

## Report on the Generation Energy Workshop

Montreal – August 17, 2017



## SUMMARY

On August 17, 2017, officials from Natural Resources Canada joined Écotech Québec in welcoming some 70 participants representing clean technology companies, public services, non-governmental environmental organizations, research and financial institutions, as well as participants in the **Your Energy Future** program in connection with the **Generation Energy** workshop. After a few words of welcome from Denis Leclerc, President and CEO of Écotech Québec, then opening remarks were made by Judith Bossé, General Director of CanmetÉNERGIE research centre in Varennes, and the workshop was led by Carol-Ann Brown, Senior Director of The Delphi Group.

### **WORKSHOP OVERVIEW**

The workshop provided an opportunity to address a number of questions:

1. What does Canada's long-term energy future look like?
2. What generational goals should we be trying to reach and what should be our guiding values?
3. What tools and what benchmarks will guide us along that path?

### **MAIN HIGHLIGHTS**

Common among the various subjects addressed were the following general principles:

- The importance of having access to reliable, quantified, and up-to date data to facilitate decision-making.
- Understanding the differences between the provinces and territories' needs and energy mixes.
- Giving priority to Canada's goals to reduce carbon emissions and achieve a low-carbon economy.

#### **The following values were considered important to Canada's energy future:**

- Consistency between policies and initiatives (application of the polluter pays principle)
- Courage and leadership
- Realism
- Sustainable development and shared prosperity
- Intergenerational fairness
- Inclusivity and accessibility of energy alternatives
- Sharing (of good practices and intellectual property)
- Flexibility
- Consumer awareness (with respect to the impact of their choices on the environment, appreciating spiritual wealth over material richness)
- Daring and openness to innovation (room for error in risk-taking)
- Competitiveness and fair treatment among the various energy sources

## **TAKEAWAYS**

### **Subject 1. Finance: how to fund energy transition**

- Internalize carbon costs
- Encourage decentralized electricity-producing projects (from \$0 to \$10M) by financing them at the same rate as the large utility companies.
- Provide government-loan guarantees to large-scale renewable energy projects (analysis to be done by financial institutions in compliance with government criteria).
- Scandinavian model: set up financial incentives (through commitments/taxes) for oil companies investing in innovation/renewable energies projects.
- Favour investment in green bonds which increase the social acceptability and the use of renewable energies.
- Improve standards for investment in green funds.

### **Subject 2. Interprovincial – and international – cooperation in energy policies, from coast to coast and back**

- The strong and respectful federal leadership demonstrated at the COP21 is a good example of what is expected of provincial and territorial governments.
- This Agreement must be implemented by initially setting flexible goals that take the provinces' rural and urban realities into account and that can be more precisely defined at a later point in time.
- The integration of markets and the harmonization of regulations and certifications are both essential to interprovincial and continental cooperation.

### **Subject 3. Energy decentralization and storage**

- Electricity is presently so inexpensive that there is little incentive for innovation and temporary storage with a view to resale to the network is not lucrative.
- In the Canadian context, decentralization of production is the best way forward to promote the growth of renewable energies, with prudent network management becoming a necessity.
- In order to harmonize production and consumption, storage capacity will be a critical issue.
- Innovations are necessary to reduce the cost of storage solutions, which will require financing to support the riskier stages of development; a more efficient collaboration will be needed between universities and industry to better support the technology transfer.
- In order to further harmonize energy demand and supply, production at the community and municipal levels may be required.
- The public energy services business model will have to adapt and take the infrastructures (assets surrendered and stranded costs) associated with energy transition into account.
- Decentralizing energy production will require a better continental integration, which can only be realized in a secure climate.

### **Subject 4. Replacing fossil energy consumption with renewable energy**

- Following the example set by France, Norway, and the U.K., Canada has set out to eliminate all gas-powered vehicles by 2050.

