

BOARD STAFF INTERROGATORY #1

INTERROGATORY

Ref: Exhibit A, Tab 1, Schedule 3, Page 1-13

Enbridge is requesting the establishment of DSM Deferral Accounts to track spending in relation to a proposed solar thermal pilot program.

- a) Please discuss why Enbridge feels it is reasonable to request the establishment of these DSM Deferral Accounts given the Board's Decision on the preliminary motion in EB-2009-0172. In your response, please provide the reasoning for why Enbridge feels it is appropriate to recover the proposed renewable energy investments from its rate base.
- b) Given the scale and length of the program, what is Enbridge's justification for classifying this program as a pilot program?

RESPONSE

- a) First for clarity, EGD's application does not propose to "Rate Base" any costs. The amounts that will be entered into the requested deferral account will be recovered through the annual process in the year that they are cleared. EGD will not retain any assets as a result of this research pilot project and is not making any request for future rate basing of costs associated with this research pilot project. This makes it very different from the rate base focus of EB-2009-0172 and the matters that the Board considered in its preliminary motion.

In EGD's view, the focus of this application is entirely on a DSM research pilot project and not on matters associated with either the provincial Green Energy and Green Economy Act, or the latest changes to the EGD's Undertakings recently directed by the Minister.

In EB-2009-0172 EGD asked the Board to look to the future and consider benefits of EGD actively leading in the development of new Green Energy opportunities within its regulated utility. In this case, the proposed solar thermal research pilot project should be characterized as a research project to assess, evaluate, test, and compare the effectiveness of various solar thermal technologies combined with

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various thermal storage technologies in a number of different applications. The focus of the project and its research is on the development and evaluation of solar thermal space heating technologies for the benefit of its ratepayers and the province.

To date, there is little research and data on the different technology costs, the effectiveness of different technologies, or the combination of technologies, institutional barriers (permitting, labour skills, training, etc), participant benefits and social benefits. This research pilot project would be designed to address each of these issues and to provide information on each.

EGD foresees these technologies as having significant potential impact on all natural gas ratepayers, as the majority of gas delivered by EGD is for thermal space heating and solar thermal space heating represents a large substitute technology. The adoption of these technologies could have significant implications on the distribution of natural gas to current and potential customers and also assist in the development of DSM programs for EGD, its customers, and other utilities. It could address climate change issues in a significant manner.

Understanding these technologies and the potential impact on gas utility customers is important to the future operations of EGD and other natural gas distribution utilities as they transition into a low carbon world.

The adoption of solar thermal space heating technologies would result in significant reductions in natural gas usage and therefore is similar in nature to EGD's current DSM programs. As well, the adoption of these technologies would reduce GHG emissions. As GHG/carbon emissions attract costs, the adoption of these technologies would reduce cost for ratepayers and provide societal benefits for all of Ontario.

The proposed research pilot project is designed to provide the largest amount of research and data with the least amount of financial impact to current gas distribution customers. Under EGD's proposal, the entire pilot project will cost no more than \$8.5 million. Of the total \$8.5 million, NRCan, through the Clean Energy Fund, has promised to fund the project to a maximum of \$3.95 million or 47% of every dollar spent on the project. Under the funding guidelines for the Clean Energy Fund, the remaining \$4.5 million can be funded from a number of sources. Provincial funding to a maximum of 25% of the program costs can be sought by EGD. In addition, EGD is allowed to seek funding from participants, vendors and other parties (either in-kind or in-cash). Finally, it is EGD's proposal that ratepayers

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would fund any shortfall between the remaining \$4.5 million and the amount recovered from all the other parties including the provincial government.

In summary, EGD believes that it is reasonable to request the establishment of these DSM Deferral Accounts given the Board's Decision on the preliminary motion in EB-2009-0172 for the following reasons:

- It is clearly a program which would support future DSM activities.
 - EGD does not propose to include any assets in rate base for this program. The reasons presented by the Board in EB-2009-0172 spoke to the inclusion of assets in rate base.
 - This research activity will be of benefit to all ratepayers. The research, data, findings, conclusions and recommendations will be made public and available to all parties. There will be no affect on the competitive market place other than providing research and development results to any party that wishes to explore solar thermal space heating technologies for personal and business ventures.
 - The financial impact on ratepayers is deminimus. At a maximum, the cost to ratepayers is \$4.5 million over five years or approximately \$0.9 million per year. This equates to an average customer cost of approximately \$0.50 per year or \$0.04 per month.
 - NRCan as the main funding agency, requires vigorous regular reviews of project spending. As such NRCan serves as an auditor to ensure the work has been completed and properly invoiced.
 - The program does not involve the generation of electricity. As such, this type of program, although in the renewable energy area, does not qualify for provincial incentive rate programs such as the Feed In Tariff ("FIT") program
- b) It is a research pilot project to evaluate, test, and compare the effectiveness of various solar thermal technologies combined with various thermal storage technologies in various applications. The project requires at least a three year monitoring period to properly and comprehensively evaluate all test sites and technology configurations. The nature of the initiative requires a 3 to 5 year horizon in order to fully evaluate the combination of technologies and develop final designs and installations guidelines. EGD is unaware of any rule which limits the operation of research pilot programs to one year. At an average cost of about \$0.9 million per year, EGD is of the view that the project is similar in scale to the recently approved Industrial Sector Pilot Program. EGD expects this project to provide the basis for future DSM programs. NRCan also believes this is a viable, useful project that will provide the basis for future cost-effective programs and market affects.

