

Complementary Agreement no. 11

(CBJNQ)

BETWEEN

The CREE REGIONAL AUTHORITY, a public corporation duly constituted under Chapter 89 of the Statutes of Québec 1978, herein acting and represented by Matthew Coon Come, its chairman, duly authorized to execute this Agreement;

and

La SOCIÉTÉ D'ÉNERGIE DE LA BAIE JAMES, a corporation duly incorporated and having its head office in Montréal, Québec, herein acting and represented by its authorized representative;

and

HYDRO-QUÉBEC, a corporation duly incorporated and having its head office in Montréal, Québec, herein acting and represented by its authorized representative.

PREAMBLE

WHEREAS Hydro-Québec wishes to complete or carry out the following projects:

- the LA 1 Project;
- the LA 2 Project;
- the 3rd 735-kV transmission line Project between Lemoyne and Tilly;
- the 2nd 315-kV transmission line Project between LG 2A and Radisson;
- the 12th transmission line Project;
- the Series capacitors Project;
- the Series compensation Project for the north-west network; Abitibi, Albanel, Chibougamau and Némiscau substations;

WHEREAS the James Bay Crees consider that the LA 1 Project is not included in Le Complexe La Grande (1975) or that, if it is included therein, the project which Hydro-Québec now wishes to carry out is a substantial modification to Le Complexe La Grande (1975);

WHEREAS the James Bay Crees consider that the connection of the 12th transmission line to the Chissibi substation is a substantial modification to Le Complexe La Grande (1975);

WHEREAS the James Bay Crees consider that their consent is required to carry out the projects detailed herein;

WHEREAS Hydro-Québec considers that the LA 1 Project is included in Le Complexe La Grande (1975), that it substantially conforms thereto and that the purpose of the technical description made thereof in section 1 of this Agreement is merely to detail this Project pursuant to the studies carried out in relation thereto;

WHEREAS Hydro-Québec considers that the connection of the 12th transmission line to the Chissibi substation is not a substantial modification to Le Complexe La Grande (1975);

WHEREAS Hydro-Québec considers that the consent of the James Bay Crees is not required to carry out the projects detailed herein;

WHEREAS the Parties disagree on these questions, including the question of consent, as regards the projects detailed herein;

WHEREAS the Cree Regional Authority acts on its own behalf and on behalf of the James Bay Crees in this Agreement;

WHEREAS, for practical reasons and for the purpose of any future references to the expression “Le Complexe La Grande (1975)”, the Parties have agreed to amend certain provisions of Section 8 of the James Bay and Northern Québec Agreement;

WHEREAS the parties hereto are entitled to amend the said provisions of Section 8 of the said JBNQA under subsection 8.19 thereof.

NOW, THEREFORE, and without prejudice to the foregoing, the Parties hereby agree as follows:

1

Le Complexe La Grande (1975), as described in the JBNQA, shall include the following projects:

1.1 LA 1 Project

The LA 1 Project consists principally of a powerhouse, spillway and temporary diversion tunnel as well as two dams and eighty dykes for reservoir closure, and related works.

The powerhouse is located on the right bank of the Laforge River. It has six turbine/generator units with a total installed capacity of 852 MW. The design flow is 1,613 m³/s and the rated head is approximately 57,3 m. The powerhouse is fed by a channel heading to an intake control structure with six gated openings. Six penstocks link the intake with the scrollcases in the powerhouse. The tailrace channel is approximately 500 m long; its width varies from 135 m at the outlet of the powerhouse to some 100 m at the river. The transformer and switching substation is located on the roof of the powerhouse and has six bays, one for each generating unit.

The spillway is located on the right bank of the Laforge River upstream of the powerhouse at the west end of the main dam. It has two openings, each 11 m wide, and its discharge capacity with the reservoir at its maximum level of 439 m is 2,450 m³/s.

