Q. Fuel savings from capital projects – since 2006 list all projects with an estimated fuel savings from the capital budget process, and provide all implementation and verification details available to confirm these savings were in fact achieved.

A. The following are projects from the capital budget process since 2006 with estimated fuel savings identified.

- In 2006, the project budget proposal for Remote Operations of the Fisheries By-Pass Valve at Granite Canal estimated the recovery of lost hydroelectric production. It had identified the equivalent displacement of approximately 567 barrels of fuel consumption at Holyrood annually, with an estimated savings of approximately $18,000 in 2006.

- In 2007, based on the recommendations made in 2003 by Hartford Steam Boiler Inspection and Insurance Company (HSB), Unit 3 was upgraded to allow for an extension to a nine-year interval for overhauls. Within the budget proposal it was estimated that this would result in a savings of approximately $1.35 million dollars in fuel consumption due to one less overhaul. During its overhauls, Unit 3 is not available in synchronous condenser mode for voltage support. This results in a requirement for Unit 1 or 2 to operate in generate mode, at inefficient (minimum) levels of generation, in order to support the system voltage.

- In 2007, the project proposal - Upgrade Unit 3 Air Preheater Steam Condensate System, estimated fuel savings of $160,000 per year, due to efficiency improvements.

- The 2010 budget proposal for the replacement of Unit 2001 at the Francois Diesel Plant was justified based on age of equipment and efficiency improvements. Due to the age of Unit 2001, it was considered impractical to rebuild the genset and continue to operate it beyond 30 years. The improved fuel efficiency of a modern genset results in an estimated fuel savings of approximately 13,600 litres per year.

- In 2012, the budget proposal to improve the method of conversion of Holyrood Unit 3 to and from synchronous condenser mode of operation, estimated that the period of conversion would be shortened by 11 days. Occurring twice a year, this results in an estimated annual fuel saving of $830,000. Please refer to the Unit 3 overhaul period extension initiative discussed previously for an explanation of the fuel savings mechanism inherent in this project.

- In 2013, within the budget proposal for Installation of Variable Frequency Drives on Forced Draft Fans, it states that, once operational, the VFDs will yield an average annual fuel savings of $4.7 million while the Holyrood generating station is generating electricity. This project is planned to be completed in 2014. The Forced Draft Fan VFDs are currently being commissioned on two of the units.

While Hydro does measure its actual expenditures against budget, Hydro does not complete verification studies on each of its capital projects looking back in time, and as a result the actual fuel savings data is not available. The savings are difficult to quantify, due to such factors as changes in operation of diesel plants and the loading and scheduling of Holyrood. However, during the budget proposal

development stage, there is a significant amount of effort in evaluating alternatives to arrive at the least cost option.