

# MINNEAPOLIS ENERGY PATHWAYS

A Framework for Local Energy Action

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# MINNEAPOLIS ENERGY PATHWAYS:

## A FRAMEWORK FOR LOCAL ENERGY ACTION

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## LIST OF ACRONYMS

<b>ACEEE</b> American Council for an Energy-Efficient Economy	<b>ALJ</b> Administrative Law Judge	<b>APPA</b> American Public Power Association	<b>ARRA</b> American Recovery and Reinvestment Act
<b>C&amp;I</b> Commercial and Industrial	<b>CO2</b> Carbon Dioxide	<b>CO2e</b> Carbon Dioxide Equivalent	<b>CAP</b> Climate Action Plan
<b>CARB</b> California Air Resources Board	<b>CCA</b> Community Choice Aggregation	<b>CCF</b> Centum Cubic Feet	<b>CEAC</b> Community Environmental Advisory Commission
<b>CEE</b> Center for Energy and Environment	<b>CEED</b> Center for Earth, Energy, and Democracy	<b>CEMI</b> Customers Experiencing Multiple Interruptions	<b>CHP</b> Combined Heat and Power
<b>CIP</b> Conservation Improvement Program	<b>DEED</b> Department of Employment and Economic Development	<b>DER</b> Distributed Energy Resources	<b>DG</b> Distributed Generation
<b>EEI</b> Edison Electric Institute	<b>EIA</b> U.S. Energy Information Agency	<b>FERC</b> Federal Energy Regulatory Commission	<b>FTR</b> Financial Transmission Rights
<b>G&amp;T</b> Generation and Transmission	<b>GHG</b> Greenhouse Gas	<b>HERC</b> Hennepin County Energy Recovery Center	<b>IAMU</b> Iowa Association of Municipal Utilities
<b>IDS</b> IDS Tower	<b>IOU</b> Investor-Owned Utilities	<b>ISO</b> Independent System Operator	<b>kW</b> Kilowatt
<b>kWh</b> Kilowatt hour	<b>LDC</b> Local Distribution Company	<b>LEAP</b> Local Energy Action Plan	<b>LED</b> Light Emitting Diode
<b>LIHEAP</b> Low-Income Home Energy Assistance Program	<b>MERP</b> Metropolitan Emissions Reduction Project	<b>MHFA</b> Minnesota Housing Finance Agency	<b>MISO</b> Midcontinent Independent System Operator

Continued .....

<b>MMPA</b> Minnesota Municipal Power Agency	<b>MPA</b> Municipal Power Agency	<b>MPUC</b> Minnesota Public Utilities Commission	<b>MRES</b> Missouri River Energy Services
<b>mtCO2e</b> Metric tons of carbon dioxide equivalent	<b>MW</b> Megawatt	<b>MWh</b> Megawatt Hour	<b>NRP</b> Minneapolis Neighborhood Revitalization Program
<b>O&amp;M</b> Operations and Maintenance	<b>OAG</b> Office of Attorney General	<b>OATT</b> Open Access Transmission Tariff	<b>PACE</b> Property Assessed Clean Energy
<b>PUC</b> Public Utilities Commission	<b>PV</b> Photovoltaic	<b>REC</b> Renewable Energy Credit	<b>RES</b> Renewable Energy Standard
<b>ROW</b> Right-of-Way	<b>RTO</b> Regional Transmission Operator	<b>SAIDI</b> System Average Interruption Duration Index	<b>SAIFI</b> System Average Interruption Frequency Index
<b>SMMPA</b> Southern Minnesota Municipal Power Agency	<b>SMUD</b> Sacramento Municipal Utility District	<b>WAPA</b> Western Area Power Administration	

# EXECUTIVE SUMMARY

The City of Minneapolis has expressed ambitious objectives for its energy system, seeking to reduce climate and environmental impacts, improve the equity of energy services for residents and businesses, retain affordability, and maintain or improve service reliability. **However, the City currently faces a major challenge in that it must rely almost entirely on two investor-owned energy utilities, Xcel Energy and CenterPoint Energy, to meet these objectives.** The City and these two utilities have historically worked in separate venues, with the City setting local goals and expectations for energy use, and the utilities focused primarily on complying with statewide and national regulations for service and environmental performance. If Minneapolis is to become a leading sustainable energy city, this lack of coordination must be addressed. This study identifies several ways the City can do this.

After thorough reviewing of the local energy system, Minnesota utility law, and the interests of Minneapolis community members, **we believe that a deeper, more formal relationship between Minneapolis and the utilities that serve it will be required to meet the City's energy goals.** Minneapolis has engaged in an inclusive, data-driven climate planning process and adopted a strong set of energy goals, and it requires more control or influence over its energy services in order to achieve those goals. **In addition, the City must continue to**

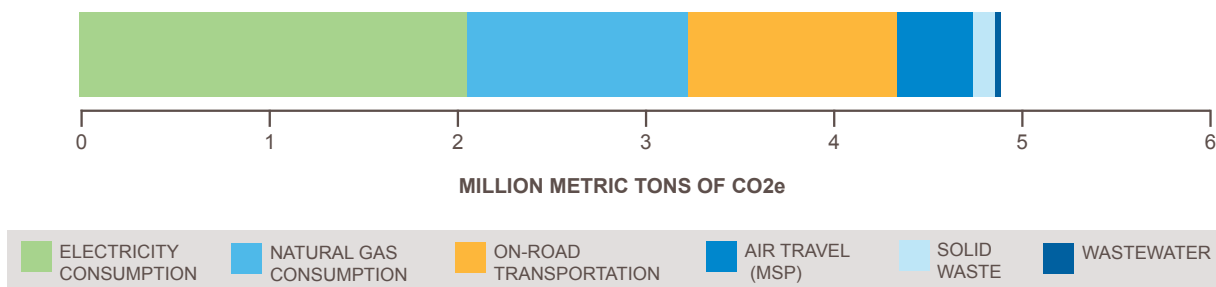
**use the assets it currently has, such as its municipal regulatory authority and relationships with businesses, neighborhoods and community organizations within the city, to work in partnership with the utilities to meet the City's aggressive energy sustainability goals.**

## BACKGROUND ON THE ENERGY PATHWAYS STUDY

With the adoption of the Climate Action Plan in 2013, the City of Minneapolis committed to ambitious goals to reduce community-wide greenhouse gas emissions and improve the equity of energy services for residents and businesses. Energy use from the city's electric and natural gas utilities is associated with approximately 66 percent<sup>1</sup> of community-wide emissions, meaning the City will not achieve its climate goals without significant progress on energy efficiency and renewable energy deployment (Figure ES-1).

The City holds franchise agreements with Xcel Energy and CenterPoint Energy that grant the use of public rights of way for utility infrastructure. The City charges the utilities a fee for this access, which utilities collect as a surcharge to Minneapolis customers. The expiration of these agreements at the end of 2014, along with interest by policymakers, advocates, businesses, and residents in

Figure ES-1: Minneapolis Communitywide Greenhouse Gas Emissions by Sector (2012)



Source: Minneapolis Sustainability Office



the city to address issues such as the environmental impact of our energy system, reliability of service, local economic impacts, and the equity of energy services, sparked significant community discussion in 2013 about the City's future energy system and its relationship to these energy utilities.

Given the City's goals, and realizing that the upcoming renewal of utility franchise agreements presented a unique opportunity, the City Council requested this Energy Pathways Study in June of 2013. Chapter 1 of the report describes in more detail the history of City decision-making around climate and energy and the activities that led to the initiation of the Pathways study.

Key deliverables for this study include:

- A unified **Energy Vision** for the city's energy system. While the City has adopted many goals and targets that relate to energy, there is currently not one set of goals that detail what the City desires from a future energy system. The Energy Vision provides this from the perspective of Minneapolis in 2040.
- An evaluation of the City's current **Energy Pathways**,

which are options the City could pursue to achieve its Energy Vision. The Pathways include, but are not limited to, state legislative changes, new City-utility partnerships, and municipalization of the energy utilities. This study provides details on the feasibility, timeline and potential outcomes of each Pathway.

- An **examination of programs and policies** that will contribute to the City's Energy Vision, and how each Pathway would impact program options. Programs and policies are the necessary "what." That is, what Minneapolis and utilities can directly implement to achieve the deployment of energy efficiency and renewable energy, and improve the equity of its energy services.
- Recommendations for **immediate next steps** for the City to begin moving towards its Energy Vision. Through the course of developing this study, it became clear to us that **City action on elements of multiple Pathways could provide the best, and most immediate, opportunity to move toward a clean, reliable and equitable future energy system.**

## PRIMARY RECOMMENDATIONS

### **1. Renew the City's utility franchise agreements with targeted enhancements, and for shorter terms.**

Traditionally and by law, franchise agreements have been limited to the subject of payment by utilities for the use of City rights of way for utility infrastructure. Because of statutory limitations in the use of franchise agreements, we recommend that the scope of existing agreements be extended to cover some reporting, reliability and right of way goals. However, these agreements should be of a shorter term, and renewal should be made contingent on satisfactory progress being made through additional agreements with the utilities.

### **2. Pursue additional, broader "Clean Energy Agreements" with utilities in which the City suspends its right to municipalize in exchange for utility commitment to meet the City's clean energy goals.**

These agreements would include the formation of a Clean Energy Coordinating Partnership, made up of City and utility leadership. This partnership would set program and policy goals, and help provide planning, leadership, coordination, promotion, and accountability for meeting these goals.

### **3. Use this Clean Energy Coordinating Partnership to leverage statewide policies, City municipal regulatory authority and community relationships, and utility expertise and funding to increase the penetration rate of efficiency and renewable energy, reliability, and equity of energy services in Minneapolis.**

We believe that significant progress can be made on specific programs and policies to advance energy efficiency and renewable energy were the City to take full advantage of existing and enhanced utility programs in concert with specific City regulatory functions.

### **4. Continue to engage in state energy policy decisions that can improve the City's ability to meet its goals.**

Policy decisions made at the Public Utilities Commission, the Minnesota Department of Commerce and Minnesota Legislature have a direct impact on energy outcomes. The City should continue to dedicate attention and resources to legislative issues, and participate in regulatory proceedings. Examples include legislation that clarifies the purpose and role of City-utility energy partnerships, solar rate reform, utility resource planning, and data privacy and access.

### **5. Continue to pursue mid- and long-term options for increasing the City's control over its energy future.**

Pathways like Community Choice Aggregation (CCA) and municipalization offer the City the most control over its energy supply, albeit with greater risk, higher cost, and a longer time frame. Should sufficient interest exist, the City should advocate for a detailed study of how CCA could operate in Minnesota and for changes to state law that would remove barriers to municipalization.

Further detail on next steps for each primary recommendation is included at the end of the Executive Summary.

## MINNEAPOLIS' ENERGY VISION

The Energy Vision is a description of the desired future state of Minneapolis' energy system, from the perspective of the year 2040. It was used to inform our development of the Energy Pathways. The Vision was received by the Regulatory, Energy, & Environment Committee of the City Council in September 2013. The full text of the Energy Vision can be found in Appendix B of the report.

A future Minneapolis energy system achieves:

- **Reliable and affordable energy services**, where all residents and businesses are supplied with competitive rates, and disparities in the relative cost of energy services for low-income households are mitigated.
- **Clean energy**, where the total carbon emissions and other waste products have substantially declined, and electricity supply is nearly carbon-free.
- Provision of **essential energy services** for all, affordably meeting the basic needs of residents, without disparity of impacts or benefits according to race, ethnicity, income, and age.
- **An increasing use of local resources** within the city, including renewable energy and efficient district heating. A robust local supply chain exists in the city for energy efficiency and renewable energy services, and Minneapolis is a national leader in advanced energy infrastructure.
- **Market integration of efficiency** that makes use of transparent data in economic and purchasing decisions. Residents and businesses are empowered to save money and reduce their environmental impact.
- **Collaborative progress** on planning and investment decisions by the energy utilities that serve the city. These decisions reflect and support the City's climate action, economic development, and social equity goals.

To develop the Energy Vision, we conducted a comprehensive inventory of 21 energy-related policies, plans, or resolutions the City has adopted over the past decade, which we considered key City positions on energy-related issues such as the 28th Street transmission line development and the Riverside power plant conversion.

The Energy Vision was developed through consultation with community stakeholder groups affected by, and with knowledge of, the energy system. These included representatives from business, community development, labor, low-income households, community relations, and state policy institutions. And importantly, the Vision reflects the input and engagement of the Minneapolis Community Environmental Advisory Commission.

## SUMMARY OF ENERGY PATHWAY EVALUATIONS


This report reviewed four major pathways the City could pursue to extend more commitment and control over its energy system. These are summarized in Table ES-1 on the next page, along with key advantages and disadvantages of each option. Not surprisingly, the options that provide the City with the greatest control and responsibility also require the longest implementation time and contain the largest uncertainty and risk. **Our recommendations emphasize capturing near-term opportunities, recognizing that progress on climate and equity goals has a critical time component.**

### Near-Term Pathway Recommendations

**We recommend a dual strategy for the near term, which blends components of Pathways 1 and 2.** Under this strategy the City would negotiate traditional franchise agreements with Xcel Energy and CenterPoint Energy, which cover compensation due the City for use of public rights of way. A shorter franchise term with the opportunity for extension would give the City a window to evaluate the effectiveness of additional agreements with utilities. In addition to compensation for the use of public rights of way, **the City should incorporate annual reporting by the utilities on reliability of service, energy usage data that supports policy objectives, and planned distribution investments**, to the extent these issues are not pre-empted by Minnesota Public Utilities Commission jurisdiction. The franchise agreement can also be expanded to allow for evaluation of utility distribution infrastructure plans for their alignment with City sustainable energy goals, again, to the extent not preempted by Public Utilities Commission jurisdiction. The City may also choose to pursue a franchise agreement with NRG Energy that could address issues such as right of way coordination, with or without an associated fee.

The second component of this dual strategy is for the City to **negotiate a separate Clean Energy Agreement with utilities that focuses directly on achieving the City's Climate Action Plan goals and Energy Vision.** The City could waive its legal right to municipalize during the term of the new agreement, in exchange for a commitment from the utilities to work toward the City's energy goals. This agreement would also create a new City-utility **Clean Energy Coordination Partnership**, consisting of key City and utility decision-makers. Although this entity would not be a "partnership" in any legal sense, use of this term emphasizes that the members of the entity would have to act as willing partners in pursuit of shared goals for the Clean Energy Agreement to achieve

Table ES-1: Comparison of Energy Pathways Evaluated for this Study

	Pathway	Advantages	Disadvantages
<p><b>Increasing Control and Responsibility</b></p> 	<p><b>Pathway 1: Enhanced Franchise Agreement</b></p> <p>Either a single franchise agreement that includes a broader set of goals, or a traditional franchise agreement with a separate agreement that addresses those goals.</p>	<ul style="list-style-type: none"> <li>• Near-term actionability</li> <li>• Addresses broader set of goals and issues than traditional agreement</li> <li>• If separate agreement, no legislation required, though beneficial</li> <li>• City continues to rely on existing utility expertise and experience</li> </ul>	<ul style="list-style-type: none"> <li>• No on-going coordination function between the City and utilities</li> <li>• Does not provide the City full control over energy services.</li> <li>• City still reliant on utilities to plan and implement clean and low-income energy actions</li> <li>• Legislation required to broaden scope of traditional franchise agreement to clean energy issues</li> </ul>
	<p><b>Pathway 2: City-Utility Partnerships</b></p> <p>Formal City-utility coordinating entity focused on setting and tracking local goals.</p> <p>Not a partnership in any legal sense, but an entity in which the City and utilities agree to act as willing partners to achieve shared goals.</p>	<ul style="list-style-type: none"> <li>• Near-term actionability</li> <li>• Addresses broader set of goals and issues than traditional franchise agreement</li> <li>• Allows the City to deeply engage in planning and coordination of clean energy activities</li> <li>• No legislation needed, if created by agreement</li> <li>• City continues to rely on existing utility expertise and experience</li> </ul>	<ul style="list-style-type: none"> <li>• Does not provide the City full control over energy services.</li> <li>• City still reliant on utilities to implement clean and low-income energy actions</li> <li>• May require legislation to authorize establishment of a stand-alone entity.</li> </ul>
	<p><b>Pathway 3: Community Choice Aggregation</b></p> <p>City contracts directly for energy supply</p>	<ul style="list-style-type: none"> <li>• City can arrange for any desired clean energy supply mix for residents and businesses in the city</li> <li>• Does not require City control and management over energy delivery</li> <li>• City continues to rely on existing utility expertise and experience for energy delivery</li> </ul>	<ul style="list-style-type: none"> <li>• Requires major legislative and regulatory scrutiny and reform</li> <li>• Does not necessarily address efficiency or low-income energy programs</li> <li>• May increase cost of energy services within city</li> <li>• Increased City exposure to external risk</li> </ul>
	<p><b>Pathway 4: Municipal Utility</b></p> <p>City owns and operates independent utility</p>	<ul style="list-style-type: none"> <li>• Gives City full control over clean energy supply mix and programs in the City</li> <li>• Easier to accommodate evolving policy priorities</li> </ul>	<ul style="list-style-type: none"> <li>• Substantial delay in implementation due to regulatory and legal process</li> <li>• Increased cost of energy services within city</li> <li>• Increased City exposure to external risk</li> </ul>

its promise. The purpose of this entity would be to:

- set renewable energy, energy efficiency, reliability and equity goals for achievement within the City,
- help provide planning, leadership, coordination, promotion, and accountability for meeting these goals; and
- enhance but not duplicate the capacities of the utilities, government agencies, and non-profit energy service organizations.

The joint coordinating entity would have a small staff and operational budget funded through an allocation of the franchise fee or an appropriation from the City's general fund, while utilities would provide appropriate staff, financial, or technical resources to support the coordinating entity.

**This first-in-the-nation arrangement would be an innovative and pragmatic approach to coordinating City and utility clean energy and reliability planning, and may afford the City the best chance of reaching its ambitious energy goals.** These agreements, along with the coordinating entity, would help to leverage, not duplicate, the complementary roles of the City and utilities, while requiring action from both. Utilities would continue providing technical expertise and financial support for clean energy activities, while the City could leverage utility program spending with tools such as benchmarking policies, regulatory and tax incentives, existing outreach networks, and its skilled residents and businesses.

We recommend that either party could terminate the Clean Energy Agreement with some period of notice if goals or obligations were not being met. At that point, the Coordination Partnership would cease to exist, and the City would be free to exercise its authority to municipalize or seek other methods to achieve City goals. The initial franchise agreement between the City and the utility, along with the franchise fee revenue, could continue independent of this agreement.

Formation of this Clean Energy Coordination Partnership, if created within the Clean Energy Agreement, would not require legislative or regulatory approval. However, if the City and utilities decided to create a stand-alone nonprofit corporation to act as this coordinating entity, legislation would be required. The utility programs the Partnership would rely upon for its work would remain subject to state regulatory authority, and individual activities planned by such a joint entity might in some cases require authorization by the state Department of Commerce, Division of Energy Resources, (in the case of energy conservation activities) or the state Public Utilities Commission (if the planned activities were to implicate the rates charged by the utilities). Although not required,

statewide legislation that would signal support for this novel City-utility arrangement and provide regulators with beneficial guidance for how activities within that City-utility arrangement should be considered.

## Longer-term Pathway Recommendations

Our review of Community Choice Aggregation (CCA) and municipalization highlighted a number of financial, statutory and regulatory barriers the City would need to overcome to make these options viable. However, they afford the City the greatest amount of control over its energy future. While we believe sufficient near-term opportunity exists with more moderate changes to the current structure, these two options offer the only opportunities to more dramatically change the city's energy supply, albeit with increased risk. Given the ability of these pathways to change electricity fuel sources, this assessment focused only on the electric sector.

### *Community Choice Aggregation*

CCA has appeal for achieving both price and environmental goals. Examples of local governments using CCA for clean power include Chicago, Cincinnati, and Marin County in California. Cincinnati's program, implemented in 2012, includes a 100 percent green power stipulation, which includes hydroelectric, wind, solar, and methane sources, and saved households an estimated 23 percent on their electricity bills.<sup>2</sup> Marin County offers a 50 percent renewable power option they estimate saves residential customers \$0.46 per month over utility rates, and a 100 percent renewable option for \$5 more per month on average.<sup>3</sup> It is important to note that these emerging green power arrangements often depend on purchasing tradable renewable energy credits (RECs), rather than owning or contracting directly for the renewable output. The market for RECs, like traditional fuels, is subject to price volatility.

However, instituting CCA in Minnesota would require making significant changes to the current utility regulatory framework. **CCA was developed for states that have deregulated retail electric service**, allowing individual customers to choose their own electric supplier at market rates. Since residential and small business consumers lacked sufficient buying power to take advantage of these new markets, some deregulated states allowed local units of government to *aggregate* their residents and businesses, and to have the City negotiate with third-party electric suppliers on their behalf. In Minnesota, CCA would require substantial revisions to two fundamental components of Minnesota's traditional regulatory structure: the utility obligation to serve all customers at non-discriminatory



regulated rates, and the right to provide that service within exclusive service territories.

### **Municipalization**

The scope of this project allowed for an initial evaluation of the legal and financial implications of forming a Minneapolis municipal utility, which would be a complex undertaking. Municipal utilities serve approximately 14 percent of the country's electricity customers, and include several known for environmentally progressive policies, such as Austin Energy in Texas and the Sacramento Municipal Utility District in California. There are 125 municipal utilities in Minnesota, many formed in the early 20th century. A Minneapolis utility would be more than three times the size of Minnesota's largest, Rochester Public Utilities.

Minnesota municipal utilities are not rate-regulated by the Public Utilities Commission like investor-owned utilities, and are accountable to their customers through locally elected or appointed officials, as opposed to shareholders and state regulators. For a city to initiate formation of a municipal utility, the measure must win a majority of votes in an election. If it proceeds, the most contentious and protracted issue would likely be the acquisition costs of the assets of the displaced utility, which would be determined by the Minnesota Public Utilities Commission or state district court if disputed. It would require a detailed analysis to estimate these costs for the Minneapolis system; Xcel Energy has suggested they may be on the order of \$3 billion.<sup>4</sup>

Our assessment indicates that **while operating a Minneapolis municipal utility could perhaps be done at a rate somewhat higher but still competitive with Xcel Energy's, becoming a municipal utility for a city like Minneapolis, under existing law, would incur prohibitive upfront costs and legal delays.** Further, the competitive but higher rate that might be charged by a Minneapolis municipal utility may not reflect a cleaner electric supply that would allow the City to meet its climate goals.

**The City would in fact gain more local control by forming a new municipal utility, but with it would come exposure to significant risk, in the form of external forces such as the electric market, technology innovation, federal and state regulations, and the weather.** With a large enough financial margin these risks could be managed, but our assessment

does not indicate the City would have such a margin.

More detail on this legal and financial assessment of municipalization is provided in Chapter 5, and Appendices F and G.

## **THE ROLE OF MUNICIPAL FRANCHISE AGREEMENTS FEES**

While the expiration of Minneapolis' current franchise agreements with Xcel Energy and CenterPoint Energy has been an impetus for the City's re-examination of the utility-city relationship, those agreements alone are not robust or flexible enough to advance the City's Energy Vision. The traditional purpose of a City-utility franchise agreement is to provide financial compensation to a local government in exchange for access to public rights of way for utility infrastructure. In 2013, Xcel Energy paid \$18.2 million in franchise fees to the City of Minneapolis, and CenterPoint Energy paid \$7.7 million.<sup>5</sup> These fees were collected as surcharges on Minneapolis customer bills, ranging from 3 to 5 percent of gross revenues for different customer classes.

While there are structural considerations that could help support (or signal support for) environmental objectives, the total franchise fee paid by any individual customer is likely too small to induce behavioral changes toward renewables or conservation. We believe the most promising option for franchise fees in a new agreement would be to dedicate a small portion of franchise fee revenue, on the order of one percent, to fund formal clean energy coordination between the City and utilities. This would allow the City to leverage existing utility programs, directing more utility resources toward the City and increasing progress toward the City's energy sustainability goals.

In addition, the franchise agreement is a fitting place for regular reporting on utility reliability and distribution infrastructure performance within the city boundaries. This might consist of annual reporting on extended outages, their locations, and the number of customers affected. We recommend the City explore reliability indicators that are relevant for reporting on a smaller geographic scale, which might be different from common utility indicators.<sup>6</sup> The franchise agreement could also require additional coordination with the City on planned infrastructure upgrades, worksite permitting or cleanup, or tree trimming activities.

## 2012 UTILITY PROGRAM ACTIVITY IN MINNEAPOLIS

### Electricity

**Total use 2012:** 4.25 million MWh

**Average Percent of Xcel Energy's MN Retail Sales:** 13

**Total Windsource® 2012:** 56,913 MWh

**Total PV 2012:** 2,700 MWh

**First-Year CIP Savings 2012:** 59,000 MWh

**Customer Rebates:** \$8.4 million

### Natural Gas

**Total use 2012:** 363 million therms\*

**Average Percent of CenterPoint Energy's MN Retail Sales:** 19

**First-Year CIP Savings 2012:** 4 million therms

**Customer Rebates:** \$527,000  
(Commercial & Industrial only)

\*Natural gas use includes the University of Minnesota Steam Plant and the Riverside Power Plant, the latter of which had higher-than-normal demand in 2012.

## PROGRAM AND POLICY PRIORITIES

One clear advantage of pursuing a near-term City-utility partnership strategy is to dovetail with existing utility programs. The largest are the statewide Conservation Improvement Programs (CIPs), which incentivize investor-owned utilities to save 1.5 percent of their retail energy sales every year through customer efficiency programs. These programs are well established and provide financial benefit to recipients, and Minnesota is considered a national leader in program implementation. **In 2012, Xcel Energy and CenterPoint Energy provided approximately \$9 million in rebates to Minneapolis customers, and \$38.7 million statewide.**<sup>7</sup> Like solar or wind energy, the savings from that initial investment accrues year after year, without any additional expenditures. If utility conservation programs can sustain a 1.5 percent savings in Minneapolis every year until 2025, those programs would reduce city electricity use to 14 percent below 2006 levels, and natural gas by 17 percent.<sup>8</sup>

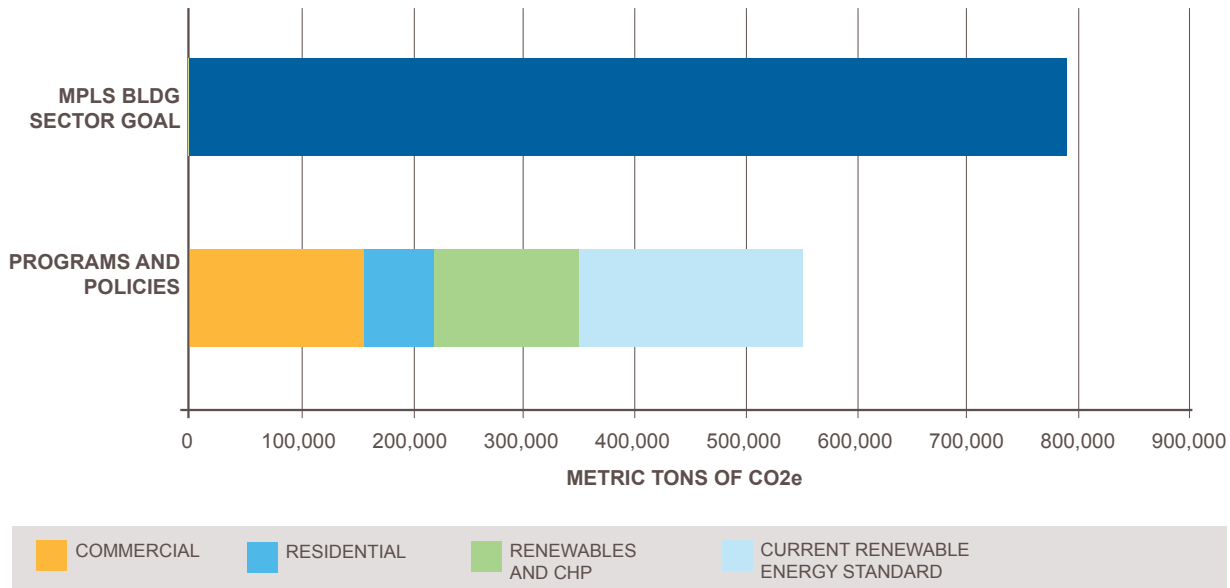
In order to fulfill the City's goals, however, joint efforts beyond this baseline program activity will be required. **This is especially true if the City would like to direct more resources toward achieving equity, local resource development, or other goals that fall outside the state-regulated purview of investor-owned utilities.** We reviewed several program and policy options that are leading, near-term priorities the City could pursue under a joint City-utility initiative. These programs were chosen because: 1) they complement existing activity, 2) they can be done in the near term without major new legal or regulatory changes, and 3) they are inclusive of a broad range of users and activities across the city.

The study evaluated how these programs would contribute to meeting the City's energy system goals, including carbon and energy savings, equity of energy services, local economic development, and a reliable supply of energy. Figure ES-2 on the next page shows the estimate of how these programs and policies could contribute to Minneapolis' 2025 carbon goals. The carbon reductions are those predicted to occur in 2025, but include program activity that would begin in 2014. For comparison, Minneapolis' 2025 target for the buildings sector is approximately 790,000 metric tons below 2012 emissions. A further description of each program and our evaluation of carbon savings and other goals are included in Chapter 6.

**Large commercial and industrial customers are crucial partners in achieving deep energy and carbon savings.** Many Minneapolis businesses already take action to reduce their energy use, but the sector's prominence warrants continued attention. In 2012, the top ten percent of Xcel Energy's commercial and industrial customers in Minneapolis, a total of 1,650 premises, accounted for two-thirds of total electricity use in the city – and 87 percent of all commercial and industrial use. Not only do these users represent a dominant fraction of total use, but they are critical for the City's economic competitiveness. The City's large building energy benchmarking and disclosure ordinance will be an important tool for measuring achievements and recognizing leading efforts.<sup>9</sup>

Minneapolis' Climate Action Plan sets an aggressive goal that 75 percent of all residents will have access to programs by 2025. **While these high residential participation rates are possible, the City and utilities must move beyond traditional energy audit programs**

Figure ES-2: Projected Program and Policy Savings Compared to Minneapolis' 2025 Carbon Goal



to transformative and innovative strategies that will increase market penetration and savings by orders of magnitude. We estimate that since 2010, seven percent of owner-occupied homes have received a complete home energy assessment, and there is currently a gap in utility programs that serve rental properties over four units.<sup>10</sup> **Developing a strong utility multi-family efficiency program that effectively serves Minneapolis' 83,000 rental units is an important near-term step.** The City can facilitate residential program outreach and tracking through local neighborhood channels, and support a green home certificate program that would set a basic cost-effective efficiency standard for single-family homes.

Programs to advance equity in Minneapolis' energy system must aim to rectify the disparate environmental and cost burden of energy services, while minimizing

the displacement that can accompany new investment. **One promising new delivery strategy is to establish Green Zones: community efforts to transition underserved and environmentally impaired parts of a city into healthier, safer, and more economically viable places to live and work.** Some promising tools are to use data and research to screen for and research systemic energy poverty linkages, and to provide deep and ongoing services on a neighborhood scale. Minneapolis' GrowNorth initiative, the Hawthorne Eco Village, and the Midtown Sustainability Initiative are current examples of such targeted, neighborhood-scale initiatives, each of which could potentially be enhanced by a comprehensive Green Zone approach.

Two important initiatives relate to the City's facilities: a program to improve public building efficiency, and upgrading City streetlights to efficient LED technology. Public buildings over 25,000 square feet represent just over three percent of citywide energy use, and streetlights use 0.7 percent of total electricity.<sup>11</sup> These programs could gross the City on the order of \$25 million in energy savings over ten years, and prevent emission of 170,000 metric tons of carbon over that same period. In addition, the City's lower-income residents tend to rely on public services more than middle- or upper-income residents. Programs targeting public buildings, especially schools, would benefit from more focused utility conservation programs, which would improve the indoor environment, health, and student comfort, key considerations for an improved learning environment. A utility-funded streetlight efficiency rebate program could be possible with approval by the state Department of Commerce, Division of Energy Resources.



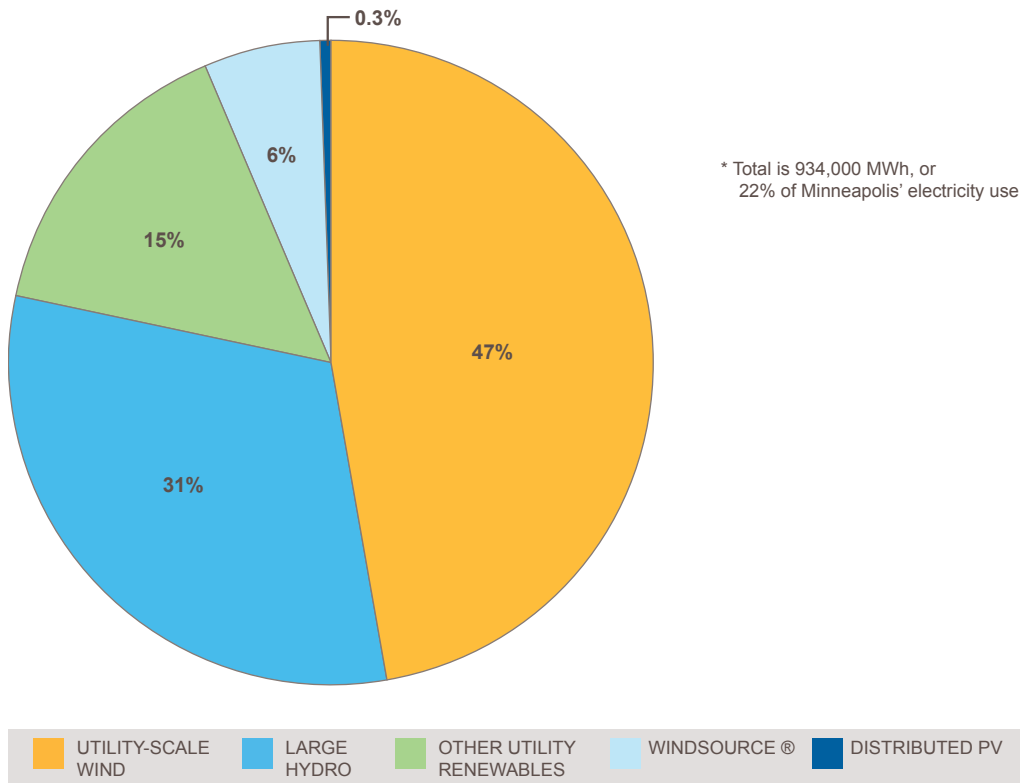
Credit: Nicole de Beaufort via cc



Minneapolis' goal to increase the use of local renewable energy will likely be met in a variety of ways. Xcel Energy's Windsource program, which allows customers to buy wind generation through an additional charge on their bill, could be expanded to include utility-scale solar generation. The program contributed 6.4 percent of the city's renewable electricity supply in 2012 (Figure ES-3), with 60 percent of purchases coming from commercial customers, a promising

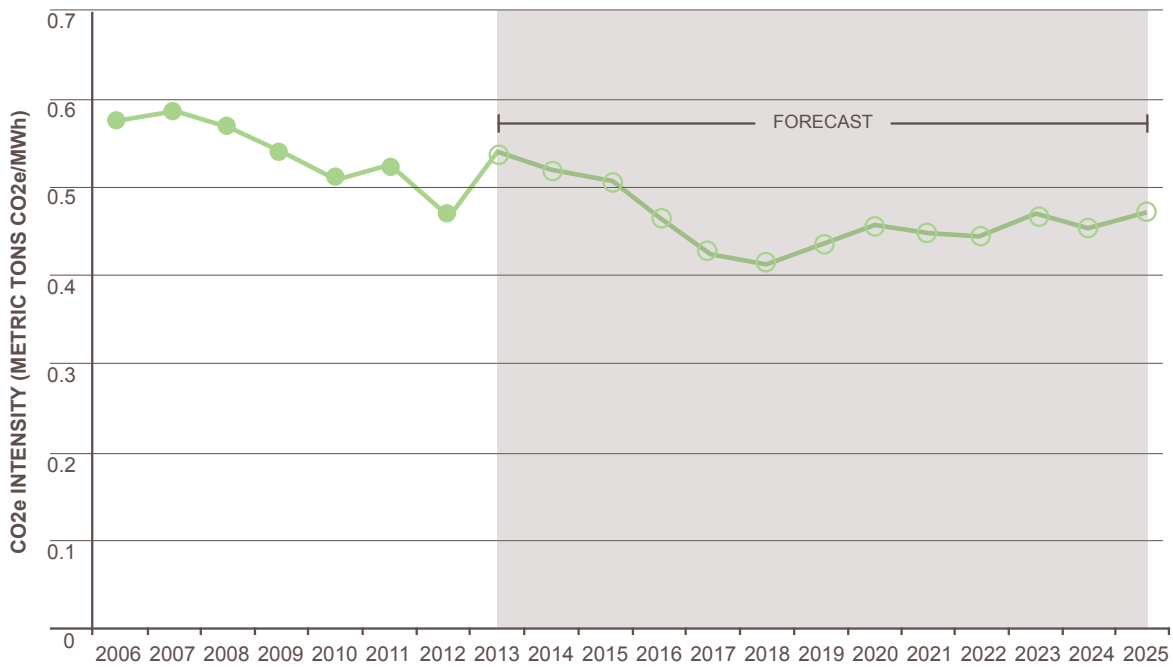
area for growth. Rooftop PV contributed just over 0.3 percent of the city's total renewable electricity use. The 2013 legislative session produced new statewide policies that are expected to increase customer adoption of solar energy.<sup>12</sup> The City can also investigate opportunities for large-scale power purchase agreements for renewable power that would be delivered by Xcel Energy.

Figure ES-3: Minneapolis' Renewable Electricity Sources (2012)



Source: Xcel Energy

Figure ES-4: Forecasted Carbon Intensity of Xcel Energy’s Minnesota Electricity Supply



Source: Xcel Energy

Of course, a major driver of the City’s environmental achievements is Xcel Energy’s carbon intensity (Figure ES-4). Xcel Energy is currently 40 percent below the statewide average in carbon intensity, in part because of the Metropolitan Emissions Reduction Project implemented in Minneapolis and St. Paul between 2007 and 2009, and also because of the higher penetration of carbon-free generation, including wind and nuclear power, in Xcel’s portfolio.<sup>13</sup> Current projections show Xcel Energy’s carbon intensity declining as the utility adds renewable generation to meet state targets of 30 percent of its supply mix by 2020. If Xcel Energy expanded its renewable energy achievements beyond the current goals, to 40 percent by 2030, we estimate the resulting carbon savings would contribute 75 percent of the total remaining goals in the buildings sector.<sup>14</sup> The City can continue to advocate for increased renewable targets for Xcel Energy, which, if implemented, would have a much larger carbon benefit than if the Minneapolis system met or exceeded this standard on its own.

resiliency will likely be required. **These more dramatic changes may usher in strikingly different models for the energy system than exist today, including new technology, business operations, and utility regulatory models.** Considerable innovation is expected to occur at the local level – the so-called “distribution edge” – where supply meets load. **Local governments can play a critical role in this transition as the facilitators of local infrastructure decisions, representatives of local resident and business needs, and by helping to pilot new ideas with an eye toward maximizing benefit and reducing local conflict.** While these new models are nascent, planning for them is happening now, and a City-utility Clean Energy Coordinating Board such as the one we recommend could facilitate their development.

The electricity distribution system in Minneapolis has benefitted from several decades of investment, and is in a robust position to handle new load growth. This also means there are opportunities to pilot new distributed energy resource technologies and learn what their energy, carbon, cost, equity, or reliability benefits are in practice. Some of the most promising opportunities include major additions of clean distributed generation, including solar, building integrated small wind, or combined heat and power; the emergence of “intelligence” in the distribution system; and the electrification of the transportation system. These emerging

### FUTURE OPPORTUNITIES AT THE DISTRIBUTION EDGE

Beyond 2025, the time horizon for the City’s Climate Action Plan, even deeper carbon reductions and climate

technologies can have numerous carbon and energy benefits, and can help reduce disparate infrastructure impacts on city residents, if implemented for that purpose.

However, distributed resources pose a conundrum for the utility business model. They tend to reduce electricity sales, the commodity upon which the utility recoups capital investments. In order to decarbonize the energy system quickly and cost-effectively, utilities must continue to invest in demand-side management, high voltage transmission, utility-scale renewables, power plant replacements, and smart-grid infrastructure. Distributed technologies alone are unlikely to scale up quickly enough to reach the needed goals. To the extent that distributed resources reduce sales and impact the current utility business model, they introduce greater uncertainty about how utilities will recover those bigger, long-term investments needed to address climate change, reducing the likelihood that they will make those investments.

**Local governments will be in the forefront of ushering in sustainable energy distribution infrastructure.**

Through a City-utility partnership, the City could develop a local energy planning framework that uses zoning and regulation powers to facilitate a distributed resource transition that minimizes conflict, and integrate with utility distribution system planning.<sup>15</sup> In addition, forward-thinking local governments that have broad goals around environment, equity, and energy costs can add a valuable perspective to the discussion of new utility business

models. In Minnesota, a stakeholder group is launching an initiative on the “energy system for the 21st century” – called e21 – to explore the future of utility business models and opportunities to advance statewide clean energy goals.<sup>16</sup>

## NEXT STEPS FOR IMPLEMENTATION

Through Minneapolis’ 18-month development of the Climate Action Plan, the City-wide discussion regarding options presented by the expiring franchise agreements, and the leadership of the City’s elected officials, the City has gained great momentum on critical energy issues, with valuable community and utility buy-in on City energy goals. Near-term action over the next number of months will be critically important for maintaining this momentum, awareness, and engagement.

Our key recommendations are outlined in the Box on the next page. We provide some detail here and in Chapter 8 to guide upcoming decisions. The City’s interest in exploring its energy options comes at an exceptionally opportune time, when the foundations of the energy industries are rapidly evolving. This effort can position the City to take advantage of that evolution and demonstrate equitable, clean, and innovative alternatives to the status quo that could be available to other municipalities in years to come.



Credit: Jenni Konrad via cc

## NEXT STEPS ON MINNEAPOLIS ENERGY PATHWAYS RECOMMENDATIONS

### **Renew the City's utility franchise agreements with targeted enhancements:**

- Construct a shorter five- to ten-year franchise term, renewable at end of term.
- Retain existing fee structure and dedicate one percent to Clean Energy Coordination Partnership activities, created under the Clean Energy Agreement.
- Require annual reports of electricity and gas distribution investments (past and planned) with a schedule of upcoming projects.
- Require citywide electricity reliability reporting including general location, duration, and number of customers affected by each outage, updated upon request.
- Request annual energy usage and program participation data at city or sub-city scale, to support goals.
- Implement a local distribution infrastructure planning process that addresses City clean energy goals.
- Establish utility standards for abandoned infrastructure, erosion control, restoration of city infrastructure, permitting, customer service, tree trimming, and project management.
- Examine options with NRG Energy for steam and chilled water efficiency programs, and explore terms of a possible district energy franchise agreement.

### **Pursue additional, broader Clean Energy Agreements with utilities:**

- Pursue legislation that clarifies the purpose and role of City-utility Clean Energy Agreements and Coordination Partnerships.
- Establish Clean Energy Coordinating Partnership consisting of strategic City and utility leadership.
- Define the scope to include setting annual or biannual renewable energy, energy efficiency, reliability and equity goals, and providing planning, leadership, coordination, promotion, and accountability for meeting these goals.
- Require utility commitment to assisting the City in achieving Climate Action Plan and equity in employment goals.
- Suspend right to municipalize for the length of the agreement.
- Establish five-year term, unless cancelled with three months' notice by either party.
- Dedicate funding through one percent of franchise fee revenues.

- Create appropriate community and technical advisory groups with formal standing.

### **Develop programs in partnership with the utilities to meet the City's energy sustainability goals:**

- Engage community and technical advisory groups on program and policy priorities.
- Leverage large commercial customers as key partners in energy efficiency.
- Pursue and advocate for a utility energy efficiency program for rental housing.
- Implement targeted utility efficiency programs for public facilities.
- Establish a Green Zones pilot with key community leadership.
- Explore innovative renewable energy supply arrangements with Xcel Energy.
- Develop a local energy planning framework that could integrate with utility distribution system planning, and target areas such as solar or CHP priority zones.

### **Continue state energy policy engagement that can improve the City's ability to meet its goals:**

- Engage with Public Utilities Commission proceedings including areas like solar rate reform, utility resource planning, and data privacy and access.
- Represent the City's interests in e21 stakeholder process on new utility business models.
- Advocate for increased state renewable energy goals for electric utilities.

### **Pursue mid- and long-term options for increasing the City's control over its energy future:**

- Request that state authorities evaluate CCA, including the potential rate impacts, energy supply mix, energy efficiency benefits, and barriers to implementation in fully retail regulated states.
- Should sufficient interest exist, solicit a robust review of the municipal utility financial assessment provided in this study, with an additional evaluation of clean power costs.
- Continue to advocate for legislation that removes barriers to municipalization, such as the requirement that municipalities pay for future lost revenue.



# 1 INTRODUCTION

The City of Minneapolis has a long history of progressive action with regard to local energy planning. The City created its own energy efficiency initiatives addressing both public and private sector buildings over 30 years ago, and created one of the nation's first greenhouse gas (GHG) emission reduction plans 20 years ago. The City was one of the nation's first to incorporate energy efficiency incentives into development regulation, aggressively promoted alternatives to inefficient single-occupancy vehicle commuting, and was one of 25 national participants in the U.S. Department of Energy's Solar Cities project, serving as a national test case for how local initiatives can reduce the cost of solar energy.

Despite this long history of progressive local action on energy issues, however, the City does not currently have a unified set of energy goals. Between the 1993 creation of the CO2 Reduction Project and the Minneapolis Energy Plan, and the 2013 Climate Action Plan, the City's local energy policy had largely evolved on an ad

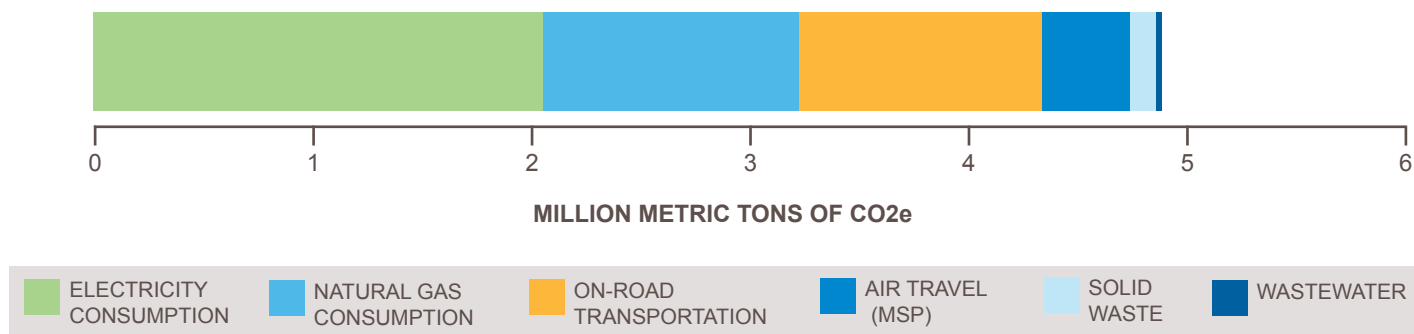
hoc basis. In addition, pending opportunities for the next generation of energy infrastructure and technologies are creating a new imperative for Minneapolis to clearly define its priorities. Two recent issues illuminated the need for a comprehensive examination of priorities and strategies: the growing urgency for local action on climate change, and the impending expiration of the City's franchise agreements with its energy utilities.

Over the last 20 years the science of global climate change has become clearer, as has the urgency regarding the need for collective and progressive response. To organize the City's response to climate change and establish clear goals for action, the City directed its Sustainability Office to develop a plan for climate response for the City. This data-intensive stakeholder process was initiated in early 2012 and culminated in the June 28, 2013 adoption of the City's Climate Action Plan (CAP), a historic and far-reaching plan that can serve as a model for other

## KEY EVENTS IN MINNEAPOLIS' ENERGY HISTORY

- **1979:** Established the Minneapolis Energy Office, which later became the non-profit organization Center for Energy and Environment, the principal consultant for this Pathways study.
- **1981:** Minneapolis Energy Office awarded \$900,000 Housing and Urban Development grant to test innovative residential efficiency strategies.
- **1985:** City passes Rental Housing Energy Ordinance
- **1993:** Adopted Minneapolis/St Paul CO2 Reduction Project and adopted the Minneapolis Energy Plan
- **2003:** Set GHG emissions reduction targets in Sustainability Indicators
- **2005:** Mayor Rybak signs US Conference of Mayors Climate Protection Agreement
- **2008:** Selected by U.S. DOE as a Solar City participant
- **2008:** Minneapolis's Comprehensive Plan includes explicit reference to a number of energy issues and sets energy goals and the GHG inventory updated
- **2010:** Installed the largest (at the time) solar array in the upper Midwest on Minneapolis convention center
- **2012:** City Council updated GHG emissions reduction targets in Sustainability Indicators
- **2013:** City Council adopted the Climate Action Plan and the Building Energy Benchmarking and Disclosure Ordinance

Figure 1: Minneapolis Communitywide Greenhouse Gas Emissions by Sector (2012)



Source: Minneapolis Sustainability Office

local governments. The plan calls for reducing GHG emissions in Minneapolis by 30 percent from 2006 levels by 2025.<sup>1</sup> The process of developing the Climate Action Plan confirmed that roughly two-thirds of the GHGs emitted in Minneapolis come from the electricity and natural gas used in buildings (see Figure 1).

Along with Minneapolis’ growing attention to energy goals and advocacy for cleaner energy, a growing number of residents and businesses were advocating for local action on energy issues. This growing interest in energy issues led to increased attention to the relationship between the City and the incumbent energy utilities – Xcel Energy for electric service, and CenterPoint Energy for natural gas service.

The City’s franchise agreements with these utilities expire at the end of 2014. These agreements, adopted in the early 1990s, have historically been 20-year agreements limited to the subject of use of City rights of way for utility infrastructure in exchange for payments by the utilities for use of those rights of way. Local stakeholders, including the City’s Community Environmental Advisory Commission (CEAC), have advocated for developing new relationships rather than simply renewing the existing standards.

Prior to re-signing franchise agreements of this length and with this limited scope, the City decided to explore its options with regard to the delivery of energy services within the City, and how those options may be implemented to further the City’s energy objectives and the aggressive goals of its Climate Action Plan. In June of 2013, the City selected the Center for Energy and Environment and its subcontractors, CR Planning and the law firm of McGrann Shea Carnival Straughn & Lamb, to develop and present this Minneapolis Energy Pathways Study.

This study provides a single coherent vision of Minneapolis’ desired future energy system for residents and businesses, and identifies possible pathways the City could choose to achieve its vision. It is organized as follows:

**Chapter 2** provides an overview of current energy use and production in Minneapolis. It also explores the current regulatory framework in which the issues under discussion in Minneapolis are being considered. In this chapter, we define key terms, describe the differing ways that various utilities are regulated, and provide background on the roles and responsibilities of state, regional, and federal entities involved in the provision of energy services in Minneapolis.

**Chapter 3** discusses the process for creating the City’s Energy Vision. Culled from numerous City documents and proceedings, stakeholder interviews, and review and prioritization from the Community Environmental Advisory Commission, the Energy Vision describes our understanding of what the City may want from a sustainable, 21st-century energy system. An aspirational document, the Energy Vision is intended to bring Minneapolis residents and businesses together around a common set of goals, and to be useful as a potential guide for implementation decisions. The Energy Vision is foundational to this study, in that the recommended pathways, programs, and policies have all been evaluated for their ability to help the City meet this Energy Vision.

**Chapter 4** provides a detailed discussion of utility franchise agreements and fees. It describes the limitations of the current agreements and discusses the City’s options for structuring franchise fees in new agreements to advance its environmental objectives, keeping in mind that the current regulatory framework, including Public Utilities Commission oversight of franchise agreements, limits the scope of these agreements.

**Chapter 5** provides a description and analysis of the four Energy Pathways we evaluated for this study:

- Enhanced Franchise Agreements
- City-Utility Partnerships
- Community Choice Aggregation
- Formation of a Minneapolis Municipal Utility (“Municipalization”)

This chapter also provides a first-cut financial analysis for the municipalizaton Pathway.

Each of the four Pathways we evaluated would increase the City’s influence or control over its energy services, either directly or through a more cooperative, collaborative relationship with the energy utilities, in order to ensure progress toward the City’s energy goals. Because the status quo is not a viable option for the City, we did not consider it as part of this study.

**Chapter 6** provides a deeper look at how the City’s energy goals can be met with near-term program and policy options. Over the course of the summer and fall of 2013, the team worked with Xcel Energy and CenterPoint Energy to better understand their systems and operations, and to build a data inventory, which provided the basis for the evaluation of seven Energy Vision-based metrics: reduced energy use, CO2 reductions, affordability, equity impacts, local resource development, system reliability, and renewable supply. Both utilities were very forthcoming with data for this project.

**Chapter 7** is a discussion of key cross-cutting issues that will likely come to the fore as progress toward the City’s Energy Vision is made. Progressive actions toward meeting Climate Action Plan goals will have implications for the energy delivery infrastructure within the City – the so-called “distribution” networks – as well as for the regulatory framework for utilities like Xcel Energy and CenterPoint Energy and how those utilities are compensated for their services. Forward-thinking local governments will have an important role to play at this critical time.

**Chapter 8** offers some guidance on next steps for the City, to begin to act on or implement the recommendations and alternatives described in previous chapters.

This study has been conducted during a time of significant community and utility buy-in on City energy goals. Through the 18-month development of the Climate Action Plan, through the City-wide discussion regarding actions and options the City could take with regard to the expiring franchise agreements, and through the leadership of the City’s elected officials, the City has gained great momentum and consensus on critical energy issues. A particularly significant achievement is the Minneapolis Climate Action Plan. Many of our options and recommendations build on that Plan and the community work that it contains.

Regardless of which Pathway or Pathways the City takes with regard to furthering its Energy Vision, sustained City involvement in the activities and dockets at the Minnesota Public Utilities Commission (MPUC) will continue to be critical. The Commission is where many of these energy and utility issues will be decided, and it will be increasingly important that the City continue to have a significant voice and presence there. Continued City involvement at the MPUC will not only help the MPUC understand the City’s goals and recommendations better, but will also do the same for the utilities that serve the City and other stakeholders, and increase the City’s understanding of the regulatory context the utilities must operate within.

Finally, we believe the City’s interest in exploring its options with regard to energy services comes at an exceptionally opportune time. The foundations of the energy industries are rapidly evolving, and this effort by the City positions it well both to take advantage of the evolution to re-define its level of involvement with the energy utilities that provide services in the city, and to explore and demonstrate alternatives to the status quo that could be available to other municipalities in years to come.





# 2 CURRENT ENERGY SYSTEM LANDSCAPE

This chapter outlines the starting points from which Minneapolis must consider its energy future.

It will review the following:

- Current energy use and major utility services within the city
- The basic terms used to describe utility services
- The types of utilities that provide services in the state
- The state, local, and federal authority for utility regulation in Minnesota

This chapter goes into some detail, as a clear understanding of these issues are important in the later discussions of the City's authority in franchise negotiations and its options regarding the Energy Pathways.<sup>2</sup>

## 2.1 ENERGY USE AND SERVICES

Two investor-owned utilities (IOUs) serve Minneapolis' energy needs. Xcel Energy, formerly Northern States Power, provides electricity service, and CenterPoint Energy, formerly Minnegasco, provides natural gas service. In addition, approximately 100 large customers in the downtown core and Fairview-Augsburg campus areas purchase steam and chilled water service from NRG Thermal, a private company.

Minneapolis customers used 4.25 million MWh of electricity in 2012, which comprised approximately 13 percent of Xcel Energy's Minnesota electricity sales. This puts Minneapolis use on par with the small number of mid-sized municipal utilities, including Lincoln, Nebraska; Tacoma, Washington; and Colorado Springs, Colorado.<sup>3</sup> The vast majority of electricity use is by the largest commercial and industrial customers; the top ten percent of commercial and industrial users, a total of 1,650

premises, account for between 65 and 70 percent of total customer sales.<sup>4</sup> The total direct electricity cost to retail customers in 2012 was approximately \$373 million.<sup>5</sup>

Residential, commercial, and industrial natural gas customers used 363 million therms in 2012, at a cost to consumers of approximately \$232 million.<sup>6</sup> This includes the large demand from Xcel Energy's Riverside power plant and the University of Minnesota steam plant, which are both fueled by natural gas. 2012 was an unusual year in several ways: prolonged outages at a major Xcel Energy coal plant required increased use of the Riverside Plant, while warmer-than-average winter temperatures reduced the heating load. Minneapolis on average comprises approximately 19 percent of CenterPoint Energy's total Minnesota retail sales.<sup>7</sup>

Several energy-related programs and services are available for Minneapolis residents and businesses. The largest are utility Conservation Improvement Programs (CIP), which offer rebates and assistance to customers in saving energy. Services range from discounted home energy assessments to large commercial building programs (programs are discussed in more detail in Chapter 6).



Credit: Doug Wallick via cc

## 2.2 CURRENT REGULATORY FRAMEWORK

In order to better understand the issues and options facing the City of Minneapolis in this Energy Pathways study, we first describe the current regulatory framework for the provision of electric and natural gas services in Minnesota.

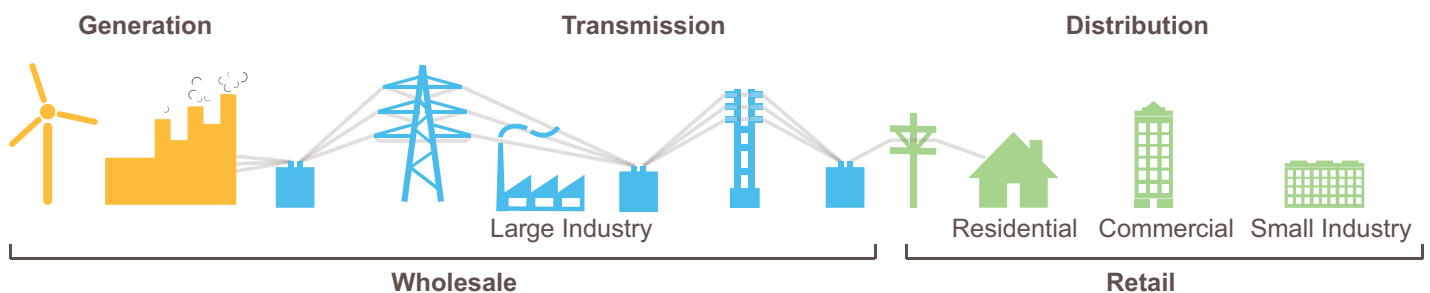
### 2.2.1 Regulated Energy Services

Virtually all aspects of electric and natural gas service markets are regulated by federal or state agencies. The market for certain other energy services, such as steam or hot water in district energy systems, is not regulated to the same extent. The regulation of electric and natural gas services is divided between wholesale services and retail services (see Figure 2). Retail energy services are services provided directly to customers who use the energy (called retail or “end-use” customers). Retail energy services are subject to state regulatory jurisdiction, either by the Minnesota Public Utilities Commission, or some other authority designated by state law.

Wholesale energy services are activities that do not involve retail (or “end-use”) customers. Wholesale services are regulated at the federal level by the Federal Energy Regulatory Commission (FERC). Examples of wholesale energy services include:

- the buying and trading of electricity and natural gas between wholesale generators and power marketers, and
- the transportation of electricity through high-voltage transmission wires and natural gas through interstate natural gas pipelines.

Figure 2: Wholesale and Retail Energy Services



Credit: Michael Kappel via cc

In 2012, these programs provided approximately \$9 million worth of rebates to Minneapolis customers.<sup>8</sup> Xcel Energy also offers incentives for customers to install solar PV systems; in 2012, Minneapolis had two megawatts of customer-owned solar PV systems installed.

Minneapolis low-income utility customers have access to federally funded efficiency programs that are provided at low or no cost. The Weatherization Assistance Program, administered in Minneapolis by Community Action of Minneapolis, is the primary program that delivers services to eligible customers. Since the 2005-2006 heating season, this program has weatherized almost 5,000 housing units in Minneapolis.<sup>9</sup> In addition, Community Action of Minneapolis administers an Energy Assistance Program, with funding from the federal government, which provides income-eligible customers assistance on paying utility bills during the winter heating season. In 2011 the program had a budget of \$17 million.<sup>10</sup>



## UNBUNDLING ELECTRIC AND NATURAL GAS SERVICES

### Electric Service

Electric service is made up of a bundle of three primary services – generation, transmission, and distribution.