The Laforge 1 development also includes two dams, one on the Laforge River and the other on the Vincelotte River, and eighty dykes. These works allow the formation of the reservoir which includes a part of Lac des Oeufs; the reservoir at its maximum level has an area of approximately 1,288 km². The annual drawdown of the reservoir is limited to approximately 3 m. However, it is possible that once every ten years, on average, the drawdown reaches 8 m.

The main dam is approximately 985 m long and 66 m high. Its construction requires the placement of approximately 2,397,000 m³ of fill materials.

The dam closing the Vincelotte River has a maximum height of approximately 28 m and a length of approximately 1,178 m. Its construction requires the placement of 1,080,000 m³ of fill materials.

Eighty dykes are required to close the reservoir. They contain a total volume of approximately 4,225,000 m³ of fill materials and they have a total crest length of some 19,575 m.

List of the plates for the LA 1 Project:

Plate 1: Plan de situation

Plate 2: Agencement général de la centrale LA 1 et des ouvrages connexes

Plate 3: Agencement général du barrage LA 1 et des ouvrages connexes

See plan no.29 Plate 1 Plan de situation LA 1 (Complementary Documents)

See plan no.30 Plate 2 Agencement de la centrale LA 1 (Complementary Documents)

See plan no.31 Plate 3 Agencement du barrage LA 1 (Complementary Documents)

1.2 LA 2 Project

The LA 2 Project consists principally of a combined powerhouse and intake, spillway, an earthcore-rockfill embankment abutting these structures at both ends, a closure dyke and related works.

The LA 2 powerhouse is built behind dyke KD-14, at the outlet of the existing Fontanges reservoir.

The “run-of-the-river” powerhouse is located at the lowest point of the valley, to the south of the Fontanges channel. It incorporates two turbine/generator units having a total installed capacity of 310 MW. The design flow is 1,200 m³/s and the rated head is approximately 26,9 m. The two intakes are served by a short intake channel and are integrated into the powerhouse. The 13,8 – 315-kV transformers are located on the draft tube deck and the substation is located on the roof of the powerhouse. Two three-phase 315-kV power lines link the substation to the switching station located some 100 m south of the powerhouse.

Each intake is 32 m wide and is divided into three passages provided with separate sets of guides for the trashracks, bulkhead gates and intake gates. The semi-spiral cases are of concrete. The tailrace is approximately 935 m long and its width varies from 64 m to 40 m at the draft tube outlets and reaches approximately 225 m at Lake Toqué. Between Lake Toqué and Lake Des Espoirs, the natural riverbed is deepened along the left bank in order to increase the head.

The spillway is located on the north side of the powerhouse and linked to it by a concrete gravity dam of approximately 20 m in length. It has two bays, each approximately 11 m wide, and its discharge capacity is 2,300 m³/s when the reservoir is at a normal level of some 481 m. The spillway discharge is returned to the water body below the Fontanges channel.

To the south of the powerhouse and to the north of the spillway a rockfill embankment dam with a moraine core completes the impoundment. The main dam south of the powerhouse is approximately 644 m long and its maximum height is 22 m.

The north dam has a maximum height of 17 m and is some 321 m long. A concrete gravity wall which supports the moraine core permits the change of alignment between the north dam and the spillway.

The existing Fontanges channel, which is used for diversion during the entire construction period, is closed after breaching the dyke KD-14 by a homogeneous dyke built upstream from the existing control weir. This dyke is approximately 229 m long and has a maximum height of 8 m.

The total surface area of the existing Fontanges reservoir at its normal level of operation is approximately 240 km².

List of the plates for the LA 2 Project:

Plate 4: Plan de situation

Plate 5: Aménagement général des ouvrages

Plate 6 : Centrale et évacuateur – plan et coupes

See plan no.32 Plate 4 Plan de situation LA 2 (Complementary Documents)

See plan no.33 Plate 5 Aménagement des ouvrages LA 2 (Complementary Documents)

See plan no.34 Plate 6 Centrale et évacuateur LA 2 (Complementary Documents)

1.3 2nd 315-kV transmission line Project between LG 2A and Radisson

The 2nd 315-kV transmission line between the Radisson substation and the LG 2A powerhouse will be approximately 16 km long and requires both guyed and self-supported (rigid) towers.

The minimum and maximum surface areas of the guyed towers (including guys) will respectively 23 m x 23 m and 32 m x 32 m. For the self-supported towers, the minimum and maximum areas occupied will be 11 m x 11 m and 24 m x 24 m.

The towers support six bundled conductors (two per bundle), supported by I-type string insulators which conductors will have a minimum ground clearance of 7,9 m, and one overhead ground wire. The overhead ground wire will include optical fibers.

The right-of-way will be 83 m wide. The total right-of-way will be 148 m wide for the two LG 2A – Radisson lines and will be entirely cleared.

Plate for the 2nd 315-kV transmission line Project between LG 2A and Radisson:

Plate 7 : Plan de situation

See plan no.35 Plate 7 Plan de situation La Grande 2A - Radisson (Complementary Documents)

1.4 3rd 735-kV transmission line Project between Lemoyne and Tilly

The 3rd 735-kV transmission line between the Tilly substation, located near the La Grande 4 powerhouse, and the Lemoyne substation, located west of River De Pontois will be approximately 116 km long and requires both guyed and self-supported (rigid) towers.

The minimum and maximum surface areas of the guyed towers (including guys) will be respectively 30 m x 40 m and 38 m x 55 m. For the self-supported towers, the minimum and maximum areas occupied will be 18 m x 18 m and 24 m x 24 m.

The towers support three phases of four-wire bundles, supported by V and I-type suspension assemblies and two overhead ground wires, one of which will include optical fibers. The conductors will have a minimum ground clearance of 13,6 m.

The right-of-way will be 90 m wide and only partly cleared when the height of the tree cover permits.

In addition to the transmission line, the Project includes connections to the Lemoyne and Tilly substations.

The connection to the Lemoyne substation requires changes to the lines north of the substation and changes to the line connecting the Lemoyne substation to the Chissibi substation to the west. The enlargement required for the new outgoing line will occupy a surface area of 3,1 ha. A 20 m-wide strip circling the substation will be set aside for drainage and landscaping purposes.

The connection to the Tilly substation requires the rerouting of outgoing lines; no enlargement of the site is necessary.

Plate for the 3rd 735-kV transmission line Project between Lemoyne and Tilly:

Plate 8: Plan de situation

See plan no.36 Plate 8 Transmission line Lemoyne et Tilly (Complementary Documents)

1.5 12th transmission line Project

The 12th 735-kV transmission line starts at the Chissibi substation, located near the La Grande 3 powerhouse and ends at the limit of the JBNQA Territory, a distance of approximately 560 km. The cables are supported by two types of towers: guyed and self-supported (rigid).

The normal width of the right-of-way is 90 m but this will be reduced to a width of 59 m or 76 m if the line runs parallel to an existing line.

The minimum and maximum surface areas of the guyed towers (including guys) will be respectively 30 m x 40 m and 38 m x 55 m. For the self-supported towers, the minimum and maximum areas occupied will be respectively 9 m x 9 m and 24 m x 24 m.

These towers support three phases of four-wire bundles, supported by V-type and I-type suspension assemblies and two overhead ground wires, one of which will include optical fibers. The minimum ground clearance of the conductors is 12,6 m.

In addition to the transmission line, the Project includes connection to the Chissibi, Albanel and Chibougamau substations, requiring additional structures and related equipment required for the operation of the network.

List of the plates for the 12th transmission line Project:

Plate 9: Plan de situation – partie nord

Plate 9A : Plan de situation – partie sud

See plan no.37 Plate 9 Plan de situation – partie nord (Complementary Documents)

– PARTIE NORD

See plan no.38 Plate 9A Plan de situation – partie sud (Complementary Documents)

– PARTIE SUD

1.6 Series capacitors Project

The Project consists of the installation of capacitors to block direct current in the middle of the three lines between Radisson and Némiscau and in the middle of the line linking La Grande 2 to Chissibi.

