KITSELAS GEOTHERMAL INC.

September 10th, 2019

Patrick Wruck
Commission Secretary
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Subject: British Columbia Utilities Commission ("BCUC") Project No. 1598998 Indigenous Utilities Regulation Inquiry
Kitselas Geothermal Inc. ("KGI") Responses to Information Requests by the BCUC

Dear Mr. Wruck,

Please find enclosed Kitselas Geothermal Inc.'s responses to the Information Requests by the BCUC.

If you have any questions, please do not hesitate to contact me.

Warm Regards,

Tim Thompson
Director
Kitselas Geothermal Inc.

British Columbia Utilities Commission
Indigenous Utilities Regulation Inquiry

Kitselas Geothermal Inc. Responses to Information Requests from
British Columbia Utilities Commission

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KITSELAS GEOTHERMAL INC.

"First Nations turn Opportunity into Economy"

"The Solution is already there – it's a matter of will."
-- Edison Bolton, Kitselas First Nation

4562-J Queensway Drive
Terrace, BC V8G 3X6

Information Requests by BCUC

1.0 Reference: Exhibit C6-3, Section 1, p. 8
Market forces

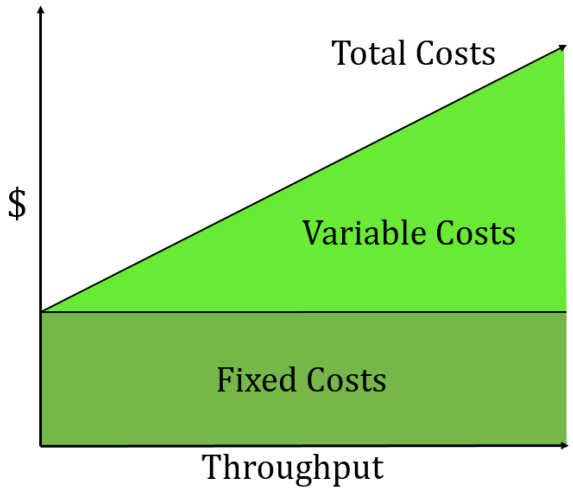
Kitselas Geothermal Inc. (KGI) states:

> Collectively, these five points connect reconciliation with energy market participation. As such, for this to be meaningful, IUs cannot be subject to 'normal' market forces which otherwise might push them out of the market.
>
> This distinction is also important as many IUs will reside in jurisdictions and operational contexts where 'normal' BCUC [British Columbia Utilities Commission] adjudication is unnecessary, unwanted, and/or too expensive.

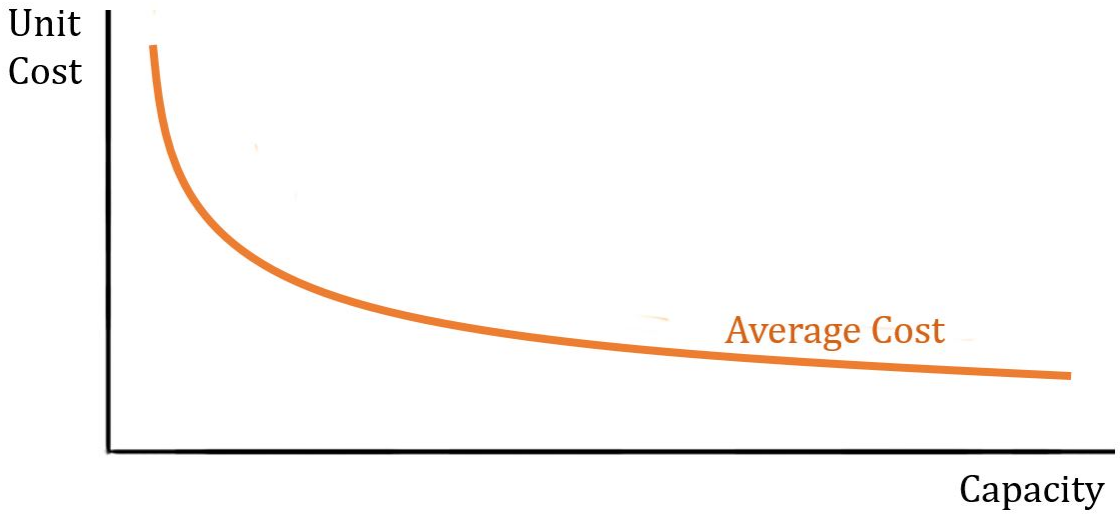
1.1 Please briefly explain further how "normal" market forces might push Indigenous utilities out of the market.

