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BRITISH COLUMBIA UTILITIES COMMISSION

ORDER NUMBER C-1-13

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IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

An Application by FortisBC Alternative Energy Services Inc.
for a Certificate of Public Convenience and Necessity for the TELUS Garden Thermal Energy System
and for Approval of the Rate Design and Rates to Provide Thermal Energy Service
to Customers at the TELUS Garden Development

BEFORE: D.M. Morton, Panel Chair/Commissioner
L.A. O'Hara, Commissioner
B.A. Magnan, Commissioner

February 4, 2013

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

WHEREAS:

A. A new mixed-used commercial and residential development, known as the TELUS Garden Development (the Development), will be constructed by a partnership formed between Westbank Projects Corp. (Westbank) and TELUS Communications Inc. (TELUS) (collectively the Partnership or the Westbank-TELUS Partnership). The energy system to be employed at the Development (TGTES or the Project), which mainly uses recovered waste heat from the TELUS data centre, will be constructed by the Partnership as part of the Development and will be purchased and operated by FortisBC Alternative Energy Services Inc. (FAES) upon completion and commissioning;

B. On October 16, 2012, FAES, on behalf of itself and the Partnership, applied (the Application) pursuant to sections 45 and 46 of the *Utilities Commission Act* (the Act) for a Certificate of Public Convenience and Necessity (CPCN) for the construction and operation of the TGTES as described in the Application;

C. In the Application, FAES also seeks, pursuant to sections 59 to 61 of the Act, approval of the rates and rate design as set out in the Service Agreements between FAES and the Partnership, including three deferral accounts to be established specific to the Project;

D. On October 19, 2012, the British Columbia Utilities Commission (Commission) by Order G-155-12 established a Written Hearing process for the review of the Application;

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E. The Commission has reviewed the Application and submissions filed during the course of the Written Hearing and has determined that it is in the public interest to grant a CPCN to the Partnership to construct the TGTES and a CPCN to FAES to purchase and operate the TGTES;

NOW THEREFORE, pursuant to the *Utilities Commission Act*, the Commission orders with Reasons for Decision to follow:

1. Pursuant to sections 45 and 46 of the Act, a Certificate of Public Convenience and Necessity is granted to the Partnership for the construction of the TGTES and to FAES for the purchase and operation of the TGTES as described in the Application.

2. Pursuant to sections 59 to 61 of the Act, the rates and rate design established by the Service Agreements filed with the Application in Appendix H, and described in Section 6 Cost of Service and Rate Design of the Application, are denied.

3. FAES must comply with all directives and determinations incuded in the Reasons for Decision that will follow this Order.

4. FAES is directed to file a new rate application no later than 90 days prior to the commissioning date of the Project.

5. The current Proceeding will be closed with the issuance of the Reasons for Decision and a new proceeding established following FAES filing of a new rate application with the Commission.

DATED at the City of Vancouver, In the Province of British Columbia, this 4th day of February 2013.

BY ORDER

Original signed by:

D.M. Morton
Commissioner

IN THE MATTER OF

FORTISBC ALTERNATIVE ENERGY SERVICES INC.
CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY APPLICATION FOR THE TELUS GARDEN THERMAL ENERGY SYSTEM AND FOR APPROVAL OF THE RATE DESIGN AND RATES TO PROVIDE THERMAL ENERGY SERVICES TO CUSTOMERS AT TELUS GARDEN DEVELOPMENT

REASONS FOR DECISION

February 5, 2013

BEFORE:

D.M. Morton, Panel Chair/Commissioner
L.A. O'Hara, Commissioner
B.A. Magnan, Commissioner

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EXECUTIVE SUMMARY

This is the fourth application brought to the British Columbia Utilities Commission (BCUC) by FortisBC Alternative Energy Services Inc. (FAES) or FortisBC Energy Inc. (FEI) to provide thermal services. In this Application, FAES is proposing to acquire a thermal energy system (TES) that utilizes waste heat from a data centre for heat and electrically driven chillers for cooling. The TES will be built, as part of a residential/office/commercial development, by a partnership between TELUS Communications Inc. and Westbank Projects Corp. Ownership of the TES will transfer to FAES upon completion of construction, after which time FAES will operate the TES. The TES will provide heat, hot water and cooling for three customers: the residential strata, the office tower and the commercial development. The Application seeks a Certificate of Public Convenience and Necessity (CPCN) to construct and operate the Project. It also seeks approval of rate design and rates as outlined in the Service Agreements.

The choice of technology for the TES was selected by the developer and FAES. Other renewable options – such as geo-thermal or solar – were eliminated either for cost reasons or impracticality. A lesser cost alternative, steam from the Central Heat District Energy system, was rejected since it did not provide the amount of greenhouse gas (GHG) reduction the developer needed to support the Development in its qualification for LEED platinum and gold certification. The Panel accepts the technically feasible choice made by the developer and notes that it meets the environmental goals of the developer in a reasonably cost-effective manner.

The American Association of Cost Engineers (AACE) Class 3 estimate for the project is $7.9 million. There are actually two CPCN applications before the Commission, one for the developer to build the TES and one for FAES to acquire and operate it. FAES proposes to acquire the TES for the actual cost of construction capped at up to 30 percent above the estimated $7.9 million. The Commission Panel grants both CPCNs.