- The use of coal and gas is also set to be eliminated from electricity production by 2050, and no further construction of fossil fuel powered electric power plants is to take place as of 2020 in order to account for power plant construction amortization.
- Binding and progressive goals must be defined respecting biofuel content and the sector using it. Example: the market-based action proposed through the International Civil Aviation Organization for an increasingly carbon-neutral international civil aviation industry beginning in 2020.
- Requiring that some products carry a “carbon label” indicating the amount of energy consumed / carbon generated during the product’s useful life in order to increase consumer awareness.
- Forest and agricultural waste sources should be utilized to position Canada as a major exporter of biofuels.

## **Subject 5. Transportation: technology and changing behaviours**

- With respect to the transportation of people, solutions such as telecommuting, car-pooling, transitioning to electric vehicles and integrating charging infrastructures, promoting active transportation and further adapting on-demand public transportation (size of buses, real time information) are some of the possibilities being explored to reduce this sector’s energy consumption and carbon footprint.
- With respect to the transportation of goods, the ASI (*Avoid-Shift-Improve*) approach is recommended. Road regulations and road pricing are some of the options to be considered, particularly in heavy traffic areas.  
(<https://www.cpq.qc.ca/wp-content/uploads/2017/03/etude4prosperite130317-sommaire.pdf>)
- The impact of automated driving and smart vehicle communication systems on the incidence of traffic accidents and road congestion remains to be assessed.

## **Subject 6. Energy efficiency**

- With respect to energy efficiency, special attention must be paid to the planning of upstream projects (ex.: buildings, industry, infrastructures) based on real and future energy costs.
- Efforts to update and harmonize standards with respect to energy efficiency, both nationally and continentally, are to be commended.
- Cooperative model: while housing co-ops have been the focus of specific energy efficiency programs, Coop Carbone’s business model, which aligns the interests of both fuel users and distributors, is of particular interest in the context of cross-Canada carbon pricing.

## **Subject 7. Circular economy**

- The circular economy aims to reduce consumption of materials that create waste and to create value for such waste, for instance, by converting them into biofuels. Sweden imports approximately 800,000 tons of waste per year to supply incinerators through which heat and electricity are retrieved.
- This could lead to a considerable reduction of dump sites by 2050 (only 4% of garbage in Sweden ends up in dumps).
- Life-cycle analyses remain important to avoid market deviations.

## **CONTRIBUTIONS BY VARIOUS STAKEHOLDERS**

### **Governments:**

- Bringing government policies into alignment by placing energy under the purview of the Department of Economic Affairs, as is the case in Germany or Scandinavian countries.
- Making the necessary data available (statistics and life-cycle data) to ensure the applicability and efficiency of policies being proposed, for instance, those concerning the regulation of energy costs (internalization of carbon costs).
- Encouraging consensus through interprovincial engagements, such as **Your Energy Future**.
- Establishing scalable standards by 2050.
- Offering programs to encourage innovation and the marketing of innovation in clean technologies.
- Establishing public policies today to ensure the predictability of regulatory and fiscal environments.
- Speeding up and simplifying government procedures regarding energy transition.

### **Companies:**

- Their goal: to create value for their stockholders, their clients, and their employees.
- Drive innovation, agility and rapid response in the face of increasingly stringent requirements with respect to regulations and incentives aimed at energy transition.
- Geographically diversified companies are important allies in interprovincial/continental collaboration on energy matters.

### **Universities/Research:**

- Universities play an important role in making available the statistical data needed to ensure the applicability and efficiency of policies being proposed.
- They are also play an important role in developing the technologies needed to market clean energies.

### **The public:**

- Citizens play a key role as consumers of goods and services who are responsible for their lifestyle choices and behaviours, as investors, as voters and taxpayers, and as workers.
- They yield influence in terms of support for regulations governing energy efficiency and renewable energy.
- Education and information (ex.: carbon labelling, applications to measure the production of waste materials and greenhouse gas emissions of individual households) are important to help guide individuals' choices.
- A study on carbon budgets or allocations per household would be useful.
- Public organizations play an important role in transmitting messages, educating various actors and highlighting achievements in energy efficiency and the transition towards renewable energy sources.