



LETHBRIDGE  
CHAMBER of COMMERCE®

## Considerations for Bio-Energy and the Future of Alberta's Electricity Production

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### Issue

As part of the Climate Leadership Plan, the Government of Alberta has unveiled a proposal to shift the province's reliance on coal-powered electricity production towards more environmentally sustainable models. This proposal has set 2030 as the target date for this shift. Consumers, namely businesses, have expressed concern with this timeline, specifically with the ability for specific renewable energy sources to direct power over sustained periods onto the electrical grid.

### Background

Alberta's energy sector is experiencing a long term transition away from fossil fuel based generation of power, to an electricity system focused on non-emitting, renewable sources of electricity. Currently, electricity is seen by consumers as a standard part of everyday living. Albertans, not unlike any other consumers, expect a reliable delivery system that promises uninterrupted sources of power. Undermining this notion is the understanding that the current distribution systems are vastly complex, and are not adequate for future electrical needs and production. As such, the use of alternative forms of energy production is a concern to consumers.

Alberta has seen periodic investments in its electricity systems, with major contributions in the 70s and 80s in response to increases in demand. However, the Electric Utilities Act of 1995 deregulated the generation of electricity and allowed for wholesale electricity prices.

In terms of the utilization of solar and wind energy to produce the flow of electricity that meets the demands of Albertans, significant investment is needed to upgrade the current distribution infrastructure. This creates challenges when speaking about utilizing renewables and alternatives as power sources. Compounding this is the inherent instability with the use of solar and wind as energy generators; as the sun only shines for so long each day, and the wind does not always blow. To mitigate the risks that couple this issue, investment in updated infrastructure that focuses on efficiency, waste reduction and limiting overconsumption should be a focus of this climate strategy.

Smart grid technologies have started to be utilized throughout the world. These systems replace the traditional metering systems where information on usage was collected periodically, instead using digital meters to record and transmit usage data to utility suppliers on a continual basis. Utilization of these meters would enable a limitation on wasted energy delivery, and increase the overall efficiency of power delivery. Alternatively, this system will

account for overconsumption, ensuring those that use the largest amounts of power pay for their usage. This type of distribution network would be in step with the objective of limiting the overall Alberta carbon footprint.

Investing in the growth of this industry, it is important to consider other forms of alternative energy production. Specifically, the advent of technologies that allow for the capture and use of bio-energy present a viable alternative to the use of fossil fuels, as well as other alternatives like wind and solar. Current bio-energy processes are carbon-neutral, and are able to be employed across several different types of energy recovery systems. The generation of power from a bio-energy standpoint is extremely competitive within current models, especially where low-cost feedstocks are available. Alberta has a diverse arrangement of industry throughout the province, such as agriculture, forestry and industrial activity, all of which are capable of providing suitable fuel for the energy production process. Furthering this, municipal waste may be utilized as additional fuels which in turn helps with many waste diversion plans across the province.

As a sustainable model of energy production, bio-energy plants are self-contained energy generation systems. Further, the use of bio-energy presents a unique ability to transmit a steady and predictable source of electricity onto the current grid. In terms of reduction of our overall carbon footprint, and as an overall sustainable alternative to coal-fired generation, bio-energy provides a clear and attractive alternative.

As Alberta moves to implement a fully phased-in provincial carbon tax of \$30 a tonne by 2018, economists at the University of Calgary have estimated a net revenue of over \$3 billion<sup>1</sup>. These funds would be an ideal source of income to reinvest in infrastructure projects that aim to secure the long-term sustainability and efficiency of Alberta's electricity transmission sector. This investment should be utilized to improve the current infrastructure to coordinate efficiently with alternative sources of energy production, such as bio-energy. Complementing investments could also be made to encourage local authorities to define waste diversion strategies and to work with local bio-energy industries in the pursuit of power generation.

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### **The Lethbridge Chamber of Commerce recommends the Government of Alberta:**

1. Promote Bio-Energy as a viable option for the production of a sustainable, predictable and carbon-neutral alternative to fossil fuel electricity generation.
2. Utilize revenue from the Carbon Tax to:
  - a. update current electrical grid infrastructure, allowing for increased efficiency in the distribution of electricity to Albertans, and,
  - b. research 'Smart Grid' technologies.

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<sup>1</sup> Tracy Johnson, "Alberta's climate-change plan: Breaking down the numbers," *CBC News*, November 22, 2015, accessed February 5, 2016, <http://www.cbc.ca/news/canada/calgary/carbon-tax-impact-consumers-business-1.3330391>

3. Allocate funds from the Carbon Tax revenue to incentivize local businesses to work with municipalities to implement waste diversion plans focused on utilizing municipal waste as an alternative form of energy production, including but not limited to bio-energy.
4. Ensure revenue generated by the Carbon Tax is allocated to the reduction and mitigation of the overall carbon footprint in Alberta.