

NOVA SCOTIA POWER INC.

TRANSMISSION & DISTRIBUTION ENGINEERING DEPARTMENT



FACILITIES STUDY INFRA-STRUCTURE REPORT
FOR
IR#56 - ESTABLISHING A 69 kV SYSTEM INTERCONNECTION
FOR A NEW 34 MW WIND POWERED GENERATING FACILITY
AT PUGWASH, NOVA SCOTIA

Approved by:



Tim Leopold, P.Eng.
Director, Project Implementation

Date: 2010/11/18

Rev. 2 (Nov. 19, 2010)



W.O.no.: IR#56 Page 4 of 48

Project: Pugwash Wind Generating Facility

Date: 2010-11-19 Rev. no.: 2

Facilities Study Report

System	Description
1.0	<p>INTRODUCTION:</p> <p>This project provides for the establishment of a 69 kV system connection for a new 34 MW wind powered generating facility consisting of 17 – 2.0 MW Enercon E-82 wind energy converters located near Pugwash, NS.</p> <p>The Point of Interconnection will be to the existing 69kV line (L-5058) emanating from the Springhill Substation (74N) within 1 km of the Pugwash Substation (7N). L-5058 also supplies a substation at Oxford, NS.</p> <p>The cost estimates provided here-in are good faith best estimates based on the scope of work defined in this Facility Study Report, however, the Interconnection Customer will be responsible to pay NSPI for the entire incurred cost associated with this project, be it higher or lower than the estimate provided here-in.</p> <p>This Interconnection Facilities Report is based on the Revised Standard Generator Interconnection Procedures as approved by the UARB February 10, 2010.</p>
2.0	<p>SUMMARY:</p>
2.1	<p>Estimated Costs:</p> <p>The estimated cost for Nova Scotia Power to provide a 69 kV interconnection to the Pugwash wind powered generating facility is \$832,395.00 (HST excluded). This cost estimate is summarized in Table 1: Pugwash Wind Generating Facility Cost Estimate below.</p> <p>The cost estimate in Table 1 is based on the scope of work outlined in Section 3.0 of this Facilities Study Report. The cost indicated in Table 1 is an estimate only.</p> <p>There is a one time initial charge for acquiring the radio licence for the low capacity radio frequency for the new communications link between Mt. Pleasant and the Pugwash Wind Facility's substation that has been included in the capital estimate. There will also be an ongoing annual license cost of approximately</p>

Transmission Engineering	prepared by: <u>R.L. Johnson, P.Eng.</u>	Customer Operations checked by: _____
Department	approved by: <u>T. G. Leopold</u>	Division approved by: _____



Facilities Study Report

System	Description
--------	-------------

\$140.00 to cover the annual licensing fees.

Table 1: Pugwash Wind Generating Facility Cost Estimate:

Pugwash Wind Farm (IR#56) [34MW]

Account	Activity	Accounts -->	Labour		Material	Expenses		Contracts	Totals	
			001	002	012	011	041	066	013	
022	Electrical Control Equipment		13,046	3,710	20,570	1,150	1,150	0	0	39,626
035	Wood Poles		0	0	66,000	0	0	0	80,500	146,500
043	Substation Devices		2,770	0	0	0	0	0	0	2,770
044	Substation Transformers		0	0	0	0	0	0	0	0
045	Underground Conduit		0	0	0	0	0	0	0	0
046	Underground Conductors		0	0	0	0	0	0	0	0
061	Telephone Equipment (/ Comm Equip.)		32,365	0	279,400	575	288	0	128,800	441,427
085	Design (i.e. Engineering)		44,733		0	805	518	0	0	46,055
086	Commissioning		15,412	3,109	0	1,725	863	0	0	21,108
087	Field Supervision and Operations		0	0	0	1,640	0	0	0	1,840
088	Survey and Mapping		0		0	0	0	0	2,300	2,300
	Sub-Total (New Capital)		108,325	6,819	365,970	6,095	2,818	0	211,600	701,626
	Sub-Total (Other Expenses)					16,080		104,689		120,769
094	005	Interest Capitalized						10,000		10,000
	Grand Total		108,325	6,819	365,970	22,175	2,818	114,689	211,600	832,395
096	006	Capital Contributions						0		0
	Totals		108,325	6,819	365,970	22,175	2,818	114,689	211,600	832,395

Estimated by: R. L. Johnson
2010-07-29

The above estimate includes costs for the Network Upgrades as well as for the Transmission Provider Interconnection Facilities (TPIF) and are as follows;

Network Upgrades: \$ 88,730.00 (74N - Springhill Mods.)
TPIF: \$ 743,665.00

The acquisition and the clearing of the right of way for this line work is **NOT** included in the cost estimate provided as it is not included in the scope of work for NSPI.

Transmission
Engineering

prepared by: R.L. Johnson, P.Eng.

Customer
Operations

checked by: _____

Department

approved by: T. G. Leopold

Division

approved by: _____