By normal market forces, we are speaking to competitive forces.

This statement speaks to the idea that energy generation and transmission systems are characterized by relatively high fixed and low variable costs and that these costs are a function of the size, or stated otherwise the capacity, of the system.



This results in what's known as a scale curve, where the unit costs of delivered energy are a non-linear function of the system's capacity, with larger systems having a significant cost advantage. This is known as the economy of scale.



From an electrical perspective this fixed cost/variable cost breakdown is true of large hydro, run of river hydro, solar, wind, tidal, geothermal power generation and also applies to electrical transmission systems. It also extends to natural gas production, gathering and transmission, propane distribution and heat pump systems.

A key outcome of this is that, in most contexts, there is a minimum 'scale' facility necessary to be economic in a competitive context. This minimum scale facility is a function of the energy technology, its costs, and competitive context. All of these values evolve with time and therefore are not static.

In grid connected electrical contexts, such as we are contemplating here, representative values for this might be:

Large hydro:	75 MW[1]
Run of River Hydro:	16 MW[2]
Wind:	100 MW[3]
Solar:	30 MW[4]
Geothermal:	20 MW[5]
Tidal:	200 MW[6]

As noted in our testimony, Indigenous Nations are relatively small, with populations ranging between hundreds of members to a few thousand, some of whom might not be located on reserves and/or traditional lands. As such, their aggregate demand is far too

[1] International Hydropower Association, *Canada statistics*, retrieved online September 9, 2019 <https://www.hydropower.org/country-profiles/canada>.
[2] *Ibid*.
[3] Lazard, *Lazard's Levelized Cost of Energy Analysis – Version 11.0*, retrieved online September 9, 2019 <https://www.lazard.com/media/450337/lazard-levelized-cost-of-energy-version-110.pdf>
[4] *Ibid.*
[5] *Ibid.*
[6] International Renewable Energy Agency, *Tidal Energy Technology Brief*, retrieved online September 9, 2019 <https://www.irena.org/documentdownloads/publications/tidal_energy_v4_web.pdf>

small to meet the capacity needs of 'scale' on-grid (electric)/distribution pipeline (heat) facilities.

An example:

Kitselas First Nation: approximately 700 members

Average electrical consumption: 13.5 MWh/year/person

Installed Capacity:

$$13.5\frac{MWh}{yr \times person} \times \frac{700\ people \times yr}{8{,}760\ h} = \text{installed capacity of} \sim 1\ \text{MW}$$

The result is that the Kitselas total demand would comprise of approximately 5% of that required by the smallest scale facility, for example a 20 MW geothermal plant, were those resources available to them.

As such, any energy supply sized for only themselves would be significantly non-competitive in the market, likely being a multiple of the scale price of energy from the existing utility provider.

We believe that these dis-economies of scale would not be sustainable in a competitive context. The Indigenous customers would not opt for significantly higher energy costs and would instead remain with their existing utility provider.

Were subsidies available, this could allow an uncompetitive Indigenous Utility to exist or a technology to be demonstrated for some period of time, but we believe that any such subsidies would be ended, as it could be easily demonstrated that they are not in the ratepayers interest.

In summary, we believe that if Indigenous Utilities were restricted to selling to only their constituent members, normal (i.e. – not subsidized or subject to other influences) competitive forces would push them out of the market, i.e. their notional customers would opt to purchase their energy from existing lower cost utilities.

2.0 Reference: Exhibit C6-3, Section 1, p. 8;
Exhibit C4-2, p. 16 Ownership stake in Indigenous utilities

On page 8 of Exhibit C6-3, KGI states:

> In our view, a 51% ownership stake and equal representation on the Board would be sufficient for inclusion, which is KGI's current structure. However, we can see instances where ownership stakes are lower but meaningful control and/or participation by Indigenous groups exists, qualifying them an Indigenous Utility.

