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## *Energy Efficiency Alliance*

### SUBMISSION TO ONTARIO'S LONG-TERM ENERGY PLAN ("LTEP") REVIEW AND RESPONSE TO CONSERVATION FIRST DOCUMENT

BY

THE CANADIAN ENERGY EFFICIENCY ALLIANCE (CEEA)

#### **About Us**

The Canadian Energy Efficiency Alliance (CEEA) is pleased to have this opportunity to submit its comments to the Ministry of Energy as part of its Long Term Energy Plan (LTEP) review and in response to the *Conservation First* discussion paper. CEEA is Canada's leading independent advocate promoting the economic and environmental benefits of energy efficiency. Established in 1995, CEEA works with both federal and provincial governments as well as other stakeholders to ensure energy efficiency is a priority for all sectors of the economy. By monitoring, examining and developing public policy ideas, programs and codes and standards, CEEA is an effective resource for policy makers, consumers, energy companies and environmental groups. CEEA's membership includes all economic sectors related to energy efficiency, including manufacturers, utilities, governments, building, labour and consumer groups and environmental organizations.

#### **Introduction**

CEEA commends the Ontario government and the Ministry of Energy in taking the initiative to recognize the importance of conservation resources in electricity resource planning. This is a very important step towards achieving a more cost effective and efficient grid.

This joint submission to both the LTEP consultation and response to the Conservation First discussion paper, however, recognizes a larger more holistic approach to Ontario's energy plan. We discuss the benefits of this approach and how more broadly defined "energy savings" – measured in dollars – can improve conservation results in the province.

**In our view, *energy planning* and *energy conservation programs* must include the energy sector holistically - the electricity sector, the natural gas sector, and the transportation sectors (oil/gas) - in order to provide real financial savings to customers.**

We have attached a copy of CEEA's white paper entitled "*Priorities for Energy Efficiency Market Development: Canadian Energy Efficiency Alliance's National Advocacy Plan*" which has just been released publicly. Although it addresses national issues, much of what we will be presenting in this submission has found inspiration from that document and has been tailored to the Ontario experience.

A list of key initiatives from CEEA's white paper is also included in Appendix A.



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### **Why Conservation First?**

There are many reasons for conserving energy or for energy efficiency whether they are environmental benefits, a more effective use of natural resources, health issues and cost savings. However, the following defines very simply the reality of energy efficiency/conservation:

***When you conserve energy you also save on the cost of living and the cost of doing business.***

To understand the knowledge of and potential for energy efficiency in Canada, CEEA engaged the Gandalf Group in February 2013 to undertake a national survey on energy efficiency knowledge and practices in Canada. The results of this survey are outlined in Appendix B.

### **Our Recommendations**

1. Electricity conservation is critical to the future sustainability and affordability of Ontario's electricity system – however, it is not the only energy resources where the “conservation first” practice ought to apply. Energy efficiency programs must recognize specific aspects of the built environment and transportation systems.
2. For Ontarians to embrace the “conservation first” attitude, we must change the dialogue and how we communicate with consumers. Savings should be measured and communicated in dollars (\$) in order to have meaning that resonates and motivates action.
3. Energy conservation and energy efficiency should be a core mandate of the Government of Ontario broadly, and should be coordinated with the Government of Canada. By saving energy the Province will reduce expenditures, and can allocate savings to other priorities, such as healthcare, education and transportation.

### **Why Ontario should take a holistic approach?**

The rationale for a holistic energy approach is best stated in a December of 2011 paper entitled “*Energy-Wise Canada: Building a Culture of Conservation*” prepared by the Canadian Council of Chief Executive Officers (CCCEO).

“The focus of energy and environmental policy has too often been on questions of energy supply, whereas it is really on the demand side of the equation where the greatest potential for positive change exists. There are understandable reasons why Canadians are high per capita



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users of energy, but there are many ways in which we are wasteful in our energy use. The reality is that 80 percent of the GHG emissions from fossil fuels, and a considerable portion of other environmental stressors associated with energy come from end-use, and only 20 percent from energy production and transmission. The best answer to rising energy costs and environmental impacts associated with energy use is to work effectively to reduce the country's energy consumption."

Ontario's discussion paper still has a primary focus on electricity supply and transmission. We understand that more can be done to conserve electricity - such as a greater focus on plug load, making the economic case for smarter appliances that use less electricity and a wider adoption of more energy efficient lighting - CFLs/LEDs – we also believe that a more holistic or broader approach will bring better returns to the province.

For many the electricity issue is not an environmental one but a ratepayer issue. For example, the building sector accounts for 30%-40% of global energy. The *Conservation First* document begins the discussion on the role of the built environment in Ontario and suggests that the province itself recognizes this to be true and it has decided it must lead the way through its own public buildings. While more can be done in terms of electricity conservation that could benefit ratepayers in the province, even more can be gained by looking at conservation and energy efficiency more holistically and by including all sources of energy and energy use.