**Generation** refers to the actual production of electricity, which can be generated using a number of methods and fuels such as wind, solar, natural gas, nuclear, coal and hydro.

**Transmission** refers to the delivery of electricity over long distances at high voltage from a generation facility through a transmission network usually to one or more distribution substations, where the electricity is “stepped down” (the voltage is reduced) for distribution to residential, commercial and industrial customers. Transmission systems owned by individual companies are interconnected to form a transmission grid, which allows for greater system reliability as well as electricity sales between utilities. Generation and transmission may be either wholesale or retail functions, depending on the particular transaction. For the retail customer, the costs for these functions are bundled into retail rates, along with the costs of distribution.

**Distribution** involves the delivery to, and retail sale of, electricity directly to consumers. In Minnesota, electric utilities provide distribution of electric services within exclusive service territories assigned to each utility by the MPUC.

### Natural Gas Service

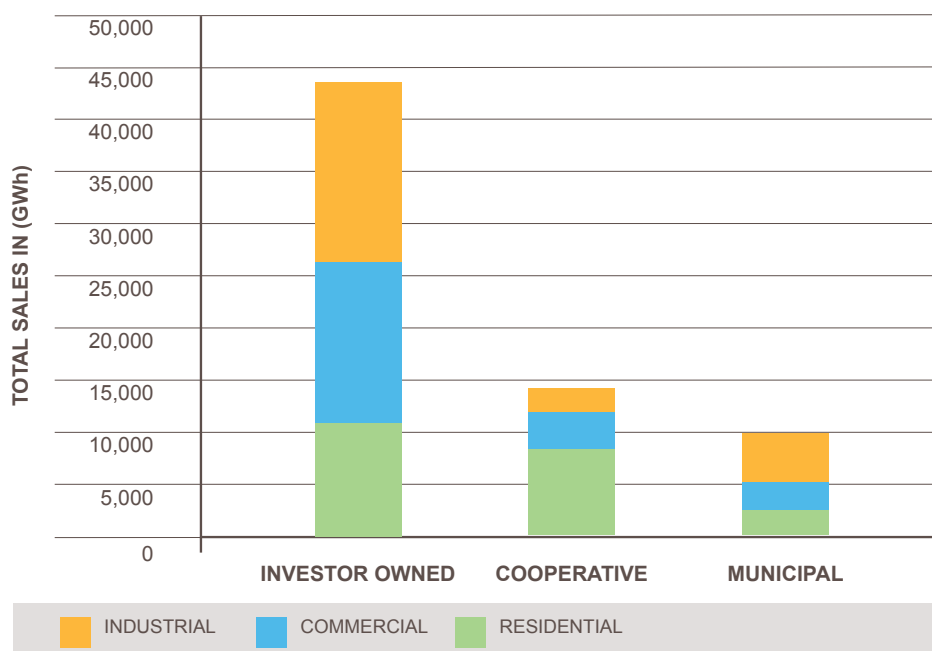
Likewise, natural gas services comprise three primary services – production, transportation and distribution.

**Production** refers to the extraction of natural gas from underground deposits, and the processing of natural gas to separate the various hydrocarbons and fluids from the pure natural gas, to produce “pipeline quality” natural gas.

**Transportation** of natural gas includes the gathering system of low pressure small diameter pipelines that transport raw natural gas from the wellhead to the processing plant, as well as the inter- and intra-state pipeline system that deliver natural gas to the “citygate.” As a general matter, interstate gas pipelines are subject to federal regulation by FERC. In Minnesota, wholly intrastate gas pipelines are regulated by the Minnesota Public Utilities Commission. Minn. Stat. § 216B.045. The citygate is the point at which local distribution utilities accept delivery of natural gas for distribution to their retail customers.

**Distribution** is the final step in delivering natural gas to customers. Although a few large industrial and commercial customers receive natural gas directly from the interstate and intrastate pipelines, the vast majority of customers receive natural gas from their local gas utility, also called a local distribution company (LDC). LDCs are regulated utilities involved in the delivery of natural gas to consumers within a specific geographic area. Unlike electric utilities, natural gas utilities do not have assigned service territories. Instead, natural gas service areas tend to be defined by the ownership of the distribution infrastructure in a given area.

Figure 3: Minnesota Electricity Sales by Type of Utility (2011)



Source: U.S. Energy Information Administration

### 2.2.2 Types of Utilities

Different types of utilities are subject to varying levels of Minnesota Public Utilities Commission oversight. There are three main types of utilities serving Minnesota customers: investor-owned, cooperative, and municipal. Figure 3 shows how Minnesota’s electricity sales and customer classes are divided between the three types. Investor-owned utilities (described below) have a profit motive, and are therefore subject to comprehensive regulation by the MPUC to ensure the utility is acting in the public interest. However, municipal and cooperative energy utilities are nonprofit organizations “effectively regulated” by their governing boards, so state oversight by the MPUC was deemed unnecessary by the Minnesota legislature.<sup>11</sup> Municipal and cooperative utilities can elect to be subject to comprehensive oversight by the MPUC, but only one utility, Dakota Electric Cooperative Association, has exercised that option.

#### **Investor-owned utilities:**

Investor-owned utilities (IOUs) are private, for-profit corporations whose rates are established and regulated by the Minnesota Public Utilities Commission. Under Minnesota law, these utilities are defined as “public utilities.” Minnesota is served by ten investor-owned utilities, five electric and five natural gas.<sup>12</sup>

#### **Municipal utilities:**

Municipal utilities are public, nonprofit utilities overseen by local public utilities commissions or city councils. In Minnesota, there are 125 electric municipal utilities and 31 natural gas utilities. Distribution municipal utilities, like Austin Municipal Utility in Austin, Minnesota or Rochester Public Utilities in Rochester, Minnesota, provide retail energy services to residents and businesses within the municipality. By statute, municipal utilities may work together to create a municipal power agency (MPA), like the Southern Minnesota Municipal Power Agency, to provide wholesale energy services to members of the MPA.<sup>13</sup> These municipal “aggregators” also provide conservation programs, and are subject to the state Renewable Energy Standard. They are discussed more in section 5.5 and Appendix G.

#### **Rural electric associations:**

Rural electric associations (co-ops) are nonprofit organizations whose rates are overseen by a board composed of co-op members. Distribution co-ops, such as Beltrami Electric Cooperative or Steele-Waseca Electric Cooperative, provide distribution electric service to Minnesota consumers. There are 44 distribution co-ops in Minnesota. By statute, co-ops may work together to create generation and transmission cooperatives, which provide wholesale energy services



to distribution co-ops. Great River Energy is an example of a generation and transmission cooperative that provides wholesale energy services in Minnesota.

### 2.2.3 State Regulatory Authority

In 1974 the legislature established the Minnesota Public Utilities Commission and created the outlines of the regulatory structure that exists in Minnesota today. Each electric utility that serves retail customers was granted an exclusive service territory and given exclusive rights to provide electricity within the assigned territory. Electricity may be sold to customers only by the utility assigned the exclusive service territory, except in certain limited circumstances.<sup>14</sup> Natural gas utilities that serve retail customers, while not assigned exclusive service territories like their electric counterparts, are given exclusive access to retail customers by virtue of the existence of the distribution infrastructure owned by the utility – the MPUC is, by statute, directed to avoid unnecessary duplication of that infrastructure.

The legislature explained its actions in findings at the beginning of the Minnesota Public Utilities Act of 1974, codified as Minnesota Statutes, chapter 216B:

*It is hereby declared to be in the public interest that public utilities be regulated as hereinafter provided in order to provide the retail consumers of natural gas and electric service in this state with adequate and reliable services at reasonable rates, consistent with the financial and economic requirements of public utilities*

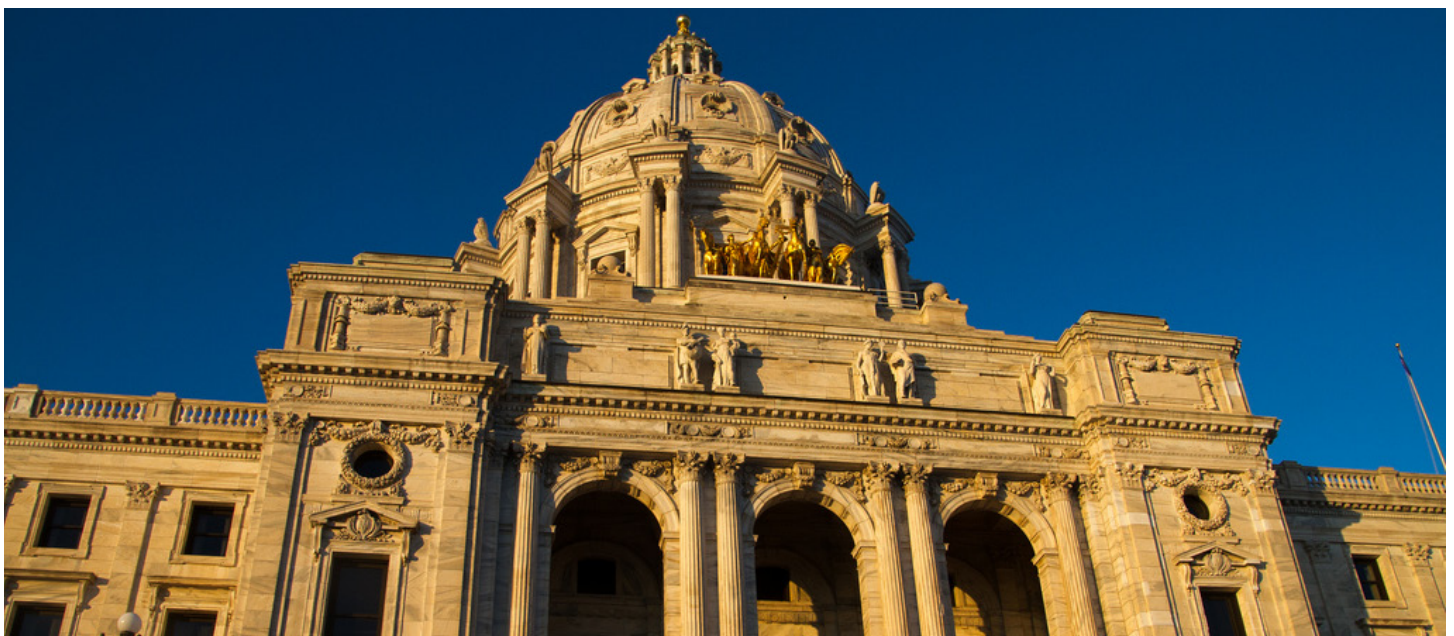
*and their need to construct facilities to provide such services or to otherwise obtain energy supplies, to avoid unnecessary duplication of facilities which increase the cost of service to the consumer and to minimize disputes between public utilities which may result in inconvenience or diminish efficiency in service to the consumers.*<sup>15</sup>

In exchange for an exclusive service territory, each utility assumed the obligation to serve all customers within its service territory and to provide quality service at just, reasonable and non-discriminatory rates. This is the foundation of Minnesota’s regulatory structure.

Minnesota law takes a broad view of what constitutes a “rate” for utility regulatory purposes, defining “rate” as “every compensation, charge, fare, toll, tariff, rental, and classification, or any of them, demanded, observed, charged, or collected by any public utility for any service and any rules, practices, or contracts affecting any such compensation, charge, fare, toll, rental, tariff, or classification.”<sup>16</sup>

Further, Minnesota law requires that “every rate made, demanded, or received by any public utility, . . . shall be just and reasonable. Rates shall not be unreasonably preferential, unreasonably prejudicial, or discriminatory, but shall be sufficient, equitable, and consistent in application to a class of consumers.”

In order to ensure that investor-owned utilities, which have a profit motive, act in the public interest and not just to further their private interest, they are required to have their rates be set by the Minnesota Public Utilities



Credit: Paul Weimer via cc

Commission. Under the oversight of the Commission, IOUs are permitted the opportunity to recover only the reasonable and prudent expenses associated with provision of utility service plus a reasonable return on its investments made to serve customers. In determining whether a utility's rates are just and reasonable, Minnesota law specifies a number of factors for the MPUC to consider, including the public's need for "adequate, efficient, and reasonable service" and the utility's need for "revenue sufficient to enable it to meet the cost of furnishing the service" and to "earn a fair and reasonable return upon the investment" in utility property needed to provide service.<sup>18</sup>

## 2.2.4 Minnesota Utility Regulatory Agencies

There are three state agencies involved with the regulation of utility electricity and natural gas services in Minnesota. Those agencies are:

- the Minnesota Public Utilities Commission,
- the Division of Energy Resources of the Minnesota Department of Commerce, and
- the Residential and Small Business Utility Division of the Office of the Minnesota Attorney General (OAG).

### **Minnesota Public Utilities Commission:**

As an independent regulatory commission, the MPUC consists of five commissioners, each appointed by the governor with the advice and consent of the state Senate. Each commissioner is appointed for a six-year term and is removable only for cause. Commissioner terms are staggered. Minnesota law requires that the commission be geographically and politically balanced.

The Commission is designed to provide independent and comprehensive oversight and regulation of utility

service providers. Its mission is to protect and promote the public's interest in safe, adequate, and reliable utility services at fair, reasonable rates. MPUC duties include:

- Setting rates for rate-regulated gas and electric utility service providers;
- Establishing service standards for gas and electric utility service providers;
- Reviewing and approving construction of large gas and electric facilities;
- Resolving consumer and provider complaints; and
- At the direction of the legislature, establishing utility policy for the state.

The MPUC comprehensively regulates retail services provided by investor-owned utilities such as Xcel Energy and CenterPoint. Municipal and cooperative electric utilities are locally regulated, except as specifically provided by statute. That is, if a statute addressing utility services does not specifically cover municipal or cooperative utilities, the courts have determined that the MPUC does not have regulatory jurisdiction.<sup>19</sup>

With regard to utility franchise agreements between utilities and cities, the Commission generally does not review the terms and conditions of individual franchise agreements. However, it can review franchise fees paid by an investor-owned utility to a city, since these fees are a cost of providing retail utility services within the city and therefore are passed on to the utility's retail customers within the city. A more detailed discussion of state law regarding franchise agreements is included in Chapter 4.

### **Division of Energy Resources:**

The Division of Energy Resources is a program within the Minnesota Department of Commerce, which is

## STATE OVERSIGHT OF UTILITY CONSERVATION IMPROVEMENT PROGRAMS

Encouraging energy efficiency has long been an important City policy, and is a key tool for achieving the City's Climate Action Plan goals. The Division of Energy Resources oversees implementation of the state's energy savings goal under utility-administered Conservation Improvement Programs. Under this program, energy utilities are required to submit a plan every three years to the Division of Energy Resources for approval by the commissioner. With some exceptions, the plan must meet the state's annual energy savings goal of 1.5 percent of average retail sales for each

electric and gas utility. Utilities may petition the Division of Energy Resources to adjust their savings goals to a minimum of 1 percent at the discretion of the Division. Legislation passed in 2009 established an interim savings goal of 0.75 percent over 2010-2012 for qualifying natural gas utilities. The MPUC has jurisdiction over the utility's recovery of conservation expenses incurred under a CIP plan, as well as any incentives approved by the MPUC to promote conservation activities.<sup>20</sup>



headed by a commissioner appointed by the governor for a term no longer than the governor’s term of office. The commissioner of Commerce, unlike the chair of the MPUC, is a member of the governor’s cabinet. By statute, the Division of Energy Resources is a party in all MPUC proceedings, and its Energy Planning and Advocacy Unit provides the MPUC comprehensive analysis of

utility filings, and advocates for the public interest.

The Division of Energy Resources also houses:

- The State Energy Office, which provides grants and loans intended to maximize the benefits of energy efficiency and renewable energy through promoting energy conservation in buildings and demonstrating

**Table 1: Comparison of Minnesota Regulatory Oversight by Topic and Type of Utility**

Regulatory Area	IOU	Muni	Co-op
Retail Rates	Set by MPUC	Set by Municipality or local governing board	Set by Co-op Board
Resource Planning	Yes, if above 10,000 customers	Yes, if above 10,000 customers	Yes, if above 10,000 customers
Certificate of Need (Large Energy Facilities)	Yes, by MPUC	Yes, by MPUC	Yes, by MPUC
Renewable Energy Standard (RES)	Xcel Energy: 30% by 2020 All other IOUs: 25% by 2025	Municipal Power Agencies: 25% by 2025	Generation and Transmission Cooperatives: 25% by 2025
Energy Efficiency Resource Standard (CIP) • Electric: 1.5% per year • Gas: 1.0% per year	Yes, both gas and electric	Yes, electric; Yes, gas if muni provides more than 1 million cubic feet annually at retail	Yes, electric
Solar Energy Standard • 1.5% by 2020	Yes	No	No
Net Metering	Allowed up to 1 MW: • Retail rate below 40 kW • Avoided cost between 40 kW and 1 MW Size restricted to 120% of the customer’s on-site load.	Net metering allowed at retail rate for systems below 40kW	Net metering allowed at retail rate for systems below 40kW
Value of Solar alternative to Net Metering	Yes, but utility must opt in	No	No
Community Solar	Xcel Energy: Required All other IOUs: Opt-in Projects may be up to 1 MW. Rate credited will be retail rate (next 3 years) or Value of Solar rate, at utility’s discretion.	No, but allowed	No, but allowed

energy technologies, with the objective of bringing them closer to market realities;

- The Energy Facilities Permitting Unit, which conducts the environmental review required for proposed energy facilities in Minnesota and serves as technical staff to the MPUC in its permitting of energy facilities. These facilities include power plants, transmission lines, wind farms, and pipelines; and
- The Energy Assistance Unit, which administers the Low-Income Home Energy Assistance Program (LIHEAP) helping income-eligible customers pay home heating costs, and the Weatherization Assistance Program, which provides assistance to homeowners

to implement conservation measures, thereby reducing the cost of home energy.

**Office of the Attorney General:**

Minnesota Statutes, Section 8.33, specifies that the Attorney General is responsible for representing and furthering the interests of residential and small business utility consumers through participation in matters before the MPUC involving utility rates and adequacy of utility services. In utility matters, the OAG is a public interest advocate, but one that is solely focused on this aspect of the overall public interest, in contrast to the Division of Energy Resources’ broader advocacy responsibilities. Due to resource constraints, the OAG participates only in those proceedings

which it determines have the greatest potential impact on residential and small business utility consumers.

### 2.2.5 Federal and Regional Authorities

As noted above, the FERC plays a critical role in interstate utility regulation. In addition, the impact and importance of the Midcontinent Independent System Operator (MISO) regarding electric service in the state cannot be overstated.

#### **Federal Energy Regulatory Commission (FERC):**

FERC is an independent government agency, officially organized as part of the Department of Energy. It is composed of five commissioners, who are appointed by the President of the United States, with the advice and consent of the Senate, for five-year terms. No more than three commissioners may belong to the same political party. The FERC is responsible for:

- Regulating the interstate transmission of natural gas and electricity;
- Regulating the wholesale sale of electricity;
- Licensing and inspecting hydropower projects;
- Approving the construction of interstate natural gas pipelines and storage facilities;
- Monitoring and investigating energy markets and promoting competitive wholesale power markets

and open access to transmission; and

- The reliability of the high voltage transmission electric grid.

Broadly speaking, the Federal Energy Regulatory Commission has jurisdiction over interstate electric and gas matters.<sup>21</sup> But Congress has reserved regulation of certain intrastate matters to state and local authorities.<sup>22</sup>

#### **Midcontinent Independent System Operator (MISO):**

To ensure the reliability of the high-voltage transmission network and promote competitive wholesale power markets, FERC approved the initial formation of MISO in 1998 as an Independent System Operator (ISO), and, in 2001, as the nation's first Regional Transmission Organization (RTO). MISO is a not-for-profit, member-based organization, with an eight-member independent Board of Directors elected by its membership.<sup>23</sup>

In addition to MISO, there are six additional Independent System Operators/Regional Transmission Organizations across the nation. The central functions of an ISO/RTO are:

- to coordinate, control and monitor the use of the electric transmission system by utilities, generators and marketers;
- to operate the transmission system owned by several entities as a single transmission system, at non-discriminatory rates and access, independently of ownership; and
- to conduct and coordinate regional transmission planning and expansion.

In addition to these functions, MISO operates a number of wholesale markets for a region that extends from north-central Canada to the Gulf of Mexico, one of the world's largest energy and operating reserves markets based on economic dispatch of generation. MISO markets include a Day-Ahead Market, a Real-Time Market, and a Financial Transmission Rights Market, and settled roughly \$18.4 billion of charges in 2012.<sup>23</sup> All of the electricity distributed by an electric utility to a retail customer in Minnesota is bought and sold through the MISO markets, regardless of whether that utility is an investor-owned, municipal, or cooperative utility.



Credit: Arkansas Business via cc



# 3 DEVELOPING MINNEAPOLIS' ENERGY VISION

Despite Minneapolis' long history of progressive local action on energy issues, the City does not currently have a unified set of energy goals. Between the creation of its initial CO2 reduction plan and the Minneapolis Energy Plan in 1993, and the 2013 Climate Action Plan, the City's local energy policy has evolved on an ad hoc basis. In addition, opportunities for new energy infrastructure and technologies create an imperative for Minneapolis to clearly define its priorities. Establishing a unified energy vision for Minneapolis was a necessary precursor to evaluating which pathways could best lead to that vision.

The Energy Vision was developed over several months in the summer of 2013. It involved three main steps:

- Evaluation of existing City policies, programs, and actions;
- Outreach to the Community Environmental Advisory Commission to prioritize draft language and components; and
- Interviews with different stakeholder groups to test the draft vision concepts.

The Energy Vision created for the City is inclusive, aspirational, and provides a unified platform for future energy policy decisions, including deliberation around which energy pathway to follow (see Sidebar). The complete Energy Vision was received and filed by the Minneapolis City Council's Regulatory, Energy, and

## A VISION FOR MINNEAPOLIS' ENERGY SYSTEM IN 2040

Excerpt from the full Energy Vision text.

### **Reliable and Affordable Energy Services**

All city residents and businesses are supplied with reliable, affordable, and high-quality electric and natural gas service. Through a combination of highly efficient end-use of energy and efficient energy delivery and generation, Minneapolis is a national leader in low-cost and high-quality energy services. Disparities in the relative cost of energy services for low-income households are aggressively mitigated. Rates are competitive, so that existing businesses in the city thrive and new business activity is attracted to the city.

An efficient and "smart" grid infrastructure seamlessly integrates distributed generation, energy storage, electric vehicles and other distributed energy resources. Smart infrastructure ensures high levels of reliability, promotes energy efficiency, and enables high levels of local interaction and coordination while protecting customer privacy. High power quality helps make Minneapolis a competitive location for power-sensitive industries.

### **Clean Energy**

The total carbon emissions and other waste products from the energy supply that serves the city have substantially declined. Electricity supply is almost carbon emission free in 2040. Heating and cooling services come from a variety of clean and efficient energy sources. Improvements in energy efficiency mean that many buildings can often generate all needed energy on-site.

### **Essential Energy Services for All**

The energy infrastructure serving the city affordably meets the basic needs of residents, such as adequate heating, cooling and lighting. Race, ethnicity, income, and age are no longer indicators for who bears pollution impacts or receives economic or environmental benefits.

*Continued.....*

## Local Resources

Local renewable energy resources (including solar, biomass, hydro and wind) are increasingly used within the city. Solar contractors are thriving, and the city is home to a number of businesses that provide equipment or services within the energy efficiency and renewable energy supply chain. Academic and business interests choose to locate in Minneapolis because it is seen as a leader in advanced energy infrastructure.

Efficient community-scale heating and cooling systems are integrated into many high-density developments across the city. Combined heat and power facilities provide efficient energy in district energy and industrial applications in many areas of the city.

## Market Integration of Efficiency

Energy use and efficiency data is seamlessly available to building owners/managers, neighborhoods, city government and customers. Businesses and residents consider energy

information in economic decisions, from making additional energy efficiency investments to making purchasing decisions and renting or buying property. Residents and businesses have simple and affordable tools to finance energy efficiency and renewable energy improvements. Buildings are constructed with energy efficiency as a primary objective, and new homes and businesses regularly achieve net-zero energy status. Residents and business can participate in community renewable energy projects.

## Collaborative Progress

The resource planning and investment decisions of the energy utilities that serve the city reflect and support the city's climate action, economic development, and social equity goals. Utility managers and city administrators seamlessly and routinely collaborate to meet those goals. Improvements to and maintenance of energy infrastructure in city rights of way (ROW) are coordinated with other ROW improvements. The city's development and redevelopment plans incorporate protection and development of local energy sources. City infrastructure is a model of energy efficiency and uses largely renewable energy.

Environment Committee on September 9, 2013. The full text is included in Appendix B.

## 3.1 EVALUATION OF EXISTING POLICIES

In the 20 years between the 1993 Energy Plan and the 2012 Climate Action Plan, the City had not conducted a comprehensive review of its energy policies and goals. However, a number of policies, programs and other initiatives were undertaken that contained important aspirations for the energy system, illuminated recurring challenges and conflicts of environmental justice, and reflected the input of engaged community members.

Consequently, we conducted an examination of the existing long-term plans and policies that relate to Minneapolis' energy future, and the recent history of policy advocacy and actions taken by the City. While not an exhaustive inventory, the plans, policies, actions, and issues considered in this initial inventory provide a mostly complete picture of how existing policy creates an energy

vision that provided context for the "pathways" analysis.

The inventory process focused on policies, programs, and actions undertaken by the City over the previous decade, and mostly within the previous seven years. The review covered detailed and complex efforts, such as the Comprehensive Plan and the 2012 Climate Action Plan, but also included smaller and more discrete efforts, such as support for legislative initiatives, ad hoc programs addressing energy use or generation within the city, and decision-making on proposed local energy infrastructure development. The review covered twenty-one distinct plans, policies, and actions. For each item, the consultant team reviewed:

- whether there was public input or engagement, and the extent of the engagement process,
- whether the item was formally adopted (official plan or policy) or if it was a stand-alone item that reflected or demonstrated a policy or desired outcome, and
- whether the item demonstrated conflicts or synergies with other city goals.



## LIST OF PLANS, POLICIES, OR INITIATIVES REVIEWED FOR THE ENERGY VISION

- Minneapolis Plan for Sustainable Growth
- Climate Action Plan
- State and Federal Legislative Advocacy
- Franchise Agreements
- 5-year City Goals and Strategic Directions
- Sustainability Indicators
- U.S. Conference of Mayors Climate Protection Agreement
- Commercial Building Rating and Disclosure Policy
- Minneapolis Climate Change Grants
- Residential Energy Efficiency Revolving Loan Program
- Solar in the Cities Initiative (Department of Energy Solar Cities)
- Minneapolis Solar Energy Systems
- Energy Innovation Corridor
- Solar Ordinances and Permits
- Thinc.GreenMSP – Manufacturing Better Business
- Hennepin County Energy Recovery Center Volume Expansion
- 28th Street Transmission Lines – Hiawatha Project
- Midtown Eco-Energy Power Plant
- Linden Hills Anaerobic Digester
- Upper St. Anthony Falls Hydro
- Riverside Plant Conversion from Coal to Natural Gas

### 3.2 CEAC REVIEW AND PRIORITIZATION

The Community Environmental Advisory Commission provided feedback of the draft energy vision.<sup>25</sup> CEAC members include citizens appointed by the Mayor and the City Council. While the Commission is not designed to represent all constituencies in the City, the membership brings a diverse set of opinions and perspectives to consideration of environmental issues.

CEAC members participated in a facilitated process designed to seek input on each component of the Energy Vision. Members were asked to identify any gaps and to prioritize different components. Additionally, individual members of CEAC offered written comments and suggestions for modifications to the language and the priorities emphasized in the draft vision.

The most prominent theme that resulted from this discussion and follow-up comments is the importance of social equity. CEAC members made it clear that being intentional about the social impacts of any energy decision is a crucial component to the Energy Vision. The themes that CEAC members deemed important include: social equity, meaningful participation, life-cycle costs, supporting renters, transparency, encouraging behavioral changes, keeping energy dollars local, and avoiding displacement of low-income residents and people of color.

CEAC kept the Pathways project on its agenda over the

summer and fall, hearing regular updates from staff and the consultant team as the project moved forward. CEAC members were given the final draft of the Energy Vision prior to the City Council Committee review, and members were invited to offer comments to the Council Committee.

### 3.3 STAKEHOLDER INTERVIEWS

In addition to review by CEAC, we conducted interviews with specific stakeholders representing a diverse set of opinions and perspectives. These stakeholders were asked both to respond to the priorities in the draft Energy Vision and to offer additional ideas. The six interviews were conducted with individuals from the following organizations, representing key constituencies (identified in parentheses):

- Minneapolis Regional Chamber of Commerce (Business)
- Metropolitan Community Development Consortium (Community Developers)
- Labor Unions (Workers)
- Energy Cents Coalition (Low-Income Households)
- Neighborhood and Community Relations (Communities)
- Minnesota Department of Commerce, Division of Energy Resources (State Policymakers)

These constituencies were chosen because they are either not represented on CEAC or under-represented relative to city demographics.

All interviewees believed that Minneapolis’s energy planning decisions would have an important impact on the people they represent. Some of the interviewees were not fully aware of the Pathways project while others were very engaged with energy issues and familiar with the project. The following themes emerged as important characteristics of the energy system:

- Clean energy,
- System reliability,
- Basic access to energy services, and
- Cost-competitiveness of energy services.

While each participant found these themes important, there was variation among interviewees on how best to achieve them. Several participants discussed approaching energy system planning from a regional perspective rather than only looking at energy issues within the City. Almost all interviewees mentioned the importance of extending benefits sought by Minneapolis to the larger region.

In response to the draft vision language, interviewees again noted clean energy, reliability, and affordability among their top priorities. While most responses to the language were favorable, some notable concerns include:

- The desire for “local” energy was perceived by some to give a preference to the Municipalization Pathway or a preference for local construction of power plants.
- The phrase “consumer choice” was perceived by some interviewees as advocating for retail deregulation of utilities. Others who did not perceive “consumer choice” as a problem still objected to it as an unimportant goal regarding the city’s energy system.
- Some of the social equity conditions, such as those relating to health considerations associated with local energy infrastructure, were regarded as unimportant for an energy vision by some, but highly prioritized by others.



Credit: Adelle Freyja Annabell via cc

# 4 LOCAL UTILITY FRANCHISE AGREEMENTS

The expiration of Minneapolis' current 20-year franchise agreements with both Xcel Energy and CenterPoint Energy at the end of 2014 has been the impetus for the City's re-examination of its historical relationship with these energy utilities, with the goal of enhancing the City's ability to achieve its Energy Vision. **The traditional purpose of a City-utility franchise agreement is to provide financial compensation to a local unit of government in exchange for access to public rights of way, such as those needed for the transmission and distribution infrastructure necessary to provide energy services.** The franchise agreement itself, because of legal restrictions on its scope, cannot be the only vehicle for achieving a re-negotiated and expanded relationship with utilities (the full options are discussed in Chapter 5). Despite this, the franchise fee structure as well as the purpose to which those fees are dedicated can be important policy and program considerations for achieving City goals.

This chapter will provide background on the City's authority to establish franchise fees, the potential scope of a franchise agreement, and an analysis of options in structuring the franchise fee itself. It builds upon a previous analysis conducted for the City by the law firm Stoel Rives (see Appendix C).

## 4.1 CURRENT MINNEAPOLIS FRANCHISE FEES

The City signed its current franchise fee contracts in 1994 for 20-year terms. In 2013, Xcel Energy paid \$18.2 million in franchise fees to the City of Minneapolis. Xcel Energy designates the franchise fees as "city fees" on customer electric bills. CenterPoint Energy paid \$7.7 million in franchise fees to the City of Minneapolis and collected the same amount as surcharges from its Minneapolis

customers. To put these amounts in perspective, revenue to the City of Minneapolis' General Fund, including utility franchise fees, is projected to be about \$465.9 million in 2014. Of that amount, franchise fees paid by Xcel Energy would be roughly 3.9 percent and CenterPoint Energy 1.7 percent.<sup>26</sup> Franchise fees received by the City of Minneapolis are deposited in the General Fund just like property tax receipts; franchise fee revenues are not presently dedicated to any particular purposes.

The current Xcel Energy franchise fee is structured as follows:

- 4.5 percent of its gross revenues from Minneapolis residential customers;
- 5.0 percent of its gross revenues from small commercial/industrial customers and large commercial industrial customers served at secondary voltage; and
- 3.0 percent of its gross revenues from large (100 kW or greater) commercial/industrial customers served at primary or higher voltages.<sup>27</sup>

Under the current franchise, Xcel Energy is required to make monthly franchise fee payments to the City based on Xcel Energy's gross revenues from each customer class in the preceding month. The franchise does not expressly require that Xcel Energy pass through the franchise fees to individual Minneapolis customers, but this is standard practice for Xcel Energy and other utilities. Thus, the "city fee" resembles a sales tax, levied on individual customers' electricity purchases and proportional to their usage. The current CenterPoint Energy franchise fee is structured similarly to the Xcel Energy franchise fee, as follows:

- 4.5 percent of gross revenues for gas sales and transportation from residential buildings with four units or less;
- 5.0 percent of gross revenues from small-volume



Table 2: Comparison of Xcel Energy and CenterPoint Energy Annual Franchise Fee Surcharges

	Xcel Energy		CenterPoint Energy	
	Typical Single-Family Home	Typical Large Commercial Customer	Typical Single-Family Home	Typical Large Commercial Customer
<b>Annual Energy Costs</b>	\$840	\$593,107	\$792	\$412,559
<b>Minneapolis Franchise Fee</b>	\$19	\$29,655	\$36	\$20,628
<b>St. Paul Franchise Fee</b>	\$29	\$29,223	\$38	\$23,056

Note: Assumes the single-family customer uses 7,500 kWh and 1,000 therms per year, and the large commercial customer uses 7,200,000 kWh and 730,000 therms per year.

(less than 2,000 ccf<sup>28</sup> /day) commercial/industrial customers with firm or interruptible service and from large-volume customers with firm service; and

- 3.0 percent of gross revenues from large-volume commercial/industrial customers with interruptible service.<sup>29</sup>

We conducted a review of franchise agreements in more than 60 other cities in Xcel Energy and CenterPoint Energy territory, fully described in Appendix D. Notably, many Minnesota cities do not charge franchise fees at all. For those that do collect fees, there are two main methods of collecting the fee: (1) a percentage of total usage (as is done in Minneapolis and Saint Paul); and (2) a flat fee per month, regardless of usage. Fifty-three of the cities we reviewed use a flat-fee method for collecting the fee. The disadvantage of a flat-fee structure, especially in a heterogeneous city like Minneapolis, is that it is regressive: smaller-use customers often pay a larger percentage of the total fees. Since higher consumption indicates a higher use of the utility infrastructure, structuring franchise fees to align with higher usage seems appropriate.

Table 2 presents an illustration of franchise fees for example customers in Minneapolis, and includes Saint Paul amounts for comparison.

## 4.2 MUNICIPAL AUTHORITY TO CHARGE FRANCHISE FEES

Cities have historically enjoyed the authority to require investor-owned utilities (“public utilities”) either operating within the city limits or occupying streets or public property to obtain a franchise. In addition, before the 1974 Public Utilities Act (the “1974 Act”), cities had authority to set utility rates.

The passage of the 1974 Act preserved the franchising authority of cities:

*Any public utility furnishing the utility services enumerated in section 216B.02 or occupying streets, highways, or other public property within a municipality may be required to obtain a license, permit, right, or franchise in accordance with the terms, conditions, and limitations of regulatory acts of the municipality, including the placing of distribution lines and facilities underground.<sup>30</sup>*

A separate provision in Minnesota Statutes also speaks to this issue:

*A corporation may be organized to construct, acquire, maintain, or operate internal improvements, including ....any work for supplying the public, by whatever means, with water, light, heat, or power, including all requisite subways, pipes, and other conduits, and tunnels for transportation of pedestrians. No corporation formed for these purposes may construct, maintain, or operate a ... pipe line, or other conduit ... in or upon a street, alley, or other public ground of a city, without first obtaining from the city a franchise conferring this right and compensating the city for it.<sup>31</sup>*

The city may impose a fee for this use of the city’s rights of way “to raise revenue or defray increased municipal costs accruing as a result of utility operations, or both.”<sup>32</sup>

However, cities lost their ratemaking powers upon adoption of the 1974 Act, which housed jurisdiction over rates at the Minnesota Public Utilities Commission. The definition of “rate” for the purposes of the 1974 Act is quite broad, encompassing “every compensation, charge, fare, toll, tariff, rental, and classification, or any of them, demanded, observed, charged, or collected by any public utility for any service and any rules,

practices, or contracts affecting any such compensation, charge, fare, toll, rental, tariff, or classification.”<sup>33</sup>

Since the 1974 Act, many cities continue to condition the operation of electric utilities and gas pipelines on compliance with a franchise ordinance. In 1996, the Minnesota Department of Public Service (now known as the Minnesota Department of Commerce, Division of Energy Resources), in response to 1995 legislation, prepared an investigative report on municipal franchises that was submitted to the legislature. The agency found that the

of a franchise may not change which utility has the exclusive right to serve an assigned service territory.<sup>36</sup>

### 4.3 PUBLIC UTILITIES COMMISSION OVERSIGHT

Historically, the Minnesota Public Utilities Commission has not exerted jurisdiction over franchise agreements or franchise fees, although, as described above, its



Credit: Alves Family via cc

continuing public policy justification for franchises and franchise fees was “to compensate the municipality for use of a public property for private gain.”<sup>34</sup> The public property included “rights of way under city streets, the easements in private properties, ditches along roads and highways, etc.”

**Thus, while the responsibility for ratemaking and overall regulatory control of public utilities has shifted to the state and federal levels of government, cities continue to use the franchise power to require those utilities to pay for their use of rights of way and other public resources.** The Minnesota Supreme Court has affirmed the authority of cities to impose a franchise on a public utility.<sup>35</sup> This authority is not unlimited, however; for example, the terms and conditions

authority over rates charged by rate-regulated utilities is near-plenary, and the definition of what constitutes a “rate” is broadly defined. As described by the legal consultants hired by the City in 2012 to look into the issue of the City’s franchising authority and its ability to impose franchise fees on rate-regulated utilities:<sup>37</sup>

*While the Commission does not generally establish, authorize, or endorse a franchise fee... the Commission will scrutinize and seek justification for anything that looks like a rate.<sup>38</sup> The franchise fees are generally recoverable so long as they exclusively benefit the city and not the utility.<sup>39</sup> The Commission has jurisdiction over anything that would flow back to benefit the utility and would be particularly concerned about preventing double-recovery of utility costs*

charged directly to municipal residents through a franchise fee line item and all customers through general rates.<sup>40</sup>

Also as noted by the City’s legal consultants, a **municipality likely does not have authority to impose renewable requirements, energy efficiency goals, or greenhouse gas emission reduction targets through a franchise agreement. These types of requirements would increase utility costs and have rate implications beyond the limited scope of compensation for a utility’s use of a city’s rights of way.** Thus, “new legislation would likely be required for the City to regulate utilities in these areas, whether through a franchise agreement or through another mechanism.”<sup>41</sup>

#### 4.4 STRUCTURING A FRANCHISE FEE TO ATTAIN ENVIRONMENTAL OBJECTIVES

Within the regulatory and statutory framework outlined above, the structure, terms, and conditions of franchise agreements and fees may be negotiated at the discretion

of the parties (the City and the utilities). Even if it does not currently have the authority to impose renewable energy requirements or energy efficiency goals on the utilities in franchise agreements, the City may still achieve some environmental and energy objectives by revising its franchise fee structure and rates. Some options could be implemented under existing statutes; others might require statutory changes. As a practical matter, however, we would make two observations: (1) franchise fees are a pass-through cost to the utilities, paid by city residents and businesses, and in that sense function much like a tax; and (2) relative to a customer’s overall energy bill, franchise fees are quite small. Thus, **changes to the franchise fee regulatory structure to induce changes in utility or ratepayer choices are unlikely to have a significant effect.** However, if a franchise fee is increased enough to effectively induce desirable efficiency and substitution investments, it would likely also be high enough to have undesirable consequences, such as a negative impact on the City’s commercial and industrial businesses, including possible business relocation outside of the City.

Table 3 summarizes a variety of options in structuring franchise fees to attain beneficial environmental outcomes.

Table 3: Franchise Fee Options to Attain Environmental Objectives

Franchise Fee Structure	Assessment
Increase franchise fees, and use the additional revenue to pay for energy-efficiency, renewable-energy, and climate-action activities in Minneapolis.	Producing new financial incentives for energy-efficiency and renewable energy investments at consequential levels would require significant increases in franchise fee rates.
Establish a performance-based fee structure based on carbon-intensity.	For example, the City could require Xcel Energy to pay higher franchise fees if the carbon intensity of the utility’s supply mix increases, and lower franchise fees for lower carbon intensity. This incentive is less effective given that Minneapolis customers, not Xcel Energy shareholders, incur the cost of franchise fees.
Use a portion of franchise fee revenue to fund a Clean Energy Partnership between the City and the utilities.	This organization would implement and administer agreements among the City of Minneapolis, Xcel Energy and CenterPoint Energy; coordinate program delivery; promote program participation; and evaluate and publicize results. Small seed funding on the order of 1 percent of franchise fees would be sufficient.
Exclude Windsource® or other renewable subscription revenues from calculations of Minneapolis franchise fees and customers’ city fees.	This would increase the financial incentive for voluntary Windsource or other renewable subscriptions. Given that Windsource accounts for only 1.2% of electric sales in Minneapolis, this would not be a significant revenue loss. If participation increases, the City might need to find other revenue sources to remain revenue-neutral.
Establish tiered surcharges (city fees) for residential customers or all customer classes so that customers would pay higher rates at higher levels of energy use.	A tiered rate structure could be designed to re-allocate the financial burden of franchise fees, to increase total revenues, or both. It is uncertain whether a tiered rate structure would send meaningful and effective price signals to consumers.
Establish a voluntary climate-protection rate to allow Minneapolis utility customers to voluntarily contribute to the City’s climate-protection programs by paying higher city fees on their utility bills.	It is uncertain whether the cost of introducing and administering a voluntary climate-protection rate would be justified by the participation and additional revenues. This could be done on a pilot basis, to gauge what the potential response might be.



## 4.5 OTHER CONSIDERATIONS IN STRUCTURING A FRANCHISE FEE

One key decision for Minneapolis is the duration of the franchise. On the one hand, a longer term would provide additional certainty to the City and the utilities, and may result in a more stable environment for additional investments in distribution infrastructure and clean-energy programs. On the other hand, a shorter term could ensure near-term results and rapid utility investment in the City's energy vision. A shorter term would also provide flexibility, enabling the City to keep its options open in the rapidly changing energy market. Franchises in the past have been long-term agreements, extending twenty years or more. In our review of other franchise agreements (see Appendix D), there does not seem to be an overarching trend toward shorter-term agreements.

The City could increase its franchise fees to generate more general fund revenue, but in the City's current financial position, it may not require additional revenues. It might make more sense to include in the franchise a mechanism for the City to increase (or decrease) the franchise fee with reasonable notice and within reasonable bounds, rather than set the franchise fee structure in the agreement.

Similarly, the overall term of the franchise could be longer than the effective period of the initial franchise-fee structure and rates. In five years, the City might want a different

franchise-fee structure (for any number of reasons related to the City's revenue objectives or developments in the energy realm), but that preference does not necessarily mean the franchise itself must be five years. This seems to be a trend – most franchises now do not set a franchise fee for the duration of the franchise, but instead contain language to the effect that the city has the right to impose a franchise fee by ordinance, which the city may later amend at its discretion.

**The City may consider the pros and cons of alternative fee structures with attention to questions of equity, ability to pay, and effect on energy use.** However, the franchise fee may not be a very useful tool for influencing consumer behavior. The most important attributes of the fee structure are likely simplicity and durability. The City's current percent-of-total-usage fee structure is simple and durable (and, unlike a flat-fee structure, it provides at least a small incentive for customers to reduce their energy use).

For **most** households and businesses, the city fees they pay to Xcel Energy and CenterPoint are not significant budget items. Minneapolis households in single-family homes may pay about \$100 per year; the city fees on utility bills equal less than 0.2 percent of total expenditures for typical Minneapolis businesses. For low-income households and energy-intensive companies, however, franchise fees matter. A significant increase in franchise fees passed through to low-income residents in the form of higher utility surcharges could reduce their quality of life.

As noted above, franchise fees are not an external funding source for cities; utilities generally pass through 100 percent of franchise fees to customers within the city limits. However, in addition to compensating a city for use of its rights of way, franchise fees can:

- diversify a city's revenue sources;
  - provide a reliable stream of revenue;
  - reduce pressure on the property tax levy;
  - generate unrestricted funds that can be used to fund ordinary municipal operations;
  - generate funds for dedicated purposes;
- be paid by occupants of property-tax-exempt properties as well as property tax payers; and
  - be structured to:
    - increase revenues automatically with utility rate increases or sales growth;
    - minimize impact on a specific customer type, such as low-income residents; and
    - provide incentives and disincentives for various purposes.

## 4.6 OTHER UTILITY SERVICE PROVIDERS

Our examination of City franchise fees raised the question of whether this would apply to NRG Energy, a major energy service provider for Minneapolis. NRG operates a district heating and cooling system to buildings in downtown Minneapolis and to Augsburg College and the University of Minnesota Medical Center, Fairview campus. According to NRG, it serves “more than 100 downtown buildings, heating more than 43 million square feet of space and cooling more than 22 million square feet.”<sup>42</sup> The system itself started in 1926 with Baker Properties and greatly expanded in the 1970s when IDS developed a “full scale” district heating and cooling facility.

The system has had a variety of owners over the years. NRG Thermal has owned the NRG Energy Center Minneapolis since 1993. NRG describes the system as encompassing four miles of chilled-water piping and six miles of steam piping, with six satellite district heating and/or cooling plants. The system is physically located throughout downtown and into the Fairview-Augsburg area.

The system crosses both private and public streets and grounds and serves a number of City buildings, including the Convention Center, Target Center, Centre Village, numerous parking ramps, and the federal courthouse. The City has agreements in place with NRG as to these accounts, some of which may include energy conservation measures.

To date, the City has not required a franchise agreement for the NRG system. While NRG is not a public utility<sup>43</sup> for purposes of Minnesota’s franchise agreement statute, it may be a “public service corporation.” This is defined as a corporation organized to “construct, acquire, maintain or operate internal improvements, including . . . any work for supplying the public, by whatever means, with water, light, heat or power, including all requisite subways, pipes, and other conduits . . .”<sup>44</sup> Minnesota law

states that no public service corporation “may construct, maintain, or operate a . . . pipe line, or other conduit . . . in or upon a street, alley, or other public ground of a city, without first obtaining from the city a franchise conferring this right and compensating the city for it.”<sup>45</sup>

If NRG is found to be a public service corporation under the statute cited above, the City can work with NRG Energy to identify opportunities for addressing this legal requirement, should the franchise need be verified. Options would include requiring NRG to obtain a license or permit from the City, requiring a franchise agreement with NRG without a franchise fee, or amending existing contracts to address both the requirements of state law and the City’s energy goals.

We recommend, as part of this discussion, that the City explore partnership opportunities for building steam and chilled water energy efficiency goals, including options for NRG to re-join statewide Conservation Improvement Programs. As discussed in Chapter 2, CIP requires utilities to meet certain energy savings goals through implementation of efficiency programs. The costs of utility CIP activities are generally recovered from utility customers. However, Minnesota law allows large customers, such as NRG, to apply to the Commissioner of Commerce to opt out of the CIP program, meaning the large customer no longer has to pay for the utility’s CIP activities, and can no longer receive energy efficiency incentives and benefits under CIP.<sup>46</sup> The Commissioner is required to approve the request, unless the commissioner finds the customer has failed to take reasonable measures to identify, evaluate, and implement energy conservation and efficiency improvements.

By opting in to CIP, NRG could avail itself of energy efficiency opportunities provided by CenterPoint Energy under its CIP programs. This could help increase energy efficiency within the City, provide additional carbon reductions, and potentially benefit NRG Energy’s downtown customers.



# 5 PATHWAYS TO MINNEAPOLIS' ENERGY VISION

This report evaluated four distinct Pathways that would allow the City greater participation and control over its energy system:

- Enhanced Franchise Agreements
- City-Utility Partnerships
- Community Choice Aggregation
- Formation of a Minneapolis Municipal Utility (“Municipalization”)

While this Chapter defines, describes and evaluates each of these Pathways independently, our recommendation for the City’s best near-term option involves blended elements of multiple pathways. This recommendation is included at the end of this Chapter.

## 5.1 OVERVIEW

Currently, the relationship between utilities and cities is essentially one of utilities managing their systems and delivering services within the cities in relative isolation from City influence or communication. That is not necessarily a fault of the utilities – cities, in recent years, have not initiated much interaction with their utilities. However, as cities become more engaged and proactive about energy use and production within their borders, as Minneapolis has, relying entirely on utilities to meet City energy goals is not an acceptable condition; communication must be better, expectations made clearer, interests more noticeably aligned.

We believe that a city that has engaged in a lengthy and inclusive data-driven planning process and adopted

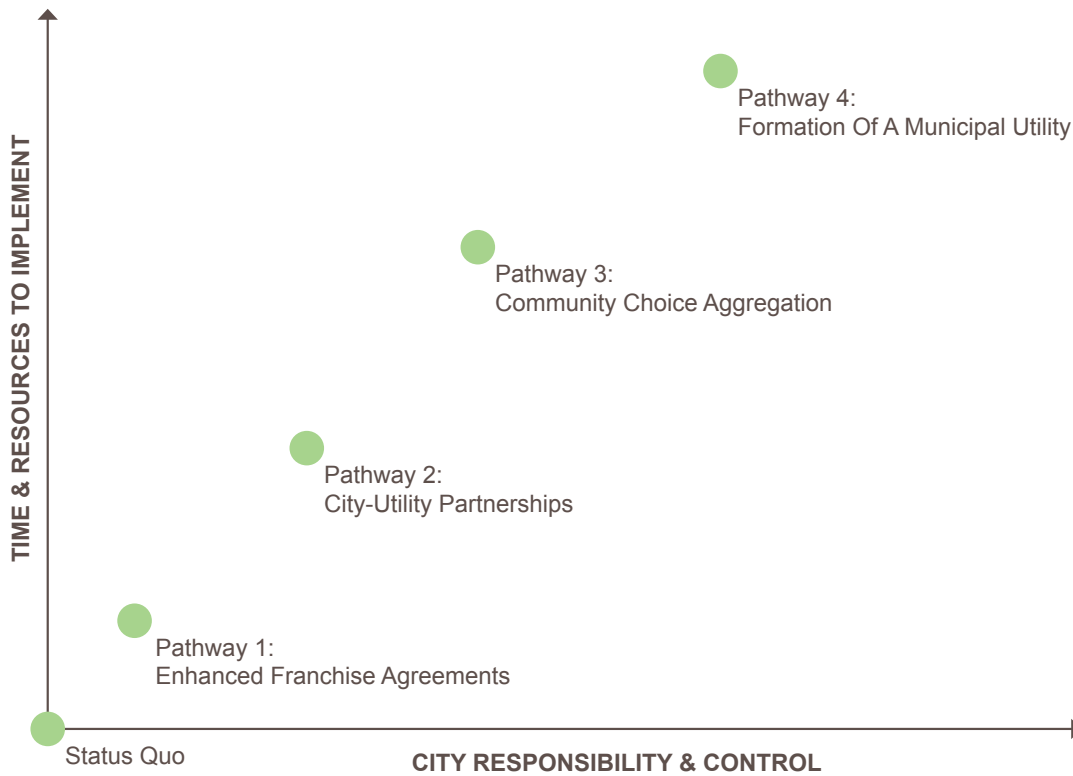
a strong set of energy goals like those in the Climate Action Plan needs more control or influence over energy services, either directly or through a more cooperative, collaborative relationship with the energy utilities that serve that city, in order to ensure progress toward those goals.

The four Pathways evaluated below are situated along a continuum of increasing influence or control over the delivery of energy services within the city (Figure 4). Increasing the City’s control over these services could increase the likelihood that the City’s Energy Vision and the goals of its Climate Action Plan would be realized. However, with additional control comes additional financial and operational risk. It also increases the time and resources required to implement a new system.

The first two Pathways, called Enhanced Franchise Agreements and City-Utility Partnerships, afford the City some additional influence over energy services in the city, and can be implemented in a relatively shorter time frame, using fewer City and utility resources. The other two, Community Choice Aggregation and a Minneapolis Municipal Electric Utility, would give the City significantly more control, but take substantially more time and resources to implement.

The City has developed buy-in and momentum for action on energy sustainability issues, through the development of its Climate Action Plan, and through the yearlong discussion of energy options inspired by local advocates in response to the pending expiration of the current franchise agreements. This momentum is an important factor in our recommendations, which emphasize near-term opportunities, recognizing that progress on the City’s climate and equity goals have a critical time component.

Figure 4: Tradeoff Considerations for Energy Pathway Options



## 5.2 PATHWAY 1: ENHANCED FRANCHISE AGREEMENTS

The first Pathway along the continuum of increasing City influence or control over energy services is the Enhanced Franchise Agreement. As discussed extensively in Chapter 4, franchise agreements historically have been limited to issues associated with utility use of rights of way in a city, and compensation to be paid or services provided for that use. However, an agreement limited to these issues does not provide a basis for ensuring that progress toward the City’s energy goals will be made, let alone that those goals will be met.

Under the Enhanced Franchise Agreement Pathway, the City and the utilities would negotiate and agree on a broader set of issues, beyond public rights of way. The City started down this Pathway during the 2013 Minnesota legislative session by introducing a Franchise Agreement Reform bill.<sup>47</sup> This legislation

would require a Franchise Agreement between a City and a utility to address a number of other issues, such as energy efficiency commitments, distribution system maintenance, and quarterly reliability reports. It would also require utilities to pay the City an annual fee in the event that no Franchise Agreement was reached.

The City’s proposed legislation broke new ground by expanding the issues that would be covered by the Franchise Agreement, including a number of additional utility requirements that caused it to be fairly controversial. However, the City’s effort helped illuminate how franchises or other contracts might enable the efforts of cities that are striving to meet GHG or other energy policy goals that are explicitly consistent with existing State energy policy.

The Enhanced Franchise Agreement Pathway could be a collaborative approach, which builds on the City’s energy policy and program initiatives, such as the Climate Action Plan. Under this approach, the City would either seek legislation to authorize a broader-than-

traditional Franchise Agreement, or elect to implement a dual strategy under which the City would negotiate:

1. A traditional franchise agreement with each of the utilities that serve the City, which stays within the confines of issues related to the use of public rights of way for utility infrastructure. This agreement could be broader than previous agreements, however, in that it could address issues such as service reliability reporting, infrastructure planning, and infrastructure investments to be made in the City, to the extent these issues are not preempted by jurisdiction of the Minnesota Public Utilities Commission; and
2. A separate Clean Energy Agreement with the utilities that serve the City, addressing issues related to the Climate Action Plan and other energy sustainability issues.

Since this approach requires negotiation and agreement between the City and the utilities, both parties could find it advantageous. To the extent that these agreements stay within the current confines of traditional franchise agreements, and within the regulatory structure in which the Minnesota Public Utilities Commission has broad authority over utility rates and services, neither regulatory approval nor legislation may be necessary to implement this dual strategy.<sup>48</sup>

However, legislation could be helpful to formalize the statutory basis for that separate agreement and assist Minnesota energy regulators in understanding where the agreement fits in the overall regulatory structure. To that end, we have developed a legislative proposal that would

facilitate implementation of this approach. The proposal would allow any municipality with a Local Energy Action Plan (LEAP) to enter into an agreement with any public utility, rural electric association, municipal utility or district energy system operators that provide energy services, either as part of a franchise agreement under section 216B.36 or in a separate document, to address the goals and related issues described in the local energy action plan.

As currently constituted, legislation would generically define a Local Energy Action Plan as a plan that:

- establishes energy production, energy conservation and emissions goals with regard to energy produced or consumed within the municipality, at a level of detail necessary to guide municipal policy and program development;
- includes a technical inventory of the natural gas and electric energy consumed within municipal boundaries, and emissions associated with that consumption, as well as energy production within municipal boundaries;
- has been developed by a municipality through a detailed process that included a broad base of interested parties representing interests within the municipality; and
- has been adopted by the governing body of the municipality after January 1, 2010, either as a separate document or included in a broader planning document.

Formalizing the statutory basis for a City-utility Clean Energy Agreement could also bring greater statewide attention to the Minneapolis Climate Action Plan, a primary LEAP example, and could inspire other cities to develop and implement their own energy action



Credit: Erin via cc

## Traditional vs. Alternative Franchise Agreement Topics

Below is a list of the traditional issues addressed in franchise agreements, and a list of additional topics that might be included in Enhanced Franchise Agreements.

### Traditional Franchise Agreement Topics

Right and privilege to operate and maintain utility within city limits

Right to occupy and use the public ways and public grounds within city limits

Franchise fee

Right of way placement/field locations

Right of way management (construction, maintenance, operation of utility facilities; improvements to right of way)

Undergrounding of certain facilities

Reports/records

Relocation of certain facilities

Abandoned infrastructure

Vacation of public ways

Tree-trimming

Streetlights

Erosion control management

Restoration

Permits

Graffiti

Customer service

Project management

Contractor management

### Potential Alternative Franchise Agreement Topics

Distribution infrastructure projects

Community engagement

Outage reporting

Renewable energy objectives\*

Local energy source objectives\*

Establish a performance-based fee based on carbon-intensity\*

Franchise fees structured so that higher levels of energy use result in higher fees\*

Increase franchise fees based on the carbon dioxide attributable to the energy sold by utility\*

Exclude Windsource utility revenues from franchise fees\*

Allow customers to voluntarily contribute to the City's climate-protection programs by paying higher franchise fees on their utility bills\*

\* MPUC approval required to the extent they affect regulated utilities' rates. See Minn. Stat. 216B.02, subd. 5.



plans, and form agreements with the utilities that serve them to implement those plans. A network of such cities in Minnesota and around the region could be a very powerful force for progress toward meeting Minnesota’s energy policy and GHG reduction goals.

### 5.3 PATHWAY 2: CITY-UTILITY PARTNERSHIPS

A City-Utility Partnership would advance the City one step further along the continuum of energy service influence and control.<sup>49</sup> As described by the American Council for an Energy-Efficient Economy, partnerships between cities and utilities provide the opportunity to combine the technical expertise and financial support for clean energy activities that utilities bring to the table with numerous regulation and community assets that cities have (see sidebar).

Such a partnership would provide an opportunity for continuing attention to clean energy activities in the

city, as compared to an agreement between the City and the utilities that’s negotiated once every several years. Our review included three partnership options.

#### 1. Energy Efficiency Local Government Partnership Program

This partnership would be structured like California’s Energy Efficiency Government Partnership Program. The California Public Utilities Commission directed the state’s investor-owned utilities nearly ten years ago to work with local units of government (counties and cities) and enter into partnerships for financial and technical assistance regarding energy efficiency within their jurisdictions. Local Government Partnerships encompass three broad areas:

- Financial support for strategic energy efficiency activities prioritized for local governments in the state’s Strategic Plan for energy efficiency,
- Promotion of utility core programs, and
- Retrofit of local government buildings.<sup>50</sup>

In California, the three investor-owned utilities made more

## LOCAL GOVERNMENT ASSETS AS ENERGY EFFICIENCY IMPLEMENTATION PARTNERS\*

### Energy codes and upgrade requirements

Many local jurisdictions have adopted building energy codes that exceed state policies.\*\* Likewise, several communities require energy performance improvements in existing buildings at time-of-sale or other trigger points.

### Disclosure and information requirements

Some localities require energy performance assessments (audits, benchmarking, or ratings) and energy use disclosure (either publicly or to parties to real estate transactions) of residential and commercial buildings. Energy information can influence market values and encourage participation in utility programs.

### Regulatory and tax incentives

Non-financial incentives, such as expedited permitting or prioritization in access to public services, have little cost to the public sector but financial value

to the real estate industry. In some communities, there may also be state or regional policies to encourage local efficiency policy adoption.

### Existing networks/outreach

Local governments and organizations are often trusted messengers in their communities and have access to low-cost communications channels that result in high participation for the investment.

### Skilled residents

Employment is a top issue in many communities. Incorporating local employees into utility program delivery can provide opportunities for job training and employment, improve trust in the community, and increase participation of hard-to-reach populations.

\* From the American Council for an Energy Efficient Economy, “Local Governments and Community Organizations as Energy Efficiency Implementation Partners: Case Studies and a Review of Trends” (February 2012).