On page 16 of Exhibit C4-2, the FortisBC Group of Companies (FortisBC) states:

An investor owned public utility should not be able to avoid regulation by the BCUC, simply by granting a non-controlling interest to an 'Indigenous Nation'. The potential for gaming would be significant because it would be possible for a public utility to grant an ownership interest to an 'Indigenous Nation' without obtaining BCUC approval.

2.1 Please clarify, in the view of KGI, whether a 51 percent ownership stake in an Indigenous utility could be achieved by:

a) A single Indigenous Nation[7];

b) Multiple Indigenous Nations that collectively add up to 51 percent or more; and/or

c) A corporation wholly owned by an Indigenous Nation(s).

We believe all of the above would suffice.

2.2 Please provide examples of where an Indigenous ownership stake could be below 51 percent, but meaningful control or participation exists.

Expanding on our earlier testimony, we believe that meaningful control is a necessary condition for the qualification of an Indigenous Utility. At a minimum, this would mean Indigenous control of the Board or equal representation on the Board, where that Board has 'normal' corporate powers including setting the strategic direction of the firm, the capacity to approve budgets and the ability to hire the executives.

In terms of participation, we are not advancing any specific number, as Indigenous Nations may have a variety of reasons for opting to invest at levels below 51%.

2.2.1 Please provide any views on how such scenarios could be captured in any definition of "Indigenous utility."

We believe that the definition of Indigenous Utility should include language that states that:

(a) Indigenous Nations have a Board majority or equal representation on the Board;
(b) The Board has real and meaningful powers to set the strategy of, and select the executive of, the utility.

[7] As defined in section 1 of Order in Council No. 108, http://www.bclaws.ca/civix/document/id/oic/oic_cur/0108_2019.

2.2.2 In KGI's view, please comment on the potential for gaming or abuse where Indigenous ownership was below 51 percent, and how this might be mitigated.

We believe that the potential for gaming or abuse is low. KGI, along with all the interveners, have suggested that 'table stakes' for becoming an Indigenous Utility was safe and reliable service. Further, all the interveners have endorsed, in one form or another, some form of capable oversight, whether this is the BCUC or another entity, to ensure that customers' interests are protected, notably that price 'gouging' does not occur.

Further, we also submit that where the Indigenous Nation has meaningful control of the entity (as defined above), third party interests will have great difficulty over-riding that control and investment on that basis, i.e. – investing to 'game' the system would be an unacceptable risk.

3.0 Reference: Exhibit C6-3, Section 1, p. 9
Dispute resolution

KGI states in Exhibit C6-3:

> ...[I]t is our view that the BCUC need not duplicate the role to play in safety and/or customer service for IUs, beyond that which is already provided by Technical Safety BC and the existing dispute resolution systems.
>
> If necessary, we could contemplate the BCUC being not the first step but rather the last step in a dispute resolution process, should parties be unable to resolve their differences - but this would have to be applied outside of any Indigenous self-governing regions.
>
> We believe that relying on existing Indigenous dispute resolution capabilities also satisfies many earlier comments requesting First Nations oversight on relevant processes.

3.1 In a situation where the BCUC would exist as the last step in a dispute resolution process, please discuss if KGI has a view as to whether the BCUC's role in dispute resolution should cover all customers.

KGI's would submit that our perspective on whether or not the BCUC has a dispute role that should cover all customers is that this will be a function of jurisdiction, and not process.

KGI believes that all customers should have a well working dispute resolution process. However, for this to be the BCUC, this would require the 'opting in' of a variety of Indigenous Nations.

As noted in our testimony:

> "… KDC [is] pushing for the idea that as these Indigenous utilities progress, … that they would be treated in a like manner to a Crown" [8]

and also as advanced by the Nisga'a:

> "in the event of an inconsistency or conflict between [the Nisga'a Treaty] and the provisions of any federal or provincial law, [the Nisga'a Treaty] will prevail to the extent of the inconsistency or conflict".[9]

This brings us to recognizing that BCUC's remit to resolve disputes is currently restricted. As such, we are not starting from a point where the BCUC has a universal role.

