Energy Efficiency Advisory Panel
Technical Session – Community Energy Systems – August 23, 2016

SESSION SUMMARY

Community Energy System Technical Sessions

Tuesday, August 23, 2016
8:00 am – 12:00 noon
Wales Room, Federal Building
9820-107 Street NW, Edmonton

Intended Outcomes

- Participants understand the mandate and scope of the Energy Efficiency Advisory Panel, the proposed Energy Efficiency Alberta agency, and the Alberta Climate Change Office.
- Participants understand opportunities for future input.
- Participants feel their perspectives on financial and other enablers for community energy systems in Alberta are heard and understood.
- Panel members are more aware of what participants view as effective enablers as well as some of the rationale underlying participant thinking.

Agenda

8:00 am Arrival and Refreshments

8:30 am Welcome and Introductions
Context Setting
Discussion
- Enablers of Community Energy Systems in Alberta (e.g. micro- and small-scale generation)
- Effectiveness of Enablers
- Potential Timelines and Responsibilities Regarding Enablers

11:45 am Wrap-up and Closing Remarks

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1. **Identify potential enablers – financial, technological, educational, regulatory, and other – that could encourage adoption of micro- and small- scale generation in Alberta.**

Financial

- Government grants, subsidies and/or incentives
- Third party financing
- Production based incentives
- Financial security (e.g. guaranteed rate of return, long-term low interest loans, PACE)
- Standard offer program
- Guaranteed long term low interest loan
- Solar Renewable Energy Certificates, enhanced offset protocols, and DTS credits
- Preferential tax treatment (e.g. corporate tax)
- Municipal tax certainty (e.g. Property Assessed Clean Energy (PACE))
- Revenue enhanced mechanism stream e.g. Demand Transmission Service (DTS) credits
- Allow carbon levy exemptions
- Provide continued innovation funding and support

Technological

- Make the approval of new technologies easier

Educational

- Need continued funding for research and development in Alberta
    - Encourage private companies / corporations / post-secondary with funding
    - Promote collaboration with corporations and universities
- Support ongoing educational programs (e.g. for insurance companies, lawyers, inspectors, schools) with a focus on environment in Alberta
- Provide marketing, education and outreach

Regulatory

- Streamline the regulatory process
- Advance codes and standards
- Change Microgeneration regulation
- Change rate structure – i.e. consumption based
- Target high energy users in the early phases, low-hanging fruit markets (e.g. MUSH sector)
- Decouple generation from the load (e.g. hospitals can support load on site)
- Accelerate the phase out of coal
- Get insurance companies to support micro-generation
- Have better access to expertise (e.g. engineering, economics, feasibility, etc.)
- Permitting
- Enable off-site ownership (coop or corporate ownership)
- Policy for geothermal and combined heat and power
- Clarify distributor rules for connections

Other

- Smart rate and tariff design (virtual net metering)
- Generate distribution system map to identify ideal project zones and provide incentives for projects in ideal zones
- Enable a Performance based system
- Support virtual aggregation of projects (deductive metering)
- Support energy storage for reliability
- Connect generation providers and consumers
- Enable smart metering and virtual billing
- Scale projects to grow with load
- Identify measurements of success
- Add more transformers (i.e. digital transformers to accommodate varying loads especially peaks)

2. Which of these enablers identified does the group feel would be most effective in encouraging adoption of community energy systems and why?

Enabler
Support energy storage for reliability
Change microgeneration regulation
Allow carbon levy exemptions
Provide marketing, education and outreach
Identify measurements of success
Smart rate and tariff design (i.e. virtual net metering)
Solar Renewable Energy Certificates, enhanced offset protocols, and DTS credits
Financial security (e.g. guaranteed rate of return, long-term low interest loans, PACE)
Production based incentive
Third party financing
Permitting
Enable off-site ownership (coop or corporate ownership)
Generate distribution system map to identify ideal project zones and provide incentives for projects in ideal zones
Policy for geothermal and combined heat and power
Accelerate the phase out of coal
Clarify distributor rules for connections
Have better access to expertise (e.g. engineering, economics, feasibility, etc.)
Provide continued innovation funding and support

3. Of these effective enablers, which of them does the group think could be launched within the next year, which would take two years, which would take three or more years?