According to the Global Buildings Performance Network, the building sector could decrease energy use for heating and cooling by over 40%, despite an expected 100% increase in floor space by 2050. Therefore, to really be forward thinking about "energy savings" Ontario needs a plan that includes buildings - new builds and retrofits – from each sector, residential, commercial, industrial, institutional and government.

The Canadian Green Building Council states that the annual energy costs for Canada's commercial building sector amounts to \$17.6 billion and lighting, heating and cooling of buildings representing 50-60% of annual greenhouse gas emissions, so there is much room for improvement. Striving for better existing building performance will have to be a provincial goal with the province taking a **"lead by example approach"** as suggested in the *Conservation First document*. Programs like the Canadian Green Building council's GREEN UP program includes a national database and information system designed to improve the energy and environmental performance of buildings in Canada. It allows building owners and real estate managers to measure energy and water use, compare with peers, set goals to reduce greenhouse gas emissions, and take steps to improve the operational and environmental performance of their portfolio. The program provides cost-effective access to a national database that will include building performance data for office, multi-family, long-term healthcare, hotel, retail, K-12 school, and government buildings.



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The transportation sector is also largely being ignored and we believe that it should be part of any new framework. While there are significant discussions about subways and light rail throughout the province, little emphasis is placed on the efficiency gains made by using public transport. There are also many opportunities, such as the use of natural gas vehicles, which can result in significant cost savings at the same time as providing desired environmental benefits.

Through our national opinion survey and its separate report on Ontario that was conducted by The Gandalf Group in February 2013, we learned that there is a strong interest to make gains in the area of transportation. The transportation sector continues to be a significant contributor to green house gas (GHG) and while energy efficiency technologies and tools are entering the market, consumer aversion to high upfront costs continues to impede the adoption of energy efficiency technologies in this sector.

#### **Learning from other jurisdictions**

In July of 2009, McKinsey and Co. released a report entitled “Unlocking energy efficiency in the US economy”. In this report, McKinsey offered a detailed analysis of the magnitude of the efficiency potential in the United States as well as a thorough assessment of the barriers that impede the capture of greater efficiency, as well as an outline of the practical solutions available to unlock the potential.

While this report deals with a national plan, it does touch on the potential for regional or state participation. Given Ontario’s critical role in the Canadian economy, this report provides excellent insight for any long term energy plan that has the objective of conservation first. It also addresses the benefits of a holistic approach.

The American Council for an Energy Efficiency Economy (ACEEE) Scorecard regularly ranks the US states in terms of their effectiveness/success in implementing energy efficiency programs. The ACEEE State Scorecard for 2012 shows that the top 10 energy efficiency states are Massachusetts (in its second year atop the rankings), California, New York, Oregon, Vermont, Connecticut, Rhode Island, Washington, Maryland, and Minnesota. The criteria used in the assessment (shown with their respective weights) include: Utility public benefit programs and policies (40%), Transportation policies (18%), Building energy codes (14%), State government initiatives (14%), combined heat and power (10%) and Equipment efficiency standards (4%). CEEA believes that the province of Ontario would benefit significantly from a similar more holistic commitment to and measurement of energy efficiency.

In a recent study in 2012 entitled *Energy Efficiency – Engine of Economic Growth in Eastern Canada* by Environment Northeast for Natural Resources Canada’s Office of Energy Efficiency looked at the potential benefits – economic, job creation and environmental – for the four eastern provinces of Quebec, Prince Edward Island, New Brunswick and Nova Scotia. They used a methodology that they had used previously when undertaking a similar study for the eastern states of the US. That study suggested that,



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“Benefits from increased efficiency investments in New England are significant for each fuel type. Increasing efficiency program investments in all six states to levels needed to capture all cost-effective electric efficiency over 15 years (\$16.8 billion invested by program administrators) would increase economic activity by \$162 billion (2008 dollars), as consumers spend energy bill savings in the wider economy. Sixty-one percent of increased economic activity (\$99 billion) would contribute to gross state products (GSPs) in the region, with \$73 billion returned to workers through increased real household income and employment equivalent to 767,000 job years (one full-time job for a period of one year). Over 15 years, increased natural gas efficiency (\$4.1 billion invested by program administrators) would increase regional economic activity by \$51 billion, boost GSPs by \$31 billion, and increase real household income by \$22 billion while creating 208,000 new job years of employment. Unregulated fuels efficiency programs (\$6.3 billion invested by program administrators) would increase regional economic activity over 15 years by \$86 billion, boosting GSPs by \$53 billion, and increasing real household income by \$37 billion while creating 417,000 job years of new employment. “

The study focussing on Canada’s four Eastern provinces indicated that:

“Cost-effective efficiency savings can be found in any energy system, and this region is no exception. This study illustrates that the economic benefits exceed the cost of implementing efficiency measures, and that efficiency investments quickly pay for themselves through increased economic activity and job creation. In fact, the analysis shows that the benefits are greater than commonly recognized even by program administrators and proponents, since expanding the assessment beyond traditional benefit/cost tests introduces the impressive impact to the wider economy. The region is already accruing economic benefits through existing efficiency program, but as shown by this study, provinces have significant incentive to move beyond current investment levels. Positioning themselves among the leading jurisdictions with respect to energy efficiency will require policies that include comprehensive efficiency programs and incentives, and market and workforce development strategies, to overcome barriers to efficiency implementation and deliver lasting benefits. By establishing mandates and complementary policy that lead to the procurement of all cost-effective efficiency across all fuel types in the near-term, government will facilitate significant new, local economic growth that is in line with consumer interests and economic and environmental goals. Avoiding expensive upgrades to aging energy infrastructure; facilitating new industry and centers of excellence; reducing the need for energy assistance programs; and, the value of energy security – not quantified or qualified by this study – further increases the attractiveness of this important energy resource. “

CEEA understands that based on these results the Department of Natural Resources has decided to undertake a Canada-wide study which should be available in 2014 and should provide a rigorous study of the true economic benefits of energy efficiency to Canada – and the province of Ontario.



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It also should be noted that programs like ENERGY STAR for New Homes launched in 2005 have led the way in terms of delivering better more efficient homes for Ontarians and the home building sector remains a key component of Ontario's economy.

As we stated earlier in this document – CEEA believes that more can be done on the conservation front and more is being done in other jurisdictions. We must integrate “energy savings”, not just electricity savings into our planning and our regular reporting. And we must use a language that the citizens of Ontario can embrace – savings in dollars.

We must redefine energy efficiency or energy conservation more appropriately as **energy productivity**, which refers to the amount of economic output possible at a given level of energy supply. This raises the thinking around conservation or energy efficiency and allows governments, consumers and businesses to see how they can save money and get more results (heating, cooling, factory productivity, lighting, recreational enjoyment etc.) out of the energy consumed.

In the US, there is now a bipartisan Bill going through the US Senate and House of Representatives - the Shaheen-Portman Bill – which reflects this emphasis on energy productivity by focusing on the transition of the US economy to a more energy efficient economy. This approach is rightly seen as contributing to both, US economic competitiveness, while encouraging private sector job creation.

### **The importance of education and communication**

The Conservation First document that has been released by the Ministry of Energy addresses a critical issue related to adoption of stronger energy efficiency or conservation practices - education. Our survey confirms that people need to understand more – they need it in a language and format that they find accessible.

Audiences are very segmented now (youth 16-25; young adults 25-40; middle age 40-55; older Canadians 55+) and segmentation is a key to success– not everyone can be expected to look for information on a website – we must be aware of how each audience segment can be found and communicated with in a way that is helpful to them. CEEA has learned a lot about this – it was a key part of the development of our recently released first white paper (attached in this submission).

Indeed, we are now in final discussions with a major public partner to launch a national education program early in 2014. We have learned very quickly that seniors are more concerned about their energy bills but may not favour change whereas young families are as worried about their time as the money they save. If you want to successfully have people embrace and adopt a new energy efficient practise you must -

1. Prove they will save money;
2. Prove this solution is good for the environment; and



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### 3. Provide easy to find and easy to understand information.

Success relies on all three being in place. In the end, the measure of success cannot just be measured in the lingo of the energy world (i.e., kW or kWh) but it must also speak to the customers' /citizens' language – savings – money in their pockets that they can apply to other uses in society, such as hiring more medical staff in hospitals.

Ontarians want the best information possible in the easiest and most accessible format from the organization that they trust, primarily in their community. Communications tools need to be based on good market segmentation information because a 35 year old householder may be well served by social media but a post 55 boomer or a post 65 retired person may not even check a website. The natural gas and electricity utilities know their customers and how to communicate effectively with them. We need to encourage utilities to work together on communications strategies but allow them the freedom to tailor their programs to their local audience.

Natural Gas Demand Side Management (DSM) in Ontario should be looked at as a model of success for the province. It has evolved considerably since the 1990's and now produces significant cost effective savings for customers every year.

CEEA is aware that Ontario is served by close to 80 electricity utilities. The reality is that the 7 largest electricity utilities serve 70% of the population – these utilities should be encouraged to lead the way and develop programs that can then be adopted by other utilities. It is essential that the electricity utilities have the accountability to design and deliver programs that meet the needs of their customers. There may be a need for some form of coordinated communication activity especially when a client such as a commercial client has a need that spans the whole province. The areas where this coordinated approach to serve customers' needs to be identified very clearly by the Ministry of Energy and the success of these programs need to be defined by nimbleness and ability to meet local requirements.

### **Governments leading by example**

A renewed vision for energy efficiency and conservation in Ontario should leverage the *Green Energy and Green Economy Act* of 2009 and identify where more can be done. For example, Section 2, part 10 of the Act states:

“In constructing, acquiring, operating and managing government facilities, the Government of Ontario shall be guided by the following principles,

1. Clear and transparent reporting of energy use and of the amount of greenhouse gas emissions associated with government facilities.
2. Planning and designing government facilities to ensure the efficient use of energy.



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3. Making environmentally and financially responsible investments in government facilities.

