



## Smarter, Cleaner Energy

Recommendations of the Saint Paul Environmental Roundtable

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### Overview

Energy drives all facets of the city of Saint Paul. It powers our homes, businesses and industries, schools and colleges, places of worship, and our government. Despite the great diversity of human enterprises and activities in our city, energy is the one element essential to all of them. We all use energy to heat, cool, light, and power our lives. Yet we usually take energy for granted. By and large, energy has been reliable and affordable for decades. Consequently, we have developed an urban infrastructure that does not value using energy efficiently, and that undervalues clean, renewable sources of energy.

Only in the 1970s and 1980s were the first steps taken to use energy more wisely; even those modest efforts yielded measurable results. Since the late 1980s, natural gas and electrical energy use in Saint Paul for the residential, commercial/industrial, and municipal sectors have grown more slowly than either population or employment. These figures suggest that energy efficiency measures required by statute, promoted by private non-profit energy organizations and by the City and implemented by a wide range of individuals and enterprises have been successful over the past two decades in tempering the rise in energy consumption. But clearly, much more needs to be done.

Few people in Saint Paul know about the City's pioneering work as part of the international Cities for Climate Protection program, through which global warming pollution has been reduced, and the City has saved millions of dollars. These energy and dollar savings must be ramped up as laid out in the Saint Paul Urban CO<sub>2</sub> Emission Reduction Plan, which calls for much more significant reductions in global warming pollution.

The Saint Paul Environmental Roundtable recommends that the City of Saint Paul join the U.S. Mayors Climate Protection Agreement, whereby cities are committing to: "urge the federal government and state governments to enact policies and programs to meet or beat the target of reducing global warming pollution levels to 7 percent below 1990 levels by 2012"; "urge the U.S. Congress to pass bipartisan greenhouse gas reduction legislation that includes 1) clear timetables and emissions limits and 2) a flexible, market-based system of tradable allowances among emitting industries";

and

"strive to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking actions in our own operations and communities".

[http://www.seattle.gov/mayor/climate/PDF/Resolution\\_FinalLanguage\\_06-13-05.pdf](http://www.seattle.gov/mayor/climate/PDF/Resolution_FinalLanguage_06-13-05.pdf)

Recently, concerns about energy use as a national security issue have been sharp reminders about how important energy is to our lives and how imprudent it is to assume that conventional energy sources will always be cheap, plentiful, and dependable. Most forecasts portend significant increases in energy prices over the long term, for oil as it becomes depleted, and for coal as markets begin to include the costs of global warming caused by burning coal in the price of that energy source. Near-term price swings likely will cause considerable economic pain and uncertainty for St. Paulites.

The Smarter, Cleaner Energy Team believe that our community has the means to produce and use energy in much cleaner ways and that doing so will benefit our economy and enhance our quality of life. We propose identifying and capitalizing on *implementable* opportunities to develop new energy generation and energy efficiency technologies that improve St. Paul's air and water, help homeowners and renters keep down their housing costs, enhance the city as a place to do business, and create a reputation for the city as an incubator for innovative energy solutions.

## RECOMMENDATIONS TO ACHIEVE SMARTER, CLEANER ENERGY

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### Use the Xcel Energy Franchise Agreements Negotiations to Achieve Energy Savings and Get More Renewable Electricity for Saint Paul

#### **Recommendation #1: Restructure the Xcel Energy Franchise Fees**

The City of Saint Paul and Xcel Energy every ten years renegotiate electricity and natural gas franchise agreements whereby the utility agrees to pay for the right to use city property and rights of way to deliver gas and electric service to its customers in the city. The current franchise agreements expire on June 30, 2006. The City and Xcel are in the midst of renegotiating these ten-year agreements, so now is the right time to press for a franchise agreement that lays out goals whereby the utility will more aggressively pursue the incorporation of energy efficiency measures into the buildings of its Saint Paul industrial, commercial, residential, and public sector customers.

A first step would be to restructure the franchise fee that Xcel posts on its monthly utility bills as a "city fee" from May through October. The appearance, disappearance, and reappearance of this fee from year to year inevitably create confusion. The "city fee" should be applied year round to eliminate the anxiety that arises in many city residents every May when the fee now makes its annual reappearance.

