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2018-074731  
Boriana Christov

July 17, 2018

Dear Ms. Thompson:

**Re: Tax Treatment of Certain Expenses Incurred as Part of a Geothermal Energy Project**

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This is in response to your request from March 6, 2018 for our views on the tax treatment of various expenses incurred as part of a typical geothermal project (the “**Project**”) and takes into account our subsequent several telephone conversations with you relating to the Project. This letter is supplemental to our letter No. 2016-063503, dated June 14, 2016, which describes in detail the technical requirements that a property must meet in order to be included in Class 43.2 of Schedule II of the *Income Tax Regulations*<sup>1</sup> and the circumstances in which an expense can qualify as a Canadian renewable and conservation expense (“**CRCE**”) within the meaning of that term in section 1219 of the Regulations. The focus of the present letter is on the impact of the measures introduced with federal Budgets 2017 and 2018 (the “**Budget Measures**”) with regard to a typical geothermal project. The Budget Measures, together with some technical requirements, are briefly described in the Appendix hereto.

**I. DESCRIPTION OF THE PROJECT**

**A. Overview**

Geothermal energy projects involve the extraction of geothermal energy generated in the interior of the earth to produce a renewable form of electricity and/or heat.

Unlike geo-exchange systems (described under sub-clause (d)(i)(A)(II) of Class 43.1) which employ a ground source heat pump to exchange heat with the earth at depths of tens of metres (typically for space heating and cooling), geothermal systems extract steam or hot water directly from the earth through wells drilled to depths of several kilometres.

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<sup>1</sup> C.R.C. c. 945 as amended; [hereinafter the “**Regulations**”].

Depending on the quality of a geothermal resource, several types and configurations of geothermal energy projects are possible:

- Geothermal power generation projects generally require high quality geothermal resources that produce steam or relatively hot water. Steam can be used to drive a turbine and generator set, or hot water can be used to heat a secondary fluid with a lower boiling point (via a heat exchanger) to generate a vapour that can be used to drive a turbine and generator set.
- Geothermal heating projects may use geothermal energy in applications such as space heating, industrial process heating or aquaculture. Geothermal steam or hot water is typically used to heat a secondary fluid (via a heat exchanger) and circulating pumps deliver the heat to one or a number of heat users through a secondary distribution piping circuit.
- Geothermal combined heat and power projects may involve a combination of the two project descriptions above or they can be configured such that geothermal heating may employ heat that is recovered from a geothermal power generation system.

Whether used for electricity generation, heating, or a combination thereof, steam or hot water that was drawn from production wells is cooled and returned to the earth through re-injection wells where it absorbs more geothermal energy and can once again be drawn to the surface. This process is then repeated continuously.

### ***B. Phases of the Project***

The Project generally includes the following steps:

1. Exploration – including both surface and in-depth subsurface mapping;
2. Production drilling and well or reservoir testing;
3. Detailed engineering and facility design;
4. Facility construction (heat/power facilities, heat distribution, power transmission and grid interconnection); and
5. Start-up and commissioning.

In general, these steps may be categorized into two broad phases being: (i) the exploration phase and (ii) the development phase, each of which is described in more detail below.

#### **1. The Exploration Phase**

Exploration includes the collection and analysis of site data. Initially, data may be gathered from geological surveys, hot spring chemistry analysis, surface lithology, and fault mapping. Based on analysis of the data, subsurface exploration of the geothermal resource may be

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effected through the drilling of smaller diameter “exploratory wells” (sometimes called “core holes” or “slim wells”) to determine the extent and quality of the geothermal resource.

Although these smaller wellbores do not typically provide the necessary flow capacity to serve as production wells for power generation projects, they may be used in smaller direct heating projects.

## 2. The Development Phase

Following a successful exploration program, the Project may proceed with the drilling and completion of larger diameter production and re-injection wells and flow testing of the geothermal resource. The next stage is detailed engineering which in the case of power generation projects would include design of the power facility, transmission infrastructure and interconnection to the power distribution system.

The final stage of the Project is the construction, start-up and commissioning of the geothermal energy facility and may include the signing of power and/or heat purchase agreements.

### C. *Other Relevant Aspects of the Project*

During both the exploration and the development phases of the Project various provincial permits and licences may be required.

For the purposes of this letter, it is assumed that at least 50% of the capital cost of the depreciable property to be used in the Project would be the capital cost of any property that is described in Class 43.1 or 43.2 of Schedule II of the Regulations. Moreover, it is assumed that at least 50% of said depreciable property is described in subparagraph (d)(vii) of Class 43.1, being equipment used by the taxpayer, or by a lessee of the taxpayer, primarily for the purpose of generating electricity, heat or a combination thereof, solely from geothermal energy.

## II. OUR COMMENTS

This technical interpretation provides general comments about the provisions of the *Income Tax Act* and related legislation. It does not confirm the income tax treatment of a particular situation involving a particular taxpayer, but it is intended to assist you in making that determination. The income tax treatment of particular transactions proposed by a specific taxpayer will only be confirmed by this Directorate in the context of an advance income tax ruling request submitted in the manner set out in Information Circular IC 70-6R7, Advance Income Tax Rulings and Technical Interpretations.

Unless otherwise indicated, all statutory references herein are to the provisions of the *Income Tax Act*<sup>2</sup> (the “Act”) and the Regulations.

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<sup>2</sup> R.S.C. 1985, c. 1 (5<sup>th</sup> suppl.) as amended.

### A. *Overview of Clean Energy Income Tax Incentives*

The Act and the Regulations include the following measures to encourage Canadian taxpayers to make investments in qualifying clean energy generation and energy conservation projects:

- CRCE, which is a category of expenditures relating to the development of eligible clean energy generation and energy conservation projects that may be deducted in full in the year incurred, carried forward indefinitely for use in future tax years or renounced under a flow-through share agreement;
- an accelerated capital cost allowance (“CCA”) for investments in clean energy generation and energy conservation equipment; the current rates of CCA are 30% for equipment described in Class 43.1 and 50% for equipment described in Class 43.2 of Schedule II of the Regulations, both applied on a declining balance basis; and
- the Atlantic investment tax credit of 10% of the cost of prescribed energy generation and conservation properties.

For more information concerning these incentives, refer to Income Tax Folio S3-F8-C2, *Tax Incentives for Clean Energy Equipment* on the Canada Revenue Agency webpage.<sup>3</sup>

### B. *General Tax Considerations Relating to Different Aspects of the Project*

#### I. Provincial Permits and Licences

Different licence, lease and permit fees may be imposed under the applicable provincial law.<sup>4</sup> The tax treatment of these payments will depend on the particular circumstances of each case and the exact legal nature of the property acquired by the payer. This would generally be determined by an examination of the parties’ relationship pursuant to the applicable provincial law. Without a comprehensive review of the particular facts of a given project, we can only provide you with general comments concerning the possible tax treatment of costs incurred for the acquisition of provincial permits, leases or licences.

- Class 14

Where the payer acquires a licence which is for a limited period, the cost of the licence would generally be included in Class 14 and apportioned over the term of the licence. Generally, the apportionment of the capital cost of a class 14 property should be made equally over the term of the property.<sup>5</sup> The limited period of the property must be capable of being ascertained at

<sup>3</sup> The folio can be found at: <https://www.canada.ca/en/revenue-agency/services/tax/technical-information/income-tax/income-tax-folios-index/series-3-property-investments-savings-plans/series-3-property-investments-savings-plan-folio-8-resource-properties/income-tax-folio-s3-f8-c2-tax-incentives-clean-energy-equipment.html#N105C5>.

<sup>4</sup> For example, the British Columbia *Geothermal Resources Act* (R.S.B.C. 1996, c. 171) imposes fees for the grant of a geothermal lease or a geothermal permit. The CRA may accept a different basis of apportionment provided that it is reasonable in the circumstances.

the time the cost is incurred. The provision of renewals and extensions following the original term are relevant in determining the duration of the property and whether it is for a limited period.

The fees paid for renewals and extensions of a licence could also be included in Class 14. Generally, where the renewals or extensions are automatic or within the control of the taxpayer, the overall term of the licence includes such additional periods. However, if there is a requirement for any further negotiations with, or the concurrence or consent of, the grantor of the licence, the new period would not be considered to be an automatic renewal but rather it could be a separate property eligible for inclusion in Class 14. For more information on the income tax treatment of extensions of the term of licences and permits, refer to Income Tax Interpretation Bulletin IT-477 *Capital Cost Allowance – Patents, Franchises, Concessions and Licenses* (Consolidated, Archived), which can be found on the CRA webpage.<sup>6</sup>

- Class 14.1

Where either the initial licence period or the number of the automatic renewals or extensions is indefinite, the property will not be considered to be for a limited period and will not qualify for inclusion in Class 14. It may be eligible for inclusion in new Class 14.1 which generally includes the cost of eligible capital property of a taxpayer acquired before January 1, 2017 under repealed section 14 of the Act and certain intangible properties acquired on or after that date.<sup>7</sup>

- Class 13

Alternatively, the property acquired by the payer may be considered to be a leasehold interest pursuant to the applicable provincial law. In the event that the payer is considered to have acquired a leasehold interest, the cost of the property would generally be included in Class 13 and eligible for a CCA deduction generally calculated on the pro-rated capital cost of the leasehold interest deducted on a straight line basis over 5 years in accordance with Schedule III of the Regulations. For more information on this matter, refer to Interpretation Bulletin IT464R - *Capital Cost Allowance - Leasehold Interests* (Archived).<sup>8</sup>

## 2. General Exploration Expenses

Generally, the exploration stage of the Project is focused on the collection and analysis of site data in order to determine and evaluate the extent and quality of the geothermal resource. During the exploration stage, various expenses may be incurred, including expenses for:

- determining the temperature and chemistry of the geothermal resource;

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<sup>6</sup> <https://www.canada.ca/en/revenue-agency/services/forms-publications/publications/it477-consolid.html>.

<sup>7</sup> Class 14.1 was added with Budget 2016, effective January 1, 2017. See *Budget Implementation Act, 2016, No. 2, S.C. 2016, c. 12*.

<sup>8</sup> <https://www.canada.ca/en/revenue-agency/services/forms-publications/publications/it464r.html>.

- flow testing;
- pre-feasibility and feasibility studies;
- socio-economic studies;
- environmental assessments; and
- negotiating power purchase agreements.

Such expenditures would generally qualify as CRCE since, for the purposes of this letter, it is assumed that at least 50% of the capital cost of the depreciable property to be used in the Project would be the capital cost of any property that is described in subparagraph (d)(vii) of Class 43.1, provided the other requirements in section 1219 of the Regulations are also met.

For more information on the type of expenditures that qualify as CRCE, refer to the Department of National Resources (“NRCan”) *Technical Guide to Canadian Renewable and Conservation Expenses (CRCE)*.<sup>9</sup>

### 3. Expenses Relating to Geothermal Wells

- *Drilling Costs*

The cost of drilling geothermal wells (either an exploratory well or a production well) would also be CRCE, based on the assumption that at least 50% of the capital cost of the depreciable property to be used in the Project would be the capital cost of any property that is described in subparagraph (d)(vii) of Class 43.1, provided the other requirements in section 1219 of the Regulations are also met.

- *Completion Costs*

The cost of completing an exploratory well whose sole purpose is to determine the extent and quality of a geothermal resource could also qualify as CRCE. However, the cost of completing either (i) a production well or (ii) an exploratory well that is used for production (including small-scale heat or electricity production) will not qualify as CRCE but rather may form part of the cost of depreciable property and may be eligible for an inclusion in Class 43.2 of the Regulations.<sup>10</sup>

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<sup>9</sup> This guide can be found at:

<https://www.nrcan.gc.ca/energy/efficiency/industry/financial-assistance/5147>.

<sup>10</sup> In the context of a renewable energy project where it is reasonable to expect that at least 50% of the cost of depreciable property to be used in the project would be property that is: (i) included in Class 43.1 or 43.2, but not (ii) solely described in subparagraph (d)(vii) of Class 43.1, the cost of both drilling and completing the well would generally qualify as CRCE pursuant to paragraph 1219(1)(f) of the Regulations unless the well is, or can reasonably be expected to be, used for the installation of underground piping that is included in paragraph (d) or Class 43.1 or paragraph (b) of Class 43.2. For a further discussion of this context, see technical interpretation 2011-0427561E5 a copy of which is enclosed hereto.

#### 4. Other Equipment

Other equipment that is described in subparagraph (d)(vii) of Class 43.1 could likewise be eligible for the accelerated CCA. This is equipment used primarily for the purpose of generating electrical energy or heat energy (or both electrical and heat energy) solely from a geothermal resource. Some of the properties that are eligible include electrical generating equipment (for example, geothermal turbines); transmission equipment, piping (for example, above- or below-ground piping, or trenching, for the purpose of installing that piping); pumps, heat exchangers, steam separators and ancillary equipment used to collect geothermal energy, and working platforms that primarily serve eligible equipment.

Further, if the Project includes heat distribution infrastructure that is used primarily to provide heating and/or cooling from a central thermal energy generation unit to one or more buildings and the thermal energy is primarily generated by a geothermal resource, this equipment could also be eligible for an inclusion in Class 43.2 by virtue of its description in subparagraph (d)(xv) of Class 43.1.

For more information on the type of eligible equipment that qualifies for the accelerated CCA, refer to the NRCan *Technical Guide to Class 43.1 and 43.2*.<sup>11</sup>

We hope that these comments will be of assistance.

Yours truly,



for: Kimberley Wharram  
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Legislative Policy and Regulatory Affairs Branch

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<sup>11</sup> This guide can be found at: <https://www.nrcan.gc.ca/energy/efficiency/industry/financial-assistance/5147>.

## Appendix

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### TECHNICAL REQUIREMENTS

#### A. *CRCE*

Section 1219 of the Regulations provides the requirements for an expense to qualify as CRCE. In broad terms, in order for an expense to qualify as CRCE, it must be incurred by a taxpayer for the development of an eligible project and be payable to a person or partnership with whom the taxpayer is dealing at arm's length.

CRCE includes certain intangible expenditures incurred in respect of the development of a project for which it is reasonable to expect that at least 50% of the capital cost of depreciable property to be used in the project would qualify for inclusion in Class 43.1 or 43.2. Moreover, these expenses must not be excluded by subsection 1219(2) of the Regulations.

All applicable environmental laws, by-laws and regulations as prescribed by the new subsection 1219(5) of the Regulations must be respected in the year the expense is incurred.

Expenses that qualify as CRCE are included in taxpayer's "Canadian exploration expense" ("CEE") by virtue of paragraph (g.1) of the CEE definition in subsection 66.1(6) of the Act. CRCE can be fully deducted in the year it is incurred or carried forward indefinitely and deducted in future years. Where CRCE is incurred by a principal-business corporation ("PBC"), CRCE can be renounced to shareholders who invest in flow-through shares of the corporation. Please refer to Income Tax Folio S3-F8-C1, *Principal-business Corporations in the Resource Industries* for information on the requirements for a corporation to qualify as a PBC.<sup>12</sup>

#### B. *Accelerated CCA – Class 43.1 or 43.2*

Where the equipment is acquired prior to 2020 (proposed to be extended to 2025)<sup>13</sup> the equipment will be eligible for CCA at a rate of 50% applied on a declining balance basis. However, the cost of property which is included in the taxpayer's CRCE cannot be included in Class 43.2 because of paragraph 1102(1)(a.1) of the Regulations.

In order to be included in Class 43.2, the depreciable property must:

- be situated in Canada;
- be acquired by a taxpayer for use by the taxpayer for the purpose of earning income from a business carried on in Canada or from property situated in Canada, or the

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<sup>12</sup> Income Tax Folio S3-F8-C1 "Principal-business Corporations in the Resource Industries" can be found at: <https://www.canada.ca/en/revenue-agency/services/tax/technical-information/income-tax/income-tax-folios-index/series-3-property-investments-savings-plans/series-3-property-investments-savings-plan-folio-8-resource-properties/income-tax-folio-s3-f8-c1-principal-business-corporations-resource-industries.html>.

<sup>13</sup> See clause 45, *Budget Implementation Act, 2018, No. 1*, (Bill C-74, Royal Assent: July 21, 2018).



- property must be acquired by a taxpayer in order to be leased to a lessee who will use the property for the same income earning purpose; and
- subject to certain exceptions, not have been used for any purpose before the taxpayer acquired the property.

For more detailed information concerning Class 43.2 rules, refer to Income Tax Folio S3-F8-C2, *Tax Incentives for Clean Energy Equipment* on the Canada Revenue Agency webpage.

### ***C. Atlantic Investment Tax Credit***

The Atlantic investment tax credit in subsection 127(9) is a credit equal to 10% of the capital cost of prescribed energy generation and conservation properties that are used primarily in the following activities: (i) manufacturing or processing goods for sale or lease; (ii) farming or fishing; (iii) logging; (iv) storing grain; or (v) harvesting peat, and these activities are carried on in the Atlantic provinces, the Gaspé Peninsula and their associated offshore regions.

For more information on this incentive, refer to Income Tax Folio S3-F8-C2, *Tax Incentives for Clean Energy Equipment* on the Canada Revenue Agency webpage.