4. Using renewable energy sources to provide energy for government facilities.”

It is not clear whether this reporting is done and how accessible the data is. Cities like Boston, Chicago and Seattle have passed ordinances that force building owners to make this information public. This is to allow tenants to assess which landlord is investing in energy efficiency and are able to manage costs effectively. In terms of government buildings – an issue raised in the Ministry’s Conservation First document, we suggest that the following approach be adopted:

### ***1. Ensure the Government and the broader public sector leads the way.***

Governments both own and lease buildings. Government is a cherished tenant. The Government of Ontario would send a signal to the market by agreeing to only rent in buildings that have reached rigorous standards of energy performance. Landlords/owners would listen.

### ***2. Measure and set targets to educate, spark change and get concrete results.***

Promote meaningful measurement. When tenants start demanding highly efficient buildings—especially influential tenants such as the Government of Ontario and MUSH-sector institutions—then the incentive to invest in significant savings will be there.

To help spark this demand, CEEA recommends that these labels be based on actual energy performance results. The label should be easy to understand, showing how one building compares to another in terms of performance so that consumers can truly compare apples to apples. The federal government’s soon to be rolled out Energuide Rating System (ERS) follows this approach and should be used as a model.

Set reduction targets for government and broader public sector buildings. Efficiency targets are powerful tools for encouraging building retrofits, an approach that is being used increasingly across North America at all levels of government. CEEA strongly recommends Ontario implement short- and long-term reduction targets for all buildings where the government has a financial interest including its own buildings, those owned by the MUSH sector and privately owned buildings.

Not only would this help to reduce energy consumption in buildings where government has a financial stake, but, as stated earlier, it transforms the province into a leader in energy conservation, sending a clear signal to the market that it is serious about supporting whole building retrofits.





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### **3. Provide the means to meet the targets.**

Once targets have been set, access to financing is important for implementing a successful buildings retrofit program. CEEA recommends that the Ontario government explore a range of financing options including: establishing a distinct line of credit solely for retrofits, incentives from utilities and government departments, establishing “Green Banks” to leverage private sector capital for clean energy and energy efficiency projects, and revolving funds for businesses and residential customers in order to unlock private capital and accelerate growth by demonstrating successful investment strategies in the conservation sector.

The Ontario’s recent enabling legislation that permits municipalities to impose local improvement fees to cover long term energy efficiency investments is a great step in the right direction. We need to monitor its effectiveness and revisit the mechanism frequently to see if more can be accomplished in terms of energy savings.

### **4. Use a procurement model that aligns interests and produces incentives for deeper energy retrofits**

The structural misalignment of stakeholder interests in the building industry has been widely recognized by leading organizations such as the American Institute of Architects, which are pushing for more innovative models of project design and delivery in the new building sector.<sup>1</sup>

Some energy retrofit procurement models have focused on awarding contracts to the qualified supplier who presents the lowest design/construction management costs. This approach does not effectively align the interests of owners and professionals when it comes to incentivizing innovative, “lean” projects that generate the most possible value to the owner. Instead, this approach tends to encourage professionals to spend less time on the design of an innovative deep energy retrofit (opting, rather, for a simple retrofit and lower targets), or to pursue a higher construction cost than might be necessary in the interests of increasing their profit margins.

CEEA strongly recommends the use of procurement models that evaluate qualified proponents based on the net present value (NPV) of the energy conservation projects they propose in detailed submissions. Under this model, the qualified proponent submitting the highest project NPV (which includes project costs, government incentives, savings and the payback period) is awarded the contract. Simply put, the firms who can design and deliver the highest possible savings using less construction dollars win. Firms should also be held accountable to contractually guarantee the proposed project NPV so that they take on the risk of achieving their targets.

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<sup>1</sup> See, for example American Institute of Architects. *Integrated Project Delivery: A Guide*. (2007)



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This model incentivizes companies to be creative and invest in the design of innovative deep energy retrofits that will unlock long-term savings and benefits. This procurement framework aligns the interests of all stakeholders to produce exceptional, concrete results.

A successful case study for these recommendations can be found in the province of Quebec as part of its 2006-2015 Energy Strategy. Quebec decided it was going to set an example – and has been successful developing a procurement model that is based on Net Present Value (NPV) which is now mandatory. Millions of dollars were saved, hundreds and thousands of tonnes of GHG emissions were avoided and jobs were created, reliable funding models were established and the importance of the building conservation was communicated proactively to many citizens.

### **Promoting Energy Audits**

When it was introduced, the *Green Energy and Green Economy Act* provided for mandatory home energy audits prior to the sale of homes unless waived by the home owner. As this part of the law has never been enforced, energy audits have not really developed a profile that has attracted home owners – they are still an unknown. We need to insist that the Real Estate industry informs potential buyers of this opportunity AND we need to ensure that these homeowners understand the value of the information.

CEEA has some knowledge in this area. CEEA's long standing member company, EnerQuality designed and launched Energy Star for new homes. It ensures that homes built to this label standard meet rigorous energy efficiency levels. Nothing similar exists for homes that are not new. Therefore, we strongly urge the Government of Ontario to put into force the mandatory requirement for energy audits and provide information to perspective homeowners on the benefits to their pocket books in the long run.

We note that the federal government is looking towards re-introducing NRCan's ERS for homes. Most agree it will provide a strong platform for home energy labelling and the building of greater energy literacy.

### **Exploring new initiatives, such as social benchmarking**

CEEA applauds the Ministry of Energy's emphasis on the role that inspiring consumers to conserve can play by providing them with better customized energy information. We believe that there are a number of ways that the province can better engage consumers such as supplying social benchmarking programs across the province and providing more tools for customer's to unlock the value of their smart meter data. These tools should go beyond simply improving data availability and focus primarily on providing insights to Ontarians by making energy usage convenient, meaningful and personalized.



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As noted in the Conservation First paper, social benchmarking provides one such way to engage Ontarians across the Province with their energy use. Indeed, social benchmarking has proven to both help customers save energy regardless of geography, age or income and also to help increase participation in other conservation activities. For instance, one CEEA member company, Opower – a behavioural energy efficiency and smart grid customer engagement company has worked with 85 utilities to deliver energy savings to 17 million residential households across twenty-eight US states and seven countries, including Canada – has found that their Home Energy Reports program consistently saves between 1.5-3.5%, across geographies and demographic groups, leading to significant energy and pocketbook savings at scale for consumers—over \$300 million to-date. These results have been verified by over twenty independent evaluations conducted by academics, economists, and consultants (e.g., Navigant, Power Systems Engineering, etc.). And the results show that social benchmarking programs deliver sustained energy savings on both the electric and natural gas side.

In addition, participation in social benchmarking programs can help to increase participation in conservation activities more broadly. For instance, an analysis across 11 utilities conducted by Opower discovered that customers who receive Home Energy Reports participate in utility energy efficiency programs at a 20% higher rate than customers who don't receive these communications.<sup>2</sup> And, these results have been borne out in independent evaluations as well.<sup>3</sup> This suggests that social benchmarking programs can generally improve awareness of conservation activities and programs in the province as well as improve the overall cost-effectiveness of conservation programs for all consumers.

Customer engagement should also focus on maximizing the value of the smart grid and smart meter data for Ontarians. Smart meters are widely deployed throughout the Province with 4.7 million installed and 4.3 million customers on time-of-use billing.<sup>4</sup> However, smart meter deployment and time of use rates alone are not sufficient to engage customers and better align awareness tools with incentives. As Smart Grid Canada and the Independent Electricity System Operator concluded in their recent report, *The Canadian Consumer and Smart Grids*, “there is a clear need to demonstrate to consumers how smart grid technologies can be a convenient way to manage their electricity use, without being onerous.”<sup>5</sup> In Ontario, more can be done to unlock the value of the smart grid by focusing on personalized outreach and timely and relevant feedback that provides customers with the context they

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<sup>2</sup> Gunel, A. *Analytics Insights: Behavioral Programs Enhance Other Utility Energy Efficiency Initiatives*, January 22, 2013, available [here](#).

<sup>3</sup> For example, see:

- Dougherty Anne, July 2012. “Massachusetts Three Year Cross-Cutting Behavioral Program Evaluation Integrated Report.” *Opinion Dynamics with Navigant Consulting*; and
- April 2012. “Puget Sound Energy’s Home Energy Reports Program: Three Year Impact, Behavioral, and Process Evaluation.” *KEMA Energy & Sustainability*, pg. 1-5.

<sup>4</sup> Ontario Energy Board, *Monitoring Report: Smart Meter Deployment and TOU Pricing – August 2012*, October 17, 2012, available [here](#).

<sup>5</sup> Smart Grid Canada in Partnership with the Independent Electricity System Operator, *The Canadian Consumer and Smart Grids: A Research Report*, October 15, 2012.



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need about their performance, how they compare, and how their performance is tracking over time. Dynamic payment plan education can be provided to customers to help them better understand more about various rate plans, compare how those plans might affect them, see how changes in consumption behavior would impact their bills and provide ongoing insights to customers. In addition, peak time rebates are being used in the United States to help customers save during peak events. Baltimore Gas and Electric recently rolled out an innovative peak time rebate program [Smart Energy Rewards](#), which provides customers with rebates during peak summer hours. And, smart energy management solutions such as smart programmable thermostats that can inform, motivate and coach households on how to use energy on an ongoing basis can also be provided more broadly and help to better engage consumers.<sup>6</sup>

In order to more effectively engage consumers the province should seek to provide a broader set of dynamic customer engagement tools and to expand successful programs more quickly and widely by taking the following steps:

- **Utilize proven results from other jurisdictions to scale programs faster** – social benchmarking programs have been proven to consistently deliver energy savings over time across demographic groups and geographies and this has been confirmed in over 20 independent evaluations. Proven results from other jurisdictions should be used to help successful programs scale across the Province more quickly.
- **Ensure funding for such programs is available, deployed swiftly and provided in such a way as to encourage – not block – innovation** – funding for customer education needs to be provided for these types of programs and should be provided with clear timetables for decision-making and implementation. In addition, funding should focus on customer engagement solutions that can be scaled broadly.

### **Serving customers with an educated workforce**

Contractors (HVAC, electrical, etc) are ambassadors of conservation with both residential and commercial clients. We need to invest in programs that ensure they have all the tools they need to promote conservation. These programs are best administered by groups like CEEA's member, the Heating Refrigeration Air Conditioning Institute of Canada (HRAI) who know and understand the contractor universe well and are able to be nimble in terms of program design. These education programs can be funded by government with appropriate evaluation tools in place as they should result in both energy savings for the customer and the province.

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<sup>6</sup> See Devenish, R., Fonts, A. and McCool, D., *Bringing Customer Engagement to Demand Response: How Behavioral Design Can Lower Peak Energy Use and Help Stabilize the Grid*, July 8, 2013, Opower; available online [here](#).



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We need to ensure that Ontarians can be served by professional renovators. Programs like The Green Renovator Program, an initiative of EnerQuality, the OPA, Home Depot, BILD, Owens Corning, the OHBA, CMHC and George Brown College is targeting professional renovators with training and accreditation. Forty three contractors have gone through this program in phase 1 and are now listed on Renomark's website as "certified green renovators." Programs like this are needed so that certified green renovators are available around the province. This program needs a higher profile so that more renovators of this quality are available.

There are several examples of effective programs that already exist in Ontario to ensure proper training:

**Example: Ontario Power Authority (OPA) saveONenergy Training and Support Initiatives**

*Training is necessary to ensure energy efficiency opportunities are maximized. The OPA's saveONenergy training and support initiatives provide up to date training to professionals. Programs include: HVAC Installation Optimization, a mandatory one-day training course for HVAC contractors delivered by the Heating Refrigeration and Air Conditioning Institute of Canada (HRAI) on behalf of the OPA; Home Builder Training Incentive; Building Operator Training Incentive; Commissioning Agent Certification Incentive; Certified Measurement and Verification Professional Certification Incentive; Energy Manager Training Incentive.<sup>7</sup>*

**Example: Immigrant Pathways to Green Careers, Seneca College**

*Run at Seneca College with funding from both the Canadian and Ontario governments, the program assists internationally trained individuals with backgrounds in engineering and the natural sciences with finding jobs in the green energy or environmental sectors. Participants benefit from experiential learning opportunities, participating in green building projects, case studies and workplace tours. Participants are able to access College supports and services including employment counseling and job development activities. Upon completion, participants receive a Ministry approved Graduate Certificate in Energy Management, Environmental Project Management, or Environmental Urban Land Regeneration.*

These need to continue and be supported and they need to be available all around the entire province.

### **Financing**

The Ministry of Energy's Conservation First document opens the door for on-bill financing. Recently the Ontario government gave municipalities the ability to fund energy retrofit programs and The City of Toronto and other municipalities are presently investigating the potential effectiveness of this tool. CEEA believes this approach makes the most sense and that municipalities are well positioned to manage such programs.

### **Expanding programs to where new services are needed**

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<sup>7</sup> saveONenergy, For Business, "Training & Support"

<https://saveonenergy.ca/Business/Program-Overviews/TRAINING---SUPPORT.aspx>



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New programs are needed to promote energy efficiency standards in areas that are currently not serviced. Ontario has been very active in labelling of new homes with programs like ENERGY STAR for new homes. As we look at the around the growing cities of Ontario we see many multiple unit dwellings (condos and part 3 residential buildings) where a majority of Ontarians will be living. EnerQuality, a CEEA member, is developing a new program entitled The Building Performance Project. This is intended to help developers in this area make the jump to the next Building Code in 2017 and ensure these home owners that their residence will meet stringent energy efficiency standards.

### **Codes and Standards**

The core of any successful conservation program is to support the development of codes and standards that ensure the best energy conservation programs. The Canadian Standards Association (CSA) is world renowned for its efforts in this area. They work with Natural Resources Canada (NRCan) and NRCan works with our international partners to ensure that we are working effectively on a global basis. Ontario has been supportive of these efforts, but the province needs to support the efforts of the federal Government in this area. In addition, Ontario needs to be the first adopter of the National Buildings Code as it evolves and must remain consistent with its goals and objectives. Given the importance of a tight building envelope in terms of both GHG emissions and costs, the principles of that Code needs to be imbedded in a new more holistic energy plan for Ontario. When any deviation is proposed, that discussion and decisions reached needs to be both transparent and public.

### **Towards a new framework**

#### ***1. Allow LDC's more flexibility***

Natural gas Demand Side Management (DSM) in Ontario should be looked at as a model of success for the province. It has evolved considerably since the 1990's and now produces significant cost effective savings for customers every year. The two largest gas utilities in Ontario have had a long term commitment to conservation and the lessons learned from the natural gas model should be adopted in the electricity CDM framework. Critical to success is utility accountability for program design and delivery.

Structurally, on the electricity side, Ontario is served by close to 80 LDCs. Much has been made of the particular challenges that this presents in moving to an Ontario Energy Board (OEB) approval process for CDM. Establishing a formulaic approach to funding (e.g. 1 or 2% of revenue including generation commodity, or \$ per kwh for energy saved, or \$ / kW demand reduced) would help streamline process.

