

FRIENDS OF SCIENCE SOCIETY

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November 17, 2016

AUC - Alberta Utilities Commission

Via DDS and courier

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TO WHOM IT MAY CONCERN:

Cc: JP Mousseau  
Commission Counsel

RE: Appeal to Ruling on Standing of Sept. 21, 2016 21394-F0041  
Jenner Wind Farm **Proceeding 21394 Application 21394-A001**

Friends of Science Society ("FSS") wishes to appeal the September 21, 2016 Alberta Utilities Commission (AUC) Ruling on Standing (21394-F00041) regarding FSS' filing of May 12, 2016 opposing Jenner Wind Farm Proceeding 21394 Application 21394-A001 under Alberta Utilities Commission Rule 016.

1. FSS requests a public hearing on the merits of this project. The principle claim of the ruling was that FSS' request for hearing was too general (paras. 15, 17, 18 19, and specifically 20) FSS files its appeal in accordance with the precedent *Reese v Alberta (Minister of Forestry, Lands & Wildlife)*, (1992) 123 AR 241, 87 DLR (4th) 1 (QB)<sup>1</sup> which describes that the parameters on appeal do not require geographic or specific standing, or that the decision may directly affect the appellant, but rather, as FSS has stated, its request is based on the public interest of this matter and FSS believes it has standing based on:

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<sup>1</sup> *Reese v Alberta (Minister of Forestry, Lands & Wildlife)*, (1992) 123 AR 241, 87 DLR (4th) 1 (QB) – which sets out the parameters an applicant must demonstrate to obtain legal standing to challenge an administrative decision that does not directly affect them. Namely that the issue is serious and justiciable, the applicant has a genuine interest in the matter, and there is no other means to bring the matter before the Court (I describe the public interest standing test in my ABlawg post "Lucy the Elephant v Edmonton (city)". Justice Rowbotham finds that Pembina has public interest standing in this case based on: (1) the issue of whether the AUC erred in law by issuing its interim approval is serious and justiciable; (2) Pembina has a genuine interest in the matter (having sought to oppose the Maxim application at the AUC); and (3) there is no other means by which this matter can be brought before the Ct since the AUC ruled no person met the 'directly and adversely affected' statutory test to trigger a public hearing (at para 20).

*(1) the issue of whether the AUC erred in law by issuing its interim approval is serious and justiciable;*

*(2) Friends of Science Society has a genuine interest in the matter;*  
*and*

*(3) there is no other means by which this matter can be brought before the Court since the AUC ruled no person met the 'directly and adversely affected' statutory test to trigger a public hearing (at para 19 through 25, and specifically for FSS request, para 20).*

2. The direct impact on Friends of Science Society members, residing in Alberta, will be an economically destructive, significant increase in power prices and a likely reduction in the stability of power supply, including a potential for blackouts. These statements are made based on the experience of other jurisdictions that expanded wind and solar installations, and FSS believes that false and misleading representations by the proponent to the public about wind energy, and by others about the health effects of coal use in Alberta, have led to this faulty decision-making. (See Section 3). Direct health impacts may be a rise in suspended particulate matter which will cause more health issues in a wide region near wind farms. (See Section 4)
3. FSS believes the AUC erred in law by dismissing its application for standing and a public hearing, especially based on new information that has come to light. This matter is serious and justiciable.

In Attachment 3-0049 Participant Information submitted by Power Renewable Corporation as part of their application, FSS finds on page 20 statements, dated November 2015, that FSS believes violate the Competition Bureau's legislation regarding false and misleading advertising in what is commonly known as 'greenwashing' – self-declared claims of environmental benefit, unsupported by evidence. FSS believes Jenner Wind Farm participants were misled by the following statement:

Wind power will play an important role in Alberta's energy future. Wind power is a much cleaner, less polluting source of electricity compared with coal or even natural gas fired generation.

No evidence is offered to support this statement.

Under the *Competition Act*:

***False or misleading representations***

- ***52 (1) No person shall, for the purpose of promoting, directly or indirectly, the supply or use of a product or for the purpose of promoting, directly or indirectly, any business interest, by any means whatever, knowingly or recklessly make a representation to the public that is false or misleading in a material respect.***
- ***Marginal note: Proof of certain matters not required***


**(1.1)** For greater certainty, in establishing that subsection (1) was contravened, it is not necessary to prove that

- **(a)** any person was deceived or misled;
- **(b)** any member of the public to whom the representation was made was within Canada; or
- **(c)** the representation was made in a place to which the public had access.


i) **Misrepresentation:** FSS believes the statement “Wind power is a much cleaner, less polluting source of electricity compared with coal or even natural gas fired generation” to be a false and misleading representation, in a material respect, particularly in Alberta where there is little hydro and no nuclear power, consequently there will be continued emissions from conventional power. In some cases, as described in c) below, there may be little reduction in carbon dioxide (CO<sub>2</sub>), the principle claimed reason in the Alberta Climate Panel push for increasing wind capacity. Thus, people are misled by the statement which does not clarify that:

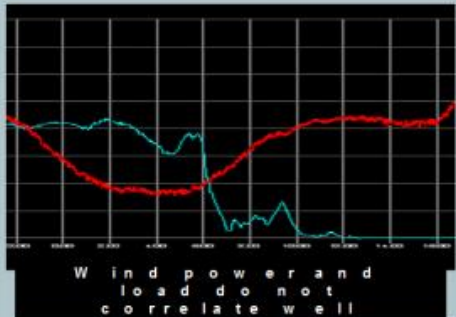
- a) no wind power can operate on the Alberta power grid without a mix of conventional coal and natural gas back-up (and Alberta’s nominal hydro power) in equivalent capacity or more to that of the installed wind power.
- b) since wind power does not generally correlate well with demand, there is little or no displacement of conventional power or related pollution.
- c) wind is random, wind is completely uncorrelated with demand. If Alberta is to add another 5,000 MW then the total would be 6,500 MW. Typically, this amount of wind would randomly experience 80% or higher ramps one or more times per week. This would be the equivalent of ramping 6.5 Shepard natural gas-fired power plants from off to full to off again. These plants are unable to do this over the long term. Thus, Alberta may end up having to put in simple cycle units instead which, from a CO<sub>2</sub> perspective, would defeat the purpose of adding wind.

## Challenges to Integrating Wind



- **Supply-demand balancing is complicated by wind power** – wind can increase or decrease rapidly and patterns can be counter to load
- **Limits to how much wind a system can accommodate** – wind needs conventional generation as backup
- **Transmission upgrades** – need upgrades in southern part of the province
- **Worked with industry to agree on framework and now implementing:**
  - Wind forecasting
  - Ramping resources
  - Wind power management
  - Operational rules and tools





ii) **Lack of Performance Tests (Competition Act - Section 74.01 (1)(b))<sup>2</sup>** The self-declared claim of “*Much cleaner, less polluting*” is unsupported by evidence and is undefined. The claim of “*much*” and “*cleaner*” is not empirically defined. There is no evidence offered to support this claim of “*less polluting.*”

Wind power cannot be said to be “*cleaner, less polluting*” in the context of the larger footprint or in operation (as noted above in i)). Indeed, though the Alberta Climate Plan attempts to prevent ‘leakage’ of greenhouse gas increases elsewhere (i.e. “leakage” being a result of industry moving from Alberta to less

### 2 Misrepresentations to public

- **74.01 (1)** A person engages in reviewable conduct who, for the purpose of promoting, directly or indirectly, the supply or use of a product or for the purpose of promoting, directly or indirectly, any business interest, by any means whatever,
  - (a) makes a representation to the public that is false or misleading in a material respect;
  - (b) makes a representation to the public in the form of a statement, warranty or guarantee of the performance, efficacy or length of life of a product that is not based on an adequate and proper test thereof, the proof of which lies on the person making the representation; or
  - (c) makes a representation to the public in a form that purports to be
    - (i) a warranty or guarantee of a product, or
    - (ii) a promise to replace, maintain or repair an article or any part thereof or to repeat or continue a service until it has achieved a specified result, if the form of purported warranty or guarantee or promise is materially misleading or if there is no reasonable prospect that it will be carried out.

regulated parts of the world to avoid GHG reduction requirements, thus increasing GHG emissions overall by “leaking” into another geographic location), wind power is a *more* polluting form of energy due to ‘leakage’ of its production from its country of origin of various components.

- a) The rare-earth magnets used in wind turbines are mined in China with few if any environmental controls, creating a toxic wasteland in a country that also has few routes of appeal for human rights/environmental protection.<sup>3</sup>
- b) Wind turbines take enormous amounts of coal, natural gas and oil<sup>4</sup> to be created, installed, operated and maintained, for little energy in return. Depending on where the components are made/assembled, there is no guarantee the devices are ‘cleaner’ than well-managed/monitored conventional power in a highly-regulated jurisdiction like Alberta.



- c) In the absence of nuclear or hydro back-up power, wind or solar facilities effectively revolve around the installation of a methane-rich natural gas power plant. To quote activist Robert F. Kennedy Jr. :  
*"We need about 3,000 feet of altitude, we need flat land, we need 300 days of sunlight, and we need to be near a gas pipe. Because for all of these big utility-scale solar plants – **whether it's wind or solar** – everybody is looking at gas as*

<sup>3</sup> <http://www.dailymail.co.uk/home/moslive/article-1350811/In-China-true-cost-Britains-clean-green-wind-power-experiment-Pollution-disastrous-scale.html>

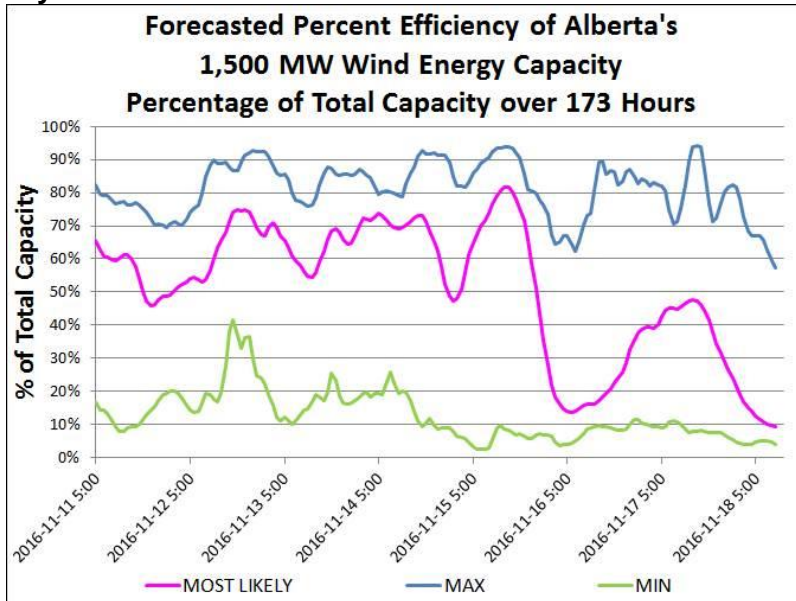
<sup>4</sup> <http://spectrum.ieee.org/energy/renewables/to-get-wind-power-you-need-oil>



