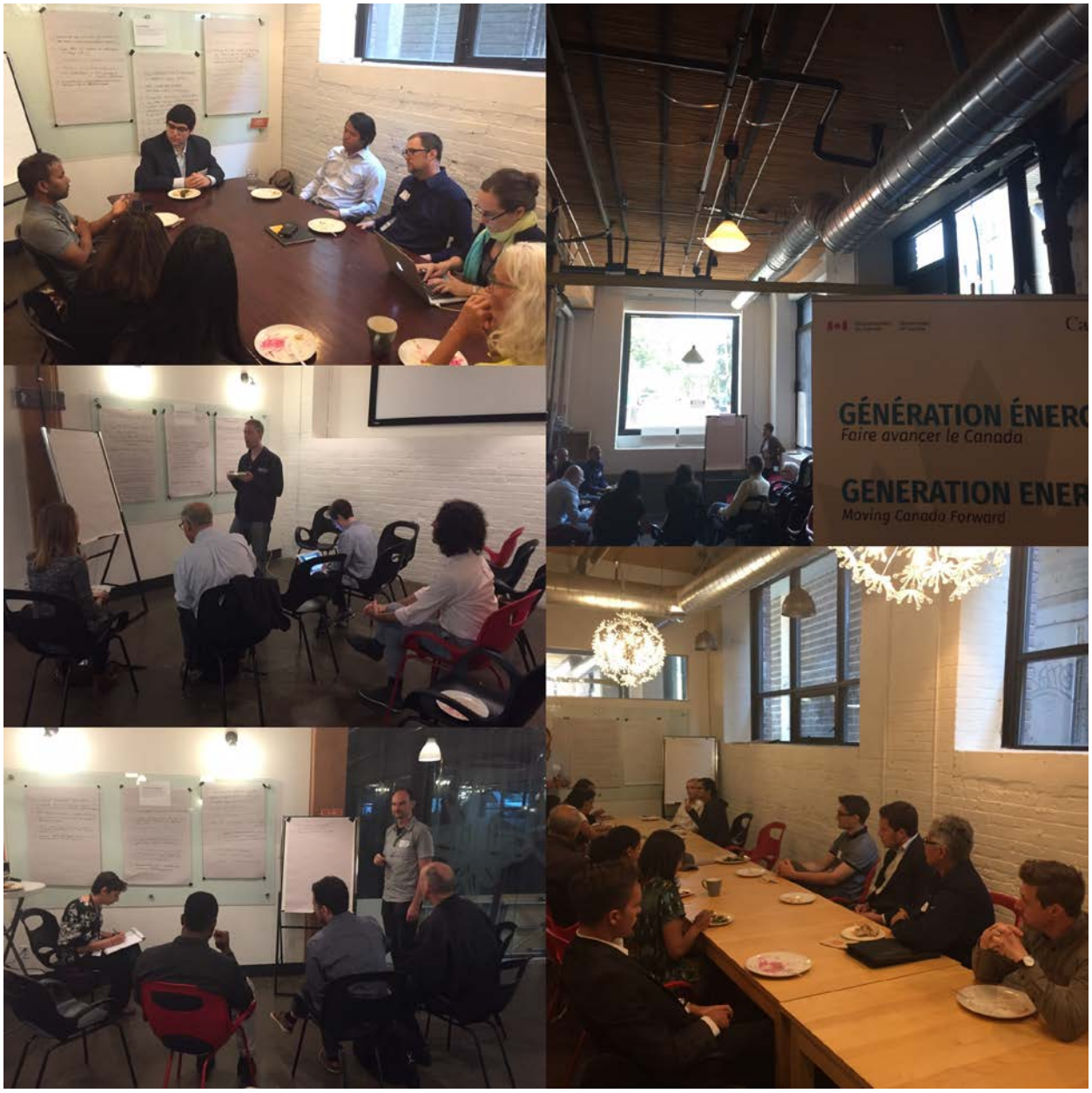
GENERATION ENERGY
The Conversation Continues

Generation Energy Workshop Report

Toronto, Sept. 11, 2017, Centre for Social Innovation



Executive Summary

On September 11, officials from Natural Resources Canada joined the Centre for Social Innovation in welcoming over 100 attendees from the environmental and social impact sectors to a workshop and panel discussion on the opportunities and challenges for Canada's low carbon energy future. Opening remarks were provided by Adil Dhalla, Executive Director of the Centre for Social Innovation, and Paul O'Keefe, Senior Policy Advisor at Natural Resources Canada.