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BOARD STAFF INTERROGATORY #2

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Enbridge notes that it has received a commitment from Natural Resources Canada for funding to support the proposed solar thermal pilot project up to a maximum amount of \$3.975M.

- a) Please discuss the status of the funding support from Natural Resources Canada in the event that the Board has not issued a decision regarding the establishment of the DSM Deferral Accounts by March 19, 2010, as requested by Enbridge?
- b) Please discuss the status of the funding support from Natural Resources Canada in the event that the Board does not approve the request for the establishment of DSM Deferral Accounts?
- c) Does Enbridge plan to proceed with the proposed solar thermal pilot program regardless of whether Board approval for the requested DSM Deferral Accounts is granted? If not, please discuss why.
- d) Please describe the process Enbridge has employed or will employ in attracting other parties' involvement and investment in the proposed five year solar thermal project. In your response, please discuss who Enbridge has targeted as ideal partners for the project and how much of the program budget Enbridge is hoping to secure from private investments.

RESPONSE

- a) When this application was submitted to the Board, EGD understood it had till March 31, 2010 to produce a signed contribution agreement with NRCan and therefore requested the March 19, 2010 Board decision date in order to complete the negotiation of the contribution agreement by March 31, 2010. Since the submission date, EGD has learned that NRCan is prepared to accept a minor delay due to the decision by the Board. Although NRCan is accepting of such a delay, both EGD and NRCan are strongly motivated to sign a contribution agreement by March 31, 2010 or as shortly thereafter as possible.

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- b) NRCan funding would be available only if EGD can assure NRCan that it can provide the non-NRCan portion of the project cost. If the Board approves this application, EGD can demonstrate that its portion of the funding is reasonably secured.
- c) It is highly unlikely EGD would proceed with this project if the Board does not approve this application. Should the Board not approve this application, EGD would review and reflect on the reasons behind the Board's decision. Following this review, EGD would make a final decision on how to proceed. It should also be noted that without Board approval of this application, it is highly improbable that EGD would secure firm commitments for partnerships/participants in the time available. EGD would not commit to this pilot research project if the shareholder is expected to be ultimately responsible for its funding.

EGD is in the process of developing a process for selecting both partners and participants. The process would involve evaluation of pilot sites, type of technology to be tested, financial strength of partners, willing to pay by participants, skills provided, etc.

EGD Currently has relationships with third parties such as home builders, solar thermal technology providers, contractors, condominium builders, property managers, energy and building consultants, municipal planning groups and energy service providers that can be leveraged to identify suitable partners and participants. Each party could provide pilot sites, solar thermal collection or storage equipment or work "in kind" such as engineering, computer model simulation and equipment installation.

EGD has had discussions with parties to gauge interest in such a pilot research project; however, no formal arrangements/commitments have been made with any party for this project to date. EGD is not willing to provide the names of any prospective partners/participants without first receiving their consent, as this may negatively impact the prospects of their and other prospective partners further involvement.

BOARD STAFF INTERROGATORY #3

INTERROGATORY

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Enbridge notes that three solar collector technologies will be tested: flat panel, evacuated tube and concentrated collectors. Enbridge also indicates that three types of thermal storage media will be tested: tank storage, geothermal, and thermal mass storage. Enbridge also notes that test sites for these technologies may include multi-residential buildings, institutional buildings, and neighborhoods of individual homes.

- a) Please discuss any work Enbridge has completed on this project to date. In your response, please indicate how much has been invested so far, and the source of the funding for any investments made to date.
- b) Please discuss the program design Enbridge is planning to employ. In your response, please indicate who the owner of the solar thermal equipment will be, who will be responsible for the maintenance of the equipment and who will subsidize both the purchase and maintenance cost of the equipment.
- c) Please discuss any research that Enbridge has conducted on the experiences that other jurisdictions have with similar solar thermal technologies.

RESPONSE

- a) EGD has not completed any work on this project to date.

Previous research on solar thermal collections systems was commissioned by EGD and has provided some background information for the submission to NRCan. The research/analysis of solar thermal collection systems has been completed in cooperation with the Solar Calorimetry Laboratory at Queen's University. The analysis provided simulation results and recommendations for commercial/industrial solar thermal installations. The simulations were performed using industry standard modeling software, and system performance data compiled and verified by the Solar Rating and Certification Corporation ("SRCC"). The simulation results can provide the basis for selection of solar thermal panel technologies, and expected output from an installation.

Witnesses:

- b) The goal of this research project would be to determine a sustainable model for solar thermal space heating. The participants/customer will own the assets and be responsible for all maintenance costs.
- c) A survey of district energy systems, and solar thermal space heating systems has been completed. The most notable project is the Drake Landing Solar Community ("DLSC") in Okotoks, Alberta. EGD has been involved in projects with ATCO, and Enerworks, partners in the Drake Landing project, and have gained insight into the DLSC project provided through reports and presentations.

DLSC Design Principles

- 1) High efficiency residential construction to reduce space & water heating demand
- 2) Blend of centralized & distributed generation and mechanical assets
 - Distributed solar thermal generation
 - Distributed mechanical systems (air handlers and heat exchangers)
 - Centralized storage of solar thermal energy (i.e. ground loops, and central storage tanks)
 - Centralized distribution mechanicals (i.e. energy station and pumping)

DLSC was constructed at a high incremental cost (>\$100,000) per home that was heavily subsidized by all levels of government to present an economically viable price point for the consumer.

Witnesses: