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Andrea Pastori
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Date: December 16, 2016

Dear Ms. Pastori:

The Ontario Sustainable Energy Association (OSEA) welcomes the opportunity to submit its recommendations to the Long Term Energy Plan planning process on behalf of its members.

OSEA has been at the forefront of championing a sustainable, low-carbon, decentralized, integrated, and inclusive energy system that is built on portfolios of sustainable technologies to meet Ontario's heating, cooling, electricity, and transportation needs.

At OSEA we feel very strongly that this is the time to make the right decisions to build an energy system that is not only affordable and clean but also supports the revitalization of our communities. Thank you for taking our comments into consideration.

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2. Supporting the Vision of the Ontario Government
3. The Reality of Energy Development Worldwide
4. Concerns about the Current Approach to Long-term Energy Planning in Ontario
5. Call for an Analysis of Alternative Options
6. Innovation and Economic Growth
7. Clean ENERGY Supply
8. Regional Planning
9. Conclusion

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1. Introduction & OSEA's Vision for Ontario

OSEA champions a prosperous Ontario with resilient communities, good jobs, and healthy environments that is built on portfolios of sustainable energy solutions for power, heat, cooling, and transportation.

It is OSEA's conviction that an energy system that is based on the local resources in a community and the region and built by and for the members of the local community is the most efficient, reliable, cost-effective, and beneficial for economic growth and sustainability of our communities. And with the sustainable technologies available today, such a system is entirely feasible.

From the examples of other jurisdictions, we know that when a community comes together to find solutions for their energy needs, it brings the members of the community together, and it increases energy literacy among the general public, which leads to energy conservation and other actions to promote sustainability within the community[1]. The economic growth benefits include sustainable jobs, capacity building that can become an export commodity, tax revenues that can be reinvested in the local community, and much more.

Hence, the key element of the OSEA vision is that each community has their energy needs met primarily from local and regional renewable fuel sources, distributed and managed as local micro-grids. For electricity, this means that those communities that are already connected to the transmission grid will continue to stay on the transmission grid and thereby be interconnected to other communities. Thus the transmission grid becomes the backup for the entire regional network. To meet their heating, cooling, and transportation needs, these communities will use local, sustainable solutions, which include bioenergy, district energy systems, geo- and air-source heating systems, etc. (the list is not exhaustive).

For remote/ off-grid communities, on the other hand, storage backup has to be considered, and where feasible, adjacent off-grid micro-grids should be interconnected to each other for stability and reliability as well as to reduce the cost for storage backup.

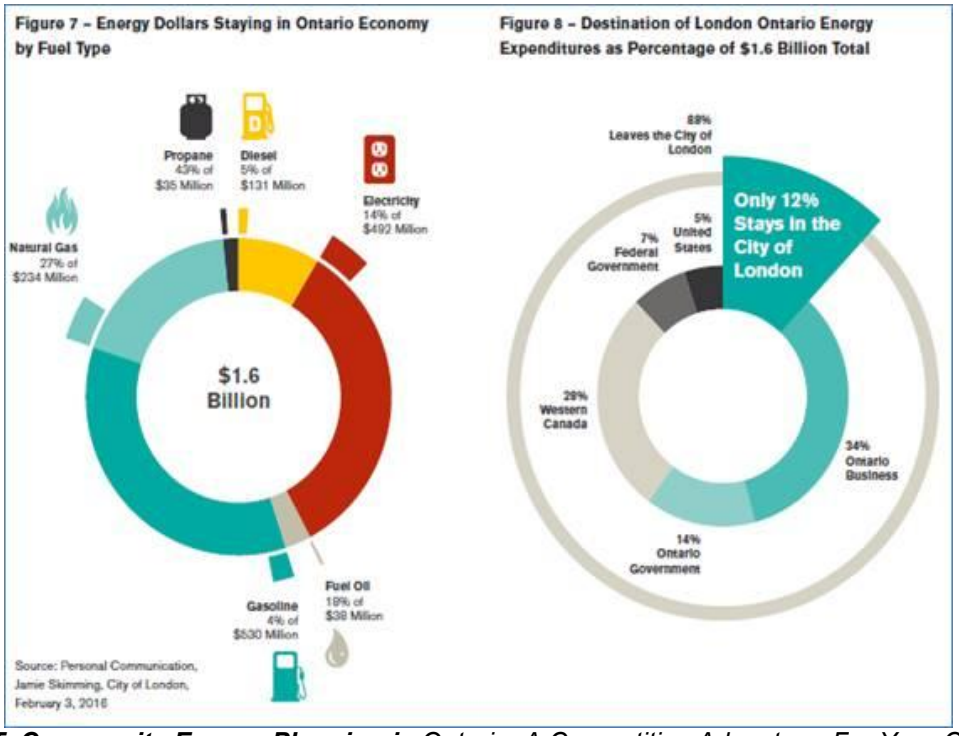
A system as outlined above would have the following advantages:

