

August 29, 2014

Board of Commissioners of Public Utilities  
Prince Charles Building  
120 Torbay Road, P.O. Box 21040  
St. John's, NL  
A1A 5B2

**ATTENTION: Ms. Cheryl Blundon**  
**Director of Corporate Services & Board Secretary**

Dear Ms. Blundon:

**Re: Newfoundland and Labrador Hydro Combined Applications - Installation of Diesel Units at Holyrood for the Purposes of Black Starting the Generating Units and Supply, and Install 100 MW (Nominal) of Combustion Turbine Generation - Request for Update**

Further to the Board's letter of August 1, 2014 regarding the above referenced matter, enclosed is the original and 12 copies of Hydro's status update for the following project:

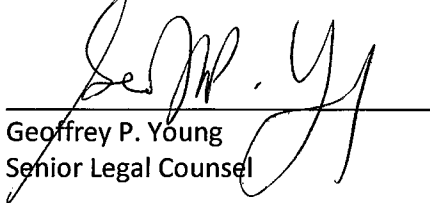
- Supply and Installation of a 100 MW Combustion Turbine Generator.

We trust you will find the enclosed updates to be in order.

Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

**NEWFOUNDLAND AND LABRADOR HYDRO**

  
\_\_\_\_\_  
Geoffrey P. Young  
Senior Legal Counsel

GPY/cp

cc: Gerard Hayes – Newfoundland Power  
Paul Coxworthy – Stewart McKelvey Stirling Scales  
Fred Winsor – Sierra Club Canada

Thomas Johnson – Consumer Advocate  
Thomas O'Reilly, QC – Cox & Palmer  
Danny Dumaresque

# Supply and Installation of a 100 MW Combustion Turbine Generator

Status Update Briefing– August 29, 2014

Boundless Energy



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- Project Dashboard
- Progress & Schedule Summary
- Cost Summary (S-Curve)
- Risk Analysis
- Project Photos

*(Includes only material updated since Aug 15, 2014)*

# Project Dashboard

The project is progressing according to plan and in compliance with Safety, Quality, Schedule, and Cost.



# Progress & Schedule Summary

1. Excavation for fuel unloading station is complete.
2. Turbine and GSU placed on foundations.
3. Generator transported from Bay Bulls to Holyrood and placed on foundation.
4. Backfilling around auxiliary transformer and GSU foundations.

## Progress & Schedule Summary (cont'd)

5. Installation of various duct banks continues.
6. Air inlet filter house construction has started.
7. Backfilling of CTG site to bring up to grade.
8. Begin installation of piping for fuel unloading station.
9. Transmission Line construction is proceeding on plan.

## Progress & Schedule Summary (cont'd)

10. Terminal station interconnection work is progressing as per plan.
11. Overall schedule is tracking in accordance with plan and ready for service date remains December 2014. See attached schedule showing progress to date.

