Stakeholder Comment Matrix – June, 2020

2021 Long-term Outlook Stakeholder Feedback

Period of Comment:	June 4, 2020 through July 6, 2020	**Contact:**	[redacted]
Comments From:	Industrial Power Consumers Association of Alberta (IPCAA)	**Phone:**	[redacted]
Date:	202/07/06	**Email:**	[redacted]

Instructions:

1. Please fill out the section above as indicated.
2. Please respond to the questions below and provide your specific comments. Email your completed comment matrix to forecast@aeso.ca by **July 6, 2020**

The AESO is seeking comments from Stakeholders with regard to the following matters:

	Questions	Stakeholder Comments
1.	**Long-term Outlook** a. What information do you find most useful within the Long-term Outlook? Is there additional information you would like to see? b. Do you use the Long-term Outlook data file? Which information within the Long-term Outlook data file is most useful to you? What additional data would you like to see within the data file? c. What delivery format of the data file would you find most useful? (Excel file, web query and download, interactive web based data visualization tool, other)	a) Of immediate interest to IPCAA in the LTO is: • The reference case forecast of both demand and energy especially across the next 5-years. • While the AESO tends to put the most focus on the AIL demand forecast, the System Load forecast is of equal or greater importance as System Load is what actually pays the wires charges. In other jurisdictions, they use the term Primary Demand to discuss system load and it is actually the focus of their forecasting efforts. • The 2019 LTO does not include a discussion on System Load or DTS load, which is concerning. It is not defined or included in the glossary. • The data file does contain the System Load peak and separately the DTS energy; however, there is no explanation of what they are nor their derivation. • In the 2019 LTO data file, the AESO forecasts 62,564

		GWh of DTS energy consumption for 2019 with a growth rate of 2.6% for 2019. In reality, 2019 DTS energy was 59,588 GWh - a growth rate of **-2.3%** and this was before the COVID-19 pandemic. b) IPCAA uses the LTO data file – in particular the DTS energy and System Load peak. As discussed above, additional explanations of this data and its derivation would be useful. c) Regarding delivery format, IPCAA uses Excel; however, other stakeholders may find other formats useful as well.
2.	**Macroeconomic variables** a. The economic outlook could range from a V-shape recovery by Q2 2021 to a longer-term recovery by 2023, with some permanent load loss in the commercial and industrial sectors going forward. What is your view on the Alberta GDP over the medium- (next 5 years) and long-term (5+ years)? b. Oil sector production capacity is expected to increase in 2023 with the completion of pipeline projects (e.g., Keystone XL, etc.). I. The 2019 CAPP Crude Oil Forecast released in June 2019[1] had oilsands forecast growth from 3.2MM bbls/d in 2020 to 3.6MM bbls/d in 2025 and then 3.9MM bbls/d in 2030. a. What is your view on oil production in Alberta over these time periods given the market changes over the last year? What is your view post 2030? b. Do you expect new oil production developments to be in situ or mining, or a combination of both?	With regard to specific responses to the AESO's macroeconomic variables questions, IPCAA does not plan to weigh in. However, please consider the following: oil & gas producers may be willing to discuss these questions in a one-on-one setting; however, they may not be willing to provide their views in a written AESO Questionnaire.

[1] Canadian Association of Petroleum Producers https://www.capp.ca/resources/crude-oil-forecast/

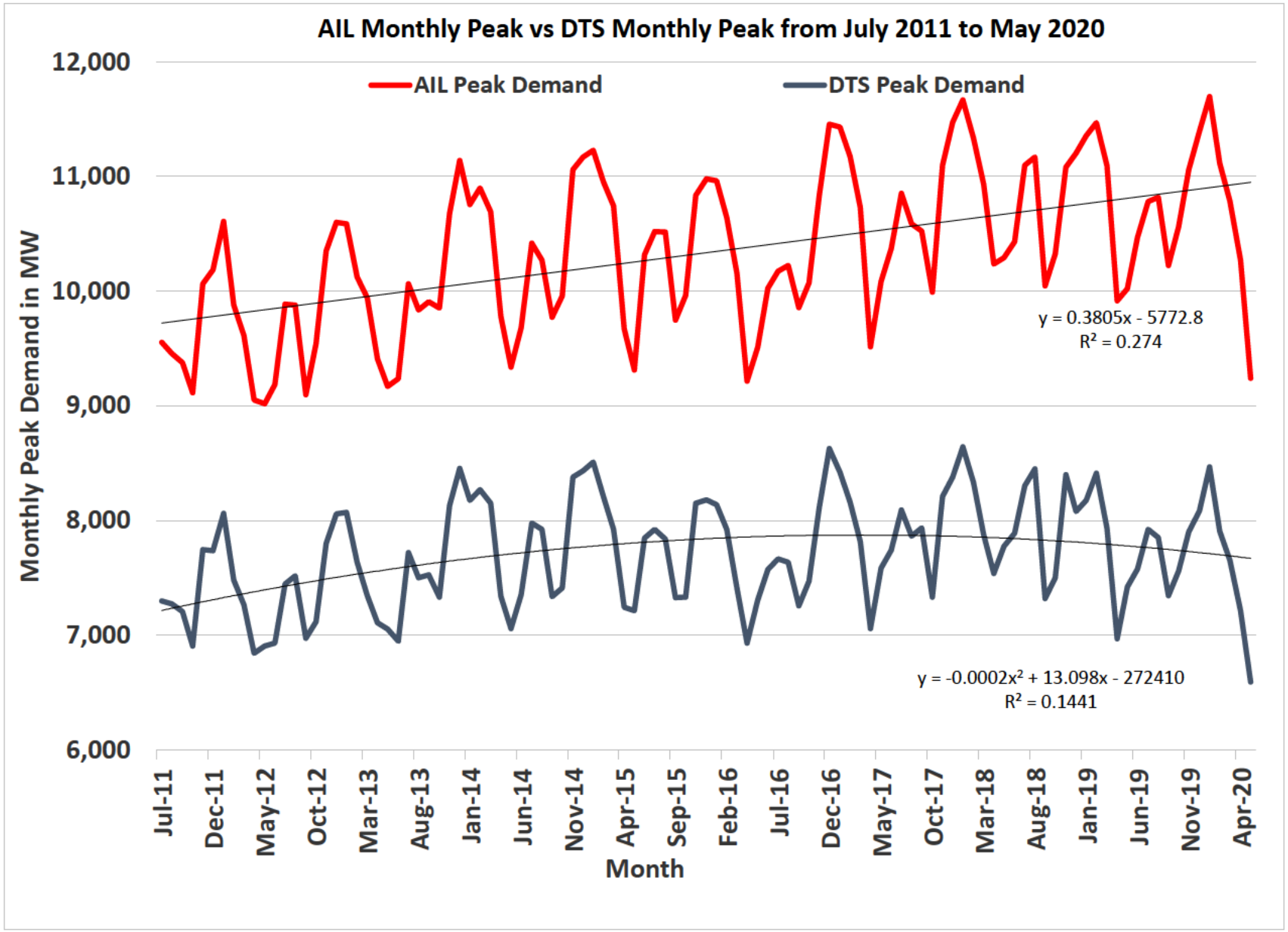
	c. Do you expect domestic condensate growth, required for transport, to meet the incremental oilsands growth? Will domestic condensate displace imported condensate? II. What is your view on further oil sector investments over the same timeframe? III. What kind of oil price or other environment would allow for further cogeneration development in the oilsands and/or petrochemical sectors? d. Current forward gas prices are in the $2.25/GJ range. Post 5 years, do you see gas prices remaining at this level, decreasing, or increasing beyond inflation?	