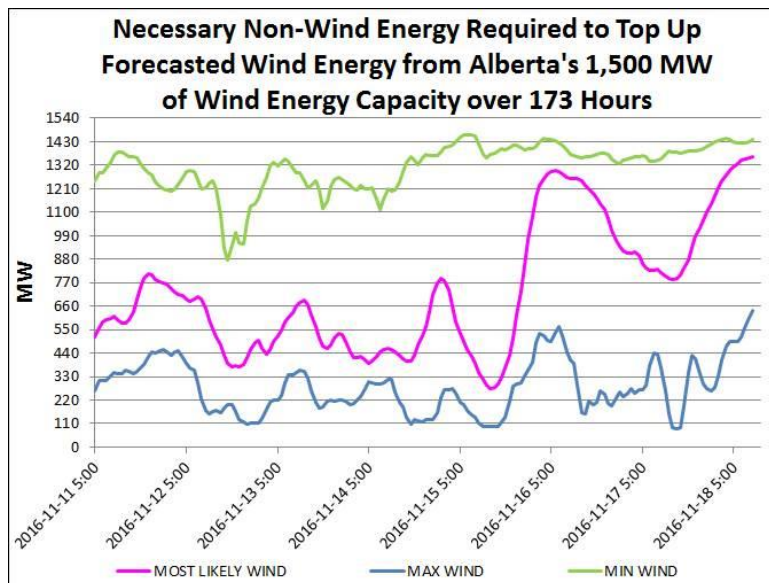
the supplementary fuel. **The plants that we're building, the wind plants and the solar plants, are gas plants.**" <sup>1</sup>

– Robert F. Kennedy, Jr. Environmental activist, Member of the board of Bright Source, developers of the Ivanpah Solar Station, Nevada, a 392 MW (peak) concentrated solar plant

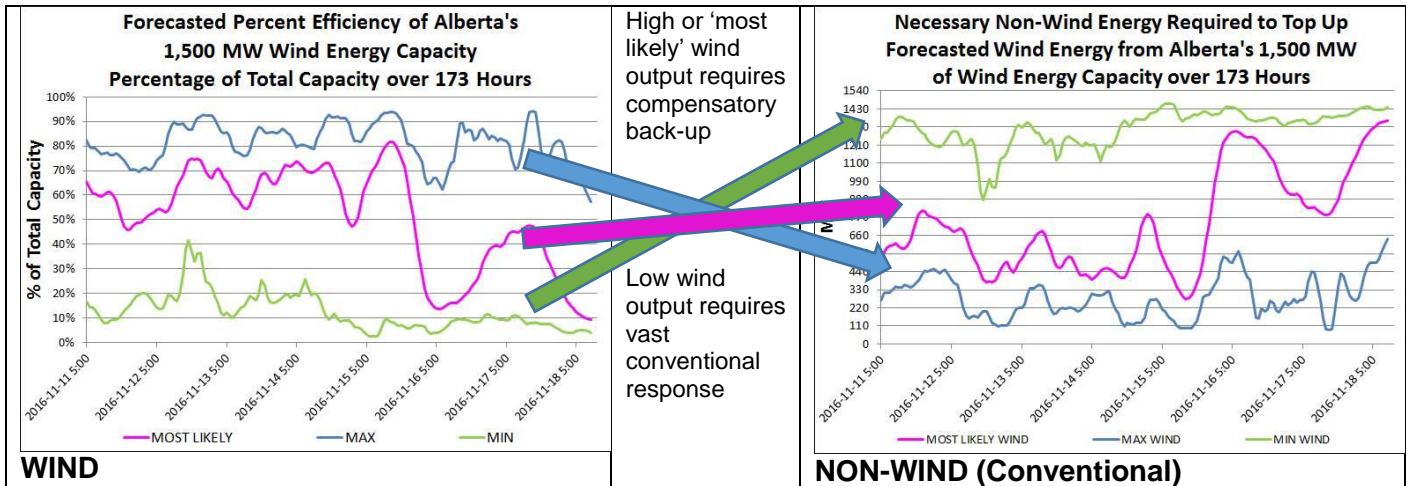
**Testing the Performance Claim of Wind being “Cleaner” replacement vis a vis the Alberta Power System**



**Fig. 1 – Graph shows forecasted wind energy capacity over 173 hour period (Data source: AESO)**



**Fig. 2 – Graph shows non-wind (i.e. conventional coal, natural gas, hydro, etc) required to meet lack of wind or fluctuating wind, to meet demand.**