We would also submit that as more Indigenous Nations finalize their land claims, these restrictions will increase, as more Indigenous governments emerge.

Insofar as the above question could be read to suggest that the BCUC has extra-jurisdictional power to extend its mandate over Indigenous governments, we would submit that they should not have this power. However, this does not preclude the BCUC from agreeing a role, in dispute resolution, for areas under Indigenous control, should those Indigenous governments opt in to such an arrangement.

We would also note that exempt utilities from the BCUC do not require a "last step" in their dispute processes; like the City of New Westminster, City of Grand Forks, City of Kelowna, City of Penticton and the District of Summerland.

3.1.1 If not, please explain if this "last step" would not apply to some of the following customer groups: members of the Indigenous Nation; Indigenous peoples without voting rights in the Indigenous Nation; non-Indigenous peoples; and commercial entities.

It is KGI's view that the 'last step' would apply to all customers, although we do not envision this issue in this format.

We expect, with the advance of Indigenous governments, a further fragmentation of the control currently exercised by the BCUC. As such, we believe that the BCUC, along with many other provincial regulatory bodies, will need to establish agreements with these Indigenous governments, related to how they should or could interact. We do not see this issue as being specific to certain customer groups.

In the Collective First Nations' written submission, they stated the following:

[8] BCUC Indigenous Utilities Regulation Inquiry, Community Input Session Prince George Transcript, Volume 8, Page 360, lines 3-9.
[9] BCUC Indigenous Utilities Regulation Inquiry, Exhibit C21-3, page 6, lines 19-23.

> It is not clear why an entitlement to vote results in municipal councils being: "... accountable to ratepayers for the performance, including rates, of the municipal utility." Commercial and industrial ratepayers of municipal utilities don't have a right to vote. Their entitlement to receive fair rates and safe, reliable service is protected by the common law and not a right to vote.[10]

We would suggest that the point being made is that defining customers along their participation in one or more different forms of government has nothing to do with the appropriate regulations of their interests, noted above as "fair rates and safe, reliable service"

4.0 Reference: Exhibit C6-3, Section 1, pp. 9–10
Regulation of heat utilities

On pages 9 to 10 of Exhibit C6-3, KGI provides a discussion in support of its suggestion that the BCUC should have no role in regulating prices of heat provided by Indigenous utilities, noting that competitive market factors will manage any price or related issues.

4.1 Please clarify, or explain otherwise, whether KGI's position is that the BCUC should continue to regulate the price of heat provided by non-Indigenous utilities.

We would suggest that the BCUC continue to apply its standard criteria for deciding whether a context requires regulatory oversight or not.

We suggested that in the event that Indigenous Utilities enter the heat market, that this would occur in a context where one or more incumbents would already exist, with the ability to directly serve any potential IU customers. In effect, the competitive 'overlap' is 100% of the IU service area.

The reverse is not necessarily true. We can see incumbent utilities, even after the emergence of Indigenous Utilities, with large service areas in which they are the sole or dominant supplier of energy, thereby qualifying for relevant regulatory oversight.

5.0 Reference: Exhibit C6-3, Section 1, p. 11
Market access

On page 11 of Exhibit C6-3, KGI states:

> To ensure clarity with regards to intent, we are providing an expansion on what we mean by market access.
>
> Market access is:

[10] BCUC Indigenous Utilities Regulation Inquiry, Exhibit C13-2, page 15.

1. Not managed by any market incumbent. This includes building necessary interconnections on a 'no delay' basis.

5.1 Please explain further what is meant by "managed" in this instance.

We would suggest that no incumbent energy supplier have control over the access of a competitor to that market, as this is clearly a conflict. This would include but is not limited to:

- Determining current or future supply/demand imbalances. Said differently, identifying and quantifying the need for energy supply;
- Determining system impacts of new or alternative energy supply;
- Determining the requisite interconnection facilities, and their costs;
- If a process exists for market access, for example – like the Standing Offer Program, that this process is adjudicated by an independent entity which is not currently supplying energy into the market.

5.2 Please discuss if KGI has a view on how the costs of building interconnections would be recovered.

We would suggest that this would begin with identifying the true cost, or benefit, of interconnection. In many instances, interconnection can provide benefits through reduced line losses, voltage support, and/or backup in case of supply interruption, or simply add energy needed to supply customers at the end of the transmission lines.