These installations, modest in size, are located within the right-of-way and under their respective line, as close as possible to an existing road.

The location of the sites is shown on Plate 10:

Site 1, which serves two of the Radisson – Némiscau lines, includes two installations (Opinaca 2 and Opinaca 3) of series capacitors and is located near the Matagami – La Grande 2 road, approximately 200 km from the La Grande 2 powerhouse near the Eastmain River; its access route is 105 m long;

Site 2, which serves one of the Radisson – Némiscau lines includes one installation (Opinaca 1) of series capacitors and is located near the same Matagami – La Grande 2 road, approximately 185 km from the La Grande 2 powerhouse near little Opinaca Lake; its access route is 80 m long;

Site 3, which serves the La Grande 2 – Chissibi line includes one installation (Sakami) of series capacitors and is located near the road linking La Grande 2 to La Grande 3, approximately 105 km from the La Grande 2 powerhouse; its access route is 120 m long.

The overall dimensions of each of the three sites are about 19 m x 47 m.

Plate for the Series capacitors Project:

Plate 10: plan de situation

See plan no.39 Plate 10 Plan de situation (Complementary Documents)

1.7 Series compensation Project for the north-west network; Abitibi, Albanel, Chibougamau and Némiscau substations:

Abitibi substation

Expansion of Abitibi substation

Series compensators will be installed on each of the three lines connecting the Némiscau substation to the Abitibi substation, located approximately 38 km west of the municipality of Chapais.

The enlargement of the site for the installation of the series compensators is located in the northern part of the substation and requires a surface area of approximately 11.6 ha.

Technical description

A three-phase set of series compensators will be installed along each of the three above-mentioned 735-kV lines. For each of the three phases, the following components will be installed on a platform supported by insulating towers:

capacitors;

varistors (non-linear resistance);

damping circuit including dry-type series reactor and resistor;

spark gap;

current and voltage transformers.

The three platforms of each of the lines will be fenced in, built about 8 m from the ground and insulated at 735 kV.

In addition, the installation as planned will include the following equipment:

bypass circuit breakers;

disconnect switches;

busbars mounted on post insulators;

control building;

monopode towers.

Furthermore, one set of shunt reactors will be installed at the starting point of the line connecting the Abitibi and La Vérendrye substations. The installation of a three-phase set of shunt reactors at 735 kV requires the following items:

shunt reactors;

air circuit breaker;

disconnect and grounding switches;

current transformers;

lightning arresters;

steel structures and supports;

fire walls when required;

oil retention basins and oil recovery well;

control and protection equipment.

Albanel substation

Expansion of Albanel substation

Series compensators will be installed on each of the two lines connecting the Lemoyne substation to the Albanel substation located approximately 40 km east of the village of Nemaska. The passage of the 12th transmission line at the Albanel substation requires the installation of a third set of series compensators.

The enlargement of the northern part of the substation by 8.05 ha for series compensation equipment and of the southern part of the substation over 1.18 ha for the reactors is required. Overall, the extension requires a surface area of 9,23 ha.

Technical description

A three-phase set of series compensators will be installed along each of the three above-mentioned 735-kV lines. For each of the three phases, the components required are those described above for the Abitibi substation.

Furthermore, four sets of shunt reactors will be installed at the starting point of the lines connecting the Albanel substation to the Chissibi, Chibougamau and Lemoyne substations. Two of these sets are related to the 12th transmission line.

Chibougamau substation

Expansion of Chibougamau substation

Series compensators will be installed on each of the two lines connecting Albanel substation to Chibougamau substation located approximately 28 km south-west of the municipality of Chibougamau. The passage of the 12th transmission line at the Chibougamau substation requires the installation of a third set of series compensators.

