



CITY OF LONDON

Community Energy Action Plan (2014 – 2018)

Collaborative - Engaging - Affordable - Practical

Part of London's Community Energy Action Program

July 2014



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1. CREATING A COMMUNITY ENERGY ACTION PLAN

The Corporation of the City of London does not have a lot of direct control over how much energy is used in London, but it does have a lot of influence. The control over energy use in London rests primarily with our citizens, visitors, employers and employees. Individual and collective action with respect of sustainable energy use, energy management, and energy conservation is the key to our future.

Rethink Energy London, launched in January 2010, was a community engagement and action plan to increase public awareness, encourage stakeholder action, and seek input on sustainable energy and greenhouse gas (GHG) emission mitigation actions that also creates local social and economic benefits. Rethink Energy London covered a broad range of topics under four main themes – Our Homes, Our Neighbourhoods, Our Transportation, and Our Economy. City staff met with stakeholders by attending their meetings and events, and by hosting workshops, seminars and conferences. Rethink Energy London was promoted at numerous public and community events, such as the London Home Show and Car Free Day. To reach larger audiences, City staff made use of relationships with local media, including regular appearances on Rogers Daytime's Green Segment.

ReThink London, launched in 2012, was a comprehensive land use planning and city visioning initiative to help obtain Londoners' thoughts on how we can do a better job through urban planning. Urban planning can have a significant impact on how much energy we use. Under the new **London Plan**, designing new communities with a mix of land uses and density reduces the need to drive all the time, and can allow for innovative energy-saving technologies that take advantage of the different heating and cooling needs of these buildings. Infill development projects, growing "inwards and upwards" particularly in older, car-dependent suburban neighbourhoods, can help "retrofit" these neighbourhoods to have these same benefits.

Transportation planning is also highly dependent upon urban planning. Today in London, the main transportation mode used by residents is the private automobile, which accounts for almost 75 percent of travel during rush hour. Public transit carries about 12 percent, and active transportation (walking and cycling) represent a further nine percent. The City's **Smart Moves 2030 Transportation Master Plan** analyzed various growth scenarios to determine what needs to be done from both land use and transportation perspectives to provide more travel choices for those who live, work and play in London.

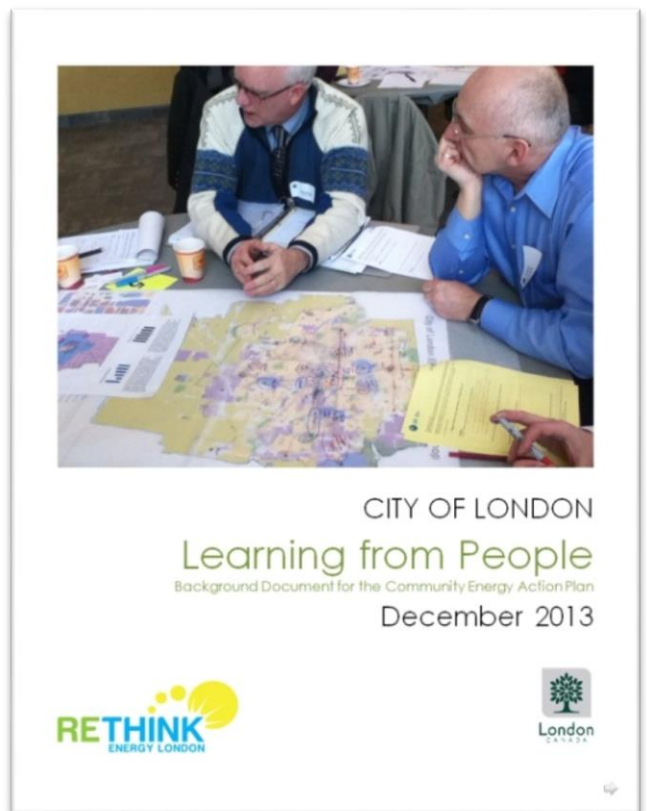
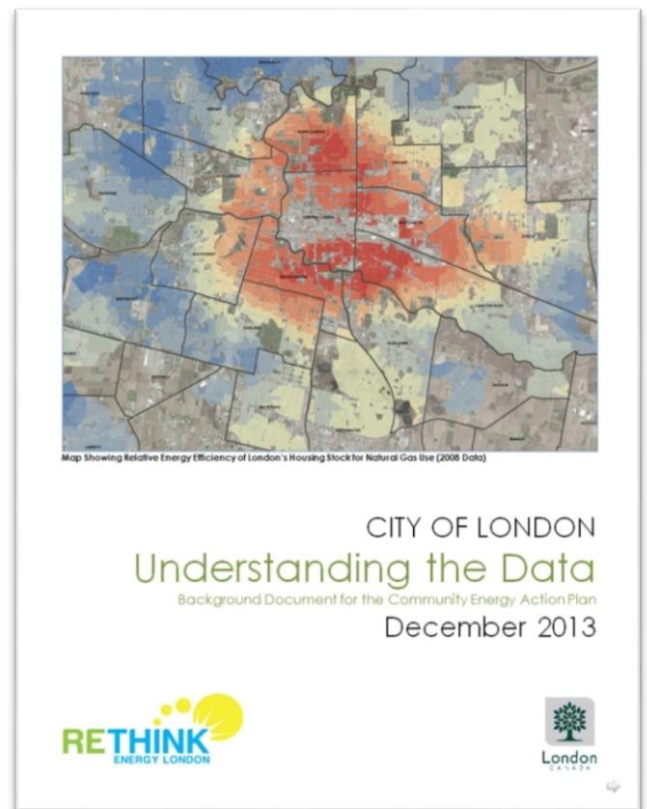
The **Short-Term Implementation Strategy for Active Transportation and Transportation Demand Management** focusses on low-cost solutions for transportation such as walking, cycling, and carpooling. This plan recognizes that many vehicle trips made in London are short enough to be made on foot or by bike, and that greater use can be made of London's existing active transportation infrastructure.

The Corporation of the City of London is also one of London's largest employers, operating over 200 facilities and over 300 vehicles involved in delivering a wide range of services to London. The City of London is expected to lead-by-example, and the City's new **Corporate Energy Conservation and Demand Management (CDM) Plan**, as part of the Corporate Energy Management Program, outlines these actions.

Finally, one of the most critical roles that the City plays is to “connect the dots” between all of the major community stakeholders, the activities they engage in, and the role that these stakeholders can play in our rolling out the Community Energy Action Plan (CEAP, 2014 – 2018) as part of the Community Energy Action Program. London's CEAP will be a “living document”, in that the actions taken by the City of London and community stakeholders are expected to grow and change over time. To keep the plan focussed on “just the actions”, we have placed all of the plan's supporting information within the following documents:

Understanding the Data summarizes what City staff knows to date about “big picture” issues like climate change and global energy supply, as well as local information on how much energy we use, what we use it for, how much it costs to use it, and how much greenhouse gas emissions it creates. This document also talks about some of the information City staff has about the options we have in London to reduce energy use, reduce greenhouse gas emissions, and create jobs in the process.

Learning from People summarizes what City staff learned through public engagement activities undertaken through Rethink Energy London, including London's Roundtable on the Environment and the Economy and the Community Energy Stakeholder Workshop, as well as community-led engagement activities.



2013 Community Energy & Greenhouse Gas Inventory

provides an overview of London's 2013 annual energy consumption and greenhouse gas (GHG) emissions. This includes information on what energy commodities are used, which sector they are used in, and the estimated cost for using these commodities.

Celebrating Progress - Sustainable Energy London 2013

(and three minute [video](#)) is a publication that draws attention to energy conservation, energy efficiency, and renewable energy projects undertaken by London's energy stakeholders in recent years. The publication illustrates the depth of projects and programs and serves as a showcase of the 'possible'. It can also be viewed as promotional piece for London's future in sustainable energy projects. Many of the projects highlight what Londoners and London business have done to both reduce energy expenditures and/or localize the expenditures. These projects include examples of:

1. Harnessing the sun
2. Tapping into the Earth's energy
3. Capturing the wind
4. Changing the way we move
5. Using less energy
6. Leading the way

Reporting on Progress outlines how Council and Londoners will be kept informed on progress made on the CEAP and the Community Energy Action Program. This includes:

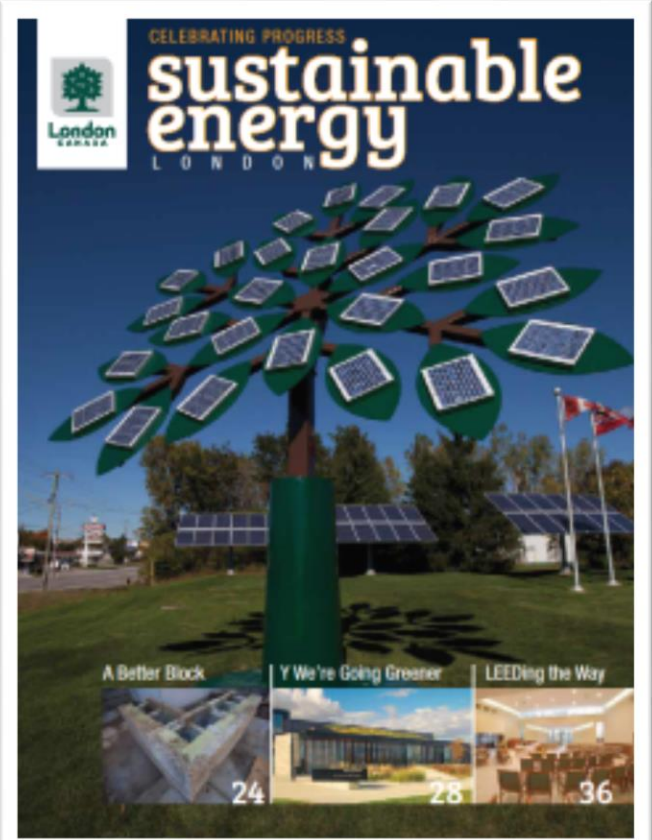
- Issuing annual Community Energy & Greenhouse Gas Inventory Reports
- Reporting on key progress indicators
- Developing new progress indicators
- Providing Open Source data solutions
- Reporting on progress for City of London community energy actions, and
- Recognizing progress made by Londoners



TD Canada Trust LEED Platinum Branch of Wonderland and Southdale. [Source: TD Canada Trust]

CITY OF LONDON 2013 Community Energy & Greenhouse Gas Inventory

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2. COMMUNITY ENERGY ACTION PLAN (2014 – 2018)

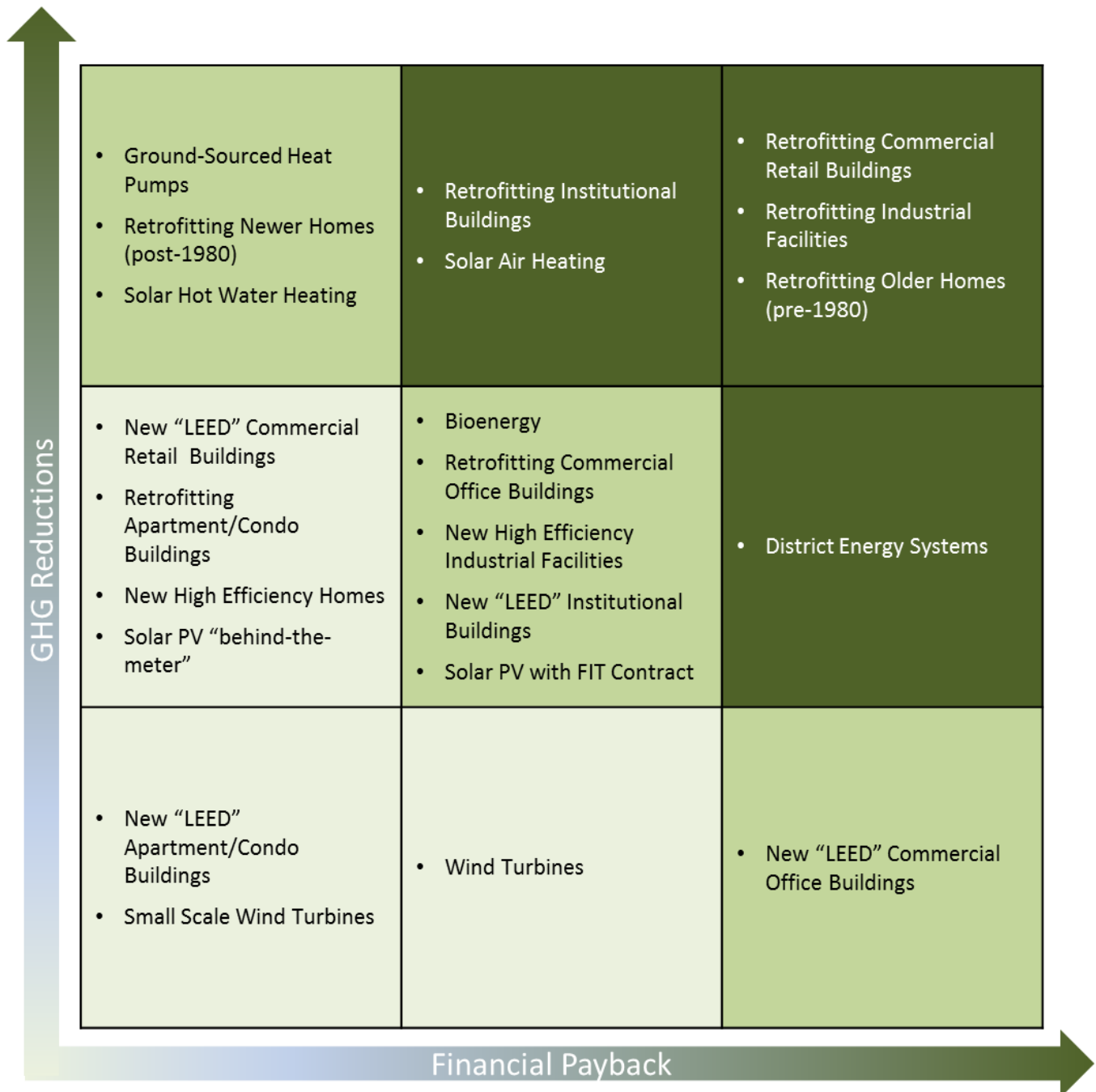
2.1 THE DEFINING PRINCIPLES AND PRIORITIES

The following principles will be used to guide London's CEAP (2014 – 2018) and the Community Energy Action Program:

1. **This needs to be the Community's plan for London, not the City of London's plan for the community** - we can start the plan, but we need community stakeholders to carry it out.
2. **We can't control the price of energy, but we can control the cost of energy** – many people have noted that the price of energy – electricity, gasoline – keeps rising even though they are using less of it. There is nothing we can do about price of energy, but we can reduce the cost of energy by using less of it.
3. **Start first with conservation** – adjusting behaviours and habits cost nothing, so the payback is right away. These can be small adjustments to day-to-day activities or significant changes due to a new investment or a desire to do things differently. This can be as simple as riding a bike (more often).
4. **Get the function and size right** – whether it's your home, vehicle, or space for your business, make sure that you get something that fits your needs.
5. **Invest in energy efficiency and good design** – look beyond the "sticker price" towards the full life-cycle cost. You will be surprised that payback and cost savings for some items occurs quickly.
6. **Make use of free heat and free light** – recover and reuse waste heat, and let the sun shine in to provide free heat and light for your building.
7. **Reduce waste** – it takes energy to make new material, and recycling old material uses less energy than making new material. Organic waste can be used to make renewable energy as well.
8. **Make it local** – moving stuff, even energy commodities like electricity, takes energy. Buying local goods and services, and producing electricity and bioenergy here in London, is not only good for saving energy – it creates local jobs as well.
9. **Build on local strengths** – London's agricultural and food industries, manufacturing, & health care, provide unique energy opportunities.
10. **Use renewable energy** – once you've done most of the above first, then it makes sense to use renewable energy.
11. **Measure your progress** – as the saying goes, "You can only manage what you measure."
12. **Share your stories** – let's celebrate the progress that we are making with sustainable energy and energy conservation choices.

The following illustration (Figure 1) summarizes the potential economic payback and environmental benefits for London as a whole for various sector- or technology-focussed strategies. All of these strategies are important for London to undertake, and individual projects can have unique circumstances that result in higher impacts and faster payback for the project proponent. What this illustration does is to help identify, at a high level, the relative impact these strategies have for London's total energy use and associated greenhouse gas emissions.

Figure 1- Impact of Building and Renewable Energy Technology Strategies on London's Greenhouse Gas Emissions



The current low costs for natural gas, used for space heating and water heating, slows down the payback rate for some of these actions. However, this does increase the payback rate for strategies like the cogeneration of heat and power.

Ontario's relatively-clean electricity grid, with over 80 percent of generation coming from emissions-free sources, means that electricity-savings measures can provide good payback, but not as much emissions-reduction benefit as those measures that reduce natural gas use.

Ontario's new Building Code, which incorporates many energy-efficiency measures from programs like Energy Star® New Homes, also sets a high bar for those builders who want to build above and beyond what the code asks for. Also, high-efficiency new buildings by themselves can have significantly lower energy costs and environmental impacts. However, London has a lot of older buildings that would benefit from building retrofits.

As for transportation, the cost of various transportation strategies (e.g., purchasing more fuel-efficient vehicles) could not be assessed, as the personal choice to purchase smaller, fuel-efficient vehicles as well as walking or biking more often actually result in net savings. However, improving overall vehicle fuel economy still has the greatest impact on London's transportation energy use and associated emissions.

