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August 30, 2017

PLANT-E CORP
POWER MERCHANTS

Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord , NH 03301-2429

Re: Renewable Energy Source Application – Seeking Class IV Eligibility

Ms. Howland:

Ayers Ltee ("**Ayers**") owns and operates two run of the river hydro plants totaling 4.8MW. The generator began operation before January 1, 2006 (Technical description is attached, Annex I).

We believe that this generating plant could qualify under New Hampshire's renewable portfolio standard. We seek to confirm with you that the facility complies with the location requirements of the program and meets its classification requirements.

Location:

We are aware that Section 362-F:6 IV mentions that the "source" need to be either within the New England control area or located in a synchronous control area adjacent to the New England control area.

It appears that the Quebec control area is asynchronous with that of New England. However, due to how the New England ISO classifies this interconnection, it is possible to consider an energy delivery to the existing DC converter as "generation within New England".

As mentioned in our email conversation of July 27 we understand that the New England ISO recognizes Capability Credits on the Hydro-Quebec Interconnection[1]. We feel that since the ISO considers that this point qualifies as "capacity", energy delivered at this point should be considered as coming from a New England source.

[1] https://www.iso-ne.com/static-assets/documents/2014/11/er15-___-000_11-6-14_2018-2019_icr_filing.pdf ; https://www.iso-ne.com/static-assets/documents/regulatory/tariff/sect_3/mr1_sec_13_14.pdf (page 214)

We referred to Section 362-F:2 of the RPS rules for a definition of the word "source" and found that paragraph XV defines a "source" as a type of Class:

> *XV. "Renewable energy source," "renewable source," or "source" means a class I, II, III, or IV source of electricity or a class I source of useful thermal energy (...)*

The concept that a source may only be a generating unit does not seem to appear in the text of the definition. The only reference to a "generating unit", in this text, is to create an exception. According to the definition, a generating unit shall not be considered a renewable source when such a source is under a long term contract at a rate fixed prior to January 1, 2007. The full text of XV reads as follows:

> *XV. "Renewable energy source," "renewable source," or "source" means a class I, II, III, or IV source of electricity or a class I source of useful thermal energy. An electrical generating facility, while selling its electrical output at long-term rates established before January 1, 2007 by orders of the commission under RSA 362-A:4, shall not be considered a renewable source.*

On the other hand, we find a definition of the word "source" in the ISO New England Glossary as being: "the point on the transmission system where electric energy is injected"[2].

We also checked the New Brunswick interconnection between Canada and New England and see that it is an AC transmission circuit[3]. It would appear to be odd that a Canadian import from New Brunswick should not be considered the same as a Canadian import from Quebec.

This review brings us to conclude that the Ayers power plant can be considered to be electrically within the New England control area when it delivers energy.

Classification:

Considering that the Ayers facility is an "Existing Small Hydroelectric" generator, we think that it could qualify as a Class IV source.

We understand that Class IV under the RPS statute (Ch 362-F:4) is defined as:

> *IV. (a) Class IV (Existing Small Hydroelectric) shall include the production of electricity from hydroelectric energy, provided the facility:*
>
> *(1) Began operation prior to January 1, 2006;*
>
> *(2) When required, has documented applicable state water quality certification pursuant to section 401 of the Clean Water Act for hydroelectric projects; and*
>
> *(3) Either:*
>
> *(A) Has a total nameplate capacity of 5 MWs or less as measured by the sum of the nameplate capacities of all the generators at the facility and has actually installed both upstream and downstream diadromous fish passages and such installations have been approved by the Federal Energy Regulatory Commission, or;*

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[2] https://www.iso-ne.com/participate/support/glossary-acronyms#s

[3] https://www.iso-ne.com/static-assets/documents/regulatory/tariff/attach_f/attach_f.pdf (Schedule A page 29)

(B) Has a total nameplate capacity of one MW or less as measured by the sum of the nameplate capacities of all generators at the facility, is in compliance with applicable Federal Energy Regulatory Commission fish passage restoration requirements, and is interconnected with an electric distribution system located in New Hampshire.

The plant effectively began operations prior to January 1, 2006. There are no requirements for a certification pursuant to section 401 of the Clean Water Act. The nameplate is of less than 5MW but the facility does not have a FERC approved upstream-downstream diadromous fish passage installation.

The plant has the required environmental certifications issued by the Quebec and Federal governments. The fish present at the facility were cataloged by governmental experts and none are diadromous. There is no salt water in this area. So we respectfully suggest that this requirement should be waived.

Conclusion and request

After reviewing both the location and Class IV specific requirements, we strongly believe that the Ayers facility complies with the pre-requisites of the program and can qualify as a Class IV source.

The program is opened to facilities located in an adjacent control area to the New England control area. Since legislation is specific to each control area and thus varies, we suggest that local governmental authorizations granted to the facility are a compliant equivalent to what is required under New Hampshire law.

Attachment 1 provides a brief description of the facility and its equipment. We also provide the list of the fish catalogued at the site.