1. **Cost-effective:** A decentralized, locally-sourced energy system will be less costly, especially when individuals are encouraged to invest and co-own their systems.
   By supporting local micro-grids, we avoid huge cost for transmission grid build-outs and for large, central generation infrastructure upgrades that may seem a good idea today but will become stranded assets, as communities, individual homeowners and businesses demand the right to meet their energy needs.

[1] World Future Council Policy Handbook: HOW TO ACHIEVE 100% RENEWABLE ENERGY, page 45

2. **Modular:** With renewable and sustainable technologies, energy projects will be smaller than with larger centralized nuclear plants and can add capacity to the system incrementally. The built-out of such an energy system can happen gradually according to the needs of the province and the communities.
3. **Fast &Flexible:** Most of the projects that would be considered can be built with relatively small turn-around time, which means that the modular build-out could happen fairly quickly, making the system very responsive to changing circumstances, such as uncertainty in demand development or new technological breakthroughs.
4. **Supports local communities and local growth:** Such a system puts the emphasis on the local communities, providing the community, not just with the energy they need to support the local economy but also providing the residents with good, sustainable jobs, and revenues from the generation of energy itself[2]. The graph below illustrates the potential that exists for communities in keeping revenues in their local communities, by investing in local energy solutions.

[2] John A. Farell, Advantage Local, **Why Local Energy Ownership Matters** 2014 (Institute for Local Self-Reliance)

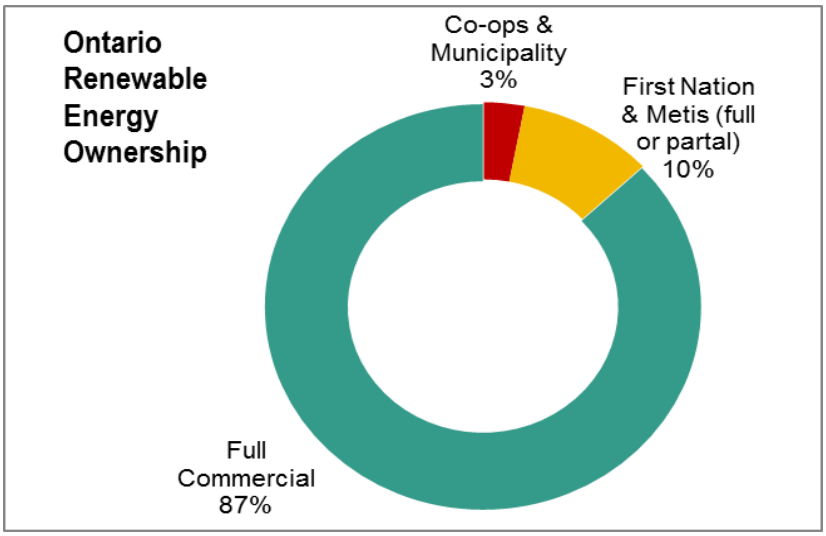


***Source: QUEST, Community Energy Planning** in Ontario: A Competitive Advantage For Your Community, June 2016*

5. **Empowers Communities:** By making use of the available resources in a local community, the system can directly support the local economy. But most importantly, the community gets to decide which resources to develop and which resources to leave untouched. Some of Ontario's communities have felt disempowered and disenfranchised by the GEA and the FIT rules, and *it is important to give the power back to the communities and to let them decide what energy sources and* technologies, within certain guidelines, of course, best meet their needs. Furthermore, there is an excellent opportunity to democratize the energy assets by allowing citizens to invest in and own/ co-own their local generation assets and energy projects. This is a concept that has been advanced effectively in Germany and Denmark, but even in Ontario, we have seen that many people are interested in investing in energy assets. According to the Federation of Community Power Cooperatives, despite a rather small percentage of total ownership (see graphic below), more than $84 million[3] have already been invested by individuals in local renewable energy projects through renewable energy co-ops across the province. The same

[3] The Power of Communities, TREC: http://www.trec.on.ca/wp-content/uploads/2016/06/TREC_Primer_Jun28_Approved_Final-LR.pdf

report clearly shows that the dollars invested through a co-op tend to stay in the community and generate greater economic value[4].