2.2 GOALS OF LONDON'S COMMUNITY ENERGY ACTION PROGRAM

The City of London is a participant in the Partners for Climate Protection (PCP) program, a network of Canadian municipal governments that have committed to reducing greenhouse gases and acting on climate change. PCP is a partnership between the Federation of Canadian Municipalities (FCM) and ICLEI — Local Governments for Sustainability.

The overall goals of London's Community Energy Action Program are to:

1. Increase the local economic benefit of sustainable energy use through:
 - a. Cost savings from energy conservation and energy efficiency,
 - b. Revenue from local production of clean & green energy products, and
 - c. Job creation associated with product and service providers engaged in these activities.

2. Reduce the environmental impact associated with energy use, through the use of greenhouse gas emission reduction targets consistent with the Province of Ontario's goals, namely:
 - a. 6 percent reduction in total greenhouse gas emissions from 1990 levels by 2014,
 - b. 15 percent reduction in total greenhouse gas emissions from 1990 levels by 2020, and
 - c. 80 percent reduction in total greenhouse gas emissions from 1990 levels by 2050.

In addition to these overall goals, sector specific goals have been established:

Sector	Goals	
	Description	Nature of Goal
Single-Family Homes	Reduce the city-wide average energy use (all commodities) per person in single-family homes by 15 percent from 2008 levels by 2018.	Measurable
	Increase the percentage of high-performance new homes (e.g., ENERGY STAR for New Homes or other rating systems) voluntarily built in London to over 10 percent of new builds by 2018.	Aspirational
Multi-Unit Residential Buildings	Improve the city-wide average energy intensity (energy used per square meter floor area – all commodities) of multi-unit residential buildings from 2008 levels by 10 percent by 2018.	Measurable
	Increase the percentage of high performance new multi-unit residential building units (e.g., LEED® New Construction or other rating systems) voluntarily built or renovated in London to 25 percent of new builds and major renovations by 2018.	Aspirational
Commercial and Institutional Buildings	Improve the city-wide average energy intensity (energy used per square meter floor area – all commodities) of commercial & institutional buildings from 2008 levels by 15 percent by 2018.	Measurable
	Maintain the percentage of high performance commercial and institutional buildings (e.g., LEED® New Construction or other rating systems) voluntarily built or renovated in London to over 25 percent of new builds and major renovations by 2018.	Aspirational
Industry and Manufacturing	Increase the share of London's industrial and manufacturing sector with documented energy management plans, programs, or systems to over 10 percent (based on share of employees) by 2018.	Aspirational
Stores and Restaurants	Increase the number of small businesses utilizing utility conservation programs by 25 percent from 2012 levels by 2018.	Aspirational
Local Energy Production and Cogeneration of Heat and Power	Increase the local production of electricity from 1.4 percent (in 2012) to 5 percent of London's total annual electricity demand by 2018.	Measurable
	Increase the local capacity for co-generation of heat and power (both merchant systems and behind-the-meter load displacement) from 47 megawatts (electricity) to 75 megawatts by 2018.	Measurable
	Increase the local capacity for renewable electricity generation from 2.7 megawatts (in 2012) to 10 megawatts by 2018.	Measurable
Vehicles and the Transportation System	Decrease the amount of petroleum-based fuel used per capita by 15 percent from 2012 levels by 2018.	Measurable
	Increase the share of London's vehicle fleet operators (by percentage of total fleet vehicles in London) with documented fleet management programs (E3 Fleet or equivalent) to more than 50 percent by 2018.	Aspirational

If these goals are met, it is estimated that the CEAP could achieve:

- A 12 percent improvement in energy use per person by 2018 compared to 2013
- Annual energy cost avoidance over \$250 million per year by 2018, compared to business-as-usual (2010 energy use levels), and
- A 15 percent reduction in total GHG emissions from 1990 levels by 2018.

Figure 2 – London’s Greenhouse Gas Emission Trend versus Federal and Provincial Reduction Targets

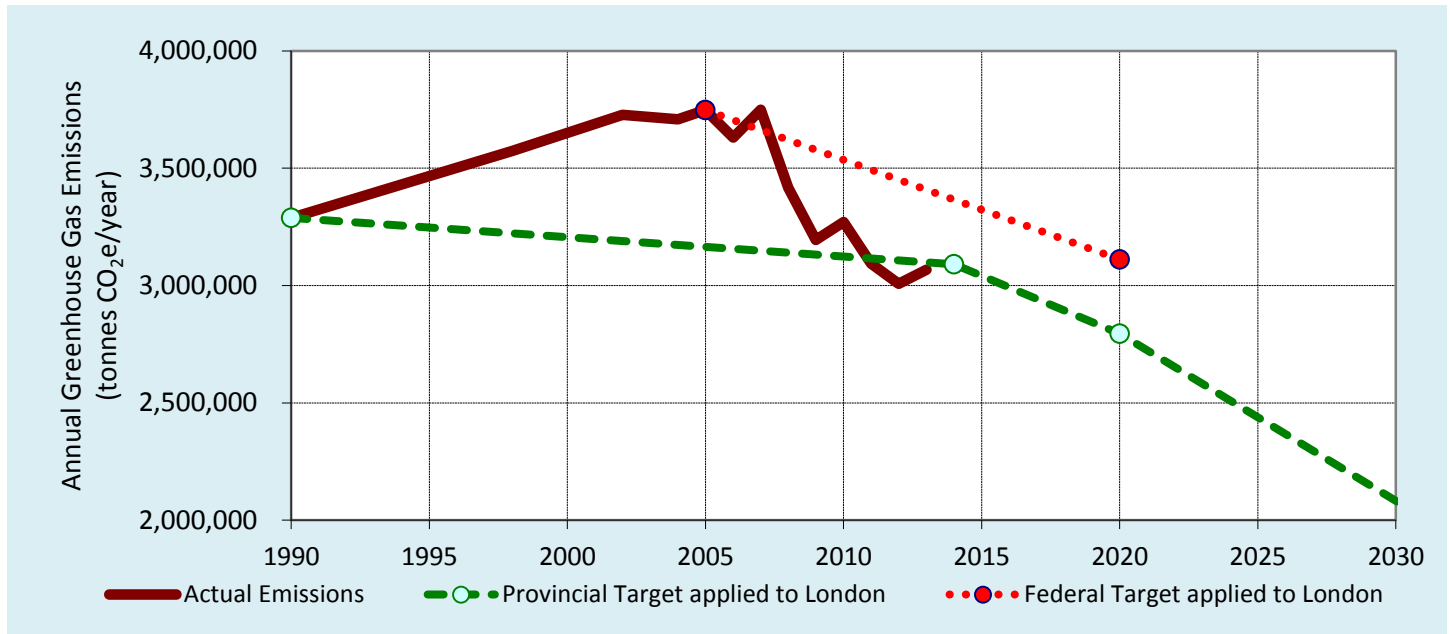
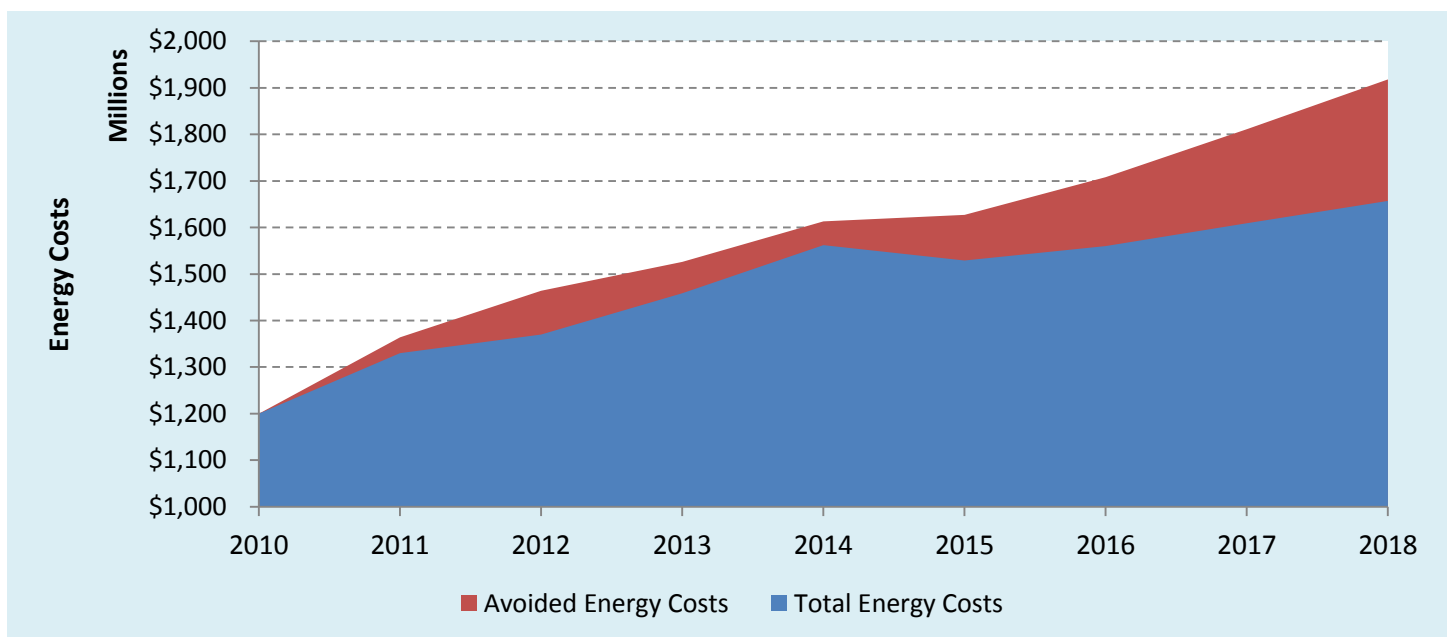