In the event there is a net cost to connect, we would suggest that this be recovered from the proponent of the interconnection.

5.3 Please discuss KGI's view on the role of Powerex Corp. in marketing electricity, including that produced by Indigenous Utilities, in KGI's desired market access environment.

In framing our reply to this question, KGI would like to highlight our submission to Question 1.2 of the Commercial Energy Consumers Association of British Columbia.

In response to being asked "Please explain how KGI believes that an oligopolistic market should be regulated and why?", KGI noted:

> "KGI would suggest that this entails, within the current context, ceding to Indigenous Utilities, sufficient market share as required to develop economically competitive electricity projects, relative to what resources currently exists within their territorial jurisdictions.
>
> We would also suggest that this extends to discussions related to export markets. It is unclear to KGI, as to why the regulator would not consider this when examining the broader issue of market access. Many Indigenous Utilities are seeking to provide energy at an equal or lower rate than provided by the incumbent, and if BC

> Hydro's assertions about the relative cost of electricity in BC versus other jurisdictions are correct, then there should be no issue with respect to market access, as – based on their own submission – BC Hydro has a substantial advantage in adjacent electricity markets.
>
> In essence, KGI would suggest that there should be no practical limit on the production and sale of low cost energy, as this will always be in the public interest; whether that is Indigenous or otherwise."

While KGI does not possess a deep understanding of Powerex, outside of the fact that it is a wholly owned marketing subsidiary of BC Hydro, we would suggest a few principles might apply in our desired market access environment.

KGI would suggest that Indigenous Utilities should be allowed to openly seek any marketing arrangements that they might wish. The corollary to this would be that Powerex would be required to not interfere or impede an IU's interest in marketing its energy.

Notwithstanding this, KGI recognizes there may be very great efficiencies in IUs opting into Powerex's services, assuming these are provided on an analogous basis to what is provided to other Crowns. They have broad capabilities and relationships, marketing energy and its attributes, which most if not all proposed IUs will lack. While engaging in this way might require some expansion of Powerex's current contractual relationships, we believe this is a very 'do-able' result.

KGI also believes that there is much common ground for agreement as Indigenous Utilities have overwhelmingly expressed, in the community input sessions, that their goal is to provide GHG free energy to support climate change goals. Within this context, KGI views Powerex as a key enabler and KGI could envision a broader remit for Powerex, should the IUs gain preferential market access and the 'surplus' energy be exported.