The largest 7 LDCs can then lead the OEB hearing process with program submissions. Once a program is approved by OEB, other LDCs can 'copy' the program, and submit written applications to OEB for the same programs and cost effectiveness. If any small or medium size LDC wants a different program that is not already approved, then the LDC can make application to OEB. If an LDC chooses not to do any CDM, then when the LDC is due to come in front of the OEB for their rate case the LDC will have to



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address how they considered conservation in their supply capital investment plan before OEB approves new capital investment. LDCs could also look for partners, including other electric LDCs and the gas utilities to deliver programs on their behalf.

### ***2. Increase intergovernmental dialogue and transparency***

The responsibility for policies and programs that impact energy efficiency rests with a variety of provincial departments – the Ministry of Energy; the Ministry of Municipal Affairs and Housing; the Ontario Power Authority; the Ministry of Transportation; the Ministry of Training and Colleges to name a few. At present, there is no coordination among these various parties in terms of policy development and consultation. We need an inter-department committee that would coordinate these activities and the results can be successfully communicated to Ontarians as “energy savings” that they can adopt and benefit from. This approach would allow Ontario to speak about energy more holistically and deliver messages to Ontarians on energy savings that would be more complete.

### ***3. Flexibility to manage demand response***

Effective demand response programs are critical to successful conservation/energy efficiency programs. Technology now exists that allows organizations like the IESO to dispatch electricity as needed to a very finite level. However, programs like DR 3 are run through the OPA which lends an extra level of complexity or bureaucracy that seems unnecessary. CEEA believes that programs like DR 3 need to rest with the party that manages the information and the province would probably be best served and more efficient in this area if the LDC’s could deal directly with the IESO. Given that the data rests with the IESO, it would seem they would be best placed to develop and update programs for maximum effectiveness.

### ***4. Only launch programs when they are fully developed***

The Conservation First paper suggests that potentially a microFIT program based on net metering could be part of a conservation program. This is theoretically correct. However, if the province decides to go with this approach it has to ensure that this is a program that can stand on its own and be well understood by consumers. Indeed the word “fit” should not be used because net metering is not a “feed in tariff”.

Secondly, microFIT in particular has been a program that has had significant challenges. These were due to unrecognized problems – such a grid problems etc. Future net metering programs needs to be done carefully with all of the economics thought out and with clear messages to the consumer. Home owners in Ontario are already suspicious of these programs. Let’s not expect conservation targets to be met by a program that is launched before its time.



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## *Energy Efficiency Alliance*

### **Conclusion**

**This document includes many recommendations that are based on the following 3 principles.**

1. Electricity conservation is critical to the future sustainability and affordability of Ontario's electricity system – however, it is not the only energy resource where the “conservation first” practice ought to apply. Energy efficiency programs must recognize specific aspects of the built environment and transportation systems.
2. For Ontarians to embrace the “conservation first” attitude, we must change the dialogue and how we communicate with consumers. Savings should be measured and communicated in dollars (\$) in order to have meaning that resonates and motivates action.
3. Energy conservation and energy efficiency should be a core mandate of the Government of Ontario broadly, and should be coordinated with the Government of Canada. By saving energy, the province will reduce expenditures, and can allocate savings to other priorities, such as healthcare, education and transportation.

CEEA is encouraged that this Government has decided to develop its new LTEP based first and foremost on the objective of *Conservation First*. This is a bold and forward looking approach. Our members are eager to work with the Ministry of Energy as well as other Departments and agencies to ensure that the savings and economic opportunities of conservation are fully realized for the province.





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### **Appendix A – CEEA’s White Paper**

The following are the list of initiatives that CEEA intends to pursue as a result of its April 2013 Thought Leaders Forum and the development of this document:

#### **LIST OF INITIATIVES FROM CEEA WHITE PAPER SEPTEMBER 2013**

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##### ***The Role of All Levels of Government***

- ❖ CEEA will engage with government(s) to help them develop a vision for energy efficiency and promote it;
- ❖ CEEA will seek opportunities to partner with the federal and provincial governments to host information on energy efficiency initiatives, service providers, databases, policies, regulations and programs. By seeking out such opportunities, CEEA could become a one-stop shop for information for industry, hosting key information on a centralized, up to date and reliable website. CEEA acknowledges this will be a challenge but the need for this service is real;
- ❖ CEEA will pursue collaboration with Canada’s financial institutions to develop and promote green mortgages and green insurance policies;
- ❖ CEEA will spur a project to identify a feasible, revenue neutral tax mechanism that stakeholders would support and could be adopted by the federal and provincial governments;
- ❖ CEEA will facilitate growth of the energy efficiency goods and services market and sector through local economic development activities – identify energy efficiency as an economic cluster and priority as the Pacific Coast Collaborative has done.

