Q. **Reference: Introduction Evidence**

Other than sharing of services with Nalcor, please identify the efficiency initiatives and management's estimate of cost savings reflected in the 2013 Test Year attributable to these initiatives. (Introduction Evidence, page 1.21, lines 3 to 4)

A. Please note that the reference in the question to Introduction Evidence, page 1.21, lines 3 to 4, now refers to Introduction Evidence, page 1.29, lines 3 to 5.

Please refer to NP-NLH-098 for a description of initiatives affecting the level of the rural deficit. In addition to those initiatives the following have resulted in cost savings reflected in the 2014 and 2015 Test Years. The savings are listed below with estimates of the annual savings noted.

Asset Maintenance Practice Changes

- In 2009 the Holyrood boiler overhaul approach was reviewed resulting in the concept of a "minor" overhaul on one of the three units and a standard overhaul on the other two each year. This results in maintenance savings of one overhaul on each unit every three years. (Estimated annual savings - $100,000)

Work Execution Practices

- In the maintenance of the hydraulic generation assets, a greater focus has been placed on work packaging to optimize costs through better upfront planning. As an example, when a crew is sent to Cat Arm, a full package of work is planned to take full advantage of the accommodations/cooking services and travel costs. The practice with respect to cooking on site is to

provide a cook when there are at least four people for a minimum of 40 hours planned work. The work is arranged in packages to ensure the crew size is less than four to avoid the extra cost of the cook, or to maximize the crew size to take full advantage when a cook is being utilized. Planning and scheduling work, in packages, help to minimize vehicle requirements as the crews are typically on the same schedule. The weekly schedule for a crew at a remote plant is well planned and maximized to avoid a repeat trip to the area. (Estimated annual savings - $22,000)

- Travel is also a significant cost in managing the assets in both Hydro Generation and in Transmission and Rural Operations due to the work sites being located throughout the province. Travel time and costs are reduced wherever and whenever possible, particularly for meetings, by utilizing teleconferencing and videoconferencing at every opportunity. (Estimated annual savings - $40,000)
- More use is being made of contractors for road maintenance in remote sites such as at Cat Arm and Hinds Lake. The savings are achieved through reduced costs of transporting equipment from Bay d'Espoir and the travel costs of staff. (Estimated annual savings - $5,000)

Human Resource Cost Savings

- The current Hydro apprenticeship program has been enhanced and an opportunity to avail of funding from the provincial government has been realized. (Estimated annual savings - $500,000). This program has been terminated and will not be available in 2015.
- The introduction of four ten-hour shifts in the maintenance of the hydraulic generation fleet has resulted in reduced hotel, travel, fuel and vehicle usage. (Estimated annual savings - $35,000)

Initiatives to Reduce Energy Use in Hydro Facilities

A number of initiatives have been undertaken in Hydro's facilities to reduce internal energy usage. The total reduction in energy usage is estimated to be around 3.7 GWh per year, to date. (Estimated total annual savings - $640,000)

Some examples of these initiatives include:

- Hydro Place HVAC and Lighting Upgrades – Significant retrofits of the HVAC, controls and lighting systems have been completed in Hydro Place resulting in an energy use reduction of 12%. In addition to these large scale measures, there have been work processes created to ensure efficient use of manually controlled equipment such as sidewalk heat tracing and evening lighting. An assessment was completed of server room energy use resulting in the right sizing of cooling equipment with more efficient controls. A parking lot lighting retrofit to LEDs is currently underway which will provide energy savings and improved lighting quality.
- Holyrood Compressed Air System Savings – two of four fixed speed compressors were retired and a new variable speed compressor was added. The sequence of operation was changed to optimize part load requirements by utilizing the new variable speed unit.
- Holyrood Auxiliary Power – consumption was reduced by installing new heat and lighting in one building.
- Automatic temperature set back controls and energy efficiency lighting replacements were undertaken in three line shops in 2012.

Generating Unit Energy Conversion Efficiency Improvements

- A chemical cleaning of the Holyrood boilers was completed on all units in 2008. This has resulted in improved heat transfer in the wall circuits. (Estimated annual savings - $50,000)

- The introduction of 0.7% sulphur fuel is resulting in savings in the handling and disposal of ash and improved heat exchanger efficiency as there is less furnace fouling and landfill volumes. (Estimated annual savings -$150,000)
- Please refer to IC-NLH-093 and NP-NLH-191 for additional initiatives at the Holyrood facility.
- The installation of the new CT at Holyrood will have a positive impact on the fuel conversion rate at Holyrood. This unit will allow for a reduction in the minimum unit operating requirements[1] at the Holyrood facility, particularly during the spring/fall and summer periods. The reduction in unit operating hours and the impact on the fuel conversion rate are outlined in Hydro's response to V-NLH-093.

[1] Periods when the Holyrood unit is on at low inefficient levels of generation in order to respond to a system contingency.