Source: TREC, Renewable Energy Co-op, The Power of Community, June 2016

6. **Removes social friction:** As outlined in point 4, empowering communities and local ownership of renewable energy assets will help eliminate social friction in and between communities[5].

[4] The Power of Communities, TREC: http://www.trec.on.ca/wp-content/uploads/2016/06/TREC_Primer_Jun28_Approved_Final-LR.pdf

[5] John A. Farell, Advantage Local, **Why Local Energy Ownership Matters** 2014 (Institute for Local Self-Reliance): https://ilsr.org/report-advantage-local-clean-energy-ownership-matters/

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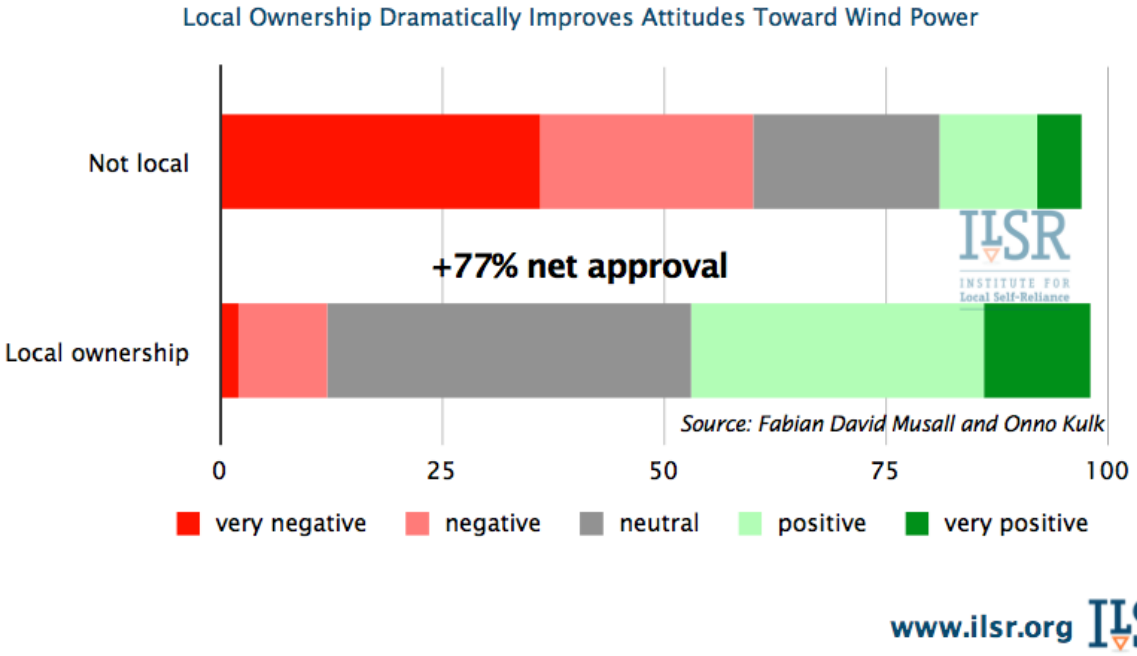

www.ilsr.org ILSR

A primary concern today is climate change, and the government of Ontario has initiated bold action to mitigate climate change and has set ambitious targets. To reach these targets, drastic measures are required, which also need to be reflected in the long-term energy plan.

OSEA strongly recommends that, given the economic benefits of localized and decentralized energy systems to communities, a full cost-benefits analysis of alternative, decentralized energy delivery models be included in all long-term energy planning for the province of Ontario.

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Environmental, economic and social performance indicators	Integrated, RE and microgrids based system	Centralized, baseload, not integrated	Comment
Effectiveness in reducing carbon emissions from entire energy sector	★★★	★★½	Effectiveness of the baseload approach to reduce GHG emissions depends on costly & slow penetration of electrification of thermal/mobility energy systems, immediate GHG reduction can be obtained by simple switching to RNG as fuel in transportation, heating & cooling.
Sustainable and long-term jobs growth stimulation	★★★★	★	Advanced economies are presently innovating, diversifying and decentralizing their energy systems, thus creating new jobs in research, development, operation and maintenance of these new systems.
Direct benefits to communities and local economic growth stimulation potential	★★★★	☆	Baseload systems have only direct positive economic impact on the few hosting communities, whereas distributed systems provide economic benefits through direct employment and ownership to all communities.
Overall lifecycle environmental performance	★★★½	☆	Massive global and local environmental and social impact of fuel mining, unsolved radioactive waste storage/disposal.
System flexibility and adaptability to uncertain demand develop	★★★★	☆	RE is dispatchable and microgrids can be build up incrementally and system can rapidly respond to changing demand situation not requiring overbuild to cover planning uncertainty, power-to-gas and renewable fuel based CHP offer maximum flexibility to manage summer & winter peak load in both thermal and electrical system.
Reliability and resilience of energy system	★★★★	★	System failure in bulk baseload system has widespread effects and often lead to massive blackout and require black starts more often.
Fairness and affordability of energy costs	★★★	★½	Decreasing cost of RE infrastructure and democratic, diversified ownership vs monopolized and therefore no cost competition and system efficiency gains.

2. Supporting the Vision of the Ontario Government

2.1. Reducing the Cost of Energy

Rising energy costs pose a problem for many families who live on low or fixed incomes. This issue is exacerbated in rural communities and for the elderly.

We, therefore, agree that we need to do more to help Ontarians with their rising cost of living. Some key solutions, some of which are already being proposed or implemented, are:

- **Create local jobs in the energy sector by supporting local energy production and the development of local energy assets.** This will help communities develop sustainable circular economies and decrease dependence on foreign investment and externalized cost, i.e. for waste management.
- Avoid significant infrastructure investments in times of uncertainty with regards to electricity demand trends. **The centralized bulk energy system is an outdated concept of the last century**. Investing and subsidizing a centralized power system and not taking advantage of the efficiencies that come with the real integration of all distributed energy forms will lead to high electricity costs and stranded assets.
- Focus on **improving the overall energy efficiency** of our power generation sector and link it to the real energy needs of Ontarians.
- Continue to support low-income households with rate subsidies. But, also, help all Ontarians to significantly decrease their total energy demand. It not only lowers the families' energy bills but also reduces the demand on our energy infrastructure. **Energy conservation must have equal priority with electrification of heating systems!**
- Support communities and provide incentives to generate their sustainable energy. This creates jobs (see the first point), local revenues for reinvestment, and ensures that communities are more resilient in light of increasingly severe weather events. Communities across Ontario are yearning for this opportunity. Community energy self-sufficiency, especially in remote and rural communities, decreases the need for extensive and costly transmission and distribution infrastructure investments and upgrades. **Help communities to help themselves and reduce costs for EVERYONE!**
- **Stop the amalgamation of LDCs** and support the return to community-owned LDCs who will drive innovation and the energy transition. The German experience has taught us that large LDCs can be expected to be unsupportive of embedded generation or Distributed Energy Resources (DER) since they tend to seek synergies and economies of scale through bulk procurement and distribution systems. Unless business models change, large utilities will not be interested in customized local DER solutions because these require additional administrative effort and expertise on their end. Large LDCs will turn to bulk energy suppliers instead, thereby effectively eliminating the opportunity for community-owned DER development (with all the economic benefits for the communities attached).[6]

[6] Energy Democracy, Craig Morris and Arne Jungjohann (2016)

2.2. Fighting Climate Change

Ontario has recognized the urgent need to respond to the threats of climate change by taking action towards reducing the province's greenhouse gas (GHG) emissions. In the recent past, the provincial government has passed legislation, and developed policies and action plans to support the province's goal to significantly and rapidly reduce GHG emissions. Together, these initiatives aim to effectively decarbonize the electricity system, the heating & cooling systems, as well as the transportation sector and industrial processes.

However, the Environmental Commissioner, Dr. Diane Saxe in her Special Report to the Legislative Assembly of Ontario[7], found that **none of the scenarios presented by the Independent Electricity System Operator and Navigant meet the provinces targets for greenhouse gas reductions**.