Figure 3 – Forecast Energy Costs – Impact of Community Energy Action Plan vs Business-As-Usual Scenario



2.3 KEY COMMUNITY ENERGY STAKEHOLDERS

The following stakeholders play a key role in London's community energy plan.

2.3.1 City of London

The City of London does not have a lot of direct control over how much energy is used in London, but it does have a lot of influence.

ReThink London was a comprehensive land use planning and city visioning initiative to help obtain Londoners' thoughts on how we can do a better job through urban planning. Urban planning can have a significant impact on how much energy we use. Under the new *London Plan*, designing new communities with a mix of land uses and density reduces the need to drive all the time, and can allow for innovative energy-saving technologies that take advantage of the different heating and cooling needs of these buildings. Infill development projects, growing "inwards and upwards" particularly in older, car-dependent suburban neighbourhoods, can help "retrofit" these neighbourhoods to have these same benefits.

Transportation planning is also highly dependent upon urban planning. Today in London, the main transportation mode used by residents is the private automobile, which accounts for almost 75 percent of travel during rush hour. Public transit carries about 12 percent, and active transportation (walking and cycling) represent a further nine percent. The City's *Smart Moves 2030 Transportation Master Plan* analyzed various growth scenarios to determine what needs to be done from both land use and transportation perspectives to provide more travel choices for those who live, work and play in London. To achieve that goal, significant improvements in transit service are planned to be implemented as well as increased support for walking, cycling and carpooling. Land use and development patterns, such as increased development in downtown London, at major suburban centres, and along key roads, will also need to change to support the plan.

The Corporation of the City of London is also one of London's largest employers, operating over 200 facilities and over 300 vehicles involved in delivering a wide range of services to London. The City of London is expected to lead-by-example, and the City's new *Corporate Energy Management Plan* will outline this plan. The agencies, boards, and commissions of the City of London, such as London Police Services and the London Public Library, are also responsible to develop their own energy management plans.

Finally, one of the most critical roles that the City plays is to "connect the dots" between all of the major community stakeholders and the role that these stakeholders can play in our rolling out the Community Energy Action Plan.

2.3.2 London Hydro

London Hydro is the local distribution company for electricity, and it is owned by the Corporation of the City of London. The role of London Hydro is to take electricity from Hydro One's high-voltage transmission lines and transformer stations, and distribute it to individual homes and businesses throughout London. London Hydro also handles all of the billing for customer electricity use, although London Hydro does not set the price of electricity. The electricity it supplies is purchased from the

provincial electricity market. London Hydro's costs are covered by the distribution charges on your bill.

London Hydro is also responsible for delivering the Ontario Power Authority's (OPA's) electricity conservation and demand management programs to residential, commercial, and large industrial customers. London Hydro also works with the OPA and Hydro One, the province's electricity transmission utility company, on regional electricity planning.

Under the Province's Green Energy Act and the OPA's Feed-In Tariff and microFIT programs, London Hydro's role is to check to see whether there is space "on the grid" for new renewable electricity generating projects. London Hydro is also allowed to invest in its own renewable electricity generating projects.

2.3.3 Union Gas

Union Gas Limited is an Ontario-based natural gas storage, transmission and distribution company, whose distribution services supply about 1.4 million residential, commercial and industrial customers in more than 400 communities across northern, southwestern and eastern Ontario. Most of the natural gas comes from Alberta, but some gas also comes from sources in the United States. Union Gas is owned by Spectra Energy, a U.S. based company.

Union Gas is also responsible for delivering natural gas demand-side management (DSM) programs to its residential, commercial, and large industrial customers.

2.3.4 London District Energy

In 1880, London built Canada's first district energy system to serve university, hospital, and government facilities. Today, this system has grown to serve most of the downtown core. London District Energy's major customers include London Health Sciences, St. Joseph's Health Care, the London Convention Centre, the Hilton Hotel, City Centre, Citi Plaza, and City Hall. London District Energy is a private sector operation owned by Veresen Incorporated out of Calgary, Alberta.

London District Energy uses a gas turbine, similar to a jet engine, combined with steam turbines to generate electricity and heat at the same time (referred to as "co-generation"). Co-generation is one of the most efficient ways to use natural gas, since the waste heat from electricity generation is used to heat buildings. In the summertime, this waste heat can also be used to make chilled water for air-conditioning.

2.3.5 Advisory Committee on the Environment (ACE)

ACE's mandate is to report to Municipal Council, through the Planning and Environment Committee. ACE provides input, advice and makes recommendation on environmental matters affecting the City of London. This involves a range of sustainable programs and functions such as: remedial planning of contaminated areas; waste reduction, reuse and recycling programs; water and energy conservation measures; climate change mitigation; and to initiate and/or receive submissions and/or delegations regarding any environmental concerns and to report with recommendation to the Planning and Environment Committee.

ACE has been interested in energy matters for some time. For instance, ACE was represented on the City's Energy Air Emissions Reduction Strategy Task Force on Air Emissions and Energy Use in London in 2000 which acted as a catalyst to develop a report and a plan that included measures to achieve energy and air emissions reductions and monitoring of future emissions. The results of this Task Force formalized a 1990 baseline inventory for London's energy use and greenhouse gas emissions similar to other Canadian cities and a number of solutions toward a plan to respond to the challenge posed by global climate change. This was a prerequisite for community energy planning.

2.3.6 Mayor's Sustainable Energy Council (MSEC)

The Mayor's Sustainable Energy Council (MSEC), launched in 2007, is made up of over 30 energy professionals, who are appointed by the Mayor, and volunteer their time to fulfill its mandate. The members include representatives from the business community, utilities such as London Hydro and Union Gas, academics from Western University and Fanshawe College, and public organizations such as the London Economic Development Corporation (LEDC). MSEC is supported by staff from the City of London.

MSEC's mandate is to promote, encourage and support the development and implementation of practical research, technologies, and investment in the area of sustainable energy, including energy conservation, efficiency, and renewable energy ultimately for the sustainable economic and environmental benefit and use of London and the surrounding region.

To date MSEC's key initiatives have been to collect up-to-date baseline data, promoting sustainable energy practices and working towards the implementation of sustainable energy projects. MSEC's progress can be followed on its Energy Saver web-site (londonenergysaver.ca).

2.3.7 London Home Builders' Association

The London Home Builders' Association (LHBA) comprises of local home builders, renovators, developers, suppliers, subcontractors and supporting financial institutions and professionals. The LHBA membership accounts for 88 percent of all new homes built in this London.

Since 2004, the LHBA and the City of London have worked together to promote energy-efficient new and renovated homes, such as Energy Star New Homes and through the London Energy Efficiency Partnership (LEEP) Project. The LHBA's Green Initiatives Committee monitors industry trends and liaises with the City on issues related to the environment and green building and community development practices and standards; raises public awareness of industry achievements and leadership; and educates members, municipal staff and politicians on industry-led initiatives.

2.3.7 London Property Management Association

The London Property Management Association (LPMA) is a non-profit organization that represents the interests of both large and small residential rental property owners. The association has more than 400 landlord members representing approximately 35,000 rental units.

London Hydro and Union Gas have used the LPMA to help promote their CDM programs to property owners.

2.3.8 London & St. Thomas Real Estate Board

The London and St. Thomas Association of REALTORS® (LSTAR) includes Middlesex and Elgin Counties, a trading area servicing approximately 500,000 residents with a membership of nearly 1,500 Real Estate Brokers and Salespersons.

One of the primary functions of LSTAR is the operation of the Multiple Listing Service® or MLS® in the London area, a co-operative database and marketing system used to sell almost all resale homes in Canada.