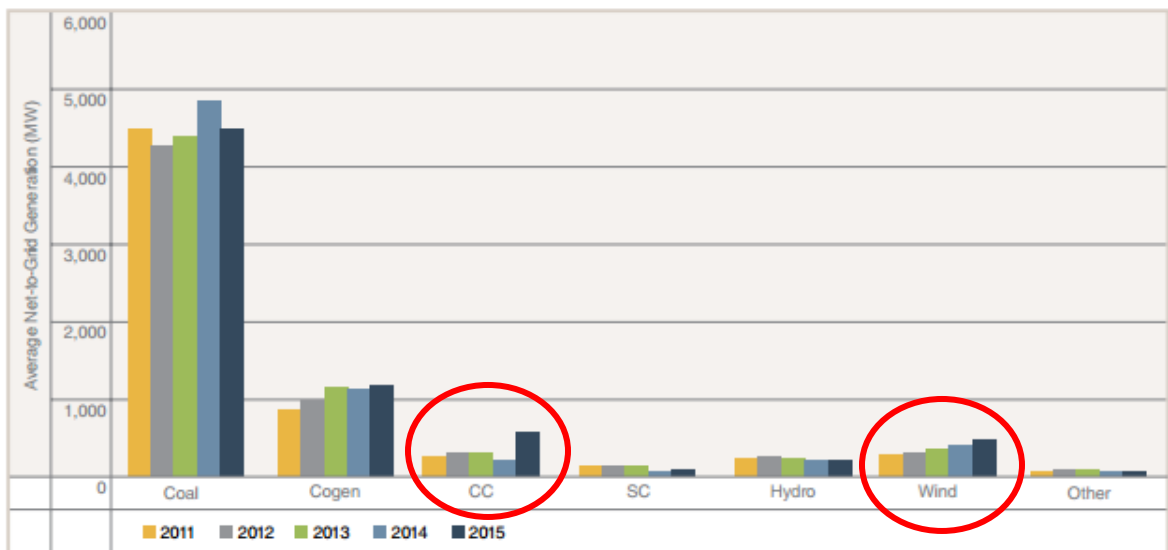


**Fig. 3 -Side by side comparison shows that wind cannot displace all conventional power requirements and would frequently need significant-to-near full conventional power when wind drops off.**

#### Coal Generation Served 64 Per Cent of System Load

Figure 11 illustrates the total net-to-grid generation from each generation technology over the last five years. In 2015, coal generation supplied almost two-thirds of energy used to serve system load. Gas generation technologies served 26 per cent of system load. Renewable generation served the remaining ten per cent of system load. Seven per cent of system load was served by wind power alone.

**FIGURE 11: Annual Average Net-to-Grid Generation by Technology**



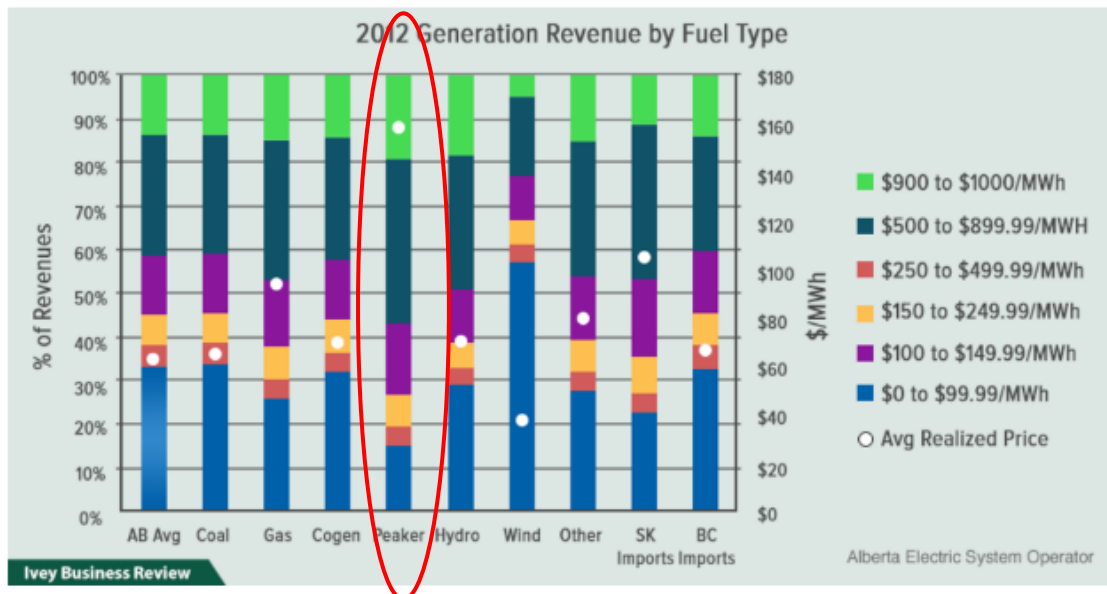
**Fig. 4. – AESO market report of 2016 shows that coal provided the highest net-to-grid generation; we also see that Combined Cycle gas (CC) rose significantly and in some correlation to a rise in wind generation. Replacing coal with 'renewables' (30% generation by wind and solar and 2/3 by natural gas)<sup>5</sup> will be an extremely expensive exercise and create significant grid instability.**

<sup>5</sup> <http://www.alberta.ca/climate-coal-electricity.aspx>

The 2012 article<sup>6</sup> “Peaking Plants provide a jolt to TransAlta’s Flagging Performance” shows that peaking plants (Simple Cycle gas turbines) are an excellent investment for investors because the combination of peaking natural gas plants and volatile wind **raises the average pool price of power for consumers – and the profits for wind and natural gas power generators.**