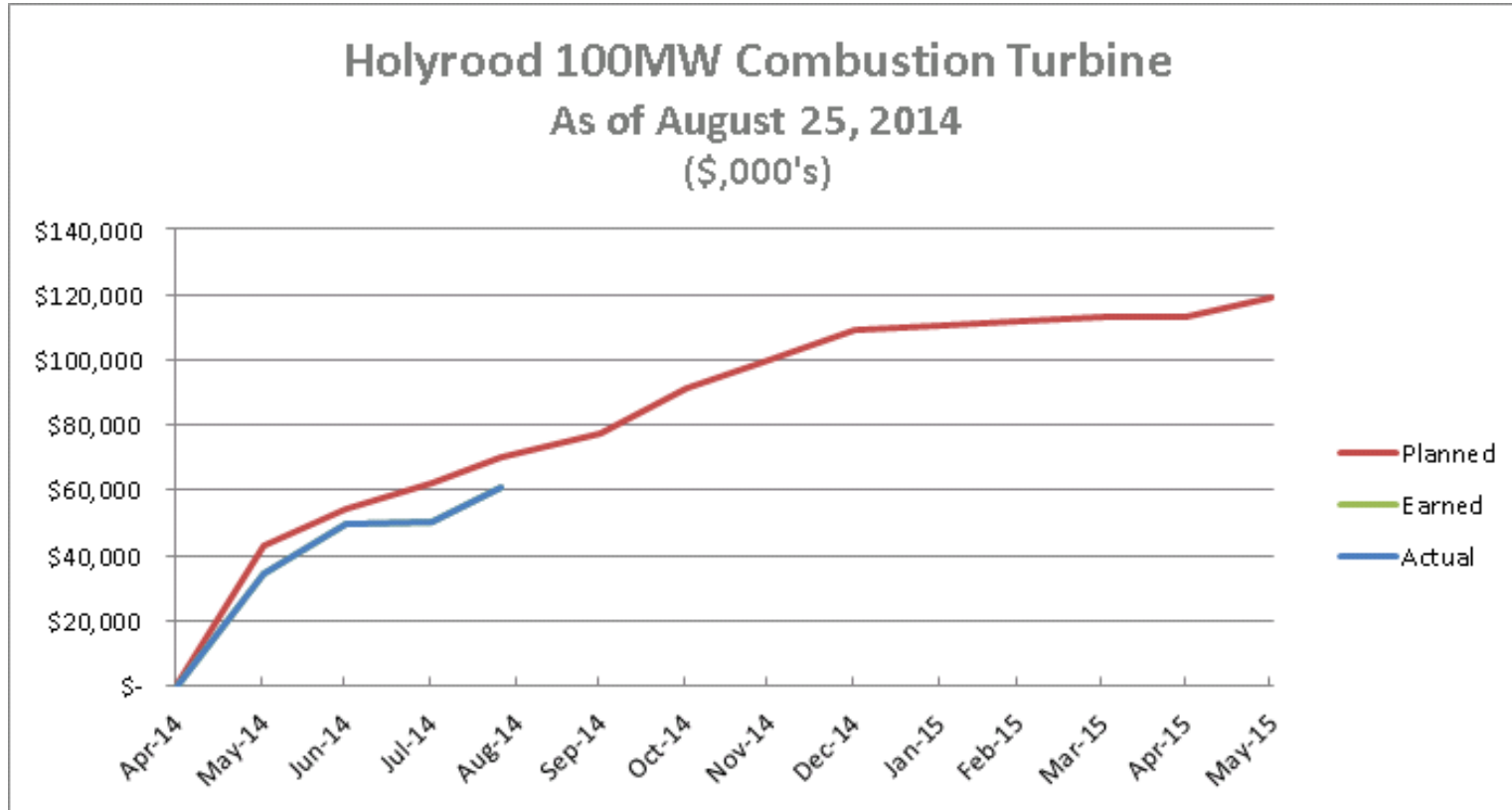
# Level 2 – Summary Schedule

- Summary level schedule provided below.

#	Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float	Qtr 2, 2014		Qtr 3, 2014		Qtr 4, 2014			Qtr 1, 2015			
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1		<b>100 MW Combustion Turbine (Integrated)</b>	107.5	03-Mar-14 A	19-Jan-15	-13.0	[Gantt bar spanning from Mar-14 to Jan-15]										
2		Milestones - Key Dates	11.0	17-Mar-14 A	22-Dec-14	3.5	[Gantt bar spanning from Mar-14 to Dec-14]										
3		EPC Contract Preparation	0.0	31-Mar-14 A	30-May-14 A		[Gantt bar spanning from Mar-14 to May-14]										
4		Enabling Works	30.0	03-Mar-14 A	06-Oct-14	56.5	[Gantt bar spanning from Mar-14 to Oct-14]										
5		System Operations Interfaces	80.0	12-Jun-14 A	08-Dec-14	14.5	[Gantt bar spanning from Jun-14 to Dec-14]										
6		Terminal Station	69.4	11-Apr-14 A	21-Nov-14	25.1	[Gantt bar spanning from Apr-14 to Nov-14]										
7		Combustion Turbine Interface	107.5	26-May-14 A	19-Jan-15	-13.0	[Gantt bar spanning from May-14 to Jan-15]										
8		Water Supply/Effluent	25.0	02-Jun-14 A	17-Sep-14	69.5	[Gantt bar spanning from Jun-14 to Sep-14]										
9		<b>Transmission &amp; Distribution</b>	15.5	09-Jul-14 A	02-Sep-14	0.0	[Gantt bar spanning from Jul-14 to Sep-14]										
10		General & Milestones	5.0	09-Jul-14 A	02-Sep-14	0.0	[Gantt bar spanning from Jul-14 to Sep-14]										
11		Materials	8.3	12-Aug-14	21-Aug-14	9.7	[Gantt bar spanning from Aug-14 to Aug-14]										
12		Installation Work	10.3	18-Jul-14 A	26-Aug-14	5.3	[Gantt bar spanning from Jul-14 to Aug-14]										
13		<b>NALCOR - Simple Cycle 1 x Westinghouse 501 D5A - B-1 - NEW</b>	130.3	01-May-14 A	26-Dec-14	0.0	[Gantt bar spanning from May-14 to Dec-14]										
14		Payment Milestones	150.0	21-May-14 A	05-Dec-14	25.5	[Gantt bar spanning from May-14 to Dec-14]										
15		Pre Project	41.4	01-May-14 A	01-Oct-14	56.8	[Gantt bar spanning from May-14 to Oct-14]										
16		Pre EPC	0.0	07-May-14 A	19-Jul-14 A		[Gantt bar spanning from May-14 to Jul-14]										
17		Engineering	49.0	12-May-14 A	10-Oct-14	49.2	[Gantt bar spanning from May-14 to Oct-14]										
18		Procurement	110.0	16-May-14 A	03-Dec-14	20.3	[Gantt bar spanning from May-14 to Dec-14]										
19		Construction	107.8	02-Jun-14 A	02-Dec-14	22.6	[Gantt bar spanning from Jun-14 to Dec-14]										
20		Commissioning and Start Up	92.8	13-Sep-14	26-Dec-14	0.0	[Gantt bar spanning from Sep-14 to Dec-14]										



