



Phase 2B Co-generation Connection Application for the Christina Lake Regional Project

Submitted to Alberta Utilities Commission

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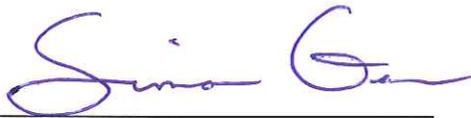
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1. Application

MEG Energy Corp. (MEG) has completed the alteration of the MEG owned Conklin 762S substation (Substation) (Alteration of Conklin 762S Substation – Application No. 1606756 & Approval No. U2010-413) for the purpose of integrating the AUC approved Phase 2B Power Plant (Cogen 2) (Phase 2B Power Plant - Application No. 1551656 & Approval No. U2009-192).

This Interconnection Application is made pursuant to Section 18 of the Hydro and Electric Energy Act for the connection of Cogen 2 with Alberta Interconnected Electric System (AIES).

Signed by



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2. Overview

MEG Energy Corp. (MEG) is a Canadian oil sands company focused on sustainable in-situ development and power generation in the Southern Athabasca oil sands region of Alberta. MEG's Christina Lake Regional Project (CLRP) consists of 80 sections of oil sands leases within the Regional Municipality of Wood Buffalo (RMWB) in northeastern Alberta, approximately 15 km southeast of Secondary Highway 881 and 20 km northeast of Conklin. The CLRP is outside of designated geographical boundaries for provincial recreation and conservation areas under the Lower Athabasca Regional Plan.

The CLRP is a Steam Assisted Gravity Drainage (SAGD) bitumen recovery project located in the Conklin area south of Fort McMurray in northeastern Alberta shown in Figure 1 in Appendix A. The Christina Lake Regional Pilot Project (Phase 1 of the CLRP) was approved in February 2005 (AENV Approval 212127-00-00). Phase 2 of the CLRP was approved in February 2007 (AENV Approval No. 216466-00-01 and EUB Approval No. 10773). A joint a facility expansion, Phase 2B (AENV Approval No. 216466-00-02 and EUB Approval No. 10773),

was approved by the Energy & Utilities Board (EUB) and Alberta Environment (AENV) in April 2009. The existing approved power generation equipment required for the Phase 2B plant expansion of the CLRP was included in the joint EUB/AENV Phase 2B Application. Phases 1, 2 and 2B of the CLRP were approved to produce a combined total of 60,000 bpd of bitumen using the SAGD process. The electrical consumption used to produce this amount of bitumen is approximately 30 MW.

The development of a substation in support of the CLRP Phase 1 (Pilot) was filed with the EUB on August 30, 2005 (Application No. 1416005), and was approved on December 23, 2005 (Approval No. U2005-478 for the electrical interconnection and Approval No. U2005-386 for the Conklin 762S substation). The purpose of the original substation was to provide electricity to Phase 1 of the CLRP.

An alteration of the Conklin 762S Substation to satisfy the power requirements of Phase 2 (Co-gen 1) of the CLRP was approved by the EUB on April 17, 2007 (Approval No. U2007-96). Phase 1 (Pilot) and Phase 2 (Co-gen 1) became the basis for the formation of the existing Industrial System Designation (Approval No. U2007-289) that became effective with the commissioning of Co-gen 1. The approval for Co-gen 2 (Approval No. U2009-192), and associated changes to Conklin 762S substation (Approval U2010-413) to connect Co-gen 2 to the AIES, provided increased security of supply (electric) to MEG's oil sands development.

The Co-gen 2 plant will be located immediately adjacent to the existing Phase 1 and 2 processing facilities and the Substation. The Substation is located on the N1/2-9 & S1/2-16-77-5-W4M ("Substation Location") on privately owned land. The Plot Plan showing the Substation Location and Cogen 2 is included in Figure 2 in Appendix A.

3. Information Requirements

IC1) Provide a statement that the local distribution company has agreed to interconnection, the LSD of the interconnection point, and an electric single-line diagram showing the interconnection point with the company. This agreement must reflect that the interest of current customers of the distribution company are served, that provision for future customer load has been made, and that both parties (generator and wire owner) are satisfied with the arrangement and its implications.

The power plant proponent has to obtain the information requirement for this section from the ISO or provide the same done by qualified in-house personnel or consultants and endorsed by ISO.

The Cogen 2 unit will be connected to the MEG owned Conklin 762S substation that is connected to the AIES via the 240 kV transmission line 971L. CLRP was previously granted

an Industrial System Designation and was amended (Approval No. U2011-464) to incorporate this generator; therefore, the local distribution company was not contacted for consent. The electrical single line diagram is shown in Figure 3 in Appendix A.

MEG has completed the requisite power system studies entitled "Connection Engineering Study Report MEG Conklin 762S Transformer and Generator Addition" (Report) dated May 30, 2012. The Report was endorsed by the Alberta Electric System Operator (AESO) as the project would not affect the reliability of the Alberta Interconnected System (AIES), nor will the project adversely impact the AIES. The AESO endorsement letter and the Report can be found in Appendix B.

- IC2) Provide local area load flow studies, including contingency analysis, with sufficient detail to demonstrate that the proposed interconnection would conform with current accepted planning criteria. Present the report of these studies with sufficient graphical outputs, which should be labeled and indexed to provide clarity as to what was studied.***

The load flow with contingencies studies are included in the Report.

- IC3) For connection of power plants with total capacity of 70 MW or larger, provide dynamic studies to determine the impact of the new generation on the transient and dynamic stability of the AIES. These dynamic studies should include system response to close-in and worst-case three-phase faults with and without the new plant addition to show the relative system performance. Study results should include macro-system quantities, such as machine angles, major bus voltages, major line active and reactive power flows, and system frequency. Present the report for the studies with sufficient graphical outputs labeled and indexed to provide clarity as to what was studied. For power plants with total capacity over 10 MW but less than 70 MW, the Commission, in consultation with ISO, will assess the need for dynamic studies.***

Transient studies are included in the Report.

- IC4) For connection of wind farms, provide details of how dynamic voltage control and "Low Voltage Ride Through" are able to conform with the current accepted standard are provided at the point of interconnection. Details should include control block diagrams of the voltage control system and time domain responses to illustrate dynamics and stability of the voltage control system.***

Not applicable.

- IC5) Provide short circuit levels at substations near the proposed connection.***

Short circuit levels at substation near the generating facility are included in the Report.

IC6) Provide the most up-to-date functional specifications when the application is filed and the final functional specification before construction of the project begins.

The AESO cover letter and final Functional Specification dated August 15, 2012 for the project is included in Appendix C.

IC7) Include a cost estimate for the connection and required system upgrades.

The cost estimate to connect the Cogen 2 to the MEG owned Conklin 762S substation is not opened for public scrutiny. No system upgrading was required for the connection of this project.

IC8) Explain proponent's contribution, if any, toward the capital cost of the interconnection.

No capital contribution was necessary.

Appendix A

Figures

Appendix B

Part 1: AESO Endorsement Letter

Part 2: Connection Study Report

Appendix C
Functional Specification