



SURFACE TRANSPORTATION BOARD
Washington, DC 20423

Office of Environmental Analysis

August 18, 2015

Liz Stanton, PhD
Principal Economist
Synapse Energy Economics, Inc.
485 Massachusetts Avenue, Suite 2
Cambridge, MA 02139

Re: FD 30186, Tongue River Railroad Company, Inc. —Rail Construction and
Operation—in Custer, Powder River and Rosebud Counties, Mont.: IPM
Questions

Dear Dr. Stanton:

Thank you for your interest in the Surface Transportation Board's environmental review process for the proposed construction and operation of the Tongue River Railroad.

This letter is in response to your e-mail dated July 30, 2015 in which you requested information regarding assumptions and outputs for modeling used in the Draft EIS. For questions that asked us to provide underlying data, we have provided this in the form of 30 Microsoft Excel files included on the enclosed CD-ROM. Other questions asked for data that was not used in the analysis and we have indicated in our response where this is the case. Lastly, some questions concern how the modeling analysis was conducted. OEA will respond to these questions in the Final EIS if they are submitted as comments on the Draft EIS before the end of the comment period on September 23, 2015.

Again, thank you for your interest in this proceeding and we look forward to receiving your comments on the Draft Environmental Impact Statement.

Sincerely,

Victoria Rutson
Director
Office of Environmental Analysis

Attachments: CD-ROM

Attachments are available upon request.

Response to data requested by Synapse

Requests for Inputs were color coded blue by Synapse.

Requests for Outputs were color coded red by Synapse.

Responses to the data requests are after each request and follow a dash “–”.

1. Electric demand
 - a. [Forecasted electric demand](#) – See Excel file “Tongue River Requests Data Set 1_081415,” worksheet “Energy Demand”.
 - b. [Forecasted energy efficiency](#) – The energy efficiency is embedded in the electric demand forecast and is not provided explicitly.
 - c. [Forecasted demand response](#) – The demand response is embedded in the electric demand forecast and is not provided explicitly.
2. Fuel price forecasts – The fuel price forecasts are outputs and not inputs. See file “Tongue River Requests Data Set 2_081415,” and worksheet “Fuel Prices” for the natural gas Henry Hub prices and PRB coal prices for each of the scenarios.
 - a. [Coal](#)
 - i. [Reference case](#)
 - ii. [Any sensitivity cases](#)
 - b. [Natural gas](#)
 - i. [Reference case](#)
 - ii. [Any sensitivity cases](#)
3. Emission price forecasts – Emission prices are not inputs into the model. However, the emissions limits by state are inputs into the model and thus are included in the Excel workbook “Tongue River Requests Data Set 1_081415,” worksheet “Emissions Allowance Caps”.
 - a. [CO₂](#)
 - i. [Reference case](#)
 - ii. [Any sensitivity cases](#)
 - b. [Other emissions](#)
 - i. [Reference case](#)
 - ii. [Any sensitivity cases](#)
4. Environmental regulations
 - a. [How do coal plants comply with regulations on coal combustion residuals?](#) – OEA will respond to this question in the Final EIS if it is submitted as a comment on the Draft EIS before the deadline.

5. Assumptions for new generating capacity

- a. **Costs of new generating capacity** – See Excel workbook “Tongue River Requests Data Set 1_081415,” worksheet “New Build Capital Costs”.
- b. **Page C.5-20 seems to indicate that the only renewable IPM can build is wind. Is this true?** – No. Multiple wind, solar, geothermal, landfill gas options provided. OEA will respond to further questions on renewable types in the Final EIS if it is submitted as a comment on the Draft EIS before the deadline.
- c. **Capacity credit given for renewable generation, by region and year** – See Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number. These workbooks contain the dispatchable capacity and reserve capacity, from which the capacity credit for renewables can be calculated.
- d. **Can IPM build renewables above RPS requirements?** – OEA will respond to this question in the Final EIS if it is submitted as a comment on the Draft EIS before the deadline.
- e. **Resulting volume of new generating capacity built, by prime mover and year** – See Excel workbook “Tongue River Requests Data Set 2_081415,” and worksheet “Modeled Builds” for the amount and type of new capacity built by IPM for each scenario.