OSEA agrees with the Environmental Commissioner and supports the recommendation to "plan for an energy supply mix that enables Ontario to achieve its greenhouse gas targets." OSEA further recommends that the Ministry of Energy work very closely with the Ministry of Environment on Climate Change to better coordinate their plans and associated programs.

[7] Developing the 2017 Long-Term Energy Plan: A Special Report to the Legislative Assembly of Ontario, Environmental Commissioner of Ontario (December 2016): http://docs.assets.eco.on.ca/reports/special-reports/2016/LTEP-2016-Special-Report.pdf

3. The Reality of Energy Development Worldwide

Many progressive and pioneering jurisdiction around the world have recognized the economic and technological (i.e. higher system resilience and stability) advantages of distributed generation and are in the process of moving away from large centralized power generation.

In fact, in its 2016 Report "Innovating Urban Energy", the World Energy Council states: "the twentieth century model of centralized energy production and distribution by a limited number of actors is evolving into a data-driven, multi-directional, market-based platform where divisions between roles – producer, distributor, consumer – are becoming blurred and overlapping."

Worldwide, promising innovative low-carbon distributed energy systems based on renewable fuels are evolving. These require the adaptation of a bottom-up planning approach and the integration of community and regionally developed and controlled energy grids. Smaller utilities that have struggled under the centralized generation system are now being provided with an excellent opportunity to adopt new business models that deliver more flexible and cost effective products with higher value-added for their customers. Where natural gas infrastructure is available, these community and utility-owned systems often include combined heat power systems, making use of locally produced biomass, on-farm or municipal biogas, landfill gas, sewer gas, etc., initially supplementing and later replacing natural gas as fuel.

The complete replacement of natural gas and thereby achievement of carbon neutrality of thermal and electrical energy generation is envisioned by these progressive and innovative societies through the introduction of power-to-gas, i.e. the catalytic production of methane as universal fuel.

In any case, integrated and co-generating systems and infrastructure for electrical and thermal energy yield the most energy efficient and flexible systems[8]. Flexibility with regards to fuel type source (biogas, hydrogen, synthetic methane, etc.), energy storage and load management are built-in advantages. Recognizing that the automotive industry is also moving away from the concept of electrifying all traffic, by all means, makes such integrated systems even more economical. Market research by the automotive industry shows, that for larger vehicles fuels cell technology and gas and bio-fuelled trucks are much more likely to win the market penetration race.

[8] Linking Heat and Electricity Systems, International Energy Agency (IEA), https://www.iea.org/publications/freepublications/publication/linking-heat-and-electricity-systems.html

4. Concerns about the Approach to Long-term Energy Planning in Ontario

4.1 Current approach: Assume continued centralized energy delivery model

Recommendation: Communities are the key element to the solution.

Our communities hold the keys to the development of a low-carbon energy system that also supports local economic development. Communities should be mandated and supported to develop sustainable community energy plans. The goal should be to move towards regional and community energy self-sufficiency. This can be achieved through micro-grids, based on integrated district energy systems, residential solar PV, cogeneration, community-owned bioenergy, geothermal, and water power as well as community wind farms where economically feasible and socially acceptable.

4.2 Current approach: Top-down, centralized planning process

Recommendation: Taking a bottom-up and integrated approach to energy planning.

The ministry's approach seems to be built on the assumption that Ontario will continue to fill only temporary gaps in its supply with distributed generation and that the bulk electricity system will continue to provide baseload power to the system. It, therefore, takes on a top-down planning approach. This justifies the omission of a comprehensive analysis of the actual potential for distributed electrical and thermal renewable energy generation but it is contrary to observable trends, globally and also within the province itself.

Only a comprehensive analysis of the potential for a distributed system (or a bottom-up approach) will allow energy system planners to fully understand the aggregated effects that increasing privately-owned, distributed generation, energy conservation, storage, and community energy self-sufficiency will have on the future distribution and transmission systems.