North of the substation, the alignment of the access road will be modified over an area of 0.10 ha, corresponding to a length of 90 m. The site enlargement required for these new installations will cover 8.56 ha for series compensation, 0.28 ha for the inductors on the west side of the substation, and 0.38 ha for the set of shunt reactors located south of the substation. A total of 9.32 ha is required.

Technical description

A three-phase set of series compensators will be installed on each of the three above-mentioned 735-kV lines. For each of the three phases, the components required are those described above for the Abitibi substation.

Furthermore, two sets of shunt reactors will be installed at the starting point of the 12th transmission line connecting the Albanel and Chibougamau substations on the one hand and the Chibougamau and Chamouchouane substations on the other hand.

Némiscau substation

Expansion of Némiscau substation

Series compensators will be installed on each of the three 735-kV lines connecting the Radisson substation, located approximately 15 km south of the La Grande 2 powerhouse, to the Némiscau substation, located approximately 11 km east of the village of Nemaska.

The installation of series compensators requires the enlargement of the northern part of the substation and involves a surface area of approximately 8.6 ha.

Technical description

A three-phase set of series compensators will be installed on each of the three above-mentioned 735-kV lines. For each of the three phases, the components required are those described above for the Abitibi substation.

[Amendment integrated]

2 The preamble shall form part of this Agreement.

3 It is expressly acknowledged that none of the stipulations in this Agreement may be invoked by the Parties hereto or be interpreted as an admission on their part in support of or against their position or arguments which they might raise in any case or legal proceeding, in any forum whatsoever, with respect to a project other than those detailed herein or with respect to any allegations or conclusions, not directly related to a project, in such case or legal proceedings.

4 For greater certainty, the reference to legal proceedings in the preceding section includes the following legal proceedings, except that part of such proceedings which mentions one or more of the projects detailed herein:

- a) Grand Chief Matthew Coon Come et al. v. Her Majesty the Queen in Right of Canada et al. – F.C.T.D. 962-89;
- b) Grand Chief Matthew Coon Come et al. v. Hydro-Québec et al. – S.C.M. 500-05-004330-906;
- c) The Eastmain Band et al. v. Robinson et al. – F.C.T.D. 1512-91; A – 1071-91 (and in the Supreme Court of Canada, should leave to appeal thereto be sought and subsequently granted);
- d) Chief Kenneth Gilpin et al. v. Hydro-Québec et al. – S.C.M. 500-05-011892-922.

5 In this Agreement, the expression “James Bay and Northern Québec Agreement” or “JBNQA” means the agreement approved, given effect to and declared valid by Chapter 32 of the Statutes of Canada 1976-77 and the Statutes of Québec 1976, Chapter 46, as amended by Complementary Agreements Nos. 1 to 10 to the JBNQA.

6 As a consequence, Section 8 of the James Bay and Northern Québec Agreement is amended by adding as subparagraph 8.1.4.3 thereof section 1 hereof.

[Amendment integrated]

7 Complementary Agreement No. 11 shall come into force on the date of execution hereof.

SIGNATORIES (CBJNQ 11)

Signée à Montréal, le 8 janvier 1993

Signed at Montréal, January 8, 1993

ADMINISTRATION RÉGIONALE CRIE

CREE REGIONAL AUTHORITY

Le président, Matthew Coon Come, Chairman

HYDRO-QUÉBEC

Le président du Conseil et chef de la Direction,
Richard Drouin,
Chairman of the Board and Chief Executive Officer
HYDRO-QUÉBEC

Le président et chef de l'exploitation,
Armand Couture,
President and Chief Operating Officer
SOCIÉTÉ D'ÉNERGIE DE LA BAIE JAMES

Le président du Conseil,
Armand Couture,
Chairman of the Board
SOCIÉTÉ D'ÉNERGIE DE LA BAIE JAMES

Le président-directeur général,
Jean-Guy René,
President and Chief Executive Officer