\*\* Minnesota generally does not allow municipalities to adopt building codes that are different than the state code. See Minnesota Statutes, section 326B.121.



than \$272 million available to local government units for these partnerships. Beyond funding, utilities provide program liaisons to local governments, similar to the community relations liaisons Xcel Energy and CenterPoint currently provide the City. A city's plans for energy efficiency activities in these three broad areas are submitted to the utility for approval and inclusion in the utility's overall energy efficiency plan for review by the California PUC.

## 2. Energy Supply Partnership

Arrangements under this category of partnership could be structured like the "buy through" energy supply agreements that are not uncommon in the energy world, or could be structured consistently with Xcel Energy's Windsource® program, or both. In a buy-through arrangement, a utility agrees to procure energy identified by a customer (usually a high energy use customer) directly for that customer, at the customer's cost. Under this arrangement, the cost to the customer would be the cost of energy from the procured source, plus associated delivery costs. The energy procured and paid for under in this scenario would replace energy delivered through existing tariffs.

Under that kind of Energy Supply Partnership, the City could designate the parameters of the energy supply mix the City would prefer and the Utility would be responsible for arranging for and providing that supply mix. It could be limited to a portion of the City's own energy consumption or extended more broadly to businesses and residents that might opt in to be served under this Partnership. The latter arrangement is similar to a Community Choice Aggregation arrangement, described in the next section.

Focusing on a Windsource-type arrangement might be a productive first step in exploring innovative supply arrangements between the City and the utilities. Under Windsource, customers commit to purchasing blocks of wind energy from Xcel Energy in excess of the amount of wind contained in the utility's supply mix, for an additional cost. Currently Xcel Energy "Windsource for Business" requires a three-year commitment from customers. If the City wanted to support development of a specific wind project, perhaps Windsource could be amended to allow a large municipal customer to commit to purchasing blocks of wind energy from that project for a longer period of time, to facilitate that project's financing.

## 3. Clean Energy Coordinating Partnership

Under the auspices of a Clean Energy Coordinating Partnership, the City and utilities would work together to implement actions to meet the City's Climate Action Plan. A Clean Energy Coordinating Partnership could be responsible for:

- Marketing, tracking, coordinating, and reporting progress on clean energy activities in the City,
- Helping harness all available resources to advance the City's Climate Action Plan, and
- Providing a basis for collaboration, while helping to hold parties accountable for meeting Plan goals using primarily utility programs and funding.

The governing body for this entity would include both City and utility leadership, and could include an advisory committee of business and community leaders, so that all of these key sectors are jointly planning and implementing Clean Energy activities in the City. Legislation for this kind of arrangement could be successful in the near term, if the statutory language could be worked out with the utilities and other key stakeholders. This kind of partnership could have an ongoing impact and be transformational over time, compared to a franchise agreement that is negotiated with regular frequency. To our knowledge, it would be the first such partnership in the nation, and could be a new



Credit: Peter Rood via cc

model for City-utility cooperation in the United States.

Legislation to implement this Clean Energy Coordinating Partnership proposal would build on the LEAP model described in the Enhanced Franchise Agreement section above. It would further specify that a municipality with a local energy action plan may participate in the formation of a nonprofit corporation under Minnesota



Statutes, chapter 317A with any public utility, rural electric association, municipal utility or district energy system operators that provide energy services under this chapter within the municipality.<sup>51</sup> Alternatively, the partnership could be created within a City-utility Clean Energy Agreement, described above.

This partnership model has the benefit of building on a proposal by one of the utilities that serves Minneapolis. In a letter from the CEO of Xcel Energy-Northern States Power MN, David Sparby, to Mayor Rybak and Council President Barbara Johnson, Mr. Sparby proposed the formation of a:

“joint Xcel Energy – Minneapolis Sustainability Working Group to develop specific implementation plans related to the city’s Climate Action Plan and other sustainability initiatives. The city’s Climate Action Plan includes a goal of reducing carbon emissions 30 percent by 2025, the current goal established by state law. We can help the city achieve or exceed its goal, given our commitment to reduce carbon emissions 30 percent by 2020.”<sup>52</sup>

Of the three partnership structures described above, we particularly recommend exploration of a Clean Energy Coordinating Partnership. A more formalized structure than the one proposed by Mr. Sparby will make the work of a Clean Energy Coordination Partnership more likely to be sustained over time.

## 5.4 PATHWAY 3: COMMUNITY CHOICE AGGREGATION

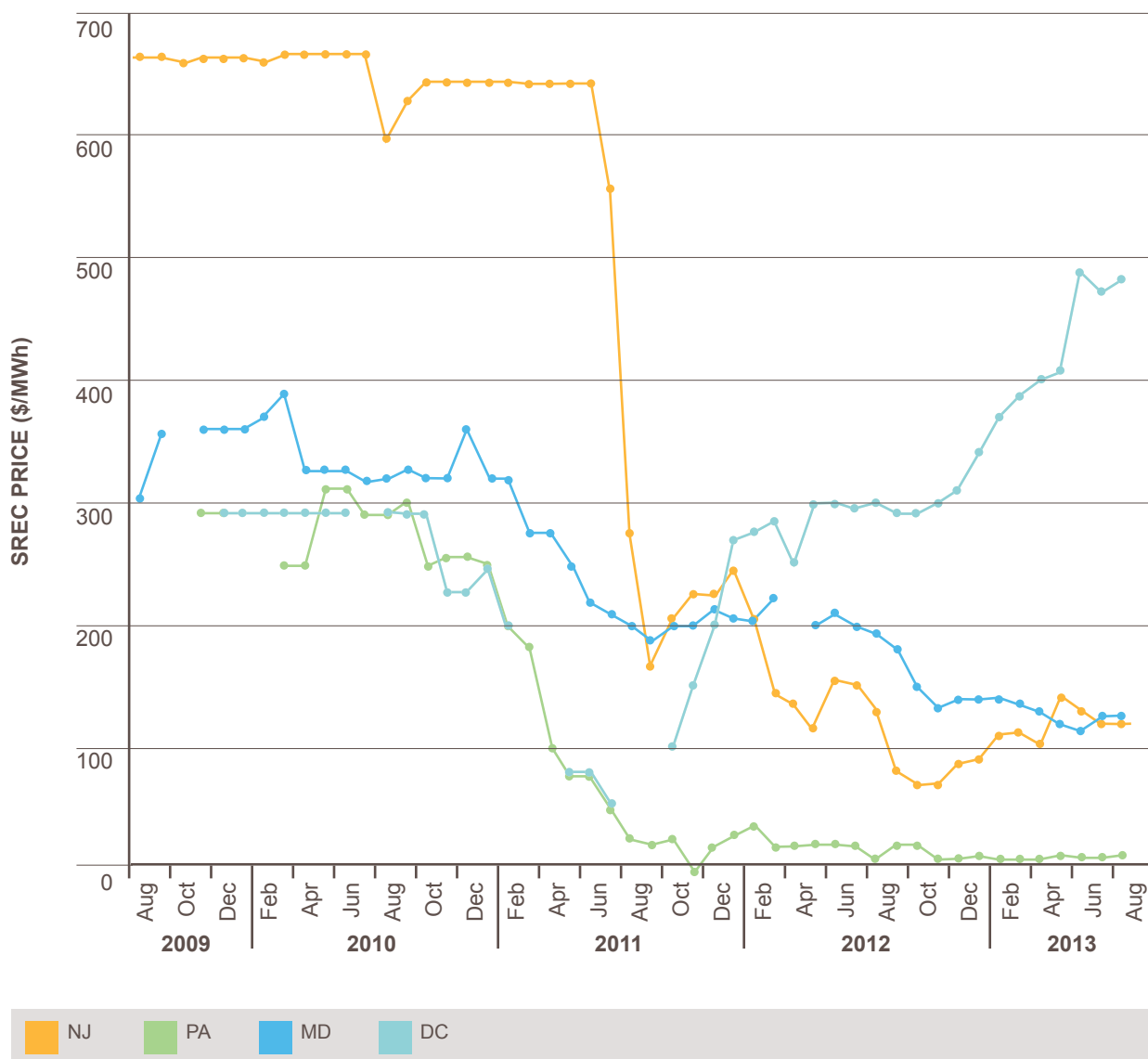
Under Community Choice Aggregation, also known as Municipal Aggregation, local governments are empowered to contract directly with electricity suppliers other than their local electric utility for the electric supply mix, and in some cases the energy efficiency services, delivered to residents and businesses within its boundaries.<sup>53</sup> The local electric utility continues to own, operate, and maintain the distribution infrastructure necessary to serve those residents and businesses, as well as provide services such as meter reading, billing, and customer service. Community Choice Aggregation is a model that developed in states that deregulated their electric industries in the late 1990s and early 2000s, allowing

individual customers to choose electricity suppliers other than their local utilities. Because individual customers were too small to have any real leverage in the new retail electricity markets that resulted from deregulation, cities sought, and received, legislative authority to aggregate the buying power of their businesses and residents to arrange for and purchase electricity in bulk for those residents. Although Minnesota is not one of those states, CCA warrants consideration as an Energy Pathway.

The main impetus for CCA was to consolidate residential and small business customers’ market power to keep downward pressure on prices in deregulated states. CCA also enables consumers to choose “green” energy options that might not otherwise be available from the local utility. Over the last several years some cities have used CCA as a mechanism to gain a cleaner, more renewable energy supply mix. When requesting bids from power providers, cities can specify desired levels of renewable energy, carbon intensity, and incorporation of energy efficiency in the mix of resources. Some communities have, moreover, separately acquired renewable energy production, such as the output from wind farms, for portions of their supply.

CCA has appeal for achieving both price and environmental goals, with early results showing cost-competitiveness and cleaner electricity. But it is still early in the implementation process, and long-term results are uncertain. Sixteen states have enacted a form of electric retail choice, and of these, six specifically allow CCA by local governments: Illinois, Ohio, California, Massachusetts, New Jersey, and Rhode Island. Examples of local governments using CCA for clean power include Chicago, Cincinnati, and Marin County in California. As one leading example, Cincinnati’s program, implemented in 2012, includes a 100 percent green power stipulation, which includes hydroelectric, wind, solar, and methane sources, and was estimated to save households 23 percent on their electricity bills.<sup>54</sup> Marin County offers a 50 percent renewable power option that is estimated to save residential customers \$0.46 per month over utility rates, and a 100 percent renewable option for \$5 more per month on average.<sup>55</sup> Most of the CCA agreements with green power components were enacted recently and therefore do not have a long record from which to draw cost conclusions. Moreover, most of the green power arrangements depend on purchasing tradable renewable

Figure 5: Historical Prices for Compliance Market Solar RECs in Select States



Source: U.S. Energy Information Administration, SREC Trade

energy credits (RECs), rather than owning or contracting directly for the renewable output. The market for RECs, like traditional fuels, is subject to price uncertainty (see Figure 5). This issue is not necessarily important for purchasers, though, who can benefit from long-term contracts.

The use of renewable energy credits to meet green power goals has been criticized by some renewable energy advocates, who argue that using RECs to meet clean energy goals does not create new investment in renewable energy generation, but simply moves the credit for existing renewable energy generation to the highest

bidder. Others respond that CCA demand for RECs increases the overall demand for renewable energy and thus spurs new investment in renewable generation. This debate occurred recently in the City of Chicago. The City ultimately entered into a direct purchase from a new wind farm, sufficient to meet approximately five percent of the city's electricity usage. The purchase was separate from the CCA contract with a third-party supplier, which included green power met via use of renewable energy credits.



### Historical context of CCA

Following the early efforts at electric retail deregulation, regulators realized that small individual customers didn't have the buying power to acquire the most competitive rates. The U.S. Energy Information Administration, which tracks market activity in states that have deregulated retail electric and gas services, found that industrial and commercial customers are participating in the retail market at moderate to high percentages, but very few residential customers use competitive retail suppliers (see Figure 6). While many deregulated states saw an initial surge of alternative suppliers and consumer participation, both plunged after only a few years. Thus, residential participation rates are in the single digits in several states, and barely measurable in others.

Some deregulated states implemented Community Choice Aggregation to compensate for the loss of buying power for residential and small business consumers. While CCA has not mitigated for these market failures in every case, it has been demonstrated to have an impact on opportunities for consumers with little buying power. The U.S. Energy Information Administration notes that retail market participation increased dramatically in Illinois very recently, a change clearly attributable to the large number of CCA programs. Illinois now has more than 450 communities with

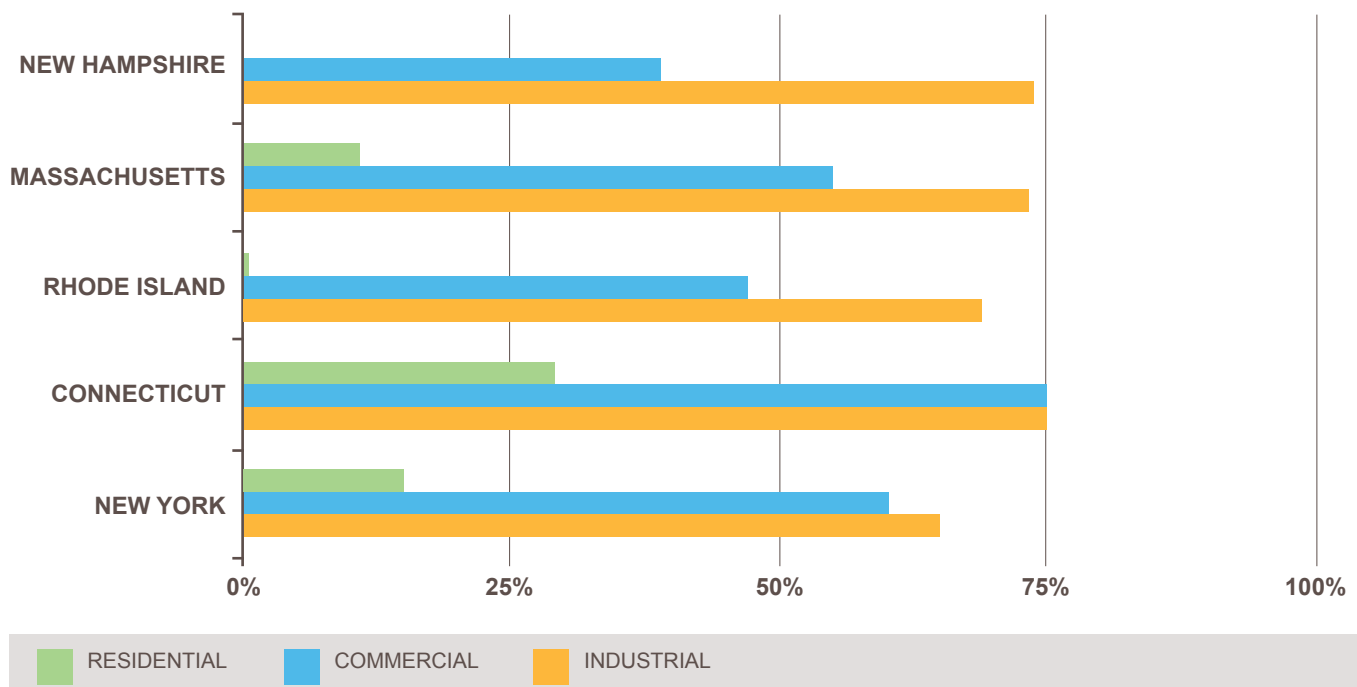
a program in place or pending.<sup>56</sup> With the recent addition of Chicago to the ranks of CCA cities, close to half of Illinois's residential customers could be participating in a CCA.

### Legal/Regulatory Context and Barriers

Enabling CCA in Minnesota would require making significant changes to the current regulatory framework, including substantial revisions to two fundamental components of Minnesota's traditional regulatory structure: non-discriminatory regulated rates, and exclusive service territories. As described in Chapter 2, most electric and gas energy services in Minnesota, including the vast majority of service provided in Minneapolis, are provided by regulated investor-owned utilities. Minnesota regulates these electric and gas utilities under "cost-of-service" (also called "rate of return" or "traditional") regulation, based on the assignment of exclusive service territories, where only the incumbent utility is allowed to provide service, in exchange for rate regulation. CCA compromises both of these elements by allowing alternative energy suppliers and utility rates that are at least partially based on a market bidding process.

CCA therefore necessitates a certain unraveling of the regulatory structure and must address the complexities associated with deregulation. At a minimum, the electric utility distribution function would need to be separated

Figure 6: Percentage of Retail Sales by Competitive Retail Suppliers in Example States



Source: U.S. Energy Information Administration



from the electric generation and supply function, creating new unbundled rates. Other elements of state policy and utility regulation that might need to be modified or redefined include:

- The State's universal service goal and obligation-to-serve requirement,
- The funding and administration of utility energy efficiency programs, and
- The disposition of long-term assets now embedded in rates (also known as "stranded costs").

Given the extent of regulatory changes needed to allow for CCA, a wide range of stakeholders would be affected, many of whom perceive the risks and opportunities of CCA and deregulation quite differently. Minnesota considered adopting retail choice legislation in the late 1990s, including changes that would have addressed the components of policy and regulation noted above. While Minnesota was debating these options, implementation problems in states that had already deregulated the retail market, and the consideration of Minnesota's relatively low electric rates, diminished policymakers' interest



Credit: Steve Lyon via cc





in deregulation. Minnesota’s experience in the retail deregulation debate does, however, shed light on many of the issues and stakeholder concerns that would arise in any attempt to change the fundamental elements of Minnesota’s existing regulatory structure. Pursuing CCA regulation would likely face similar challenges, meaning that the legislative change is probably not a near-term option.

## 5.5 PATHWAY 4: MUNICIPALIZATION

The pathway that provides the City the greatest control over local energy services, as well as the greatest cost and risk, is to create a City-operated municipal utility, a process known as “municipalization.” The formation of a Minneapolis municipal utility is easily the most complex of the four Pathways, and we therefore provide more detail on background, legal components, and financial considerations. Additional details pertaining to municipalization are included in Appendices F and G.

A Minneapolis municipal electricity utility would serve more than 175,000 customer accounts and deliver four million to five million MWh of electricity per year. It would be more than three times the size of the largest existing municipal utility in Minnesota, Rochester Public Utilities, and supply just over one-eighth the current volume of Xcel Energy’s Minnesota sales. It would need to secure more than 1,200 megawatts of capacity,

more than the total capacity of the Prairie Island nuclear power plant. It would run its own energy efficiency programs, and would have options for procuring a high percentage of renewable electricity for its customers.

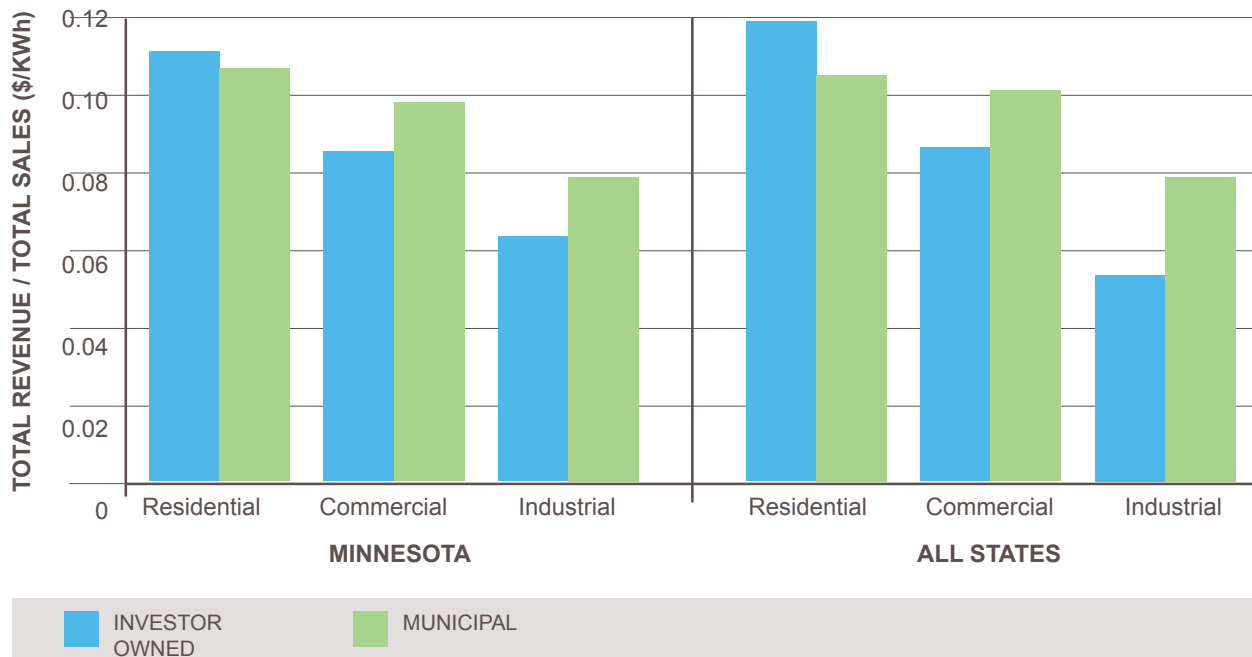
### 5.5.1 Municipal Utility Background

In the late 19th century, communities began to form publicly owned utilities in order to make sure their homes and businesses were electrified, and to protect themselves against profit-taking by unregulated privately owned electric utilities. Today there are more than 2,000 municipal electric utilities nationwide.<sup>57</sup> There are currently 125 municipal electric utilities in Minnesota. From the very beginning of “public power,” the primary motivation was local control – local control over rates and services, and today, local control over the energy supply mix.

#### *Comparison of Rates, Energy Efficiency and Renewable Energy Achievements*

In comparison with investor-owned utilities, municipal utilities overall have more competitive residential rates, but slightly higher commercial and industrial rates. Using national data from the Energy Information Administration in 2011, municipal utility residential customers paid an average rate of 10.9 cents per kilowatt-hour versus 12.2 cents for investor-owned utility residential customers (see Figure 7).<sup>58</sup> Commercial and industrial customers averaged 9.9 and 7.7 cents per kilowatt-hour for municipals, and 8.5 and

Figure 7: Average Rates for Investor-Owned and Municipal Utilities by Customer Class (2011)



Source: U.S. Energy Information Administration

5.3 cents per kilowatt-hour for investor-owned utilities. Minnesota utilities demonstrate a similar relationship, though electricity rates are lower than the national average.

Minnesota’s electric utilities are required to achieve energy efficiency savings of 1.5 percent of annual retail sales, unless the Commissioner of Commerce adjusts that target.<sup>59</sup> The energy savings target for natural gas utilities was 0.75 percent of annual retail sales until 2011, when it increased to a minimum of 1.0 percent of annual sales. Tables 4 and 5 show energy efficiency achievements by investor-owned and municipal utilities for 2010 and 2011, the latest years for which data are

available.<sup>60</sup> These reports show that municipal utilities in Minnesota, as with most Minnesota utilities, have performed well with regard to energy efficiency achievements.

Renewable energy achievements tell a similar story. In Minnesota, electric utilities that provide electricity to the wholesale market, which includes municipal and cooperative aggregators, are required to increase the percentage of their electric supply that comes from certain renewable resources. Table 6 shows a comparison of the percentage of renewable energy available for compliance in 2012 for Xcel Energy and a number of municipal wholesale power suppliers in Minnesota.<sup>61</sup>

**Table 4: Electricity Energy Efficiency Achievements by Investor-Owned and Municipal Utilities (2010 and 2011)**

Electric Utility	2010 Energy Savings (% of Sales)	2011 Energy Savings (% of Sales)
<b>Investor-Owned Utilities (range)</b>	0.4 - 1.8	0.9 - 2.1
Xcel Energy (total)	1.3	1.5
<b>Investor-Owned Utilities (total)</b>	1.4	1.5
<b>Municipal CIP Aggregators (range)</b>	1.3 - 1.9	1.1 - 1.9
<b>Municipal CIP Aggregators (total)</b>	1.6	1.5
<b>Independent Municipals (total)</b>	1.0	1.3

Source: MN Department of Commerce

**Table 5: Natural Gas Energy Efficiency Achievements by Investor-Owned and Municipal Utilities (2010 and 2011)**

Organization	2010 Energy Savings (% of Sales)	2011 Energy Savings (% of Sales)
<b>Investor-Owned Utilities (range)</b>	0.3 - 1.2	0.4 - 1.1
CenterPoint Energy (total)	0.9	1.0
<b>Investor-Owned Utilities (total)</b>	0.9	1.0
<b>Municipal Utilities (total)</b>	1.2	0.7

Source: MN Department of Commerce

**Table 6: Renewable Energy Supply Percentages (2012)**

Utility	Renewable Percentage Required for 2012	Renewable Percentage Available for 2012
<b>Xcel Energy</b>	10	29.2
<b>Southern MN Municipal Power Agency</b>	12	44.8
<b>Central MN Municipal Power Agency</b>	12	33.3
<b>Missouri River Energy Services</b>	12	33.3
<b>MN Municipal Power Agency</b>	12	35.2

Source: MN Department of Commerce

**Table 7: Snapshot of Austin, TX and Sacramento, CA Municipal Utilities**

Utility	Number of Customers	Year Established	2011 Average Electricity Costs *	2011 Statewide Average Electricity Costs **
Austin, TX	420,000	1895	\$0.087/kWh	\$0.090/kWh (TX)
Sacramento, CA	598,205	1946	\$0.119/kWh	\$0.131/kWh (CA)

\* EIA form 861 (total revenues divided by total sales)

\*\* EIA Electric Power Annual: Average Retail Price of Electricity to Ultimate Customers by End-Use Sector (2011)

According to the Department of Commerce report that is the basis for the above table, all of Minnesota’s electric utilities, including municipal utilities, are far ahead of compliance with the Minnesota renewable energy requirements.

### **Municipal Utility Leadership Examples**

Many municipal utilities throughout the country have shown leadership in achieving energy savings goals and reducing greenhouse gas emissions. Two leading examples are Austin Energy in Austin, Texas and Sacramento Municipal Utility District (SMUD) in Sacramento, California (see Table 7)

In 2010, the Austin City Council set a goal for Austin Energy to acquire 35 percent of its energy supply from renewable sources by 2020.<sup>64</sup> Currently, it is on track to increase its portfolio to 27 percent renewable energy by 2013. Austin Energy also has some of the most comprehensive energy efficiency programs in the country. Austin was ranked sixth in the American Council for an Energy-Efficient Economy 2013 City Energy Efficiency Scorecard, with high ratings in community initiatives and building efficiency programs.<sup>65</sup> Like Minneapolis, it has implemented a building energy disclosure ordinance, which includes a residential energy disclosure at time-of-sale. In 2012 the City Council directed the utility to conduct an energy efficiency community stakeholder process, which it completed in 2013.<sup>66</sup>

Highlights of SMUD’s environmental initiatives include supplying 33 percent of its energy from renewable sources by 2020, and providing robust energy efficiency programs for both customers and utility infrastructure.<sup>67</sup> SMUD has also set an aggressive goal to reduce greenhouse gas emissions to 10 percent of (or 90 percent below) 1990 levels by 2050, which would be less than 350,000 metric tons per year. For comparison, if Minneapolis reaches its climate goals for 2025, it will emit 1.3 million metric tons from electricity use, and SMUD is 2.5 times the size of Minneapolis by sales volume. In Minnesota the Next Generation Energy Act of 2007 set statewide goals of 80 percent below 2005 levels by 2050.

However, the foregoing comparisons are with regard to municipal utilities that are already established, and have decades of operational and financial history upon which to build. Minneapolis does not have these advantages. The next sections explore the legal and financial implications for forming a municipal utility.

### **5.5.2 Legal Process for Formation of a Municipal Utility in Minnesota**

The process for forming a municipal utility, established in state and federal law, is quite involved. Depending on how the negotiations proceed, it can also require millions of dollars in litigation and compensation costs and take years to accomplish. It can involve up to four major steps.

First, the City must initiate the process, as provided in state and federal law. This typically takes from four to six months. The formation of a new municipal utility requires a resolution by the governing body, a public hearing, and an election in which the measure is supported by a majority of the voters of the City.

Next, negotiations occur with the displaced utility. The main items to negotiate are the acquisition costs for utility infrastructure, as the municipality has a legal right to form a municipal utility as long as it pays for the infrastructure. The negotiations might take from three months to a year.

If a mutually acceptable agreement is not possible, there is an acquisition litigation process, which can take from nine months to two years. This process can occur either before the Minnesota Public Utilities Commission, or in state district court. For either process, four elements are considered by the judicial bodies in determining just compensation in Minnesota:

- the original cost of the property and infrastructure;
- loss of revenue to the utility formerly serving the area;
- expenses resulting from the integration of facilities; and
- other appropriate factors.

Finally, under certain circumstances, a federal proceeding under the Federal Energy Regulatory Commission may be required. The purpose of this proceeding would be to recover any potential transmission “stranded costs” that result from the creation of a municipal utility. This would apply if the City were to purchase all of its power from an entity other than Xcel Energy.

While not a legal consideration, another important time element is the bonding process needed to pay for the acquisition and startup costs. These costs are discussed further below.

### 5.5.3 Financial Considerations in Forming a Municipal Utility

The purpose of this section is to help readers consider the major cost components and revenue requirements of a municipal utility. The financial illustration demonstrates a wide band of uncertainty, reflecting that many financial factors which would affect the acquisition and operation of a municipal utility are highly unpredictable. The sources, assumptions and methods used to create this financial illustration are included in Appendix G.<sup>68</sup>

It is important to note that this is not a feasibility study of a municipal electric utility, but instead is intended to help City decision-makers decide whether they want to invest

the resources necessary to produce one. We recommend this as an important next step if the City intends to give further consideration to municipalization, and we estimate the costs for such a study would likely be an order of magnitude greater than this Energy Pathways study.

Forming and operating a municipal electric utility would be a significant financial undertaking for the City of Minneapolis. Since 2004, the City has reduced its total debt from almost \$1.4 billion to about \$800 million. To fund all start-up costs, including compensation to Xcel Energy, may require the City to more than double its total debt.<sup>69</sup> We estimate a municipal electric utility would have total annual expenditures over \$500 million and a payroll of around 600 employees.<sup>70</sup>

We assume that, at least initially, a Minneapolis municipal utility would function much like other municipal utilities – purchasing most or all of its power rather than generating its own, using other utilities’ transmission networks, and devoting almost all operational resources to maintaining a distribution system and providing customer services.<sup>71</sup>

Table 8 summarizes the major cost components for a Minneapolis municipal electric utility, presented as both levelized annual costs and average electricity costs. These include operational as well as start-up costs, funded with 30-year bonds.<sup>72</sup> Although presented in 2013 dollars, the illustration presumes a high level of organizational maturity

Table 8: Summary of Estimated Cost Components for a Minneapolis Municipal Electric Utility

	Cost Component	Estimated Range: Annual Costs (\$ Millions)	Estimated Range: Electricity Cost (\$/kWh)
<b>Operating Expenses</b>	Power supply and transmission	262 - 348	0.062 – 0.082
	Distribution O&M	19 - 26	0.004 – 0.006
	Customer accounting, service and sales	11 - 16	0.003 – 0.004
	Efficiency and clean energy programs	10 - 20	0.002 – 0.005
	Administrative and general expenses	12 - 16	0.003 – 0.004
<b>Capital Improvements</b>	Major repair and replacement	15 - 24	0.004 – 0.006
<b>Debt Service</b>	Debt service on Xcel Energy compensation	44 - 260	0.010 – 0.061
	Debt service on start-up costs	8 - 23	0.002 – 0.005
<b>Net Revenue Requirements</b>	Depreciation	14	0.003
	Net revenue required	17 - 56	0.004 – 0.013
<b>Transfers to City and other Property-Taxing Jurisdictions</b>	City General Fund allocation	3 – 4	0.001 – 0.001
	Transfer in lieu of franchise fees	17	0.004
	Payments in lieu of property taxes	9	0.002
	<b>Total revenue requirements</b>	<b>440 - 833</b>	<b>0.104 – 0.196</b>

Notes: This organization varies slightly from standard City budget documents to provide more clarity to the different cost components. Major Repair and Replacement is a capital expense that will recur every year. Depreciation is ordinarily treated as a non-cash operating expense.



and fully developed management systems, capabilities and functions, which would not be expected in the early years of operation. Table 8 shows the range between the low- and high-cost scenarios. For further detail, Appendix G breaks out the three scenarios independently.<sup>73</sup>

The largest cost component would be power supply and transmission costs. In all scenarios, power supply and transmission costs are more than 80 percent of operating expenses. Key considerations for power supply costs include:

Current MISO market prices are low due to a surplus of generating capacity and low fuel costs, but experts predict higher prices beginning around 2017-18 when utilities will be adding new generation resources. It is likely that only Xcel Energy and Great River Energy would have enough available capacity to supply Minneapolis' required 1,200 MW of capacity, at least in the early years.

Unless a Minneapolis municipal utility negotiates resource-specific power purchase agreements, its resource portfolio would be only as green as the portfolios of its wholesale power suppliers (discussed below).

The second-largest cost component would be debt service on the acquisition of Xcel Energy's distribution system, and other displacement considerations the City would be financially responsible for under existing law. Xcel Energy has indicated that this compensation might be \$3.0 billion, but the Minnesota Public Utilities Commission or a court could award Xcel Energy much less. If the City were to pay Xcel Energy the full \$3.0 billion, the debt service on this compensation would equate to about \$0.06/kilowatt-hour, which would make the municipal utility's rates highly

uncompetitive. This illustration shows a range of \$525 million to \$3.1 billion, spread over a 30-year bond term.

Table 9 compares the total revenue requirements under the three scenarios to Xcel Energy's overall weighted-average retail rate for 2013. This financial illustration suggests that the costs of forming and operating a municipal utility would result in electric rates that range from slightly higher to substantially more than the rates Xcel Energy presently charges. The difference between a municipal utility's revenue requirement in the low-cost scenario and Xcel Energy's rate is not significant, though this rate parity may require that a municipal utility operate at considerable market risk.<sup>74</sup>

As mentioned above, this assessment does not reflect a resource portfolio that has more renewables or lower carbon intensity than Xcel Energy's. In all three cost scenarios we assume that a Minneapolis municipal electric utility would purchase the lowest-cost power available without regard to associated carbon emissions. A Minneapolis municipal utility would likely want to acquire a "greener" resource portfolio, which could be accomplished with the following strategies:

- Purchasing renewable energy credits;
- Entering into power purchase agreement for specific allocations of renewable energy and natural gas-fired power production; and
- Developing City-owned and operated generation resources (solar, wind, and natural gas-fired).

Each of these options is viable, though the City would need to conduct a deeper comparison of procurement

**Table 9: Comparison of Municipal Utility Revenue Requirement and Xcel Energy Rate**

	Low Cost (\$/kWh)	Mid Cost (\$/kWh)	High Cost (\$/kWh)
<b>Municipal utility total revenue requirement</b>	0.104	0.141	0.196
Less franchise fees	(0.004)	(0.004)	(0.004)
Less debt service on compensation to Xcel Energy for revenue loss and re-integration	(0.006)	(0.024)	(0.051)
<b>Adjusted muni. utility revenue requirement</b>	0.094	0.113	0.141
<b>Xcel Energy's overall weighted-average retail electric rate</b>	0.092	0.092	0.092
<b>Difference between adjusted municipal utility revenue requirement and Xcel Energy's average rate</b>	0.002	0.021	0.049

Notes:

1. Franchise fees are subtracted from the municipal utility's total revenue requirements because Xcel Energy does not include franchise fees in its rate; franchise fees are a separate charge to customers.

2. Debt service on compensation to Xcel Energy for "revenue loss and re-integration"—which does not include the distribution acquisition costs—is subtracted because this cost would be a financial burden without an associated asset or financial benefit. This provides an approximation of the impact of the legislative proposal to eliminate lost revenues as a consideration in determining compensation due a utility for acquisition of its utility infrastructure (HF 945/SF 911 of the 2013-2014 Minnesota Legislative Session), if that legislation were to be enacted.



## 5.6 ENERGY PATHWAY RECOMMENDATIONS

costs at the relevant time period. An important consideration is whether each option increases the net renewables production system wide. As discussed above in relation to CCA, market prices for RECs have recently been low – less than \$0.001 per kWh since early 2010 – which indicates an abundance of low-cost supply.<sup>75</sup> Because of renewable energy's low marginal cost, REC purchases could be for generation that would have occurred anyway.

A Minneapolis municipal utility would likely need to increase rates to acquire a significantly lower carbon resource portfolio than what Xcel Energy provides in Minnesota. Xcel Energy's electricity carbon intensity is 40 percent below Minnesota's statewide average, and the utility's carbon-free resources are primarily nuclear generation, large-scale hydro, and wind. According to the American Wind Energy Association, Xcel Energy is currently the nation's number one wind provider, and it has announced plans to develop an additional 600 megawatts of wind in the Upper Midwest by 2015.<sup>76</sup> Coal generation was 35 percent of Xcel Energy's 2012 supply portfolio in the Upper Midwest, while it was 58 percent in Colorado.

In summary, while the City would gain more control over its energy services by forming a municipal utility, with this control would come exposure to significant risk in the form of external forces that are beyond the City's control – forces such as the electric market, technology innovation, federal and state regulations, and the weather. This financial illustration, while not conclusive, indicates that a new Minneapolis municipal utility, under current state law, would not have a large financial margin in which to manage these risks.

Over time, a nimble municipal utility could be better at taking advantage of advances in generation and resource-management technologies, innovations in utility business practices, and the economic efficiency of an open energy market. However, the time, resources, legal decisions, and financial considerations for doing so, along with the opportunity costs of actions not taken while working to develop that municipal utility, are significant and play a substantial role in our Energy Pathway recommendations, which we describe in the next section.

Our primary recommendation is for the City to pursue a dual strategy that combines Pathways 1 and 2. In essence, the City would negotiate franchise agreements with Xcel Energy and CenterPoint Energy as traditionally constructed, which cover compensation due the City for use by each utility of the public rights of way. A shorter franchise term of five to ten years with the opportunity for extension would give the City a window to evaluate the effectiveness of additional agreements with utilities. In addition to compensation for the use of public rights of way, the City should also incorporate annual reporting by the utilities on reliability of service within the City, and expected distribution investments to coordinate with their sustainability goals, to the extent not pre-empted by MPUC jurisdiction. In addition, the City should require a public role in planning distribution infrastructure within the City. These issues relate directly to the use of the public rights of way for utility infrastructure – the fundamental issue traditionally addressed in a franchise agreement.

Further, we recommend the City negotiate a separate Clean Energy Agreement with utilities that focuses on achieving the City's Climate Action Plan and equity in employment goals. The City could waive its right to municipalize during the term of the new agreement, in exchange for a commitment by the utilities to work with the City to meet the City's energy goals. This agreement would rely on the creation of a new City-utility Clean Energy Coordinating Partnership, either as a stand-alone nonprofit corporation with a Board of Directors made up of City and utility leaders, or created by the Clean Energy Agreement consisting of City and utility leadership. We recommend forming the Partnership within the Clean Energy Agreement, because this could be achieved without legislative approval.

The purpose of this entity would be to:

- set annual renewable energy and energy efficiency goals for the city;
- help provide planning, leadership, coordination, promotion, and accountability for meeting these goals; and
- enhance but not duplicate the capacities of the utilities, government agencies, and nonprofit energy service organizations.



The joint coordinating entity would have staff partially funded through a small allocation of the franchise fee (or an appropriation from the City's general fund). The participating utilities would provide staff and technical resources, and could also help fund administrative costs.

This first-in-the-nation arrangement would be an innovative and pragmatic approach to coordinating City and utility clean energy and reliability planning, and may afford the City the best chance of reaching its ambitious energy goals. In addition, it could be the start of a fundamental new approach to how utilities conduct their business – beginning to blend components of investor-owned utilities with municipalities into a “new utility business model.”<sup>77</sup>

These agreements, along with the Coordinating Partnership, would help to leverage, not duplicate, the complementary roles of the City and utilities, while requiring action from both. Utilities would continue providing technical expertise and financial support for clean energy activities, while the City could leverage utility program spending with tools such as energy codes and upgrade requirements, benchmarking policies, regulatory and tax incentives, existing outreach networks, and its skilled residents and businesses.

Either party could terminate the Clean Energy Agreement with some period of notice, if goals or obligations were not being met. At that point, the Partnership would cease to exist, and the City would be free to exercise its right to municipalize. The initial franchise agreement between the City and the utility, along with the franchise fee revenue, could continue or not, independent of this agreement.

Unless the City and utilities decided to create a stand-alone nonprofit rather than a joint entity created within the Clean Energy Agreement, legislation would likely not be required to implement this agreement as long as the activities stayed within the confines of the existing regulatory structure, and did not implicate the rates or services of the utilities. However, the individual activities planned and agreed to by such a joint entity might in some cases require authorization by the state Department of Commerce (in the case of energy conservation activities) or the state Public Utilities Commission (if the planned activities were to implicate the rates charged by the utilities). Statewide legislation would therefore signal support for this novel City-utility arrangement and provide regulators with beneficial guidance for how activities within that City-utility arrangement should be considered. We therefore recommend seeking legislation to support this arrangement, but moving forward with the arrangement if legislation is unsuccessful in the upcoming session.

Similarly, we recommend continuing to explore both Community Choice Aggregation and Municipalization as longer-term options should the Clean Energy Agreement arrangement not make the kind of progress toward the City's clean energy goals expected by City leaders.

Further exploring CCA would require a legislatively authorized study that asks an appropriate entity (e.g., the Minnesota Public Utilities Commission, the Department of Commerce, Division of Energy Resources, or the Legislative Energy Commission) to:

- Evaluate the implementation of Community Choice Aggregation in other states regarding rate impacts, energy supply mix, penetration of energy efficiency and distributed renewable generation, and other issues determined to be relevant;
- Analyze barriers and identify potential advantages and disadvantages to implementation of CCA in a state like Minnesota that is fully regulated at the retail level but benefits from competitive markets for wholesale energy; and
- Make recommendations by January 15, 2015 regarding next steps for exploring CCA in Minnesota.

Additional steps to continue to develop municipalization as an alternative would include:

- Continue to seek approval of legislation regarding compensation due utilities for acquisition of utility infrastructure;
- Seek an independent assessment of the financial illustration we developed of the comparative costs of forming a municipal utility, to increase the City's confidence in our assessment. We are secure that we have done a thorough and reliable job given the time and resources available, but there is no blueprint for this kind of analysis, and we would welcome further evaluation; and
- As an initial step toward forming a municipal utility, the City could contract for a robust feasibility study regarding its formation. A feasibility study would build on but go well beyond our initial assessment, and should include: 1) an independent valuation of Xcel Energy's infrastructure; 2) engineering analyses and costs estimates of separating the municipal system from the Xcel Energy system; and 3) acquisition of power supply proposals and costs for meeting the City's electricity supply needs and carbon goals.



# 6 PROGRAMS AND POLICIES FOR A CITY-UTILITY PARTNERSHIP

One clear advantage of pursuing a near-term partnership strategy is to dovetail with existing utility programs, and leverage ongoing utility expertise and funding to increase the penetration rate of efficiency and renewable energy in Minneapolis. Statewide, utility budgets for customer energy efficiency and renewable energy programs are substantial, and Minnesota programs provide some of the highest savings in the country. In 2012, Xcel Energy spent a combined \$98 million statewide on electricity efficiency programs, research, solar rebates, and low-income programs, and CenterPoint Energy spent \$19 million on natural gas efficiency programs. Both utilities have received Exemplary Program awards from the American Council for an Energy Efficient Economy, a leading national energy efficiency nonprofit.<sup>76</sup>

In order to fulfill the City's Energy Vision, however, joint efforts beyond this baseline program activity will be required. This is especially true if the City would like

to direct more resources toward achieving equity, local resource development, or other goals that fall outside the state-regulated purview of investor-owned utilities. As mentioned, the City can bring important assets such as its municipal regulatory authority and its deep relationships with businesses, neighborhoods and community organizations.

We reviewed several near-term program and policy options that the City could consider for joint City-utility initiatives. Many of these programs and policies follow directly from strategies identified in the Climate Action Plan process and from the Community Environmental Advisory Commission review and prioritization that has occurred since.

We have organized this chapter around how programs and policies might fulfill seven key components of the City's Energy Vision. For each one, we offer an assessment of the best near-term program and policy opportunities for combined City-utility efforts. The seven areas pertain to:

## UTILITY PROGRAM ACTIVITY IN 2012

### Electricity

**Total use 2012:** 4.25 million MWh

**Total Windsource 2012:** 56,913 MWh

**Total PV 2012:** 2,700 MWh

**First-Year CIP Savings 2012:** 59,000 MWh

### Natural Gas

**Total use 2012:** 363 million therms

**First-Year CIP Savings 2012:** 4 million therms

Note: For simplicity, we primarily focus on 2012 activity, the most recent year for which complete data were available at the time of this writing. We relied heavily on data provided by Xcel Energy and CenterPoint Energy.

While much of it is public information, such as CIP program activity, it had not been reported for Minneapolis only. 2012 was an unusual year for natural gas use: the Riverside Generating Station, which is included in this inventory, used more than normal, while warmer temperatures suppressed heating demand.



- energy savings,
- carbon savings,
- program implementation cost,
- energy equity across city residents and businesses,
- local resource development,
- service reliability, and
- renewable energy supply.

Although not inclusive, these encompass the breadth of City energy goals. They also complement ongoing efforts to track sustainability progress within the city.

The section below first describes existing utility program activity within the city. We then introduce several comple-

in Minnesota over the past three years, and 30 percent of CenterPoint Energy’s. Table 10 shows how each utility’s estimated program savings in Minneapolis have tracked statewide achievements. These estimations indicate Minneapolis has realized essentially the same, or in the case of natural gas, higher than average program penetration.<sup>78</sup> If electricity programs can sustain a 1.5 percent savings in Minneapolis every year until 2025, those programs would reduce city energy use by about 850,000 MWh. This is an absolute reduction of 14 percent from 2006 levels, and half of the CAP energy savings goals.<sup>79</sup> Gas programs will achieve a 17 percent reduction over 2006 use – slightly higher because the gas use baseline is not expected to grow.

**Table 10: CIP First-Year Savings as a Percent of Energy Sales**

	Xcel Energy			CenterPoint Energy		
	2010	2011	2012	2010	2011	2012
<b>Minneapolis Savings (%)</b>	1.26	1.51	1.33	1.6	1.3	1.5
<b>Statewide Savings (%)</b>	1.19	1.53	1.75	0.9	1.00	0.9

mentary program and policy concepts that would go above and beyond these existing programs. And finally, we highlight the seven Energy Vision components and recommend programs and policies with the most promising near-term opportunities for progress.

## 6.1 BASELINE UTILITY PROGRAM ACTIVITY IN MINNEAPOLIS

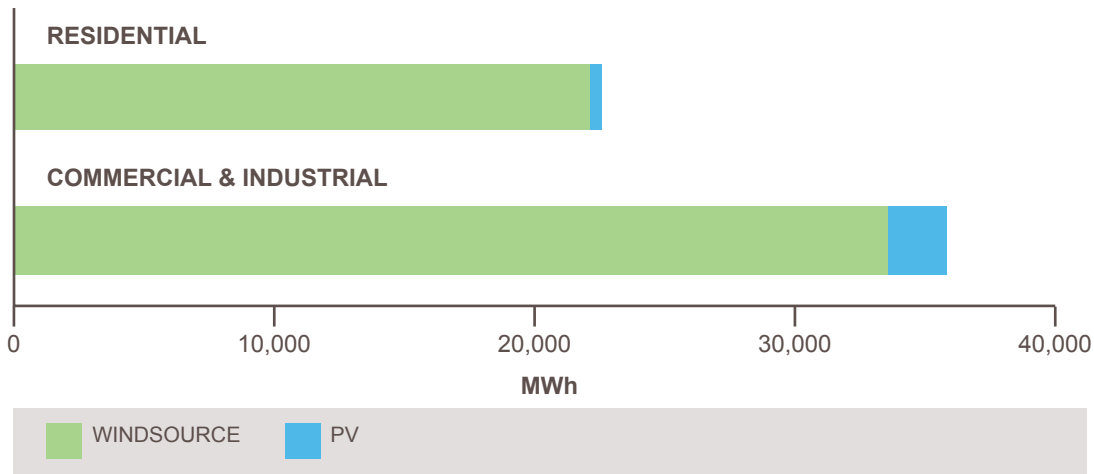
The largest utility programs are the statewide Conservation Improvement Programs, which give incentives to investor-owned utilities to save 1.5 percent of their retail energy sales every year through customer efficiency programs. Minnesota’s are well established and the State is considered a national leader in program implementation.<sup>77</sup> The program offerings are generally uniform to all customers across the utility service territory, although some cities (including Minneapolis) enhance these programs in various ways, for example by further buying down the cost of utility-funded energy assessments for their residents.

Minneapolis residents and businesses have accounted for approximately 12 percent of Xcel Energy’s CIP savings

Xcel Energy has two primary programs for renewable energy. Windsource is an opt-in renewable tariff that allows customers to purchase wind generation through an alternate charge structure on their bill. In 2012, there were 6,530 Minneapolis customers subscribed to Windsource, and total purchases of 56,913 MWh. Solar\*Rewards provides rebates for small (40 kW and under) customer-installed PV systems. Xcel Energy reported an interconnected PV capacity of 2,118 kW in 2012. This includes 177 installations, 123 of which are small systems that have been installed as part of the Solar\*Rewards program between 2010 and 2012. Assuming average production values for the region, those systems will produce approximately 2,700 MWh of electricity each year, or 0.06 percent of the City’s 2012 electricity use.<sup>80</sup>

The estimated total 2012 electricity generation from these local renewables is shown in Figure 8. Commercial, industrial, and public sector customers accounted for 61 percent of this local renewable production, and residential customers were responsible for 39 percent. The number of residential customers opting for renewable energy was more than 40 times the number of commercial and industrial customers, though the size of the transactions is of course much smaller.

Figure 8: Local Renewable Generation in Minneapolis (2012)



Source: Xcel Energy



Credit: Minnesota Solar Challenge via cc

## 6.2 FEATURED PROGRAMS AND POLICIES

These new or enhanced programs and policies were carefully developed as near-term options that could build on existing activity by the City and utilities. These programs were chosen because: 1) they complement existing activity, 2) they can be done in the near term without major new legal or regulatory changes, and 3) they are inclusive of a broad range of users and activities across the city. As mentioned, many of these ideas were developed from strategies put forth in the Climate Action Plan (see sidebar), and developed further through the CEAC prioritization that has occurred since. Some may already be under consideration or development by utilities.

The details of program implementation are critical, and we have provided more information on suggested program

components, as well as our evaluation assumptions, in Appendix H. However, there are still more details to consider. A critical next step would be to work with key stakeholders in the priority areas to develop a more rigorous program or policy design. In many cases the Department of Commerce would need to approve new programs; in others, additional outreach and marketing can extend the uptake of current programs. What we have provided here is a rigorous yet high-level assessment of each program's ability to meet the City's goals, using data from the existing building stock, and technical references for program benefits. Again, more detail is provided in Appendix H.

Table 11 on the next page provides a brief description of each program and why it should be considered for near-term action.

### Climate Action Plan Goals for Buildings and Energy

1. Achieve 15 percent energy efficiency in residential buildings from the growth baseline by 2025.
2. Achieve 20 percent energy efficiency in commercial/industrial buildings from the growth baseline by 2025.
3. Increase electricity from local and directly purchased renewables to 10 percent of the total consumed by 2025.
4. Achieve a 1.5 percent annual reduction in greenhouse gas emissions from City facilities.

### Climate Action Plan Strategies for Buildings and Energy

1. Develop a Green Zone Initiative.
2. Launch a public-private energy efficiency campaign to catalyze action in businesses large and small.
3. Ensure that City facilities and infrastructure, across all neighborhoods, are models of energy efficiency and renewable energy technology.
4. Continue and expand efforts to promote green jobs that support greenhouse gas emissions reduction goals.
5. Support the State's adoption of the latest International Energy Conservation Code and International Green Construction Code (IGCC) and adopt the IGCC locally.
6. Incentivize energy and water efficiency in private buildings during every interaction with the City.
7. Require City-financed projects to meet an energy efficiency standard, like Sustainable Buildings 2030 (SB2030).

8. Explore opportunities to restructure the mechanical permit fee schedule and other fee

schedules to incentivize energy- and water-efficient products and renewable energy.

9. Determine the feasibility of establishing conservation-based pricing or structuring of franchise fees and using the franchise agreement to support renewables.

10. Evaluate and expand incentives granted for high energy performance.

11. Develop tools to finance energy efficiency and renewable energy retrofits for commercial and residential buildings that have low barriers to entry and limited risk for local government.

12. Support the adoption and implementation of emissions reductions plans by other government entities and institutions.

13. Support the adoption and implementation of emissions reductions plans by small and minority-owned businesses.

14. Monitor new technologies and regularly reassess strategies.

15. Identify opportunities to increase conservation efforts within the downtown district heating and cooling system and make the system more efficient using technologies like combined heat and power.

16. Identify opportunities to expand the use of district heating systems to new and existing buildings.

17. Work with utility providers and the State of Minnesota to conduct a robust energy end-use analysis to inform future energy planning efforts by the City.





Table 11: Programs and Policies Reviewed for City-Utility Partnership

	Programs & Strategies	Program Description
Commercial and Government	<b>Public Building Energy Partnership</b>	<b>What:</b> An ongoing program to improve energy efficiency in public buildings, including city government buildings, public schools, and park board facilities. <b>Why:</b> This program would impact a wide range of residents across the City while saving public money.
	<b>Large Commercial Buildings</b>	<b>What:</b> A commercial building energy efficiency program and campaign that leverages the City's building benchmarking ordinance to achieve high participation. <b>Why:</b> The largest carbon reductions can be found here while being a source for sustained, local jobs.
	<b>Streetlight Efficiency Program</b>	<b>What:</b> A complete replacement of City streetlights with efficient LED technology. <b>Why:</b> This will reduce one of the largest energy costs to the City, paying for itself in a relatively small number of years while improving lighting conditions across the City.
	<b>Hospitality Efficiency Program</b>	<b>What:</b> A targeted efficiency program for hotels, restaurants, entertainment, and other tourist venues. <b>Why:</b> These businesses are the face of Minneapolis for visitors and efforts here will help broadcast the city's goals and progress beyond its boundaries.
	<b>District Energy Service Enhancement</b>	<b>What:</b> An energy efficiency program targeting NRG district energy customers, increasing the overall efficiency of the system. <b>Why:</b> The program would target some of the largest energy users in the city and increase the efficiency of existing infrastructure.
	<b>Small Business Efficiency Programs</b>	<b>What:</b> An effort to promote and grow existing small business programs to deliver cost-effective energy efficiency improvements to more businesses. <b>Why:</b> Relatively large energy savings could be achieved, while serving a diverse array of communities, creating sustainable green jobs, and reducing small business costs.
Residential	<b>Neighborhood Focused Program Delivery</b>	<b>What:</b> A residential efficiency program that would engage residents through their neighborhood organizations, leveraging neighborhood-level energy usage data to promote participation. <b>Why:</b> This method could help increase penetration in the hard-to-reach residential market, and make use of local delivery channels.
	<b>Energy Performance Certificate</b>	<b>What:</b> A performance-based certificate program to promote the certification of homes that have achieved a basic level of energy efficiency. <b>Why:</b> Uptake could create a de facto efficiency standard, incorporate the value of energy efficiency more visibly in the housing market, and increase the value of homes across the city.
	<b>Rental Energy Efficiency</b>	<b>What:</b> A comprehensive, utility-funded program that would make efficiency and comfort accessible for renters by introducing program features that incentivize landlord participation. <b>Why:</b> The program would serve renters, an underserved population and building stock that are widely distributed across the city.
	<b>Green Zones</b>	<b>What:</b> A comprehensive program targeting at-risk neighborhoods and working with residents directly to identify local issues so that resources can be allocated to make measureable health and environmental improvements. <b>Why:</b> The program would serve some of the hardest to reach communities and would have the ability to work across energy, transportation, and waste issues.
Renewables & Chp	<b>Local Solar Development</b>	<b>What:</b> An initiative to promote business and resident participation in new solar offerings to achieve solar penetration of 1.5 percent by 2020. Includes both rooftop and utility-scale systems that customers can purchase through community solar, green tariff, or other means. <b>Why:</b> This program would help grow local, urban renewables to help reach the City's renewable energy goal, reduce its carbon emissions, and create value for ratepayers.
	<b>Expand Combines Heat and Power Opportunities</b>	<b>What:</b> The creation of new underground infrastructure that would redirect waste heat from power generation or industrial processing to serve local heating needs. <b>Why:</b> Using waste heat provides a low-cost energy source and could increase local resilience in discrete parts of the city.
	<b>Green Tariff</b>	<b>What:</b> A program that would expand customer on-bill wind purchases to solar and other renewables to achieve City CAP goals. <b>Why:</b> This could increase popularity of the program, and provide additional support for utility-scale installations as solar increases in cost competitiveness.



## 6.3 ENERGY VISION COMPONENTS

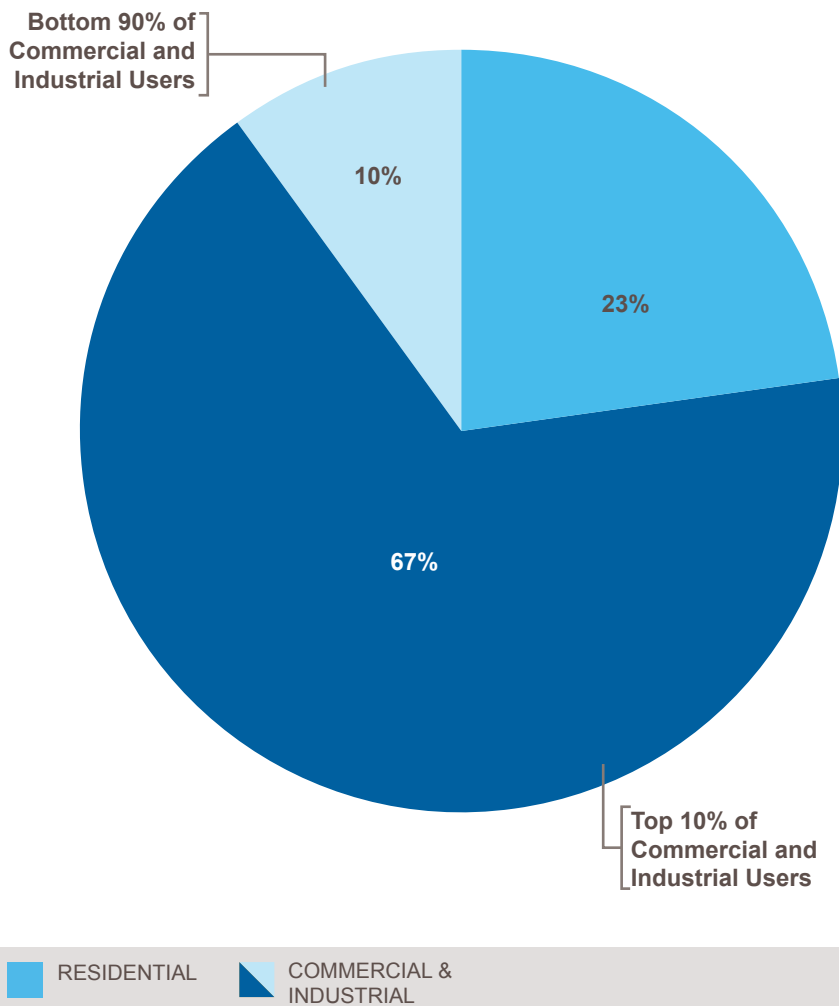
While the elements of the Energy Vision are interdependent, programs and policies may need to address specific areas to be most effective. Programs that lower the city's carbon emissions do not necessarily reduce energy use or costs, while strategies to improve equity benefits might not save the most energy. Below we outline these seven Energy Vision components independently. We describe the basic concept, important considerations for how each fits within the energy supply system, and recommendations for near-term programs and policies the City can pursue to further each goal.

### 6.3.1 Energy Savings

A central Climate Action Plan strategy is to reduce the amount of energy consumed by buildings and facilities across Minneapolis, which is the lowest-cost way to reduce carbon. The CAP sets a target to reduce building energy consumption 17 percent below 2006 levels. Thirty percent of the CAP goals across all sectors are reached by these energy savings.

