



Total E&P Canada Ltd.

Joslyn North Mine Project – Cogeneration Power Plant

December 9, 2014

The Alberta Utilities Commission

Decision 2014-338: Total E&P Canada Ltd.

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Application No. 1560592

Proceeding No. 259

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Published by

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1 Introduction and background

1. In this decision the Alberta Utilities Commission (AUC or the Commission) must decide whether to approve an application by Total E&P Canada Ltd. (Total) to construct and operate a 170-megawatt (MW) cogeneration power plant for the Joslyn North Mine Project, in the Fort MacKay area, pursuant to Section 11 of the *Hydro and Electric Energy Act*.
2. Total's application, which was originally for one 85-MW cogeneration unit, was registered on February 12, 2008, as Application No. 1560592. The Commission issued information requests to Total on April 11, 2008, requesting additional information to complete the application. The application was then placed on hold while Total addressed the application deficiencies.
3. From February 2011 to February 2014, Total provided the Commission with a number of updates on its application. It also provided updates about its application for the Joslyn North Mine Project, which was being considered by a joint review panel of the Energy Resources Conservation Board and the Canadian Environmental Assessment Agency.
4. The joint review panel conditionally approved the Joslyn North Mine Project in January 2011. However, Total filed an application to amend that approval with the Alberta Energy Regulator (AER) in November 2013. Total's amendment application is currently under review by the AER.
5. Total filed an updated power plant application with the AUC on November 25, 2013 in which it sought approval for two 85-MW cogeneration units. Total stated its original application was revised to be consistent with the mine project, which had been conditionally approved by the joint review panel on January 27, 2011 and the proposed amendments to the project described in its AER application. On February 4, 2014, Total filed further updates to its application with revised consultation, noise and environment sections and a table of concordance.
6. The Commission issued a notice of application on May 8, 2014. The notice was sent directly to area stakeholders and published in the Fort McMurray Connect. The Commission received one statement of intent to participate in response to the notice from TransCanada Energy Inc. (TransCanada). TransCanada stated it is the owner of the MacKay River Power Plant, located in the vicinity of the proposed project, and had concerns that interconnecting the cogeneration power plant to the Alberta Interconnected Electric System (AIES) could have direct and adverse impacts on the operation of its plant.
7. On July 10, 2014, Total submitted a letter to address TransCanada's concerns. Total stated that the proposed cogeneration power plant location would not initially be connected to the AIES and that future requests to the Alberta Electric System Operator (AESO) for AIES access

would require the preparation and approval of a needs identification document application to the Commission. Total submitted that TransCanada would have an opportunity to address any outstanding concerns related to potential impacts to the MacKay River generator at that time. TransCanada withdrew its statement of intent to participate on July 11, 2014.

8. On July 23, 2014, the Commission issued an information request to Total requesting an updated timeline describing the AER process, construction period and anticipated in-service date for the Joslyn North Mine Project. Total responded to the information request on September 22, 2014, stating that the AER proceeding is expected to conclude in the first quarter of 2015 and that the November 2013 update indicating a construction period of 2015-2019 and an in-service date of 2019, was still correct. Total stated that the original implementation plan is expected to accommodate potential mine project optimizations that may result from the engineering studies that it is currently conducting, and that should additional time be required, an amendment application would be filed.

2 Role and authority of the Commission

9. The Commission is responsible for regulating the construction and operation of power plants in Alberta. Section 11 of the *Hydro and Electric Energy Act* makes it clear that no person may construct or operate a power plant without prior approval from the Commission.

10. When considering an application for a power plant, the Commission is guided by sections 2 and 3 of the *Hydro and Electric Energy Act* and Section 17 of the *Alberta Utilities Commission Act*.

11. Section 2 lists the purposes of the *Hydro and Electric Energy Act*. Those purposes include:

- To provide for the economic, orderly and efficient development and operation, in the public interest, of the generation of electric energy in Alberta.
- To secure the observance of safe and efficient practices in the public interest in the generation of electric energy in Alberta.
- To assist the government in controlling pollution and ensuring environment conservation in the generation of electric energy in Alberta.

12. Section 3 of the *Hydro and Electric Energy Act* requires the Commission to have regard for the purposes of the *Electric Utilities Act* when assessing whether a proposed power plant is in the public interest. The purposes of that act include the development of an efficient electric industry structure and the development of an electric generation sector guided by competitive market forces.

13. Section 3 of the *Hydro and Electric Energy Act* further directs that the Commission shall not have regard to whether the proposed power plant “is an economic source of electric energy in Alberta or to whether there is a need for the electric energy to be produced by such a facility in meeting the requirements for electric energy in Alberta or outside of Alberta.”

14. Section 17 of the *Alberta Utilities Commission Act* states that the Commission shall:

...in addition to any other matters it may or must consider in conducting the hearing or other proceeding, give consideration to whether construction or operation of the proposed... power plant... is in the public interest, having regard to the social and economic effects of the ...plant... and the effects of the ...plant... on the environment.

15. In reaching the determinations set out in this decision, the Commission has considered all relevant materials comprising the record of this proceeding, including the evidence and submissions provided by each party. References in this decision to specific parts of the record are intended to assist the reader in understanding the Commission's reasoning relating to a particular matter and should not be taken as an indication that the Commission did not consider all relevant portions of the record as it relates to that matter.

3 Discussion

16. Total is proposing to construct and operate a natural gas-fuelled 2x85-MW cogeneration power plant, totalling 170 MW, to provide electricity and steam for the Joslyn North Mine Project. The cogeneration power plant is proposed to be located on Crown land, approximately nine kilometres northwest of Fort McKay and 70 kilometres north of Fort McMurray, Alberta in parts of sections 20, 29 and 30, Township 95, Range 11, west of the Fourth Meridian, within the process plant footprint of the Joslyn North Mine Project. Total stated that there are no occupants, residents or landowners within a 2,000 metre radius of the proposed cogeneration power plant.

17. Total indicated that an integrated application for environmental approvals for the Joslyn Mine North Project, including the cogeneration power plant, had also been submitted to Alberta Environment, now referred to as Environment and Sustainable Resource Development (ESRD). Total noted that *Environmental Protection & Enhancement Act* (EPEA) approvals for power plants are typically issued after the AUC's public interest decision, and describe the conditions required for environmental protection during construction, operation and reclamation of the facility.

3.1 Environment and emissions

18. Total stated that the cogeneration power plant is an appropriate use of land and is not located in a sensitive area as defined by the Lower Athabasca Regional Plan. It explained that the cogeneration power plant would be located entirely within the mine project footprint on the Joslyn lease site, which is located in the Boreal Mixedwood Ecoregion of the Northern Alberta Plains.

19. Total indicated it had conducted an environmental impact assessment and cumulative effects assessment for the Joslyn Mine Project that included the cogeneration power plant. It explained that the joint review panel assessed environmental considerations such as air quality, soil and terrain, vegetation and wildlife as part of the joint review panel process. Total added that it received approval from the joint panel review in 2011 but clarified that its updated AUC application included a 2013 air modelling report for the mine project as a whole, including the applied-for power plant.

20. Total explained that the project area hosts many major industrial developments, including Suncor Millennium, Syncrude Mildred Lake, Petro-Canada MacKay River and MacKay River

Expansion, Canadian Natural Resources Limited Horizon and Total E&P Joslyn SAGD Project. It noted that other area disturbances include Highway 63, seismic lines, transmission lines, pipeline right-of-ways, roads and well sites. Total observed that the land and vegetation will be disturbed by the approved mine project and the cogeneration power plant will be located within the mine project area.

21. Total stated that emissions from the cogeneration power plant will meet all Alberta Source Emissions Standards for nitrogen oxides (NO_x), sulphur dioxide (SO₂) and primary particulate matter (PM_{2.5})¹ and that emissions of NO_x and SO₂ from the cogeneration power plant were well below the guidelines for stationary combustion turbines published by the Canadian Council for Ministers of the Environment.
22. Total predicted that there would be exceedances of Alberta Ambient Air Quality Objectives (AAAQO) for nitrogen dioxide, fine particulate matter (< 2.5 microns), and a slight exceedance of carbon monoxide and nine other compounds of potential concern.² Total stated that exceedances of AAAQO for nitrogen dioxide and fine particulate matter already exist throughout the region and that the cogeneration power plant would be a very small contributor to the compounds of potential concern. Total emphasized that the contribution of the Joslyn North Mining Project to concentrations of compounds of potential concern at Fort McKay was negligible and the contribution to odours was similarly negligible, to minimal. Total concluded that the predicted cumulative changes to air quality levels resulting from the Joslyn North mine project, including the cogeneration power plant in combination with other area developments, was predicted to range from negligible on a regional scale to minimal on a local scale. Total explained that it will seek air emissions approval by separate application to ESRD.
23. Total completed a noise impact assessment (NIA) for the Joslyn North mine project in 2007. The NIA was updated to reflect the addition of a second 85-MW cogeneration unit in 2010 and further updated in 2013.
24. The 2013 NIA assessed the total noise impact of the Joslyn North mine project. The project modifications relevant to the noise assessment since the 2010 NIA included refinement of the design of the extraction plant and revisions to the mine plan. The 2013 NIA included the sound level contribution of the 2x85-MW cogeneration power plant.
25. Total stated that there is only one occupied dwelling in the project area; a seasonally occupied trapper cabin (the most impacted dwelling) located approximately five kilometres from the cogeneration power plant. Total also included the town of Fort McKay in the 2013 NIA. Total submitted that the nighttime Permissible Sound Level (PSL) value for the trapper cabin is 40 dBA Leq;³ and the nighttime PSL value for Fort McKay is 43 dBA Leq.
26. Total assessed the energy-related facilities considered in the 2011 NIA in preparation of the 2013 NIA, which included the Shell Canada Ltd. Muskeg River Mine and Expansion, CNRL Horizon Oil Sands Project Phases 1, 2 and 3 and Syncrude Canada Ltd. Aurora North Project. Total indicated that there have been no changes to these projects that would require modifications to the treatment of the facilities for the modified project assessment and there are no new developments within five kilometres of the relevant receptors.

¹ PP36, Exhibit No. 36.TOTALEP-259.

² Clarification, Exhibit No. 40.1.TOTALEP-259, PDF page 12.

³ Time weighted average of the level of sound in decibels on scale A.

27. Total selected two snapshot years for its 2013 NIA, 2029 and 2032, that had the highest level of activity close to the trapper cabin and the town of Fort McKay. At the most impacted dwelling, during the snapshot year 2029, the approved project (2010) contribution alone was 42.8 dBA resulting in a predicted cumulative sound level of 43.5 dBA Leq nighttime which exceeds the PSL of 40 dBA by 3.5 dBA. From the updated project, during the snapshot year 2029, the project contribution alone at the most impacted dwelling is 38.8 dBA Leq resulting in a predicted cumulative sound level of 40.3 dBA Leq nighttime which exceeds the PSL of 40 dBA by 0.3 dBA, but results in a decreased predicted cumulative sound level from the approved project.

28. Total explained that at the most impacted dwelling, during the snapshot year 2032, the project alone sound level contribution is 38.2 dBA Leq resulting in a predicted cumulative sound level of 39.9 dBA Leq nighttime which meets the PSL value. As a mitigation measure, Total committed to the trapper to relocate the cabin upon the trapper's request.

3.2 Stakeholder engagement and consultation

29. Total conducted consultation on the cogeneration power plant as part of its overall consultation on the mine application. Total stated that it consulted with the Regional Municipality of Wood Buffalo, regional First Nations and Metis bands, Canadian Natural Resources Limited and Trapper TPA 965. Total held open houses, met with First Nations' traditional land users, maintained a project specific website and distributed stakeholder newsletters.

30. Total stated that it developed and signed socio-economic and environmental agreements with three First Nations in the area, funded traditional land-use studies, maintained dialogue with the area First Nations and Metis, and conducted specific consultation with First Nations and other stakeholders regarding the proposed project.

31. Total stated that as part of its consultation program it has provided tours of the project area, developed long-term business opportunities, provided information to trappers and opened an office in Fort MacKay to establish a permanent presence in the community.

32. Total signed a Memorandum of Understanding with both the Regional Municipality of Wood Buffalo and the Alberta Northern Lights Regional Health Centre and met with both groups in the summer of 2013 to apprise them of proposed changes to the project. It explained that it made commitments to these groups to keep them updated on the project's schedule and milestones.

33. Total stated there have been no expressed concerns specific to the cogeneration power plant.

34. Total received *Historical Resources Act* clearance from Alberta Culture on December 17, 2012.

4 Findings

35. In deciding if the proposed cogeneration power plant is in the public interest, the Commission considered the social, economic and environmental effects of the project.

36. In Decision 2001-111, the Commission's predecessor, the EUB stated on the subject of air quality and associated health impacts:

The Board views that the AAAQG [Alberta Ambient Air Quality Guidelines] and other reference criteria accepted by AENV are the appropriate benchmarks for assessing predicted ambient air quality impacts of the proposed project. That is, the Board finds that these standards, guidelines and other environmental and health protection criteria define the maximum predicted cumulative effects that would be permissible. The Board views that emissions reductions or other mitigation would have to be incorporated into projects should substantive exceedances of the criteria be predicted.

37. The evidence of Total demonstrates that air quality issues will be addressed by ensuring that air emissions from the cogeneration power plant will comply with the EPEA Approval and will meet all current Alberta Source Emissions Standards for NO_x, SO₂ and primary PM_{2.5}. In addition, emissions of NO_x and SO₂ from the cogeneration power plant are well below the CCME⁴ guidelines for stationary combustion turbines.

38. The Commission understands that the Alberta Ambient Air Quality Objectives are regional goals or targets for air quality that may be affected by a variety of regulated and non-regulated emission sources. In this regard, Total's evidence demonstrated that emissions from the cogeneration power plant is a very small contributor to the release of compounds of potential concern, which are primarily associated with the mining and extraction processes as opposed to natural gas combustion within the cogeneration power plant. The use of natural gas as fuel is expected to have a negligible effect on air quality and, in particular, ambient SO₂ concentrations.

39. In making its determination on the project's impact on air quality, the Commission notes exceedances of the Alberta Ambient Air Quality Objectives for compounds such as NO₂, CO and PM_{2.5} already exist throughout the region. The Commission accepts Total's assertion that air emissions from the cogeneration power plant will create negligible to minimal change and contribute very little to those exceedances. The Commission has regard for the oversight of ESRD when evaluating air emission standards for this project and that the Alberta Ambient Air Quality Objectives will be considered by ESRD when it establishes air emissions standards for the project. The Commission has also taken into account Total's obligation to comply with these air emission standards; accordingly, any approval by the Commission of the power plant would be conditional upon Total's receipt of ESRD approvals and the filing of such approvals with the Commission upon receipt.

40. Based on all of the above, and given the nature of the proposed cogeneration power plant, its proximity to the Joslyn North Mine Project, and the cogeneration power plant's distance from area residents, the Commission finds that the project's impact on air quality will be negligible.

41. The cogeneration power plant will be located within the Joslyn North Mine Project and in proximity to other industrial sites. The Commission finds that the cogeneration power plant will

⁴ Canadian Council of Ministers of the Environment.

have minimal incremental disturbance on the land from those created from the mine site. An important consideration for the Commission is the joint review panel's thorough review of the Joslyn North Mine Project and the AER's ongoing review of Total's application to amend the related approvals. Accordingly, the Commission's decision to approve the application would be conditional upon Total's receipt of the mine amendment approval.

42. As a result of the modifications to the project, the predicted cumulative sound level has decreased at the most impacted dwelling. While the cumulative sound level for snapshot year 2029 is predicted to exceed the PSL by 0.3 dBA, the cumulative sound level for snapshot year 2032 is predicted to be in compliance with the PSL values of AUC Rule 012: *Noise Control* (AUC Rule 012).

43. AUC Rule 012 states that noise attenuation measures must be identified in cases where the predicted sound level indicates non-compliance. The noise mitigation and management measures identified in the NIA include monitoring the sound levels associated with construction and operations to confirm predictions and moving the trapper's cabin (should the owner make the request) to an area with lower predicted sound levels.

44. Because project modifications have caused the predicted cumulative sound level to decrease at the most impacted dwelling and the NIA has identified noise mitigation and management measures, although the predicted cumulative sound level for the snapshot year 2029 exceeds the nighttime PSL by 0.3 dBA, the Commission finds that this predicted exceedance meets the definition of "no net increase" set out in AUC Rule 012. AUC Rule 012 defines "No net increase" as the logarithmic addition of sound pressure levels when predicting noise where the sum does not exceed the PSL by 0.4 dBA.

45. The Commission finds that Total's participant involvement program was consistent with the requirements set out in AUC Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*. Total's public involvement program was comprehensive and appropriate in the circumstances and there were no outstanding public or industry concerns or objections. Based on the foregoing, the Commission finds that construction and operation of the proposed cogeneration power plant is in the public interest, having regard to the social and economic effects of the proposed power plant and its effects on the environment in accordance with Section 17 of the *Alberta Utilities Commission Act*.

46. The cogeneration power plant is approved, subject to the following two conditions:

- i. Approval of the project is conditional upon Total's receipt of any related approvals from ESRD. Total is required to advise the Commission by letter of its receipt of ESRD approvals for the power plant within 30 days of their receipt.
- ii. Approval of the project is conditional upon Total's receipt of approval for the Joslyn North Mine Project from the AER. Total is required to advise the Commission by letter of its receipt of AER approval within 30 days of their receipt.
- iii. Total shall not commence construction of the cogeneration power plant until it has received the necessary approvals from ESRD and the AER and filed confirmation

of receipt of such approvals as contemplated in i and ii above, with the Commission.

5 Decision

47. Pursuant to Section 11 of the *Hydro and Electric Energy Act*, the Commission approves the application and grants Total the approval set out in Appendix 1 – Joslyn North Mine Project – Cogeneration Power Plant – Approval No. U2014-534 – December 9, 2014 (Appendix 1 will be distributed separately).

Dated on December 9, 2014.

The Alberta Utilities Commission

(original signed by)

Anne Michaud
Commission Member