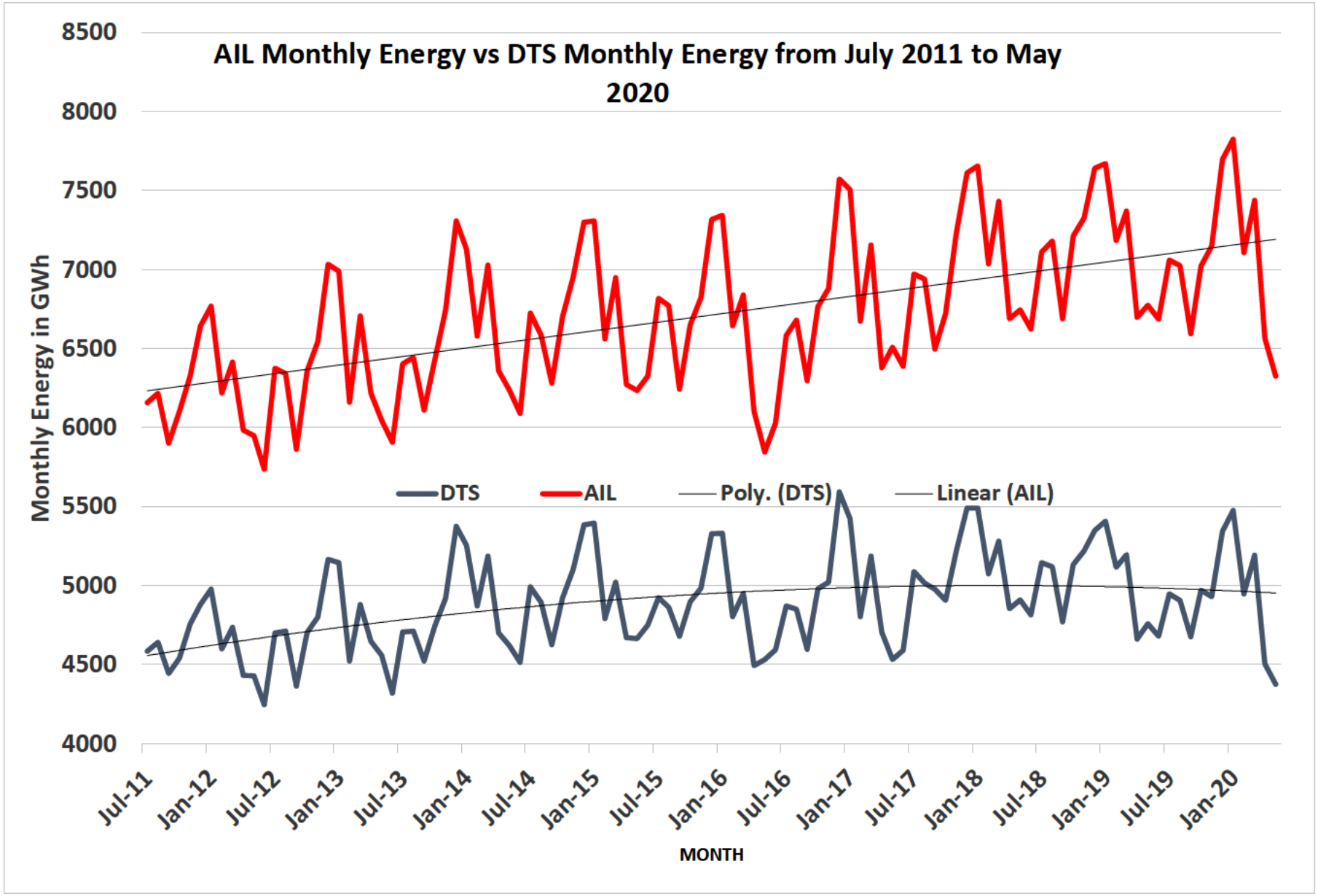
3.	**Policy** a. What are your expectations of carbon prices in the future? Do you expect any change from a $30/t rising to $50/t, inflated by 2% thereafter? b. Other than policy on carbon pricing, what coming policies or policy scenarios do you see impacting load growth and generation development?	a. IPCAA will not be weighing in on carbon price expectations in the future. b. The continued increases in transmission and distribution costs is not being adequately factored into business growth decisions in Alberta. Ideally, the Alberta electricity sector begins focusing our efforts on how to reduce regulated monopoly utility wires costs. The province needs to support rational investment decisions by Alberta businesses that are striving to remain competitive with their global peers. However, at the very minimum, we need to forecast the impacts of these costs more accurately, which impact the System Load.
4.	**Impact of the COVID-19 pandemic** a. What is your expectation on behaviour changes (e.g., work-from-home practices, online shopping, etc.) and the way Albertans consume electricity going forward? b. How are near-term costs and future generation projects being impacted by covid-19? Do you anticipate long term impacts to generation development?	IPCAA does not plan to weigh in on this directly. However, if it would help the AESO, we are willing to schedule some time on a conference call with industrial consumers for the AESO to ask these questions and host a discussion.
5.	**Load growth and modifiers** a. Where do you think load growth will be concentrated –at the System Load (all metered demand) level, or at the Alberta Internal Load (system load plus load served by on-site generating units) level? b. Under what conditions could Alberta see sustained negative system load growth? c. In the 2019 Long-term Outlook, the AESO had a number of economic and technological advances that are expected to impact the load growth in the province (see section 4 of the 2019 LTO and "New Load Modifiers" tab of the 2019 LTO data file). What is your view on load	IPCAA would like to thank the AESO for specifically considering System Load (all metered demand). Again, IPCAA encourages the AESO to include a definition of System Load in their LTO glossary, as well as a section on System Load and underlying causes for its change in levels. Negative System Load growth is a function of: • The cost of power to the consumer, which is an amalgam of a competitive commodity price and rising transmission and distribution charges caused by both rising costs and reducing demand. • Reducing demand, which we believe is a combination of increased efficiency combined with falling costs of self-

	growth and the impact of the following modifiers within the next 5 years, from 5 to 10 years, and after 10 years for: i. Distributed energy resources: 1. Rooftop solar PV 2. Electric vehicles and charging stations 3. Gas generation 4. Wind generation 5. Energy storage 6. Energy efficiency d. What is your view on load growth and the impact of other emerging industries, sectors or technologies (e.g., bitcoin and cryptocurrency mining, cannabis facilities, petrochemical facilities, data centers, others)?	supply and demand destruction due to the high input cost. With regard to the falling cost of supply, the AESO has illustrated (in its Delivered Cost of Electricity report) that new forms of generation keep falling in price and in some cases are now economic to displace system demand.