Large commercial and industrial customers account for the vast majority of energy use in Minneapolis. As Figure 9 shows, the top ten percent of Xcel Energy's commercial and

Figure 9: Minneapolis Electricity Consumption by Sector (2012)



Source: Xcel Energy



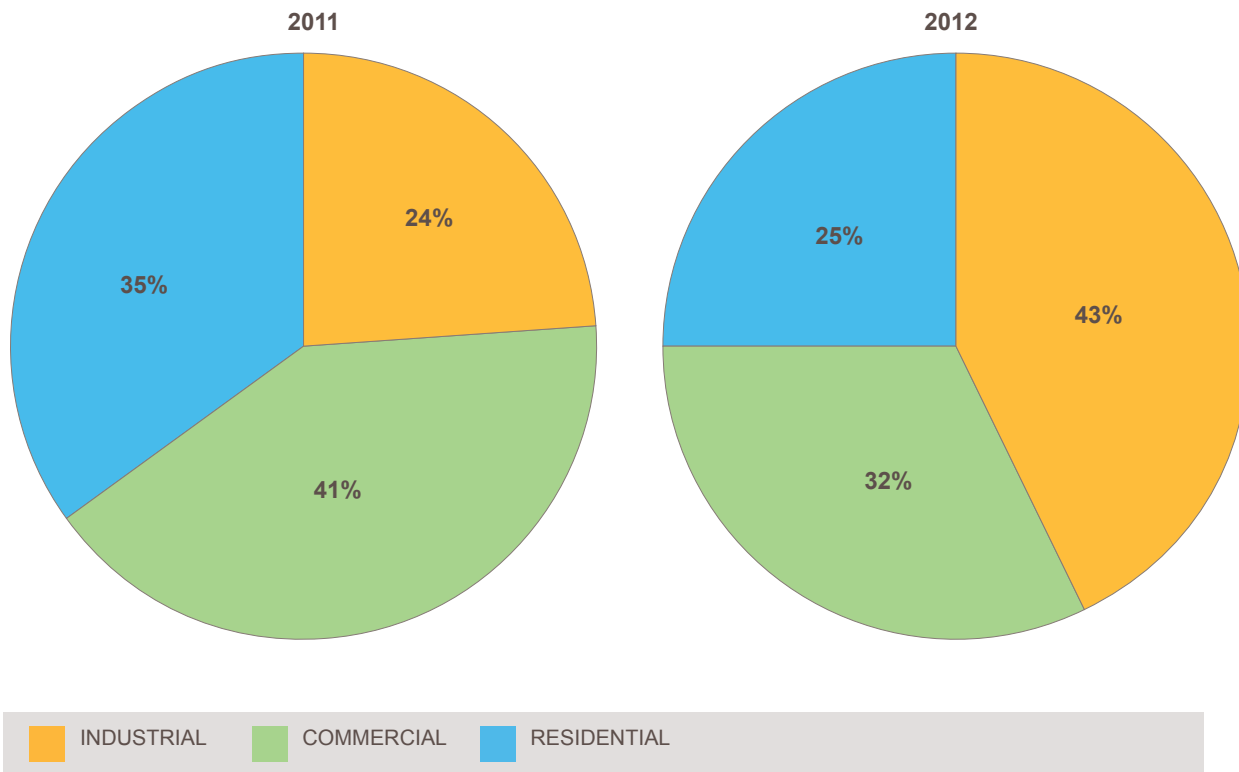
industrial customers in Minneapolis, a total of 1,650 premises, accounted for 67 percent of total electricity sales in 2012.

Natural gas use is divided more equally between sectors, but is also more volatile depending on average temperatures and other factors year to year (Figure 10). We include data from both 2011 and 2012, since the latter was atypical.<sup>81</sup>

### **Leading Programs and Strategies for Energy Savings**

We conducted an across-the-board evaluation of the energy savings potential for these different programs and policies. This included an inventory of the Minneapolis building stock eligible for each program, using the best available public information, and an estimation of savings potential based on a review of the technical

Figure 10: Minneapolis Natural Gas Consumption by Sector (2011 & 2012)



literature.<sup>82</sup> Figure 11 shows a comparison of the estimated energy savings from different programs in 2025. These savings are for the year 2025, but include activity from program implementation beginning in 2014.

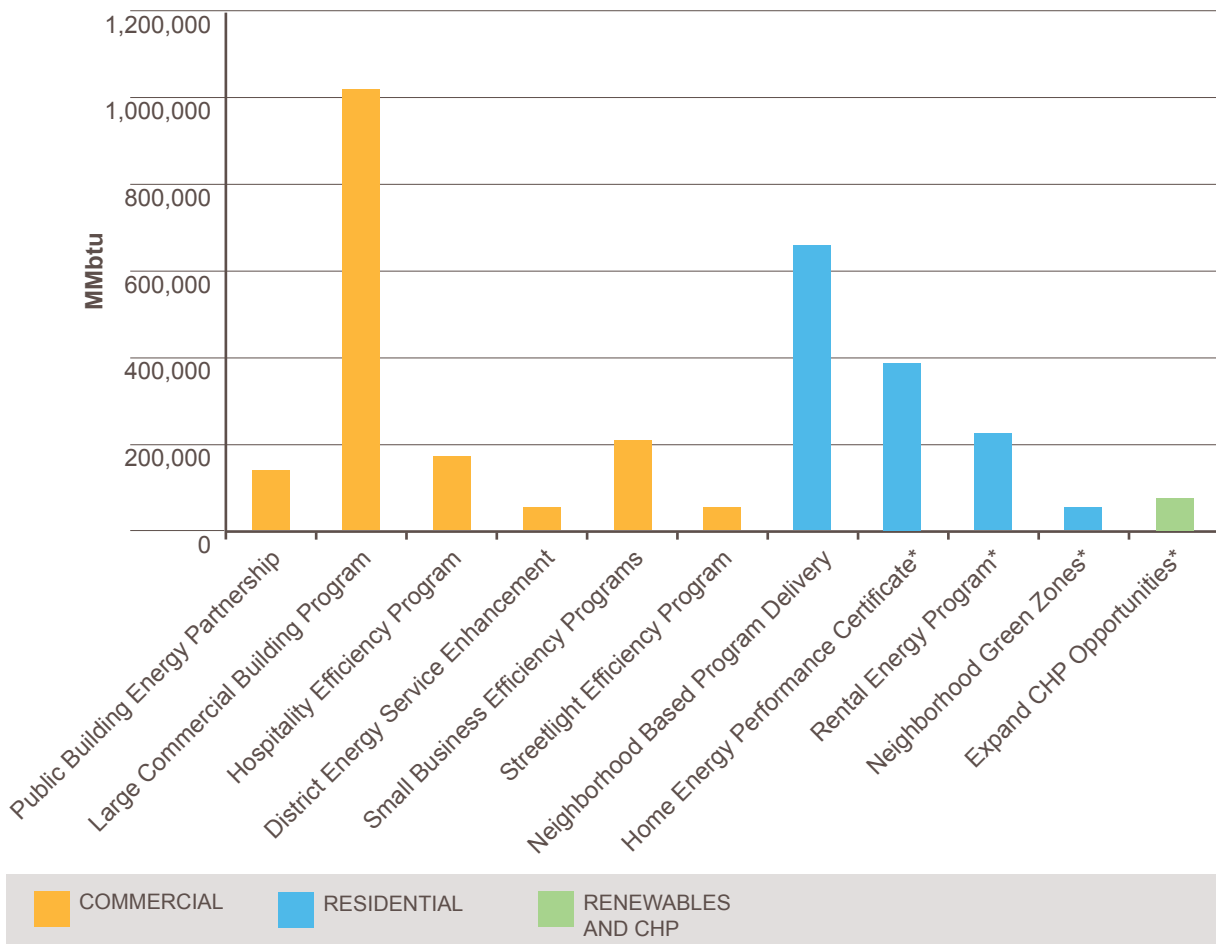
As might be expected, the highest energy saving programs and policies are ones that target the highest users – in this case, large commercial and industrial customers. Programs that target public buildings and small businesses will also yield moderate savings. High savings in the residential sector reflect our assumptions that the penetration rate can be doubled or tripled with new. It is important to reiterate that many programs overlap; for example, the hospitality sector overlaps with both large buildings and

small buildings, and the Green Zones program assumes a higher penetration of several programs, but for a small number of neighborhoods. The estimated energy savings for each program are therefore not exclusive.

### 6.3.2 Carbon Savings

The Climate Action Plan specifies a target buildings sector emissions level for 2025 which is about 790,000 mtCO<sub>2</sub>e less than the City’s 2012 inventory, which, to put it in context, is more than 100 times the carbon emissions City Hall is responsible for in one year.<sup>84</sup>

Figure 11: Projected Program and Policy Energy Savings in 2025



\* Program savings may be lower because of additional start-up time



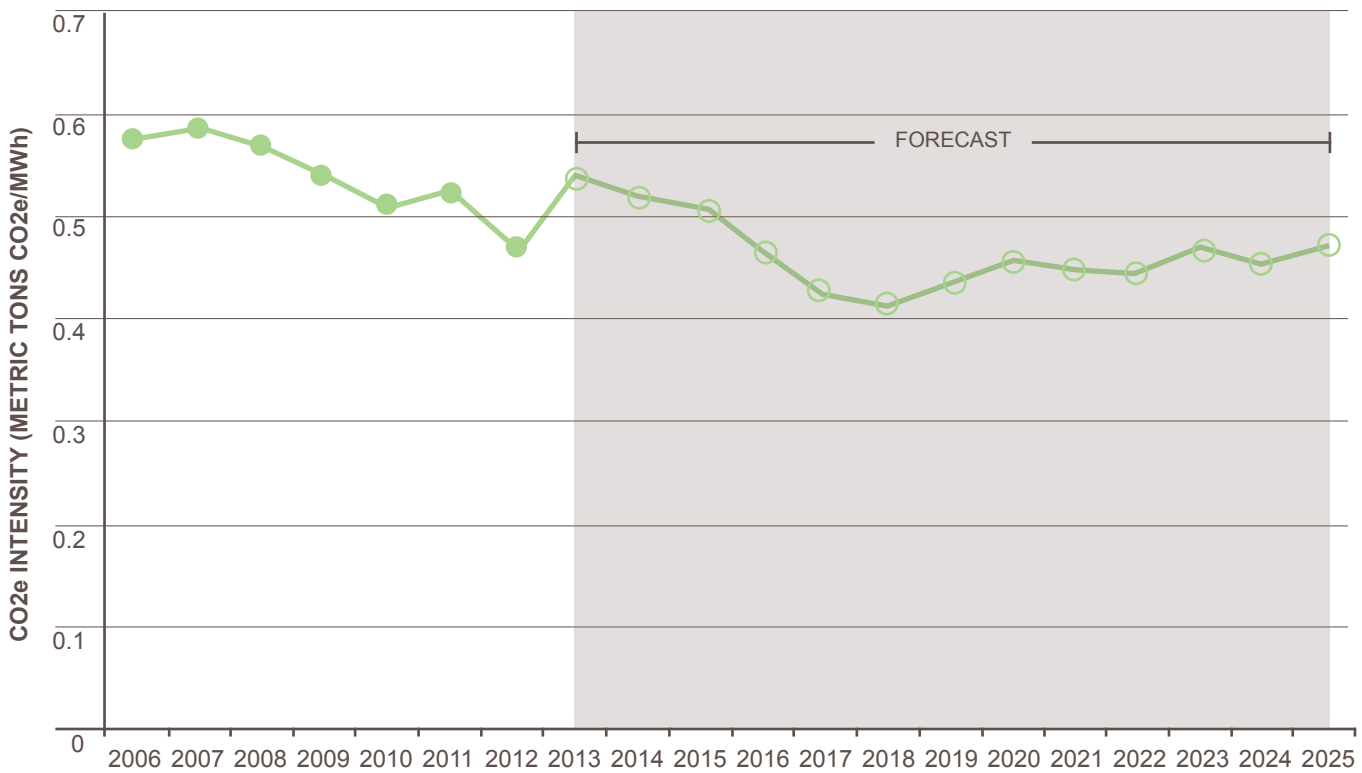
Carbon savings can be attained by either reducing total end-user energy consumption or by de-carbonizing the electricity supply.<sup>85</sup> Xcel Energy's carbon intensity, already significantly lower than the statewide average, is projected to continue to decline as the utility adds renewable generation to meet state targets of 30 percent of its supply mix by 2020 (see Figure 12).<sup>86</sup> As Xcel Energy's carbon intensity declines, it becomes harder and harder to save carbon through end-user programs. Forecasts

after 2020 are highly uncertain because of pending critical decisions regarding existing and future resources.<sup>87</sup>

**Leading Programs and Policies for Carbon Savings**

Programs and policies will reduce carbon as a direct result of their predicted energy savings, or, in the case of renewable energy, from the carbon intensity of the energy source that was displaced.<sup>88</sup> The biggest

Figure 12: Carbon Intensity of Xcel Energy's Minnesota Electricity Supply



Source: Xcel Energy



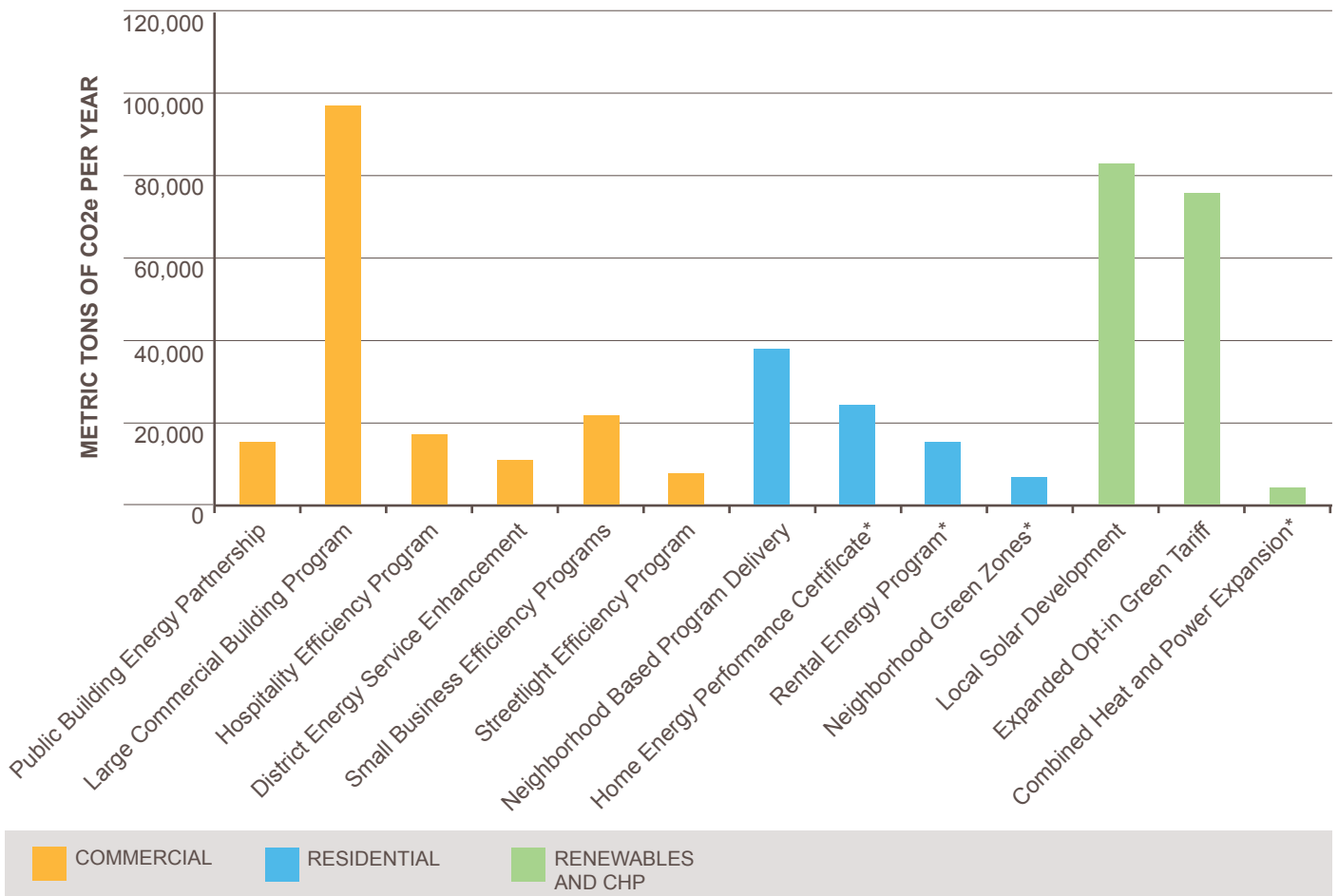
carbon benefit will come from offsetting electricity or chilled water, which produce more CO<sub>2</sub>e per unit of energy than natural gas or district steam.<sup>89</sup>

Figure 13 shows how different programs and policies might contribute to the City's 2025 carbon goals. It shows the estimated carbon savings that would occur in 2025, and, like energy savings, includes continued savings from 2014 programs onward. Also like energy savings, these carbon savings are not exclusive – many programs overlap (for example, a significant portion of local solar

purchases are achieved through a green tariff). Electricity CO<sub>2</sub>e intensity numbers are those from Figure 12.

Not surprisingly, the efficiency programs that save high amounts of electricity contribute a high carbon benefit. These include large commercial building efficiency programs and aggressive residential programs. In addition, if Minneapolis stays on track to achieve its share of the statewide 1.5 percent solar energy standard by 2020, this could catapult the local industry forward, and solar could contribute approxi-

Figure 13: Projected Program and Policy Carbon Savings in 2025



\* Program savings may be lower because of additional start-up time

mately ten percent of the City’s carbon savings goals by 2025. Again, local solar includes both rooftop systems and utility-scale systems that customers can opt in to through a green tariff, community solar, or other program.

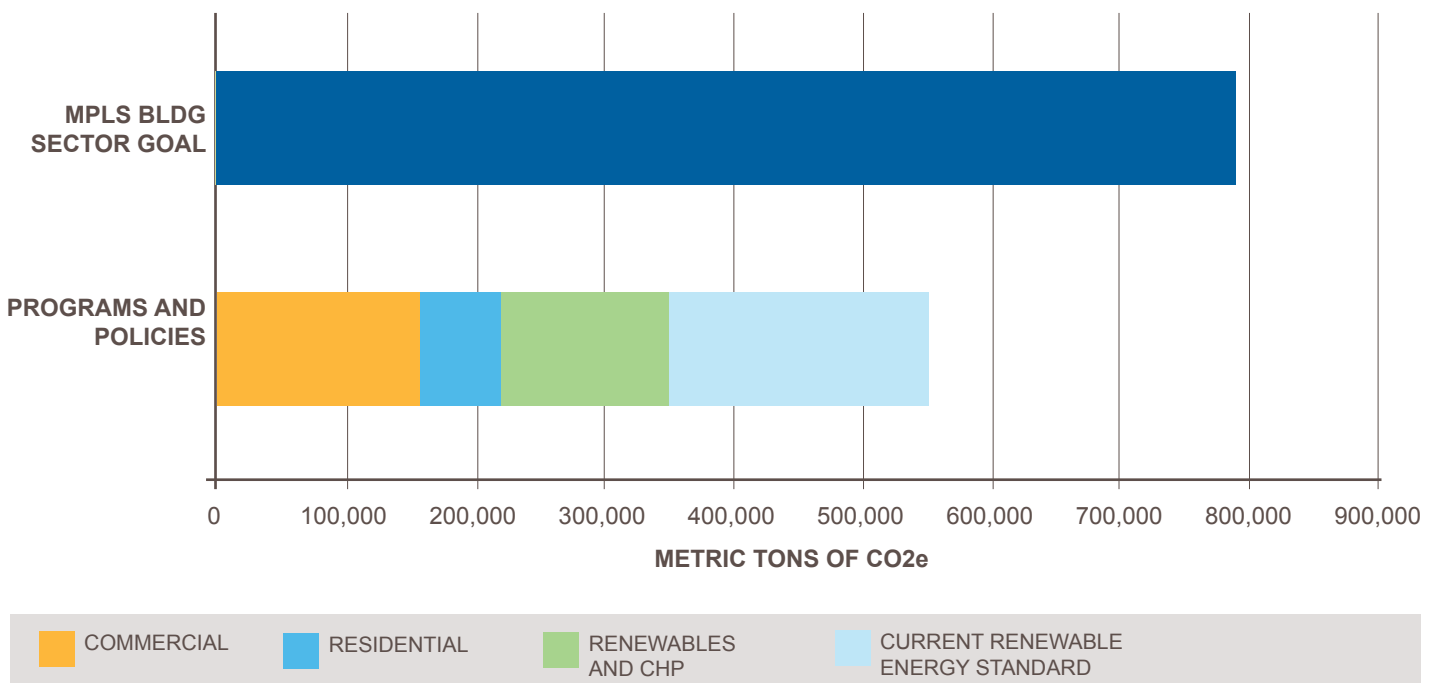
For comparison, Figure 14 puts these estimated savings in context according to their combined contribution to the required 790,000 mtCO<sub>2</sub>e CAP reductions. This takes into account that some program savings overlap. Overall, including the carbon savings that will result assuming Xcel Energy attains its 2020 Renewable Energy Standard (RES), these efforts will make up more than two-thirds of the City’s total 2025 goal. Our estimates,

City can continue to advocate for increased renewable targets for Xcel Energy, which, if implemented, would have a much larger carbon benefit than if the Minneapolis system met or exceeded this standard on its own.

### 6.3.3 Affordability

There is a large variation in the cost of different program and policy options. Minnesota’s prices for electricity and natural gas are below the national average,<sup>92</sup> so despite high seasonal heating and cooling needs, residents and businesses still benefit from relatively affordable

Figure 14: Projected Program and Policy Savings Compared to Minneapolis’ 2025 Carbon Goal



based on information from past program achievements, are moderately aggressive; clearly, in many cases a new level of attention and resources will be required.

Minneapolis would receive large carbon benefits if Xcel Energy expanded its Renewable Energy Standard achievements beyond the current goals of 30 percent by 2020. The Minnesota Department of Commerce is currently studying the technical feasibility of a statewide increase in the RES to at least 40 percent by 2030, and to higher proportions thereafter, while maintaining system reliability.<sup>90</sup> If a change in the RES of this magnitude was adopted, the resulting carbon savings (compared to 2012) would be an estimated 400,000 mtCO<sub>2</sub>e in 2025.<sup>91</sup> The

bills. In evaluating the cost of energy programs, it is important to maintain this focus on affordable energy.

Participants of programs will lower their energy costs by reducing or offsetting their energy payments. In addition, many programs reduce secondary costs, such as maintenance. But the important policy consideration for utility regulators is that the program benefits accrue to more than just the program users. Utility expenditures are paid for by all ratepayers, and investor-owned utility efficiency programs are required to pass “cost-effectiveness” tests to show that the public benefit outweighs the cost.<sup>93</sup> Subjecting all programs to significant screening and analysis ensures that the cost of efficiency as a

resource is lower than the cost of providing new power. A special provision is made for low-income programs.

The key reason to understand this policy framework is that it limits (for public benefit reasons) what money can be spent on. The use of cost-effectiveness tests provides a built-in mechanism to ensure that efficiency programs with unreasonable costs are not implemented. That said, there is a large variation in program costs driven by a number of factors, such as whether a program saves electricity or gas; the time of day when savings occur; and the transaction cost per unit of energy saved. Another important consideration is the length of time upgrades are expected to last.

### **Leading Programs and Policies for Cost Savings**

The commercial sector offers the highest potential energy savings and the lowest implementation costs for both

the energy service provider and the participants. This is generally due to the greater energy consumption within this sector, and to the continued opportunity for low-cost lighting improvements. In the residential sectors, the Neighborhood Based Program Delivery and Energy Performance Certificates can offer significant energy savings potential at low costs, assuming that these programs can greatly expand recruitment and commitment from participants.

Upgrading the City's streetlights to LED technology would save considerable electricity, but since streetlights do not use electricity during expensive "peak" daytime hours, it provides more of a challenge for the efficiency measure to pass cost-effectiveness tests. However, with recent reductions in LED lighting costs, as well as the maintenance savings that would accrue from the longer bulb lifetimes, the potential for cost savings from this activity has increased.

## FINANCING CLEAN ENERGY PROJECTS IN MINNEAPOLIS

While the availability of financing alone does not create demand for clean energy projects, well-structured programs can remove a major up-front barrier. The interest rate and loan terms for these financing opportunities can be just as important as the project cost to be financed. Minneapolis residents and businesses currently have several options for low-cost financing programs:

**St Paul Port Authority:** Finances large efficiency and solar projects

**CEE:** Administers a menu of loans for residents and small businesses, including residential solar

**Minnesota Housing Finance Agency (MHFA):** Offers low-interest residential fix-up loans that can be used for energy efficiency improvements

**The City of Minneapolis:** manages a Two-Percent Loan program for eligible local businesses.

### **Loan Repayment Options:**

#### **Property Assessed Clean Energy (PACE):**

Property owners repay loans via a local government property assessment. The loan's relationship to the property mortgage is an important question. Under existing Minnesota law, a PACE loan takes priority over the building owner's mortgage, which makes this form of financing challenging.

**On-Bill Loan Repayment:** Customers repay loans for clean energy projects on their utility bill (legislation pending for 2014).

Despite the wide range of energy financing programs available, many have credit and income requirements that exclude lower-income households. This could potentially be addressed if neighborhoods with existing Minneapolis Neighborhood Revitalization Program (NRP) funds could use those funds to buy down the costs of financing, or if the MHFA would modify their programs to serve these residents.



### 6.3.4 Equity

Equity concerns in the City's Energy Vision reflect the ability for energy and climate change solutions to pertain to and be accessible for the diversity of Minneapolis residents and businesses, while reducing and preventing health and economic burdens.<sup>94</sup> Some key areas needing attention include the "energy burden" cost on low-income residents, accessibility of services, shared benefits from program investments, and disproportionate health and quality of life impacts resulting from energy production.

There is very little publicly available data on energy expenditures in low-income households. Program guidelines for the Low-Income Home Energy Assistance Program defines a high energy burden as households that spend 10.9 percent or more of their income on energy, and a moderate energy burden as above 6.5 percent.<sup>95</sup> An estimation of the average monthly cost of energy service to a typical Minneapolis customer is about \$100 - \$175. Apartments on average use about half the energy for heating of single-family homes, and residents with fewer appliances (for example, large-screen TVs and in-unit washer and dryers) will generally pay less on their electricity bills.

Access to energy services includes knowledge about programs among a multi-lingual audience; the ability to pay upfront costs, if any; and occasionally the authority to make decisions about a building, something many renters do not have. Free and low-cost programs exist for income qualified residents. In Minneapolis, Community Action of Minneapolis provides low-income weatherization services, administering federal and state assistance for energy audits and insulation. Since the 2005-2006 heating season, the program has fully weatherized 5,000 housing units in the city.<sup>96</sup> Income-qualified residents also have access to energy assistance if they need help paying a utility bill.<sup>97</sup> While households that have the greatest energy burden are served by these low-income programs, those that fall just above the income threshold may also be experiencing an energy burden.<sup>98</sup>

Environmental health includes pollution and climate impacts from energy production, but also the indoor environment, especially air quality. Health ramifications continue to disproportionately impact low-income populations and communities of color. They also disproportionately impact the very young and the very old. In Minnesota's climate, insulating homes poorly can lead to issues with mold; homes that are too tight

also may not vent equipment properly. Quality energy efficiency programs examine these issues for residents and make sure health is not being threatened.

Equity of Minneapolis' electricity grid is discussed in more detail in the Reliability section. But overall, the Minneapolis distribution system is well maintained across the city, and the potential pockets of needed investment are not located in low-income neighborhoods or communities of color (see Figure 16 in the section on reliability, ahead). Importantly, utilities are not allowed to stop critical service during winter because customers have not paid utility bills.

#### ***Leading Programs and Policies for Equity Enhancement***

A leading program would be energy efficiency services for the City's 83,000 multifamily units and other rental properties.<sup>99</sup> Currently, there is no comprehensive efficiency program serving buildings with more than four units, though CenterPoint Energy recently completed a multifamily program pilot, and offers higher rebates for low-income rental properties. To increase access to services, including more targeted outreach to residents of color and non-native English speakers, programs could build on the work of existing community organizations, and provide program marketing in multiple languages.<sup>100</sup> Figure 16 on the opposite page shows our estimation of the percent of total residential energy savings that multifamily buildings would account for, by neighborhood across the city.<sup>101</sup>

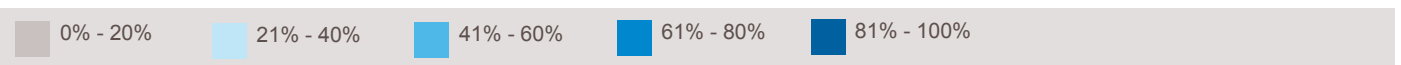
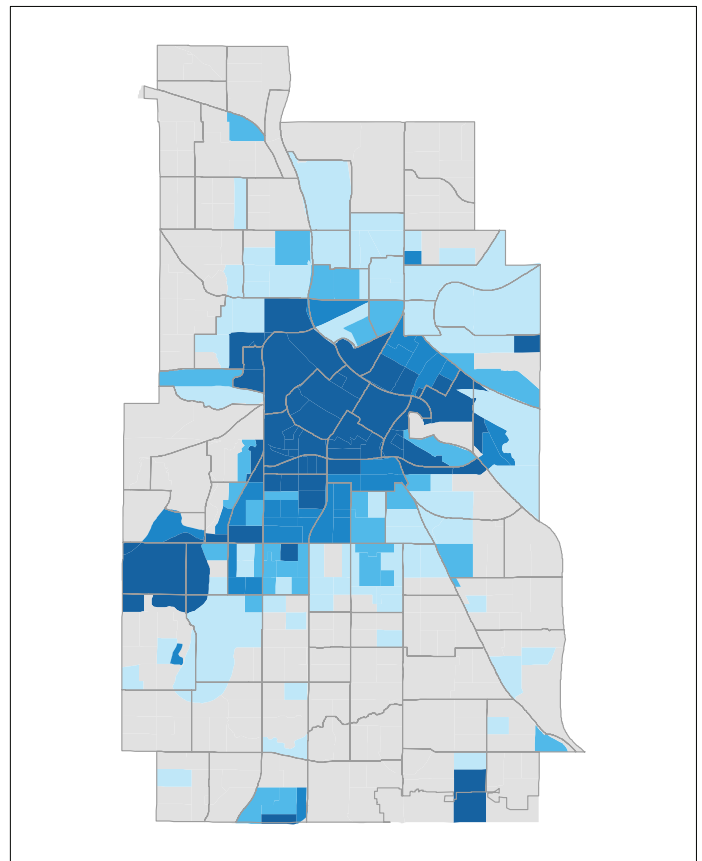
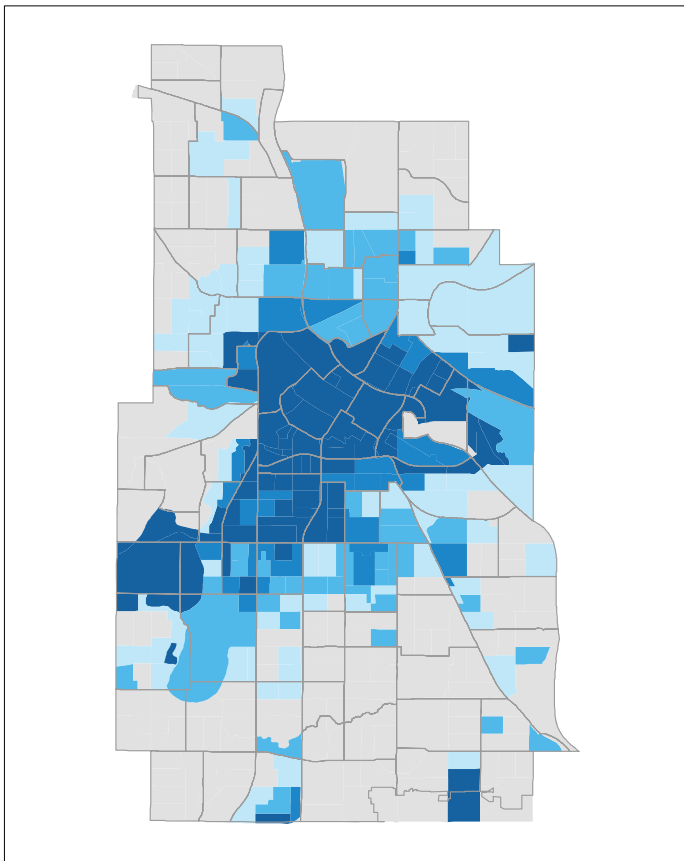
Given the higher use of public services by low-income residents, a commitment to enhance the efficiency of public buildings is important.<sup>102</sup> Minneapolis Public Schools, which hold over 35,000 students, two-thirds of which are students of color, are particularly important. Aside from reducing costs, energy service programs targeting these facilities would improve the indoor environment, health, and student comfort, key considerations for an improved learning environment. A streetlight efficiency program would also reduce streetlight outages and enhance lighting quality throughout the city as well as save energy. The City could help identify neighborhoods with the most immediate need for prioritization.

Many of the basic infrastructure issues that could be included in both a franchise agreement or a City-utility partnership will have important implications for meeting City environmental justice goals. This includes issues such as distribution planning and maintenance, tree trimming, or clean up after repair work. Planning efforts

Figure 15: Estimated Multi Family Energy Savings Potential as a Percent of Total Residential Potential by Neighborhood

**ELECTRICITY**

**NATURAL GAS**







## What are Green Zones?

A Green Zones initiative is a community effort to provide deep and ongoing services on a neighborhood scale to transition underserved and environmentally impaired parts of a city. Programs take on various forms depending on the needs in a given city, but a few key elements are common. Communities are screened using a cumulative impacts screening process to identify high-priority neighborhoods. A leading tool is the Environmental Justice Screening Method, developed for Southern California.<sup>103</sup> Partners also work with cities to develop public policies and funding sources that will support these local goals over time. From the CAP, “communities with Green Zone designation would then be able to access benefits... ranging from targeted pollution reduction to increased funding opportunities for energy efficiency, onsite renewable energy, and other low emission infrastructure.”

Many cities have adopted green zones initiatives aimed at different issues and goals. In San Diego the focus is on community-based land use planning to reduce pollution and improve health conditions. Partners in Los Angeles have hired a staff person to help develop a city ordinance that will increase pollution prevention and assist businesses to adopt sustainable practices. Kansas City has provided energy efficiency services to underserved homeowners and small businesses to improve air quality and reduce energy costs.

that prioritize future clean energy infrastructure could provide targeted screening to identify the best opportunities for investment in communities of need. Citywide reliability reporting could also include summary statistics for low-income neighborhoods and communities of color.

And finally, the City can engage stakeholders to move forward with a Green Zones Initiative, a major equity recommendation from the Climate Action Plan. Urban Green Zones have been adopted by cities that are trying to tackle systemic linkages between sustainability and poverty (see sidebar). The CAP envisions that “the Green Zones Initiative will create a city designation for neighborhoods or clusters of neighborhoods that face the cumulative impacts of environmental, social, political and economic vulnerability.” Programs and services could also be coupled with data collection to create a more rigorous understanding of energy and health burdens.

## How might Minneapolis approach a Green Zones initiative?

The City could create an initial planning framework based on a deeper review of efforts in other cities, followed by an inventory of data and existing tools that would help screen for priority communities, including census data, utility costs, and housing makeup. This could support data-driven stakeholder efforts to identify the local high-risk neighborhoods, or a task force to begin community-led engagement to identify the priorities on the ground. Determining how to avoid displacing current residents is key as new investments are made in a community.

Minneapolis communities can use Green Zones to direct local capacity building that will contribute to the City’s clean energy system, not just as recipients of services, but regional providers. Some priorities include jobs training for operational energy services, residential energy programs, or partnering with utilities for skilled energy utility jobs, and equity in employment. The City could also showcase best practices of affordable housing developers who have maximized energy efficiency and minimized utility costs in new projects.

Minneapolis’ GrowNorth initiative, the Hawthorne Eco Village, and the Midtown Sustainability Initiative are current examples of such targeted, neighborhood-scale initiatives, each of which could potentially be enhanced by a comprehensive Green Zone approach.

## 6.3.5 Local Resource Development

Clean energy programs encourage local resource development by promoting investment in energy-related business and by saving residents and businesses money, which can then be reinvested.

The Minnesota Department of Employment and Economic Development (DEED) completed a statewide analysis of “green jobs” in 2011, including the energy efficiency and renewable energy sectors.<sup>104</sup> DEED concluded that Minnesota’s manufacturing and construction industries, already regional assets in job creation, were foundational to capturing growth in an expanding green economy. Much of the manufacturing and construction benefit was specifically related to the energy efficiency component of the green jobs analysis. Within Minneapolis, local energy contractors provide services ranging from residential insulation to large building energy monitoring and solar installations.

Table 12: City of Minneapolis Approximate Representative System Average Interruption Duration Index (SAIDI)

Year	2008	2009	2010	2011	2012
SAIDI (minutes)	48	77	102	72	87

Source: Xcel Energy

The most important local economic benefit is often the money saved from reducing energy costs through energy efficiency. The job creation and retention benefit can be two to three times more than the labor on the initial job.<sup>105</sup> We estimate that the accumulated savings from Xcel Energy’s CIP programs in Minneapolis between 2007 and 2012 was almost \$70 million, and the savings from CenterPoint Energy’s gas programs was over \$40 million.<sup>106</sup> Business development assessments must also consider that both of the city’s utilities serve larger Midwest territories from corporate headquarters based in Minneapolis. Xcel Energy-NSP has about 1,500 employees in downtown Minneapolis and CenterPoint Energy has about 350; both have additional employees in operations facilities within the city.<sup>107</sup>

**Leading Programs and Policies for Local Resource Development**

The large commercial sector, including large public buildings, offers the highest net return for dollars invested in energy savings. These programs bring second-order benefits because businesses and institutions reinvest those savings, in the form of an expanded workforce, capital investments, or even additional energy efficiency. Much of these initial commercial savings and economic returns are due to opportunities for low-cost lighting improvements or building recommissioning services to be implemented on a very large scale; both of these services provide short paybacks.

On average, residential programs create more energy jobs for each dollar spent than commercial programs. Traditional residential programs require a larger workforce to diagnose and implement energy measures, including insulation and mechanical systems. In addition, the more aggressive program achievements proposed here will require additional capacity for marketing, outreach, and networking at the neighborhood level.

There are also opportunities for workforce development in broad energy services, beyond specific programs. A recent study for the Minneapolis Department of Community Planning and Economic Development identified operational energy services in commercial buildings as a potent economic development strategy.<sup>108</sup> Needed skills include building commissioning, audits,

modeling, and real-time monitoring. The City could also work with utilities to provide targeted training and job placement for utility workers. A rapidly aging workforce is a growing concern for energy utilities.<sup>109</sup>

**6.3.6 Reliability**

Maintaining a reliable supply of electricity for Minneapolis residents and businesses is a clear prerequisite for the city’s health and economic well-being. Real-time considerations focus on the frequency, duration, or location of power outages, or the quality of electric power, especially for larger users. Improving this operational reliability requires robust response systems, real-time data, and adequate measures to track performance. Reliability is also a consideration for longer-term integration of distributed energy resources, which include PV as well as other supply, demand, and information and control technologies at the distribution level. Long-term reliability will require system planning that explicitly incorporates the new clean distributed technologies.

The City’s current state of operational reliability can be assessed by reviewing outage information. Common metrics are the system average interruption duration and frequency indices (or SAIDI and SAIFI – pronounced say-dee and say-fee). These territory-wide indices measure the average length and number of occurrences of outages over a given time period (generally one year) and weighted by the number of customers.

Xcel Energy calculated an approximate City of Minneapolis SAIDI measurement for this study (Table 12). The data show that the average duration of outages for Minneapolis customers ranged from 48 minutes to 102 minutes during the past five years of available data.

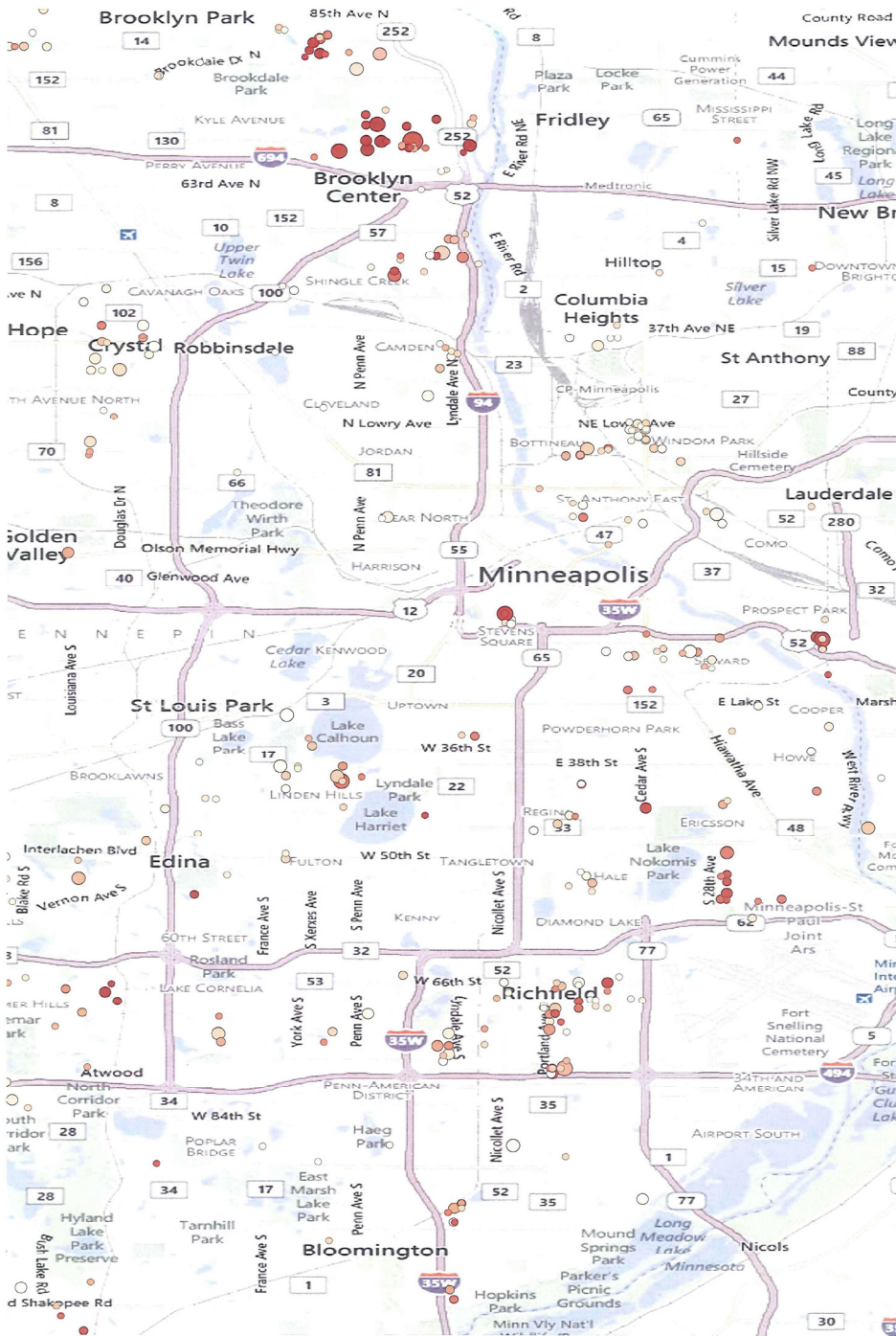
SAIDI and SAIFI are useful for tracking system conditions year to year but they have limitations. They are challenging to interpret at small geographic scales since there are fewer data points over which to average. They don’t count outages caused by accidents or weather, such as the June 2013 storms that affected more than 600,000 customers in Xcel’s Midwest territory.<sup>110</sup> The reason for disregarding these outages is that the indices are intended to track

systemic performance of utility infrastructure, without outlying events, but this also means utility response times to accidents (either positive or negative) is not accounted for.

Xcel Energy is developing a new tracking tool called the Customers Experiencing Multiple outages Index, or CEMI (pronounced see-me). The CEMI maps

customers who have experienced at least four sustained outages, and shows the location, duration, and number of customers affected. CEMI is a way to track and communicate systemic, recurring infrastructure problems. Figure 16 shows a screenshot of the CEMI map for Minneapolis and surrounding areas in 2012. The size of the dots indicates the number of customer affected, and the color intensity represents the duration.

Figure 16: CEMI Map (2012)



Source: Xcel Energy

System planning is the longer-term assessment of the distribution feeder’s ability to handle customer needs including future projected demand. One measure is the “loading” on the system – that is, how closely the maximum demand comes to the designed capacity of distribution feeders. Currently 16 substations serve Minneapolis’ electricity load, and 8 of those substations are physically located within the city. Over the last several decades essentially all of the City’s distribution feeder lines have been upgraded to 13.8 kV capacity, leaving the Minneapolis distribution system well positioned for future growth.

**Leading Programs and Policies to Ensure Reliability**

Programs that continue to reduce electricity demand, especially on-peak demand, will have the highest long-term reliability value. These programs have historically been primarily commercial customer efficiency programs, especially lighting and cooling efficiency, which reduce system peaks.

Given the low penetration levels of distributed generation in Minneapolis, and the utility investments that have been made in the distribution system, currently anticipated expansion of DG should not threaten system reliability. However, large-scale systems (in excess of 1 MW) may pose additional site-specific challenges, depending on their location.

The distribution system can also use distributed energy resources to help support local reliability, but this requires

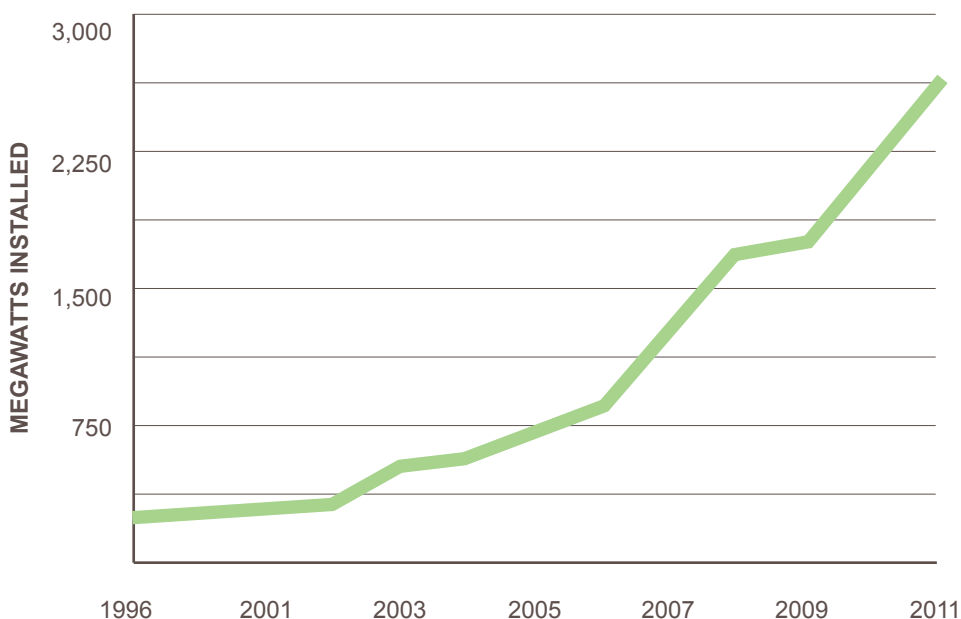
planning and coordination between customers and the local utility. Opportunities exist for Minneapolis to pilot distributed energy resources (DER), efficiency planning, and other smart-grid technologies that optimize locations and operation, which can reduce system loading and provide voltage support. A City-utility Clean Energy Coordinating Partnership could help to pioneer these issues in Minneapolis.

**6.3.7 Renewable Supply**

The City’s renewable energy supply comes primarily from utility-scale wind and from a small number of distributed PV systems. Minnesota’s large-scale wind capacity increased by a factor of 10 between 1999 and 2011, and continues to be the most promising renewable technology for near-term growth (Figure 17).

Because of the physics of the electric system, the output of one specific generator generally cannot be dispatched to serve a specific load, for example, a wind turbine in Mankato can’t deliver energy to the new Vikings stadium. Managers of the electrical grid – in the Midwest, that entity is MISO, as described above – must balance the supply and demand of electricity across the whole upper Midwest region, in real time, and electrons move through a network rather than a pipeline. Nonetheless, customers can secure renewable energy through different accounting methods, where the utility acts as a bookkeeper to track what has been generated and purchased using Renewable Energy

Figure 17: Minnesota’s Installed Wind Power Capacity





Credits. Examples discussed in this report include the Windsource program and community choice aggregation.

Minneapolis' share of Xcel Energy's total renewable supply was 890,000 MWh in 2012, which includes large hydro, biomass, and waste-to-energy production.<sup>111</sup> All in all, these renewable energy sources comprised 22 percent of Minneapolis' use. Local renewables, which only include local PV and Windsource, made up 1.4 percent of total use.<sup>112</sup>

**Leading Programs and Policies for Renewable Supply**

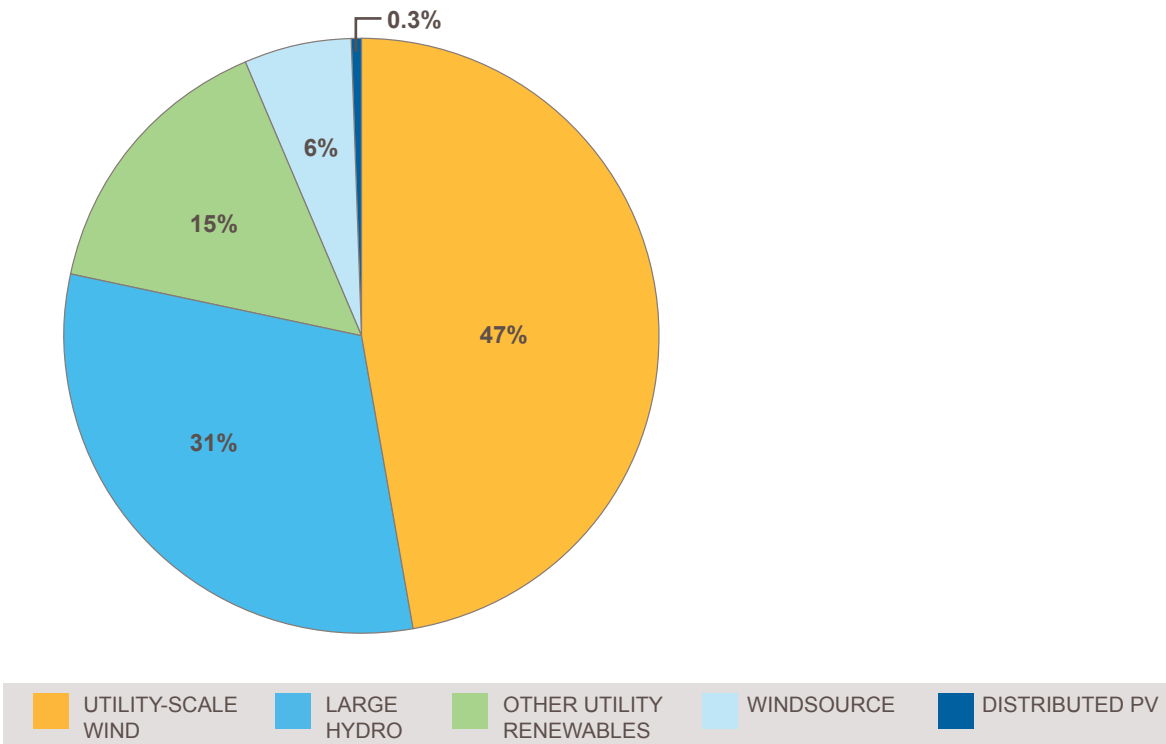
While only a small fraction of Minneapolis customers have installed PV systems, utility offerings for solar energy will be changing as a result of statewide legislation passed in 2013. Utilities now must increase the size of a PV system eligible for net metering from 40 kW to 1 MW. Utilities may also offer a "Value of Solar" energy tariff that allows the customer to sell their solar output to the utility at a rate based on the value of distributed solar to the utility, its customers, and society to offset the standard retail cost of their own use.<sup>113</sup> For this project, we estimated that three-fourths of installations by 2025 would be from larger systems. Community solar lets subscribers buy a portion of an installation, and receive some cost advantages of economies of

scale and optimized locations. The City can play an important role to promote opportunities, help customers and installers understand the new reward structure, and assist in finding locations for community solar projects.

Additional expansion of the Windsource program could be a flexible strategy to help the City meet its Climate Action Plan goals for local renewables. Windsource could be expanded to include solar energy as well as wind, as a blended green tariff. This program would need to be developed by Xcel Energy and approved by the Public Utilities Commission, which would include review of the proposed cost structure. Such a program would be a good policy tool to support the higher-cost solar resource, and for customers, it is a low-risk and low-barrier way to reduce their carbon footprint. There is potential to find new adopters in the commercial sector as companies look for ways to meet sustainability goals.

As discussed in Chapter 5, another possible option is for the City to solicit a large-scale power purchase agreement for renewable electricity in which a utility would agree to deliver specific types of energy to the City, at the City's cost. Under this arrangement, the cost to the City would be the cost of energy from the procured source, plus associated delivery costs. The energy procured and paid for under in this scenario would replace energy delivered through existing tariffs.

Figure 18: Minneapolis' Renewable Electricity Sources (2012)



Source: Xcel Energy





# 7 STRATEGIES BEYOND 2025: A FOCUS ON THE “DISTRIBUTION EDGE”

Chapter 6 focused on near-term program and policy opportunities for a Minneapolis City-utility Partnership to make progress toward the City’s 2025 climate goals, recognizing that urgency makes a quick uptake a major priority. However, even deeper carbon reductions and improved climate resiliency will be required beyond 2025. Numerous studies that have modeled a zero carbon energy system have repeated the same findings: that this future will require an increased reliance on electricity across all sectors, with a radical shift toward renewable fuels. These changes may accelerate the transition to different models for the energy system, including new technology, business operations, and regulatory models to manage the transition.

Considerable innovation is expected to occur at the local level – the so-called “distribution edge” – where supply meets load. This is largely because of a suite of distributed energy technologies, including PV, other small-scale renewables, demand response, storage and power quality devices, and advanced metering and response information that are becoming more consumer-ready. It also reflects a growing recognition that the centralized electricity system is vulnerable, leading some customers to install distributed technologies for reliability reasons. However, as more customers adopt their own generation, it creates significant pressure on the regulated compensation model of utilities like Xcel Energy and CenterPoint Energy. This impedes the



Credit: Stephen Rees via cc

large-scale investments that are required both for reliability of the aging fleet and for environmental upgrades.

This chapter briefly introduces these issues with an eye toward the role of local governments. While near-term programs would be the immediate priority for a new partnership, it would also be well positioned to spearhead long-term City-utility planning of the distribution system. Local governments will play a critical role in this transition as the facilitators of local infrastructure decisions. In addition, cities can work with local residents and businesses to pilot new ideas with an eye toward maximizing benefit and reducing local conflict. While the clean distribution edge may not be fully established before 2025, planning for this future should be happening now.

## 7.1 TECHNICAL AND INFRASTRUCTURE OPPORTUNITIES

As discussed briefly in Chapter 6, the electricity distribution system in Minneapolis has benefitted from several decades of investment, and is in a robust position to handle new load growth. This also means there are opportunities to pilot new distributed energy resource technologies and learn what their energy, carbon, cost, equity, and reliability benefits are in practice. Some of the most promising emerging infrastructure opportunities include:

- Major additions of clean distributed generation, including solar, building-integrated small wind, or combined heat and power. While concentrating these technologies in a dense city will not obviate the regional grid and centralized supply, this is an opportunity to turn buildings and urban areas into productive space – rather than just consumers of resources.
- The emergence of “intelligence” in the distribution system. Load is considered passive, but the future holds potential for energy-using devices to respond to signals and moderate demand accordingly. Centralized load control is not new (Xcel Energy’s Saver’s Switch program for air conditioning is a major example). But distributed intelligence refers more specifically to devices that can act in real time, either in response to and in support of system needs, or independently based on set customer priorities. Current examples, including demand response, tend to respond to price,

but there are opportunities for devices that respond instead to real-time environmental signals.<sup>114</sup>

- Electrification of the transportation system. Transportation represents about 30 percent of the City’s greenhouse gas emissions, and more importantly, produces local air pollutants that have a direct and disproportionate impact on human health, especially for communities of concern along major transportation corridors. Electrified vehicles and transit would significantly reduce these harms. They are also a major potential source for new intelligent distributed load, and a growth area that would warrant investment in EV charging and operation management.

## 7.2 REGULATORY AND BUSINESS MODEL ISSUES

For the last 100 years, the regulated electric utility industry has been designed around central stations, long-distance wires, and exclusive providers. This has been an efficient and reliable way to generate and deliver electricity. The way utilities recover their capital investment and operation costs has been designed to support that centralized system, by charging customers through each increment of commodity sold (kilowatt hours for electric utilities, therms for natural gas utilities).

Distributed resources all share a common feature – they tend to reduce electricity sales, the commodity upon which the utility business model is based. At the same time, utilities are making significant investments to maintain their centralized infrastructure – transmission, generation and distribution – and currently these long-term capital costs have to be recovered through fewer sales.

In order to decarbonize the energy system as quickly and as cost-effectively as possible, utilities must continue to invest in demand-side management, high-voltage transmission, utility-scale renewables, power plant replacements, and smart grid infrastructure. Distributed generation is unlikely to scale up quickly enough to reach the needed goals on its own. To the extent that distributed resources reduce sales and impact the current utility business model, they introduce greater uncertainty about how utilities will recover those bigger, long-term investments needed to address climate change. Utility executives, unsure how they’ll recover those costs over twenty or thirty years, will likely increase their resistance to making those investments.

Distributed resources can provide new, not-yet-recognized values, as well as new, not-yet-resolved challenges.



The Edison Electric Institute released a 2013 report called “Disruptive Challenges.” EEI reflected on what the organization termed a “death spiral” for electric utilities. Under this scenario, as distributed resources undermine utility sales (and therefore, revenues), the fixed costs utilities have invested in power plants and other infrastructure don’t disappear; they get loaded onto the remaining kilowatt-hours that utilities do sell. This cost-shifting increases the costs of those kilowatt-hours, which increases the utility’s rates and makes distributed energy resources options even more attractive to customers. As more and more distributed resources are implemented, the utility business model ultimately collapses. While this scenario is intentionally extreme, it helps illustrate why utilities are so resistant to distributed resources.

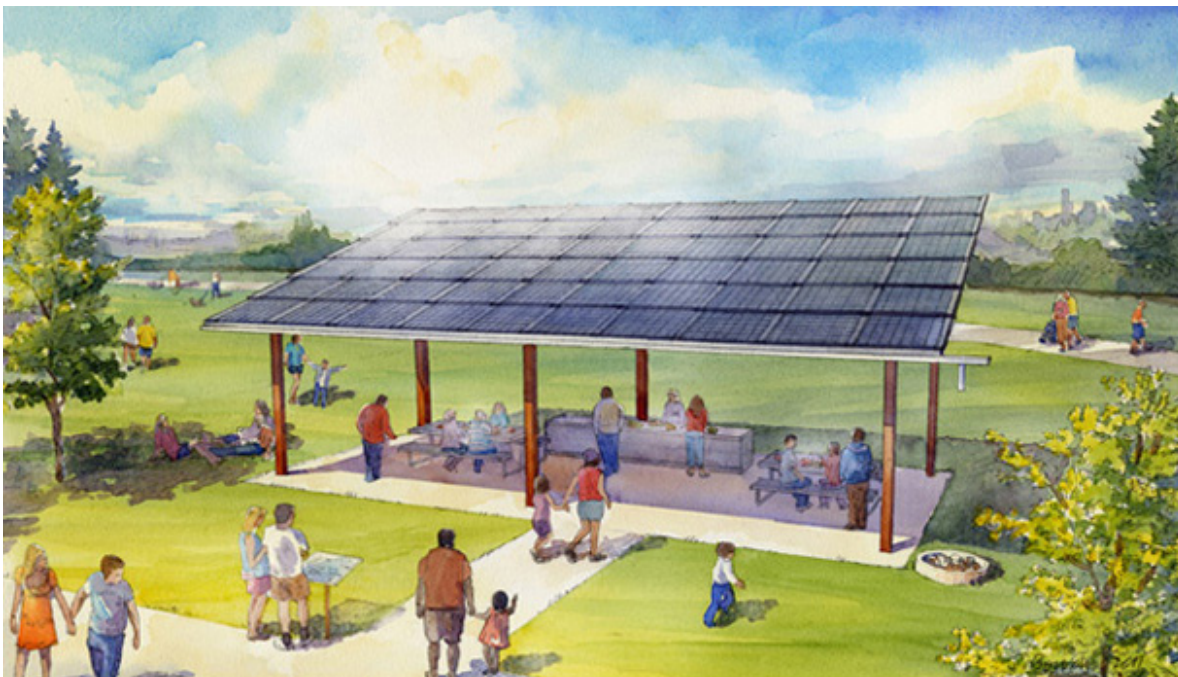
Utilities, as service providers, won’t be able to ignore the broadening set of demands from customers and communities as technologies become more cost-effective and the systems grow smarter and more innovative. And as utilities refresh their infrastructure and respond to a number of environmental regulations, rates continue to increase. And as those rates go up, the relative costs of distributed resources are going down, making them all the more appealing to customers. Revenue decoupling, in which recovery of a utility’s fixed costs are no longer tied to the amount of energy sales in a given period, and Minnesota’s innovative “value of solar” alternative tariff are examples of near-term tools that can be implemented to mitigate these effects.<sup>115</sup> However, utilities, ratepayers and regulators will all need new tools

to manage costs while facilitating customer choice, as the penetration of distributed resources increases.

