

Can Renewables Replace Conventional Generation?

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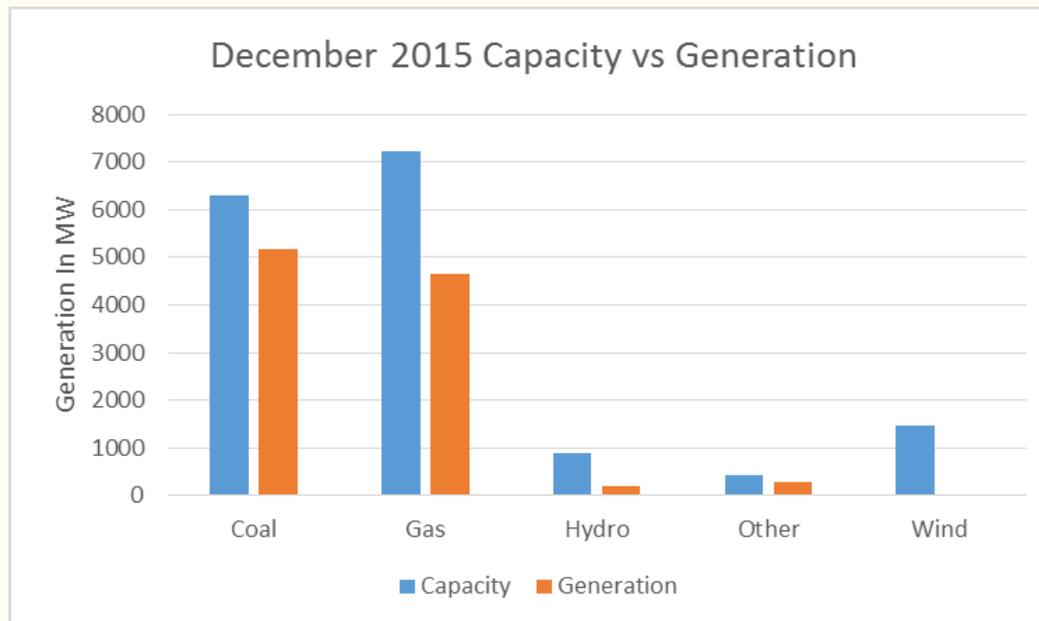
Company Name: Boyd Solar

What we have been told

- There has been much talk and proposed action on Climate Change and the Strategies that will be implemented to address this.
- We are being told that:
 - Wind generation can replace coal
 - Solar generation will help when the demand is the highest
 - Essentially, that this move is going to be good for Alberta economically

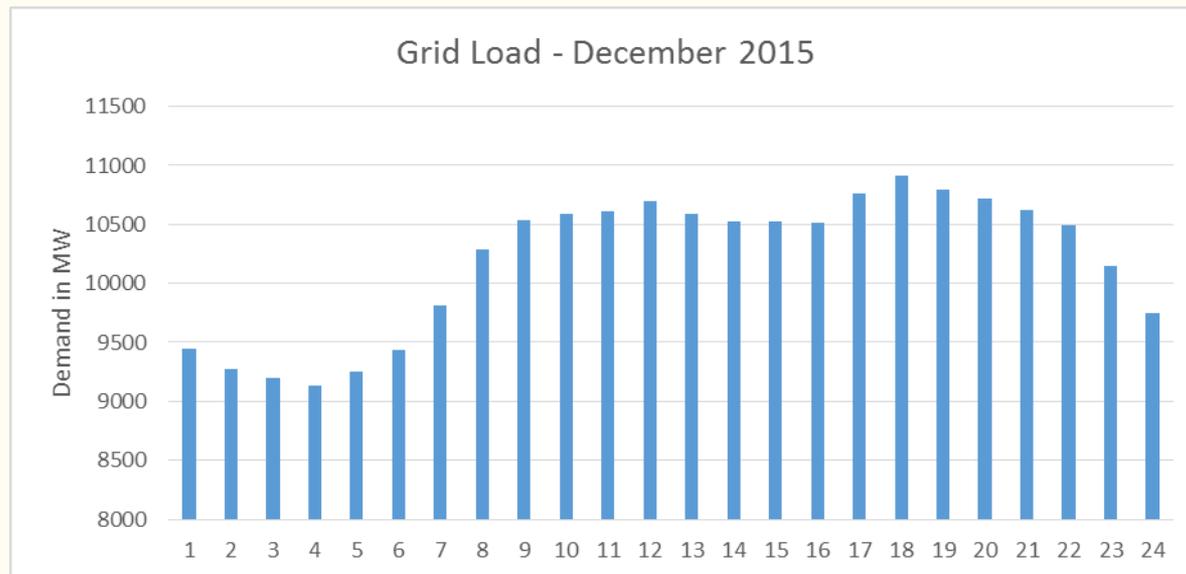
The Grid Facts

- Here we have a chart showing the total capacity of the Alberta Electrical Grid vs actual generation (3rd week of December 2015) based on AESO data. This was a random sampling of the Grid, note the total amount of Wind generation – next to nothing! (3 MW)



The Grid Facts

- Here we have a chart showing the time of day load on the Grid in the third week of December 2015 (based on AESO data). Note that the sun does not shine at the time of highest demand at this time of Year!



What does this mean then for us?

- Regardless of what we are being told by “experts” and Government, it is obviously not possible to “replace” conventional power plants with renewable ones like Wind or Solar plants in Alberta.
- Coal plants will need to be replaced with other types of conventional generation such as natural gas.
- Renewable energy will only be able to reduce the output of these conventional power plants when energy is available from the renewable plants.

What does this mean then for us?

- The result of the conventional plants running less will obviously mean that they will need to, either be subsidized, or that they will need to receive a premium price for the electricity to make them financially viable and sustainable.
- We will then be burning much more natural gas. While natural gas may burn cleaner, what other damage will we be doing to the environment? One example that comes to mind is fracking – so are we trading one evil for another?

Additional Food for Thought

- Other ways to “reduce” pollution have been suggested, are they an actual benefit though?
- Electric Cars – when are they charged? With what are they charged? They will increase the demand on the Grid, thereby increasing the required generation and transmission capacity
- “Net Zero” homes – while the energy efficiency aspect is quite positive, putting in electric heat will increase the demand on the Grid, thereby increasing the required generation and transmission capacity
- While some of these items have good PR value, are they actually a positive item?

Conclusion

The things that we have been told do not line up with the actual facts and we really need to take a good hard look at how to transition from conventional generation to renewable generation and the cost associated with doing so.

Realistically, the only way to actually replace a conventional power plant with a renewable one is to design it like an “Off Grid” renewable energy system which incorporates enough storage for about 2 weeks.