Recently, MLS® listings introduced the use of WalkScore to highlight the “walkability” of the home’s neighbourhood to prospective home buyers. This is a good example of how the “eco-friendly” features of resale homes can be promoted.

2.3.9 London Economic Development Corporation

The London Economic Development Corporation (LEDC) is a partnership between the City of London and the private sector, whose goal is to attract new investments and expand existing investments in our community. The Clean Tech and Green Energy sectors are a key focus of the LEDC’s direct investment and business growth and retention strategies.

The LEDC also supports local industry through the London Region Manufacturing Council and the Excellence in Manufacturing Consortium (EMC), by providing information for London region manufacturers.

2.3.10 London Chamber of Commerce

The London Chamber of Commerce is an independent, membership based, not-for-profit organization that acts as an advocate for local business, facilitates opportunities for member businesses to promote themselves locally and regionally, do business with one another, and gain knowledge through events and seminars each year. Every year, the London Chamber of Commerce recognizes London businesses who have taken a leadership role in managing the environmental aspects of their business through the Environmental Leadership Business Achievement Award. Energy management and conservation is often a key theme of the finalists.

The Chamber of Commerce was also a member of the Mayor’s Sustainable Energy Council from 2007 through to 2010.

2.3.11 London Development Institute

The London Development Institute (LDI) represents the majority of London’s development community. The LDI’s mandate is to work with London’s City Council and Administration on development and tax-based issues and monitor the timing of infrastructure projects. The LDI is a key stakeholder to engage for incorporating sustainable energy aspects into new greenfield development and infill development.

2.3.12 Local Businesses

London's major employers have been a significant partner for environmental and energy conservation projects. This includes participation in transportation demand management programs such as Business Travel Wise. Many of London's major employers are members of the Canadian Industry Program for Energy Conservation (CIPEC).

In June 2013, Labatt hosted a meeting of the environmental professionals who work at London's major employers, and a proposal was made to form an Environmental Business Professionals Network to help share best practices.

2.3.13 Local Institutions

Local institutions, such as schools and hospitals, are also important stakeholders in community energy.

Western University provides a large pool of talent, both faculty and students, to help London address community energy issues. Greater emphasis needs to be made to provide Western students and faculty with opportunities for London-focussed projects and research. For example, the Urban Development Program has made London the focus of his research on the integration of architecture, urban planning, and human geography. Also, Western Engineering has had students study the biofuel potential offered by the waste generated by Londoners and local businesses, and currently operates the Institute for Chemicals and Fuels from Alternative Resources.

Fanshawe College's students and faculty are currently involved in hands-on research with Western University, London Hydro, and the London Home Builders' Association.

London Health Sciences Centre has developed award-winning Environmental Stewardship and Energy Stewardship programs for London's hospitals, and is now sharing this expertise with hospitals across Canada through the Chester Network. Most of the practices within these programs are easily applicable to London's major property owners and employers.

In August 2011, the provincial government introduced Ontario Regulation 397/11 under the Green Energy Act, 2009, which requires certain public agencies – Municipalities, Municipal Service Boards, Schools Boards, Universities, Colleges and Hospitals – to report on their energy consumption and greenhouse gas emissions annually beginning in 2013. The affected public agencies are also required to develop and implement five-year energy management plans starting in 2014.

2.3.14 Local Community

London is fortunate to have many dedicated citizens leading environmental activities, many of whom work together on local initiatives

For over 30 years, the *Thames Region Ecological Association (TREA)* has led a wide range of local campaigns, from the annual Bicycle Festival to renewable energy workshops. *Post Carbon London* focuses on proactive responses to global warming, oil & gas depletion, and various other related problems (such as smog) that surround fossil fuel consumption. *Post Carbon London* works with TREA to co-host workshops on energy-related matters. *Transition London* promotes a grassroots approach to tackling community energy issues. They co-host a monthly climate and energy meet-up with *Post Carbon London*.

In terms of social enterprises, *ecoLiving London* helps Londoners make environmentally-friendly lifestyle choices. The services offered include: the *ecoSAVER* Directory of local eco-friendly products and services; a Community Calendar of local green events; community blogs with lifestyle how-to articles written by Londoners for Londoners; monthly *GreenDrinks* London social networking events; and the forthcoming *ecoSAVER* Card for discounts on environmental products and services.

Reforest London, with its *One Million Trees* campaign, works with Londoners and local business to plant trees to enhance environmental and human health in the Forest City.

These are just five of the over 40 organizations active here in London. For more information, check out *EnviroSource* in the Waste Reduction & Conservation Calendar.

Many community and neighbourhood associations also get involved in environmental activities. For example through initiatives such as the *London Strengthening Neighbourhoods Strategy*, neighbourhood associations are working directly with City staff on environmental projects within the community.

3. ACTION PLAN ELEMENTS

The following is an overview of the major action plan elements. Keep in mind that Londoners and London businesses – people – are the key to all areas:

1. Policy Support for Community Energy Action Planning
2. Reporting and Education about the Economic and Environmental Considerations of Energy Use
3. Single-Family Homes
4. Multi-Unit Residential Buildings
5. Commercial and Institutional Buildings
6. Industry and Manufacturing
7. Stores and Restaurants
8. Local Energy Production and Cogeneration of Heat and Power
9. Vehicles and the Transportation System

Within the action plan, information has been provided on the highest priority actions for the City of London in 2014 and 2015 and key strategies for the City of London to 2018. Examples of some of the corresponding actions being undertaken by local stakeholders, as identified by them, have also been provided.

The pace of local action can be influenced by both the levels of funding and resources provided, as well as by more-efficient and collaborative application of resources between the City of London and key energy stakeholders (business and community).

For the City of London, this involves taking the actions outlined in the CEAP and developing this in to an ongoing Community Energy Action Program that is frequently updated and with results reported on a semi or annual basis.

POLICY SUPPORT FOR COMMUNITY ENERGY ACTION PLANNING

Highest Priority Actions for the City of London in 2014-2015

1. Establish new, easy to implement policy tools within the new Official Plan and supporting plans for encouraging energy efficiency and renewable energy, as well as accommodating energy infrastructure in coordination with existing tools and programs (including those from utilities). Examples of these include Local Improvement Charges for energy and water retrofits, Community Improvement Plans, and other monetary and non-monetary incentive mechanisms within the Development Approvals process.
2. Continue to work with energy utilities to coordinate land use planning with energy infrastructure planning.

Key Strategies for the City of London to 2018

1. Develop pilot programs to test these new policy tools and report back on their effectiveness.

Stakeholder Actions

1. The Advisory Committee on the Environment will:
 - a. monitor the progress of ACE's July 17, 2013 recommendation to Council to establish city-led incentive programs for property owners, such as the use of Local Improvement Charges, towards energy and water efficiency technologies in buildings, and the Integration of sustainability into ReThink London and *The Official Plan* process.
 - b. provide comments to the yearly City budget process to give further consideration in budget design to conserving by improving infrastructure performance to reduce long-term costs with the least environmental impact; linking projects with 'green' strategies to any potential leveraged green funding that exists, and examining the budget with a sustainable lens so the City can become less dependent on other levels of government fund.
2. The London Development Institute and the London Home Builders' Association will provide support for an integrated community energy solutions pilot project.
3. The London Home Builders' Association will support the use of Local Improvement Charges, if approved, and encourages a partnership with the City and local partners (energy utilities, etc.) to develop a program for draft proofing and possibly insulating existing homes that includes an energy assessment to provide an energy rating for the homeowner.
4. London Hydro will:
 - a. Support the use of Local Improvement Charges, if approved, to offer low-interest financing with regards to dove-tailing the financing of measures or projects that fall under OPA contracted programs. Currently there would be an excellent fit for the saveONenergy *HEATING & COOLING INCENTIVE* program for residential customers. The incentives, combined with low rate financing would likely enhance the uptake of this already successful initiative.
 - b. Continue to play a role in electricity conservation and demand management (CDM) past 2015 under the new provincial electricity conservation framework being released in 2014. Highlights of the new provincial framework will likely include a six-year time frame, long term stable funding, and a greater role for local electricity distribution companies in the development of CDM programs.

POLICY SUPPORT FOR COMMUNITY ENERGY ACTION PLANNING

5. London Public Library will:
 - a. Implement its new Environmental Strategy policy that puts in place a formal, ongoing commitment to making a contribution towards the conservation of our natural resources and the protection of our environment, and reducing the carbon footprint of Library services, operations and business activities in accordance with the principles of reduce, repurpose, reuse and recycle.
 - b. Continue to work on strategy and initiatives in the *2010-2013 Strategic Plan*.
 - c. Include environmental strategy and initiatives in the *2014-2016 LPL Strategic Plan: Library Space is Community Place*.
6. Union Gas, as described in *Your Partner in Integrated Energy Planning*, will promote:
 - a. Conservation First - energy conservation programs for households, businesses and industries
 - b. Smart Energy Networks
 - c. Natural gas power generation and combined heat & power (CHP)
 - d. Transportation – natural gas transport and fleet vehicles
 - e. Renewable natural gas (RNG)
 - f. Accessing natural gas and demand side management data
7. Western University will:
 - a. Implement energy-related strategies in its 10-Year Goals & 5-Year Outcomes for Sustainability.
 - b. Develop and implement a 10-Year Energy and Water Management Master Plan.
 - c. Incorporate sustainability into their purchasing decisions and policies, and incorporate life-cycle accounting into purchasing decisions on campus.

REPORTING AND EDUCATION ABOUT THE ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS OF ENERGY USE

Highest Priority Actions for the City of London in 2014-2015

1. Provide Londoners with annual information on community energy use and greenhouse gas (GHG) emissions.
2. Develop and report new energy-related performance indicators that highlight the total cost of energy and total money saved/generated from community energy actions.
3. Develop new tools to raise awareness on progress being made in London.

Key Strategies for the City of London to 2018

1. Work with community and neighbourhood associations to make use of neighbourhood energy maps and other energy information.
2. Work with London Economic Development Corporation to encourage major London employers to report their energy performance to the public.

Stakeholder Actions

1. The Advisory Committee on the Environment will:
 - a. Review and encourage the progress of projects and benchmarks in the City's community energy plan's implementation strategy within the five main areas surrounding energy planning - land use, transportation, buildings, infrastructure and energy supply noting the connection with The Official Plan.
 - b. Work with City staff to define a preferred way to raise energy planning awareness and communications through greater public participation yearly using a venue such as an open house, an information session, energy fair or public celebration.
2. Fanshawe College will participate in the voluntary Sustainability Tracking and Rating System (STARS) for post-secondary institutions. Fanshawe College is currently in the data collection phase.
3. London Hydro will track and report on progress on meeting mandatory targets established by the Ontario Energy Board to reduce net peak electricity demand by 41.44 megawatts from 2011 levels by 2014, and to achieve a net cumulative electrical energy savings of 156.64 gigawatt-hours over the 2011-2014 periods.
4. London Health Sciences Centre will continue to focus on the education of its staff on not only how to save energy at the workplace but also how to save energy in the home.
5. The London Home Builders' Association will provide
 - a. Public education through the Lifestyle Home Show; weekly *LHBA Home Front* and President's *Bang-on* column in the London Free Press; Parade of Renovations; the *Signature New Homes and Renovation* magazine; and the LHBA website;
 - b. Education for industry professionals through seminars ; and
 - c. Access for the public and industry professionals to the *Green Home MOOC (Massive Open On-line Course)* recently developed and hosted by Fanshawe College, based on the LHBA Green Home.
6. MSEC will:
 - a. Provide assistance to the City of London for community education and awareness activities.

REPORTING AND EDUCATION ABOUT THE ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS OF ENERGY USE

- b. Assist in the development of additional key indicators and performance measures for community energy use, such as the amount of local energy produced, average building energy efficiency, and the economy-related energy and GHG emission indicators.
7. ReForest London will recruit and train Tree Teachers to give presentations to organizations about native trees and the benefits of planting trees, and will continue to recruit Million Tree Challenge Partners, and promoting tree planting to all partners as a means of reducing energy usage.
8. Union Gas will provide:
 - a. annual municipal gas usage data for the latest two calendar years at the following two geographic levels: a) Total Municipality - segmented by residential, commercial and industrial users (including large contracts),
 - b. annual gas usage by six-digit postal code - segmented by residential, commercial and industrial users (excluding large contracts). To ensure customer confidentiality, we will combine postal codes in areas where there are less than five customers.
 - c. information on natural gas savings realized through participation in our energy conservation, Demand Side Management programs upon request.
9. Western University will:
 - a. Engage with the larger community to promote sustainable practices and to identify and address opportunities and challenges that may have impact beyond its campus boundaries.
 - b. Establish measurable sustainability goals and monitor, evaluate and report on performance through the Sustainability Tracking, Assessment & Rating System™ (STARS) self-reporting framework for colleges and universities.
 - c. Continue to provide tours of its green buildings.

SINGLE-FAMILY HOMES

Highest Priority Actions for the City of London in 2014-2015

1. Work with the LHBA, London Hydro, and Union Gas on actions that encourage energy retrofits and other energy conservation measures in older housing stock.

Key Strategies for the City of London to 2018

1. Work with the London & St. Thomas Real Estate Board and the LHBA to promote NRCan's new EnerGuide Rating System and other relevant building labelling programs on existing and new houses.
2. Continue to work with the LHBA to promote wider use of energy-efficiency technologies and techniques in home construction and renovation.

Stakeholder Actions

1. The LHBA will:
 - a. Work with the City to determine whether a 15 percent energy reduction in residential energy use per person is a high target or is in fact achievable, and will support and work towards whatever final target was determined.
 - b. Research current participation levels by LHBA builder members in new home labelling programs and determine whether having 10 percent of new builds participating in high-performance building labelling programs is an achievable target or worthy of pursuing.
 - c. Support utilities in the promotion of their energy conservation programs for existing homes and new homes, through the Lifestyle Home Show, Signature magazine and weekly London Free Press columns to educate the public and promote for energy efficiency programs.
 - d. Provide public education when the new EnerGuide Rating System goes into effect and use its resources (newspaper, magazines, home show) towards this end.
 - e. Educate member renovators and promote for the new EnerGuide Rating System and other labeling programs and other educational programs as learning opportunities for renovators.
 - f. Continue to educate member builders on the latest technologies as they become available, and provide training to members to increase the energy efficiency, water conservation and environment-friendly livability of new homes and developments.
2. London Hydro and Union Gas conservation staff will continue to cooperate in the co-promotion of their conservation programs.
3. London Hydro will:
 - a. Continue to promote and operate the provincial saveONenergy FOR HOME and saveONenergy HOME ASSISTANCE energy-efficiency programs until 2015.
 - b. Develop an energy-efficiency program for residential swimming pools that will promote energy-efficient pool pumps, filters, and underwater lighting. This program is expected to be in-market in Spring of 2014.
 - c. Continue to operate the provincial saveONenergy NEW HOME CONSTRUCTION program. This program provides incentives to home builders and renovators for the installation of energy-efficient measures in the home.
 - d. Continue to evaluate "Green Button" initiatives and social benchmarking in future residential customer conservation and demand management activities

SINGLE-FAMILY HOMES

4. The Ontario Power Authority will:
 - a. Release its recently-completed Energy Efficiency and Energy Management Potential study for the province.
 - b. Develop a tool to assist local electricity distribution companies, municipalities, and other stakeholders identify local electricity conservation achievable potential.
5. ReForest London will recruit and train volunteers to serve as Neighbourhood Tree Captains to promote tree planting.
6. Union Gas will
 - a. Promote its new *Home Reno Rebate* program for home renovations, including insulation, air sealing, furnace upgrades, boiler upgrades, water heater upgrades, and Energy Star® windows and doors.
 - b. Work with the LHBA to promote its *Optimum Home Program* to build and sell homes that will be 20 percent more energy efficient than the current *Ontario Building Code 2012*, to be future-ready ahead of the *Ontario Building Code 2017*.
 - c. Continue to offer incentives for the purchase and installation of programmable thermostats.
 - d. Continue to promote its *Helping Homes Conserve* program for free energy-efficiency upgrades to low-income households living in private homes (owned or rented), including insulation, water-saving devices, and programmable thermostats.
 - e. Work with the City of London, with support from the LHBA, to explore options for including renewable technologies such as heat pumps, solar hot water heaters, solar pool heaters, natural gas heat pumps, and micro-cogeneration in future energy conservation program frameworks (2015-2018).

MULTI-UNIT RESIDENTIAL BUILDINGS

Highest Priority Actions for the City of London in 2014-2015

1. Gather information on the status of energy management practices for London's multi-unit residential properties.
2. Gather information on municipal regulatory developments across Canada for energy reporting requirements.

Key Strategies for the City of London to 2018

1. Work with leading property owners/managers and the London Property Management Association (LPMA) to educate local property owners on the use of energy performance benchmarking and other energy management practices for multi-unit residential buildings, for both the whole building and for marketing of leased space.

Stakeholder Actions

1. The LHBA and London Development Institute will research current participation levels by new multi-unit residential builders in high-performance labelling programs and determine whether having 25 percent of new builds and major renovations is an achievable target or worthy of pursuing. The London Property Management Association will help promote the use of energy performance labelling and benchmarking as a standard practice for multi-unit residential buildings in London.
2. The LPMA will help educate its members on the use of energy performance labelling and benchmarking as a practice for multi-residential buildings in London.
3. London Hydro and Union Gas conservation staff will continue to cooperate in the co-promotion of their conservation programs.
4. London Hydro will:
 - a. Work on new programs to incorporate into their delivery of the saveONenergy RETROFIT PROGRAM for multi-unit residential buildings to deploy energy-efficiency technologies for boosting water pressure and recirculating hot water and the adoption of energy-efficiency technology for elevators. London Hydro will use its existing relationship with the London Property Managers Association to promote these new programs through meetings and membership communications.
 - b. Continue to promote the OPA's saveONenergy HIGH PERFORMANCE NEW CONSTRUCTION (HPNC) program provides design assistance for new construction projects that exceed the Ontario Building Code.
5. Union Gas will:
 - a. Continue to provide incentives for measures such as condensing boilers, energy & heat recovery ventilators, and water heating equipment.
 - b. Continue to provide their *Affordable Housing Conservation Program* to social and non-profit/cooperative housing.
 - c. Work with the City of London, with support from the LHBA, to explore options for including renewable technologies such as solar hot water heaters, solar pool heaters, natural gas heat pumps, and micro-cogeneration in future energy conservation frameworks (2015-2018).
6. Western University will implement its operational policy that all new building construction and retrofits (e.g., student residences) will achieve a minimum LEED silver certification.

COMMERCIAL & INSTITUTIONAL BUILDINGS

Highest Priority Actions for the City of London in 2014-2015

1. Lead by example through managing its own municipal building energy use through the Corporate Energy Management Program.
2. Gather information on the status of energy management practices for London's commercial and institutional properties.
3. Work with stakeholders to promote and share existing building energy management best practices within London's commercial and institutional sector.
4. Gather information on municipal regulatory developments across Canada for energy reporting requirements.

Key Strategies for the City of London to 2018

1. Encourage the creation of a business-led entity to foster sharing best environmental practices and reporting on progress in London's commercial building sector.
2. Work with stakeholders to pilot the voluntary use of energy performance labelling and benchmarking tools in London, for both the whole building and for the marketing of leased space, to test and demonstrate the potential value of the various energy performance labelling and benchmarking activities available.

Stakeholder Actions

1. BOMA Toronto (responsible for all of Ontario, except Ottawa) will:
 - a. Invite representative(s) to sit on BOMA's Energy Committee and Regulatory and Environment Committee.
 - b. Work with the City of London to host breakfast sessions and webinars in London to serve the London region.
 - c. Work closely with London Hydro and the OPA to help promoting the incentive programs to its members and to the London's commercial sector at large.
 - d. Offer local training on the BOMA BEST to promote best building practices, and raise awareness of the need for continuous improvement.
2. Fanshawe College will:
 - a. Commit to continue reducing its energy consumption and intensity. From 2005-2011, the College reduced its annual energy intensity by around 38 percent, from 3.3 ekWh/m² to around 2.1 ekWh/m².
 - b. In 2014, carry out initiatives that are expected to further reduce energy consumption by at least 1,350,000 ekWh/year and GHG emissions of 67 tonnes CO₂e annually, such as building envelope improvements, and various lighting and mechanical upgrades.
 - c. In 2014, complete a comprehensive energy audit of all owned facilities completed, as well as upgrading the current Monitoring and Targeting (M&T) program. This will provide real time analysis of energy usage and variance from baseline and projected usage. It is expected that the findings of the energy audit along with analysis provided by the M&T System would provide low or no cost measures that could be implemented over the next year to further reduce energy consumption and GHG emissions.

COMMERCIAL & INSTITUTIONAL BUILDINGS

3. The London Chamber of Commerce will encourage Chamber members to participate in the pilot test of energy performance labelling and benchmarking tools.
4. London Hydro and Union Gas conservation staff will continue to cooperate in the co-promotion of their conservation programs.
5. London Hydro will:
 - a. Continue to work with its key accounts to promote the OPA's saveONenergy FOR BUSINESS programs to commercial and institutional property managers.
 - b. Continue to promote the OPA's saveONenergy HIGH PERFORMANCE NEW CONSTRUCTION initiative for new commercial and institutional buildings.
6. London Public Library (LPL) will:
 - a. Improve the average energy efficiency of its buildings through the implementation of LPL's Energy Audit and Facility Renewal Plan.
 - b. Pilot the use of energy performance labelling for potential use in all libraries.
 - c. Strive for LEED Gold rating for new buildings slated for 2016 and 2017.
7. MSEC will assist the City of London to populate Reduce Impact London (reduceimpact.ca) with energy success stories from the commercial & institutional building sector.
8. ReForest London will promote tree planting in schoolyards by offering all schools matching funds and assistance with planning projects.
9. TD Canada Trust will:
 - a. Continue to use Energy Star Portfolio Manager to track and assess energy and water consumption across its portfolio of buildings.
 - b. Continue to apply the policy for building all new retail locations to achieve LEED certification.
10. Union Gas will:
 - a. Continue to provide incentives for measures such as condensing boilers, energy & heat recovery ventilators, infrared heaters, air curtains, demand control ventilation systems, water heating equipment, commercial laundry equipment, commercial kitchen dishwashers, and engineering studies.
 - b. Work with the City of London to explore options for including renewable technologies such as solar hot water heaters, solar pool heaters, natural gas heat pumps, and micro-cogeneration in future energy conservation frameworks (2015-2018).
11. The Upper Thames River Conservation Authority will work on the process for achieving LEED Platinum rating for the new Watershed Conservation Centre.
12. Western University will implement its operational policy that all new building construction and retrofits will achieve a minimum LEED silver certification.

INDUSTRY AND MANUFACTURING

Highest Priority Actions for the City of London in 2014-2015

1. Lead by example through managing its own municipal utility infrastructure energy needs through the Corporate Energy Management Program.
2. Determine the share of London's industrial and manufacturing employers that have documented energy management plans, programs, or systems in place.
3. Work with the stakeholders to promote and share existing energy management best practices within London's industrial, commercial, and institutional sector.

Key Strategies for the City of London to 2018

1. Work with stakeholder on the ongoing promotion of energy management best practices, such as those provided by the Canadian Industry Program for Energy Conservation (CIPEC) and Natural Resources Canada's Office of Energy Efficiency.
2. Encourage the creation of a business-led entity to foster sharing best environmental practices and reporting on progress in London's industrial and manufacturing sector.

Stakeholder Actions

1. Labatt Breweries of Canada has set aggressive, global five-year environmental goals for 2017. These goals include reducing global water usage to industry-leading 3.2 hectolitres of water per hectolitre of production, and reducing global energy usage per hectolitre production by 10%.
2. LEDC will:
 - a. Facilitate, through the London Region Manufacturing Council (LRMC) and the Excellence in Manufacturing Consortium (EMC), dialogue with local industry to encourage them to be a partner in the promotion of energy efficiency programs.
 - b. Continue to work with companies in the London Clean Tech and Green Energy sectors to ensure they have access to appropriate government and market supports, and to keep them engaged in London's efforts to increase energy efficiency.
3. London Hydro and Union Gas conservation staff will continue to cooperate in the co-promotion of their conservation programs.
4. London Hydro will:
 - a. Continue to test the concept of Roving Energy Managers – London Hydro experts – for industrial customers to make various measurements, carry out some analysis, and make value propositions to the customer to get them started with one or more energy-efficiency opportunities.
 - b. Continue to promote the OPA's saveONenergy AUDIT FUNDING program that offers to cover up to 50% of the cost of an electricity-focussed energy audit. London Hydro will also study options for encouraging greater follow-through on audit recommendations.
 - c. Continue to promote the OPA's saveONenergy RETROFIT PROGRAM offers to cover up to 50% of the project cost of electricity-focussed prescriptive measures, engineered measures, and custom projects for smaller industrial customers.
 - d. Continue to promote the OPA's saveONenergy PROCESS & SYSTEMS program incentives for preliminary engineering studies for larger electricity customers.

INDUSTRY AND MANUFACTURING

5. MSEC will assist the City of London to populate Reduce Impact London (reduceimpact.ca) with energy success stories from the industrial sector.
6. ReForest London will promote tree planting in industrial areas by seeking industrial land owners to plant trees on their property, and connecting them with tree planting programs (including ReForest London programs and those offered by other organizations).
7. Union Gas will continue to provide incentives for measures such as condensing boilers, energy & heat recovery ventilators, infrared heaters, de-stratification fans, air curtains, demand control ventilation systems, water heating equipment, engineering studies, and engineering projects.

STORES, RESTAURANTS, & OTHER SMALL BUSINESSES

Highest Priority Actions for the City of London in 2014-2015

1. Work with local business associations, the London Chamber of Commerce, and local utility conservation and demand management staff to promote simple energy conservation measures to small businesses.