### 7.3 ROLE OF LOCAL GOVERNMENT

This is not just a utility problem, it is a shared problem of what services consumers expect from their utility and what business models can support those services at a reasonable cost. Our recommendation regarding the formation of a City-utility Clean Energy Coordinating Partnership is one example of an evolving utility business model. Going deeper on this subject in Minnesota, the Great Plains Institute, CEE, Xcel Energy, Minnesota Power and the George Washington Law School are launching an initiative on the “energy system for the 21st century” – called e21 – to explore the future of utility business models and opportunities to advance statewide clean energy goals.<sup>116</sup> While most policy debate will occur at the state legislature and Public Utilities Commission, an important perspective is that of forward-thinking local governments. Minneapolis, with its broad and diverse Energy Vision and comprehensive Climate Action Plan, would add a valuable voice to this process, and we recommend the City participate.

Cities will also be in the forefront of ushering in local green energy distribution infrastructure. While power plant development now occurs far outside the city



Credit: Stephanie Bower / Courtesy Seattle City Light

boundaries, cities may be reintroducing hundreds of mini power plants that need to be integrated into the urban fabric. There are numerous considerations, for example the equity of impacts or benefits across different neighborhoods. The City could develop a local planning framework for green infrastructure that makes use of local zoning and regulation powers to facilitate a distributed resource transition that minimizes conflict. Examples could include solar or combined heat and power priority zones based on linkages with city infrastructure.

A local green planning framework could also formally integrate with utility distribution system planning. Minnesota Statutes 216B.2426 requires the Commission to ensure that there are opportunities for distributed resources in state planning processes.<sup>117</sup> This is an opportunity to build more regulatory understanding and capacity around planning for distribution infrastructure. This planning currently occurs within the Distribution Engineering sections of each utility, without opportunity for public or regulatory input. While that might have been appropriate previously, the public interest in the appropriate planning and development of the infrastructure necessary to provide service to city residents and business – today and tomorrow – requires new avenues for the City, state regulators, and other stakeholders to

provide input and test utility assumptions and plans.

Recently, the Interstate Renewable Energy Council provided a concept paper of how a planning process to prepare for high penetration rates for distributed generation could be designed and implemented.<sup>118</sup> Its approach may be too limited – it is important to broaden the goals of distribution planning beyond distributed generation, to incorporate planning for net-zero buildings, microgrids, demand response, advanced inverters, etc. – but it is instructive. New law enacted in California should be looked to as a model in this area.<sup>119</sup> According to the Clean Coalition that advocated for its passage, Assembly Bill 327 stipulates that “each utility must take the following three actions:

1. Submit plans to the California Public Utilities Commission that identify optimal locations for the deployment of distributed resources, defined broadly
2. Propose policies and programs to achieve this deployment
3. Include any necessary distribution grid spending to accomplish their plans in their next general rate case.”<sup>120</sup>

The MPUC could incorporate this kind of approach into utility integrated resource planning, consistent with Minnesota Statutes, section 216B.2426.



Credit: Dave Reid via cc

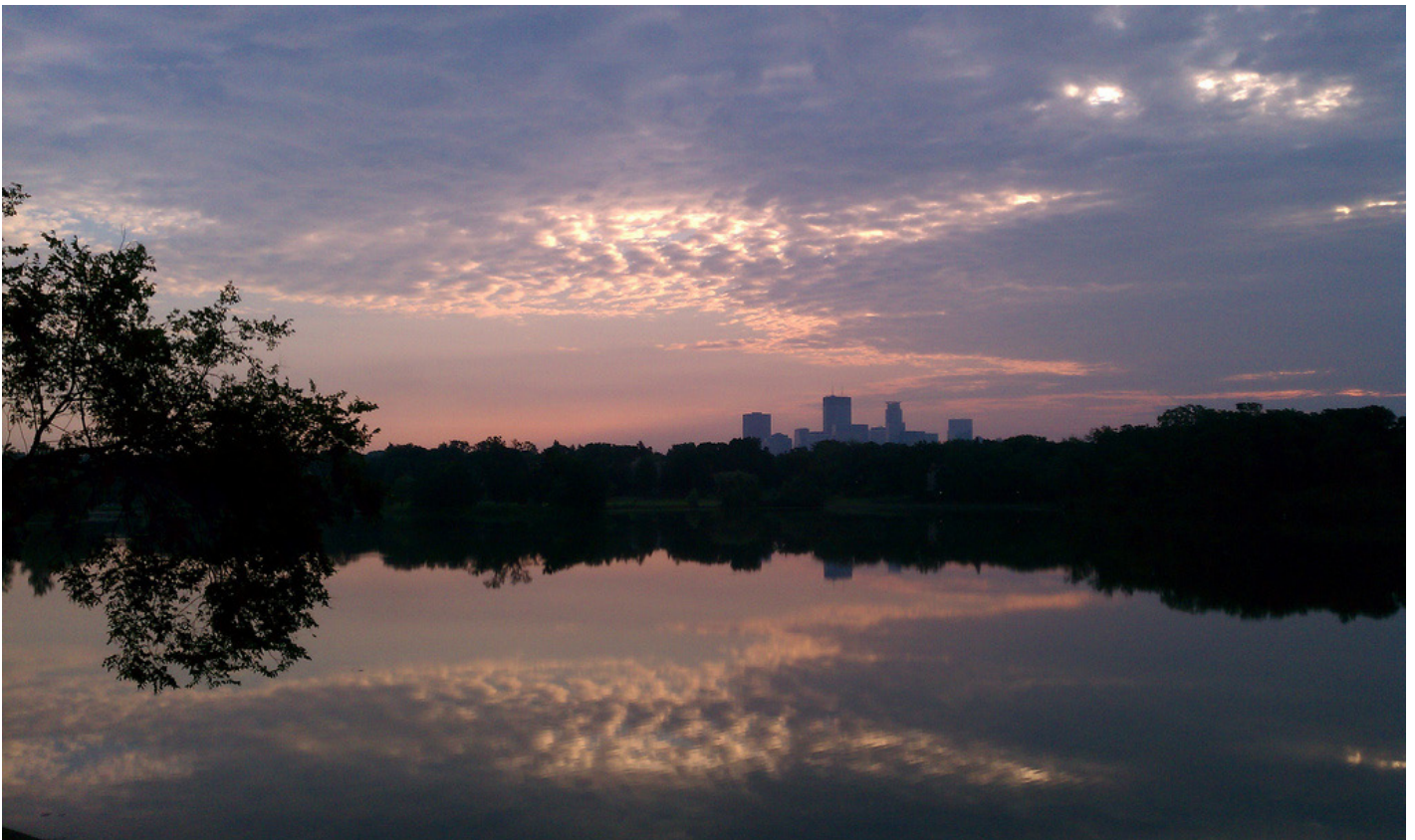


# 8

## NEXT STEPS FOR IMPLEMENTATION

Through Minneapolis' 18-month development of the Climate Action Plan, the City-wide discussion regarding options presented by the expiring franchise agreements, and through the leadership of the City's elected officials, the City has gained great momentum and consensus on critical energy issues, with significant community and utility buy-in on City energy goals. Near-term actions in 2014, and sustained commitment beyond, will be critically important for maintaining this momentum, awareness, and engagement.

Our key recommendations are outlined in the executive summary. We provide some detail in other sections to guide the upcoming franchise agreements and exploration of a City-utility partnership. But in addition, the state legislature and Public Utilities Commission will be important arenas for policy decisions that support City goals. The City should continue to work with stakeholders to develop program priorities and map out implementation strategies. And finally, while this study provides an informed



Credit: crossn81 via cc

assessment of the City's longer-term options of CCA and municipalization, numerous additional questions were raised. Both of these options deserve more in-depth technical review before they can be understood definitively.

The City's interest in exploring its energy options comes at an exceptionally opportune time, when the foundations of the energy industries are rapidly evolving. This effort can position the City to take advantage of that evolution and demonstrate equitable, clean, and innovative alternatives to the status quo that could be available to other municipalities in the years forward. In this section, we summarize our recommendations into near-term, medium-term and long-term actions.

### **Near-term actions (3-6 months)**

#### ***Negotiate new franchise agreements***

Begin negotiation process for enhanced franchise agreements with Xcel Energy and CenterPoint Energy, which cover compensation due the City for use by each utility of the public rights of way. Key recommendations for constructing these agreements are:

- Construct a shorter five- to ten-year franchise term, renewable at end of term.
- Require annual reports of electricity and gas distribution investments (past and planned) with a schedule of upcoming projects.
- Require citywide electricity reliability reporting including general location, duration, and number of customers affected by each outage, updated upon request.
- Implement a local distribution infrastructure planning process that addresses City clean energy goals.
- Establish utility standards for abandoned infrastructure, erosion control, restoration of city infrastructure, permitting, customer service, and project management.
- Retain existing fee structure and dedicate one percent to fund Clean Energy Coordinating activities.

#### ***Establish a City-utility Clean Energy Agreement***

Simultaneous to the franchise agreements, negotiate a separate Clean Energy Agreement with utilities that focuses on achieving the City's Climate Action Plan goals. Key recommendations for this agreement are:

- Pursue legislation that clarifies the purpose and role of City-utility energy partnerships.

- Establish a Clean Energy Coordinating Partnership consisting of strategic City and Utility leadership.
- Define the scope to include setting annual renewable energy and energy efficiency goals, and providing planning, leadership, coordination, promotion, and accountability for meeting these goals.
- Require utility commitment to assisting the City in achieving Climate Action Plan and equity in employment goals.
- Suspend right to municipalize for the length of the agreement.
- Establish five-year term, unless cancelled with three months notice by either party.
- Dedicate funding through one percent of franchise fee revenues.
- Create community and technical advisory groups with formal standing.

### **Medium-term actions (6-18 months)**

#### ***Start program and policy implementation process***

Engage community and technical groups on program and policy priorities. The following areas are recommended near term focus points for implementation with a new city-utility partnership:

- Leverage large commercial customers as key partners in energy efficiency.
- Pursue and advocate for a utility rental energy efficiency program.
- Implement targeted utility efficiency programs for public facilities.
- Establish a Green Zones pilot with key community leadership.
- Explore innovative renewable energy supply buy-through arrangements with Xcel.
- Develop a local energy planning framework that could integrate with utility distribution system planning, and target areas such as solar or combined heat and power priority zones.

#### ***Pursue efficiency programs for downtown district heating/cooling system***

We also recommend the City examine options with NRG Energy for steam and chilled water efficiency programs, and explore possible terms of a district energy franchise agreement.



### ***Engage in state policy arenas***

Continue to engage in state energy policy decisions that can improve the City's ability to meet its goals. Key recommendations are:

- Support legislation for a statewide CCA evaluation, requesting state authorities to evaluate the potential rate impacts, energy supply mix, energy efficiency benefits, and barriers to implementation in fully retail regulated states.
- Engage with Public Utilities Commission proceedings including areas like solar rate reform, utility resource planning, and data privacy and access.
- Represent the City's interests in the "e21" stakeholder process on new utility business models.
- Advocate for increased state renewable energy goals for electric utilities.

### **Longer-term actions (2-5 years)**

#### ***Continue engagement in City-utility Partnership***

The City-utility Partnership that is developed will require sustained commitment from the city in order to be effective.

### ***Further explore the Community Choice***

#### ***Aggregation option***

As discussed in this report, the CCA could offer increased control over the City's ability to procure clean energy, but would require changes in the regulatory framework, some of which could have broad consequences well beyond CAA. The City should continue to engage other stakeholders, including state regulatory bodies, in exploring this option.

#### ***Continue to investigate the municipal option***

As the City gains experience with the effectiveness of the City-utility Partnership, the municipal option can continue to be explored. Should sufficient interest exist, solicit a robust review of the municipal financial model developed for the Pathways study, to strengthen the understanding of municipal utility financial implications. A further requirement would be a robust feasibility study, including an independent valuation of existing utility infrastructure; engineering analyses and cost estimates of separating the municipal system; and costs for meeting the City's renewable and carbon goals.





# END NOTES

## EXECUTIVE SUMMARY

1. 2012 Minneapolis Community Inventory. <http://minneapolismn.gov/sustainability/indicators/WCMS1P-087163>.
2. “Community Choice Aggregation: A Tool for Municipalities.” [www.icleiusa.org/action-center/learn-from-others/community-choice-aggregation-a-tool-for-municipalities](http://www.icleiusa.org/action-center/learn-from-others/community-choice-aggregation-a-tool-for-municipalities).
3. <https://mcecleanenergy.com/faq> and <https://mcecleanenergy.com/rates>.
4. Personal communication with Xcel Energy dated October 8, 2013. Minnesota Statutes 216B.45 specifies that the “just compensation” must take into account “the original cost of the property less depreciation, loss of revenue to the utility, expenses resulting from integration of facilities, and other appropriate factors.” The “integration of facilities” refers to re-integration of Xcel Energy’s system once Minneapolis has exited, a unique challenge since Minneapolis is located in the middle of Xcel Energy’s service territory.
5. City of Minneapolis Finance and Property Services Department.
6. One example being developed by Xcel Energy is the Customers Experiencing Multiple Outages Index, or CEMI. CEMI indicates geographically where customers have experienced more than four outages, and can more directly show which neighborhoods are experiencing systematic infrastructure-related problems.
7. Statewide spending figures are for rebates only; total spending includes numerous additional program implementation costs. These additional costs would be challenging to assign to a single city. Xcel Energy reported providing \$8.4 million in Minneapolis rebates and CenterPoint Energy provided \$527,000 for commercial and industrial programs. Statewide, Xcel Energy reported \$36,095,977 in electricity rebates, and CenterPoint Energy was \$2,639,963 for commercial and industrial. (Xcel Energy 2012 CIP status report p.76; CenterPoint Energy Personal Communication.)
8. This is calculated using the Climate Action Plan assumption that electricity sales rise at 0.5 percent every year, and natural gas sales will remain flat. We assume these projections include embedded savings from previous efficiency activities, but not activities going forward. Therefore, CIP savings in 2025 are calculated from the cumulative achievements of programs beginning in 2014.
9. Ordinance 47.190 was passed in 2013 and targets commercial buildings over 50,000 square feet and public buildings over 25,000 square feet. The first deadline for commercial building compliance is June 1, 2014, beginning with buildings 100,000 square feet and over. Public buildings complied beginning in 2013.
10. This segment has been traditionally hard to serve, in part because of the lower available savings per residential unit, and the so-called “split-incentive” barrier between landlord investment and tenant bill savings. Xcel Energy has an electricity direct install program. CenterPoint Energy recently completed a multifamily program pilot, and offers higher rebates for low-income rental properties.
11. Public building energy data from Minneapolis Energy Benchmarking and Disclosure 2012 status report; streetlight data from personal communication with City Staff. Total streetlight electricity estimated at 31 million kWh per year.
12. These include an increase in the eligible net metering size from 40 kW to 1 MW, introduction of a “Value of Solar” energy tariff, a 1.5 percent utility solar standard, and new requirements for community solar programs.

13. Xcel Energy's 2012 CO<sub>2</sub>e intensity number is 0.47 mtCO<sub>2</sub>e/MWh of electricity generated. Nuclear generation accounted for 28.9 percent of Xcel Energy's total 2012 generation mix, hydroelectric was 7.0 percent, and wind 11.9 percent. Xcel Energy Annual Update Environmental Disclosure and Generation, Transmission, and Distribution Cost estimates for Website. Docket Nos E,G999/CI-00-1343 and E999/CI-01-1127

14. This is estimated by adjusting Xcel Energy's 2012 carbon intensity of 0.456 mtCO<sub>2</sub>e/MWh, a mix of 22 percent renewables and 30 percent nuclear, to a mix that is 40 percent renewable and 30 percent nuclear. This estimation assumes that the Prairie Island and Monticello nuclear plants continue to supply their current capacity, which is uncertain.

15. Examples could include solar or CHP priority zones based on linkages with city infrastructure. Minnesota Statutes 216B.2426 requires the Public Utilities Commission to ensure that there are opportunities for distributed resources in state planning processes such as utility resource planning, biennial transmission planning, or certificates of need.

16. [www.betterenergy.org/projects/e21](http://www.betterenergy.org/projects/e21).

## CHAPTER 1

1. Minneapolis Climate Action Plan, City of Minneapolis, adopted June 28, 2013; [www.minneapolismn.gov/sustainability/climate](http://www.minneapolismn.gov/sustainability/climate).

## CHAPTER 2

2. For a more in-depth primer of the utility regulatory framework in the U.S., see: "Electricity Regulation in the US: A Guide," The Regulatory Assistance Project, March 2011.

3. EIA form 861 Retail Sales for 2012.

4. "Premises" is the term utilities use to refer to a single customer site. It might be a portion of a building, a stand-alone building, or a campus of buildings.

5. Using average costs of electricity to residential and commercial/industrial from EIA form 861.

6. Average unit cost derived from EIA form 176 gas sales and revenue for 2012.

7. Total sales derived from Minnesota Utility Data Book for 2007 – 2010.

8. Xcel Energy's total is \$8.4 million, and CenterPoint Energy's commercial and industrial rebates were \$527,000.

9. Personal Communication, Community Action of Minneapolis, 1/9/14.

10. 2011 Community Action of Minneapolis Annual Report. Income and budgets for that year reflect the availability of American Recovery and Reinvestment Act (ARRA) funds.

11. Minn. Stat. § 216B.01.

12. The five electric IOUs that serve Minnesota are Allete (Minnesota Power), Alliant (Interstate Power), Northwestern Wisconsin Electric, Otter Tail Power, and Xcel Energy (Northern States Power). These five provide generation, transmission, and distribution services to their customers. The five natural gas IOUs in Minnesota are Alliant, Great Plains Natural Gas, Xcel Energy, CenterPoint Energy, and Minnesota Energy Resources. These utilities only distribute natural gas to end-use customers, getting their natural gas at wholesale through pipelines owned by other entities that are regulated by the FERC.

13. In addition, a municipal utility may enter into a joint venture with other municipal utilities, municipal power agencies, cooperative associations, or investor-owned utilities to provide utility services. Minn. Stat. § 452.25, subd. 3.

14. See Minn. Stat. § 216B.40. However, as city borders change or expand, a municipal utility may acquire the facilities and electric service territory assigned to another utility, provided that appropriate compensation must be paid to the displaced utility. Minn. Stat. §§ 216B.44, .47. Also, the exclusive nature of service territories does not apply to very small providers. An entity that provides electricity or natural gas to 24 retail customers or less within the state may do so unencumbered by the exclusive service territory requirement. See Minn. Stat. § 216B.02, subdivision 4, and Minn. Stat. § 216B.37-40.

15. Minn. Stat. §§ 216B.01.

16. Minn. Stat. §§ 216B.02, subdivision 5.

17. Minn. Stat. §§ 216B.03.

18. Minn. Stat. §§ 216B.16, subdivision 7.

19. In re Investigation Into Commission's Jurisdiction over the City of Hutchinson's Intrastate Natural Gas Pipeline, 707 N.W.2d 223 (Minn. App. 2005) (holding MPUC exceeded its jurisdiction in applying intrastate pipeline statute to municipal utilities), review denied (March 14, 2006).

20. Since the MPUC has authority over the resource choices made by electric utilities to serve Minnesota consumers, the Commission also has jurisdiction over energy efficiency as a resource. In the 2013 session, the Minnesota Legislature determined that "... energy savings are an energy resource, and that cost-effective energy savings are preferred over all other energy resources...cost-effective energy savings should be procured systematically and aggressively in order to reduce utility costs for businesses and residents, improve the competitiveness and profitability of businesses, create more energy-related jobs, reduce the economic burden of fuel imports, and reduce pollution and emissions that cause climate change." Minn. Stat. § 216B.2401.

21. 15 U.S.C. § 717(a), (b) (plenary jurisdiction over interstate sale and transportation of gas by natural gas companies).

22. 15 U.S.C. § 717(c) (certain gas pipelines and facilities exempt from federal regulation if regulated by state); 15 U.S.C. § 717a(8) (defining state commission as state agency or municipality).

23. No MISO board member may have been a director, officer or employee of a member, user, or affiliate of a MISO member or user for two years before or after election to the board.

24. See [www.misoenergy.org/Library/Repository/Communication Material/Corporate/Corporate Fact Sheet.pdf](http://www.misoenergy.org/Library/Repository/Communication Material/Corporate/Corporate Fact Sheet.pdf).

## CHAPTER 3

25. CEAC is the City's primary citizen and stakeholder environmental commission. The Commission is advisory to the City's Environmental Coordinating Team (City department heads) on a variety of environmental issues and also makes recommendations to the City Council on selected environmental issues.

## CHAPTER 4

26. For ease of reference, "franchise fees" are the fees paid by the utility to the City. "City fees" and "surcharges" are the fees paid by Minneapolis customers to the utility.

27. Note that these percentage rates are lower than they were in 1994, the first year of the current franchise agreement. The initial rates were 5.0 percent for residential customers, 5.75 percent for commercial/industrial customers on secondary voltage, and 5.0 percent for large commercial/industrial customers on primary voltage.

28. Centum cubic feet.

29. For these large-volume customers that have the ability to use alternative fuels (such as fuel oil), the City has an option to raise this franchise fee up to a maximum rate of five percent to equalize the natural-gas franchise fee with the franchise fee for these alternate fuels.
30. Minn. Stat. § 216B.36.
31. Minn. Stat. § 301B.01.
32. Minn. Stat. § 216B.36.
33. Minn. Stat. § 216B 02, subd. 5.
34. Minnesota Department of Public Service, Report to the Minnesota Legislature on Franchise Fees and Public, Educational and Government (PEG) Access (Feb. 15, 1996) (hereafter the “DPS Report”) p. 1.
35. City of Cohasset v. Minnesota. Power, 798 N.W.2d 50 (Minn. 2011).
36. In re City of Rochester, v. Minnesota Pub. Utils. Comm’n, No. C0-90-808, 1990 Minn. App. LEXIS 833 (Minn. App. Aug. 15, 1990).
37. See Stoel Rives Memorandum, “City of Minneapolis Utility Franchise Agreements” at page 3 (September 7, 2012) (“Stoel Rives Memorandum”), included in this report as Appendix C.
38. See, e.g., Comments of the Minn. Office of Energy Sec., Minn. Pub. Util. Comm’n, Docket No. M-09-1422 (Feb. 10, 2010) (“The OES concludes that the Commission has thoroughly vetted this issue[sic], including the relevance of Minnesota Statutes, sections 216B.03 and 216B.07, and has concluded that an administrative fee associated with collecting a franchise fee is a rate and must be justified and approved as a rate prior to its imposition.”).
39. See, e.g., Order Barring Collections of Administrative Costs Through Franchise Fee and Requiring Compliance Filing, Minn. Pub. Util. Comm’n, Docket No. M-11-1105 (Dec. 30, 2011).
40. Reply Comments of the Minn. Office of Energy Sec. to the Reply Comments of Interstate Power and Light, Minn. Pub. Util. Comm’n, Docket No. M-08-200 (Apr. 18, 2008) (“Minnesota Statutes §216B.36 pertains only to the “Municipal Regulatory and Taxing Powers;” it does not pertain to the utility’s ratemaking, as the responsibility for such ratemaking falls under the Commission’s responsibility. It is important to make this distinction because it would not be reasonable for a municipality to require a utility to charge its customers for costs over and above the franchise fee, since such charges could lead to double-recovery of costs if those costs are recovered in rates charged to the citizens in the municipality and to all of the utility’s customers (thus charging the citizens in the municipality twice for such costs). Such a result would violate Minnesota Statutes §216B.03 requiring just and reasonable rates.”).
41. Stoel Rives Memorandum at page 6.
42. See, generally, [Nrgthermal.com/centers/mppls](http://Nrgthermal.com/centers/mppls).
43. While Minnesota Statutes defines a “public utility” in terms of “furnishing at retail natural, manufactured, or mixed gas or electric service,” it does not reference steam, hot water, or chilled water, the services provided by NRG. Minn. Stat. 216B.36 and Chapter 216B.2, subdivision 4.
44. Minn. Stat. § 301B.01.
45. *ibid.*
46. See Minnesota Statutes, § 216B.241, subdivision 1a, paragraphs (b) and (c).

## CHAPTER 5

47. See House File 1450/Senate File 1490 as introduced in the 2013 Minnesota legislative session. [https://www.revisor.mn.gov/bills/text.php?session=ls88&number=HF1450&session\\_number=0&session\\_year=2013&version=list](https://www.revisor.mn.gov/bills/text.php?session=ls88&number=HF1450&session_number=0&session_year=2013&version=list).

48. As noted in Chapter 2, the MPUC has near-plenary jurisdiction over the rates and services of an investor-owned utility like Xcel Energy and CenterPoint. To the extent the city's Franchise Agreement with these utilities does not cause the utilities to incur significant expense to comply, the Franchise Agreement would not implicate that jurisdiction.

49. Note that we are not talking about a "partnership" in any legal sense, but an entity in which the City and utilities agree to act as willing partners to achieve shared goals.

50. California Public Utilities Commission Fact Sheet: Energy Efficiency Government Partnership Programs (2010-2012), July 2010.

51. Legislation would be required for the City to implement this Pathway. Minnesota statutes, section 465.717, subdivision 1, specifies that City "may not create a corporation, whether for profit or not for profit, unless explicitly authorized to do so by law."

52. The full text of this letter and the City's response is included in Appendix E.

53. CCA is a model that has been used primarily for electric power and services, rather than natural gas. The wholesale natural gas industry was federally deregulated in the 1990s, legally separating retail service providers (natural gas local distribution utilities) from wholesale providers of natural gas itself. Large industrial and commercial consumers have been able to acquire their own supplies of natural gas from the wholesale market for two decades. The local utilities act as aggregators for residential and small business consumers, and are not allowed to charge a mark-up on the cost of the fuel. Moreover, recent prices for natural gas have been quite low relative to the peak in 2001. The market interest in natural gas aggregation is thus significantly lower than for electric aggregation.

54. "Community Choice Aggregation: A Tool for Municipalities." [www.icleiusa.org/action-center/learn-from-others/community-choice-aggregation-a-tool-for-municipalities](http://www.icleiusa.org/action-center/learn-from-others/community-choice-aggregation-a-tool-for-municipalities).

55. <https://mcecleanenergy.com/faq> and <https://mcecleanenergy.com/rates>.

56. U.S. EIA, [www.eia.gov/todayinenergy/detail.cfm?id=9691](http://www.eia.gov/todayinenergy/detail.cfm?id=9691).

57. These municipal utilities serve more than 47 million people or approximately 14 percent of the country's electricity customers; [www.publicpower.org/about/index.cfm?navItemNumber=37583](http://www.publicpower.org/about/index.cfm?navItemNumber=37583).

58. This may reflect that municipal utilities serve fewer rural areas, which are more expensive to serve.

59. While municipal utilities are required to report their progress toward the goal to the Division of Energy Resources on an annual basis, state regulatory agencies do not have the authority to order compliance with the goal, or that a municipal utility spend additional resources if they have not met the goal, as they can with investor-owned utilities. Also, as community-owned utilities, municipal utilities do not receive shareholder incentives for performance toward these goals, as the investor-owned utilities do.

60. Minnesota Department of Commerce, Division of Energy Resources, "Minnesota Conservation Improvement Program Energy and Carbon Dioxide Savings Report for 2010-2011" (October 2013), pages 13-18.



61. Minnesota Department of Commerce, Division of Energy Services, “Progress Report on Compliance By Electric Utilities With The Minnesota Renewable Energy Objective And The Renewable Energy Standard” (Jan 14, 2013), page 7. Note that the “renewable percentage available for 2012” does not indicate the amount of additional renewable energy capacity that the utility has developed, but rather the amount of renewable energy credits that have been accumulated and which can be applied to future years for compliance purposes; it is thus a good indicator for how far ahead a given utility is in meeting its compliance requirements, but not a good indicator of total renewable capacity on its system.
62. For comparison Xcel Energy’s renewable standards in Minnesota are for 30 percent by 2020 with an additional 1.5 percent solar standard.
63. [www.aceee.org/local-policy/city-scorecard](http://www.aceee.org/local-policy/city-scorecard).
64. More information is available from Austin Energy’s web site: [www.austinenergy.com](http://www.austinenergy.com).
65. [www.smud.org/en/about-smud/environment/climate-change.htm](http://www.smud.org/en/about-smud/environment/climate-change.htm). 66. Primary sources of information included annual reports and financial statements of Minnesota utilities and municipal power agencies, annual reports and financial statements of 22 large municipal utilities across the country, American Public Power Association survey results and statistical reports, Boulder municipal utility documents, Xcel Energy rate case filings and other documents, reports and tariff schedules of the Midcontinent Independent System Operator (MISO), reports of the U.S. Energy Information Administration, City of Minneapolis financial policies and budget documents, and other documents and website information. Conversations with staff of the above-mentioned organizations were held to confirm information and obtain additional information.
67. The City of Minneapolis Finance Department expects that the bonds sold to start up the municipal utility would not be General Obligation debt or otherwise indirectly supported by the property tax levy. Therefore, this debt would not count against the City’s statutory debt limit.
68. “APPA Selected Financial and Operating Ratios of Public Power Systems, 2011 Data,” American Public Power Association. The median number of retail customers per non-power generation employee was 273 for public power utilities with more than 100,000 customers. Based on this, a Minneapolis municipal utility, which would have approximately 177,625 customer premises, would have about 650 employees.
69. The business of a Minneapolis municipal utility might be more complicated, however, if it is not able to join a municipal power agency or otherwise contract with a single entity for wholesale power, transmission and market operations.
70. Thus, one cannot expect that revenue requirements would drop after a start-up period.
71. For the low-cost scenario, we made favorable assumptions to test whether a Minneapolis municipal electric utility might achieve a revenue requirement (per kilowatt-hour) that is comparable to Xcel Energy’s overall weighted-average rate. The high-cost scenario is moderately pessimistic, and reflects what the revenue requirement might be if costs run high for most cost components.
72. A low-cost strategy would be risky if it increases a municipal utility’s near-term exposure to high market prices during peak-demand periods and long-term exposure to rising price trends. The cost of \$0.062/kWh in the low-cost scenario (which includes transmission costs of about \$0.01/kWh) is probably lower than what it would cost for long-term, firm commitments of load-serving power. This means that only non-firm and short-term power purchase agreements may be available at this price. (“Firm” power is guaranteed to be available 24 hours a day, year-round.)
73. Energy Information Administration, “Green Power Markets.” <http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=5>.
74. <http://aweablog.org/blog/post/4000-mw-and-counting-xcel-energy-punctuates-busy-first-half-of-2013-for-rfps-contracts>.
75. See Chapter 7.

## CHAPTER 6

76. In 2013, Xcel Energy received “Exemplary Program” recognition from ACEEE for the Self-Direct Custom Efficiency Program, One-Stop Efficiency Shop Small Business Lighting program, Home Energy Squad Program (jointly implemented with CenterPoint Energy), High Efficiency Air Conditioning Program, and their Nonprofit Energy Efficiency Program (implemented in Colorado). Also in 2013, CenterPoint Energy received recognition for their Custom Rebate Program, Home Energy Squad Program, and Foodservice Program. See: [www.aceee.org/press/2013/03/aceee-recognizes-exemplary-energy-ef](http://www.aceee.org/press/2013/03/aceee-recognizes-exemplary-energy-ef).

77. Minnesota tied for second place in ACEEE’s 2012 State Energy Scorecard rankings of Utility and Public Benefits Programs and Policies (and 11th for energy efficiency overall, which includes transportation, appliance standards, and more).

78. Note that Minneapolis-specific percentages are an estimation, not official reporting by the Utilities. Utilities use historic average sales to determine compliance, not same-year sales.

79. This is calculated using the CAP assumption that electricity sales rise at 0.5 percent every year. We assume this escalation includes embedded savings from previous efficiency activities, but not activities going forward. CIP savings in 2025 are calculated from the cumulative achievements of programs starting in 2013.

80. Based on annual production of 1,286 kWh/kW installed for Minneapolis (NREL PVWatts calculator).

81. As was previously noted, unusually warm temperatures suppressed heating demand, while a prolonged outage at the Sherburne County Generating Station (“Sherco”) transferred more gas sales to the Riverside Generating Station.

82. Including Department of Commerce research for Minnesota, and Center for Energy and Environment program experience.

83. Overall, we estimate single-family homes use twice as much energy as multifamily units (two-thirds of the total residential use). Actual comparative sales data are not available, as utilities often do not have a record of which category a premises belongs to. This estimation is based on the relative number of homes to multifamily units, and the estimated average usage of each.

84. Source: Climate Action Plan baseline and targets accounting calculations. City Hall reports 7,036 mtCO<sub>2</sub>e in 2012 (Minneapolis 2012 Energy Benchmarking Report).

85. Renewable and nuclear energy are the only options for completely carbon-free electricity, but fossil fuels also vary in their carbon intensity.

86. Xcel Energy’s 2012 CO<sub>2</sub>e intensity number is 0.47 mtCO<sub>2</sub>e/MWh of electricity generated. Nuclear generation accounted for 28.9 percent of Xcel Energy’s total 2012 generation mix, hydroelectric 7.0 percent, and wind 11.9 percent. Xcel Energy Annual Update Environmental Disclosure and Generation, Transmission, and Distribution Cost estimates for Website. Docket Nos E,G999/CI-00-1343 and E999/CI-01-1127.

87. Chief among these are the future of: 1) Units 1 and 2 at Xcel Energy’s Sherburne County Generating Station, which are 750 MW coal-fired units that were constructed in the 1970s; and 2) the three nuclear generation units that Xcel Energy operates at Prairie Island and Monticello, which represent almost 1,800 MW of carbon-free, but nuclear waste producing, generation.

88. One note is that the methods for counting the carbon reductions attributable to renewable energy systems in Minneapolis are not clearly established. There is the potential for under-counting the benefit if the city credits their electricity savings with a utility carbon intensity number that includes the Minneapolis systems in its average. This is currently a minor effect but should be considered if Minneapolis reaches significantly higher penetration of renewable distributed generation.

89. While the growth of alternative natural gas sources, namely hydraulic fracturing, has raised questions about the high life-cycle carbon impacts of certain natural gas sources, this is not an immediate concern for Minnesota. This report uses a natural gas carbon intensity of 0.0053 mtCO<sub>2</sub>e per therm, consistent with the Climate Action Plan.
90. <http://mn.gov/commerce/energy/topics/resources/energy-legislation-initiatives/minnesota-renewable-energy-integration-transmission-study.jsp>.
91. This is estimated by ramping Xcel Energy's 2012 carbon intensity of 0.456 mtCO<sub>2</sub>e/MWh, a mix of 22 percent renewables (including hydro) and 30 percent nuclear, to a mix that is 40 percent renewables and 30 percent nuclear in 2030. The difference between the 2012 and 2025 carbon intensity values is multiplied by the projected city electricity use, after CAP efficiency and renewable energy targets are made. Because 2012 was a low-carbon year to use for a baseline, due in part to Sherco outages, this underestimates the Minneapolis carbon savings of an increased RES policy.
92. U.S. Energy Information Administration, State Profiles and Energy Estimates, 2011 and 2012 data.
93. [www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/Cost-effectiveness.htm](http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/Cost-effectiveness.htm).
94. According to the 2010 Census, 39 percent of Minneapolis households earn less than \$35,000 per year. Forty percent of the total population is non-white, and 19 percent of Minneapolitans speak a language other than English at home.
95. Cite 2005 study.
96. Personal Communication, Community Action of Minneapolis, 1/10/14.
97. Minnesota Energy Assistance Eligibility Guidelines. Minnesota Department of Commerce. <https://mn.gov/commerce/energy/topics/financial/Energy-Assistance-Program/Eligibility-Guidelines.jsp>. Income thresholds are calculated based on 50 percent of State Median Income (SIM) or 110 percent of Poverty, whichever is greater. In Minnesota, this means households of one with an income of \$22,694 or less, households of two with an income of \$29,677 or less, and households of four with an income of \$43,642 or less are eligible for energy assistance.
98. LIHEAP Study, 2005. 1.2 percent of households with incomes above \$30,000 a year experience a high energy burden and 12.0 percent of them experience a moderate energy burden.
99. This number includes some condos, but the majority are for rental properties (Source: Minneapolis Assessor's Office).
100. Currently, CenterPoint Energy provides services and program materials in English; Xcel Energy publishes its materials in English and Spanish. The Xcel Energy's small business program literature is available in five languages (English, Spanish, Hmong, Somali, and Vietnamese) though it is only published online in English.
101. This estimation is based on the distribution of the building stock across the city, as well as estimations of the relative savings potential of multifamily units and single-family homes.
102. Totals are for kindergarten through high school. Minneapolis Public Schools: [http://studentaccounting.mpls.k12.mn.us/2013-2014\\_3.html](http://studentaccounting.mpls.k12.mn.us/2013-2014_3.html).
103. Sadd, J., Pastor, M. and Morello-Frosch, R. Playing It Safe: Assessing Cumulative Impact and Social Vulnerability through an Environmental Justice Screening Method in the South Coast Air Basin, California. International Journal of Environmental Research and Public Health. Vol. 8. 2011. [www.ncbi.nlm.nih.gov/pmc/articles/PMC3108119/pdf/ijerph-08-01441.pdf](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3108119/pdf/ijerph-08-01441.pdf).
104. Leibert, Alessia. "Minnesota's Emerging Green Economy: Green Jobs Report 2011." Minnesota Department of Employment and Economic Development. November 2011.
105. Estimations are based on CEE's One-Stop Efficiency Shop™ program, which tracks labor and material expenditures. These represent short-payback projects that are likely to maximize the benefit of bill savings compared to upfront job benefits.

106. Assuming an average electricity cost of \$0.08/kWh, demand charge of \$15/kW, and gas cost of \$10/Dth. Savings are calculated at the customer using 8 percent line losses for electricity. Does not include CenterPoint Energy data for the residential sector prior to 2010.

107. [www.bizjournals.com/twincities/blog/real\\_estate/2013/06/centerpoint-looking-for-more-downtown.html](http://www.bizjournals.com/twincities/blog/real_estate/2013/06/centerpoint-looking-for-more-downtown.html) and [www.bizjournals.com/twincities/blog/real\\_estate/2012/06/opus-xcel-office-nicollet-mall-tower.html](http://www.bizjournals.com/twincities/blog/real_estate/2012/06/opus-xcel-office-nicollet-mall-tower.html) .

108. MIT CoLab, “Operational Energy Savings and Economic Development.” Massachusetts Institute of Technology. January 2012.

109. See, e.g., Price Waterhouse, “Power and utilities changing workforce: Keeping the lights on” (December 2013). [www.pwc.com/en\\_US/us/power-and-utilities/publications/assets/pwc-power-utilities-changing-workforce.pdf](http://www.pwc.com/en_US/us/power-and-utilities/publications/assets/pwc-power-utilities-changing-workforce.pdf).

110. [www.xcelenergy.com/About\\_Us/Energy\\_News/Emergency\\_Notices/June\\_21\\_Storm\\_Outage\\_Report\\_for\\_Minnesota](http://www.xcelenergy.com/About_Us/Energy_News/Emergency_Notices/June_21_Storm_Outage_Report_for_Minnesota).

111. This is calculated by applying Xcel Energy’s systemwide fuel source breakdown to Minneapolis’ total use (Docket #00-1343 filed 5/29/13). Windsource sales are subtracted from Xcel Energy’s total, which we assume includes Windsource for environmental reporting purposes.

112. As outlined earlier in this chapter, in 2012 Minneapolis customers purchased 56,913 MWh of Windsource and generated approximately 2,700 MWh of local solar.

## CHAPTER 7

113. The valuation includes the cost of avoided energy and capacity, avoided transmission and distribution line loss and investment, avoided environmental impacts from electricity generation, etc.

114. One example would be devices that respond in real-time variable renewable energy supply.

115. For additional information on the Value of Solar methodology and tariff, see <https://mn.gov/commerce/energy/topics/resources/energy-legislation-initiatives/value-of-solar-tariff-methodology%20.jsp>.

116. [www.betterenergy.org/projects/e21](http://www.betterenergy.org/projects/e21).

117. For example, utility resource planning, biennial transmission planning, or certificates of need.

118. See IREC “Integrated Distribution Planning Concept Paper: A Proactive Approach for Accommodating High Penetrations of Distributed Generation Resources” (May 2013); [www.irecusa.org/wp-content/uploads/2013/05/Integrated-Distribution-Planning-May-2013.pdf](http://www.irecusa.org/wp-content/uploads/2013/05/Integrated-Distribution-Planning-May-2013.pdf).

119. [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201320140AB327](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB327).

120. Craig Lewis, “It’s Time for Grid Planners to Put Distributed Resources On Par With Transmission” GreenTechGrid (November 13, 2014). [www.greentechmedia.com/articles/read/its-time-for-grid-planners-to-put-distributed-resources-on-par-with-transmi](http://www.greentechmedia.com/articles/read/its-time-for-grid-planners-to-put-distributed-resources-on-par-with-transmi)

# APPENDICES

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# Appendix A: Inventory of Minneapolis' Energy Plans, Policies, and Actions

Minneapolis already has many formally adopted energy policies and plans, including a number of recent plans. Over the past ten years, the city has implemented several programs and taken a number of actions designed to achieve specific energy or energy-related outcomes. We worked with City staff to assess the resulting inventory and develop a first draft vision rooted in existing policy. The inventory included:

1. A summary of existing policies related explicitly or implicitly to energy
2. An outline of recent actions or programs that demonstrate a policy preference or desired outcome
3. Examples of current energy issues that demonstrate conflicts or choices among different goals

For each plan, policy, action, or program, the inventory describes the document or initiative, identifies the relevant energy policies or issues, and describes briefly how the public or stakeholders were engaged by the city as part of the process.

## EXISTING POLICIES

### 1. Minneapolis Plan for Sustainable Growth

The City's Comprehensive Plan is the foundational policy document for city programs, regulations, and capital improvements and investments. The City completes a comprehensive plan update every ten years that must be consistent with the Metropolitan Council Regional Framework and system statements, as per Minnesota Statutes (Minn Statutes 473.858). Most recently, the City Council approved the Minneapolis Plan for Sustainable Growth in October of 2009.

The Plan's ten topical chapters outline the goals and policies that guide the development of a Minneapolis Energy Vision.

- |                                    |                               |
|------------------------------------|-------------------------------|
| 1. Land use,                       | 6. Environment,               |
| 2. Transportation,                 | 7. Open Space and Parks,      |
| 3. Housing,                        | 8. Urban Design,              |
| 4. Economic Development,           | 9. Heritage Preservation, and |
| 5. Public Services and Facilities, | 10. Arts and Culture.         |

Each chapter includes a goal statement, context for the subject matter, policies, and implementation guidelines to achieve the goals of the chapter and the overall plan. A number of goals and policies specifically mention energy issues, in particular those in the Environment chapter. A number of other goals and policies, while not explicitly mentioning energy, affect energy-related considerations for the Energy Vision, as noted below.

### ***Energy-Specific Policies***

These policies directly address desired energy generation, use, and energy infrastructure in the City of Minneapolis.

#### **Economic Development Policies**

- **Policy 4.13:** Downtown will continue to be the most sustainable place to do business in the metro area.

#### **Environment Policies**

- **Policy 6.1:** Integrate environmental, social and economic goals into decision-making processes at all levels.
- **Policy 6.2:** Protect and enhance air quality and reduce greenhouse gas emissions.
- **Policy 6.3:** Encourage sustainable design practices in the planning, construction and operations of new developments, large additions and building renovations.
- **Policy 6.4:** Expand the use of renewable energy.
- **Policy 6.5:** Support the efficient use of land and development that reduces the reliance on fossil fuels.
- **Policy 6.8:** Encourage a healthy thriving urban tree canopy and other desirable forms of vegetation.
- **Policy 6.10:** Coordinate and operate waste management programs that focus on reducing, reusing and recycling solid waste prior to disposal.

#### **Heritage Preservation Policies**

- **Policy 8.10:** Promote the benefits of preservation as an economic development tool and a method to achieve greater environmental sustainability and city vitality.

### ***Related Non-Energy Policies***

These policies could direct aspects of the desired energy use, generation, and infrastructure in the City of Minneapolis.

#### **Land Use Chapter**

The comprehensive plan does not offer details regarding preferred locations of energy use, production, and facilities. The future land use map, for instance, does not dictate the preferred locations of energy infrastructure:

*“Transportation, communication, and utility uses include roads, rail lines, communications towers, energy production, and similar facilities. While these are important to the city, they are not specified on the map. Most are generally allowed in a range of districts, and specific regulations govern their location and appearance” (page 1-9).*

#### **Economic Development Chapter**

The economic development chapter includes a number of policies that could direct the energy vision. These policies encourage use of public development tools to create economic opportunity, partnership with private and business entities to meet economic development goals, and support strategic use of infrastructure to achieve economic development.

- **Policy 4.1:** Support private sector growth to maintain a healthy, diverse economy.
- **Policy 4.3:** Develop and maintain the city’s technological and information infrastructure to endure the long-term success and competitiveness of Minneapolis in regional, national and global markets.
- **Policy 4.11:** Attract businesses to the city through strategic infrastructure investments.

### **Public Services and Facilities Chapter**

The public services and facilities chapter includes a number of important policies describing the infrastructure that enables a high quality of life. The chapter does not specifically address energy infrastructure, but does recognize that the city's infrastructure lies in both public and private ownership, and that the city has a policy interest in both.

- **Policy 5.4:** Enhance the safety, appearance, and effectiveness of the city's infrastructure.
- **Policy 5.5:** Improve the appearance and physical condition of private property throughout the city.

### **Environment Chapter**

The environment chapter includes policies that encourage economic use of local resources, development of local businesses, and reducing minimizing the city's carbon footprint.

- **Policy 6.15:** Support local businesses, goods and services to promote economic growth, to preserve natural resources, and to minimize the carbon footprint.

### **Urban Design Chapter**

The urban design chapter notes the design, safety, and aesthetic issues around public infrastructure and overhead utilities.

- **Policy 10.19:** Landscaping is encouraged in order to complement the scale of the site and its surroundings, enhance the built environment, create and define public and private spaces, buffer and screen, incorporate crime prevention principles, and provide shade, aesthetic appeal, and environmental benefits.

### **Public and Stakeholder Engagement**

The 2008 Comprehensive Plan Update was a collaborative process led by CPED-Planning Division in close cooperation with the City Planning Commission, Public Agencies, the City Council, residents, and stakeholders. The Plan update included an intensive public participation process including community forums, public surveys and results, public open houses and comment periods, and multi-media outreach. Additionally, Planning Division staff conducted internal meetings with various City Departments to equally address all community issues. There were six main phases to the public process:

- |  |   |
|--|---|
| 1. Incorporating input from previous public planning process | 5. City's approval process of draft to submit to Metropolitan Council |
| 2. Visioning for direction of plan                           | 6. City's final approval process after Metropolitan council review    |
| 3. Focus groups on key issues                                |   |
| 4. Review of draft policy content                            |   |

Focus groups representing a variety of stakeholders including realtors, environmental advocates, neighborhood groups, architects, heritage preservationists, and NRP staff provided in-depth insights into specific elements of the plan.

## **2. Climate Action Plan**

In January 2012, the City of Minneapolis adopted targets to reduce citywide greenhouse gas emissions: 15 percent by 2015 and 30 percent by 2025, using 2006 emissions as a baseline. The Climate Action Plan, adopted by the City Council in June of 2013, serves as a roadmap for how the city can achieve those goals. The plan is broken up into 7 chapters:

- |                 |  |
|-----------------|--|
| 1. Introduction | 2. Climate Change – Background and Impacts |
|-----------------|--|

3. Emissions Profile and Reduction Targets
4. Plan Development
5. Implementation Goals

6. Greenhouse Gas Emissions Reductions Strategies
7. Implementation

### ***Chapter 3. Emissions Profile and Reduction Targets***

This Chapter measures city greenhouse gas (GHG) emissions over a 5-year period. The emissions profile identifies the biggest opportunities for emission reductions within the city borders, consistent with national community GHG inventory protocols. The Greenhouse Gas Inventories<sup>i</sup> identify the methodology for quantifying emissions. The emissions data show that commercial and industrial buildings account for the largest portion (46 percent) of GHG emissions, transportation accounts for 22 percent, and residential buildings account for 20 percent of the city's emissions. The Climate Action Plan lays out goals and actions aimed at reducing emissions in each of these sectors.

Many of the goals and actions are directly related to energy issues including changes to the generation and consumption of electricity and natural gas, as well as energy use associated with transportation and the city's pattern of land uses.

#### ***Energy Specific Goals***

The Climate Action Plan sets the following goals for reducing greenhouse gas emissions through energy efficiency and renewable energy in public and private sector buildings and facilities.

#### **Building and Energy Goals**

- Achieve 15 percent energy efficiency in residential buildings from the growth baseline by 2025.
- Achieve 20 percent energy efficiency in commercial/industrial buildings from the growth baseline by 2025.
- Increase electricity from local and directly purchased renewables to 10 percent of the total consumed by 2025.
- Achieve a 1.5 percent annual reduction in greenhouse gas emissions from City facilities.

To implement these goals, the City identified 17 cross-cutting strategies. The plan identified ten strategies specifically targeting the building sector (residential, commercial, and industrial), and five strategies to increase use of renewable energy.

#### **Transportation and Land Use Goals**

The other major sector contributing to GHG emissions is Transportation and Land Use. The Climate Action Plan set seven goals to help curb emissions in this area, two of which address issues related to the energy vision process:

- Support livable, walkable, bikeable, safe and growing neighborhoods that meet the needs of all Minneapolis residents, provide a range of housing types at all income levels, and protect against displacement of and provide opportunities to current resident, businesses and cultural communities.
- Through local action and federal and state legislation, support a transition to cleaner fuels and more efficient vehicles.

### ***Balancing Energy and Non-Energy Priorities***

Finally, the Minneapolis Climate Action Plan provides some guidance on managing risks and opportunities of energy goals. For instance, the following strategy calls for mitigation of the cost risk to low-income households associated with a specific high value GHG-reducing action:

**Continue to shift to LED streetlights.** Replacing conventional bulbs with LEDs can net up to a 50 to 60 percent reduction in energy use. As capital costs come down, continue to replace older bulbs with more efficient LEDs, with a long term goal of citywide LED use. During typical street reconstruction projects, which include streetlight retrofits, the cost of upgrade/replacement is assessed to property owners on that street. These assessments can have a higher relative impact on low-income property-owners. For streetlight retrofits, innovative financing mechanisms should be explored to avoid this impact. For example, most of the streetlights in the city are owned by Xcel Energy, and a retrofit may be part of the City's franchise renegotiation with Xcel.

Similarly, the Climate Action Plan includes five implementation goals that acknowledge the tradeoffs among different policies and actions, and provide some guidance for how the city might address such tradeoffs in evaluating pathways to the city's desired energy future. The goals are:

1. Prioritize high impact, short timeframe, equitable, and cost effective strategies.
2. Seek strategies with multiple benefits.
3. Advance equity in infrastructure and environmental benefits between neighborhoods and communities.
4. Monitor progress annually and based on results and new developments, revisit goals and strategies at minimum every three years.
5. Begin assessing and building resiliency to climate changes and impacts.

### ***Public and Stakeholder Engagement***

The Climate Action Plan ran an extensive and multi-faceted process to engage stakeholders. First, the city created a Steering Committee and three technical committees of technical experts, community members, and representatives from particular industries. The Steering Committee was the decision-making body for Plan recommendations to the City Council.

Second, at the request of several environmental justice (EJ) organizations, the city established an EJ Working Group to review work by the technical committees and participate in the Steering Committee process. The EJ Working Group provided extensive recommendations for addressing the concerns of communities of color, American Indians, and low-income communities.

Third, the City solicited direct input from community members and businesses. Feedback on Climate Action Plan greenhouse gas emissions reductions strategies came from public open houses, an online survey, Hennepin County, and CenterPoint Energy. Formal comments were submitted by the City of Minneapolis citizen boards and commissions submitted formal comments.

### **3. State and Federal Legislative Advocacy**

Minneapolis continues to actively lobby an energy agenda consistent with city policies at the state and federal level. For example, Minneapolis pursued two bills in the 2012-2013 legislative session that would help move the city's energy vision and utility franchise negotiations forward:



- Green, Reliable, Affordable Clean Energy Bill (HF1450/SF1490; Rep. Ray Dehn and Sen. Kari Dziedzic). This legislation would require that energy companies provide timely reports on service continuity, meet specific state-established energy goals, and invent consumers to be more energy efficient.
- Franchise Reform Energy Energy Dependence of Municipalities Bill (HF945/SF911; Rep. Frank Hornstein and Sen. Jeff Hayden). This legislation would require that the State Public Utility Commission use a more fair formula for placing a value on an energy company, which would make it more feasible for communities to consider pursuing a municipal-owned energy utility.

These bills were not approved in this session, but the city intends to work to move them forward in the next session.

At the federal level, Minneapolis Mayor RT Ryabak joined 115 U.S. mayors to make three major requests of the 110th Congress:

- Establish a national cap on greenhouse gas emissions and a flexible market-based system of tradable allowances for emitting industries;
- Pass climate-friendly energy and transportation policies; Create funding and incentives to help cities in their effort to curb greenhouse gas emissions; and
- Establish a national goal to cut greenhouse gas emissions 80 percent by 2050.

#### **4. Franchise Agreements**

The City of Minneapolis' current franchise agreements are described in Chapter 4.

##### ***Public and Stakeholder Engagement***

The public engagement process at the time the current franchise agreements were established is not documented. However, conducting public hearings as the City prepares to renegotiate, the Minneapolis City Council will conduct two public hearings for the consideration of authorizing the establishment a municipal utility in lieu of renegotiating the franchise agreements. The hearings were scheduled for 10 a.m. August 1, 2013 for electric and 10:30 a.m. August 1, 2013 for gas.

#### **5. 5-year City Goals and Strategic Directions**

During a strategic planning process, the Mayor and City Council identified 6 overarching goals and forty-one strategic directions to serve as the City's guide through 2014. On April 2, 2010, the Minneapolis City Council adopted 5-year goals<sup>2</sup> intended to guide the council in the following areas:

- A Safe Place to Call Home
- Jobs & Economic Vitality
- Livable Communities, Healthy Lives
- Many People, One Minneapolis
- Eco-focused
- A City that Works

Relevant strategic directions under the Eco-focused goals include successful integration of clean, renewable energy sources; pristine trees, lakes, and streams; enjoyment of parks; availability of locally grown food; and reductions in energy consumption and waste production.

### ***Public and Stakeholder Engagement***

The strategic planning efforts<sup>3</sup> were part of an internal process. Every four years the city engages in a citywide strategic planning effort to develop citywide goals and strategic directions that establish guidelines for each department to develop its business plan. Elected officials and department leadership participated in three sessions to determine a vision, five-year goals, and a strategic direction.

## **6. Sustainability Indicators**

In 2003, the Minneapolis City Council adopted a resolution<sup>4</sup> that initiated the Minneapolis Sustainability Program and the use of sustainability principles to guide city decision-making. In 2006, the city adopted six city-wide sustainability goals – one of which was “eco-focused” and included integrating “clean, renewable energy sources” and reducing energy use. That same year, the City Council directed staff to include the Sustainability Indicators in work plans and budgets. The City modifies the indicators periodically and now has 26 indicators<sup>5</sup>.

The 26 Sustainability Indicators measure the community’s progress toward environmental, economic, and social sustainability. Each indicator has a 10-year measurable target so the City can track its progress. Two indicators – Climate Change and Renewable Energy - directly relate to energy. The targets under are to:

- Reduce citywide greenhouse gas emissions by 15 percent by 2015, and 30 percent by 2025 using 2006 as a baseline.
- Reduce municipal operations GHG emissions by 1.5 percent annually.
- Permit 70 renewable energy projects by 2015 citywide.
- In municipal operations, increase renewable energy by 1.5 percent annually.

In addition, strategies for meeting energy indicators may affect (or be perceived to affect) non-energy sustainability indicators. Strategies to meet the energy indicators can work in synergy or in conflict with the following non-energy indicators: Asthma, Air Quality, Tree Canopy, Green Jobs, Community Engagement, and Cost-Burdened Households.

### ***Public and Stakeholder Engagement***

The City of Minneapolis has engaged residents in its efforts around sustainability for twenty years. In that year two public roundtable meetings were held to express a 50-year vision for the city. Approximately 100 residents and professionals attended the meetings and drafted a series of sustainability initiatives. Minneapolis Community Environmental Advisory Commission (CEAC)<sup>6</sup>, Minneapolis’ citizen/stakeholder environmental commission, also reviews and provides comments and recommendations on the sustainability indicators and progress reports. CEAC consists of 18 community members who assist and advise the city’s sustainable development efforts, serving as a key player in assessing sustainability indicators.

## **7. U.S. Conference of Mayors Climate Protection Agreement**

The U.S. Conference of Mayors Climate Agreement is a platform where participating cities commit to take actions to reduce greenhouse gas emissions and curb their climate impact. The actions range from reducing greenhouse gas emissions in their own communities to urging state and federal policy-makers to enact programs to meet or exceed the U.S. emission reduction target in the Kyoto protocol. Mayor R.T. Rybak was one of the first mayors to sign onto the agreement in 2005.

### ***Public and Stakeholder Engagement***

No organized public engagement was undertaken prior to Mayor Rybak's signing of the agreement. The city does promote its status as a Mayors Climate Agreement signatory in ongoing climate action planning and programs.

## **8. Commercial Building Rating and Disclosure Policy**

On February 8, 2013, the City Council unanimously adopted a new section to the city's ordinance code; Section 47.190<sup>7</sup> Commercial Building Rating and Disclosure. The Commercial Rating and Disclosure Policy requires all commercial buildings greater than 50,000 square feet to enter building energy usage and water consumption data into U.S. EPA's Energy Star Portfolio Manager (or equivalent benchmarking program) and to disclose performance reports to the City of Minneapolis.

In the City's review of the ordinance, the policy is described as a "tool that uses market forces, not performance or design mandates, to increase building energy performance awareness and motivate owners and tenants to invest in energy efficiency improvements."<sup>8</sup>

Beginning in 2013, all city-owned buildings over 25,000 square are required to report to the city. Commercial buildings at or above 100,000 square feet will begin reporting in 2014, and buildings at or above 50,000 square feet will begin in 2015. The city will begin disclosing this information as early as 2013.

### ***Public and Stakeholder Engagement***

The City conducted outreach with a number of stakeholder groups including building owners, property management companies, real estate professionals, energy utilities, and construction services companies. City staff refined the ordinance based on feedback received, including "adding exemptions to the ordinance for buildings facing financial distress, new construction, and unoccupied buildings."<sup>9</sup> The City also held a public hearing regarding the Building Rating and Disclosure Policy on January 28, 2013.

## **9. Government Buildings Energy Efficiency - EECBG**

In 2009, the American Recovery and Reinvestment Act was signed into law, allocating \$3.2 billion to the Energy Efficiency and Conservation Block Grant (EECBG). The City of Minneapolis (along with St. Paul) received \$30 million in EECBG funds<sup>10</sup>. A portion of these funds, along with EECBG funds from the Minnesota Department of Commerce allowed the city to move forward with initializing energy retrofits on the City's 65 municipal buildings. This project's objectives<sup>11</sup> were to conduct energy audits of selected

City Facilities to develop an Energy Efficiency and Conservation Program, with the intent that the City would implement efficiency retrofits in compliance with this Program.

### ***Public and Stakeholder Engagement***

No formal outreach was conducted for this project. However, the public may access information on the City website.

## **10. Minneapolis Climate Change Grants**

The Minneapolis Climate Change Grants funded projects to encourage activities that reduce the impacts of climate change. Their purpose was to energize local groups, empowering residents and businesses to change their behaviors. The program required each proposal to use the Minnesota Energy Challenge to identify measurable actions offering significant carbon savings.

The Minneapolis Sustainability Office ran this program. The grants awarded between 2007 and 2011 leveraged more than \$1.1 million in additional funding, including in-kind contributions, donated staff and volunteer time, and other grants.

### ***Public and Stakeholder Engagement***

This program engaged thousands of residents via the Energy Challenge and events related to grant projects events. Additionally, the city issued a report<sup>12</sup> that includes the challenges and lessons learned when conducting outreach around energy efficiency and climate change.

