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Request IR-1:

Reference: Exhibit N-2, DE-03-DE-04, page 67 of 159, lines 3-8

a. Describe the effect of using a higher proportion of mid-sulphur and petcoke in both years on regulated air pollutants (SOx, NOx, Hg and PM).

b. Describe the effect of increased use of mid-sulphur and petcoke in both years on PAC usage amounts and costs.

Response IR-1:

(a-b) The 2013 and 2014 forecasts show reduced solid fuel consumption compared to previous year forecasts due to natural gas pricing offsetting coal consumption and lower industrial load. As a result of reduced solid fuel consumption, room is created in the emissions caps to consume higher sulphur fuels including mid-sulphur and petcoke. The amount consumed is balanced to stay under the emissions caps. The projected SO_2 emissions are therefore similar to previous years and within emission limits. Mercury emissions are also projected to be lower in 2013 and 2014 as a result of reduced coal consumption as well as the lower mercury content of petcoke. PAC (Powdered Activated Carbon) consumption in 2014, however, is forecast to increase as a result of the reduction in annual mercury emission allowance compared to years 2012 and 2013. The anticipated effect on NO_x as a result of additional mid-sulphur and petcoke is forecast to be minimal relative to previous years. The addition of mid-sulphur and petcoke enhances precipitator and opacity performance, and so is projected to assist with particulate matter control.

Request IR-2:

Reference: Exhibit N-3(iii), OP -14, page 2 of 3, lines 13-21

Describe the proportion of air emission reductions (SOx, NOx, Hg and PM) attributed to the each of the five bulleted items.

Response IR-2:

It is difficult to separate the relative contributions of each measure for each pollutant in each year. The Strategist model solves for the environmental and system constraints in an integrated manner, arriving at relative least cost solutions that address the input criteria. The approach taken by NS Power has been to:

(1) Consider the outcomes of Demand Side Management (DSM) and Energy Efficiency measures. These efforts are predicted to result in a load reduction of approximately 125 GWh per year throughout the 2010-2020 period.

(2) Consider the measures identified to concurrently address Greenhouse Gas reductions and Renewable Electricity Standard (RES) increases. These include NS Power and Independent Power Producers (IPP) non-emitting generation, increased natural gas use, and in the latter part of the decade, imports.

These measures collectively deliver co-benefits for reductions of emissions of sulphur dioxide, nitrogen oxides, mercury and particulate matter.

Sulphur dioxide is further managed by matching the sulphur content in the solid fuels with emissions requirements. Nitrogen oxides are further reduced through the use of the low NO_x combustion firing systems already installed on six generating units. Further mercury reductions

are achieved through fuel specifications and selective use of powdered activated carbon. Overall particulate matter (PM) reductions are realized through the reductions in thermal generation. Local PM air quality is addressed through use of electrostatic precipitators and baghouses.

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Request IR-3:

Reference: Exhibit N-2, DE-03-DE-04, p. 17 of 159, lines 4-7; Exhibit N-2, DE-03-DE-04, page 67 of 159, lines 3- 8; and Exhibit N-2, DE-03-DE-04, page 79 of 159, lines 10-11

a. Given the increased renewable energy to come on line in 2013/2014 (Biomass) and no change in the SOx regulated air emission cap (OP-14, page 1 of 3, lines 16 and 17), describe the need for additional low sulphur coal required for 2014 over 2013.

b. In 2010 Lingan contributed 33,479 tonnes of SO2 emissions of the total regulated cap of 72,500 tonnes (National Pollutant Release Inventory, 2010 NPRI Reviewed Facility Data Release: Nova Scotia Power Incorporated - Lingan Generating Station 2010) and was used year round. Given the seasonal use of the two Lingan units and that 2013 and 2014 regulated cap does not differ from 2010, describe the need for additional low sulphur coal required for 2014 over 2013.

Response IR-3:

(a-b) The 2014 forecast shows a higher coal burn relative to 2013 due to a forecast increase in natural gas pricing. This increase in solid fuel burn results in an upward effect on SO_2 emissions which is managed in the 2014 forecast by a reduction in high-sulfur petcoke consumption and an increase in low-sulphur and mid-sulphur coal consumption relative to 2013 levels.

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Request IR-4:

Reference: Boiler performance and heat rate

Describe the effect of lower boiler performance on the amount of air pollutants emitted. Moreover, describe the resultant cost impacts for additional low-sulphur coal that could be required to meet the regulated fleet caps

Response IR-4:

Heat rates at the coal fired plants are, on average higher in 2011 compared to 2009 due to increased operation at partial loads in 2011 compared to 2009. These heat rate increases would equate to less than 1000 MT SO_2 and less than 1 kg of mercury per annum, based on a generation year similar to that forecast for 2013. Similarly, the rise in CO_2 emissions would be in the range of 150 kT or 3 percent of annual CO_2 emissions from the coal plants in 2013. The scenario of optimized heat rates corresponds with high fossil fuel generation years when plants are required to generate at their design base loads (for example, high industrial load years, and years of lower renewables). Thus, although the plants are operating more efficiently, annual emissions are higher due to higher solid fuel generation. In contrast, the scenario of reduced heat rates corresponds with lower fossil fuel generation years (for example, lower industrial load, and years with higher renewables, such as being experienced today). Although plants operate less efficiently at lower loads, annual emissions are lower due to lower solid fuel generation.