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Thursday, May 19, 2016

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Derrick Krizan C.L.G.M.
Municipal Administrator
Municipal District of Taber
4900B - 50th Street
Taber, AB T1G 1T2

Re: Alberta Electric System Operator Interpretation of Alberta's Climate Leadership Plan

Dear Sirs:

We estimated, in our presentations to your meetings of municipality representatives on January 15th and May 6th that revisions to the electrical system envisaged by the Climate Leadership Plan (CLP) would cost on order of \$50 billion to 2030. That was based on replacing 2/3 of electricity (MWhr) generated by coal with wind power, and 2014 production data. That interpretation of the CLP goal leads to a need for wind turbines of about 12,000MW capacity as explained in our presentations.

Mr. Schaupmeyer, our presenter, noted that the CLP is not completely clear as to whether 2/3 of coal generation electricity capacity (MW) or total electricity generation (MWhr) is to be replaced by renewable electricity.

The AESO has recently published the "AESO 2016 "Long-term Outlook"", which provides information on their interpretation of the effects of CLP. They "assume" that it calls for replacement of 2/3 of coal generation capacity (MW) with wind power. That results in a much lower estimated total wind generation capacity of 5663 MW by 2030 for the AESO "reference case" on Table 3, Page 20 in the "Outlook" report. That will require installation of about 4000 MW of new wind turbines, and would reduce our estimate of \$50 billion to around \$35 billion.

The points we made on potential costs to compensate coal plants and the need to provide additional gas power plants remains unchanged. We will need sufficient natural gas power plants, under the plan, to provide nearly all the electricity the province demands at maximum load. Whether we have 12,000 MW of new wind power or 4000 MW is irrelevant since wind

turbine output will be zero during periods of low or no wind. By 2030 our electrical system will be totally reliant on supplies of natural gas to ensure electricity demand is met. The cost of producing electricity will, in turn, be primarily dependent on the future price of natural gas as wind power will provide only a small fraction of the electricity we need. Even the intended goal of reducing GHG equivalent emissions may not be achieved if life cycle emissions related to early construction of new power plants and operational emissions of the GHG, methane, are taken into account.

This single focused example illustrates the great uncertainty in the energy, environmental and economic consequences of the plan to phase out the use of coal for electricity production. That uncertainty is understandable. The CLP was prepared with great haste to meet passionate politically based provincial, national and international timelines and commitments. One of our members, Cosmos Voutsinos, interviewed by the Lethbridge Heraldⁱⁱ, suggested that major environmentally related proposals should “be subjected to a lifetime rigorous assessment” to “identify how the environment could benefit from a proposal”.

In summary it appears the Climate Leadership Plan’s phase out of coal generated electricity will be very costly, will leave us vulnerable to total dependence on natural gas for our electricity, and may not even achieve the goal of reduced GHG emissions. It is thus a prime candidate for the kind of rigorous review by professionals that Mr. Voutsinos advocates.

Yours truly,

Duane Pendergast, on behalf of the Energy Collegium

Energy Collegium

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ⁱ AESO “[2016 Long-term Outlook](http://www.aeso.ca/downloads/AESO_2016_Long-term_Outlook_WEB.pdf)”, http://www.aeso.ca/downloads/AESO_2016_Long-term_Outlook_WEB.pdf,

ⁱⁱ J. W. Schnarr, Climate change fight needs new approach, Lethbridge Herald, May 9, 2016