##### ***Communicating the Energy Efficiency Message***

- ❖ CEEA will continue to promote energy efficiency and disseminate knowledge about new initiatives and technology through CEEA’s website (<http://energyefficiency.org/>) and via social media. CEEA will continue to build up its website and social media presence, including its:
  - Big Idea Forum: LinkedIn Discussion Group
  - CEEA’s Efficiency Matters Blog
  - Twitter account (@CdnEnergyEffic)
  - Build up CEEA’s website to host and disseminate information to consumers, industry and government via social media

##### ***Transportation and Energy Efficiency***

- ❖ CEEA will work to build up its membership within the transportation sector, so that we can bring interested parties together and develop a strategy for CEEA to advance on behalf of the sector.
- ❖ CEEA will play an active role in hosting and disseminating information on government and industry initiatives in transportation energy efficiency.

##### ***Training and Education for Energy Efficiency***



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- ❖ CEEA will work to increase the membership of Canadian colleges and universities in CEEA. This will enable CEEA to take on a coordinating role in bringing educational institutions and programs together to develop strategies for promoting awareness of their green programs and the green careers to which they lead. These strategies may include activities such as lobbying the federal and provincial governments for further investments in skills training programs.
- ❖ CEEA will build upon its existing online Job Board and LinkedIn network so that CEEA can collect and disseminate information about energy efficiency careers and education programs.
- ❖ CEEA will incorporate messaging about the benefits of pursuing “green collar” jobs into its online and social media platforms giving these opportunities greater profile
- ❖ A marketing effort is necessary to educate students, parents and guidance counselors about these programs and careers, and to repaint them as highly skilled, in demand “green collar” careers. CEEA will develop a program seeking government as a partner in order to deliver an effective educational tool that also links government incentive programs to training and certification.

### ***The Built Environment***

- ❖ CEEA will work to encourage energy efficiency ratings in a format that can help consumers and tenants identify and realize savings; drawing upon successes in other jurisdictions, such as the City of Philadelphia.
- ❖ CEEA will continue to advocate for the adoption of the new national building code standards for both residential and building by all provinces.<sup>8</sup>
- ❖ CEEA will monitor new initiatives, such as the building labeling initiative in Vancouver, and disseminate information about the lessons learned through CEEA’s online platforms.
- ❖ CEEA will support and encourage adoption of the new Energy Rating System in 2014 towards provincial labeling for new and existing homes that protects consumers and rewards homeowners who have invested in energy conservation
- ❖ CEEA will encourage governments to develop incentive programs and innovative financing tools that are responsive to the price sensitivity of one-, two- or five-year payback periods for energy efficiency retrofits.
- ❖ CEEA will advocate for streamlining municipal regulations and the full enforcement of codes.

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<sup>8</sup> National Energy Code for Buildings (2011) and s9.36 energy standards of the National Building Code (2012)



## **Appendix B – CEEA’s Survey Results**

To understand the knowledge of and potential for energy efficiency in Canada, CEEA engaged the Gandalf Group in February 2013 to undertake a national survey on energy efficiency knowledge and practices in Canada. The survey was comprehensive enough to allow the Gandalf Group to produce a separate report for Ontario. These are both appended to this report.

The key general findings were as follows:

- Over one third of respondents said they have done a great deal to conserve energy in the last year – they are strong conservers;
- Most said they have done some things – moderate conservers;
- Just 22% believe they are doing everything they can;
- Regardless of region, age, gender or income, a majority of Canadians and Ontarians intend to do more to conserve.

From this, we now know that there is strong support and little real opposition to government acting to mandate or help encourage citizens to do more.

Ontario:

- Canadians and Ontarians were more likely to want to conserve electricity than natural gas in their homes. Related to this bias:
  - Electricity costs have risen faster than natural gas;
  - More Ontarians use electricity than natural gas, but among those who have each, they are more likely to conserve electricity;
  - Even if their bills have not come down, most believe they are saving at least some percentage – some believe they saved a significant amount.

What else did we learn from this study?

- There is significant room to do more when it comes to:
  - Upgrading insulation;
  - Windows/doors and weather stripping;
  - Home energy audits; and



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- Participating in conservation and energy efficiency programs (only about a quarter have participated in an incentive or rebate program – this includes 3 in 10 home owners).

### Conservation as a life style issue:

- Substantial numbers engage in energy efficient practices or behaviour in their day to day life;
  - For example, almost half say they ALWAYS turn down the heat at night or when away, or use cold water for clothes washing;
  - Ontarians were more likely to have air conditioning and more likely to raise the thermostat during the summer to above room temperature when they can
- Few are able to reduce their reliance on the car, compared to electricity, despite the faster rising cost of gasoline
- Few are aware of the benefit that would come from unplugging appliances and few do this regularly;
- Most Ontarians are aware of time of use pricing and regularly try to take advantage of pricing that it comes in.

In the end, this survey proved the following. **Three** factors must be in place to really spur on conservation/energy efficiency:

1. Perceived cost savings;
2. Environmental motivation; and
3. Knowledge of how to conserve.

All three factors matter and must work together and none can take the place of the other.

It should be noted that while consumer (homeowners, commercial clients) views and acceptance are clearly important to successfully achieving better conservation returns, energy efficiency/conservation efforts also encourage innovation and industry capacity (builders and the building trades, contractors, car and equipment manufacturers etc).