Workshop Overview

The event consisted of:

- **Activity 1:** To scope the conversation participants identified opportunities and challenges: Market Transformations, Behaviour Change, Policy Change, Capacity Building, and Platforms (infrastructure, networks, systems, etc.). All participants then voted on the opportunities and challenges they felt were most important.
- **Panel discussion:** "What it will take for Canada to transition to a clean energy future, from community participation to policy innovations to new business models." The panel was moderated by Sandra Odendahl, Board Chair of The Atmospheric Fund, and included Trish Nixon, Chief Impact Investing Officer at CoPower; Bernie Li, advisor, investor and solar entrepreneur; and Alex Gill, Executive Director of the Ontario Environment Industry Association, and Social Innovator in Residence at Ryerson University's Social Ventures Zone.
- **Activity 2:** Facilitators formed five groups around Market Transformations, Behaviour Change, Policy Change, Capacity Building, and Platforms, and led discussions on the opportunities and challenges that surfaced in Activity 1.

Key Takeaways

- The government has a role in creating an enabling environment that incentivizes investment in a low carbon energy future. -
- Making energy consumption data readily available and accessible would help educate end users about their energy behaviours, and help the ecosystem create new solutions and business models that can optimize behaviours.
- The government has a role in funding programs that will develop entrepreneurs who can start innovative, new companies in the energy sector, but oftentimes the process to access these programs can be too burdensome for SMEs.
- There are opportunities to integrate existing infrastructure (e.g., using heat from wastewater for other usages) but systems and their managers often operate in silos, preventing collaborative or new solutions from being identified, tested and implemented.
- Open data came up many times as a way to spur and accelerate innovation, and to allow more people to participate in and propose solutions to energy systems.
- Policy should consider all costs (externalities) and implications on communities, and take account of differences that exist between jurisdictions and how policy may need to be adapted for different contexts.
- The government should end subsidies to fossil fuel industries, and create the right conditions for an energy transformation by, for example, putting a price on carbon.

Full Summary

Market Transformations:

The first activity surfaced the following opportunities and challenges:

Opportunities:

- Green Bonds
- Emissions trading (inter-provincial)
- Moving towards a smart, decentralized energy generation model (versus centralized grid)
- Enabling/encouraging institutional investors (banks, insurance, pensions) to invest in cleantech to accelerate industry
- Community power generation
- On-bill financing and rebates for low carbon retrofits

Challenges:

- Ensuring that government support for carbon-free development is properly and effectively distributed
- Encouraging growth of carbon-free development without creating unsustainable burden on public resources (i.e. Attracting the most private capital per public dollar invested)
- Legacy systems and regulations; resistance to change
- Getting business to think in terms of “steady state economy”
- Moving from global energy systems to local energy systems, but power and money - haven’t shifted (local governments in Canada lack power) -
- Lack of support for early stage start-ups
- The government should focus on creating the general ecosystem for sustainable energy businesses rather than choosing winners or losers

Members of the panel put forward that the government should create an enabling environment to incentivize investment, and that it should create the right conditions for an energy transformation but not try to pick winners.

The Market Transformation group discussed decentralizing energy generation, and the opportunity to attract funding through the offering of green bonds. A main challenge seen by the group was to push the government to commit to developing a carbon-free energy model, and it was perceived that powerful interests from corporations are holding back the development of decentralized, community-based energy systems.

Behaviour Change:

The first activity surfaced the following opportunities and challenges:

Opportunities:

- Show environmental impacts related to specific actions/behaviours close to real-time
- Define an inspiring vision of 100% renewable energy use and 100% renewable resources

- Greater detail, clarity and transparency on energy bills (including anonymous data on neighbourhood/community use to encourage conservation)
- Greater education and awareness around importance of environment to well-being, both economic and social
- Educate people on economic competitiveness of clean energy to combat perception that change is expensive
- Empower youth to participate in changing energy systems
- Integrate traditional ecological knowledge

Challenges:

- How to move citizens to participate in green energy evolution
- How do you motivate people (who sometimes do not care)? Culture behaviour change takes time

Members of the panel suggested the government should ensure that the full costs (including environmental costs) of energy production are accounted for and publicized, and that it has a role in gathering and sharing independent evidence and information. Making energy consumption data available would help educate end users about their energy behaviours, and help the ecosystem create new solutions and business models that can optimize behaviours. The government is in a position to act as a powerful convener of people and ideas.

This group discussed education as being a key component to shifting energy systems, and that it can create deeper change but takes time. It was suggested that the environment be integrated into all aspects of education to create a new lens for looking at the world. The role of the nonprofit sector in contributing to developing school curriculums was explored, citing examples such as Let's Talk Science. Different approaches to education and teaching in the classroom were talked about such as having students define their values, explore different life experiences in the community, question the impacts of energy generation on other communities, and linking important points to their own experiences. It was pointed out that the education system tends to make actions and personal responsibilities seem easy (for ex. recycling and taking short showers) but there are many problems and complexities we don't talk about or deal with, such as industrial pollution vs. consumer waste.