The word "conservation" does not appear in the current franchise agreement. The city fee as currently structured provides no market signal to customers to conserve energy. The fee is charged against the total amount of electricity and natural gas consumed by a residential customer, regardless of how modest or extreme this consumption might be. Electricity and natural gas are essential for a safe and comfortable quality of life. A certain number of kWhs of electricity per month (500?) and therms of natural gas (200?)

should always be free of the franchise fee. Amounts above these monthly allowances should be assessed a fee at an increasingly progressive rate to provide a market signal that helps encourage more awareness of energy usage.

A number of citizens who commented on these Roundtable recommendations noted that, if franchise fees are increased, the added revenue to the City should help support energy efficiency and conservation.

### **Recommendation #2: Set a Renewable Electricity Standard in the Franchise Agreement**

The City should renegotiate the Xcel electricity franchise agreement, to phase in a requirement that Xcel provide clean renewable electricity for at least 25% of Saint Paul's electricity usage. Such a renewable electricity standard would be met by the development of new sources of electricity, such as wind power and solar power.

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### **Recommendation #3: Work with Rock-Tenn on a Clean Energy Source**

The Rock-Tenn Plant at Vandalia Avenue and I-94 recycles waste paper. Rock-Tenn is planning for the loss of its current supply of steam energy, now delivered from Xcel Energy's High Bridge Power Plant. The energy source will be lost when Xcel replaces that coal-fired plant with a natural gas-fired plant in 2008. If this energy problem forces the plant to close, the results would be the loss of jobs and a business that plays an important role in recovering otherwise wasted resources. Replacing Xcel Energy's coal-fired steam with another environmentally harmful energy source would not only erode the environmental benefits of the plant's recycling business, but would be contrary to the City of St. Paul's commitments to reduce its greenhouse gas emissions.

We recommend that the City of Saint Paul work closely with Rock-Tenn to aggressively investigate potential clean energy opportunities that would serve the needs of Rock-Tenn while conveying broader environmental benefits. These opportunities can be differentiated according to fuel source and energy efficiency:

- The supply of waste wood in the core Twin Cities metropolitan area is insufficient to support another major power plant in addition to District Energy St. Paul's combined heat and power plant. The transportation costs associated with delivering wood fuel by truck (as is the current practice with District Energy), furthermore, inhibit looking further out for wood supplies. But could waste wood or plantation-grown wood biomass (from rural Minnesota) be delivered to a new Rock-Tenn power plant economically by rail?

- Would bio-oil made from any of a wide range of sustainable biomass feedstocks be a suitable substitute for waste wood?
- Would a high-temperature fuel cell deliver the electricity and process heat needed by the plant at a reasonable cost, assuming a clean energy source was identified for the fuel?
- Regardless of the new energy source, can the city, the company, and citizens work together to ensure the maximum utilization of this energy? What will happen to the waste energy inevitably generated? Might it be available to serve as the basis for a local district heating system headquartered at Rock-Tenn but also supplying energy to neighboring commercial and residential customers?

In deliberations around the future of Rock-Tenn, planners should consider any direct impacts on the surrounding neighborhood from net increase in traffic, noise, and emissions caused by the fueling and operation of a new energy source. For example, if biomass is used, that should not mean the use of refuse-derived fuel (RDF), since the burning of processed trash produces dioxins and emits mercury, and yields a toxic ash that must be managed as a hazardous waste. A thorough assessment of the plant's current and projected environmental impacts should be made, including issues of environmental justice, in a determination of whether the benefits of any repowering of the plant outweigh any increase in environmental and human impacts.

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#### **Recommendation #4: Encourage Ground-Source Heating and Cooling**

Using the thermal inertia of the earth to heat buildings in the winter and cool them in the summer is a proven technology. It is also highly energy efficient. Because ground-source systems do not produce energy, but merely move it around, they can achieve energy efficiencies far above conventional heating and cooling technologies.

Ground-source heating and cooling systems typically are designed and installed to serve individual buildings. It is time for the City of Saint Paul to encourage the wider adoption of this technology and to facilitate the development of ground-source systems that serve multiple buildings. Commercial/residential complexes being developed in the City could be ideal sites for ground source heating and cooling systems.