## **11. Residential Energy Efficiency Revolving Loan Program**

The City of Minneapolis worked with Community Energy Services to provide no to low interest loans to Minneapolis homeowners for the purpose of implementing energy saving measures. After attending community workshops that provided training on specific energy-saving actions, homeowners could then sign up for an advanced energy audit that included specific recommendations for major upgrades. Program participants had access to financing to complete these improvements.

Minneapolis provided more than \$800,000 for the program, \$747,000 of which was spent. The program also leveraged \$3.1 million in additional private funding. The City successfully engaged its residents to increase the number of home energy improvements among households.

### ***Public and Stakeholder Engagement***

The City worked with CEE to reach out to the public in order for residents to take advantage of this loan program. The program reached 6,000 households.

## **12. Solar Cities**

In 2009, the U.S. Department of Energy (DOE) named 25 U.S. cities as Solar America Cities; Minneapolis - St. Paul were among those selected. DOE recognizes these cities based on their commitment to adopting solar technology. The awards are intended to accelerate solar implementation in these cities by providing financial and technical assistance for innovation efforts.

The Minneapolis-Saint Paul Solar in the Cities Initiative<sup>13</sup> set an aggressive goal to increase solar capacity 500 percent in the Twin Cities from 2009 to 2011. The top five priority areas included city and state policies, financing mechanisms, integrating solar in city infrastructure, building public awareness, and training and education. Sections 11, 12, and 13 highlight the Minneapolis' accomplishments since being selected for this program.

### ***Public and Stakeholder Engagement***

Solar in the Cities Initiative included partnerships with the Minnesota Department of Commerce, Xcel Energy, the League of Minnesota Cities, Fresh Energy, and several other groups. The *Solar in the Cities Initiative* also coordinated multi-stakeholder working groups that resulted in the passage of strong solar legislation in 2009<sup>14</sup> and the advancement of 2010 legislative initiatives. The program also actively engaged solar contractors, environmental organizations, and neighborhood groups to develop solar-friendly permitting processes and regulation.

## **13. Minneapolis Solar Energy Systems**

In addition to the solar installations that were part of the Energy Innovation Corridor (below), the Minneapolis City Council approved the installation of one of the largest PV systems in the State on top of the Convention Center in January 2010. The 600 kW system was installed in November of 2010; it produces 750,000 kWh of renewable electricity each year, providing 5 percent of the Convention Center's power. The project was funded in part by a Renewable Development Fund grant.

### ***Public and Stakeholder Engagement***

The public was not directly engaged in the formation or approval of this installation.

## **14. Energy Innovation Corridor**

The Energy Innovation corridor is a showcase of energy efficiency, renewable energy, transportation, and smart technology along the new light rail line that runs between Minneapolis and St. Paul. Both cities have been actively involved in implementing energy technologies along this corridor.

Minneapolis has installed solar systems on seven of its buildings within the EIC, which will save the city \$32,200 in energy costs and avoid 170 metric tons of greenhouse gas emissions each year.<sup>15</sup>

### ***Public and Stakeholder Engagement***

The Energy Innovation Corridor used significant branding and marketing to promote energy efficiency and clean energy initiatives. The EIC partnership conducted direct outreach to businesses and residents within the corridor, produced an electronic newsletter, maintained a website displaying progress and new initiatives, and conducted a variety of ad hoc publicity and marketing efforts.

## **15. Solar Ordinances and Permits**

The city building department adopted guidelines and standards by issuing solar energy permits and created a solar energy ordinance<sup>16</sup> (adopted December of 2010) that defines standards for building mounted and freestanding solar energy systems. The city developed a streamlined permitting process for residential solar electric systems, based on national best practices and crafted to meet Minneapolis'



circumstances. The ordinances establish an “as-of-right” solar installation process, clarify solar access easements provisions, and provide guidelines to protect existing solar systems when proposed development may shadow them.

### ***Public and Stakeholder Engagement***

The Solar Cities program conducted outreach to solar contractors and building officials on numerous occasions to review program goals and draft language for solar permitting documents. The comments resulted in significant changes to the ultimate permit process. The City engaged multiple stakeholders and held public hearings throughout the ordinance writing process and modified language in response to stakeholder input.

## **16. Thinc.GreenMSP – Manufacturing Better Business**

The Mayor’s Initiative on Green Manufacturing began in 2006, when Mayor Rybak and Mayor Coleman partnered with the BlueGreen Alliance to make the Twin Cities a national leader in the growing green economy. The initiative identified the region’s best strategies and opportunities in green business. The research conducted through this initiative resulted in Thinc.Green<sup>MSP</sup>, which integrates a toolkit to “grow the region’s economy, to create regional distinction, to drive demand for green products and services, and to generate momentum and support for continues innovation in green manufacturing.”<sup>17</sup> In September 2010, the City Council adopted a resolution authorizing and directing staff to enter into a Joint Powers Agreements with the City of St. Paul to advance and implement Thinc.Green<sup>MSP</sup>.

Thinc.Green<sup>MSP</sup> will partner with private, public, and academic centers to implement Strategic Initiatives to improve the Twin City’s manufacturing base; grow the market for green products and services; brand MSP as a great place to develop green business; and expand the green business-friendly environment to make MSP an attractive choice for manufacturers and suppliers.

### ***Public and Stakeholder Engagement***

The Thinc.Green<sup>MSP</sup> Steering Committee coordinated of private, public, and intergovernmental efforts to grow the region’s green economy. In January 2011, City staff solicited applications from interested candidates and the mayors of both cities approved those appointments. The Steering Committee focused on green buildings policy development, government procurement of green products and services, and expanding export opportunities for local green manufacturers and clean tech companies.

## **ENERGY-RELATED ISSUES**

Over the years, a number of energy issues have come up where the City has some regulatory or policy authority, and where stakeholders and residents advocate for specific outcomes. In several instances over the last ten years, opportunities to develop alternative energy sources and distributed generation have been cast as in conflict with City goals to improve health and air quality. In other cases, stakeholders have perceived electric system infrastructure improvements as conflicting with environmental preservation and equity. In most of these instances, the City engaged residents and stakeholders and helped create public forums. While every case did not change City policy or create precedents for decision-making, on several occasions the City modified its initial positions in response to stakeholder concerns. These examples could help identify how City officials and the public can

collaborate to meet the safe, reliable, equitable, and environmentally responsible goals of the Energy Vision.

## **1. Volume Expansion of Hennepin County Energy Recover Center**

The Hennepin County Energy Recovery Center (HERC) is a waste-to-energy facility located in downtown Minneapolis. The HERC burns about 365,000 tons of garbage each year, generating enough electricity to power 25,000 homes. It also provides steam to heat buildings in downtown Minneapolis and Target Field – the equivalent of heating 1,500 homes using natural gas. The HERC is currently operating at 90 percent of its capacity. In 2009, facility operator Covanta Energy requested a conditional use permit to allow it to operate at full capacity. The expansion would increase the amount of waste processed at the HERC by 40,000 tons per year.<sup>18</sup>

### ***Community Response***

Several community groups strongly opposed to the expansion. Some argue that it would reduce ambient air quality, increase toxins to the air, and negatively impact the health of residents living in proximity or downwind. Opponents also argue that waste-to-energy is acknowledged by both Minneapolis and Hennepin County as a lower priority for managing solid waste. They believe that the negative externalities outweigh the environmental benefits. In 2009, citizens and state lawmakers petitioned the state to mandate an environmental review; the MPCA determined the petitions were unnecessary as an Environmental Assessment Worksheet was already mandatory.<sup>19</sup>

### ***City Stance***

The City Council has not taken a position on whether proposed expansion creates or alleviates environmental problems. In 2009, the Minneapolis Planning Commission denied a conditional use permit because it was found to be a “detrimental to public safety, health or welfare.”<sup>20</sup> However, an appeal was filed to get the City Council to overturn the decision, several extensions have been granted while Covanta and the Minnesota Pollution Control Agency (MPCA) work to complete an EAW.

### ***Public Involvement***

In 2009, when Covanta Energy appealed the City Planning Commission’s denial of a request for a conditional use permit to increase burning capacity, the city notified the North Loop Neighborhood Association and the Downtown Minneapolis Neighborhood Association.<sup>21</sup> A public hearing was held June 22, 2009. The public continues to be active on this issue.

### ***Outcome***

The expansion request remains caught up in appeal extensions as the City Council awaits the completion of the EAW and determine whether an Environmental Impact Statement (a more detailed version of an EAW) is required.

## **2. 28th Street Transmission Lines – Hiawatha Project**

In 2009, Xcel Energy proposed the Hiawatha Project, a high-voltage power line running over the Midtown Greenway. They intended this project to add energy capacity to the Lake Street corridor and provide more reliable service.

### ***Community Response***

Community members came out strongly opposed to this proposal. Several Midtown neighborhood groups and organizations banded together to stop to what they saw as a negative impact on the Midtown Greenway bicycle path, an asset that has helped revive the area. The groups in opposition included the Midtown Greenway Coalition, East Phillips Improvement Coalition, Little Earth of United Tribes, and the Corcoran, Seward, and Longfellow neighborhoods.

### ***City Stance***

On February 6<sup>th</sup>, 2009, the city council approved a resolution<sup>22</sup> to “pursue the production of electricity more responsibly, the delivering of electricity more intelligently and the consuming of electricity more efficiently (Schiff, 2009).” The resolution further recommended that “Xcel Energy delay its routing permit application to the Minnesota Public Utilities Commission for the Hiawatha Project and provide greater detail [...] as well as a thorough analysis of aggressive alternative methods to abate and/or supply the electricity (Schiff, 2009).” And finally, the city council resolved that the City’s preferred route for the new high voltage transmission lines is underground below East 28<sup>th</sup> Street.

### ***Public and Stakeholder Engagement***

Given the substantial neighborhood and stakeholder participation in this effort, the City did not engage in a public outreach effort.

### ***Outcome***

In January of 2012, the Minnesota Public Utilities Commission granted Xcel’s Certificate of Need for the project and determined that the transmission lines would be buried beneath East 28<sup>th</sup> Street.<sup>23</sup>

Acknowledging the additional cost of burying the lines, the PUC on June 28, 2012 determined the rate allocation would be spread amongst Xcel’s statewide customer base.<sup>24</sup>

## **3. Midtown Eco-Energy Power Plant**

In 2001 the Green Institute, a non-profit organization, had the idea of acquiring city garbage transfer station at 2850 20<sup>th</sup> Ave. S and converting it to a biomass renewable energy plant. The executive director at the time eventually left the non-profit to start the private firm Kandiyohi Development Partners, which took over the biomass plant project. In 2006, the City of Minneapolis issued an RFP to sell the transfer station property in order to develop a biomass plant. The only proposal they received was from Kandiyohi, which called for a 24.5 megawatt combined heat and power facility. The primary fuel source was to be from wood and agricultural byproducts. Kandiyohi worked with Xcel Energy to develop a power purchase agreement and with the MPCA to obtain approval for environmental review.

### ***Community Response***

A number of neighborhood groups opposed the biomass plant. They cited environmental and economic concerns, including the cumulative emissions impact in an area that already has facilities with substantial emissions, the possibility that Refused Derived Fuel may be burned at some point, and that the economic and financial justifications were flawed.

### ***City Stance***

Both the City Council and Mayor Rybak initially supported this project, saying that it would create an alternative energy source that would help address climate change and provide jobs. However, once it

became clear that Kandiyohi was not going to get a power purchase agreement with Xcel, the City moved to cancel the land deal and the project came to a halt.

### ***Public and Stakeholder Engagement***

The City Council and the Minnesota Pollution Control each held public meetings in regard to this issue. Both meetings demonstrated strong opposition from the same groups cited above.

### ***Outcome***

Community backlash, Xcel backing out, the cumulative impacts bill, and lack of City support ended the project. Despite discussion of finding an alternative location, nothing has happened since the project ended in 2008.

## **4. Linden Hills Anaerobic Digester**

Linden Hills Power & Light (LHP&L) is a community based non-profit organization. LHP&L works to shrink the local carbon footprint through education and community engagement by promoting sustainable energy, waste reduction, and energy conservation. In 2007, LHP&L applied for and received a grant from the Minnesota Pollution Control Agency (MPCA) to conduct a feasibility study for a community anaerobic digester.

Anaerobic digesters use the methane produced from organic matter to provide an alternative energy source. The benefits of this project include reducing the amount of waste that ends up at the incinerator or landfill, a reduction in greenhouse gas emissions, green jobs, and cleaner and cheaper energy.<sup>25</sup> LHP&L completed the feasibility study<sup>26</sup> in 2008.

### ***Community Response***

This project is a community-led effort. In February 2008, LHP&L rallied block captains to spread the word about the program. The first community meeting attracted 50 residents. LHP&L worked with Minneapolis and Hennepin County to develop a pilot curbside collections program picking up separated organics – today over 1,400 residents participate.

### ***City Stance***

The City seems to be generally in favor of anaerobic digesters as the council was receptive to a recommendation from the Urban Agriculture Policy Plan to include a text addressing anaerobic digesters and composting business in the zoning.<sup>27</sup> However, any changes to the code have been delayed until the MPCA finalizes its composting rules.

### ***Public and Stakeholder Engagement***

In this case, the public reached out to the City. The City will conduct public outreach as it considers zoning code language for anaerobic digesters.

### ***Outcome***

Curbside collection of organic waste is available for Linden Hills residents, but there is not an anaerobic digester facility in place to receive the waste. LHP&L stopped pursuing an anaerobic digester because the St. Paul Port Authority had the necessary resources and is currently building a facility in Becker, MN.

## 5. Upper St. Anthony Falls Hydro

In 1999, the Federal Energy Regulatory Commission granted Crown Hydro a license to build a 3.2-megawatt hydroelectric facility on the west bank of the Mississippi River, just above the St. Anthony Falls. The Minneapolis Park and Recreation Board owns the land and has strongly and consistently objected to the construction of this facility. In 2011, Crown Hydro sought legislative action that would allow them to circumvent local control by directing the park board to authorize an agreement – the bill failed.

### ***Community Response***

Community and resident organizations and the Minneapolis Park Board have opposed construction. Their main concern is that the plant would divert water from the falls, resulting in low flow that would hurt the local economy by making the destination less desirable.

### ***City Stance***

The City Council formally disapproved of legislation that would take away local control.<sup>28</sup> The City Council has not appeared to take a stance one way or another on the project itself, though some individual council members have taken positions.

### ***Public and Stakeholder Engagement***

The City did not conduct outreach efforts, as Minneapolis Parks and Recreation Board owns this land and the City of Minneapolis had little authority over this decision.

### ***Outcome***

Crown Hydro continues to try to move the project forward.

## 6. Riverside Plant Conversion

To meet environmental and climate action goals, Minneapolis supported a 2001 bill passed by the Minnesota Legislature that allowed utility companies to convert coal plants to natural gas and recover costs through rate increases. In September 2003, Xcel Energy announced plans to convert the Riverside power plant from coal to natural gas.

### ***Community Response***

Minneapolis residents actively advocated cleaning up the Riverside plant, organizing to oppose the continued use coal fired power plants. Residents, neighborhood groups, and advocacy groups sent letters to the MPCA, to stop the plant from burning coal.

### ***City Stance***

In 2002, the Minneapolis City Council passed a resolution to “call on Northern States Power Company to convert the Riverside plant from coal to natural gas to reduce the environmental and public health impacts that coal burning presents to the community.”<sup>29</sup>

### ***Outcome***

Xcel began the conversion in 2006 as part of its Metro Emissions Reduction Project to significantly reduce air emissions and increase electrical production. The plant came online in April 2009.



# Appendix B: City of Minneapolis Energy Vision

The following was presented to the Minneapolis City Council's Regulatory, Energy, and Environment Committee on September 9, 2013.

This Energy Vision identifies Minneapolis' long-term energy goals that guide the Minneapolis Energy Systems Pathways Study, authorized by the City Council on April 12, 2013. The Energy Vision was developed after a thorough inventory of existing City policies, actions, and programs, then enhanced and clarified through stakeholder discussions. It is an aspirational document, intended to bring City residents and businesses together around a common set of goals, and will serve as a foundational document for the Pathways work to follow.

## I. VISION STATEMENT

In 2040, Minneapolis's energy system will provide reliable, affordable, local and clean energy services for Minneapolis homes, businesses, and institutions: sustaining the city's economy and environment and contributing to a more socially just community.

## II. VISION NARRATIVE

The vision narrative is an example of how the City's energy system could look in 2040, assuming successful implementation of all elements. The narrative helps define the city's desired future, and along with the vision statement and elements, is a guide for making implementation decisions.

### A. Reliable and Affordable Energy Services

All city residents and businesses are supplied with reliable, affordable, and high quality electric and natural gas service. Through a combination of highly efficient end-use of energy and efficient energy delivery and generation, Minneapolis is a national leader in low cost and high quality energy services. Disparities in the relative cost of energy services for low-income households are aggressively mitigated. Rates are competitive, so that existing businesses in the city thrive and new business activity is attracted to the city.

An efficient and "smart" grid infrastructure seamlessly integrates distributed generation, energy storage, electric vehicles and other distributed energy resources. Smart infrastructure ensures high levels of reliability, promotes energy efficiency, and enables high levels of local interaction and coordination while protecting customer privacy. High power quality helps make Minneapolis a competitive location for power-sensitive industries.

### B. Clean Energy

The total carbon emissions and other waste products from the energy supply that serves the city have substantially declined. Electricity supply is almost carbon emission free in 2040. Heating and cooling services come from a variety of clean and efficient energy sources. Improvements in energy efficiency mean that many buildings can often generate all needed energy on-site.

## **C. Essential Energy Services for All**

The energy infrastructure serving the city affordably meets the basic needs of residents, such as adequate heating, cooling and lighting. Race, ethnicity, income, and age are no longer indicators for who bears pollution impacts or receives economic or environmental benefits.

## **D. Local Resources**

Local renewable energy resources (including solar, biomass, hydro and wind) are increasingly used within the city. Solar contractors are thriving, and the city is home to a number of businesses that provide equipment or services within the energy efficiency and renewable energy supply chain. Academic and business interests choose to locate in Minneapolis because it is seen as a leader in advanced energy infrastructure.

Efficient community scale heating and cooling systems are integrated into many high density developments across the city. Combined heat and power facilities provide efficient energy in district energy and industrial applications in many areas of the city.

## **E. Market Integration of Efficiency**

Energy use and efficiency data is seamlessly available to building owners/managers, neighborhoods, city government and customers. Businesses and residents consider energy information in economic decisions from making additional energy efficiency investments, making purchasing decisions, or renting or buying property. Residents and businesses have simple and affordable tools to finance energy efficiency and renewable energy improvements. Buildings are constructed with energy efficiency as a primary objective, and new homes and businesses regularly achieve net-zero energy status. Residents and business can participate in community renewable energy projects.

## **F. Collaborative Progress**

The resource planning and investment decisions of the energy utilities that serve the city reflect and support the city's climate action, economic development, and social equity goals. Utility managers and city administrators seamlessly and routinely collaborate to meet those goals. Improvements to or maintenance of energy infrastructure in city rights of way (ROW) are coordinated with other ROW improvements. The city's development and redevelopment plans incorporate protection and development of local energy sources. City infrastructure is a model of energy efficiency and uses largely renewable energy

# **III. ELEMENTS OF THE ENERGY VISION**

Minneapolis' energy vision identifies the desired state of the Minneapolis energy system, where the goals of the city and its energy providers are aligned. The vision addresses how energy is supplied, delivered, and used in Minneapolis. Moreover, the energy vision addresses how energy services affect: the climate and other components of the natural environment; the health, social equity and economic opportunity of residents; and, the creation of economic value and Minneapolis' competitiveness as a place to do business. The following are elements of a fully realized energy vision:

## **A. Social and Economic Elements**

**1. Improves social equity** - The City's energy providers minimize service costs to city residents and businesses, and provide opportunities to: lower energy bills through energy efficiency; to control energy cost volatility; and improve access to energy services that empower low-income residents through efficiency, conservation, and renewable energy.

**2. Reduces economic and health disparities** – Changes to the energy system reduce the health and economic disparities between Minneapolis communities (racial, ethnic, economic, age) and improve health economic outcomes for all residents.

**3. Improves participation** – Decision making regarding energy services in the city is structured for all members of society to have opportunity for meaningful participation.

**4. Expands economic development** – Investment and management of the energy system encourages investment in new local energy-related business and new opportunities for existing businesses without diminishing economic opportunities of others.

**5. Support current residents and businesses** – Energy system improvements are planned and structured in a manner that provides benefits to residents and businesses in the city at the time of the improvement, and current residents are safeguarded against displacement as a result of those improvements.

## **B. Energy supply**

**1. Low or no Carbon** – Reduced carbon intensity throughout the resource supply line is a primary component of clean energy.

**2. Clean** – Energy generation creates few or no waste products or pollutants.

**3. Affordable cost** – Supply costs, including life cycle costs, are kept affordable in creating a supply portfolio.

**4. Reliable** – The supply mix is protected from unexpected unavailability.

**5. Predictable cost** – Supply is minimally subject to price volatility.

**6. Diversified** - The supply system uses multiple energy sources with different availability and price risks.

**7. Local** – Policies maximize opportunities for local generation and ownership.

## **C. Distribution System**

**1. High level of reliability** – The system is redundant and resilient in regard to a wide range of risks.

**2. High level of safety** – The system is safe for consumers, utility workers, and contractors.

**3. Supports consumer choice** – The system supports on-site generation, on-site energy storage, aggressive energy efficiency implementation, and other distributed and renewable energy resource choices.

**4. Minimizes conflicts** – The distribution system is increasingly underground, location and design of substations and distributed generation reduces nuisances, and natural systems (air, green space, water) are protected.

**5. Establishes a 21st century distribution system** –The system supports opportunities for microgrids, electric vehicles, distributed generation, smart meters and other distributed energy resources.

**6. Efficient and accessible** –The system efficiently uses space available in rights-of-way and allows access to the distribution system (electric, gas, thermal) for local energy production.

## **D. Energy Use**

**1. Highest level of efficiency** – Buildings and facilities incorporate all lifecycle cost-effective efficiency measures, across all neighborhoods in the city.

**2. Maximizes efficiency’s societal benefits** – Efficiency and retrofit priorities address participation barriers for underserved customer classes, including renters.

**3. Supports end-user self-sufficiency** –Buildings and facilities can use energy efficiency, on-site generation and on-site energy storage to achieve net-zero energy use.

**4. Delivers equity in rate structures** – Rate structures for end users set appropriate price signals, maintain competitive rates, recognize residential customers’ ability to pay, and minimize cross subsidies.

**5. Transparency** –Energy users can conveniently access their own energy consumption data, while ensuring consumer privacy.

## **Appendix C: Stoel Rives Memorandum on Utility Franchise Agreement**





## MEMORANDUM

September 7, 2012

TO: PETER GINDER, DEPUTY CITY ATTORNEY  
COREY CONOVER, ASSISTANT CITY ATTORNEY

FROM: KEVIN JOHNSON  
SARAH JOHNSON PHILLIPS  
SARA BERGAN

RE: City of Minneapolis Utility Franchise Agreements

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### I. Summary

- **Utility Franchise Agreements.** The City of Minneapolis (the “City”) currently has electricity and gas utility franchise agreements with the operating subsidiaries of Xcel Energy (“Xcel”) and CenterPoint Energy (“CenterPoint”), respectively. These agreements will both expire at the end of 2014, presenting an opportunity for the City to consider its options and priorities for negotiating new agreements.
- **Scope of the City’s Authority.** Under its utility franchise agreements, the City imposes a fee on a utility in exchange for the use of public rights-of-way. By statute, the City’s authority to regulate electric and gas utilities is generally limited to imposing franchise fees and conditions related to the use of the right-of-way. However, the City has wide latitude to determine the amount, structure, and use of franchise fees.
- **Rate and Service Regulatory Authority Reserved to the State.** Regulatory authority over public utility rates and services is reserved to the state via the Minnesota Public Utilities Commission (the “Commission”). As a result, the City does not currently have authority to directly impose renewable energy or conservation targets because such action would be akin to regulating rates and services. New legislation would be required to broaden the scope of the City’s authority to regulate utilities.
- **Use of Franchise Fees.** The City has discretion to determine the amount charged and the formula for collecting franchise fees and how funds collected from such fees are used. Therefore, the City may increase or reformulate its utility franchise fees and/or designate some portion of the collected funds for new initiatives. Franchise fees are currently directed to the City’s general fund, which means that any new programs would require either an increase in franchise fees or that funds be redirected from another part of the City’s budget.

- **Franchise Fees Passed Through to Ratepayers.** The Commission will allow utilities to recover franchise fees from ratepayers without the scrutiny applied to changes in utility rates, to the extent such fees benefit a city. As a result, Minneapolis residents, businesses, and institutions ultimately bear the burden of paying franchise fees.

- **Municipalization.** An alternative to negotiating franchise agreements with the incumbent utilities is municipalization, which would require a referendum, raising a large amount of money to buy out existing utility infrastructure, and, ultimately, ongoing operation of a municipal utility. This process would require substantial investment of time and resources and would be very controversial.

## II. General Background

**A. Minnesota Public Utilities Act of 1974.** In the Minnesota Public Utilities Act of 1974, the Minnesota Legislature deemed it in the public interest to avoid the duplication of services by regulating and coordinating natural gas and electric service within the state.<sup>1</sup> Electric utilities are allowed to serve designated areas on an exclusive basis as regulated monopolies.<sup>2</sup>

It also reserved to the state the right to regulate the rates utilities charge.<sup>3</sup> “Rate” is defined to include “every compensation, charge, fare, toll, tariff, rental, and classification, or any of them, demanded, observed, charged, or collected by any public utility for any service and any rules, practices, or contracts affecting any such compensation, charge, fare, toll, rental, tariff, or classification.”<sup>4</sup> The responsibility of the Commission is to ensure that the rates electric and gas utilities charge are just and reasonable.<sup>5</sup>

**B. Municipal Authority.** Two statutory provisions grant municipalities in Minnesota authority to require a fee from a public energy utility in exchange for the use of public lands within the municipality.<sup>6</sup> The Minnesota Supreme Court recently affirmed that the plain language of these statutes authorizes municipalities to impose a franchise on a public utility.<sup>7</sup> Commission staff have also recognized that the statute “gives municipalities broad authority to assess franchise fees on utilities.”<sup>8</sup> A city may require the utility to obtain a franchise, but the terms and requirements of a franchise may not frustrate the legislature’s paramount authority to determine who has the right to serve an assigned area.<sup>9</sup>

The franchise fee “may include *but is not limited to* a sum of money based upon gross operating revenues or gross earnings from its operations in the municipality so long as the public utility shall continue to operate in the municipality.”<sup>10</sup> It also must be obtained “in accordance with the terms, conditions, and limitations of regulatory acts of the municipality.”<sup>11</sup>

Within these statutory constraints, franchise fees and other terms and conditions of the franchise are generally determined by mutual agreement. Existing agreements exhibit a fair amount of variety in fee structure. Franchise fees are often billed to customers in the form of a per meter charge, a variable rate determined by customer usage, or as a percentage of the bill.<sup>12</sup>

**C. Public Utilities Commission/Department of Commerce Oversight.** Rate regulated utilities generally have to seek Commission approval in order to change rates or otherwise recover costs from their ratepayers. While the Commission has long recognized that it

does not have jurisdiction over whether a city may impose a fee<sup>13</sup> and franchise fees have generally not been considered *rates* by the Commission,<sup>14</sup> the Commission does have authority over how these fees are charged by utilities to ratepayers. For example, Minn. Stat. § 216B.05 requires public utilities to file with the Commission their schedules showing not only all rates, but also all tolls, tariffs, and charges that it has established.<sup>15</sup> In other words, a city's imposition of a franchise fee involves two transactions: (1) the imposition of a fee over which the Commission has no authority and (2) the utility's recovery of the fee over which the Commission does have authority.<sup>16</sup> The Commission generally will not act on other aspects of the franchise agreement between a municipality and the utility,<sup>17</sup> but will review how the fees are passed on to ratepayers.

Because of its limited role in reviewing franchise fees, the Commission has struggled with its direction to utilities regarding filing information associated with franchise fees.<sup>18</sup> Until recently, fee changes were generally included in miscellaneous tariff filings<sup>19</sup> 90 days prior to the imposition of the fee or change in fee.<sup>20</sup> But the manner in which utilities filed notice of, and tarified, the fees varied greatly.<sup>21</sup> When a filing was made, the Department of Commerce's Division of Energy Resources (formerly the Office of Energy Security) reviewed utilities' requests to recover franchise fees through ratepayers by assessing:

- 1) the impact of the proposal on the company's revenues (ensuring that it all flows back to the municipality);
- 2) the sufficiency of notice to the customers; and
- 3) the potential for unreasonable preferential treatment for any customer.<sup>22</sup>

Franchise fee filings, however, are becoming more frequent as cities are increasingly using franchise fees to offset declines in other city revenue sources. Xcel, for example, administers at least 49 franchise fees and has argued that the filing should be streamlined to avoid an excessive administrative burden on both the utility and the Commission.<sup>23</sup>

In two recent cases where a utility attempted to recoup its own costs of administering the franchise fee as part of the franchise fee line item on customer bills, the Commission determined the portion benefiting the utility was more akin to a rate than a franchise fee.<sup>24</sup> While the Commission does not generally establish, authorize, or endorse a franchise *fee*, given its limited jurisdiction, the Commission will scrutinize and seek justification for anything that looks like a *rate*.<sup>25</sup> The franchise fees are generally recoverable so long as they exclusively benefit the city and not the utility.<sup>26</sup> The Commission has jurisdiction over anything that would flow back to benefit the utility and would be particularly concerned about preventing double-recovery of utility costs charged directly to municipal residents through a franchise fee line item and all customers through general rates.<sup>[27]</sup>

In response to the issues and concerns raised by these cases, the Commission sought input on how utilities deal with the franchise fees in their billing and publicly available tariffs.<sup>28</sup> Seeing a need for greater uniformity and a more streamlined process, the Commission established a mechanism by which utilities can file to recover franchise fees without prior Commission approval.<sup>29</sup> Today utilities give the Commission 60 days' notice prior to

implementing a franchise fee, include a customer notice on the first bill on which the new or modified fee is listed – consistent with that filed in its approved tariff<sup>30</sup> – list the fee as a separate line item on customer bills, file the relevant ordinance(s) with the Commission, and note in the tariff that 100% of the fees are remitted to the municipality. Utilities following these uniform requirements are then allowed to recoup franchise fees through customer bills without prior Commission approval.<sup>31</sup>

Just as the Commission does not have authority over fees imposed by the City, it does not have authority over what the City does with the revenue raised through the fees. The statute simply provides that utilities may be obligated to pay municipal fees “to raise revenue or defray increased municipal costs accruing as a result of utility operations, or both.”<sup>32</sup> The City has wide latitude to use the recovered funds for purposes of its choosing.

## **D. Current Agreements and Fee Structure Examples**

### **1. CenterPoint**

**a. Minneapolis Agreement with Minnegasco (CenterPoint), January 1, 1992 through December 31, 2014.** The City’s current franchise agreement grants Minnegasco a nonexclusive 23-year franchise to construct, operate, repair, and maintain facilities and equipment for the transportation, distribution, manufacture, and sale of gas energy for public and private use and to use the public ground of the City for such purposes. The franchise fees vary from 3% to 5% of gross revenue, depending on customer class. Percentages for residential buildings increase over the term of the agreement. Currently, the largest industrial class of customer pays the lowest fee of 3%, while residential customers pay 4.5% and all other classes of customers pay 5%.

**b. Other Natural Gas Franchises.** In other cities imposing natural gas franchise fees on CenterPoint, the amount and structure of the fees imposed varies considerably. Anoka, for example, imposes a flat fee graduated by customer class and ranging from \$3.00 per meter for residential users to \$981.80 per meter for the largest industrial user.<sup>33</sup> By contrast, Excelsior imposes a flat fee of \$2.50 per meter for all customer classes.<sup>34</sup> Granite Falls includes a percentage-based fee with a cap that is the same for all customer classes, and Minneapolis currently imposes a percentage-based fee that differs by customer class.<sup>35</sup> Many cities also impose a volumetric fee<sup>36</sup> or a volumetric fee combined with a flat fee<sup>37</sup> on their natural gas utility.

### **2. Xcel**

**a. Minneapolis Agreement with Northern States Power (Xcel), January 1, 1994 through December 31, 2014.** The City’s current franchise agreement grants Northern States Power the right for 21 years to construct, install, enlarge, operate, repair, and maintain, in the City, its electric distribution system and electric transmission lines, for the furnishing of electricity to the City and its inhabitants, and others, and transmitting electricity from, into, and through the

City, and to use the streets, alleys, and public grounds of the City for such purposes. Franchise fees vary from 3% to 5.75% of gross revenue, depending on customer class. Percentages decrease for each customer class over the course of the agreement.

**b. Other Electricity Franchises.** In other cities imposing franchise fees for electric service on Xcel, there are a variety of structures. The Coon Rapids franchise agreement authorizes a fee of up to 5% of Xcel's gross operating revenue from Coon Rapids customers but currently imposes a fee of only 4% of gross earnings. Winsted imposes a flat per account fee that is the same across all customer classes. Hopkins imposes a flat monthly fee that is graduated by customer class, where residential customers pay \$1.70 per month and large industrial customers pay \$105.00 per month. New Brighton imposes a usage fee that is roughly three times higher for residential customers (\$0.0023/kWh) than for large industrial customers (\$0.0009/kWh). Sauk Rapids imposes a percentage-based fee that is also dramatically less for larger customers. St. Joseph imposes a graduated flat fee for all customer classes except large industrials, on which it imposes a percentage-based fee.

**c. St. Paul Agreements with Northern States Power (Xcel), August 31, 2006 through August 30, 2026.** In the City of St. Paul's most recent gas and electric franchise renewal, St. Paul decided to impose a more complicated multi-part franchise fee that includes: 1) a per meter flat fee; 2) a monthly energy factor fee (charge per kWh); and 3) a monthly demand factor fee (charge per kW). In all cases, the fees generally vary by customer class and generally increase over the term of the agreement.

### III. Franchise Fee Options

**A. Increase Fees.** The statute specifically grants the City the right to use the franchise fee to raise general revenue, and the City has long allocated franchise fee revenue to the City's general fund. While there are no statutory limits on how the City uses franchise fee revenue, existing budgetary uses of the current amount of fee revenue could be a constraint to redirecting it to new programs.

The City is also free to negotiate higher fees through its franchise agreement and allocate additional monies raised to new programs or initiatives. The statute authorizes the City to impose franchise fees to "raise revenue or defray increased municipal costs accruing as a result of utility operations, or both."<sup>38</sup> We are not aware of any upper-bound or Commission threshold for reasonable franchise fees, though the City would likely be constrained by other factors such as how much of an increase is reasonable to pass on to City residents and businesses.

**B. Change Fee Structures.** Although the statute provides a percentage of gross operating revenue as one way to structure the fee, it clearly leaves open other possible fee structures. Fee structures vary considerably in existing franchise agreements as discussed in Section II.D above.



**C. Other Contract Terms.** The City may want to carefully consider many different aspects of a new franchise agreement. One provision that is getting increased attention is the term of the grant of franchise. Of the recently negotiated franchise agreements with Xcel, several were for 20-year terms.<sup>39</sup> On the other hand, some negotiated much shorter terms or at least shorter terms for the imposed fee. Mound, for example, passed an ordinance in 2003 imposing a franchise fee for five years on Xcel with a sunset clause. It recently amended the sunset clause to provide for an extension of only one year.<sup>40</sup> Likewise, Hopkins recently adjusted its fee and limited the term of the fee to two years “to ensure that there would be a review of the effect and need for these fees.”<sup>41</sup>

#### **IV. Other Options for the City That Require a Legislative Change**

Aside from increasing or changing the franchise fee structure, the City’s ability to require changes to the services Xcel and CenterPoint provide is very limited. Although the issue has not been directly tested at the Commission or in court, the City does not appear to have authority to impose through the franchise agreement a city-based renewable energy standard, conservation goals, or greenhouse gas emission reduction targets. As a result, new legislation would likely be required for the City to regulate utilities in these areas, whether through a franchise agreement or through another mechanism.

**Other Jurisdictional Example: Ann Arbor, Michigan.** When the U.S. Environmental Protection Agency conducted a survey of Midwest franchise agreements, Ann Arbor was the only city that included environmental targets as part of the agreement.<sup>42</sup> As part of its grant of franchise, Ann Arbor requires the grantee to obtain certain percentages (escalating over the tenure of the contract) of the electricity supplied from renewable resources and establishes penalties for not meeting the requirements.<sup>43</sup> Ann Arbor also stipulates that the grant of franchise must not result in an increase in CO<sub>2</sub> emissions. Notably, Michigan is a partially deregulated state and includes some direct access, and the franchise agreements were entered into before the state had a significant statewide renewable energy standard. However, Michigan law allows for more regulation of utilities by municipalities than does Minnesota law.<sup>44</sup> Because Minnesota law is different, the City does not have the same options available to it that Ann Arbor did.

#### **V. Municipal Utility Option**

As an alternative to negotiating franchise agreements, the City has the option of acquiring the existing utility property and creating its own municipal utility. This would considerably expand the City’s authority over utility services. This option, however, is a dramatically more significant investment of human and financial resources than renegotiating agreements with CenterPoint and Xcel.

The City would first need a resolution of the city council, ratified by a majority of the voters voting on the question during a special election held for that purpose.<sup>45</sup> The City could then elect to either purchase the utility’s property pursuant to Minn. Stat. § 216B.45 or acquire the utility’s property by eminent domain pursuant to Minn. Stat. § 216B.47. To the extent the parties could not agree on a purchase price under the first option, the Commission would set a place and time for a public hearing and by order determine the just compensation for the property

to be purchased. The statute provides a list of factors that must be assessed in determining just compensation, including: “the original cost of the property less depreciation, loss of revenue to the utility, expenses resulting from integration of facilities, and other appropriate factors.”<sup>46</sup> By statute, court appointed commissioners in an eminent domain proceeding must also consider the same factors.<sup>47</sup>

These factors were recently determined by the Minnesota Court of Appeals to preclude a fair market value assessment of the property.<sup>48</sup> Furthermore, the court recognized that these factors were intended to create a higher valuation of the property acquired than that created using a fair market value assessment.<sup>49</sup> Therefore, under current law, which is currently under review by the Minnesota Supreme Court,<sup>50</sup> acquiring utility property will likely cost more than fair market value because loss of revenue, integration expenses, and other factors must be considered in the process.

**Other Jurisdictional Example: Boulder, Colorado.** Boulder has recently been the subject of considerable attention because of the city council’s and voters’ recent decision to end the franchise agreement with Xcel and consider creating a municipal utility. After a long franchise negotiation broke down – partially over the language that would be included on the ballot – Boulder voters approved an effort to municipalize.

Colorado law provides that the governing body of each municipality has the power to acquire gas or electric light and power works and distribution systems or to authorize the ownership and maintenance of such systems by others.<sup>51</sup> Notably, even the granting of a franchise requires voter approval<sup>52</sup> and must include an express condition that the municipality has the right and power to purchase or condemn any such works or systems at their fair market value.<sup>53</sup>

The November 1, 2011 decision by voters included two parts. The voters approved Ballot Issue No. 2b, which increased and extended Boulder’s utility occupation tax, a voter-approved tax that replaced the franchise fee after Boulder’s franchise agreement with Xcel expired at the end of 2010.<sup>54</sup> Note that Minnesota law governing utility franchise agreements only provides for municipalities to impose an excise tax to replace franchise fees in the limited scenario in which an existing franchise was abrogated or impaired by the adoption of the Minnesota Public Utilities Act in 1974.<sup>55</sup>

The voters also elected to amend the city charter through the addition of a new Article XIII, “Light and Power Utility,” which authorizes and sets the conditions under which the city could establish a municipal utility.<sup>56</sup> Specifically, it requires that the city can establish a light and power utility only if it can demonstrate, verified by an independent third party, that the utility can acquire the electrical distribution system in Boulder and charge rates that do not exceed those rates charged by Xcel at the time of acquisition. It also requires that the utility demonstrate reliability comparable to Xcel and include a plan for reduced greenhouse gas emissions and increased use of renewable energy.<sup>57</sup> Notably, the current cost estimates associated with acquiring Xcel’s system in Boulder range from under \$200 million to over \$1 billion.<sup>58</sup>

## Endnotes

<sup>1</sup> Minn. Stat. § 216B.01

<sup>2</sup> Minn. Stat. §§ 216B.37-43.

<sup>3</sup> See, e.g., *Minn. Gas Co. v. Pub. Serv. Comm'n, Dep't of Pub. Serv., State of Minn.*, 523 F.2d 581 (8th Cir. 1975).

<sup>4</sup> Minn. Stat. § 216B.02, subd. 5.

<sup>5</sup> Minn. Stat. § 216B.03.

<sup>6</sup> Minn. Stat. § 216B.36 (“Under the license, permit, right, or franchise, the utility may be obligated by any municipality to pay to the municipality fees to raise revenue or defray increased municipal costs accruing as a result of utility operations, or both. The fee may include but is not limited to a sum of money based upon gross operating revenues or gross earnings from its operations in the municipality so long as the public utility shall continue to operate in the municipality, unless upon request of the public utility it is expressly released from the obligation at any time by such municipality.”); Minn. Stat. § 301B.01 (“A corporation may be organized to construct, acquire, maintain, or operate internal improvements, including railways, street railways, telegraph and telephone lines, canals, slackwater, or other navigation, dams to create or improve a water supply or to furnish power for public use, and any work for supplying the public, by whatever means, with water, light, heat, or power, including all requisite subways, pipes, and other conduits, and tunnels for transportation of pedestrians. No corporation formed for these purposes may construct, maintain, or operate a railway of any kind, or a subway, pipe line, or other conduit, or a tunnel for transportation of pedestrians in or upon a street, alley, or other public ground of a city, without first obtaining from the city a franchise conferring this right and compensating the city for it.”).

<sup>7</sup> *City of Cohasset v. Minn. Power*, 798 N.W.2d 50 (Minn. 2011) (holding that the statutes provide this right even if the utility is not using the rights-of-way to provide services to the municipality and also holding that the right is not preempted by a state routing permit).

<sup>8</sup> *Staff Briefing Papers*, Minn. Pub. Util. Comm’n, Docket No. CI-09-970, at 1 (Feb. 17, 2011).

<sup>9</sup> *City of Rochester, Relator v. Minn. Pub. Utils. Comm’n*, No. C0-90-808, 1990 Minn. App. LEXIS 833 (Minn. Ct. App. Aug. 15, 1990).

<sup>10</sup> Minn. Stat. § 216B.36 (emphasis added).

<sup>11</sup> Minn. Stat. § 216B.36

<sup>12</sup> *Order Establishing Franchise Fee Filing Requirements*, Minn. Pub. Util. Comm’n, Docket No. CI-09-970 (Mar. 23, 2011).

<sup>13</sup> *Order Approving New Gas and Electric Rate Books*, Minn. Pub. Util. Comm’n, Docket M-97-985 (Feb. 3, 1998). See also *Staff Briefing Papers*, Minn. Pub. Util. Comm’n, Docket No. CI-09-970 (Feb. 17, 2011) (“Thus, if a city chooses to impose a franchise fee on a utility, the utility presumably is obligated to pay it to the city on the date selected by the city through its ordinance. Staff is not aware of any instance in which the Commission would become involved in this piece of the transaction.”).

<sup>14</sup> *Staff Briefing Papers*, Minn. Pub. Util. Comm’n, Docket No. CI-09-970 (Feb. 17, 2011).

<sup>15</sup> Minn. Stat. § 216B.05, subd. 1.

<sup>16</sup> *Staff Briefing Papers*, Minn. Pub. Util. Comm’n, Docket No. CI-09-970 (Feb. 17, 2011) (“[I]t appears that a city’s imposition of a franchise fee involves two transactions: first, the city’s right to impose a franchise fee on the utility; and second, the utility’s ability to pass that franchise fee through to the customer. This first transaction, between the city and the utility, generally does not involve the Commission. Thus if a city chooses to impose a franchise fee on a utility, the utility presumably is obligated to pay it to the city on the date selected by the city through its ordinance. Staff is not aware of any instance in which the Commission would become involved in this piece of the transaction. What the Commission has authority over is the utility’s ability to collect the franchise fee from its customers, how it is displayed on the utility bill, and how it is otherwise communicated to customers. Staff therefore agrees with the SRA that a city has the authority to collect a franchise fee from the utility even if the Commission-filing process has not concluded.”).

<sup>17</sup> See, e.g., *Comments of the Minn. Office of Energy Sec.*, Minn. Pub. Util. Comm'n, Docket No. M-09-1422 (Feb. 10, 2010) ("Moreover, as noted above, the Commission's actions in this proceeding pertain to the rates that MP charges its customers; the Commission is not acting on the franchise fee agreement between MP and the City of Staples. Thus, the OES concludes that the effective date of the franchise fee is a matter between the City of Staples and MP.").

<sup>18</sup> *Order Approving New Gas and Electric Rate Books*, Minn. Pub. Util. Comm'n, Docket M-97-985 (Feb. 3, 1998) ("[T]he Commission notes that it does not have jurisdiction over whether a city may impose a fee or surcharge and finds as a practical matter that the burden on the Company to file a new Surcharge Rider 1 every time a city changes or implements a franchise fee or gross earnings fee outweighs the value of maintaining the Company's tariff as the publicly accessible central location for such information. Accordingly, the Commission will allow the Company to shed its previous practice of maintaining such information as part of its tariff.").

<sup>19</sup> Minn. Rules, part 7829.1300.

<sup>20</sup> See, e.g., *Comments of the Minn. Office of Energy Sec.*, Minn. Pub. Util. Comm'n, Docket No. M-09-1422 (Feb. 10, 2010) ("MP must seek and obtain the Commission's approval before the Company can recover the costs of the proposed franchise fee as a separate line item on the utility bills it sends to its customers."); see also Minn. Rules, part 7825.3200 (requiring that utilities serve notice to the Commission at least 90 days prior to the effective date of modified rates).

<sup>21</sup> *Order Establishing Franchise Fee Filing Requirements*, Minn. Pub. Util. Comm'n, Docket No. CI-09-970 (Mar. 23, 2011).

<sup>22</sup> See, e.g., *Order*, Minn. Pub. Util. Comm'n, Docket No. M-10-1214 (Feb. 8, 2011).

<sup>23</sup> *Comments and Filing in Response to Notice Franchise Fees*, Minn. Pub. Util. Comm'n, Docket No. CI-09-970 (July 6, 2010) ("As the Commission recognized in its February 3, 1998 Order, Minn. Stat. §216B.36 gives municipalities the authority to impose fees on utilities. Since the Commission does not have authority over the fee itself, the administrative burden of filing a new Rider each time a city changes or implements a fee could outweigh the benefit of maintaining the specific fee information in the tariff. We currently implement 49 franchise or other city fees on our electric customer bills and over 20 similar fees on our gas customer bills; many of these fees require updates or changes on an annual basis.").

<sup>24</sup> See, e.g., *Comments of the Minn. Office of Energy Sec.*, Minn. Pub. Util. Comm'n, Docket No. M-09-1422 (Feb. 10, 2010) ("The OES concludes that the Commission has thoroughly vetted this issue[sic], including the relevance of Minnesota Statutes, sections 216B.03 and 216B.07, and has concluded that an administrative fee associated with collecting a franchise fee is a rate and must be justified and approved as a rate prior to its imposition.").

<sup>25</sup> *Id.*

<sup>26</sup> See, e.g., *Order Barring Collections of Administrative Costs Through Franchise Fee and Requiring Compliance Filing*, Minn. Pub. Util. Comm'n, Docket No. M-11-1105 (Dec. 30, 2011).

<sup>27</sup> *Reply Comments of the Minn. Office of Energy Sec. to the Reply Comments of Interstate Power and Light*, Minn. Pub. Util. Comm'n, Docket No. M-08-200 (Apr. 18, 2008) ("Minnesota Statutes §216B.36 pertains only to the "Municipal Regulatory and Taxing Powers;" it does not pertain to the utility's ratemaking, as the responsibility for such ratemaking falls under the Commission's responsibility. It is important to make this distinction because it would not be reasonable for a municipality to require a utility to charge its customers for costs over and above the franchise fee, since such charges could lead to double-recovery of costs if those costs are recovered in rates charged to the citizens in the municipality and to all of the utility's customers (thus charging the citizens in the municipality twice for such costs). Such a result would violate Minnesota Statutes §216B.03 requiring just and reasonable rates.").

<sup>28</sup> *Notice Seeking Filings and Comments on Franchise Fees*, Minn. Pub. Util. Comm'n, Docket No. CI-09-970 (June 7, 2010).

<sup>29</sup> *Order Establishing Franchise Fee Filing Requirements*, Minn. Pub. Util. Comm'n, Docket No. CI-09-970 (Mar. 23, 2011).

<sup>30</sup> See, e.g., *Northern States Power Compliance Filing – Franchise Fee Compliance Filing*, Minn. Pub. Util. Comm’n, Docket No. CI-09-970 (Apr. 21, 2011) (“The Community of [City][adopts/collects] a [\$x.xx/\$x.xx per kWh/therm/x%][franchise/city] fee on Xcel Energy [electric/gas] accounts effective [date]. The line item appears on your bill as ‘City Fees.’ We pass along 100% of this fee to the community imposing the fee.”); see also *Franchise Fee Rider in CenterPoint Energy’s Informational Filing: Change Tariff to Update Franchise Fee in the City of Eden Prairie*, Minn. Pub. Util. Comm’n, Docket No. M-12-750 (July 9, 2012) (“The MUNICIPALITY granted CenterPoint Energy a franchise to operate within the city Limits. A Gas franchise fee of x.x% of Gross Revenues/\$x.xx per Meter/\$x.xx per Therm will be collected from customers effective MM/DD/YYYY. The line item appears on your bill as ‘City Franchise Fee.’ CenterPoint Energy remits 100% of this fee to the MUNICIPALITY.”).

<sup>31</sup> *Order Establishing Franchise Fee Filing Requirements*, Minn. Pub. Util. Comm’n, Docket No. CI-09-970 (Mar. 23, 2011).

<sup>32</sup> Minn. Stat. § 216B.36.

<sup>33</sup> *Informational Filing: Change Tariff to Update Franchise Fee in the City of Eden Prairie*, Minn. Pub. Util. Comm’n, Docket No. M-12-750 (July 9, 2012).

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> *Informational Filing: City of Ortonville Franchise Fee*, Minn. Pub. Util. Comm’n, Docket No. M-12-68 (Jan. 19, 2012) (Roseau imposes a volumetric fee of \$0.01122 per therm, and Nashwauk imposes a volumetric fee of \$0.013 per therm on Minnesota Energy Resources Corporation).

<sup>37</sup> *Id.* (Ortonville, for example, imposes a \$1.50/month meter charge and a \$0.013 charge for every 100 cf of gas “transported, sold, furnished, or delivered by the Gas Company within the City limits”; Plainview imposes a flat fee of \$0.50 plus a volumetric fee that is higher for residential than for industrial users).

<sup>38</sup> Minn. Stat. § 216B.36.

<sup>39</sup> *Informational Filing: Franchise Fee – Winsted, Minnesota*, Docket No. CI-09-970 (Feb. 13, 2012) (term of 20 years); *Informational Filing: Franchise Fee – Clements, Minnesota*, Docket No. CI-09-970 (Apr. 6, 2012) (term of 20 years); *Informational Filing: Franchise Fee – Henderson, Minnesota*, Docket No. CI-09-970 (Jan. 17, 2012) (Henderson granted a 20-year franchise to Xcel in August 2011 that at the time did not include an associated fee but provided the option for the city to impose a fee by separate ordinance in the future. By late December 2011, the city had already exercised its option to impose a fee); *Informational Filing: Franchise Fee – Coon Rapids, Minnesota*, Docket No. CI-09-970 (Nov. 7, 2011) (term of 20 years).

<sup>40</sup> See *Informational Filing: Franchise Fee – Mound, Minnesota*, Docket No. CI-09-970 (June 18, 2012) (amended the automatic sunset clause from December 31, 2012 to December 31, 2013).

<sup>41</sup> See *Informational Filing: Franchise Fee – Hopkins, Minnesota*, Docket No. CI-09-970 (Oct. 18, 2011) (referencing City Ordinance 2011-1036).

<sup>42</sup> *Utility Franchise Agreements Summary Report: Research on Municipal Franchise Agreements Gas and Electric Utilities*, submitted to U.S. Environmental Protection Agency Region 5 (Dec. 21, 2009), available at <http://www.epa.gov/r5climatechange/pdfs/franchise-agreement-report.pdf>.

<sup>43</sup> See, e.g., Ann Arbor Municipal Code § 2:623 (portfolio of renewable energy sources; option to purchase greater percentage of power from renewable energy sources; prohibition against degradation of quality of energy sources).

<sup>44</sup> See Mich. Comp. Laws § 460.54.

<sup>45</sup> Minn. Stat. § 216B.46.

<sup>46</sup> Minn. Stat. § 216B.45.

<sup>47</sup> Minn. Stat. § 216B.47.

<sup>48</sup> *City of Moorhead v. Red River Valley Coop. Power Ass’n*, 811 N.W.2d 151 (Minn. Ct. App. 2012).



<sup>49</sup> *Id.* at 160 (“Red River contends that, because eminent-domain proceedings pursuant to Minn. Stat. § 216B.47 are not traditional eminent-domain proceedings, damages are unique and appropriately higher than damages calculated under a fair-market-value analysis. Again, we agree with Red River. We acknowledge that fair market value is the typical method to calculate just compensation in eminent-domain proceedings, but the legislature can require a different method to calculate damages that results in higher-than-market-value damages in certain circumstances.”).

<sup>50</sup> *City of Moorhead v. Red River Valley Co-op*, No. A11-0705, 2012 Minn. LEXIS 175 (Minn. Apr. 17, 2012) (granting certiorari).

<sup>51</sup> Colo. Rev. Stat. § 31-15-707.

<sup>52</sup> Colo. Rev. Stat. § 31-15-707(1)(a)(I) (requiring the majority of registered electors voting upon the question in a special election to vote in favor of the provision); *see also* Boulder Revised Charter, art. VIII, § 108.

<sup>53</sup> Colo. Rev. Stat. § 31-15-707(1)(a)(II) (“All such works or systems authorized by any municipality to be erected by others or the franchise of which is extended or renewed shall be authorized, extended, or renewed upon the express condition that such municipality has the right and power to purchase or condemn any such works or systems at their fair market value at the time of purchasing or condemning such works or systems, excluding all value of the franchise or right-of-way through the streets . . . .”); *see also* Boulder Grant of Franchise to the Public Service Company of Colorado, art. 14 (Purchase Condemnation) (Ordinance No. PO-9302).

<sup>54</sup> Boulder City Ordinance Nos. 7769 (2010) and 7825 (2011).

<sup>55</sup> Minn. Stat. § 216B.36.

<sup>56</sup> Boulder City Charter, art. XIII, § 178.

<sup>57</sup> *Id.*

<sup>58</sup> *See, e.g.,* Mark Jaffe, *Boulder voters OK with municipal utility, tax to set it up*, The Denver Post (Nov. 2, 2011); *see also* Heath Urie, *Xcel consultant: Cost of Boulder utility near \$1.2B*, Daily Camera (July 29, 2011), available at [http://www.dailycamera.com/energy/ci\\_18581008](http://www.dailycamera.com/energy/ci_18581008).

# Appendix D: Comparison of Minnesota Municipal Franchise Fees

## TYPICAL FRANCHISE FEE STRUCTURES

Many Minnesota cities do not charge franchise fees at all. Among Minnesota cities in Xcel Energy’s service territory that charge franchise fees, the majority use a flat-fee structure. Sixty-six Minnesota cities served by Xcel charge franchise fees and 53 of them use a flat-fee structure. This fee structure is Xcel Energy’s preferred structure, as it allows them to charge a flat monthly fee to all customers in each class calculated to achieve a city’s pre-determined revenue targets.<sup>30</sup> To illustrate, the following fee schedule shows fees in the City of Arden Hills that capture approximately 1 percent of gross revenues from each customer classification.<sup>31</sup>

### Example Fee Schedule (Arden Hills, MN)

Customer Class	Monthly Flat Fee Per Customer
Residential	\$ 1.00
Small C&I - Non-Demand	\$ 1.25
Small C&I - Demand	\$ 15.25
Large C&I	\$ 123.75

Under this structure, every residential customer would pay \$1.00/month, and every large C&I customer would pay \$123.75/month, regardless of their energy use. The other most frequently utilized types of franchise fee structures are charges that are based on a percentage of total electric charges or the units of energy (kWh or therms) that are sold to each customer class.

## XCEL ENERGY FRANCHISE FEE STRUCTURE IN MINNEAPOLIS

In Minneapolis, and in 10 other Minnesota cities served by Xcel Energy, the Xcel charges city fees (surcharges) as a percentage of total electric charges. Currently, surcharge rates are lower for residential customers and for large commercial-industrial customers. If the City were to move to a flat-fee structure, it would set a revenue target and then choose a schedule of flat fees that distributes the financial burden for that revenue target among customer classes, as determined by City officials. While the current structure is not Xcel’s preferred structure, it does allow customers an additional opportunity to be reward those customers that use less electricity, or impose additional cost on those who use more.

## XCEL ENERGY FRANCHISE FEE STRUCTURE IN ST. PAUL

The City of St. Paul has a more complicated franchise fee structure than most cities, characterized by their multiple-page fee tables.<sup>32</sup> Assuming that Xcel Energy passes through to St. Paul customers the same rates that Xcel Energy pays to the City of St. Paul, each St. Paul customer is charged the sum of up to three applicable charges: a monthly charge per account, a monthly charge per kWh, and a monthly charge per kW of demand. Residential customers in St. Paul only pay city fees for the months of May through October; residential customers pay no city fees for the months of November through April. The

schedule of charges in St. Paul's franchise with Xcel Energy provides for increases every two years from 2007 to 2026.

## Xcel Energy Electric Franchise Fees in Minneapolis and Other Minnesota Cities

### Comparison of Xcel Energy and CenterPoint Energy Annual Franchise Fee Surcharges

City	Xcel Energy		CenterPoint Energy	
	Typical Single-Family Home	Typical Large Commercial Customer	Typical Single-Family Home	Typical Large Commercial Customer
<b>Annual Energy Costs</b>	\$ 840	\$ 593,107	\$ 792	\$ 412,559
<b>Minneapolis Franchise Fee</b>	\$ 19	\$ 29,655	\$ 36	\$ 20,628
<b>St. Paul Franchise Fee</b>	\$ 29	\$ 29,223	\$ 38	\$ 23,056

Note: These Calculations assume the single-family customer uses 7,500 kWh and 1,000 therms per year, and the large commercial customer uses 7,200,000 kWh and 730,000 therms per year.

## CenterPoint Energy Franchise Fees in Minneapolis and other Cities

Forty-two Minnesota cities require CenterPoint Energy to pay franchise fees, which CenterPoint passes through to its customers. The City of Minneapolis and 12 other cities charge CenterPoint Energy on a percentage of sales basis, like a sales tax. The surcharges in the City of Minneapolis are in line with those other cities, only varying marginally. The big difference is between the cities that charge on a percentage basis and the cities that charge a flat fee, particularly for high users among commercial-industrial customers.

## Alternative Franchise Fee Structures and Rates

In TechLaw's 2009 report on utility franchises for the US Environmental Protection Agency, their overall recommendation was to use franchises to advance environmental and energy objectives.<sup>33</sup> TechLaw recommends that franchises require utilities to invest in energy efficiency, purchase renewable energy, and reduce greenhouse gas emissions; and TechLaw recommends that financial penalties be incorporated in franchises, presumably in the form of higher franchise fees for non-compliant utilities.

## DURATION OF A FRANCHISE

One of the key issues regarding the upcoming negotiations between the City and the energy utilities that provide service in the City will be the term (duration) of the franchise. Longer term agreements provide additional certainty to the City and the utilities, and may result in a better environment for additional investments in distribution infrastructure and clean-energy programs with confidence that there will be sufficient time to realize a satisfactory return on such investments. A shorter term agreement may be seen as preferable because it would strengthen the case for utility investment in a city's energy goals and

ensure short-term results. A shorter term would also provide flexibility, enabling the City to keep its options open in a rapidly changing energy market.

### Statutory Minimum and Maximum Terms

Franchises in the past have been long-term agreements, extending twenty years or more. There does not seem to be an overarching trend toward shorter terms, although there are cases of both.

While Minnesota has not, numerous states have statutes that set a maximum term for franchises. Some of these states are:

<u>State</u>	<u>Maximum Term</u>
Colorado	25 years
Florida	30 years
Kansas	20 years
Idaho	50 years
Oregon	20 years

At least one state has a minimum term. Idaho requires a term of not less than 10 years.<sup>34</sup> No reports of state legislatures changing the allowable duration of franchises, or even considering the matter, were found.