The role of data being accessible came up again as a way to provide individual as well as neighbourhood or community level usage information helping people make decisions and be aware of usage in both residential and commercial settings. Several studies were referenced in which people's energy usage decreased when they could more readily see their consumption, for example by having meters at the front of the house rather than in the basement.

Capacity Building

The first activity surfaced the following opportunities:

Opportunities:

- Help empower entrepreneurs (especially youth) to innovate in energy space
- Empower communities to build local sustainable energy generation
- Empower youth to feel like they can contribute to discussion/solutions

- More training/access for GHG inventory/assessment, and funding for renewable energy co-ops, local energy generation and distinct energy systems, ground source heating/cooling and/or geothermal systems
- Greening of public lands to grow food and clean air; teach regenerative design

Members of the panel spoke of the government's role as a funder of incubators that develop entrepreneurs who can start innovative, new companies in the energy sector. It was also brought up that many programs set up by government to help SMEs and social enterprises require them to jump through so many hoops that they impose opportunity costs that smaller organizations can't afford, hence a lot of that support goes to large companies and organizations that don't necessarily need it.

This group discussed the importance of helping entrepreneurs understand the funding ecosystem and helping them access capital at different stages. The group pondered how to better open up crowdfunding to energy initiatives, and if there were opportunities for government and corporations to offer matching funding to crowdsourced funding, in order to involve and educate the public, and spur innovation.

The group discussed ways in which energy companies could share their knowledge (open sourcing) with communities building local energy systems, for ex. GreenXChange, a collaboration between Creative Commons, Nike and Best Buy. The group also asked the questions, how do we ensure equal access to information, for example in remote areas where internet speed is slow, and how do we make sure knowledge of existing solutions with data from around the world are discoverable so we can learn from and adapt them? Idea of pairing communities, to create sister communities for mentorship and mutual support, was also discussed.

Platforms

The first activity surfaced the following opportunities:

Opportunities:

- Platform with list of all energy projects with needs-financing, technology, land requirements, constructions with goal to engage local communities to get involved and create sustainable employment
- Decentralized power grid to allow local communities to come together to create local sustainable power generation
- Open APIs for monitoring and participating in energy grid
- Integrate existing infrastructure i.e. use waste heat from waste and underground systems, use storm water as energy rather than finding/building structures to get rid of it
- Focus a platform on energy storage to complement renewables and connect electric vehicles that interact on grid along with home energy storage

Platforms were defined by this group as both physical and political infrastructure. The group discussed opportunities to integrate existing infrastructure, for example by putting heat from wastewater to other usages. The group felt that systems and their managers often operate in silos, which prevents collaborative or interdependent solutions from being identified, tested and implemented. It was suggested that more open data would allow more people to participate in

and propose solutions to energy systems. The group pondered what an economic model not driven by shareholders in large corporations would do for energy, and in particular community run energy systems.

The group discussed the opportunities of having smart grids, and developing storage solutions to be paired with new or developing renewable technologies. The example was given of using the storage capability of electric vehicles as a way of providing power during peak demand hours. However, a challenge is that such a system requires a lot of coordination, for example between car manufacturers and utility companies.

Policy change

The first activity surfaced the following opportunities and challenges:

Opportunities:

- End fossil fuel subsidies
- Ensure policies are in place to allow for individual and community power generation
- Look to best practices and most effective policies globally for achieving transformation to 100% renewable energy + 100% renewable resources.
- Use sustainable procurement in government

Challenges:

- No policy work on planned phase out to fossil fuel infrastructure. Risk for consumers and investors if it happens in uncontrolled way
- Remove politics from planning, leaving to experts to determine what is most cost efficient and environmentally sound based on empirical data
- Much more emphasis on energy efficiency

Participants in this group agreed that the government should end subsidies to fossil fuel industries, and agreed with the panel about creating the right conditions for an energy transformation by, for example, putting a price on carbon. They discussed how government will need to manage displacement of labour from fossil fuels to green energy sector, and how it could create incentives for people to switch or install solar panels on their homes.

Participants felt the government should think long term about where we need to be and plan for the transition, but political cycles make this difficult. They felt government could do a better job of communicating true costs to people and the environment of current system in order to prepare people for the costs and benefits of transforming our energy system. Policy should consider all costs (externalities) and implications on communities, and take account of differences that exist between jurisdictions and how policy may need to be adapted for different contexts.