Regulatory barriers, however, likely would inhibit the innovative use of ground-source technology. The Minnesota Department of Health (MDH) oversees the drilling of wells for ground-source heating and cooling systems. The City should work with the MDH and other state agencies to minimize the regulatory hurdles that would inhibit the wider installation of ground-source heating and cooling in the City.

After maximizing conservation and efficiency to preclude the development of unnecessary new energy sources, the City should seek to implement a showcase multi-building ground-source heating and cooling system to demonstrate the effectiveness and efficiency of this technology.

As part of Xcel Franchise Fee negotiations, City negotiators should seek a significant utility rebate for new ground-source systems.

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### **Recommendation #5: Run the City Fleet on Renewable Fuels**

The motor pool for the City of Saint Paul currently has approximately 100 E85 (85% ethanol)-ready flexible-fuel vehicles. The City's fuel pumps, however, do not dispense E85 fuel, thereby completely negating the environmental and economic value of having flex-fuel vehicles. The City should promptly install an E85 fuel tank at its motor pool operations at the Department of Public Works and Parks and Recreation and mandate that all City flex-fuel vehicles be fueled with E85 exclusively. The fuel savings and other benefits of this simple fuel switch should be advertised widely to City residents and businesses, along with encouragement for private individuals and businesses in the city to follow suit by burning only E85 in flex-fuel vehicles.

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### **Recommendation #6: Implement a Home Energy Rating System**

The City of Saint Paul currently is enjoying a re-energized housing market, with the construction of thousands of new units of housing in the past few years. This trend is likely to continue as empty nesters and young professionals choose the conveniences of urban living.

Long-term operating costs, especially heating and cooling, almost always receive short shrift compared to home purchase costs. Consequently, new home buying seldom receive information on the anticipated costs of heating and cooling their new homes,

and contractors have no incentive to maximize energy efficiency. The end result is that housing is built without regard for lifetime energy (and environmental) costs.

The City should implement a residential energy rating system. The purchasers of new homes should be provided information on the anticipated annual costs to heat, cool and run the appliances in their home; this should be done by an independent energy auditing entity. Furthermore, this entity should rate new residential properties according to whether or not they meet the requirements of the Energy Star home rating system. The Neighborhood Energy Consortium (NEC) currently offers HERS ratings and ENERGY STAR designations to residences in Saint Paul. Contractors and realtors would be required to disclose that their produce does—or does not—meet ENERGY STAR requirements.

In addition, the City of Saint Paul should enforce the PED/HRA's recently adopted Sustainability Initiative for new residential units receiving city subsidies, perhaps by making it a requirement for new home permitting.

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### **Recommendation #7: Establish a Clean Energy Coordinator for the City of Saint Paul**

The City of Saint Paul has steadily pursued energy efficiency and conservation measures in municipal buildings for many years and supported other energy initiatives with dramatic energy and dollar savings. These accomplishments should be touted, as our twin city to the West already does. However, much more needs to be accomplished. Saint Paul still spends millions of dollars annually on energy bills; efforts to use energy more efficiently need to be promoted city wide. The City should sponsor a campaign, via the City's website, to educate residents about how to take advantage of ongoing and short-term energy saving incentives. A first example could be wide promotion of the energy tax incentives now available to taxpayers via the federal energy law passed in 2005; information on tax incentives is available at [www.energytaxincentives.org](http://www.energytaxincentives.org)

Leading Saint Paul to become a cleaner energy city ought to be a city employee's full-time responsibility. This position should be structured to be revenue neutral or even positive. Savings on municipal energy bills ought to be credited to this position, as should state and/or federal grants secured to pursue new energy initiatives. The Clean Energy Coordinator would work closely with businesses, nonprofit organizations, state agencies, and citizens interested in making St. Paul a showcase of enlightened energy policies and practices.

Mayor Coleman's recent appointment of a Deputy Policy Director—Environment is an excellent step toward a better environment in Saint Paul. The Environmental Roundtable will be seeking clarification of the duties of the Deputy Policy Director—Environment; we are interested in how much of that staff person's time will be devoted to achieving smarter, cleaner energy goals.