A number of documents produced by utility and public works organizations address franchise agreements in some fashion, but the common presumption is that franchise agreements have long terms (ten+ years). An exception to that presumption, from outside Minnesota, was found in a document published by the Iowa Association of Municipal Utilities (IAMU) recommending that a franchise agreement be 10 to 15 years in duration rather than the statutorily allowed 25 because of the “ever-changing utility industry.”<sup>35</sup>

### Minnesota Franchise Agreements

The table of franchise fees by city in Xcel Energy’s electric rate book (current as of September 3, 2013) lists 63 cities that charge franchise fees, with an effective date and an expiration date for each.<sup>36</sup> Of the 32 cities that showed effective dates for new franchise agreements, all but one was approved under long-term franchise.

We are aware of one city recently experiencing some controversy regarding a franchise: the City of St. Louis Park. In September 2013, the City of St. Louis Park adopted an ordinance extending the term of its electric franchise with Xcel Energy until only December 31, 2015. The staff report on this matter states:

The City currently has a franchise agreement with Xcel Energy (Xcel) which expires December 31, 2013... Xcel and the City still have differences regarding language City staff proposed relative to insuring performance by Xcel, particularly during City construction projects. As such, Xcel and City staff have discussed extending the current franchise ordinance for two years to allow more time to work thru these issues. Staff feels this is acceptable given in part to the fact Minneapolis is undergoing a franchise renewal process as well. The results of this process may be of benefit to the City relating to the terms Minneapolis may be able to negotiate in their new franchise ordinance.

There is some activity on franchises in the service territories of other Minnesota electric and natural gas utilities. Several cities served by Minnesota Power have renewed long-term franchise agreements in the past three years; but apparently there have been no conflicts except over franchise fees and service territories. As mentioned before, in Minnesota, there is no apparent trend toward franchise agreements with shorter terms.



## **Appendix E: August 2013 Letters RE: City of Minneapolis/Xcel Energy Partnerships**



**David M. Sparby**  
Senior Vice President, Group President  
President & CEO NSP-Minnesota

414 Nicollet Mall, 5<sup>th</sup> Floor  
Minneapolis, Minnesota 55401-1927

August 8, 2013

Mayor R. T. Rybak  
Council President Johnson  
City of Minneapolis  
350 S. 5<sup>th</sup> Street  
Minneapolis, MN 55415

**RE: CITY OF MINNEAPOLIS/XCEL ENERGY PARTNERSHIP**

Dear Mayor Rybak and Council President Johnson:

Over the past few months, Xcel Energy has met with Minneapolis council members, staff, and many stakeholders to gain better understanding of how we can help the city achieve its energy goals. In particular, we carefully reviewed both the city's Climate Action Plan and the January 3, 2013, recommendations of the Citizen's Energy Advisory Committee (CEAC).

We see much common ground and believe we can effectively collaborate with the city, building on our long history of working together. Xcel Energy is committed to Minneapolis's vibrant future and will work to provide the city with even more choices for reliable, clean, cost-effective energy.

This letter outlines our commitment to working constructively with Minneapolis on these issues, and proposes an ongoing dialogue that further defines specific action plans. The key issues we identified include:

**Environmental Goals**

- *Renewable Investments.* We understand the interest in increasing renewable energy sources within the city. Leveraging our extensive experience with solar energy in Colorado, we will help expedite the development of community solar within Minneapolis. In addition, we commit to explore making a solar investment at our Riverside power plant.
- *Interconnecting Renewable Energy Projects in Minneapolis.* Xcel Energy will build on our experience with interconnecting renewable energy projects and explore with Minneapolis potential process improvements related to our standard contract for renewable energy projects and to address other real and perceived barriers related to the expected growing development of renewable energy in Minneapolis.
- *Energy Efficiency.* We would like to explore with you ways we can increase participation in our energy efficiency programs to help position Minneapolis businesses and residents for competitive success.

These commitments will represent an important step in achieving the Climate Action Plan goal of increasing local renewable energy and relate to CEAC recommendation #5.

## Reliability

- *Reliability Reporting.* We understand the city's interest in gaining a better understanding of energy issues and our performance. To that end, we commit to provide reports regarding city-specific service reliability and to work with you on the format and frequency of that reporting. Because our information systems do not organize reliability information by city, we will need to work jointly with the city to develop a method of producing this information in a manner that is feasible for Xcel Energy and usable for the city.
- *System Investments.* We likewise understand the interest in ensuring a robust grid that is poised for future development and growth, as well as potential future energy sources. We propose to provide on an annual basis our plans for investments in the Minneapolis grid to both ensure reliable service and evolve to meet future needs, including more distributed generation and smart-grid features.
- *Service Quality.* We propose to meet with you annually to review the reliability performance of our service within Minneapolis and planned investments in our system within Minneapolis. These reviews will include information and assessment of more localized areas experiencing higher-than-normal outage levels and our plans for addressing them.

These commitments relate to CEAC recommendations #7, 8, 10 and 11.

## On-going Dialogue

- *Working Group.* We propose to form a joint Xcel Energy – Minneapolis Sustainability Working Group to develop specific implementation plans related to the city's Climate Action Plan and other sustainability initiatives. The city's Climate Action Plan includes a goal of reducing carbon emissions 30 percent by 2025, the current goal established by state law. We can help the city achieve or exceed its goal, given our commitment to reduce carbon emissions 30 percent by 2020.
- *Other Issues and Initiatives.* We are interested in developing more service offerings for customers, including options for obtaining additional renewable energy, and welcome your input to the design of these offerings. For example, we will explore with Minneapolis the potential to link renewable energy and energy efficiency to city infrastructure such as the Xcel Energy-owned street lights. Another area of mutual interest is energy usage data and the associated privacy needs and concerns. We support the city's participation in the working group in the Minnesota Public Utilities Commission docket on this issue and look forward to a productive engagement with the city and other interested parties. We know you have interests in other issues that

we are open to better understanding. We would like to work with city staff on the best forum for ongoing collaboration and idea exchange to ensure we continue to advance our mutual understanding of these issues.

In addition to helping the city achieve its Climate Action Plan goals, this commitment relates to CEAC recommendations #1 and 18.

### **Commitment**

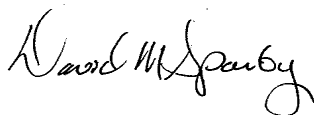
I believe these initiatives represent a sizable commitment to helping Minneapolis achieve its goals. We are committed to the city's long-term success and vitality, and look forward to continuing to make this place a great place to live and work.

Mayor Rybak and Council President Johnson, please know that we are proposing these initiatives in the spirit of the strong and long-standing partnership between Minneapolis and Xcel Energy. Let me assure you that we consider these actions to be next steps in our work with you on energy services, sustainability and climate change, rather than a first or last step. As we work to develop these initiatives, we must of course ensure that our investments are in the best interest of all our Minnesota customers and that we obtain any necessary approvals.

If the city were to adopt a resolution authorizing the city to acquire Xcel Energy's property to create a municipal utility, we feel it would be difficult to move forward with the proposed actions presented in this letter. I am sure you can understand this perspective and hope you agree. I believe we can accomplish much more by working constructively together.

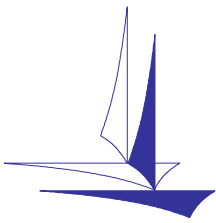
I look forward to your response, and to a continued strong partnership between the city of Minneapolis and Xcel Energy. Please feel free to contact me at (612) 330-7752, or Laura McCarten at (612) 330-5723.

Sincerely,



David M. Sparby

Cc: Council Member Colvin Roy  
Council Member Glidden  
Council Member Goodman  
Council Member Gordon  
Council Member Hodges  
Council Member Hofstede  
Council Member Lilligren  
Council Member Quincy  
Council Member Reich  
Council Member Samuels  
Council Member Schiff  
Council Member Tuthill  
City Coordinator Aasen



**Minneapolis**  
City of Lakes

**Office of the Mayor**

R.T. Rybak  
Mayor

350 South 5th Street – Room 331  
Minneapolis MN 55415-1393

Office 612 673-2100  
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TTY 612 673-3187

August 8, 2013

Dave Sparby  
President & CEO  
Northern States Power – Minnesota  
414 Nicollet Mall  
Minneapolis MN 55401

RE: CITY OF MINNEAPOLIS/XCEL ENERGY PARTNERSHIP

Dear Mr. Sparby:

Thank you for your August 8, 2013 letter. Throughout our city's history, meaningful partnerships between government, business and community have helped Minneapolis build and maintain our strong economy and outstanding quality of life. Your letter laid the groundwork for a productive, collaborative partnership that will bring forward a next-generation energy system for Minneapolis that is green, efficient, reliable and affordable.

The commitments that you have outlined in your letter gave me real hope that we can seize opportunities that have been missed in the past. I believe a collaborative approach between the City and Xcel will lead to concrete benefits for Minneapolis residents and ratepayers of which we can both be proud. For example:

- 1. Renewable energy for City streetlights.** The City of Minneapolis used approximately 98 million kWh of electricity in 2011, of which 32 million were for streetlights alone. Our streetlights are second only to the City's waterworks for usage of electricity. I appreciate Xcel's commitment to work together to explore powering our streetlights with renewable energy that is specifically for Minneapolis. Specifically, I would like Minneapolis to buy, rather than rent, renewable energy through a wind farm that we can build together for the City's use. It would be a visible sign of our collaboration that would allow Minneapolis residents to reap the full benefit of their investment.
- 2. Solar at Riverside.** One of my proudest moments as Mayor was the day that our partnership with Xcel allowed us to announce that the Riverside Power Plant was being converted from coal to cleaner natural gas. Xcel's commitment to explore making a solar investment at Riverside is the next step in providing cleaner power in North and Northeast Minneapolis.



3. **Midtown HVTL controversy.** Lake Street was completely torn up and rebuilt just a few years before Xcel sought to build new power lines through the same corridor. This led to both unnecessary conflict and increased cost as those lines are now being buried under 28<sup>th</sup> Street, which runs parallel to Lake Street. Xcel's commitment to share its capital plan with the City will help us avoid situations like this in the future by coordinating investments together for the benefit of residents and ratepayers.
4. **City solar installation at the Haaf Ramp.** We can both be proud of the contribution to renewable energy that this project is making, but the process for building it was onerous and time-consuming. Xcel's commitment to reduce barriers to the growing development of renewable energy in Minneapolis will allow for a more aggressive expansion of such facilities in the future.
5. **Reliability reporting and service quality.** Xcel's commitment to provide city-specific reliability reports and to strengthen the grid in areas that are experiencing higher-than-normal outage levels is an important step forward. We agree that this is something we must work on together, and as we do so, we will provide even greater confidence to area businesses.
6. **Shared commitment to reduce carbon emissions.** I am pleased that Xcel has offered to help the City achieve or exceed the goals in our Climate Action Plan goals, given your commitment to reduce carbon emissions by 30% by 2020. Future generations will measure both Minneapolis and Xcel by our bottom-line results in addressing climate change.

Much more work is left to do. As a part of that work, I hope that we will jointly address the unique challenges of Minneapolis' older housing stock and the dramatic benefits of improved weatherization, in both winter and summer. These benefits include increasing the affordability of living in Minneapolis, addressing climate change in the most cost-effective way possible, and creating more green jobs in our growing local green economy, among others.

I appreciate the important commitments that Xcel has made in your letter. I believe, and I think that my colleagues on the City Council believe, that we should not preempt the conversations that come next by putting a question about municipalization on the ballot three months from now. I will ask that City Coordinator Paul Aasen work with your staff to continue this conversation and solidify our next steps in building this partnership.

Sincerely,



Mayor R.T. Rybak  
City of Minneapolis

cc: Council President Barbara Johnson  
City Council Members  
City Coordinator Paul Aasen

# Appendix F: Legal Process for Acquiring Utility Infrastructure

## OVERVIEW OF THE PROCESS

A city without a municipal utility may establish a municipal utility, using the procedures established under Minnesota Chapter 216B. In the 1974 Act, Minnesota adopted an assigned, exclusive electric service territory for each utility.<sup>37</sup> The boundaries can be changed only upon either (1) agreement by the parties or (2) a municipal utility acquiring additional service territory. This second alternative recognizes that the city boundaries may change over time. A municipal utility, unlike other types of utilities (such as investor-owned utilities or rural electric cooperative utilities), may therefore expand its assigned electric service territory, as long as it compensates the existing provider.<sup>38</sup>

The factors to determine payment of the existing provider are set forth in statute. To create a municipal utility, the City of Minneapolis “would first need a resolution of the city council, ratified by a majority of the voters voting on the question during a special election held for that purpose. The City could then elect to either purchase the utility’s property pursuant to Minn. Stat. § 216B.45 or acquire the utility’s property by eminent domain pursuant to Minn. Stat. § 216B.47.”<sup>39</sup>

In short, the overarching process to create a municipal utility and acquire infrastructure contains four potential steps: (1) the City must initiate the process (the initial steps); (2) negotiations with the displaced utility as to acquisition costs; (3) acquisition litigation process; and (4) a potential federal proceeding.

## REQUIRED INITIAL STEPS

Minnesota statutes establish the process for creating a new municipal utility. These initial steps consist of three components. First, a city must hold a public hearing after thirty days published notice.<sup>40</sup> Second, the governing body must pass a resolution authorizing the establishment of a municipal utility.<sup>41</sup> Third, in an election held within 60-120 days after the resolution was adopted, the majority of voters who voted must ratify the resolution.<sup>42</sup> Depending on the scheduling of meetings and the election, the estimated timing of these initial steps is four to six months.

## NEGOTIATING PROCESS

Theoretically, a new municipal utility could construct all new facilities (e.g. distribution lines, substations, generation facilities, etc.). Of course, this approach is impractical if a significant number of citizens are already receiving service. If a newly-formed municipal utility wishes to acquire the utility infrastructure from an existing provider, the parties should attempt to negotiate the terms of any acquisition. This approach is prudent to avoid the costs and expenses of litigation by both parties. If the parties reach agreement on the compensation terms, the agreement will govern the payment amounts and timing. For an agreement concerning electric facilities and service territory, the parties may request that the Minnesota Public Utility Agency (MPUC) adjust the records and boundaries to reflect the agreed-upon changes in the assigned electric service territories. If the parties are unable to reach agreement, then a city may consider two procedural options.

## THE ACQUISITION PROCESS – TWO OPTIONS

As noted above, a municipal utility enjoys the statutory right to expand its electric service territory to match the boundaries of the city limits or to acquire gas or electric facilities. It is required to pay the

displaced utility “damages” for the property rights that the municipal acquires. If the parties are unable to agree upon the amount of damages, a municipal may choose between two litigation processes.

### **Option 1: Contested Case Proceeding**

One option is for the municipal to proceed before the MPUC.<sup>43</sup> By statute, the MPUC “shall, by order, determine the just compensation for the property to be purchased by the municipality” and in doing so, the MPUC “shall consider” four factors:

1. the original cost of the property, less depreciation,
2. loss of revenue to the utility formerly serving the area,
3. expenses resulting from integration of facilities, and
4. other appropriate factors.<sup>44</sup>

The MPUC typically refers a compensation matter to a contested case proceeding before an administrative law judge (“ALJ”). This proceeding includes discovery, pre-filed testimony by all witnesses expected to be called by the parties, and a hearing in which witnesses testify and exhibits are received. The hearing typically includes an opportunity for members of the public to testify. The ALJ issues recommended findings of fact and conclusions of law in an Order. Either party may file exceptions to the ALJ order. The MPUC reviews and considers, but does not always adopt, the ALJ’s recommendations. The estimated timing for the MPUC process is 15-24 months. Any appeal of an MPUC decision would be to the Minnesota Court of Appeals, expanding the duration of the process.

### **Option 2: Condemnation**

As a second option, a municipal may proceed in state district court through condemnation/ eminent domain.<sup>45</sup> A city council would pass a resolution condemning facilities and/or electric service territory rights and file a petition of condemnation with the district court in which the property rights are located. The court reviews the petition and may approve it no earlier than 90 days after the filing. The Minnesota Supreme Court has established that condemnation of utility facilities satisfies the public purpose and necessity requirements of condemnation.<sup>46</sup> Under traditional condemnation practice, the court appoints three commissioners (typically, although not required to be, an attorney, an appraiser, and an accountant) to conduct hearings and determine an award. The “damages to be paid in eminent domain proceedings must include” the same four statutory factors as a proceeding before the MPUC.<sup>47</sup> The estimated timing for the commissioner process is 6-12 months. The award of the court-appointed commissioners typically results in the transfer of the property rights at issue.

Either party may appeal the court-appointed commissioners’ award to the district court. That appeal includes the right to a jury trial, with further appeal to the Minnesota Court of Appeals and the Minnesota Supreme Court (in its discretion). The estimated timing for a jury trial is 9-12 months.

## **INTERIM SERVICE REQUEST TO THE MPUC**

Another important factor is the timing of any anticipated acquisition. Typically the existing utility prefers to continue to serve any existing or new customers until the amount of compensation is finally determined. By contrast, the municipal may be best served by planning sewer, water, electrical, and any other municipal services at the same time. The parties may agree on which utility should provide service pending a final determination on compensation, known as interim service. If the parties cannot reach agreement on interim service, the MPUC decides the issue.

A city cannot use the condemnation proceeding to seek interim service through a “quick-take” determination.<sup>48</sup> The MPUC presumes that the existing provider should serve, absent public policy or

good reasons to the contrary.<sup>49</sup> The MPUC also considers the specific location of each utility’s facilities and to extent to which the facilities are compatible (with the services needed and the population being served)<sup>50</sup> If the MPUC denies a request for interim service, the existing provider continues to provide service until compensation is determined and transfer arrangements are made.

## DAMAGES UNDER STATE LAW

The four statutory factors under either the MPUC or the condemnation process include: (1) the original cost of the property, less depreciation; (2) loss of revenue to the utility formerly serving the area; (3) expenses resulting from integration of facilities; and (4) other appropriate factors.<sup>51</sup> The loss-of-revenues component has been limited to ten years, as a reasonable period of time for a displaced utility to complete its planning and transition.<sup>52</sup> The loss-of-revenue factor considers not only the gross revenues associated with the affected customers/facilities, but also the expenses that the utility will no longer incur in no longer serving the applicable customers (such as purchased power, operations and maintenance, customer service, etc.). The “other appropriate factors” component has rarely been applied. The Minnesota Supreme Court recently reasoned that the fair market value approach commonly used in condemnation may be appropriate in the electric service territory context, as long as the approach provides “meaningful consideration” of the four statutory factors.<sup>53</sup>

## POTENTIAL FEDERAL PROCEEDING

Depending on the particular circumstances, including how a city approaches future power supply issues, a potential issue may arise under the Federal Energy Regulatory Commission (“FERC”) regulations. As part of the process of encouraging open access to transmission, FERC has permitted public utilities to seek recovery of “stranded costs” of generating facilities for retail-turned-wholesale customers (such as a city creating a municipal utility) based upon a reasonable expectation that the utility would continue to provide retail service to the customers.<sup>54</sup> FERC defines stranded costs for wholesale and retail stranded costs separately.<sup>55, 56</sup> The public utility must demonstrate that it “incurred costs . . . based on a reasonable expectation that the utility would continue to serve the customer.”<sup>57</sup> While FERC has rarely had occasion to apply the formula, it is stated as:

$$\text{Stranded Cost Obligation} = \text{Revenue Stream Estimate} - \text{Competitive Market Value Estimate} \times \text{Length of Obligation (reasonable expectation period)}^{58}$$

There are many variables in considering any claimed stranded costs. First, FERC has held that a municipality that continues to purchase power from its previous provider does not incur stranded costs.<sup>59</sup> For example, if the City of Minneapolis were to form a municipal electric utility, but continue to purchase its power from Xcel Energy, these federal regulations would not apply. Second, FERC recently clarified that this principle applies when the municipality purchases a portion (rather than all) of its power supply from the former supplier.<sup>60</sup> Third, it is unclear whether FERC has addressed the issue of claimed stranded costs when state law already specifies damages, including loss of revenues (as mentioned earlier), for the displaced utility. Fourth, it is unclear at this point whether a city would become an unbundled wholesale or retail transmission services customer. In short, any claim for stranded costs requires a case-by-case inquiry that considers the particular terms of power supply contracts, as well as the application of Minnesota statutes.

# Appendix G: Detailed Assumptions for Municipal Electric Utility Financial Assessment

This Appendix provides a more detailed overview of the key assumptions behind the financial assessment of a Minneapolis municipal utility, which is presented in Section 5.5. This analysis constructed a single-year financial illustration that asks: How might a Minneapolis municipal electric utility have performed financially in 2013 if it had already been operating for many years? Our assessment demonstrates a wide band of uncertainty, reflecting that many key factors are highly unpredictable.

The sources, assumptions and methods used to create this financial illustration are described throughout this Appendix. Primary sources of information included annual reports and financial statements of Minnesota utilities and municipal power agencies, annual reports and financial statements of 22 large municipal utilities across the country, American Public Power Association (APPA) survey results and statistical reports, municipal utility documents produced by the City of Boulder,<sup>61</sup> Xcel Energy rate case filings and other documents, reports and tariff schedules of the Midcontinent Independent System Operator (MISO), reports of the U.S. Energy Information Administration, City of Minneapolis financial policies and budget documents, and other documents and website information. When necessary, we confirmed information and obtained additional information from staff at the above-mentioned organizations.

The scope of the Energy Pathways study does not include a feasibility study of a municipal electric utility, which would entail an engineering assessment of the physical system, functions and programs, assessment of legal costs, and more. This section is intended to help City decision-makers decide whether they want to invest the resources necessary to develop a financial model and produce a feasibility study, which would be advisable if the City intends to give further consideration to municipalization.

The cost components of a Minneapolis municipal utility would be:

1. Power supply and transmission
2. Distribution operations and maintenance (O&M)
3. Customer accounting, service, and sales
4. Energy efficiency and clean energy programs
5. Administrative and general expenses
6. Major repair and replacement
7. Debt service on start-up costs
8. Depreciation
9. Net revenue required for debt service coverage ratio and operating margin (less depreciation)
10. City General Fund allocation
11. Transfer in lieu of franchise fees
12. Payments in lieu of property taxes

Like Figure 12 in Chapter 5, this organization varies slightly from standard City budget documents to provide more clarity regarding the different cost components.



This Appendix reviews each of these components in individual detail, and provides a range of cost estimates. This is an “nth year” financial illustration in 2013 dollars, which means it presumes a municipal utility with a high level of organizational maturity and fully developed management systems, capabilities, and functions, which cannot be expected in the early years of operation. The estimates for several of the cost components are based on other municipal utilities’ costs, but these utilities would not be true comparables until a Minneapolis municipal electric utility had achieved their level of expertise, efficiency and economy. This kind of analysis better reflects the value of the City’s investment after an initial assumed period of fluctuation, but it is important to note that it does not include first-year costs, especially staff time and unforeseen legal expenses. Start-up expenditures would be funded with 30-year bonds, and this nth year analysis reflects those revenue requirements would not drop after a start-up period, as bonds are repaid.

We provide three financial scenarios – a low-cost, mid-cost, and high-cost scenario. For the low-cost scenario, favorable assumptions were made to test whether it was possible for a Minneapolis municipal electric utility to achieve a revenue requirement (per kilowatt-hour) that is comparable to Xcel Energy’s overall weighted-average rate. The high-cost scenario is not as pessimistic as the low-cost scenario is optimistic, but it tests what a Minneapolis municipal utility’s revenue requirement might be if costs run high for most cost components. The mid-cost scenario is more probable than the assumptions for either the low-cost and high-cost scenarios.

The term “cost” technically refers to the revenue requirement associated with each cost component: the cents/kilowatt-hour that retail customers would have to pay. The sum of all cost components equals the average retail rate (cents/kWh) that a Minneapolis municipal utility would have to charge its retail customers.<sup>62</sup> This distinction is most important in regard to power supply and transmission (cost component 1). Note also that several cost components would be matters of City policy. Elected officials and directors of the municipal utility would have considerable discretion to affect the revenue requirements of a municipal utility.

## COST COMPONENT 1: POWER SUPPLY AND TRANSMISSION

### Power Supply and Transmission Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
262.3	0.062	305.6	0.072	348.1	0.082

The largest cost component for a Minneapolis municipal utility would be power supply and transmission costs. In these three scenarios, costs range from 40 percent to 60 percent of total expenditures including debt service and all transfers. In all three cases, these costs are over 80 percent of operating expenses (the first five cost components).

For clarification, most municipal utilities and distribution cooperatives are similar in that they are “retail” utilities whose primary functions are distribution and customer services. Municipal power agencies and generation and transmission (G&T) cooperatives are wholesale providers of power supply and

transmission service to their members. G&Ts own their own generation, and in most cases, municipal power agencies own a portion of their generation – but all buy and sell their power through the MISO market. Contracts with individual municipal agencies will depend on a number of factors, but underlying all those costs are region-wide price trends determined by MISO supply and demand.

Our low-cost scenario assumes that the City would purchase its energy directly through MISO markets. The mid- and high-cost scenarios are based on current contract prices with municipal agencies and G&Ts. However, it is unlikely that a Minneapolis municipal utility could immediately join one of the existing municipal power agencies. The additional demand would double or even quadruple the current size of most agencies, without bringing its own generation resources to offset a large portion of that load. Conversations with agency managers suggest that a more likely scenario would be to offer a limited contractual arrangement, rather than full membership.

We assume a Minneapolis municipal utility would need more than 1,200 megawatts of capacity.<sup>63</sup> For reference, this is more than the capacity of the Prairie Island nuclear power plant, and approximately half of the capacity of all three units at the Sherco generating station. In terms of demand and energy requirements, a Minneapolis municipal utility would be bigger than any of the municipal power agencies in Minnesota. Thus, a Minneapolis municipal utility would be large enough to acquire, manage, schedule, and dispatch its own power supply. However, this would add additional complexity and risk that would impact the financial outcomes.<sup>64</sup>

Investor-owned utilities and the G&T cooperatives sell power and transmission service to municipal utilities. At present, Great River Energy is the only utility in the region with excess capacity, and Xcel Energy would have excess capacity if Minneapolis became an independent utility. For a Minneapolis municipal utility, contracting with one of these utilities for power supply and transmission (and perhaps distribution O&M, too) might be the most expedient and economical option, but it is uncertain whether this could advance the purposes for which the City would form a municipal utility.

Unless a Minneapolis municipal utility negotiates resource-specific power purchase agreements, its resource portfolio would reflect the portfolios of its wholesale power suppliers. A Minneapolis municipal utility would likely increase its costs if it wanted natural gas-fired power during hours when coal-fired baseload power plants can meet load requirements. Likewise, depending on the terms of power purchase agreements, its total power supply costs could be higher if it purchases wind power from another source to supplant power that would otherwise be delivered by its primary wholesale power supplier.

Current MISO prices are low due to a surplus of generating capacity and low fuel costs, but experts predict a capacity shortfall and higher resulting prices after 2017. Factors affecting capacity and energy prices will include demand growth, coal-fired power plant retirements, new plant costs, transmission efficiency, tax policy and government subsidies, carbon pricing, fuel costs, and more.

The potential difficulty of arranging new power supply contracts for an entity the size of Minneapolis should be emphasized. A Minneapolis municipal electric utility may have to negotiate and execute multiple power purchase agreements in a market with tight supply, creating a weak negotiating position to advance its underlying clean energy goals. Thus, it is possible that a Minneapolis municipal electric utility would begin operations with a high-cost, high-carbon resource portfolio.

## **Municipal Utilities and Distribution Cooperatives: Mid- and High-Cost scenarios**

We assessed the performance of current municipal agencies and distribution cooperatives to create a benchmark for the power supply and transmission cost component. Annual reports and financial statements of wholesale suppliers, municipal utilities and distribution cooperatives for 2012 are the primary sources of operational and financial information. However, it is unlikely that a Minneapolis municipal would join these agencies at the same rates. Minneapolis has significantly more demand, and does not provide its own generation assets.

### ***Minnesota Municipal Power Agency***

The Minnesota Municipal Power Agency (MMPA) provides wholesale power, transmission and market operations to 11 municipal utilities with a variety of generation resources. In 2018, Elk River Municipal Utilities will join MMPA, which will add about 60 megawatts (MW) of peak demand to MMPA's current peak demand of 320 MW.

Annual reports and financial statements of MMPA and some of its members were reviewed for rate and wholesale cost information. MMPA increased its wholesale rates slightly in 2013, but its rates are still quite low – after adjusting for Conservation Improvement Program (CIP) costs and distribution line losses, the overall average rate charged to members for wholesale power and transmission is about \$0.067/kWh.<sup>65</sup>

### ***Southern Minnesota Municipal Power Agency***

The Southern Minnesota Municipal Power Agency (SMMPA) provides wholesale power, transmission and market operations to 18 municipal electric utilities in Minnesota. In 2012, the average rate to SMMPA members (including distribution losses) was \$0.072/kWh; and SMMPA did not increase its rates in 2013, according to website information and documents of SMMPA and SMMPA members. If CIP expenditures are subtracted, the overall average rate to SMMPA's members would be slightly less than \$0.070/kWh. The actual average SMMPA rate to individual utilities would vary based on their load profiles. This benchmark – \$0.072/kWh – is the estimate for power supply and transmission included in the mid-cost scenario of the financial illustration for a Minneapolis municipal utility.

SMMPA's current peak demand is 621 MW; a significant percentage of this demand is met by SMMPA's ownership of 362 MW (41 percent) of Sherco 3. SMMPA and its current members do not have surplus generating capacity under ownership or contract.

### ***Missouri River Energy Services***

Missouri River Energy Services (MRES) is the largest municipal power agency serving Minnesota municipal utilities. Its membership includes 24 Minnesota municipal utilities and 37 municipal utilities in North Dakota, South Dakota, and Iowa. Among municipal utilities in Minnesota, the members of MRES enjoy the lowest overall wholesale costs. MRES's average wholesale rate was \$0.057/kWh in 2013, but this rate does not include transmission costs.<sup>66</sup> When transmission costs are included and CIP costs are excluded, the delivered wholesale cost of power to MRES members was about \$0.066/kWh.

MRES members purchase only about half of their wholesale power from MRES. Almost all of the members of MRES have fixed allocations of low-cost hydroelectric power from the Western Area Power Administration (WAPA). In 2013, WAPA's average wholesale rate was \$0.033/kWh (without transmission). For illustration, for a municipal utility that buys 60 percent of its power from MRES and 40

percent from WAPA, the average blended cost for power and transmission (less CIP costs) is about \$0.057/kWh.<sup>67</sup> Apart from WAPA's hydro-electric power, 65 percent of the nameplate capacity available to MRES members burns coal, diesel or fuel oil; 19 percent uses natural gas; 5 percent is nuclear power; and 12 percent is wind power.

### **Great River Energy**

Great River Energy is a generation and transmission cooperative for 28 distribution cooperatives. In 2013, Great River Energy's overall average wholesale rate to all distribution cooperatives was about \$0.071/kWh. The average rate paid by individual distribution cooperatives for wholesale power varies, depending in large part on when they need power. Great River Energy charges distribution cooperatives lower rates for off-peak electricity, so the distribution cooperatives whose customers use more off-peak electricity have lower retail revenue requirements for recovery of wholesale power and transmission costs.

Unlike other large utilities in the region, Great River Energy has surplus generating capacity. Thus, of the wholesale power suppliers reviewed above, Great River Energy could be a wholesale supplier of power and transmission service to a Minneapolis municipal utility.

A Minneapolis municipal utility's load curve would resemble the load curve of a suburban/exurban distribution co-op more than that of a rural distribution co-op. Taking into account distribution losses and CIP costs, a large suburban/exurban distribution co-op's retail revenue requirement for power supply and transmission was \$0.082/kWh in 2013. This number – \$0.082 – is the estimate for power supply and transmission assumed in the high-cost scenario of the financial illustration for a Minneapolis municipal utility.

Relative to recent market prices, power supply and transmission costs may be surprisingly high in the mid-cost and high-cost scenarios (\$0.072/kWh and \$0.082/kWh, respectively); but these are actual current costs of some municipal and cooperative utilities in Minnesota. If demand pushes capacity and energy prices in the coming years, these scenarios may accurately indicate what it would cost a Minneapolis municipal utility to meet MISO capacity requirements and maintain a stable power supply; but costs could be higher, too.

### **Hypothetical MISO Purchases: Low-Cost Scenario**

The hypothetical MISO power supply and transmission costs below are an optimistic, low-cost approximation of the cost to acquire a blend of resources under limited agency contracts and power purchase agreements that would meet Minneapolis' entire need for capacity and energy.

It is assumed that the sellers would meet MISO requirements for accredited capacity plus reserve margin for the Minneapolis municipal utility. Thus, the Minneapolis municipal utility would need to purchase only enough capacity to serve load, accounting for distribution line losses. This might be a realistic expectation in a short-term arrangement when a seller has excess capacity, though not for a ten- or fifteen-year term when many utilities expect to need additional resources.

Based on U.S. Energy Information Administration data, the capacity cost estimate of \$60/kW-year is less than the annual capital cost of a conventional combined-cycle power plant using a capitalization rate of seven percent.<sup>68</sup> This is a low estimate for long-term, firm commitments of load-serving capacity. (With a

“firm” baseload power purchase agreement, the supplier is contractually obligated to deliver power 24 hours a day, year-round.)

Other costs that make up energy delivery costs are Plant O&M, fuel costs, and the transmission costs. Transmission is the cost of transmission and ancillary fees under MISO’s open access transmission tariff (OATT). Transmission costs were calculated with assistance from MISO staff, using all applicable schedules and assuming that all transmission would occur within NSP’s zone.

### Purchased Power Supply and Transmission Costs: Low-Cost Scenario

<b>Cost Assumption</b>	<b>Value</b>
Megawatts of capacity required (1,200 MW + 3.5% for distribution losses) <sup>1</sup>	1,242
Capacity cost <sup>2</sup> @ \$60/kW-year	\$74,520,000
MWh energy production <sup>3</sup> (4.25 million + 3.5% for line losses)	4,398,750
Plant O&M cost <sup>4</sup> @ \$1.00/MWh	\$4,398,750
Fuel cost <sup>5</sup> @ \$30/MWh	\$131,962,500
Transmission cost <sup>6</sup>	\$51,430,830
Total costs for power supply and transmission	\$262,312,080
Kilowatt-hours delivered to customers	4,250,000,000
<b>Cost per kWh delivered to customers for power supply and transmission only</b>	<b>\$ 0.062</b>

NOTES:

<sup>1</sup> Xcel Energy's revised estimate

<sup>2</sup> Xcel Energy value of solar estimate

<sup>3</sup> Xcel Energy estimate

<sup>4</sup> Xcel Energy value of solar estimate

<sup>5</sup> U.S. Energy Information Agency, 2013

<sup>6</sup> MISO schedules; assumes Zone 16 (NSP) for all transmission

To reiterate, it is doubtful that a Minneapolis municipal utility could obtain long-term firm power purchase agreements at such a low cost, particularly at a time when other utilities are adding generation resources. A municipal utility may be able to purchase power at this cost on a non-firm or short-term basis; but this would expose the municipal utility to high market prices during peak-demand periods or long-term exposure to rising price trends.

As mentioned earlier, none of the scenarios are “green” scenarios – all three scenarios are “least-cost” scenarios based on different assumptions about market conditions and opportunities to contract for power and transmission. Under any of these scenarios, supplanting dirtier generation resources with greener generation resources would probably increase power supply costs.



# COST COMPONENT 2: DISTRIBUTION SYSTEM OPERATIONS AND MAINTENANCE

## Distribution O&M Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
18.5	0.004	23.1	0.005	26.1	0.006

Operations and maintenance of the distribution system is a crucial activity for a municipal electric utility. For this and other cost components, the annual reports and financial statements of 22 large municipal and public power utilities nationwide were reviewed to develop financial benchmarks and gain insights into factors that affect costs. However, given that there is little uniformity among municipal utilities in their financial accounting and reporting, especially for O&M costs, only seven of the 22 utilities have annual reports and financial statements that are useful for the purposes of this financial assessment.<sup>69</sup>

In addition, the American Public Power Association conducts annual surveys of public power utilities, which provides many of the benchmarks used in this assessment.<sup>70</sup> The APPA survey results include the cost statistic of distribution operations and maintenance expenses per retail customer. Fifteen municipal utilities with more than 100,000 customers responded to the APPA survey.

The following table presents cost benchmarks based on the results of the APPA survey for the fifteen municipal utilities with more than 100,000 customers, the financial reports of seven individual municipal utilities, and the estimate of distribution system O&M costs that have been assessed for the Boulder municipal utility.<sup>71</sup> The values in the table below were calculated by multiplying distribution system O&M costs per customer for the utilities identified in each row by Minneapolis' number of customer premises (177,625).

## Values Based on APPA Survey Results and Selected Actual Expenditures: Distribution System O&M Costs

Expenditure Source	Cost Scenarios		
	Low (\$ Millions)	Mid (\$ Millions)	High (\$ Millions)
Range based on APPA results: 1st quartile, median, 3rd quartile	18.48	23.14	26.13
Value based on median of 7 municipal utilities		24.16	
Value based on mean of 7 municipal utilities		23.45	
Value based on Boulder municipal utility estimate		23.60	
*All values adjusted to 2013 dollars with 2.5%/year inflator/deflator.			

The tight mid-cost range suggests a reasonable confidence in the estimation of distribution O&M costs. The results of the APPA survey results, the actual expenditures on distribution system O&M at seven large municipal utilities, and the results of the Boulder municipal utility financial modeling all point to an estimate of annual costs for distribution system O&M in the range of \$23.1 million to \$24.2 million.

## COST COMPONENT 3: CUSTOMER ACCOUNTING, SERVICE, AND SALES

### Customer Accounting, Service, and Sales Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
11.1	0.003	12.9	0.003	16.1	0.004

Customer accounting, service, and sales is a difficult cost category to assess because different municipal utilities charge different expenses to it. Respondents to the APPA survey were instructed to include the costs of metering, billing, and collections in this category, as well as the costs of all customer services programs, including the cost of energy efficiency and renewable energy programs. Depending on the programs a utility has and how they are accounted, the costs of programs such as key account services, low-income subsidies, energy efficiency and renewable energy programs, and promotions might be reported in this cost category.<sup>72</sup> Many municipal utilities report no spending on energy efficiency and renewable energy programs; others report substantial spending.

The following table shows the APPA survey results for the 15 municipal utilities with more than 100,000 customers. Also shown are values based on the actual expenditures of seven large municipal utilities in other states and a value based on the City of Boulder’s financial modeling.

### Values Based on APPA Survey Results and Selected Actual Expenditures: Customer Accounting, Service, and Sales

Expenditure Source	Unadjusted Cost Scenarios		
	Low (\$ Millions)	Mid (\$ Millions)	High (\$ Millions)
Range based on APPA results: 1st quartile, median, 3rd quartile	13.06	15.86	24.07
Value based on median of 7 municipal utilities		12.25	
Value based on mean of 7 municipal utilities		11.90	
Value based on Boulder municipal utility estimate		16.90	
All values adjusted to 2013 dollars with 2.5%/year inflator/deflator.			

In this financial illustration, there is a separate cost component for energy efficiency and renewable energy programs. Thus, some adjustment is necessary to avoid double-counting these program costs. To recognize that respondents to the APPA survey may have included energy efficiency and renewable energy program costs in this cost category, the following adjustments are made to the values in the range of APPA results.

SCENARIO	ADJUSTMENT	MINNEAPOLIS ESTIMATE
Low-Cost	\$2.0 million subtracted	\$11.06 million
Mid-Cost	\$3.0 million subtracted	\$12.86 million
High-Cost	\$8.0 million subtracted	\$16.07 million

Note that the mid-cost estimate for a Minneapolis municipal utility is slightly higher than the median cost of the seven municipal utilities we were able to use for purposes of this assessment and much lower than the estimate for a Boulder municipal utility. To the extent possible, costs for energy efficiency and renewable energy programs were excluded from the calculation for these benchmarks. For a Minneapolis municipal utility, the range of \$11.06 million to \$16.07 million per year for customer services seems reasonable.

## COST COMPONENT 4: ENERGY EFFICIENCY AND CLEAN ENERGY PROGRAMS

### Energy Efficiency and Clean Energy Programs Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
10.0	0.002	15.0	0.004	20.0	0.005

Xcel Energy estimates that approximately \$8.0 million of its 2012 Conservation Improvement Plan program dollars were spent in Minneapolis. If the City were to establish a municipal utility, it probably would not spend less on energy efficiency and clean energy programs than Xcel Energy. Therefore, \$10.0 million is the assumed spending level in the low-cost scenario. Expenditures on energy efficiency and clean energy programs in the mid-cost and high-cost scenarios are assumed to be \$15.0 million and \$20.0 million, respectively.

This range from the low-cost to the high-cost scenario equates to only \$0.002 to \$0.005/kWh in the average retail rate. Thus, the overall results of this financial illustration are not significantly affected by any doubling of costs attributable to energy efficiency and clean energy programs.

It is difficult to draw comparisons with other municipal utilities because some or all of their energy efficiency and clean energy program funding may be hidden in the customer services cost category. Where there is a third-party program administrator or where wholesale municipal power agencies deliver energy efficiency and clean energy programs, the municipal utilities' funding contributions might be treated as general expenses or included in power rates.

Two benchmarks are worth noting, however. First, Austin Energy (Texas), which has about 417,000 customers, had \$40.0 million budgeted in 2013 for its energy efficiency and distributed renewable energy programs. If a Minneapolis municipal utility funded these programs proportionately for its 177,625 customers, its budget for energy efficiency and renewable energy programs would be about \$17.0 million. Second, the financial modeling for a Boulder municipal electric utility indicates that Boulder would have had \$4.5 million budgeted for energy efficiency and renewable energy programs in 2013. This budget equates to a Minneapolis budget of \$12.7 million. The mid-cost value for a Minneapolis municipal utility is centered between these two benchmarks.

## COST COMPONENT 5: ADMINISTRATIVE AND GENERAL EXPENSES

### Administrative and General Expenses Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
12.0	0.003	14.2	0.003	16.0	0.004

APPA's survey instructions are to include in this cost category expenses that do not fit in other cost categories. Utilities vary with respect to which financial functions they include in this cost category versus the customer services category. Some include all employee benefits and pension contributions, and others include payments in lieu of taxes and General Fund overhead charges. We assume that a Minneapolis municipal utility would account the following functions to administrative and general expenses:

- Governance and general management
- Operations management
- Power and transmission resource management
- Information systems and IT support
- Legal
- Contracts administration
- Risk management and insurance
- Regulatory compliance and reporting
- Human resources
- Payroll, pensions, and benefits management
- Purchasing
- Inventory management
- Facilities management and maintenance
- Finance (including power and transmission settlements)

The APPA survey results are organized by utility size (number of customers) and also by how much of their generation portfolio utilities own and operate. One might expect that utilities that own and operate more of their generation portfolio would have higher administrative and general expenses (for everything from management staff to information systems to insurance). The survey results indicate that this is generally, but not uniformly, true. The APPA survey results for utilities that do not own and operate generation resources are presented in the table below.



Values Based on APPA Survey Results and Selected Actual Expenditures:  
Administrative and General Expenses

	Low-Cost Scenario (\$ Millions)	Mid-Cost Scenario (\$ Millions)	High-Cost Scenario (\$ Millions)
Range based on APPA results for utilities with more than 100,000 customers: 1st quartile, median, 3rd quartile	22.56	26.47	38.54
Range based on APPA results for utilities that own/operate no generation resources: 1st quartile, median, 3rd quartile	16.34	26.47	36.41
Value based on median of 7 municipal utilities		32.86	
Value based on mean of 7 municipal utilities		35.70	
Value based on Boulder municipal utility estimate		14.20	
All values adjusted to 2013 dollars with 2.5% inflator/deflator.			

Note the costs of pensions and medical benefits for all employees are not included in this cost component, nor are payments in lieu of taxes, payments in lieu of franchise fees, or transfers to the City's General Fund.

## COST COMPONENT 6: MAJOR REPAIR AND REPLACEMENT

### Major Repair and Replacement Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
14.9	0.004	19.5	0.005	23.7	0.006

It is the financial policy of the City that:

For certain enterprise fund capital projects, annual revenues are designated as the source of funding. These projects are typically for recurring major maintenance projects or ongoing long-term programs. For these projects, the expenditures are to be paid from funds of the appropriation year in which the work occurs.<sup>73</sup>

In 2013, Xcel Energy budgeted \$149.7 million for capital investments in NSP-Minnesota's distribution system, according to testimony by Kent T. Larson. Mr. Larson described the capital investments as follows:

Distribution is making investments to maintain and improve substation and distribution line asset health, to increase system capacity, and to relocate facilities within public right-of-ways. The asset health projects include replacement of transformers, circuit breakers, and switches in our distribution substations, as well as replacement of poles, wires and cables. The capacity-related projects include new service connections, substation capacity increases to address high-consequence outage potentials and localized growth, and substation modifications to accommodate higher voltage transmission lines. The relocations are required by our franchise agreements.<sup>74</sup>

Xcel Energy has indicated that Minneapolis has 13 percent of the Minnesota distribution system, so it is reasonable to assume that Minneapolis' portion of the capital budget for distribution system improvements would be about 13 percent of \$149.7 million, or about \$19.5 million.

Xcel Energy has reported that the gross plant-in-service value of its distribution system in Minnesota is \$3,375 million dollars. Thirteen percent of this gross plant-in-service value is \$439 million, which is an approximate value for the Minneapolis distribution gross plant-in-service. An ongoing capital budget of \$19.5 million for distribution system improvements equals 4.4 percent of the gross plant-in-service value. This might seem somewhat high, but Mr. Larson describes in his testimony the need to replace aging infrastructure (with some transformers more than 60 years old) and system upgrades required to support development projects. Additionally, a Minneapolis municipal utility may want to move distribution lines underground and install smart-grid technologies, which would also be budgeted under major repair and replacement.

In the financial illustration, the annual budget for major repair and replacement is assumed to be:

Low: 3.4% of \$439 million = \$14.9 million  
 Mid: 4.4% of \$439 million = \$19.5 million  
 High: 5.4% of \$439 million = \$23.7 million

## COST COMPONENT 7: DEBT SERVICE ON XCEL ENERGY COMPENSATION

### Debt Service on Xcel Energy Compensation Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
43.6	0.010	126.8	0.030	259.7	0.061

Compensation costs to Xcel Energy for acquisition and displacement of its energy supply system are the second-largest cost component of this assessment. The costs are also highly uncertain, and we explore the possible range of components below. Xcel Energy has indicated that this compensation might be \$3.0 billion, but it could be considerably less. If the City were to pay Xcel Energy \$3.0 billion, the debt service on this compensation would equate to about \$0.06/kilowatt-hour, a significant rate impact.

According to Minnesota statute, if the City of Minneapolis and Xcel Energy are unable to reach agreement on compensation, the Minnesota Public Utilities Commission (MPUC) or the courts would determine the “just compensation” due to Xcel Energy, taking into account **“the original cost of the property less depreciation, loss of revenue to the utility, expenses resulting from integration of facilities,** and other appropriate factors.”<sup>75</sup> Note that the statute does not establish a formula for determining “just compensation,” and does not require assigning and summing discrete values for each of these three factors.

In a letter to the Center for Energy and Environment dated October 8, 2013 (“Xcel Energy’s October 8 Letter”), Xcel Energy provided a “high-level indicator of potential value” for the Minneapolis distribution system which, Xcel Energy cautions, “should not be relied upon for any planning purposes and are not binding on the company.”<sup>76</sup> In this letter, Xcel Energy assigns “potential” values to each of the three specific factors identified in the statute as follows:

### Xcel Energy: Potential Values for Specific Compensation Factors

Compensation Factor	Value (in Millions)
Depreciated value of distribution system	\$270 to \$530
Present value of lost revenues less fuel costs	\$2,000
Cost to separate Minneapolis and re-integrate Xcel's distribution system	≥ \$500
<b>Total</b>	<b>\$2,770 to \$3,030</b>

It is not within the scope of this study to propose a calculation of “just compensation” to Xcel Energy; but for the purpose of establishing a reasonable range of potential costs to the City of Minneapolis to include in the financial illustration, alternative ways to consider depreciated value and lost revenues are described below.

### Depreciated Value of the Minneapolis Distribution System

The first element of the statute governing compensation requires consideration of the “original cost of the property less depreciation.” Additionally, one might also consider the income value of the property.

According to e-mail correspondence from Xcel Energy staff (January, 10, 2014), NSP’s preliminary and unaudited ledger for year-end 2013 indicates that the depreciated value of the Minnesota distribution system is:

Gross Plant-in-Service:	\$3,375,000,000
Accumulated Depreciation:	(\$1,362,000,000)
Net Plant-in Service:	\$2,013,000,000

Xcel Energy has noted that approximately 13 percent of NSP’s Minnesota distribution system serves Minneapolis. Based on this, the “original cost of the property less depreciation” would be \$261.7 million, which is less than \$270 million (the low end of the range suggested in Xcel Energy’s October 8 Letter).

NSP pays property taxes on equipment as well as real property in Minnesota; NSP paid approximately \$60,120,000 in property taxes on its Minnesota distribution system in 2013. NSP’s “system unit value”

(property valuation) has two parts that are given equal weight: a “cost indicator of value” (which is an adjusted depreciated value), and an “income indicator of value.”

The income indicator of value is the net operating income (NOI) of the system divided by a capitalization rate. The conceptual basis for this valuation method is that the system’s value is a function of its original cost less depreciation and the net income it generates. (Capitalizing NOI is not an uncommon method of valuation; it is used to price investment properties and businesses every day.)

For 2013, NSP’s cost indicator of value was \$8.45 billion (Minnesota, electric-only). Its income indicator of value was \$6.12 billion.<sup>77</sup> Thus, the “original cost of the property less depreciation” was \$2.33 billion more than the estimated value of the NOI attributable to that property, and the “system unit value” was 86 percent of the “cost indicator of value.”

If the MPUC or court were to find that this proportion is true of the Minneapolis distribution system, it could determine that the value of the Minneapolis distribution system is \$225.1 million (86 percent of \$261.7 million). This value is used in the low-cost scenario of the financial illustration. The values used in the mid-cost and high-cost scenarios were provided in Xcel Energy’s October 8 Letter.

### Depreciated Value of the Distribution System

Scenario	Value (\$ Millions)	Source
Low-Cost	225.1	CEE Calculation
Mid-Cost	270.0	Xcel Energy
High-Cost	530.0	Xcel Energy

### Loss of Revenues

Xcel Energy suggests that it should be awarded the present value of net lost revenues over a ten-year compensation period, based on past precedent.<sup>78</sup> Xcel Energy defines net lost revenues as total Minneapolis revenues less fuel costs. This assumes that Minneapolis electric sales, electric rates and fuel costs would remain the same for ten years. The result of Xcel Energy’s calculation is an estimate of \$2.0 billion for compensation due to loss of revenues, which is the value used in the high-cost scenario of the financial illustration.

### Recognition of Cost-Savings Potential

If the City of Minneapolis decides to form a municipal utility, Xcel Energy would realize operations savings, which would be deducted from the compensation value. Xcel Energy’s Integrated Resource Plan indicates that Xcel Energy plans to add generating capacity between 2017 and 2025. Eliminating 1,200 megawatts of demand would postpone or eliminate the need for planned capacity additions. According to documents filed by Xcel Energy related to the value-of-solar methodology, new combustion turbines cost \$5.00/kW-month. At \$5.00/kW-month, 1,200 megawatts would cost \$72 million per year. At some point in the ten-year compensation period, Xcel Energy could begin accruing savings of this amount (that is, if Xcel does not sell this capacity elsewhere).

Formation of a Minneapolis municipal utility would also result in distribution system capital cost savings for Xcel Energy, as well as fuel cost-savings and fixed and variable O&M cost-savings. Also, Xcel Energy would no longer have the non-cash expense of depreciation on the distribution plant in Minneapolis, and would additionally realize savings in customer services and administrative and general expenses. The estimated annual cost savings for Xcel Energy are shown below.

Generating capacity cost-savings:	\$ 74.5 million
Distribution capital improvements:	\$ 19.5 million
Fuel cost-savings:	\$111.8 million
Fixed and variable generation O&M:	\$ 4.2 million
Distribution system O&M:	\$ 13.9 million
Distribution depreciation:	\$ 12.9 million
CIP cost-savings:	\$ 10.0 million
Administrative & General	\$ 8.5 million
Customer Services, Sales, Billing And Accounting	\$ 8.5 million
<b>TOTAL COST-SAVINGS:</b>	<b>\$263.8 million</b>

The above cost savings are equal to about \$0.062/kWh.

According to Xcel Energy, revenues from sales in Minneapolis were \$378.0 million (\$0.089/kWh) in 2012. Minneapolis revenues minus the above estimate of total annual cost savings equal annual net revenue losses of \$114.2 million (\$0.027/kWh). If, like Xcel Energy, the MPUC or courts assume no cost or rate escalation over the ten-year period, the net present value of this stream of net revenue losses would be \$858.3 million. This is the value assumed in the mid-cost scenario of the financial illustration.

### Recognition of Cost Savings Potential

Potential Savings Source	\$ Millions
2012 Minneapolis revenues	378.0
Annual cost-savings potential	(263.8)
Annual net revenue loss	114.2
NPV of annual revenue loss	858.3

### Recognition of Revenue Potential

Rather than maximize costs savings, Xcel Energy could maximize revenues with the capacity freed by Minneapolis forming a municipal utility. A plausible scenario is for marginal capacity prices to remain near zero while there is sufficient capacity in the regional market, and then quickly rise around 2017 to a plateau of about \$65/kW-year (2013 dollars) because utilities will need capacity additions.<sup>79</sup> At \$65/kW-year, 1,200 MW of capacity would be worth \$80.7 million a year.

In 2012, the Minnesota Department of Commerce concluded that wind resources would be worth up to \$0.050/kWh on a long-term contractual basis primarily for their energy value and recommended that Xcel Energy be required to pursue 100 MW to 200 MW of wind power in 2015-2016 if the price is \$50/MWh or less. Using a wholesale price of \$0.050/kWh to estimate Xcel Energy's revenue potential resulting from Minneapolis' formation of a municipal utility is not overly optimistic. In fact, it is conservative because it discounts the capacity value of firm, dispatchable resources during a period when several utilities in the upper Midwest (including Xcel Energy) will be adding such resources. Put differently, it is highly unlikely that a utility with an underutilized power plant would sell the capacity and its energy production for \$0.05/kWh under a long-term power purchase agreement beginning around 2017.

In the event that Minneapolis forms a municipal utility, Xcel Energy could use the freed capacity to meet its own expected capacity needs, or Xcel Energy could sell 1,242 MW of capacity and electricity production to another utility with a power purchase agreement. If Xcel Energy were to execute a power purchase agreement to sell 4.25 million MWh at a price of \$0.050/kWh (with no demand charge for 1,242 MW of firm capacity), Xcel Energy’s revenues would be \$212.5 million a year. These revenues would partially offset the revenue loss of \$378 million a year in Minneapolis (as estimated by Xcel Energy).

There would be offsetting cost savings, too. Xcel Energy would not incur any distribution system costs (including customer services and administrative/general expenses) or CIP expenses associated with the sale of power at the retail level. Based on the calculation of savings explained in the preceding section, these cost savings would be \$73.3 million per year. The sum of revenues from the power purchase agreement and these cost savings would be \$285.8 million per year. Thus, the net loss of revenues to Xcel Energy would be as follows:

**Recognition of Revenue Potential**

Potential Revenue Source	\$ Millions
2012 Minneapolis revenues	378.0
Power purchase agreement revenues	(212.5)
Distribution and CIP cost savings	(73.3)
Annual net revenue loss	92.2
NPV of annual revenue loss	693.0

It should be noted that no adjustment to gross revenues were made for Xcel Energy’s rate increase in 2013.

The preceding analysis of revenue potential plus cost savings is not used in any of the three scenarios of the financial illustration. It is provided to inform discussions about the potential net revenue loss which Xcel Energy might incur if Minneapolis forms a municipal electric utility.

**Rejection of Claim for Lost Revenues**

Lost revenue determination by the Public Utilities Commission would be the result of extensive testimony and analysis. For the purposes of this study we use a large range between \$2.0 billion (the value suggested by Xcel Energy and assumed in the high-cost scenario) down to zero dollars, which is unlikely, but used as the other extreme for the low-cost scenario.

**Separation and Re-integration Expense**

Both Xcel Energy and a Minneapolis municipal utility could incur high costs to integrate (or complete) their respective distribution systems after Xcel Energy separates Minneapolis from the remainder of its distribution system. Detailed engineering studies would be required to estimate what it would cost each utility to build separate and functional distribution systems after the wires are cut. According to Xcel Energy:



The effort would require significant time and resources to conduct necessary distribution system planning, system engineering, construction design, state and local permitting, data acquisition, etc.

- May require at least 5-7 new substations to maintain existing design and operation standards for reliability.
- Dozens of feeders would have to be severed, requiring new, modified and relocated facilities. System reconfiguration would be required to reestablish reliability and switching capabilities, requiring miles of new lines and associated easements and right of way.
- Hundreds of taps serving load from the feeder system would have to be severed, requiring new, modified and relocated facilities.
- New and altered land rights would need to be secured.<sup>80</sup>

Xcel Energy further states that “consideration of these issues suggests a potential separation/integration cost factor of at least \$500M. Given the magnitude and complexity of separating and integrating the distribution system serving Minneapolis, we believe that a detailed engineering study is more likely to conclude that the total cost would be more, rather than less than this amount.”

The City of Minneapolis’ costs should be less than Xcel Energy’s because the City would acquire some functional substations and distribution lines from Xcel Energy, but completing the Minneapolis distribution system would be costly nevertheless. Xcel Energy’s \$500 million estimate serves as our benchmark for separation and re-integration costs. The following distribution of values is assumed in the financial illustration.

### Separation and Reintegration Expense

Scenario	Value (\$ Millions)
Low Cost	300.0
Mid Cost	400.0
High Cost	600.0

The wide range of factors described above inform our large range of \$525 million to \$3.1 billion for total Xcel Energy compensation costs (spread over a 30-year bond term).

### Total Compensation Cost Factors

Factor	Cost Scenarios		
	Low (\$ Millions)	Mid (\$ Millions)	High (\$ Millions)
Depreciated value of distribution system	225.1	270.0	530.0
Present value of net lost revenues	0.0	858.3	2,000.0
Cost to separate Minneapolis and re-integrate Xcel's distribution system	300.0	400.0	600.0
<b>Total</b>	<b>525.1</b>	<b>1,528.3</b>	<b>3,130.0</b>

Attorneys in Minneapolis and Boulder, Colorado, concur that the bonds sold to pay just compensation to Xcel Energy probably cannot be tax-exempt because they would be considered “private activity bonds” used “to acquire nongovernmental output property.”<sup>81</sup> Because the interest on these bonds would be taxable income, bond buyers would expect a higher yield (lower price) than if the bonds were tax-exempt. Also, it is assumed that these bonds would not be general obligation bonds; payments to bondholders would not be assured by the “full faith and credit” of the City of Minneapolis. Bond buyers would take this into account, too, when they bid on these bonds.

The City of Boulder assumes that the effective interest rate on 30-year taxable bonds would be 6.5 percent. The table below shows annual debt service costs for compensation to Xcel Energy assuming that taxable bonds would be sold with a 1.0 percent cost of issuance included in the principal, a level debt service schedule over a 30-year term with 58 payments (no payments due in the first year), and a 6.5 percent interest rate. It is important to note that the low-cost, mid-cost, and high-cost estimates assume the same term and interest rate. A shorter term than 30 years or a higher interest rate than 6.5 percent would increase annual debt service costs.

### Annual Debt Service for Compensation to Xcel Energy

	Cost scenarios (\$ Millions)		
	Low	Mid	High
<b>Total compensation to Xcel Energy</b>	525.1	1,528.3	3,130.0
<b>Annual debt service*</b>	43.6	126.8	259.7
* 1% cost of bond issuance included in principal, 6.5% interest rate, 30-year term, 58 payments, first payment due 18 months after issuance.			

## COST COMPONENT 8: DEBT SERVICE ON START-UP COSTS

### Debt Service on Start-up Costs Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
7.7	0.002	15.3	0.004	23.0	0.005

For the purposes of this illustration, start-up costs are presumed to be \$100 million in the low-cost scenario, \$200 million in the mid-cost scenario, and \$300 million in the high-cost scenario. These amounts should be viewed as “markers” rather than cost estimates. The table above shows these cost markers and the resulting annual debt service costs assuming that tax-exempt bonds would be sold with a 1.0 percent cost of issuance included in the principal, a level debt service schedule over a 30-year term with 57 payments (no payments due until the end of year two), and a 5.5 percent interest rate.