Please do not hesitate to contact us at pplante@plantecorp.com or 514 297 2522.

Regards

Pierre Plante
President
740 Saint-Maurice Street, Suite 209
Montreal, Quebec, H3C 1L5 CANADA

ANNEX I

SUMMARY DESCRIPTION OF INSTALLATIONS

A. Address of facilities:
346 Hamford Street, Lachute, Quebec, J8H 3P6
The facilities are located on the North River in the Municipality of Lachute, Quebec

B. Name and contact information of the designated representative for coordination with the Transmission Provider:
Name: Gilbert Ayers
Title: President
Address: 346 Hamford Street
J8H 3P6
Lachute, Quebec
Phone: (450) 562-7958
Cell: (514) 979-7958
electronic: gilbertayers@hotmail.com

C. Total installed capacity: 4.8 MW

D. Maximum power injected at the connection point: 5.97 MW

E. Mechanical and electrical systems

Turbine Generator Group # 1	Power Plant # 2	
Number:	3	3
Brand:	Allis Chalmers	FlYGT
Model:	H170	E: 7650
Rated Power:	1600 kW	390 kW
Rated voltage:	4,16 kV	600V
Nominal power factor: 0.8		0.83
Turbine Type:	Double Francis	Kaplan
Alternator Type: Synchronous Induction		
Cruise control:	No	No
Voltage Regulator: Yes		NA
Stabilizer:	No	NA

Connection transformer
Number: 1
Rated power: 5,4 / 7,2 MVA
Nominal Voltage Rating: 4.16 kV - 25 kV
Impedance: Standard
Winding: N / A

Grounding: Yes
Number of sockets: 3
Regulating range: 8%
Capacities under load with regulation
automatic: N / A

Reactance in the neutral of the connection transformer
Impedance: 28 ohms
Reagent support equipment (if required)
Number: N / A
Type: N / A
Nominal power: _ N / A __ kvar
Rated voltage: _ N / A __ kV
Disconnection station (distribution network only)
Main Circuit Breakers
Number: 1
Grounding: No

Any modification to the data contained in this annex must be communicated in writing to the Transmission Provider within a reasonable period of time.

ANNEXE I

DESCRIPTION SOMMAIRE DES *INSTALLATIONS*

A) **Adresse des *installations* :**
346, rue Hamford, Lachute, Québec, J8H 3P6

Les *installations* sont situées sur la rivière du Nord dans la municipalité de Lachute, Québec

B) **Nom et coordonnées du représentant désigné pour la coordination avec le Transporteur :**

Nom	:	Gilbert Ayers
Titre	:	Président
Adresse	:	346, rue Hamford
		J8H 3P6
		Lachute (Québec)
Téléphone	:	(450) 562-7958
Cellulaire	:	(514) 979-7958
C. électronique	:	gilbertayers@hotmail.com

C) **Puissance totale installée :** 4,8 MW

D) **Puissance maximale injectée au point de raccordement :** 5,97 MW

E) **Systèmes mécaniques et électriques**

Groupe turbine-alternateur	Centrale #1 Centrale #2	
Nombre	: 3	3
Marque	: Allis Chalmers	FIYGT
Modèle	: H170	E :7650
Puissance nominale	: 1600 kW	390 kW
Tension nominale	: 4,16 kV	600V
Facteur de puissance nominal	: 0,8 0,83	
Type de turbine	: Double Francis	Kaplan

Type d'alternateur	: Synchrone À induction	
Régulateur de vitesse	: Non	Non
Régulateur de tension	: Oui	NA
Stabilisateur	: Non	NA

Transformateur de raccordement

Nombre	: 1
Puissance nominale	: 5,4/7,2 MVA
Tension nominale	: 4.16 kV - 25 kV
Impédance	: Standard
Enroulement	: N/A
Mise à la terre	: Oui
Nombre de prises	: 3
Plage de régulation	: 8%
Prises sous charge avec régulation automatique	: N/A

Réactance dans le neutre du transformateur de raccordement

Impédance	: 28 ohms

Équipement pour le support réactif (si requis)

Nombre	: N/A
Type	: N/A
Puissance nominale	: _ N/A __ kvar
Tension nominale	: _ N/A __ kV

Poste de sectionnement (réseau de distribution seulement)

Disjoncteurs principaux

Nombre	: 1
Mise à la terre	: Non

Toute modification apportée aux données contenues dans cette annexe doit être communiquée par écrit au **Transporteur** dans un délai raisonnable.

Fish species catalogued

By the Ministry of Forest and Wildlife: M. Michel Renaud, biologist; reported in Environmental Impact Study, Ecohydro Inc.

Perca Flavescens (Yellow Perch)

Stizostedion Vitreum (Walleye)

Ambloplites Rupestris (Rock Bass)

Lepomis gibbosus (Pumpkinseed)

Semotilus corporalis (Fallfish)

Micropterus Dolomieu Lacepede (Smallmouth Bass)

Ictalurus Nebulosus (Brown Bullhead)

Isox Lucius (Northern Pike)

Catostomus commersoni (White Sucker)