Enabler	# of Years
Provide marketing, education and outreach	1
Clarify distributor rules for connections	1
Allowance of combined heat and power	1
Have better access to expertise (e.g. engineering, economics, feasibility, etc.)	1

Enabler	# of Years
Enable off-site ownership (coop or corporate ownership)	1
Provide continued innovation funding and support	1
Financial security (e.g. guaranteed rate of return, long-term low interest loans, PACE)	1-2
Solar Renewable Energy Certificates, enhanced offset protocols, and DTS credits	1-2
Change microgeneration regulation	1-2
Generate distribution system map to identify ideal project zones and provide incentives for projects in ideal zones	2
Production based incentive	2
Policy for geothermal and combined heat and power	2-3
Support energy storage for reliability	2-3
Permitting	3
Smart rate and tariff design (i.e. virtual net metering)	3
Identify measurements of success	3
Accelerate the phase out of coal	3

4. Which of these enablers should be administered by the Agency?

- Provide marketing, education and outreach
- Support energy storage for reliability
- Identify measurements of success
- Have better access to expertise (e.g. engineering, economics, feasibility, etc.)
- Generate distribution system map to identify ideal project zones and provide incentives for projects in ideal zones
- Geothermal transmission investment
- Financial security (e.g. guaranteed rate of return, long-term low interest loans, PACE)
- Production based incentive
- Third party financing
- Permitting
- Smart rate and tariff design (i.e. virtual net metering)
- Solar Renewable Energy Certificates, enhanced offset protocols, and DTS credits

5. Of the enablers not identified as being administered by the Agency, who should be responsible for administering or championing them?

Enabler	Who Should Administer
Support energy storage for reliability	Industry AESO Distribution Company Government of Alberta
Policy for geothermal and combined heat and power	AB Energy
Continued innovation funding and support	Economic Development, Alberta Innovates
Clarify distributor rules for connections	AB Energy, AUC, Distribution Company
Marketing, education and outreach	AUC and retailers

Enabler	Who Should Administer
Smart rate and tariff design (i.e. virtual net metering)	AB Energy AUC Federal Government Industry
Change microgeneration regulation	AB Energy AUC
Financial security (e.g. guaranteed rate of return, long-term low interest loans, PACE)	Municipal Affairs (for PACE) Federal Government
Solar Renewable Energy Certificates, enhanced offset protocols, and DTS credits	AB Energy AUC
Permitting	Government of Alberta Municipalities
Accelerate the phase out of coal	Government of Alberta

6. Which of the effective enablers identified are dependent on the regulatory review?

- Provide marketing, education and outreach
- Support energy storage for reliability
- Policy for geothermal and combined heat and power
- Production based incentive
- Financial security (e.g. guaranteed rate of return, long-term low interest loans, PACE)
- Third party financing
- Permitting
- Generate distribution system map to identify ideal project zones and provide incentives for projects in ideal zones
- Solar Renewable Energy Certificates, enhanced offset protocols, and DTS credits
- Change microgeneration regulation
- Smart rate and tariff design (i.e. virtual net metering

Final Thoughts

- 1. Include thermal energy in the EE Plan. >50% of energy consumed is by combusting natural gas for heating buildings. Don't ignore. 2. Explore infrastructure requirements for alt fuels and 'net' GHGs (after transporting, biofuels - rail/truck/air) 3. Consider options for natural gas CHP + Carbon tax exposure - there is no exception currently even though CHP will reduce GHG emissions for building heat. (Suggest either 1. lower SGER min emission level) 2. Amend LFE to include CHP like cogen. 3. Getting everything 100% will delay GHG - suggest an alternative approach with clarity to developers/proponents change will be an operating principle. A good balance of imperative and urgence with good policy and best practices. i.e. Germany and Ontario. Not Great. Examples of success - look at northern Europe and unep.org for real success and failure.
- Remember that Alberta| Canada is not "dirty energy". We do not want to create/change the system if it will diminish the quality or poorly affect the users. Let's not cut off our nose to spite our face.
- It is politically sensitive but the ultimate effective driver of adoption of clean energy and energy efficiency for the average Albertan will be increases in the cost of energy. If energy remains cheap (low in power pool prices and low natural gas prices) all of the incentive programs will be very expensive to implement.