Tax-exempt bonds could not be sold to fund compensation to Xcel Energy, but they could be sold to fund all or a substantial portion of start-up costs for a municipal utility. It is assumed that all start-up costs would be funded with a 30-year bond. Thus, the financial illustration shows one year of debt service in each scenario.<sup>82</sup>

There are no comparables, proxy values, or rules of thumb to guide estimation of start-up costs. The biggest unknown in this cost component is what it would cost to complete the Minneapolis distribution system as Xcel Energy separates its remaining distribution system from Minneapolis'. Xcel Energy's distribution system was developed without regard for municipal boundaries. If the distribution system in Minneapolis is disconnected from the rest of Xcel Energy's distribution system, then the municipal utility would incur significant capital costs to complete its stand-alone distribution system.

The cost of completing the Minneapolis distribution system cannot be estimated without an extensive engineering study, and all other start-up costs cannot be estimated without a requirements study. Other start-up requirements, beyond the assets acquired from Xcel, would include commitments for generation capacity and energy; service centers, shops, and warehouses; information and billing systems; vehicles, equipment, tools, and inventory; and about 600 employees (hired and trained).

Finally, it should be noted that the costs and logistical challenges of completing Minneapolis' distribution system as Xcel Energy separates its remaining system could be avoided entirely if the Minneapolis municipal utility were to contract with Xcel Energy to operate its distribution system.

## COST COMPONENT 9: DEPRECIATION

### Depreciation Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
14.4	0.003	14.4	0.003	14.4	0.003

Depreciation is a non-cash expense. According to Xcel Energy, distribution assets are depreciated over different periods from 22 years to 70 years. The average depreciation rate on distribution assets is 2.93 percent per year, which corresponds to a 34-year straight-line depreciation schedule.

Xcel Energy's preliminary and unaudited financial statements for 2013 indicate that at year-end the gross plant-in-service value of Xcel Energy's Minnesota distribution system is \$3,375 million.<sup>83</sup> Xcel Energy has indicated that the Minneapolis distribution system is 13 percent of the Minnesota distribution system, and its gross plant-in-service value is approximately \$438.7 million. Applying a depreciation rate of 2.93 percent per year to a basis of \$438.7 million results in annual depreciation of \$12.9 million per year. This value for depreciation of the distribution system is used in all three scenarios of the financial assessment.<sup>84</sup>

There would also be depreciation on the distribution system improvements made by the Minneapolis municipal utility and on the buildings, computer systems, equipment, tools and vehicles acquired by the municipal utility apart from the assets purchased from Xcel Energy. Their original costs cannot be estimated at this time; markers for their costs are provided in this financial illustration in the cost

component called “debt service on start-up costs.” For the purpose of assigning values for depreciation, it is assumed that these assets would have a gross plant-in-service value of \$50 million in all three scenarios (even though the markers for start-up costs show a range of \$100 million to \$300 million). With the same depreciation rate of 2.93 percent, the annual depreciation on these assets would be \$1.5 million.

Thus, **total depreciation in all three scenarios is \$14.4 million**, the sum of these two values.

## **COST COMPONENT 10: NET REVENUE TO MEET DEBT SERVICE COVERAGE RATIO OF 1.25 AND OPERATING MARGIN**

### Net Revenue to Meet Debt Services Coverage Ratio of 1.25 and Operating Margin Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
17.1	0.004	22.8	0.005	56.4	0.013

The debt service coverage ratio is the ratio of net revenues available for debt payments to the amount of debt payments (principal plus interest). The City of Minneapolis’ Chief Financial Officer has indicated that 1.25 would be a satisfactory debt service coverage ratio provided that there would also be sufficient revenues to cover all annual operating costs and fund a capital improvement reserve.<sup>85</sup>

It is also a policy of the City of Minneapolis that “The City shall maintain a minimum cash balance in its Enterprise Funds equal to approximately three months of operating expenses, or 25 percent of the annual operating budget. This balance shall be maintained to ensure adequate maintenance reserves, cash flow balancing requirements and legal restrictions.”<sup>86</sup>

This financial illustration assumes that cash balances in the Enterprise Fund of the municipal utility have grown in the years before the “nth year” to meet the needs for a minimum cash balance and a capital improvement reserve (to the extent a capital improvement reserve would be needed given the assumption that “major repair and replacement” projects would be funded from annual revenues).

The amounts shown in the cost category called “Net Revenue Required” are the minimum amounts necessary to achieve a debt service coverage ratio of 1.25 and net revenues plus depreciation equal to ten percent of operating expenses, with operating expenses calculated as the sum of only the first five cost categories (power supply and transmission; distribution O&M; customer accounting, service, and sales; efficiency and clean energy programs; and administrative and general expenses).

We exclude from the calculation major repair and replacement, debt service, and transfers to the City and other jurisdictions. The simple reason for this is to prevent the financial illustration from showing the accrual of excessive cash, but it is justified as follows: Operating expenses, particularly power supply costs, are most vulnerable to unexpected cost overruns; and operating expenses must be paid to

continue utility operations. It is for these expenses that a margin is needed. In a financial emergency, major repair and replacement projects that are not urgent could be postponed. Debt service payments could also be postponed (perhaps not without repercussions), as could transfers to the City and other jurisdictions. Also, it is assumed that the municipal utility would have a fund balance equal to at least 25 percent of its annual operating budget by the “nth year,” which could be used to cover cost overruns and revenue shortfalls. That said, a ten percent margin on operating expenses could disappear quickly with a combination of higher power prices and lower demand than forecast. Prudent financial managers would probably deem this an insufficient margin for the early years of operation.

The following table shows the calculations for net revenue required in each scenario. In the low-cost and mid-cost scenarios, the cash required for the ten percent operating margin is greater than the cash required for the 1.25 debt service coverage ratio. Therefore, the net revenue required is the cash required for the ten percent operating margin minus depreciation (a non-cash expense).

In the high-cost scenario, the cash required for the 1.25 debt service coverage ratio is greater than the cash required for the ten percent operating margin. Therefore, the net revenue required is the cash required for the 1.25 debt service coverage ratio minus depreciation.

### Calculations for Net Revenue Required

	Cost Scenarios (\$ Millions)		
	Low	Mid	High
Cash required for 1.25 debt service coverage ratio	12.8	35.5	70.7
Cash required for 10% operating margin	31.4	37.1	42.6
Depreciation	(14.4)	(14.4)	(14.4)
Net Revenue Required	17.0	22.7	56.3

## COST COMPONENT 11: CITY OF MINNEAPOLIS GENERAL FUND ALLOCATION

### City General Fund Allocation Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
3.1	0.001	3.7	0.001	4.3	0.001

A municipal electric utility would be an Enterprise Service. It is a financial policy of the City of Minneapolis to charge Enterprise Services an overhead allocation to recover costs of General Fund functions that directly or indirectly support the Enterprise Services. (These General Fund functions include City Coordinator, City Council, Mayor, Finance, Human Resources, and more.) In short, a municipal utility would pay a General Fund overhead charge. It is assumed that the General Fund overhead charge would be 1 percent of total operating expenses (power supply and transmission; distribution O&M; customer accounting, service, and sales; efficiency and clean energy programs; and administrative and general expenses).

The General Fund allocation increases from the low-cost scenario to the high-cost scenario only because total operating expenses are assumed to increase.

## COST COMPONENT 12: TRANSFERS IN LIEU OF FRANCHISE FEES

### Transfers in Lieu of Franchise Fees Cost Scenarios

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
17.0	0.004	17.0	0.004	17.0	0.004

A municipal electric utility could pay franchise fees to the City of Minneapolis (or transfers in lieu of franchise fees). It is assumed in all scenarios of the financial illustration that a municipal utility would pay \$17.0 million per year into the City’s General Fund, which is approximately the amount of franchise fees expected from Xcel Energy in 2013. This is not an insignificant revenue source – it accounts for about 4.6 percent of General Fund revenues.

Whether a municipal electric utility would pay franchise fees to the City of Minneapolis would be a matter of policy to be decided by the Mayor and City Council. Presently, Xcel Energy collects “city fees” from all Minneapolis customers and pays the amount collected to the City in the form of franchise fees. (To be clear, city fees are a separate line item on an Xcel Energy bill; franchise fees are not embedded in Xcel Energy’s rates.) For comparison to Xcel Energy, a full accounting of a municipal utility’s revenue requirements would include franchise fees, even though franchise fees may be a separate line item on a municipal utility’s bill or may not be collected and paid at all.

## COST COMPONENT 13: PAYMENTS IN LIEU OF PROPERTY TAXES

### PAYMENTS IN LIEU OF PROPERTY TAXES COST SCENARIOS

Low		Mid		High	
(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)	(\$ millions)	(\$/kWh)
8.7	0.002	8.7	0.002	8.7	0.002

In 2010, Northern States Power Company (Xcel Energy) was the City’s top taxpayer, contributing 1.47 percent of the City’s total net tax capacity. NSP pays real and personal property taxes on the assets of its



distribution system in Minnesota. The Minneapolis distribution system does not have a discrete property identification number, so determining the property taxes paid on its value is neither simple nor certain.

James J. Duevel, the Managing Director of Tax Services for Xcel Energy, explained in testimony before the Minnesota Public Utilities Commission how utility property is valued and taxed in Minnesota.<sup>87</sup> In summary, the Minnesota Department of Revenue calculates a “total system unit value” based on a “cost indicator of value” and an “income indicator of value” for most of NSP’s taxable assets. (Local jurisdictions handle most land and buildings separately.) Various adjustments are made to the “total system unit value” to arrive at an “apportionable market value.” An effective overall tax rate is applied to the “apportionable” market value to calculate total Minnesota property taxes. Then the property taxes are apportioned to the counties where NSP owns taxable real and personal property based on the value of properties, class rate and local tax rates in each county.

Mr. Duevel’s testimony indicates that NSP-Minnesota expected to pay \$60,120,000 in property taxes on the value of its Minnesota distribution system in 2013. Based on the Minneapolis tax rate of 3.846 percent and Xcel Energy’s estimate that Minneapolis has 13 percent of the Minnesota distribution system, Xcel Energy paid an estimated \$8.84 million in 2013 property taxes.

To approach this analysis from another direction, under the section “Debt Service on Xcel Energy Compensation,” a calculation is presented which suggests that the economic value of the Minneapolis distribution plant is \$225,053,400 when the “income indicator of value” is taken into account as well as the net plant-in-service value (which is how the Minnesota Department of Revenue calculates the “apportionable market value”). Multiplying the Minneapolis property tax rate of 3.846 percent by this estimate of economic value yields estimated property taxes of \$8.66 million, which is close to the estimate of \$8.84 million in the preceding paragraph.

If Xcel Energy paid \$8.66 million in property taxes on the value of its Minneapolis distribution plant in 2013, the property taxes would have been divided among jurisdictions and districts as follows:

## Property Taxes on Distribution Plant: 2013

Basis		
Market Value		\$ 225,053,400
Property Tax Rate	3.846%	
<b>Total Property Tax</b>		<b>\$ 8,655,554</b>
Distribution of Property Tax		
Hennepin County	18%	\$ 1,556,971
City of Minneapolis	22%	\$ 1,905,970
Minneapolis Park Board	5%	\$ 401,355
Minneapolis School District	15%	\$ 1,265,111
Metropolitan Council	1%	\$ 99,982
Other Taxing Districts	2%	\$ 141,862
State General Tax	13%	\$ 1,117,416
Fiscal Disparity Tax	25%	\$ 2,166,887
<b>Total Property Tax</b>	<b>100%</b>	<b>\$ 8,655,554</b>

The above table shows the disposition of property taxes paid by Xcel Energy on the value of the Minneapolis distribution system, but it does not necessarily show the payments in lieu of taxes that a Minneapolis municipal utility would make. The real and personal property of municipal utilities is exempt from property taxes, and municipal utilities are not required by statute to make payments in lieu of property taxes.<sup>88</sup>

Minnesota Statutes Section 412.361 Subd. 5 specifically allows the commission of a municipal utility to enter into an agreement with the city council to make payments in lieu of taxes to the city and to make other transfers to the city's general fund. There does not seem to be a statute that expressly authorizes a municipal utility to make payments in lieu of taxes to other property-taxing jurisdictions and districts. Accordingly, it is possible that a Minneapolis municipal utility would make payments in lieu of taxes to only the City of Minneapolis and Park Board, or make no payments in lieu of taxes at all.

Many municipal utilities in Minnesota and in other states make payments in lieu of property taxes. For example, Rochester (Minnesota) Public Utilities – Electric paid to the City of Rochester \$8.3 million in 2012 from total revenues of \$129 million. A Minneapolis municipal utility could have annual revenues of about \$600 million; a payment in lieu of taxes proportional to Rochester Public Utility’s would be \$38.6 million.

Even though a Minneapolis municipal utility might not make any payments in lieu of taxes, the amount shown in all scenarios is \$8.7 million because this is the estimated amount of property taxes that Xcel Energy pays on the value of its Minneapolis distribution plant. This is a cost that is embedded in Xcel Energy’s rates. If the City of Minneapolis forms a municipal utility, Xcel Energy would no longer pay this amount on an annual basis. Thus, a “cost” of a municipal utility would be lost property tax revenues of \$8.7 million per year; and this amount should be recognized as a cost in the financial illustration whether a municipal utility would actually pay the entire amount or not.

## **SUMMARY OF ALL COST COMPONENTS**

The table below summarizes all cost components that make up total revenue requirements under each of the three scenarios. Again, revenue requirements, which are equal to total costs from the ratepayer’s perspective and average retail rate, are expressed in terms of total dollars on an annual basis and cents per kilowatt-hour (kWh).

From the low-cost scenario to the high-cost scenario, the range is \$0.104/kWh to \$0.196/kWh. Most of this range is attributable to two cost components: power supply and transmission, and debt service on compensation to Xcel Energy. These two cost components account for \$0.071/kWh of the range.

Minneapolis Municipal Utility: Financial Illustration

Cost Component		Low-Cost Scenario		Mid-Cost Scenario		High-Cost Scenario	
		(\$ Millions)	(\$/kWh)	(\$ Millions)	(\$/kWh)	(\$ Millions)	(\$/kWh)
<b>Operating Expenses</b>	Power supply and transmission	262.3	0.062	305.6	0.072	348.1	0.082
	Distribution O&M	18.5	0.004	23.1	0.005	26.1	0.006
	Customer accounting, service, and sales	11.1	0.003	12.9	0.003	16.1	0.004
	Efficiency and clean energy programs	10.0	0.002	15.0	0.004	20.0	0.005
	Administrative and general expenses	12.0	0.003	14.2	0.003	16.0	0.004
<b>Capital Improvements</b>	Major repair and replacement	14.9	0.004	19.5	0.005	23.7	0.006
<b>Debt Service</b>	Debt service on Xcel Energy compensation	43.6	0.010	126.8	0.030	259.7	0.061
	Debt service on start-up costs	7.7	0.002	15.3	0.004	23.0	0.005
<b>Revenue Requirements</b>	Depreciation	14.4	0.003	14.4	0.003	14.4	0.003
	Net revenue required (less depreciation)	17.1	0.004	22.8	0.005	56.4	0.013

<b>Transfers to City and other property-taxing jurisdictions</b>	City General Fund allocation	3.1	0.001	3.7	0.001	4.3	0.001
	Transfer in lieu of franchise fees	17.0	0.004	17.0	0.004	17.0	0.004
	Payments in lieu of property taxes	8.7	0.002	8.7	0.002	8.7	0.002
	<b>Total revenue requirements</b>	<b>440.3</b>	<b>0.104</b>	<b>599.0</b>	<b>0.141</b>	<b>833.4</b>	<b>0.196</b>
	Note: This organization varies slightly from standard City budget documents to provide more clarity to the different cost components. Major Repair and Replacement is a capital expense that will recur every year. Depreciation is ordinarily treated as a non-cash operating expense.						

# Appendix H: More Detail on Evaluation of City-Utility Partnership Program Options

Thirteen potential programs and policies were assessed as near-term options for a City-utility partnership. These programs were evaluated both quantitatively and qualitatively to indicate the major benefits and relative advantages each would provide. These evaluations were based on high-level assessments and include the authors' expert assumptions about the potential for moderately aggressive program uptake levels in Minnesota. While programs vary in their size and estimated impact, it should be emphasized that all programs considered here would provide positive progress towards multiple city energy goals.

This Appendix provides general program and policy descriptions, technical assumptions and references used to evaluate each program, and any relevant legal considerations. However, much additional work with key stakeholders and technical experts would be required to develop actionable program design. Each program and policy was also evaluated as to how it addresses specific goals outlined in the Climate Action Plan and how it might affect the City's score in the American Council for an Energy-Efficient Economy's 2013 *City Energy Efficiency Scorecard*. Minneapolis ranked eighth in the 2013 version of the scorecard.

Many of the programs described here can, but don't necessarily have to be, developed as part of existing utility Conservation Improvement Programs. These programs would be the most promising for action in the near-term, whereas new programs would be more intensive to create. Utility conservation plans are filed every three years by either a utility or a third-party (a so called "Alternate CIP"), and undergo significant review by the Department of Commerce to gain approval. Among the items reviewed is the program's budget and cost-effectiveness. In general, significant supporting information including a market potential study, saturation assessment, and consumer research accompany a new proposed program.

Where possible, calculations relied on the same data sources for computing energy usage to make energy savings across programs comparable. These data sources included utility CIP status reports, Minnesota Conservation Applied Research and Development projects, Center for Energy and Environment program experience, and utility program potential studies. Consistent with the baseline assumptions in the Minneapolis Climate Action Plan, we applied a 0.5 percent growth factor to electricity use and assumed no baseline growth for natural gas use. The following are important points to consider:

- For energy efficiency programs, we used moderately aggressive assumptions for program uptake and building stock eligibility, and moderate assumptions for near-term technology efficiencies seen in the field.
- We assumed that new programs such as Green Zones and combined heat and power expansion would require additional start-up time from upfront planning. In addition, these programs are not implemented citywide, but targeted at specific locations within the city. This is important to consider when evaluating the total energy and carbon savings potential.
- In the case of renewables, incremental growth is based on recent policy drivers at the state level, namely the 1.5 percent solar standard, and not on market potential assumptions.

Program-specific references and assumptions are described further below.



## COMMERCIAL AND GOVERNMENT PROGRAMS

Commercial and government programs have some of the largest opportunities for carbon and energy reductions, because the sector uses more energy than any other. While a number of programs are applicable to large commercial buildings and single-tenant buildings, some program options focus on small business applications.

### ***Public Building Energy Partnership***

This program would build on the City's 2013 ordinance that requires large buildings to disclose their annual energy use.<sup>89</sup> A program administrator would provide a comprehensive service to systematically, and continuously, investigate and provide assistance implementing efficiency projects, and building-integrated renewables as appropriate. This program would apply to City public buildings, and could include the City as well as Hennepin County and the Minneapolis School District, depending on their ability and willingness to participate. There are at least 112 public buildings over 25,000 square feet in Minneapolis, and many smaller buildings.<sup>90</sup>

While efficiency projects have been completed in City facilities, there are still additional opportunities that would be pursued by conducting existing building commissioning studies on all buildings, on approximately 5-year schedules, or implementing continuous commissioning in buildings as appropriate. Recommissioning has been shown to save on the order of 15 percent of building energy use.<sup>91</sup> As appropriate, a scope of work for larger retrofits would be completed. Financing options appropriate to local government (e.g., tax-exempt lease-purchase financing) could be coordinated. The program administrator would coordinate the technical service delivery by multiple providers, provide quality assurance for vendors, track and verify energy savings, and coordinate with public building facility managers.

We used the baseline energy use reported in the 2012 Minneapolis Energy Benchmarking report for public buildings. We estimated an aggressive initiative targeting a 10 percent annual uptake, based on uptake rates from a similar State program.<sup>92</sup> We assume these buildings would save seven percent of their energy use, and that a small subset (2 percent) would save 12 percent on average from deeper capital improvements.

Climate Action Plan: This program would directly address the goals outlined in Cross-Cutting Strategy 3: *City facilities and infrastructure are models of energy efficiency.*

ACEEE City Scorecard: This program would help advance Minneapolis under the category of *Local Government Operations*. Having a 3<sup>rd</sup> party track and verify energy improvements would earn the City more points.

### ***Large Commercial Buildings Efficiency Program***

Large commercial building owners would be provided customized recommissioning and other energy efficiency services. Under the new Minneapolis commercial building energy disclosure ordinance, the 600 or so largest buildings in Minneapolis will be required to enter their energy data into a benchmarking tool, and publically disclose their resulting energy scores. The ordinance will help to create interest and demand for increasing energy efficiency in these buildings, and this program will create the pathway for

implementing efficiency projects. Lessons learned from the highest achieving buildings could be made available to buildings just initiating their benchmarking practices. Through coordination with the utility, the program could facilitate the automated collection and reporting of energy data, easing compliance. This data would be continuously collected, so building owners could more closely monitor their energy usage. As Xcel Energy currently does, utility funding would be provided for conducting recommissioning studies and rebating efficiency projects, and building owners would be encouraged to conduct deep energy retrofits with larger rebates as appropriate. A program coordinator would conduct a campaign to achieve extraordinarily high participation among building owners by actively working with the City, BOMA (and their successful KilowattCrackdown program), the Chamber of Commerce, and other organizations to publicize the efforts of leaders, and encourage participation among all building owners.

Like the public buildings program, we targeted buildings 25,000 square feet and above (though note the commercial building benchmarking ordinance applies only to buildings at or above 50,000 square feet). Currently, Minneapolis has approximately 870 private commercial buildings over 25,000 square feet.<sup>93</sup> The energy usage of each building was estimated based on its size.<sup>94</sup> Energy savings potential was calculated based on square footage. For buildings less than 100,000 square feet, we assumed 70 percent of buildings would be eligible for recommissioning services. We assumed that 8 percent of buildings could be treated each year, a moderately more aggressive uptake than has been seen in other small commercial programs, though less than the public buildings sector.<sup>95</sup> For the buildings that are treated, on average, electricity and natural gas consumption would be reduced by 7 percent.<sup>96</sup>

For buildings over 100,000 square feet we considered four categories of improvements: capturing savings from different levels of recommissioning, lighting upgrades, other low-cost upgrades, and deeper capital improvements. Expected energy savings would range from 7 percent up to 30 percent, with the fraction of eligible buildings diminishing greatly as the savings go up.

Climate Action Plan: This program does directly apply to a specific City strategy, however, it does build on the goals rooted in Commercial Building Strategies 2 and 3: *Building Energy Disclosure* and *Building Energy Asset Rating*.

ACEEE City Scorecard: Minneapolis scored high in the category of *Utility Policies and Public Benefit Programs*. Minneapolis earned all possible points in the area of electricity utility programs and earned relatively high marks in the area of natural gas utility programs. Implementing this program would likely improve the City's ranking in the area of natural gas savings.

### ***Streetlight Efficiency Program***

This program would modernize the City's current, predominately high-pressure sodium streetlights, with longer-lasting and more efficient white LED lamps. In aggregate, streetlights are the second largest consumers of electricity in the City, behind water treatment and delivery. Xcel currently owns and maintains about half of the lamps, and the City pays a flat combined maintenance and energy fee for this service. The other lamps are owned and maintained by the City. The utility would fund either all (if they own the lamps) or a significant portion of this retrofit through rebates (for City-owned lamps), based on the energy savings that could be achieved. For utility-owned lamps, a new service fee would likely need to be negotiated with the City.<sup>97 98 99</sup> A rebate program would require approval from the Department of Commerce, Division of Energy Resources, as would clarification if upgrades to Xcel Energy-owned lamps could be considered "utility infrastructure" for purposes of conservation program goals.

Streetlight energy use was estimated with the help of the Minneapolis Public Works Department. Since not all lights are metered directly, energy use is an estimation. Within the boundary of Minneapolis we estimate there are approximately 48,000 streetlights, that combined consume an estimated 30 million kilowatt hours of electricity. We assume an aggressive savings of 55 percent of energy use would be possible with emerging LED technologies. There would be additional dollar savings from reduced operation and maintenance since LED bulbs are not changed as frequently. High pressure sodium lights require changing every 4 years, and we assume LED lights would last 4 times as long (16 years). Given the total number of lights, this could save the city \$1.6 million on labor costs annually.<sup>100</sup>

Climate Action Plan: This program would directly address the goals outlined in Cross-Cutting Strategy 3: *City facilities and infrastructure are models of energy efficiency.*

ACEEE City Scorecard: This program would help advance Minneapolis under the category of *Local Government Operations*. Currently the City is ranked 6<sup>th</sup> for its 'Procurement and Construction Policies'. Creating outdoor lighting standards and bringing lamps up to standard would earn the City more points.

### ***Hospitality Efficiency Program***

An efficiency program focused on the hospitality industry would showcase a sustainable Minneapolis brand to visitors and tourists, and help raise the image of Minneapolis as a leading green city. A hospitality energy efficiency program could be developed in partnership with the Downtown Council, Chamber of Commerce, the City of Minneapolis and the energy utilities that serve the City. The partnership would provide incentives for hotels and restaurants, which represent a substantial portion of the locally-owned businesses in Minneapolis, to improve facility energy performance through building retrofits as well as changes in energy usage. The program could also provide assistance to local event managers to minimize food and product waste and resource use at conferences and conventions, to dovetail with other Minneapolis sustainability goals. This program would include a range of small and large businesses that require different implementation strategies, but could be connected under one marketing umbrella. These highly visible businesses would display the City's commitment to a clean energy future.

Minneapolis has approximately 300 restaurants and 200 entertainment facilities and hotels, many of which are locally owned.<sup>101 102</sup> We estimated that these facilities consume approximately 251,000 MWh of electricity and 935,000 decatherms of natural gas annually. While energy efficiency savings via utility programs is less understood for this type of facility, there are precedents for persistent electric and thermal savings through system controls and capital investments. We assumed an uptake rate of 5 percent per year, as this could be a highly visible program for the City.

Climate Action Plan: This program does directly apply to a specific City strategy, however, it does build on the goals rooted in Commercial Building Strategies 2 and 3: *Building Energy Disclosure* and *Building Energy Asset Rating*.

ACEEE City Scorecard: Minneapolis scored high in the category of *Utility Policies and Public Benefit Programs*. Minneapolis earned all possible points in the area of electricity utility programs and earned relatively high marks in the area of natural gas utility programs. Implementing this program would likely improve the City's ranking in the area of natural gas savings, particularly for these types of buildings, which tend to use higher volumes of natural gas.

### ***District Energy Service Enhancement***

Under this program, targeted heating energy-efficiency services would be offered for the approximately 100 large building owners on the downtown district heating system. The services delivery would be parallel to, and coordinated with, the Commercial Building Efficiency program. One possible pathway is for the district energy provider to “opt-in” to state conservation improvement programs (as discussed in Section 4.6 of the report). This would give NRG Energy access to rebates and technical assistance for energy efficiency programs through their investor owned utility, CenterPoint Energy. This process would be managed through the Minnesota Department of Commerce.

NRG Energy provides steam to approximately 43 million square feet and chilled water to approximately 22 million square feet in downtown Minneapolis.<sup>103</sup> Baseline energy intensity of steam and chilled water usage was estimated using energy usage data from Minneapolis public building energy disclosure reporting, and technical estimations from review of the literature. We assumed buildings would realize an increased efficiency of 5 percent for both steam and chilled water on average, applying the conservative improvements in efficiency seen in other commercial building in the same climate.<sup>104</sup>

Climate Action Plan: This program would directly address the goals outlined in Cross-Cutting Strategy 15: *Increased conservation in the downtown district heating and cooling system.*

ACEEE City Scorecard: This program would take partial action in the scoring category of *Community-Wide Initiatives*. While CHP would not be expanded, facility improvements to the existing district system would make the system more efficient and be a model for other district systems.

### ***Small Business Efficiency Programs***

The program would coordinate and promote efficiency services for Minneapolis small businesses. Small businesses are traditionally underserved because of lack of time, resources, and dedicated expert staff. Currently, utilities as well as the Chamber of Commerce, Lake Street Council and others have energy efficiency programs and initiatives targeting small businesses that can help small businesses significantly reduce their energy bill. The City would start an initiative to promote these programs to Minneapolis small businesses.

The City contains over 8,000 commercial facilities that are currently eligible for small commercial energy efficiency programs in their utility service area. The energy consumption of these businesses was estimated using Xcel Energy and CenterPoint Energy usage data provided for the Energy Pathways study. As a result, it is estimated that small businesses in Minneapolis consume approximately 161,000 MWh of electricity and 1 million decatherms of natural gas.

We assumed program uptake would meet or exceed existing uptake of other small commercial energy efficiency programs, which is approximately 7 percent. This is reasonable as long as savings to the business continue to have a short payback. Two levels of improvements were delineated: businesses that have not received prior upgrades and businesses that have.<sup>105</sup> Improved scheduling for mechanical fans would reduce both electrical and heating loads and other low-cost water use reduction improvements would create further water heating savings.<sup>106</sup> The largest difference between the two scenarios was the difference in lighting available upgrades.

Climate Action Plan: This program does not directly apply to a specific City strategy, however, it does build on the goals rooted in Commercial Building Strategies 2 and 3: *Building Energy Disclosure* and *Building Energy Asset Rating*.

ACEEE City Scorecard: Minneapolis scored high in the category of *Utility Policies and Public Benefit Programs*. Minneapolis earned all possible points in the area of electricity utility programs and earned relatively high marks in the area of natural gas utility programs. Implementing this program would likely improve the City's ranking in the area of natural gas savings.

## RESIDENTIAL & COMMUNITY FOCUSED PROGRAMS

This category covers programs that target Minneapolis residents and the places they live, including single-family homes, apartments, and neighborhoods.

### ***Neighborhood Focused Program Delivery***

This program would combine the utilization of neighborhood-level energy usage data with active engagement of neighborhood organizations to achieve high levels of participation in residential efficiency programs. A format and system for sharing aggregated energy usage data at the neighborhood level would be developed and implemented in conjunction with utilities, in order to track progress over time via a program website. Each neighborhood could set its own energy conservation goal and benchmark progress on an ongoing basis, and competition among neighborhoods could encourage participation. With some utility funding, neighborhood-sponsored home energy parties and other events would provide forums for communities to come together, as well as encourage wide participation. Existing residential programs would be enhanced, and mostly funded by utilities with a small customer copay (and could be provided free for low-income homeowners). The program would provide comprehensive and convenient services to increase home energy efficiency, including installation of weather-stripping and efficient lighting, and identification of insulation and other whole-home opportunities. An insulation contractor program would provide jobs training and inspections of completed work to ensure insulation and air sealing work was done correctly. Neighborhood organizations could also promote business efficiency programs for neighborhood businesses.

Our analysis used Xcel Energy and CenterPoint Energy Minneapolis residential consumption data for 2012 to estimate baseline energy usage. We assumed energy usage was spread across 88,304 houses, the number of Minneapolis single-family homes (one to four units) reported in the 2010 census. Based on previous research savings of 0.58 kWh per year were applied to each house through 2016.<sup>107</sup> Due to new lighting standards beginning in 2017, estimated savings were reduced to 0.14 kWh per house per year. For natural gas, we estimated an average reduction in household consumption of 14.1 decatherms per year. We assumed 10 percent of homes would not be eligible due to previous work. Of the remaining eligible homes, similar programs have usually show uptake in the range of two to four percent. This more aggressive program used an uptake factor of five percent. By 2025 this program is estimated to save over 5.4 million MMBtu.

Climate Action Plan: This program would directly address the goals outlined in Residential Building Strategy 1: *Help Minneapolis homeowners participate in whole-house efficiency retrofits*.



ACEEE City Scorecard: Minneapolis ranked relatively high in the subcategories under *Utility Policies and Public Benefit Programs*, tied with other cities under energy efficiency, but ranked 5<sup>th</sup>. While this program does not directly fulfill one a scoring criteria in this area, this program may allows Minneapolis to gain additional points under the ‘Community-Level Data’ and ‘Data Provisions’ criteria in this category.

### ***Energy Performance Certificate***

An energy performance certificate program would promote the certification of homes that have achieved a basic level of energy performance in order to help incorporate the value of energy efficiency into the residential real estate market at time-of-sale. This third-party administered program would create a low-cost certification for home sellers who have completed efficiency upgrades, and allow home buyers to identify homes that have achieved a basic level of energy performance. Over time, this could help transform the market for energy-efficient homes and drive demand for efficiency retrofits.

There has recently been much national interest in time-of-sale home energy certifications, but no model has taken hold yet.<sup>108</sup> CEE and the Neighborhood Energy Connection are currently developing an energy performance certificate for existing Minnesota homes that would be appropriate for Minneapolis housing stock.<sup>109</sup> There is an opportunity for an aggressive City-sponsored program to propel Minneapolis to be a national leader in this field. Participation could be encouraged through a utility-subsidized energy assessment that would certify eligible homes, or determine what would be required to achieve certification. These assessments could be done at time of sale through the City’s existing Truth-in-Housing program, which could result in thousands of homes being certified annually.

Our evaluation, based on program findings and anticipated lighting standard changes that will take effect in 2017, estimates treated homes to save 0.42 MWh of electricity annually through 2016 and 0.104 MWh thereafter.<sup>110</sup> These homes are also estimated to save 9.2 decatherms of natural gas per year. Due to the program being tied to the City’s Truth in Sale of Housing process, the uptake of this program is anticipated to be very close to the number of homes that are sold in Minneapolis annually.<sup>111</sup> The uptake factor of 7 percent reflects this quantity, but it is only applied to those homes that have not already participated in the program during the study period (2014 through 2025).

Climate Action Plan: This program would directly address the goals outlined in *Residential Building Strategy 3: Time-of-sale and time-of-rent energy label disclosure*.

ACEEE City Scorecard: This program would take partial action to increase the City’s score in the category of *Building Policies* under the subcategory of *Residential Benchmarking, Rating and Disclosure*, which could significantly affect Minneapolis’ *Building Policies* rank.

### ***Rental Energy Efficiency Program***

This comprehensive utility-funded efficiency program would substantially reduce rental housing energy costs by targeting building owners. The majority of low and moderate-income residents live in rental housing. Of this, larger multifamily units tend to have much lower heating costs, because the large amount of common wall area results in less need for heating per unit than smaller houses (apartments in general have about half the heating costs of single-family homes). In addition, heating bills in apartments are often paid by the building owners, unlike in duplex, triplex and 4-plex buildings, where the tenant tends to pay the heating bills. Thus renters living in 1-4 unit housing tend to have the largest need, and the least incentive by the building owner to invest in energy upgrades. The City may be able to replicate



past success in dealing with rental housing stock through city policies, coupled with effective efficiency programs. In the mid-1980s, the City passed a rental housing energy ordinance<sup>112</sup>, which required landlords to meet certain basic energy efficiency requirements, including adequate insulation, storm windows, weatherstripping, and other basic efficiency requirements. Enforcement was based on tenant complaints, which the City responded to by requiring the owner to obtain a certificate of compliance, verified by a dedicated city inspector.

In order to evaluate this program, we calculated baseline energy usage using the number of multifamily units recorded in the 2010 census and research that suggests the average unit consumes 4.5 MWh of electricity and 53 decatherms of natural gas per year.<sup>113</sup> Based on this research and pilot programs administered in Minnesota it was anticipated that 0.39 MWh of electricity and 6 decatherms of energy could be potentially saved each year by the units that receive treatment from the program.<sup>114</sup> Participation in rental programs is more challenging than other residential programs. Nonetheless, we estimate an aggressive annual uptake of three percent. Overall, the estimated technical potential for energy savings is just over one million MMBtu.

Climate Action Plan: This program would directly address the goals outlined in Residential Building Strategy 2: *Help Minneapolis renters and rental property owners participate in energy efficiency retrofits.* If a 'Green Lease' component were implemented, the program would also contribute to Commercial Building Strategy 2: *Develop Green Lease model language.*

ACEEE City Scorecard: Minneapolis has a lot of potential to earn a higher score in the category of *Building Policies*, where it ranked 12<sup>th</sup>. This program would offer incentives to multifamily building owners and residents, an under utilized approach according to the scorecard. While Minneapolis did score high under the 'Comprehensive Efficiency Services' criteria, this program would offer these services to an underserved segment of buildings.

## **Green Zones**

Green Zones are comprehensive efforts to transform communities that face economic, health, and environmental hazards and disparities. The program has come to life in various forms in a number of cities across the country, including in Oregon, Missouri, and California, where health benefits and sustainable economic development are being observed. Communities identified as Green Zones, after an extensive screening process, may collaborate with the City and partners to create a community-based vision for improved sustainability and environmental justice. This may include working with the City planning office in devising a plan and goals, allocating funds or staff to support such a program, or connecting targeted communities with programs that will train and employ local residents to do the work that is needed. Jobs skills would include energy efficiency improvement or clean energy installation skills, operational energy services training, or working with utilities to achieve equity in employment goals. These efforts could be coupled with new research strategies to understand evolving energy saving opportunities in low-income households.

We evaluated Green zones as a cross-cutting opportunity based on expanded program uptake in a targeted number of neighborhoods. Our evaluation is based on targeting 5 percent of the city for a deep penetration of programs in public building and infrastructure upgrades, residential (single and multi-family), small business, and solar installations. Direct energy and carbon savings measures are those realized in these neighborhoods. Economic developments would also include jobs training and external funding that would be attracted from concentrated efforts.

Climate Action Plan: This program would directly address the goals outlined in Cross-Cutting Strategy 1: *Develop a Green Zones Initiative*.

ACEEE City Scorecard: A Green Zones program would not directly address any of the scoring criteria under the categories ranked in the Scorecard. However, expanded 'Community-Level Data' (a criteria in the category of *Utility Policies and Public Benefit Programs*) would help advance Minneapolis' score.

## **RENEWABLES AND COMBINED HEAT AND POWER**

These programs focus specifically on creating incentives and reducing barriers around the development of renewables and efficient energy generation processes.

### ***Local Solar Development***

This initiative would facilitate the development of local solar electric capacity. We assume this is reached by either customer-owned rooftop systems, Minneapolis customer purchases of community solar systems, within or outside the city, or customer opt-in to an expanded green tariff program that includes solar energy (see below). The City could continue its work to streamline the PV permitting process to further reduce soft costs of solar development, and work with Xcel Energy to pilot new program ideas.

Savings calculations are based on the assumption that Xcel Energy would work to help Minneapolis reach its share of the 1.5 percent solar standard by 2020. We assume this is applied to all city energy use, and does not carve out sales for large customers, as allowed by state law. Meeting this solar standard would require aggressive growth between now and 2020, on the order of 30 to 50 percent per year, using the current baseline of 0.06 percent of total electricity sales (based on 2012 electricity data). Assuming this occurs, there would be significant additional growth between 2020 and 2025, such that 5 percent of city electricity could be provided by solar energy in 2025. We assume approximately one-fifth of the energy is produced by rooftop systems.

Climate Action Plan: This program would not directly address any of the Renewable Energy Strategies outline in the Plan, but it would contribute to the City's goal to increase electricity from local renewables to 10 percent of the total by 2025.

ACEEE City Scorecard: The scorecard only addressed issues related to energy efficiency.

### ***Expand Combined Heat and Power Opportunities***

Under this program, the City would encourage cost-effective development of new combined heat and power systems that would deliver waste heat in the most efficient manner possible to existing commercial and industrial buildings in targeted areas of Minneapolis. This could include a mix of financial incentives and reduced regulatory or planning barriers. All local utility providers would collaborate on identifying locations that are appropriate for development. New district systems could connect to commercial, multi-family, and residential areas offering them competitive utility services at a reduced carbon intensity. The city would establish combined heat and power planning zones as priority areas of the city with high potential. Planning zones would facilitate coordination between street reconstruction and new infrastructure development. The City would likely need to require a franchise agreement for the entity.

There are large uncertainties around the cost and time to deploy new combined heat and power systems, especially at the district scale. Without a new development, it would require extensive planning and coordination with City facilities. We assume that in the 2025 timeframe about 4 million square feet may be served, which is one-twentieth the size of NRG’s downtown system. We assume the energy savings would be realized as the waste heat from electricity generation offset a portion of the customer heating load, currently supplied by natural gas. Thus, the savings estimates for this program are largely a feature of uncertainty around planning and the possible deployment timeline between now and 2020.

Climate Action Plan: This program would directly address the goals outlined in Cross-Cutting Strategy 16: *Expand the use of district heating systems to new and existing buildings.*

ACEEE City Scorecard: Minneapolis ranked 16<sup>th</sup> under the ‘District Energy and CHP’ criteria in the *Community-Wide Initiatives* category. A program like this would likely maximize the score that Minneapolis could receive in this portion of the category.

### ***Expanded Green Tariff***

Currently Xcel Energy’s Windsorce® program allows customers to opt-in to purchase wind electricity through an alternate tariff structure. Customers pay an additional surcharge per kWh purchased, but also receive fuel adjustments for the renewable energy portion of their purchases. This program would expand this current model to include purchases of solar electricity from utility-owned systems. The tariff structure would be devised based on assessment of societal costs and benefits, possibly building off the Minnesota Value of Solar methodology.<sup>115</sup> This new rate would be set consistent with state law and under the review and authority of the Public Utilities Commission, and must uphold several legal constraints.

Like local solar development, we base our assumptions about an expanded green tariff program on current city policies, in this case to meet 10 percent of electricity in 2025 through local renewables. We assume that a majority of the utility-scale solar purchases would be via an opt-in green tariff, and that purchases of Windsorce continue to grow, especially in the commercial sector.

Climate Action Plan: This program would directly address the goals outlined in Renewable Energy Strategy 1: *Support efforts to align utility practices with City and State renewable energy policy.*

ACEEE City Scorecard: The scorecard only addressed issues related to energy efficiency.

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## APPENDICES END NOTES

### APPENDIX A

- <sup>i</sup> <http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/wcms1p-092812.pdf>.
- <sup>2</sup> [http://www.minneapolismn.gov/council/council\\_goals\\_index](http://www.minneapolismn.gov/council/council_goals_index).
- <sup>3</sup> <http://www.ci.minneapolis.mn.us/www/groups/public/@finance/documents/webcontent/wcms1p-103499.pdf>.
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- <sup>5</sup> <http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/images/wcms1p-093724.pdf>.
- <sup>6</sup> <http://www.minneapolismn.gov/sustainability/approach/teams/index.htm>.
- <sup>7</sup> [http://library.municode.com/HTML/11490/level3/COOR\\_TIT3AIPOENPR\\_CH47ENAIPO.html#COOR\\_TIT3AIPOENPR\\_CH47ENAIPO\\_47.190COBURADI](http://library.municode.com/HTML/11490/level3/COOR_TIT3AIPOENPR_CH47ENAIPO.html#COOR_TIT3AIPOENPR_CH47ENAIPO_47.190COBURADI).
- <sup>8</sup> <http://www.minneapolismn.gov/www/groups/public/@regservices/documents/webcontent/wcms1p-102210.pdf>.
- <sup>9</sup> <http://www.ci.minneapolis.mn.us/www/groups/public/@clerk/documents/webcontent/wcms1p-103265.pdf>.
- <sup>10</sup> [http://www.minneapolismn.gov/www/groups/public/@council/documents/webcontent/convert\\_283179.pdf](http://www.minneapolismn.gov/www/groups/public/@council/documents/webcontent/convert_283179.pdf).
- <sup>11</sup> [http://www.minneapolismn.gov/recovery/s-proj\\_102](http://www.minneapolismn.gov/recovery/s-proj_102).
- <sup>12</sup> [http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/convert\\_276131.pdf](http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/convert_276131.pdf).
- <sup>13</sup> [http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/convert\\_286306.pdf](http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/convert_286306.pdf).
- <sup>14</sup> <http://www.ci.stpaul.mn.us/index.aspx?NID=3294>.
- <sup>15</sup> <http://www.minneapolismn.gov/www/groups/public/@citycoordinator/documents/webcontent/wcms1p-099829.pdf>.
- <sup>16</sup> [http://www.minneapolismn.gov/www/groups/public/@cped/documents/webcontent/convert\\_285502.pdf](http://www.minneapolismn.gov/www/groups/public/@cped/documents/webcontent/convert_285502.pdf).
- <sup>17</sup> <http://www.minneapolismn.gov/www/groups/public/@cped/documents/webcontent/wcms1p-082020.pdf>.
- <sup>18</sup> <http://www.hennepin.us/your-government/facilities/hennepin-energy-recovery-center>.
- <sup>19</sup> <http://www.pca.state.mn.us/index.php/view-document.html?gid=14012>.
- <sup>20</sup> <http://www.tcdailyplanet.net/news/2011/08/02/more-garbage-burning-ahead-minneapolis>.
- <sup>21</sup> [http://www.minneapolismn.gov/www/groups/public/@council/documents/webcontent/convert\\_283484.pdf](http://www.minneapolismn.gov/www/groups/public/@council/documents/webcontent/convert_283484.pdf).
- <sup>22</sup> [http://www.minneapolismn.gov/www/groups/public/@council/documents/webcontent/convert\\_285359.pdf](http://www.minneapolismn.gov/www/groups/public/@council/documents/webcontent/convert_285359.pdf).
- <sup>23</sup> [http://www.puc.state.mn.us/portal/groups/public/documents/pdf\\_files/013647.pdf](http://www.puc.state.mn.us/portal/groups/public/documents/pdf_files/013647.pdf).
- <sup>24</sup> <http://www.mepc-mn.org/updates/PUC%20Update%207%2016%2012.pdf>.

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<sup>25</sup> [http://www.lhpowerandlight.org/uploads/1/1/6/1/11619011/vision\\_statement\\_4\\_pg\\_lhpl.pdf](http://www.lhpowerandlight.org/uploads/1/1/6/1/11619011/vision_statement_4_pg_lhpl.pdf).

<sup>26</sup> [http://www.lhpowerandlight.org/uploads/1/1/6/1/11619011/lhpl\\_feasibility\\_study\\_nov\\_20\\_2008\\_pdf.pdf](http://www.lhpowerandlight.org/uploads/1/1/6/1/11619011/lhpl_feasibility_study_nov_20_2008_pdf.pdf).

<sup>27</sup> [http://www.minneapolismn.gov/www/groups/public/@cped/documents/webcontent/convert\\_281459.pdf](http://www.minneapolismn.gov/www/groups/public/@cped/documents/webcontent/convert_281459.pdf).

<sup>28</sup> [http://www.ci.minneapolis.mn.us/www/groups/public/@council/documents/webcontent/convert\\_278862.pdf](http://www.ci.minneapolis.mn.us/www/groups/public/@council/documents/webcontent/convert_278862.pdf).

<sup>29</sup> [http://www.minneapolismn.gov/www/groups/public/@council/documents/webcontent/convert\\_256704.pdf](http://www.minneapolismn.gov/www/groups/public/@council/documents/webcontent/convert_256704.pdf).

## APPENDIX D

<sup>30</sup> Xcel Energy advises municipal officials that it does not prefer to charge city fees like a sales tax because customers then pay higher city fees, as well as higher utility charges, when electricity usage is high due to weather conditions.

<sup>31</sup> The City of Arden Hills fee schedule was provided by Xcel Energy.

<sup>32</sup> St. Paul Code of Ordinances, Appendix C <http://library.municode.com/index.aspx?clientId=10061>.

<sup>33</sup> [www.epa.gov/r5climatechange/pdfs/franchise-agreement-report.pdf](http://www.epa.gov/r5climatechange/pdfs/franchise-agreement-report.pdf).

<sup>34</sup> Idaho Statute 50-329. “Franchises created or granted by the city council for electric, natural gas or water public utilities...shall be for terms of not less than ten (10) years...”

<sup>35</sup> IAMU, “Municipal Utility Law 101: A Basic Primer on Common Legal Issues and Frequently Asked Questions” (2012), page 5.

<sup>36</sup> To be clear, this is the effective date and the expiration date of franchise fees, not franchises. This is useful information nevertheless because the effective date of a franchise fee may coincide with the effective date of a franchise, and because the expiration date of a franchise would not precede the expiration date of a franchise fee.

## APPENDIX F

<sup>37</sup> Minn. Stat. §§ 216B.39-.40.

<sup>38</sup> *In re City of Rochester (North Park Additions)*, 470 N.W.2d 525, 531 (Minn. App. 1991) (Davies, Judge, dissenting) *rev. denied* (Minn. July 24, 1991) (describing legislative history of the 1974 Act).

<sup>39</sup> Stoel Rives Memorandum.

<sup>40</sup> Minn. Stat. § 216B.46.

<sup>41</sup> *Id.*

<sup>42</sup> *Id.* The process specified in Section 216B.46 also applies to a purchase of utility property under Section 216B.45.

<sup>43</sup> Minn. Stat. § 216B.45.

<sup>44</sup> Minn. Stat. § 216B.45. If a municipal utility already exists and wishes to expand its service territory, the MPUC may “fix and determine the appropriate value” and it “shall consider” the same four statutory factors. Minn. Stat. § 216B.44.

<sup>45</sup> Minn. Stat. § 216B.47; Minn. Stat. § 465.01.

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<sup>46</sup> *City of Shakopee v. Minnesota Valley Elec. Co-Op.*, 303 N.W.2d 58, 61 (Minn., 1981) (“The provisions of § 216B.45, authorizing either a conventional purchase or a forced sale, constitute a declaration that establishes municipal ownership of a utility as a valid public purpose.”).

<sup>47</sup> Minn. Stat. § 216B.47.

<sup>48</sup> Minn. Stat. § 216B.47.

<sup>49</sup> *In re Petition by the City of Rochester to Provide Interim Service to Various 1997 Annexations*, No. E-132,299/SA-97-981, Order Determining Interim Service Rights, at 4 (Aug. 22, 1997).

<sup>50</sup> *Id.*

<sup>51</sup> Minn. Stat. §§ 216B.44; 216B.45; 216B.47.

<sup>52</sup> *In re Application by the City of Rochester for an Adjustment of its Service Area Boundaries with People’s Cooperative Power Assoc.*, 556 N.W.2d 611, 614-15 (Minn. App. 1996), *rev. denied* (Feb. 26, 1997). In this case, the MPUC and the Court of Appeals rejected arguments that loss of revenues should be awarded for an indefinite period, and reasoned that ten years provided a reasonable period for the displaced utility to “mitigate any losses resulting from the City’s acquisition of [its] service areas” and adjust requirements for its remaining customers. *Id.* Moreover, predicting loss revenues more than 10 years into the future was rejected as inherently speculative. *Id.*

<sup>53</sup> *City of Moorhead v. Red River Valley Cooperative Power Ass’n*, No. A11-0705 (Minn. May 1, 2013) (rejecting expert report as failing to provide meaningful consideration of factors, but expressly reserving issue as to future cases).

<sup>54</sup> Order No. 888-A, FERC Stats. & Regs. ¶ 31,048 at 30,348.

<sup>55</sup> 18 CFR § 35.26(b)(1) FERC has defined wholesale stranded costs as “any legitimate, prudent and verifiable cost incurred by a public utility or a transmitting utility to provide service to: . . . (ii) A retail customer that subsequently becomes, either directly or through another wholesale transmission purchaser, an unbundled wholesale transmission services customer of such public utility or transmitting utility

<sup>56</sup> 18 CFR § 35.26(b)(5) FERC has defined retail stranded costs as “any legitimate, prudent and verifiable cost incurred by a public utility to provide service to a retail customer that subsequently becomes, in whole or in part, an unbundled retail transmission services customer of that public utility

<sup>57</sup> 18 CFR § 35.26(c)(2)(i).

<sup>58</sup> 18 CFR § 35.26(c)(2)(iii).

<sup>59</sup> *City of South Daytona, Florida*, 137 FERC 61,183 (2011).

<sup>60</sup> *City of Boulder, Colorado*, No. EL13-67-000, at ¶ 33 (July 29, 2013).

## APPENDIX G

<sup>61</sup> February Report to the City Council, and personal communications with experts familiar with the report.

<sup>62</sup> While results show an average rate, wholesale suppliers and retail utilities do not charge all customer types the same rate. They have multiple rate schedules, and customers pay different demand and energy rates depending on various factors.

<sup>63</sup> Based on estimations and personal communication with Xcel Energy staff.

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<sup>64</sup> Power supply costs would depend on the regional balance of supply and demand; costs of different generation technologies and fuel; the composition of the municipal utility's resource portfolio; the priority of generation resources (based on least-cost or other merits); its buying power, strategic sophistication and negotiating savvy; and the effectiveness of its resource management, market operations, and demand-side management.

<sup>65</sup> At least 3.5 percent of electricity received by a retail utility is dissipated in the distribution system; some distribution systems lose up to five percent.

<sup>66</sup> MRES does not provide transmission service, so this is a cost over and above its power contract.

<sup>67</sup> Even a fixed allocation of WAPA power does not guarantee low wholesale rates. With recent sustained drought conditions in the Western U.S., WAPA was forced to make market purchases at time of high demand, and WAPA passed the costs through to its customers.

<sup>68</sup> U.S. Energy Information Administration, "Updated Capital Cost Estimates for Utility Scale Electricity Generating Plants, April 2013.

<sup>69</sup> These seven municipal utilities are Austin Energy, Seattle City Light, Nashville Electric Service, Omaha Public Power District, Knoxville Utilities Board, Huntsville Utilities, and Eugene Water and Electric Board.

<sup>70</sup> APPA Selected Financial and Operating Ratios of Public Power Systems, 2011 Data (published in November 2012).

<sup>71</sup> City of Boulder February report to the city council.

<sup>72</sup> Respondents to the APPA survey were also asked to include the revenue loss of uncollectible accounts in this cost category. The median cost of uncollectibles for municipal utilities with more than 100,000 customers is only 0.36 percent, or \$360,000 per \$100 million in accounts receivables, according to APPA.

<sup>73</sup> City of Minneapolis 2014 Budget, [www.minneapolismn.gov/www/groups/public/@finance/documents/webcontent/wcms1p-119432.pdf](http://www.minneapolismn.gov/www/groups/public/@finance/documents/webcontent/wcms1p-119432.pdf).

<sup>74</sup> Direct testimony by Kent T. Larson before the Minnesota Public Utilities Commission, "In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service," November 2, 2012.

<sup>75</sup> Minnesota Statutes 216B.45.

<sup>76</sup> In this letter, Xcel Energy does not sum the potential values for these three factors. In fact, Xcel Energy states that there may be other appropriate factors that would justify additional compensation to Xcel Energy. Thus, Xcel Energy has not determined an asking price or staked a position in any manner whatsoever. At most, Xcel Energy has merely suggested that just compensation would be at least \$2.77 billion.

<sup>77</sup> Rebuttal Testimony and Schedules by James J. Duevel, "In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in Minnesota," before the Minnesota Public Utilities Commission, March 25, 2013.

<sup>78</sup> In the letter dated October 8, 2013.

<sup>79</sup> \$65/kW-year is approximately the annualized cost of a new conventional combined-cycle power plant, according to the U.S. Energy Information Administration. This estimate is only \$5.00/kW-year more than the estimate Xcel Energy suggested for the value-of-solar methodology.

<sup>80</sup> Xcel Energy's October 8 Letter.

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<sup>81</sup> Relevant sections of the United States Code are 26 U.S.C. § 103(a), 26 U.S.C. § 103(b), 26 U.S.C. § 141(d), and 26 U.S.C. § 141(e).

<sup>82</sup> Whether the City of Minneapolis would actually issue a bond for all start-up costs is unknown, but assuming that the City would do so is a good way to calculate the levelized annual cost in an “nth year” financial illustration.

<sup>83</sup> Gross-plant-in-service means the original cost.

<sup>84</sup> The reason for having the same value for depreciation in all three scenarios is that this cost component does not affect total revenue requirements under the construction of this financial illustration. Depreciation is a non-cash expense. Depreciation expense is added to net revenue available for debt service to calculate the debt service coverage ratio, and it is treated as net revenue to calculate the operating margin. In all three scenarios, the cost component called “net revenue required (less depreciation)” would be a positive number regardless of the depreciation estimate (within reason), and it is easier to understand how net revenue requirements change from the low-cost scenario to the high-cost scenario with a constant amount for depreciation.

<sup>85</sup> For comparison, the City of Boulder’s City Charter would require its municipal electric utility to maintain a debt service coverage ratio of at least 1.25. The financial model for Boulder’s municipal utility is set to maintain a debt service coverage ratio of 1.63.

<sup>86</sup> City of Minneapolis 2014 Budget, [www.minneapolismn.gov/www/groups/public/@finance/](http://www.minneapolismn.gov/www/groups/public/@finance/)

[documents/webcontent/wcms1p-119432.pdf](#). Because depreciation is a non-cash expense, the amounts charged for depreciation contribute to the cash balance of an Enterprise Fund as well as to the numerator in the debt service coverage ratio.

<sup>87</sup> James J. Duevel, “In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in Minnesota,” November 2, 2012, and March 25, 2013, Docket No. E002/GR-12-961.

<sup>88</sup> The real and personal property of municipal power agencies [SMMPA, MMPA, etc.] is exempt from property taxes, too, but they are required under Minnesota Statutes Section 453.54 to make payments in lieu of property taxes to property-taxing jurisdictions in the same amounts as they would if their property were not exempt from property taxes.

## APPENDIX H

<sup>89</sup> Minneapolis Ordinance 47.190 adopted February 2013.

<sup>90</sup> This is the number of buildings that provided energy use data in 2012 for the City’s energy benchmarking ordinance.

<sup>91</sup> Mills, Evan. *Building Commissioning: A Golden Opportunity for Reducing Energy Costs and Greenhouse Gas Emissions in the United States*. LBNL. 2009.

<sup>92</sup> Plum, Hancock, and Traczyk, *Results of Minnesota’s Public Buildings Enhanced Energy Efficiency Program (PBEEEP)*.

<sup>93</sup> City of Minneapolis Assessor’s Office

<sup>94</sup> Not included in the totals is the additional energy that is being consumed by buildings receiving district steam and hot water.

<sup>95</sup> Compared to Xcel Energy’s One-Stop Lighting Program.

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<sup>96</sup> Plum, Hancock, and Traczyk, *Results of Minnesota's Public Buildings Enhanced Energy Efficiency Program (PBEEEP)*.

<sup>97</sup> Office of Energy and Sustainable Development, City of Berkeley, "Streetlight Upgrade (LED Lighting)"

<sup>98</sup> Blake, "Test of LED Streetlights in West St. Paul Could Lead to Wider Use."

<sup>99</sup> Gary A. Swanson, Cole A. Carlson, *Cost-Benefit Analysis of Energy Efficient Technologies Available for Use in Roadway Lighting*.

<sup>100</sup> Assuming the maintenance cost to change one light is \$200. This does not account for the difference in bulb costs.

<sup>101</sup> This category of facility includes the Minneapolis Convention Center, which would also be considered under the *Public Buildings Program*.

<sup>102</sup> City Assessor Data

<sup>103</sup> <http://www.nrgthermal.com/Centers/Mpls/index.htm>.

<sup>104</sup> Evan Mills, *Building Commissioning: A Golden Opportunity for Reducing Energy Costs and Greenhouse Gas Emissions*.

**105** Based on penetration from Xcel Energy's One-Stop Lighting Program, it is estimated that 77 percent of businesses have not yet received lighting improvements.

<sup>106</sup> Professional energy auditor field experience in Minnesota, G. Ernst.

<sup>107</sup> Scott Pigg, Jeannette LeZaks, Karen Koski, Ingo Bensch, Steve Kihm, *Minnesota Multifamily Rental Characterization Study*.

<sup>108</sup> See, for example: Northeast Energy Efficiency Partnerships, "Building Energy Rating and Disclosure Policies: Update and Lessons from the Field." (February 2013).

<sup>109</sup> Nelson, Carl, Chris Duffrin, Rebecca Olson, Isaac Smith, Jennifer Edwards, and Helen Booth-Tobin. "Energy Fit Homes: A Tool to Transform the Market for Energy Efficiency in Existing Homes." (forthcoming)

<sup>110</sup> Based on program experience and Minnesota deemed savings literature.

<sup>111</sup> As reported by the City of Minneapolis Assessor's Office

<sup>112</sup> Originally this was Title 12, Chapter 244, 530 and 680 of the Housing Maintenance Code as modified June 28, 1985. The City oversaw the compliance of over 1,900 buildings until the program ended in 1989.

<sup>113</sup> Scott Pigg, Jeannette LeZaks, Karen Koski, Ingo Bensch, Steve Kihm, *Minnesota Multifamily Rental Characterization Study*. Note that multifamily units also include condo buildings.

<sup>114</sup> Nelson, *Direct Install Plus Multifamily Pilot Program Final Report*.

<sup>115</sup> Minn. Statute § 216B.164, Subd. 10. See <https://mn.gov/commerce/energy/topics/resources/energy-legislation-initiatives>



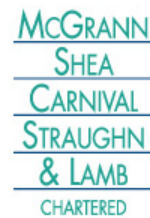


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MINNEAPOLIS ENERGY PATHWAYS:  
A FRAMEWORK FOR LOCAL ENERGY ACTION

March 4, 2014