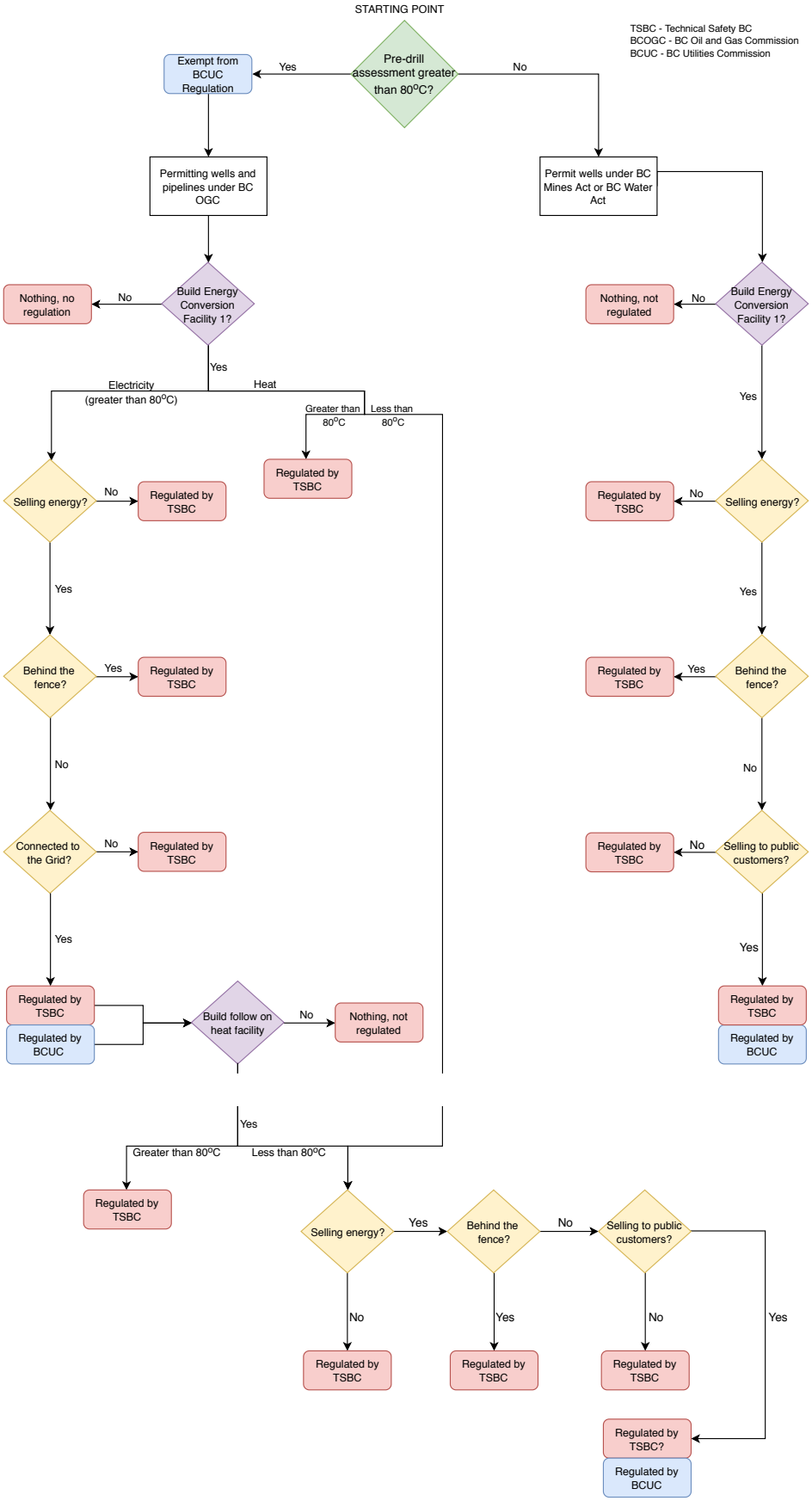
6.0 Reference: Exhibit C6-3, Section 2, pp. 12–20
Regulatory framework for geothermal utilities

On pages 12 to 20, KGI outlines its proposal for the regulatory framework for geothermal energy in BC.

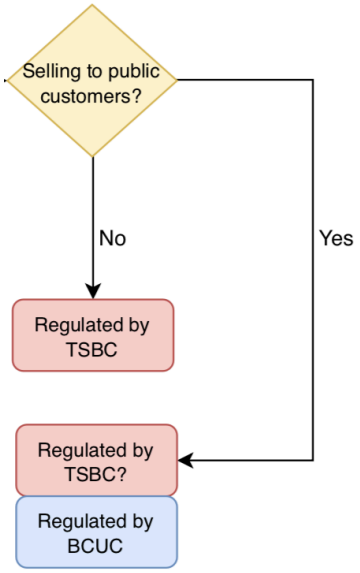
6.1 Please clarify if KGI's proposed regulatory framework would apply to Indigenous and non- Indigenous geothermal utilities.

Yes, we would propose that it apply to both Indigenous Utilities and non-Indigenous utilities. However, additional conversations have driven updates to the regulatory flowchart (see below).

Within this context, there appears to be a circularity, where an 'exempt' project may come back under BCUC oversight, as it travels through the process. We would ask that the BCUC examine this and confirm that once a project is BCUC exempt, it remains so.


STARTING POINT
TSBC - Technical Safety BC
BCOGC - BC Oil and Gas Commission
BCUC - BC Utilities Commission
Pre-drill assessment greater than 80°C?
Yes
No
Exempt from BCUC Regulation
Permitting wells and pipelines under BC OGC
Permit wells under BC Mines Act or BC Water Act
Build Energy Conversion Facility 1?
Nothing, no regulation
Nothing, not regulated
Electricity (greater than 80°C)
Heat
Greater than 80°C
Less than 80°C
Regulated by TSBC
Selling energy?
Behind the fence?
Connected to the Grid?
Selling to public customers?
Regulated by BCUC
Build follow on heat facility
Regulated by TSBC?