- I hope that jurisdictions with renewable rollouts (Germany, Ontario, Japan, etc.) have been consulted. One key message is to stay on track, be transparent, policy roll out to be simple and transparent. Absolute key is the effort that needs to be put into a broad roll out. Renewables need to be efficiency for all, which in turn will create an innovative energy smart province. Good luck.
- Provide something tangible that ordinary people can use. They need reasons to want to see these efforts more ahead. That may take grants or other incentives to make it easy for ordinary people to get involved. Further, make sure that small organizations also have something tangible in order to take part in generation.
- Please consider the long-term sustainability of industry in the program design. Industries relying on this policy will live and die by it.
- Keep up the awesome work; make sure the communication with stakeholders is really clear so that any negative comments from naysayers are strongly countered. Make sure that the regulations are set up to leverage private investment as much as possible so as to minimise government programs in the future.
- The barriers to rapid uptake are mostly financial. Once a renewable incentive system is announced there will be fast adoption. But only if it is simple to develop. Strive for a one window application process.
- We need to get something going NOW. The enthusiasm that we had earlier in the year is slowly dissipating. Capital and resources will move to other regions where renewables are being supported now, and we will have to compete to get these back interested again. Alberta is getting left behind, relative to world development. The single most important enabler is financial. It must be simple, like a feed-in-tariff, and the payback (i.e. 7 year simply payback) will be directly proportional to the rate of growth. With enough financial incentives, all other problems will be solved, technically. Thank you for doing a difficult job and looking forward to seeing the program roll out soon!
- 1. [10 year payback!!. Gov't rebate to kick start res and small bus solar] 2. Synergies/align res and small business solar and energy efficiency programs/incentives. 3. Financing long term, reasonable interest rate is a must have. 3.5 Incentives is effective enabler #1 but will not happen without financing - effective enabler #2. 4. Financial production based incentive for larger users - Take your time, get it right. 5. See if feds will participate in/partner with province for financing. (could move beyond solar to energy eff as well). 6. Long term - step function monthly elec rates similar [similar] program.
- Recommend a program that is easy to understand, gives financially secure investment opportunities to all Albertans, and encourages growth of Alberta based companies so that our investment dollars do not flow out of the province. Residential and commercial scale solar systems create far more jobs that utility scale.
- The final key message would be that small-scale generation requires financial security in order for investors to bring thick money to the province. This could be done with a standard offer program. This kind of buy-in in small scale projects will increase community confidence in renewables and therefore the overall provincial renewables goals.
- Small scale community renewable energy projects can contribute to Alberta's climate change goals. With some minor regulatory modifications and collaborative partnership approaches.
- Communities, especially smaller ones, must have access to an impartial advisor. The advisor can advise on technologies, financing, and project viability. Without these advisors, I do not believe community generation will succeed.

- Align carbon levy implementation with opportunities for consumers to generate at their site (and to export) and/or to participate in community generation projects. This is imperative for policy acceptance and support form Albertans. Put another way "don't tax me without providing me an opportunity to mitigate my exposure!"
- Ensure the program is effective and efficient long term. Producers are evaluated feasibility studies. Business cases with limited gov't financial support. Economics and technology must converge for products to be viable.
- Energy efficiency was not (or do not seem to be) a priority or a focus of either A: microgren amendments and B: small scale generation. 2. Energy efficiency only considers non carbon producing technologies => renewables vs high efficiency energy.
- Caution with distortion on their deregulated energy market.
- Flexible end of life cycle 1 oil and gas well regulation can unlock small scale, distributor baseload power generation across the province.