Consequently, it is difficult to see how the AUC would be protecting the interests of the public by approving more wind projects or more correlated natural gas peaking plants. Peaking plants are much less efficient than base load combined cycle plants, so they consume more fuel and emit more CO<sub>2</sub> per kWh or electricity generated. Wind installations are effectively decorations on natural gas plants, which, when run as “peakers,” result in near equivalent carbon dioxide (CO<sub>2</sub>) emissions<sup>7</sup> and much higher costs to consumers. “Price volatility in the Alberta power market is here to stay and is likely to grow. Using the Alberta Electric System Operator’s (AESO) 2012 Annual Market Statistics and BC Hydro’s Integrated Resource Plan we discover that **with the right type of power plants, power companies stand to make big profits, even if power prices fall.**”

Further: “**Increasing structural volatility in the Alberta power market will present large opportunities for generators with the right assets and a tolerance for risk. Peaking plants will benefit from increased wind generation,** as well as fuel switching amongst base load generators which makes them more competitive in this market.”



**Fig. 5** – Shows that in 2012, “peaker” natural gas plants in Alberta Generated the highest average realized price. From: “Peaking Plants provide a jolt to TransAlta’s....”

Other commercial interests also stand to gain, for instance AltaLink, Alberta’s corporation charged with the construction of new transmission lines, now owned by

<sup>6</sup> <http://iveybusinessreview.ca/blogs/acornhillhba2013/2013/09/23/peaking-plants-will-provide-a-jolt-to-transaltas-flagging-performance/>

<sup>7</sup> <http://energypost.eu/wind-solars-achilles-heel-methane-meltdown-porter-ranch-means-energy-transition/>



Warren Buffet's Berkshire Hathaway, concurs that natural gas is the crucial element of the 'cleaner' grid saying : "*AltaLink's proposed lower carbon generation future enables more renewable generation, delivers a 50% improvement in emissions and will cost consumers no more than a predominantly natural gas generation future.*"<sup>8</sup> FSS has shown evidence that 50% improvement on emissions is a questionable claim. Indeed, Mr. Buffet has been quoted as saying of his corporate situation in the US regarding wind farms: "*For example, on wind energy, we get a tax credit if we build a lot of wind farms. That's the only reason to build them. They don't make sense without the tax credit.*"<sup>9</sup>

If there was a significant price, health or economic benefit to consumers, then commercial activity to develop such would be welcomed – but FSS has shown there is little reduction in emissions, the price rise will be significant for consumers and industry, there are few 'green' jobs created, or those that are, cost a fortune in subsidies.<sup>10 11</sup> The power grid stability will not benefit. In terms of economic diversity, the wind farm proponent – PREC - is a major player from out-of-province – a province that is blocking Alberta's economic development of the Energy East pipeline. Why should Albertans send subsidy money East to an uncooperative partner in Confederation on a green rent-seeking project?

4. **New health information** – Presumably the proponent's claim of "*much cleaner, less polluting*" should also be provable in terms of Alberta air quality and health indicators. Pembina Institute recently issued a report entitled "*Breathing in the Benefits*" and made numerous claims about the health and premature death impacts of coal-fired power plants, recommending that the solution is renewable wind/solar generation plants and that these would benefit the health of Albertans. We have done a thorough review of the evidence based on long-term patient records globally, internationally and provincially and we find that the argument is not supported by the evidence.

FSS has compiled a comprehensive report entitled "*Dire Consequences: Destroying Alberta's Affordable Power Advantage*"<sup>12</sup> that reviews the evidence. It is FSS' opinion, based on the evidence, that Albertans and the Alberta government are being misled on both the coal phase-out health claims and the claims regarding renewable wind/solar energy, the costs, complications to the power grid and the implications for industry, consumers and taxpayers.

In fact, in terms of Alberta, FSS found that **Alberta Health Services statistics indicate a higher rate of asthma in the Pincher Creek/Claresholm region, where there are several wind farms, than in Edmonton where there are coal-fired power plants within an hour's distance, downwind, of the city.** (See bubble maps in Appendix A)

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<sup>8</sup> <http://www.altalink.ca/about/investing-in-albertas-future.cfm>

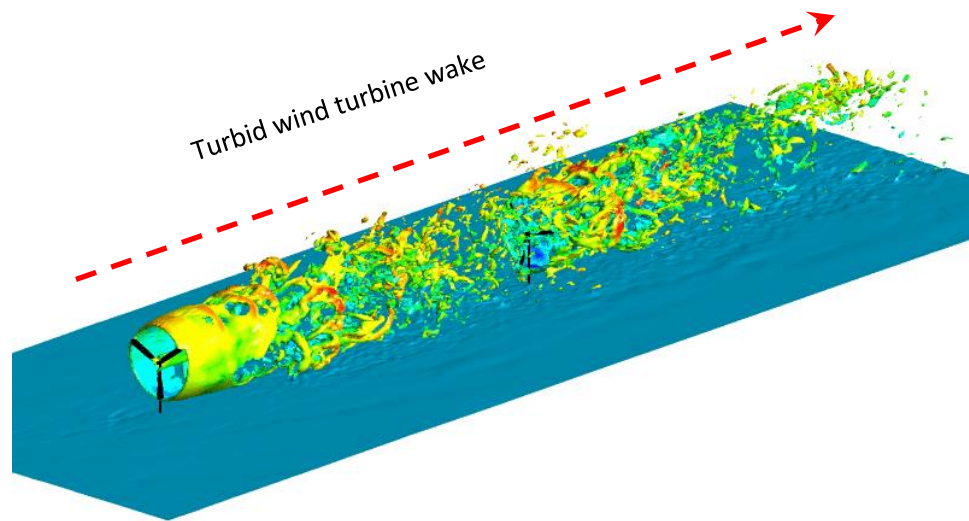
<sup>9</sup> <http://www.usnews.com/opinion/blogs/nancy-pfotenauer/2014/05/12/even-warren-buffet-admits-wind-energy-is-a-bad-investment>