# Cost Summary – S-Curve



Note: earned = actual for this report

# Risk Analysis

A 3<sup>rd</sup> party facilitated risk workshop was held on June 26<sup>th</sup>.

Risk Register was produced during the workshop. 50+ risks identified.

Risk mitigation plan in place and being used to manage risk during execution of the project.

## Key Risks & Mitigation (cont'd)

**Risk:** Construction activities lead to contact with energized lines leading to safety incident.

**Mitigation:** Relocate lines, power line hazard training for operators, use permit system, prepare lift plans, de-energize lines where possible.

*(Aug 29 update - Jack and Slide arrangement used to move turbine, generator and GSU)*

## Key Risks & Mitigation (cont'd)

**Risk:** Unfamiliarity with new equipment leads to delay in commissioning.

**Mitigation:** Training included in EPC contract; engage operations and commissioning personnel early in the process.

*(Aug 29 update – commissioning coordinator assigned to project)*

## Key Risks & Mitigation (cont'd)

**Risk:** Labour issues at the plant/TRO leads to work disruption and delay in project.

**Mitigation:** Contract terms currently under negotiation; maintain open communications with stakeholders.

*(Aug 29 – working closely with operations for assignment of resources to the project.)*

## Key Risks & Mitigation (cont'd)

**Risk:** Lack of coordination of work with all of the work crews on site leads to safety incident.

**Mitigation:** HSE Plans; Site Orientations; Contractor coordination meetings; toolbox meetings.

*(Aug 29 update – coordination meeting held this period between u/g utility contractor and EPC contractor)*

## Key Risks & Mitigation (cont'd)

**Risk:** Aggressive project schedule does not allow for any delay or rework in design – leads to schedule delay.

**Mitigation:** Close coordination between fast-track design and construction teams; regular coordination meetings; field engineering engaged with design team.

## Key Risks & Mitigation (cont'd)

**Risk:** Delay in delivery of equipment and/or materials leads to schedule delay.

**Mitigation:** expediting; order materials as early as possible; identify long lead items early in project; choose appropriate shipping method; identify work around contingency plans.



## Key Risks & Mitigation (cont'd)

**Risk:** Lack of available of resources to execute the Holyrood terminal station P&C work.

**Mitigation:** Engage external resources where required.

*(Aug 29 update – external resources engaged for P&C technician and electrician roles)*

# Project Photos

# Photo 1 – CTG Site - Holyrood



# Photo 2 – Generator Arriving - Holyrood



# Photo 3 – Generator Jack and Slide - Holyrood



# Photo 4 – Turbine and Generator Rough Alignment – Holyrood, NL



# Photo 5 – Fuel Offloading Pumphouse - Holyrood



# Photo 6 – Fuel Offloading Pumphouse - Holyrood





# Photo 7 – Duct Banks - Holyrood



# Photo 8 – Transmission Line Construction - Holyrood

New Structures