4.3 Current approach: Alternative energy sources de-emphasized
Recommendation: Bioenergy – the untapped asset

Bioenergy is widely ignored in all planning documents, yet there is great potential for it across Ontario. Many Bioenergy technologies are very mature and range from landfill- and sewer-gas to anaerobic digestion of agricultural and food waste, to biomass combustion, all of which can be operated as Combined Heat and Power (CHP) plants, thereby providing maximum efficiency and flexibility to meet local peak demands for heat and electricity. Renewable natural gas is the essential linkage between the electrical, thermal, and transportation systems that are currently separately owned, controlled, and operated. Bioenergy technologies and processes

are also crucial to the future of commercial transportation and heavy trucking, one of the greatest sources of Ontario's GHG emissions.

4.4 Current approach: Communities develop local energy plans in isolation from central planning

Recommendation: Encourage integrated community energy planning and avoid the risk of stranded assets and resulting high electricity rates

Many communities are starting to understand the potential of using the development of local energy assets to meet local demand and as an opportunity to address concerns about reliability and cost head-on. More and more communities are considering or already developing their own Community Energy Plans that demonstrate a growing desire to become energy-independent and see the transmission grid becoming a source of backup support to the local system. If this trend results in the development of energy islands and micro-girds, the need for centralized electricity supply will decrease to a point where huge, unchecked investments into the continuation of the bulk power system will result in stranded assets and high electricity rates.

5. Call for an Analysis of Alternative Options

A comprehensive study of centralized nuclear and decentralized renewables should be undertaken to ensure that. The direction Ontario chooses to follow in this LTEP will lead to a future that Ontarians want, need and can afford.

The Conference Board of Canada calculates that the Darlington Generating Station refurbishment will create an economic multiplier of 1.3[9] (2015) or 1.4[10] (2016) but no information is available on how sensitive this number is to cost overruns.

The numbers we have for distributed renewable systems provide the following picture: The US Department of Energy in its study "US Energy and Employment Report 2015"[11] found that solar created 8.3 jobs per thousand MWh. We do not know if the US numbers are entirely applicable to Ontario, but a clear trend of better job creation from renewables is clear. Furthermore, a study of Ontario's co-op sector by the Federation of Community Power Cooperatives[12] found that co-op sector investments offered an economic multiplier of 2.01.

Generator	**Nuclear**	**Wind**	**Solar**	**Bio Energy**
Generation amount (thousand MWh)	727544	170602	36171	58620
Jobs	42909	77088	300192	19559
jobs per thousand MWh	0.06	0.45	8.30	0.33

Source: http://energy.gov/sites/prod/files/2016/03/f30/U.S.%20Energy%20and%20Employment%20Report.pdf

[9] Refurbishment of Darlington Nuclear Generating Station, The Conference Board of Canada (November 2015): http://www.opg.com/generating-power/nuclear/stations/darlington-nuclear/darlington-refurbishment/Documents/CBCDRP-EconomicAnalysisReportFINAL.pdf

[10] Continued Operation of the Darlington Nuclear Generating Station: An Impact Analysis on Ontario's Economy (October 2016): http://www.opg.com/generating-power/nuclear/stations/darlington-nuclear/darlington-refurbishment/Documents/CBOC-DarlingtonContinuedOps_ImpactAnalysis.pdf

[11] US Energy and Employment Report 2015: http://energy.gov/sites/prod/files/2016/03/f30/U.S.%20Energy%20and%20Employment%20Report.pdf

[12] The Power of Community, FCPC: http://www.trec.on.ca/wp-content/uploads/2016/06/TREC_Primer_Jun28_Approved_Final-LR.pdf

Because Germany has committed to and is in the process of, nuclear decommissioning it provides an excellent source of information on the economics of investing in renewable energy. In 2013, Germany reported that it required €182,000 ($254,800 CAD) of investment to create one job in the turnover of equipment and capacity of renewable energy[13].

The nuclear refurbishment will create 8,800 jobs[14]or 14,200 jobs[15], depending on which report by the Conference Board is being consulted. According to the Conference Board of Canada, for an investment of $12.8 billion, this would mean a cost of $1,454,545 per job or $901,000 per job, respectively.

If $12.8 billion were invested in renewables, the German numbers suggest that we could create 50,196 local jobs. Furthermore, by comparing the economic multipliers of Ontario renewables versus nuclear, OSEA believes there is a 43% better return on investment from renewables.

Another consideration that Ontarians do not have is how the refurbishment will affect the global adjustment[16], which is the fastest growing portion of ratepayer bills.

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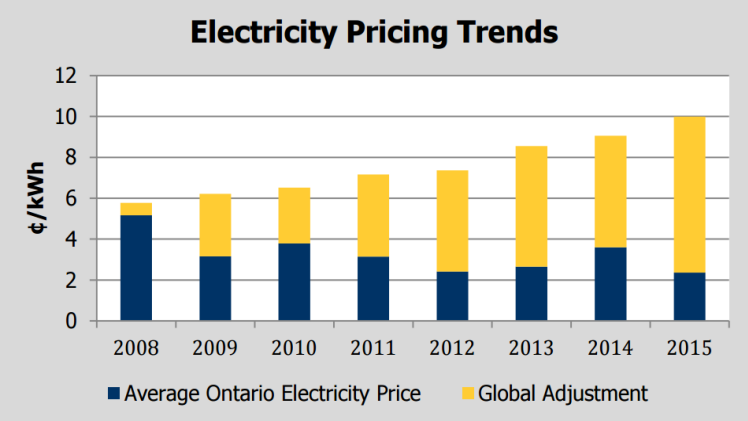
[13] Gross Employment from Renewable Energy in Germany in 2013, Federal Ministry of Economic Affairs and Energy: https://www.bmwi.de/English/Redaktion/Pdf/bericht-zur-bruttobeschaeftigung-durch-erneuerbare-energien-jahr-2013,property=pdf,bereich=bmwi2012,sprache=en,rwb=true.pdf

[14] Conference Board of Canada: http://www.conferenceboard.ca/press/newsrelease/15-11-23/refurbishment_of_darlington_nuclear_generating_station_would_boost_economic_activity_and_employment.aspx

[15] Continued Operation of the Darlington Nuclear Generating Station: An Impact Analysis on Ontario's Economy (October 2016): http://www.opg.com/generating-power/nuclear/stations/darlington-nuclear/darlington-refurbishment/Documents/CBOC-DarlingtonContinuedOps_ImpactAnalysis.pdf

[16] Understanding Global Adjustment, IESO (2016): http://www.ieso.ca/Documents/Understanding_GA_Jan_2016.pdf



Source IESO understanding the global adjustment January 2016

OSEA brings these points up because there is not enough information from the Ministry of Energy on how the nuclear refurbishment will affect Ontario, and if it is the correct course of action. Nuclear refurbishment may be the best choice, but that can only be determined by a comprehensive and publicly available cost/benefit analysis of the economic, social, and environmental factors around a centralized or decentralized system. There are multiple jurisdictions around the world that are natural laboratories for these kinds of questions. Germany, Japan, the United Kingdom, and the United States can teach Ontario what will happen if we choose nuclear or distributed renewables. Because the decision for nuclear refurbishment will lock Ontario into a centralized bulk supply systems for decades to come, it is one that must be made with eyes open.

OSEA, therefore, recommends that a thorough analysis is done on the trends within the energy sector and the cost and benefits of the alternatives. OSEA has been working on a study entitled "Combined Energy Options Ontario" that would lend itself well to this undertaking.

5.1. Introducing the Combined Energy Options Ontario Study

The Combined Energy Options Ontario project has been proposed by OSEA in partnership with the German Fraunhofer Institute IWES, and several Ontario Academic Institutions. The research project will provide Ontario's energy planners with a proven framework for detailed analysis, planning, and integration of ALL of Ontario's energy needs to establish a pathway and model for a 100% sustainable, low carbon, combined energy system in Ontario.

The study, and its results, documentation, and models will:

- help us understand how and under what circumstances such an energy system can be realized,

- investigate economic, environmental, and societal opportunities,
- identify technological and political barriers to implementation,
- support public communication and education of our politicians and civil servants about the potential for and opportunities of such an energy future.

A primary objective of the CEOO study, therefore, is to jointly arrive at an understanding of how this new vision can be realized, what behavioral changes it requires, and what the social and economic impacts will be. Furthermore, the findings and analysis will help make evidenced-based decisions when developing Ontario's Long-Term Energy Plans.

6. Innovation and Economic Growth

Innovators and start-ups cite a significant dearth of risk capital available for new and novel technology development that is non-internet related, which is further amplified by a lack of market opportunities within Canada to test new technologies.