<sup>10</sup> <https://friendsofsciencecalgary.wordpress.com/2016/03/25/green-jobs-rhetoric-or-reality/>

<sup>11</sup> <https://friendsofsciencecalgary.wordpress.com/2016/05/03/alberta-government-subsidies-to-wind-and-solar-will-cost-you-billion/>

<sup>12</sup> <https://friendsofsciencecalgary.wordpress.com/2016/09/29/dire-consequences-destroying-albertas-affordable-power-advantage/>

Wind turbines have turbulent wakes. On the dry prairies, it may be a factor that natural PM2.5 (fine particulate matter of less than 2.5 microns) might become concentrated and suspended to create more near-ground-level ambient air pollution than that of conventional power which disperses filtered emissions high into the atmosphere. This health concern should be examined prior to approval of this wind farm.



[http://homepages.engineering.auckland.ac.nz/~snor007/films/2t\\_10ms\\_lines.gif](http://homepages.engineering.auckland.ac.nz/~snor007/films/2t_10ms_lines.gif)



Image of Danish wind farms with turbid wakes of fog and water vapor/ocean particulates  
<http://www.nrel.gov/news/features/2012/1995>

5. **Violation of FEOC legislation** – the new renewable target legislation along with the unsupported statements above appear to violate the principles of FEOC – Fair, Efficient,

Open and Competitive legislation in Alberta. The matter should be reviewed.<sup>13</sup> Particularly section 2 (h) (i) should be reviewed considering the various entities recommending coal phase-out and their business relationships and the relative sway they hold on the government of Alberta as opposed to the access and sway to that of the electorate who will be paying billions of dollars in additional costs for a less reliable power system.<sup>14 15 16</sup> Likewise, as recently expressed, existing providers of wind and solar will not benefit from the proposed subsidies. This is contrary to fair market principles and detrimental to Albertans who will end up paying the costs to prop up the wind industry that investors otherwise do not find attractive.<sup>17</sup>

6. **Sustainability** – Wind power is intended to be an integral part of the Alberta Climate Plan, dedicated to sustainability, but expert commentators note that, next to solar,<sup>18</sup> wind is the least sustainable<sup>19</sup> and does not provide sufficient power to support a simple, basic society, let alone one with high culture and international travel.<sup>20</sup>

**In closing, let FSS quote the words of the late J.A. Halkema:**<sup>21</sup>

*“The reason why I have chosen to use the term Wind Energy instead of Wind Power in the title is because most publications from promoters of wind energy use the word **Power** (the kilowatts) to conceal the essential fact that the **Energy** (the kilowatt hours) produced by wind turbines **is negligible and without any 'security of supply'.**”*

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<sup>13</sup> [http://www.qp.alberta.ca/documents/Regs/2009\\_159.pdf](http://www.qp.alberta.ca/documents/Regs/2009_159.pdf)

<sup>14</sup> <http://www.troymedia.com/2015/09/02/alberta-climate-change-panel-one-sided/>

<sup>15</sup> <https://www.neiinvestments.com/documents/Marketing/Transitioning%20to%20a%20Low-carbon%20Energy%20System.pdf>

<sup>16</sup> [http://www.finadvice.ch/files/germany\\_lessonslearned\\_final\\_071014.pdf](http://www.finadvice.ch/files/germany_lessonslearned_final_071014.pdf) (see pg 36-49, esp pg 44. From a grid intervention of twice in 2003...“In Germany, as the percentage of renewable power increased, so did the number of times that grid operators had to intervene to rebalance the market. In 2012, there were 1,213 such interventions”

<sup>17</sup> <http://albertamsa.ca/uploads/pdf/Archive/2012/Investor%20Perspectives%20Report%20to%20MSA%20-%202017%20August.pdf>

<sup>18</sup> <https://openaccess.leidenuniv.nl/bitstream/handle/1887/19740/04.pdf?sequence=27>

<sup>19</sup> <https://www.masterresource.org/windpower-problems/wind-power-least-sustainable-resource/>

<sup>20</sup>

<http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=10333234&fulltextType=RV&fileId=S2329222916000039>

<sup>21</sup> **The late J.A. Halkema (M.S.E.E.)** was an authority on the subject of energy. Author of: **Critique of Wind Power and the UK Wind Resource (published by the Oxford Environmental Change Institute, University of Oxford) (Published in Energy & Environment, Vol. 17, No 4, 2006)** Over the past several years, dozens of newspaper and online articles have recorded the author's activities and his stance against the misleading information regarding the characteristics and capabilities of wind turbines as producers of electricity for national use. He maintains that wind energy advocates with hidden political and monetary agendas intentionally withhold vital information from the public.