Specifically, in the chart above, KGI would like to have the following area examined:



It is KGI's position that once a utility is exempted from regulation, unless it changes the nature of its utility and provides different services, it should not then be subject to regulation further down the line as demonstrated in the above chart. The definition of exempt is "to excuse someone or something from a duty, payment, etc."[11] To excuse someone from a duty or regulation should mean exactly that. It provides clarity and certainty for utilities to know that once they are exempted, they stay exempted.

7.0 Reference: Exhibit C6-3, Section 3, p. 24; Exhibit C2-2, p. 12
Reducing regulatory burden

On page 24 of Exhibit C6-3, KGI states:

> As an IU [Indigenous utility], we would request that the BCUC examine the burden associated with its regulation. Predominantly, its counterparties have been extremely large corporations, who have the capacity to absorb the requisite overhead costs, which attach to regulation under the UCA - per its normal application.
>
> We would suggest that the BCUC has a need to provide low cost regulation, where it can still apply the principles of the UCA, but at a fraction of the cost. The advent of IUs will create a number of very small utilities, who cannot engage in the same way as large utilities. The BCUC needs to consider how it might deliver its service,

[11] Definition of "exempt", Cambridge Dictionary, retrieved online September 5, 2019 <https://dictionary.cambridge.org/dictionary/english/exempt>.

> with a total overhead burden that, for arguments sake, need to be < $10,000 per year - and in some cases, well lower than that.

On page 12 of Exhibit C2-2, the British Columbia Hydro and Power Authority (BC Hydro) states:

> BC Hydro believes that the Commission should consider streamlined or expedited review processes which would allow the public interest to be safeguarded while also allowing for a reduction in the overall regulatory cost placed on the utility and ultimately borne by its ratepayers. As well, the Commission may consider the creation of standard reporting templates that would set out the format and nature of information required by the Commission for fundamental purposes such as determining that Public Utility's overall cost of service (Revenue Requirement) and for the setting of rates.

7.1 Please discuss if KGI has a view on the potential for the BCUC to reduce the regulatory burden on Indigenous utilities by:

a) Using streamlined or expedited review processes; and

b) Creating standardized reporting templates.

KGI does not have a specific view on how the BCUC could reduce its regulatory burden. We are insufficiently aware of the BCUC costs and operational model to provide a substantive view.

KGI provided a response to an information request by the Commercial Energy Consumers Association of British Columbia similar to this one, and has reproduced below for convenience:

> KGI would submit that, in our view, the regulatory burden needs to reflect the activity and interaction with the regulator and relevant stakeholders who might appear before them. However, this burden needs to recognize the net amount of energy being regulated, as – ultimately – these costs will be borne by customers.
>
> KGI is not entirely clear how the current BCUC overhead is shared amongst its energy providers. However, we believe it is on a pro rata basis related to some metric. We would propose that regulatory burdens should be shared across market participants based on their share of the energy sold in the BC market.
>
> Or, another alternative could be a nominal annual fee to minimize the administrative burden. Bookkeeping and invoicing for each and every inquiry (and at different stages of the inquiries) that we have to pay our share for is burdensome. A once a year bill from the BCUC for overhead would be more efficient.

A credit system would also be welcome where utilities that provide a benefit to the BC grid are compensated for providing said benefit, i.e. servicing new economic growth that BC Hydro cannot serve.

7.1.1 Please discuss any other mechanisms that KGI considers could help reduce the regulatory burden on Indigenous utilities.

KGI envisions an evolution of the electricity market, as Indigenous Nations conclude treaty processes that result in self-government. This interplay with the existing market management will likely create a period of transition, and likely, some higher than normal regulatory costs, as the relevant interrelationships are worked out.

KGI would suggest that those costs, and perhaps the cost of this Inquiry, be borne by the Provincial Government directly, and not be borne by market incumbents, as they are generated by processes notionally external to the existing market.