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**On the cover:** Guelph Hydro's headquarters is one of the largest renewable energy business sites in Southwestern Ontario, an example of a key initiative of Guelph's Community Energy Plan (see the story on page 17 of this issue). The facility has been built with sustainability in mind, incorporating conservation management principles through the use of energy efficient design, and making use of natural light, geothermal and solar technologies. *Photo by Ross Davidson-Pilon, Studio 404, Guelph, Ontario.*

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# City of Guelph's Community Energy Plan Sets High Standard

*Peter Barrow*

Canadians are the highest per capita user of energy in the world. More than 80 percent of Canada's population lives in cities, and of all the energy used in Canada, over half is for buildings, homes, and transportation within cities.

With stats like these, and the fact that the City of Guelph is anticipating 35 to 40 percent growth over the next 25 years (from 115,000 in 2006 to 180,000 in 2031), it is easy to see why the City of Guelph, Ontario recently completed a Community Energy Plan (CEP) to ensure its long-term competitiveness and environmental leadership.

Linking itself with local electricity distribution company Guelph Hydro Electric Systems Inc. and other partners in 2004, the city and broader community undertook a community energy planning process to ensure a sustainable energy future. With council's unanimous approval of the plan in 2007, Guelph became one of a group of municipalities around the world to have such a plan – and one of the first cities of its size to incorporate global and local urban energy management strategies into its daily operations.

## Broad-based Participation and Support

In Fall 2005, before there was a community energy plan, seven partners (City of Guelph, Guelph Hydro Inc., University of Guelph, Guelph Chamber of Commerce, the Wellington Catholic District School Board, the Upper Grand District School Board, and the Friends of Guelph) founded a Community Energy Plan Community Consortium with the aim of leading the city and its constituents to a more sustain-



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able energy future.

The consortium was co-chaired by Janet Laird, the city's director of environmental services, and Art Stokman, president of Guelph Hydro Electric Systems Inc. Peter Garforth, of Garforth International LLC, provided strategic leadership and advice, while many local companies, organizations and individuals contributed significantly to every stage of the CEP's development.

In the months that followed, consortium members and the broader community consulted widely. Collectively, they developed a simple but challenging vision.

"We stated that Guelph will create a healthy, reliable and sustainable energy future by continually increasing the effectiveness of how we use and manage our energy and water resources," said Guelph Mayor Karen Farbridge.

The consortium was able to get the right partners on board, each of whom brought a unique perspective and combination of assets to the group, including specialized expertise and knowledge, and access to targeted sectors of the community.

## Goals Key to Success

The plan outlined the following five strategic goals:

1. Make Guelph the place to invest, supported by the commitment to a sustainable energy future.
2. Have a variety of reliable, competitive energy, water and transport services available to all.
3. Ensure that Guelph's energy use per capita and resulting greenhouse gas emissions will be less than the current global average.
4. The city will use less energy and water per capita than comparable Canadian cities.
5. All publicly funded investments will visibly contribute to these four key goals.

Recent statistics show that Guelph uses 52 megawatt hours of equivalent energy (MWh) from fuels of all types for each inhabitant of the city. If the heat wasted in the production of electricity is factored in, this rises to 73.7 MWh per capita.

The average daily water demand is 52,579 cubic metres, or approximately 230-250 litres per day per household. (In fact, the city's single largest electricity cost comes from water pumping). The city decided that it is this energy that can be more directly influenced by community action.

### Initiatives to Put Plan Into Action

To help Guelph achieve its goals, the CEP recommended many strategic initiatives for the next 25 years. Briefly, these can be highlighted as follows:

1. Use efficiency to create at minimum, all the energy needed to support growth in the residential, commercial, and institutional sectors.
2. Team with a local bank and Natural Resources Canada to adopt an energy performance labelling scheme that acts as a pilot program for Canada.
3. Offer world-class tailored energy services and accomplish annual investment growth higher than the underlying population growth, with no increase in the primary energy required to serve the first 15 years of growth.
4. Reduce transportation energy use by 25 percent while meeting all transportation needs.
5. Create energy distribution architecture that is served by alternative energy fuels and technologies.
6. Source 25 percent of Guelph's energy needs

from local renewable resources in the next 15 years, and target that 30 percent of anticipated power requirements will be associated with co-generation by 2031.

7. Reduce pressure on the summer grid by 40 percent by 2031.
8. Create an integrated energy metering, billing, and management network across the city.
9. Implement large area, high efficiency scale projects.

### Ensuring Long-Term Success

While the immediate output from the process was a plan, consortium members recognized the importance of ensuring that community energy planning continues long into the future. They are very cognizant of the need for effective governance, long-term and stable funding. They are also aware it will be important to institutionalize consortium, so that the CEP endures over the long-term, beyond the tenure of the founding individuals and organizations, and through changes in organizational priorities.

### The Bottom Line

If the CEP is successful, Guelph's total fuel use required to deliver all energy services will decrease from today's total of 8,475 GWh to 6,135 GWh in 2031 – a decrease of greenhouse gas emissions from 16 tonnes per capita, to seven tonnes.

"This is a truly ambitious and, in many cases, revolutionary plan for urban responsibility in an energy conscious world," said Farbridge. "But, if the commitment that was shown in developing the plan can be sustained, I have no doubt that it will ultimately be successful." *MW*

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