Stakeholder Actions

1. London Hydro will:
 - a. Continue to promote the OPA's current saveONenergy SMALL BUSINESS LIGHTING initiative as it approaches market saturation.
 - b. Once available, promote the OPA's new saveONenergy SMALL BUSINESS A/C "direct install" initiative for upgrading HVAC systems and refrigerated display cases.
 - c. Continue to engage all local business associations and advocate groups, and will continue to be a major participant with the London Chamber of Commerce.
2. Union Gas will continue to provide incentives for measures such as condensing boilers, energy & heat recovery ventilators, infrared heaters, de-stratification fans, air curtains, demand control ventilation systems, water heating equipment, commercial laundry equipment, and commercial kitchen dishwashers.

LOCAL ENERGY PRODUCTION AND CO-GENERATION OF HEAT & POWER

Highest Priority Actions for the City of London in 2014-2015

1. Lead by example with renewable energy projects and co-generation projects through the Corporate Energy Management Program.
2. Continue to offer municipal support for new private-sector as well as community-led renewable electricity generation projects.
3. Encourage new development in Downtown London to connect to London District Energy's downtown district energy system.

Key Strategies for the City of London to 2018

1. Promote and encourage the expanded use of cogeneration of heat & power for both district energy applications as well as net-metered building/facility applications.
2. Investigate the feasibility of utilizing source-separated organics as a feedstock for the production of bioenergy products (biogas, biomass, biofuels) as part of London's waste diversion strategy, as outlined in Road Map 2.0 - The Road to Increased Resource Recovery and Zero Waste.

Stakeholder Actions

1. London Hydro will work with London District Energy to determine the approximate incentives that would be available through the OPA's saveONenergy RETROFIT program for converting their existing electric chillers to a district cooling solution.
2. MSEC will:
 - a. Develop an updated biomass inventory interpretation report, compiling information from existing reports, and interpret/recommend how some of this material can be used in support of energy programs.
 - b. Encourage its members (e.g., Fanshawe, Western) to support feasibility studies on expanding the use of district energy systems.
 - c. Study the concept of grey water 'hubs', similar to water towers, to promote the use of grey water or the harvest of rainwater.
3. The Ontario Power Authority will continue to offer Large Renewables Procurement, Feed-in Tariffs (FIT) and microFIT incentives for new renewable electricity generation, including solar photovoltaic and biogas.
4. Union Gas will promote the use of industrial-scale and smaller commercial/institutional scale combined heat & power with natural gas through its demand-side management incentive programs.

VEHICLES AND THE TRANSPORTATION SYSTEM

Highest Priority Actions for the City of London in 2014-2015

1. Carry out the 2030 Transportation Master Plan, as approved by London Municipal Council, for improving London's transportation network to increase walking, cycling, and use of public transit.
2. Carry out the Short-Term Implementation Strategy, as approved by London Municipal Council, for active transportation and transportation demand management.
3. Lead by example for vehicle fleet management practices through the Green Fleet strategy.
4. Work with local fleet owner/operators to share research and lessons learned from fleet greening strategies.

Key Strategies for the City of London to 2018

1. Develop and Implement the Comprehensive AT and TDM Action Plan in support of the proposed Complete Streets Mobility Plan.
2. Provide tools and resources to help Londoners assess the cost/benefit of replacing older vehicles with more-efficient new vehicles, vehicle downsizing, and eco-driving techniques.
3. Provide tools and resources to assist local fleet owners/operators in determining the lifecycle cost/benefit of low/no emission vehicles and other fleet greening practices.
4. Work with Union Gas to promote the use of compressed natural gas (CNG) and renewable natural gas (purified biogas) as a substitute for diesel fuel for heavy-duty vehicles in London.

Stakeholder Actions

1. London Police Services will expand its propane fleet program beyond patrol cars to include the conversion of 3 prisoner transport vehicles, and will continue to right-size unmarked vehicles to mid-sized or compact four-cylinder vehicles or hybrid vehicles.
2. London Public Library will:
 - a. Develop and implement a Fleet Management Energy Program using City of London best practices and peer input.
 - b. Work with City of London and corporate partners to install publicly-accessible vehicle charging stations.
3. London Transit will:
 - a. Maintain its fleet maintenance program to ensure that buses operate at maximum efficiency. London Transit will maintain its fleet replacement program replacing vehicles at 12 years of age (standard economic/operating life) versus the historic 18 years.
 - b. Assess the business case of using CNG vehicles, along with hybrid technology.
4. MSEC will coordinate the development of an "app" that will identify the locations of all publicly-accessible EV charging stations in London.
5. Union Gas will:
 - a. Work with the City of London to explore the potential for the use of locally-sourced renewable natural gas for local compressed natural gas (CNG) vehicles.
 - b. Work with major local fleet operators (e.g., City of London, London Transit, private sector) to encourage the use of CNG in "return-to-base" fleet vehicles.

VEHICLES AND THE TRANSPORTATION SYSTEM

6. The Upper Thames River Conservation Authority will continue to implement its Green Fleet Strategy, including fleet and vehicle right-sizing, exploring the use of biodiesel, and driver education.
7. Western University will
 - a. Work to reduce the need for vehicle-based transportation through and on campus.
 - b. Partner with the City of London to facilitate increased access for bike and pedestrian travel to and from campus.

4. REPORTING ON PROGRESS

The following is an overview of how Council and Londoners will be kept informed on the progress being made with the Community Energy Action Program.

4.1 ANNUAL COMMUNITY ENERGY & GREENHOUSE GAS INVENTORY REPORT

The City of London has an established methodology for tracking and reporting on energy use in London, and the associated greenhouse gas emissions. This includes information on what energy commodities are used, which sector they are used in, and the estimated cost for using these commodities.

As part of the Community Energy Action Program, the City of London will commit to publishing these inventory reports on an annual basis. The target date for the release of these inventory reports will be on or close to Earth Day (April 22nd) every year.

4.2 KEY PROGRESS INDICATORS

The key progress indicators that will be used include the following:

Energy Performance	<ul style="list-style-type: none"> • Total annual energy use (terajoules) • Percentage change in total energy use from peak energy use year (2007) • Per-person annual energy efficiency (gigajoules per person) • Percentage change in energy efficiency from peak energy year (2007)
Economic Impact	<ul style="list-style-type: none"> • Total annual energy cost (dollars) • Avoided annual energy costs (compared to 2010 business-as-usual) • Per-person annual energy expenditures (dollars per person) • Percentage change in per-person energy expenditures from baseline year (2010)
Environmental Impact	<ul style="list-style-type: none"> • Total annual GHG emissions (tonnes CO₂e) • Percentage change in total GHG emissions from GHG baseline year (1990) • Percentage change in total GHG emissions from peak GHG emissions year (2007) • Average annual GHG contribution (tonnes CO₂e per person) • Percentage change in per-person GHG emissions from GHG baseline year (1990) • Percentage change in per-person GHG emissions from peak GHG year (2007)

4.3 NEW PROGRESS INDICATORS

The City of London will work with key stakeholders to develop and use new indicators:

- **Economic-related indicators** – Information on energy use can be matched up with economic indicators such as gross domestic product and local employment. Information on energy use trends, such as reductions in energy commodity use per person, can be used to estimate the economic benefit of avoided energy costs for London.
- **Transportation indicators** – We don't really know how much fuel Londoners use. We do know how much fuel is sold in London, but this also includes people from out of town filling up here, and also does not cover off the fuel Londoners use when filling up out of town. We also can't tell whether Londoners in the suburbs actually use more fuel than Londoners living near downtown. However,

we can get information from companies such as Polk Canada and Environics Analytics, on vehicle ownership in London such as the number of vehicles owned, the size of vehicles, and the powertrain used in vehicles (e.g., gasoline, diesel, hybrid, electric)

- **Benchmarking indicators** – Tools such as energy mapping can help to illustrate where there are opportunities to focus building retrofit activities. City of London staff work with our energy utilities to create and update these maps on an annual basis so that we can see what parts of London are making progress on improving energy efficiency. This same data can also be used to determine useful energy efficiency benchmarks, such as energy used per square meter floor area for different types of buildings – single family housing, apartment buildings, office buildings - here in London.

In addition to the above, progress indicators will be developed to measure progress for the sector-specific goals mentioned in section 2.2.

4.4 OPEN SOURCE DATA SOLUTIONS

The City of London has lots of good information, but we need to figure out better ways to let people know that we have it, and make it available in a format that is quick and easy to understand. With “Open Data”, we can share our information with fellow data nerds who may have better ways to present this information.

4.5 REPORTING ON CITY OF LONDON COMMUNITY ENERGY ACTIONS

The City of London will commit to publishing progress reports on City-led Community Energy Action Program activities on an annual basis. The target date for the release of these progress reports will be on or close to Earth Day (April 22nd) every year.

The Community Energy Action Program will be a “living document”, with the ability to adapt to changing situations. New actions that arise from new opportunities will be added to the plan within these progress reports.