6. Assumptions about power plant operations

- a. **Generation, by prime mover and year** – See Excel workbook “Tongue River Requests Data Set 2_081215,” and worksheet “Generation by Type” for generation by prime mover by year.
- b. **Resulting wholesale power prices, by region and year** – Wholesale power prices were not used in the analysis.
- c. **Fuel consumption, by fuel type and year** – See Excel workbook “Tongue River Requests Data Set 2_081415,” and worksheet “Fuel Consumption” for fuel consumption by fuel type and year.
- d. **Emissions output, by pollutant and year** – See Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number for emissions by pollutant and year by plant.
- e. **Compliance with environmental regulations**
 - i. **How do plants comply?** – See Excel workbook “Tongue River Requests Data Set 1_081215,” and worksheet “Pollution Control Options” for a list of retrofit options. See Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number, for how each plant complies.
 - ii. **Which plants fuel switch?** – Information on fuel switching was not used in the analysis.
 - iii. **Which plants install emissions controls?** – See Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number, for which plants install what emissions controls.

1. **Which controls are installed?** – See Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number, for which controls are installed at which plants.
 - a. **Resulting heat rate changes** – See Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number, to calculate the individual heat rate changes at each plant.
 - b. **Energy penalty due to parasitic load** – See Excel workbook “Tongue River Requests Data Set 1_081415,” and worksheet “Pollution Control Options” for a summary of energy penalties by retrofit. Also see Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number, to calculate the individual energy penalties at each plant.
 - iv. **Which plants purchase allowances?** – This information was not used in the analysis.
 - v. **Which plants retire?** – See Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number, to see which plants retire.
 - f. **Capacity factors of operating power plants** – See Excel workbooks “Plant Level Data ##,” where the “##” is the scenario number, for individual unit capacity factors.
7. Assumptions about transmission
 - a. **Timing and location of new transmission lines** – This information was not used in the analysis.
 - b. **Transmission flows on existing lines** – This information was not used in the analysis.
 - c. **Transmission flows on new lines** – This information was not used in the analysis.
8. Constraints on the IPM model
 - a. **What are the constraints imposed on the IPM model?** – See Excel workbook “Tongue River Requests Data Set 1_081415,” and worksheet “Types of Constraints” for a list of the types of constraints used in IPM.
9. Coal contracts
 - a. **How are coal contracts at existing plants considered in IPM?** – OEA will respond to this question in the Final EIS if it is submitted as a comment on the Draft EIS before the deadline.
10. Coal exports
 - a. Where do assumptions on international coal use come from?
 - i. **Historic coal consumption** – OEA will respond to this question in the Final EIS if it is submitted as a comment on the Draft EIS before the deadline.

- ii. [Expected coal plant construction](#) – See Coal Market Appendix Chapter 2 reference Yang, A. and Y. Cui. 2012. Global Coal Risk Assessment: Data Analysis and Market Research.
 - iii. [Economic growth on a country-by-country basis](#) – Economic growth forecasts were not used in the analysis.
 - b. Does IPM track the destination of US coal exports? – OEA will respond to this question in the Final EIS if it is submitted as a comment on the Draft EIS before the deadline.
 - c. Provide supply curve results from the CoalDom model – See Excel workbook “Tongue River Requests Data Set 1_081415,” and worksheet “Coal Supply Curves”.
 - i. [Production cost](#)
 - ii. [Annual production capacity](#)
 - iii. [Coal resource limits](#)
11. What does IPM assume about an international CO₂ policy? – OEA will respond to this question in the Final EIS if it is submitted as a comment on the Draft EIS before the deadline.
12. In the results of the analysis, OEA finds that Tongue River coal displaces other domestic coal. What does IPM predict happens to the displaced coal from other parts of the United States? – OEA will respond to this question in the Final EIS if it is submitted as a comment on the Draft EIS before the deadline.