6.	**Generation Technologies** a. What renewable technologies are likely to be developed by PPA's? b. What is the potential size of the corporate PPA market for renewables, being funded fully or in part, in Alberta? c. What challenges do you foresee in implementing PPA's for renewable development in Alberta? d. Recent public announcements indicate all existing coal-fired units will utilize natural gas in the near term. How do you see the operation of the converted units changing compared to operations as a coal-fired unit? e. Outside of existing generation technology in Alberta, what technology will show up in Alberta next? f. What are the challenges surrounding generation development in Alberta and what are the major factors that will determine what gets built?	The AESO should consider reaching out directly to the Business Renewables Centre Canada, the (soon to be established) Canadian Renewable Energy Association as well as existing Alberta generators on these topics.
7.	**Future technologies** The following table contains generation technologies and specifications on potential future generation development. Do you believe that these are representative of potential future Alberta generation projects? Would you like to share views on additional technologies and specifications that are not included within the table?	No comments at this time.

	<table><tr><th>Facility Type</th><th>Overnight Capital Cost ($/kW)</th><th>Fixed O&M ($ / kW-year)</th><th>Variable O&M ($/MWh)</th><th>Generator Capacity (MW)</th><th>Heat Rate (GJ/MWh)</th></tr><tr><td>Combined-Cycle Natural Gas</td><td>1,667</td><td>$49.71</td><td>$2.49</td><td>479</td><td>7.03</td></tr><tr><td>Simple-Cycle Natural Gas – Aeroderivative</td><td>1,159</td><td>$52.83</td><td>$4.24</td><td>46.5</td><td>9.68</td></tr><tr><td>Solar Photovoltaic – 2021-2025</td><td>1,643</td><td>$31.85</td><td>Credit: grid intensity x carbon price</td><td>50</td><td>N/A</td></tr><tr><td>Solar Photovoltaic – 2026-2030</td><td>1,388</td><td>$31.85</td><td>Credit: grid intensity x carbon price</td><td>50</td><td>N/A</td></tr><tr><td>Wind Generation - 2021-2025</td><td>1,586</td><td>$32.50</td><td>Credit: grid intensity x carbon price</td><td>50</td><td>N/A</td></tr><tr><td>Wind Generation - 2026-2030</td><td>1,105</td><td>$29.25</td><td>Credit: grid intensity x carbon price</td><td>50</td><td>N/A</td></tr></table>	
8.	**Other** a. Is there any information that you would like to share, which would contribute to the Long-term Outlook development (ie. Developing trends)? b. What do you think is likely to disrupt Alberta's electricity industry in the next 20 years and in what way?	IPCAA has attached two graphs (all from AESO data) showing the divergence in AIL and DTS growth from both an energy and a peak viewpoint. Please see the graphs below. In both the energy and the peak demand graphs, DTS consumption is falling. This was happening prior to the COVID-19 pandemic. In fact, in 2019, DTS demand **fell by 1.6 TWh** in comparison to 2018. IPCAA submits that while electricity consumption will likely grow again, with the rising costs of transmission and distribution, there will be a greater focus on self-supply and demand response to mitigate rising costs.


AIL Monthly Peak vs DTS Monthly Peak from July 2011 to May 2020
AIL Peak Demand
DTS Peak Demand
Monthly Peak Demand in MW
12,000
11,000
10,000
9,000
8,000
7,000
6,000
y = 0.3805x - 5772.8
R² = 0.274
y = -0.0002x² + 13.098x - 272410
R² = 0.1441
Jul-11
Dec-11
May-12
Oct-12
Mar-13
Aug-13
Jan-14
Jun-14
Nov-14
Apr-15
Sep-15
Feb-16
Jul-16
Dec-16
May-17
Oct-17
Mar-18
Aug-18
Jan-19
Jun-19
Nov-19
Apr-20
Month


AIL Monthly Energy vs DTS Monthly Energy from July 2011 to May 2020
Monthly Energy in GWh
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
DTS
AIL
Poly. (DTS)
Linear (AIL)
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Jul-19
Jan-20
MONTH