OSEA would, therefore, like to point out that technology innovation by start-up firms is a key driver of new manufacturing and export businesses and that, support for smaller renewable energy projects offer a variety of opportunities to showcase Ontario companies to the global market. Furthermore, the implementation of renewable energy systems can also spawn further innovation. For example, CHP is driving R&D for biomass fuel drying, condensing heat recovery, and gasification.

Moreover, there are many opportunities to enable innovative business models for the sale of excess energy generated by buildings**.** For example, if a building is generating excess heat allow the sale of the heat to neighboring buildings or third parties.

7. Clean ENERGY Supply

Any serious Long-term Energy Plan must consider and take an integrated look at thermal, electrical and energy for mobility. From the discussion guide and the consultations, it seems that the Ministry has finally recognized that energy is not electricity alone, which is a welcome shift. However, we urge the Ministry not to lose sight of this crucial aspect, and we point out that:

- at the Ontario household level (transportation not included) only 28% of the energy consumption is electricity; the remaining 72% is heat[17], of which 89% are non-renewable and GHG emitting;
- by shifting its approach to the larger energy sector, Ontario can make large gains to its GHG reductions at the household level, which will see positive climate change actions and engage citizens to take part in the transition;
- Ontario can engage citizens and reduce household GHG emissions by supporting renewable heat sources as alternatives to natural gas. The options for renewable heat are bioenergy (including renewable natural gas), solar, ground or air sourced heat pumps, and deep geothermal.

[17] Statistics Canada: http://www.statcan.gc.ca/pub/11-526-s/2013002/t003-eng.htm

8. Regional Planning

The Integrated Regional Resource Planning (IRRP) process included three distinct scenarios. In addition to the "wires only" Deliver Provincial Resources solution, the IRRP also identified two additional scenarios: Centralized Local Resources, large, localized generation and Community Self-Sufficiency, conservation and small-scale distributed resources.

Scenarios are a starting point used to test the robustness of actions against the uncertainty in the future. And the best plans are a combination of steps, which reflect unique, local situations that are drawn from the scenario(s) discussion.

The current IRRP process chooses to see the scenarios as distinct alternatives in opposition, for the most part, to one another. Also, the urgency of the near term deflected any substantive discussion on the scenarios and their medium or long-term implications and/or feasibility for the regions in the discussion.

Consequently, Local Advisory Councils (LAC) groups were constantly frustrated in providing a meaningful, long-term perspective and contribution.

In this regard the regional planning process, specifically, the IRRP component was not successful.

Going forward, in line with OSEA's broader recommendations specifically, "Communities are the key element to the solution." We recommend that a revamped regional planning process starts with the assumption that Community Self-Sufficiency is the desired end-state and that any wires only or centralized, local generation are in the service of achieving this end state.

This approach will:

1) naturally, lead to the acceptance of the growing use of electricity anticipated in the Climate Action Plan,
2) minimize the need for transmission corridors, expected in this document's question for consideration and, and
3) result in greater community acceptance of trade-offs required, such as the need for reserved/set-aside corridor lands.

When "communities are the key element to the solution," as OSEA proposes, communities take on ownership of the solution, reducing the social friction that may be associated with necessary trade-offs that, in the end, lead to Community Self-Sufficiency as defined in the IRRP process.

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9. Conclusion

As part of our pre-consultation, OSEA surveyed its membership to identify the key areas of consideration for the next Long-term Energy Plan. These factors were included in our pre-consultation submission in June 2016. The following key recommendations had been identified by our membership:

1. Any future Long Term Energy Plan should be based on a publicly available, transparent, and full lifetime feasibility and cost analysis of the most sustainable technology and policy options.
2. Define clear, ambitious energy conservation and GHG emission reduction targets in the LTEP for all economic sectors and government agencies in line with Canada's commitment to the Paris Agreement.
3. Improve stability and predictability of renewable energy procurement programs for all participants.
4. Design the regulatory process to support and simplify the economic participation of the communities hosting the projects.
5. Change building code to include mandatory and ambitious energy efficiency standards for new buildings.

In closing, we would like to reiterate that, to be as effective as possible, the 2017 Long-term Energy Plan needs to take a(n):

- Bottom-up approach: Community driven
- Integrated approach: Advances synergies between technologies for maximum efficiency
- Evidence-based approach: A full, public analysis of alternatives

On behalf of the OSEA membership, I would like to thank you for your consideration.

Best Regards,

Nicole Risse
Executive Director