If, indeed, the AUC is committed to the following principles and mission as stated on the AUC website, then FSS requests a public hearing on the Jenner Wind Farm **Proceeding 21394 Application 21394-A001**. The AUC states:

- *“We are impartial and objective.*
- *We are accountable and strive for excellence in everything we do.*
- *We treat everyone with dignity and respect.*
- *We maintain and promote a positive work environment.*

*The Alberta Utilities Commission is an independent, quasi-judicial agency of the province of Alberta. The AUC is responsible to ensure that the delivery of Alberta's utility service takes place in a manner that is **fair, responsible and in the public interest.**”*

FSS does not believe this project to be in the public interest. It requests a hearing and standing as interveners.

For FSS' part as climate change science critics, solar physicists report a decline in solar activity and the likelihood of a long-term cooling period in which access to affordable, reliable power from coal or natural gas power plants will be crucial for safe and healthy communities and stable industry. Despite [RWE npower renewables](#) operating some 27 wind farms across the UK, in 2013 they reported these farms, at certain times, generated only enough power to make two cups of tea.<sup>22</sup> Echoing FSS' concerns and Alberta's legislation on carbon taxes and wind/solar, the winter cold snaps of 2013 in the UK made the need for reliable prime power obvious, in brutal detail.<sup>23</sup>

*“As the country was subjected to the worst March snowfall in over 30 years, official figures showed that there were more **than 4,000 extra deaths in just five weeks** as the wintry conditions persisted. ...The experts said that the crisis showed the need for more energy to be produced in this country, either from nuclear, coal or gas plants. The shortage added to concern over the impact of a new fossil fuel tax, due to come in on April 1, which will penalise carbon-emitting power stations.”<sup>24</sup>*

**FSS does not believe this project to be in the public interest.** FSS appeals the AUC Ruling on Standing. FSS requests a hearing and standing as interveners.

Sincerely,

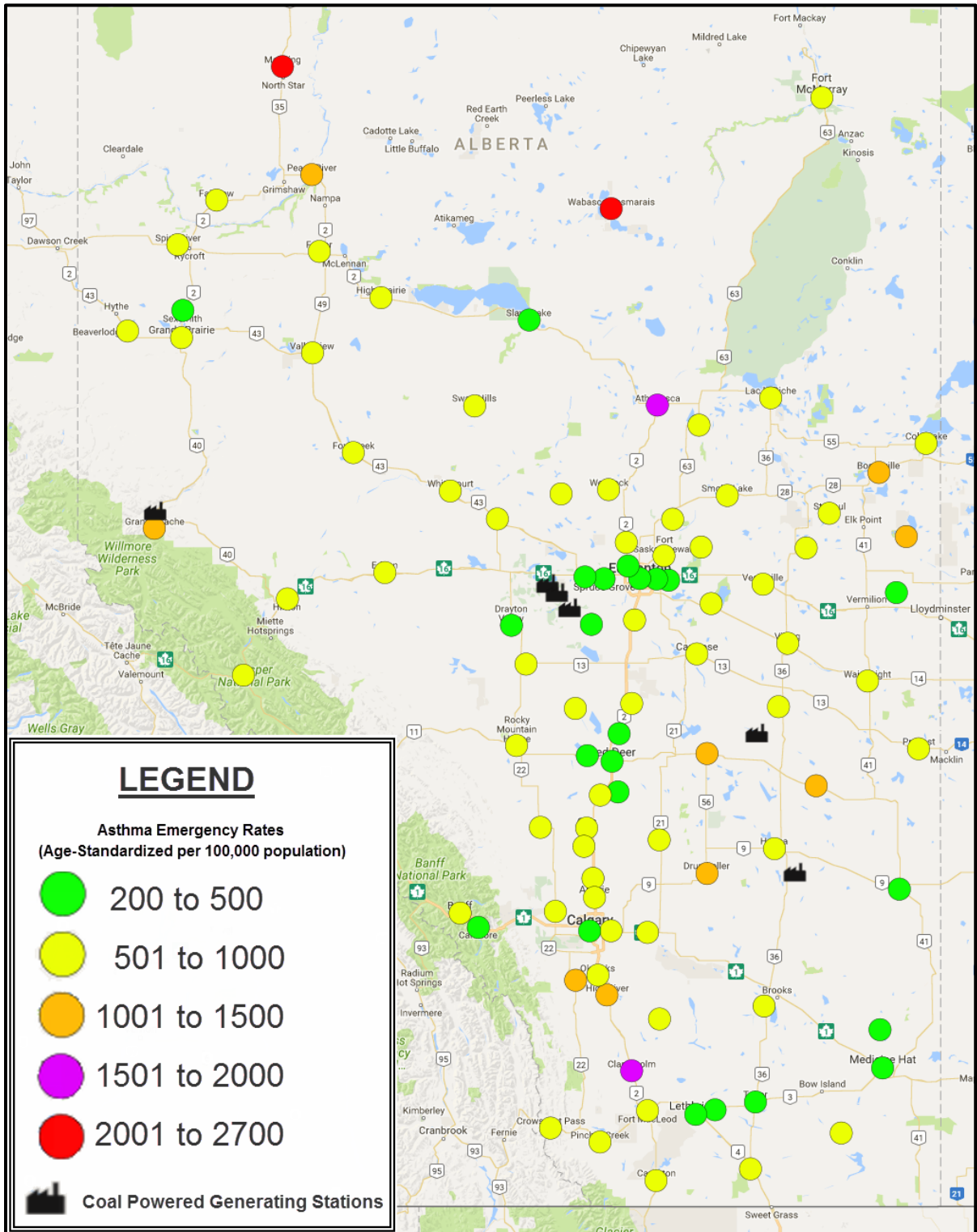
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<sup>22</sup> <http://www.telegraph.co.uk/news/earth/energy/windpower/10264185/The-wind-farms-that-generate-enough-power-to-make-a-few-cups-of-tea.html>

<sup>23</sup> <http://www.telegraph.co.uk/news/weather/9950731/Drawn-out-winter-may-have-caused-thousands-of-extra-deaths.html>

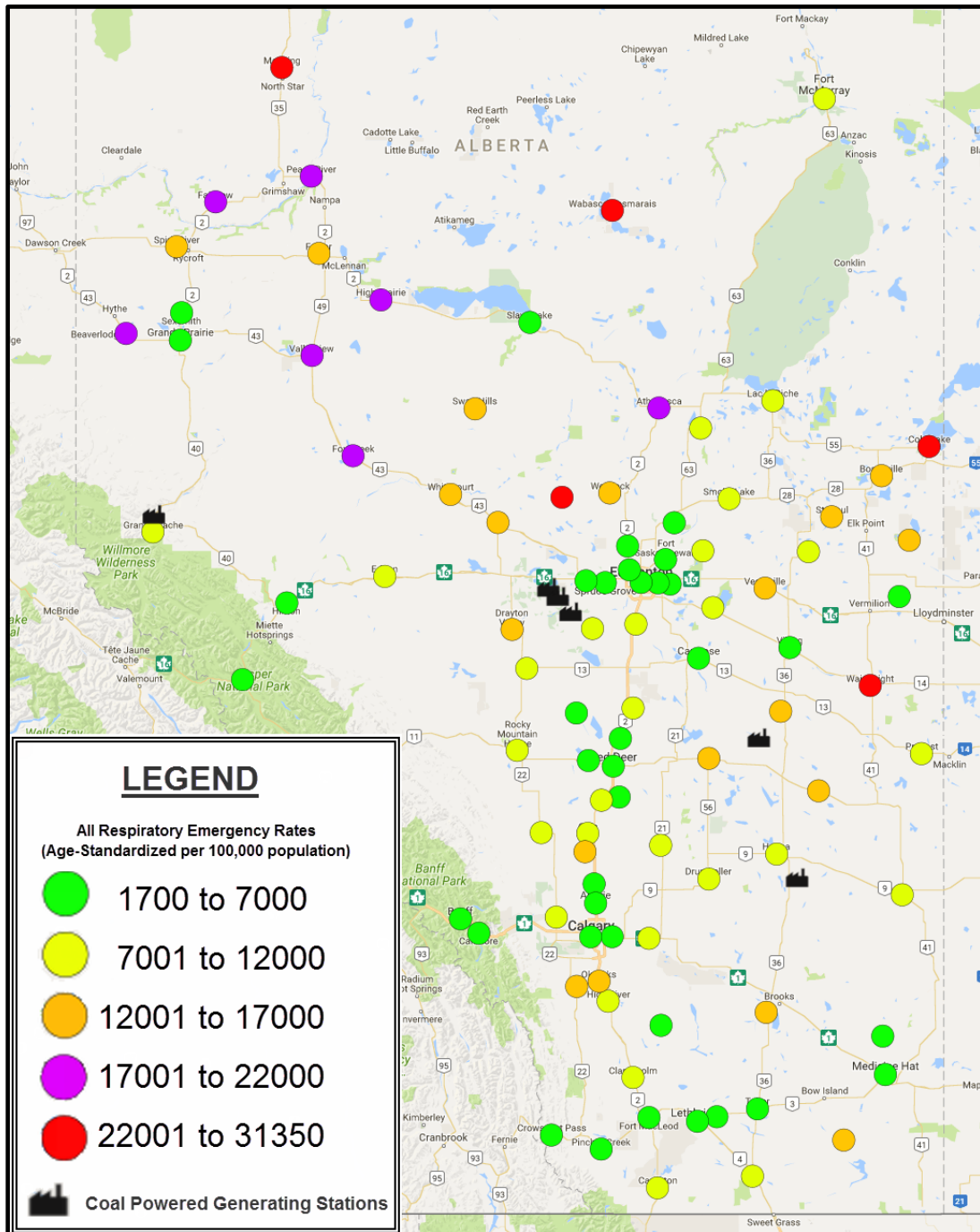
# APPENDIX A



Map of asthma emergency rates, drawn from the data of the 2015 “Alberta Primary health care community profiles” reports on Alberta Health website <http://www.health.alberta.ca/services/PHC-community-profiles.html> , presents that **proximity to coal-fired power plants does not correlate to increased asthma rates.**



Other health factors are affected by ambient air pollution. A review of the Alberta Health Services primacy care networks reports shows that **all respiratory emergency rates are also lower in the Edmonton area versus areas farther from coal-fired power plants**. Some of the areas in the northern boreal may be affected by various natural spores, or a **higher reliance on wood stoves for Residential Wood Combustion** as per Cooper (1980).<sup>25</sup>



<sup>25</sup> <http://www.tandfonline.com/doi/pdf/10.1080/00022470.1980.10465119>