In assessing the rate setting issues, the Panel first focused on the degree of assumption of risk by FAES as well as on just and fair treatment of the ratepayers represented by the three customers:

(i) The future tenants as members of the Residential Strata Corporation;
(ii) The future tenants of the Office Tower; and
(iii) The future tenants of the Commercial/Retail Units.

The Panel concludes that FAES is not exposed to any construction risk, supply risk or pricing risk: the construction is the responsibility of the Partnership; Central Heat is able to provide a full energy source back-up; and the data centre waste heat will be supplied at no charge by TELUS. Regarding revenue forecasting and O&M risks, the Panel finds FAES is willing to take on only load forecast risk, but not the fuel volume or price forecasting risk. In conclusion, assuming a cost of service based rate design, the Panel does not approve the requested risk premium of 50 basis points over the benchmark ROE at the present time.

To ensure a fair treatment of all customers the Panel considers various issues, including:

- Are there three customers, or should the Panel consider the individual tenants behind the stratas?
- Are all customers equally sophisticated?
- Is there a possible preferential treatment of TELUS as it is both a partner in the development and a future tenant?

The three customers will receive service under the terms and conditions of three Service Agreements. The key contractual differences in the Agreements were found in the clauses addressing minimum consumption limits, termination, and Clause 20 –Special Contract Terms.

The Panel finds that if a minimum consumption limit is applied at all, it should be applied to all customers. Furthermore, the Panel accepts that the identified termination related differences are reasonable. Finally, the Panel makes certain recommendations regarding the application of Clause 20 to all customers, which FAES is directed to address when it makes its tariff filing with the Commission.

FAES proposes a fully variable rate, with no fixed component, based on the cost of service methodology. The Panel is not persuaded that the proposed rates are fair, just and reasonable, and declines to approve the proposed rates and rate design. Particular concerns include:

- Treatment of Timing of Build-Out;
- Treatment of Deferred Tax Losses; and
- Setting the Initial Rate using a BC Hydro Benchmark.

The Panel directs FAES to file an amended rate design and rate no later than 90 days prior to commissioning the TES and provides guidance to FAES in the required revisions.

The primary concern that resulted in the rejection of the applied for rate is that of intergenerational equity. The Panel wants to ensure that all tenants, including the early occupants of the towers as well as the tenants signing up in later years, all pay their fair share of the service. For the first five years, FAES submits that a "market rate" as appropriate. The "market rate" is based on the cost of electricity for an equivalent thermal load, with an added 10 percent premium. However, this has the effect of under-recovering the cost of service by a significant amount – almost half a million dollars in the first five years and up to 30% more if the construction costs exceed the initial estimate. This amount would be recovered in later periods. The Panel can find no justification for such a transfer of costs to future parties, considers the resulting rate to be discriminatory and thereby unjust and unreasonable, and denies the use of a "market rate". However, the Panel is concerned about the potential for inequities during the first two years, while the project build-out is completed and directs FAES to develop a rate smoothing mechanism for this period.

On December 27, 2012, the AES Inquiry issued its Report. Among other things, the Report echoed previous Commission concerns about the appropriateness of a cost of service rate methodology for Thermal Energy projects. This Panel concurs. The TELUS Garden TES application was filed under the terms of GT&C 12A, which provides for a cost of service based rate. However, the Panel remains unconvinced of the superiority of this model for thermal energy systems and encourages FAES to explore alternative mechanisms for the rate filing. This, and subsequent filings should have an increased focus on rate setting mechanisms which more appropriately balance the risks between the ratepayer and the utility shareholder.

The Panel also reflects the AES Panel's concern about cost allocation, both across regulated and unregulated projects within FAES and between FAES and other corporate entities within the Fortis group of companies. The Panel directs FAES to address this issue in the amended rate filing.

INTRODUCTION

Westbank Projects Corp. (Westbank) and TELUS Communications Inc (TELUS) have formed a Partnership (Westbank-TELUS Partnership or Partnership) to build a mixed use development of one million square feet consisting of a 24 storey office tower and a 44 storey mixed use residential condominium tower along with approximately 8,500 square meters of retail/commercial space at Richards Street and West Georgia Street (Development). The Partnership has entered into a series of agreements with FAES whereby the Partnership will build a TES (the Project) to provide thermal energy for heating, cooling and hot water. The Partnership will build the TES, which will then be purchased by FAES who will be the owner-operator of the Project. (Exhibit B1, p. 1)

The Partnership along with FAES commissioned a thermal energy study for the site to evaluate the various options available. The option chosen was one using waste heat from the TELUS Data Centre located in a building adjacent to the Project site. Contributing to this particular decision was the Partnership's goal of achieving LEED platinum and gold certifications for the residential and office towers respectively as well as to reduce GHG emissions at the site per their discussions with the City of Vancouver (CoV). (Exhibit B-1, pp. 12, 23)

FAES prepared the load analysis and energy demand forecast based on information supplied, in part, by the Partnership and its consultants. The TELUS Gardens Thermal Energy System (TGTES) will supply thermal energy for heating, cooling and hot water (where required) to the following customers (Exhibit B-1, p. 3)

- The Residential Strata Corporation;
- Office complex management company (currently and expected to remain the Partnership); and
- Commercial/retail units (currently and expected to remain the Partnership).

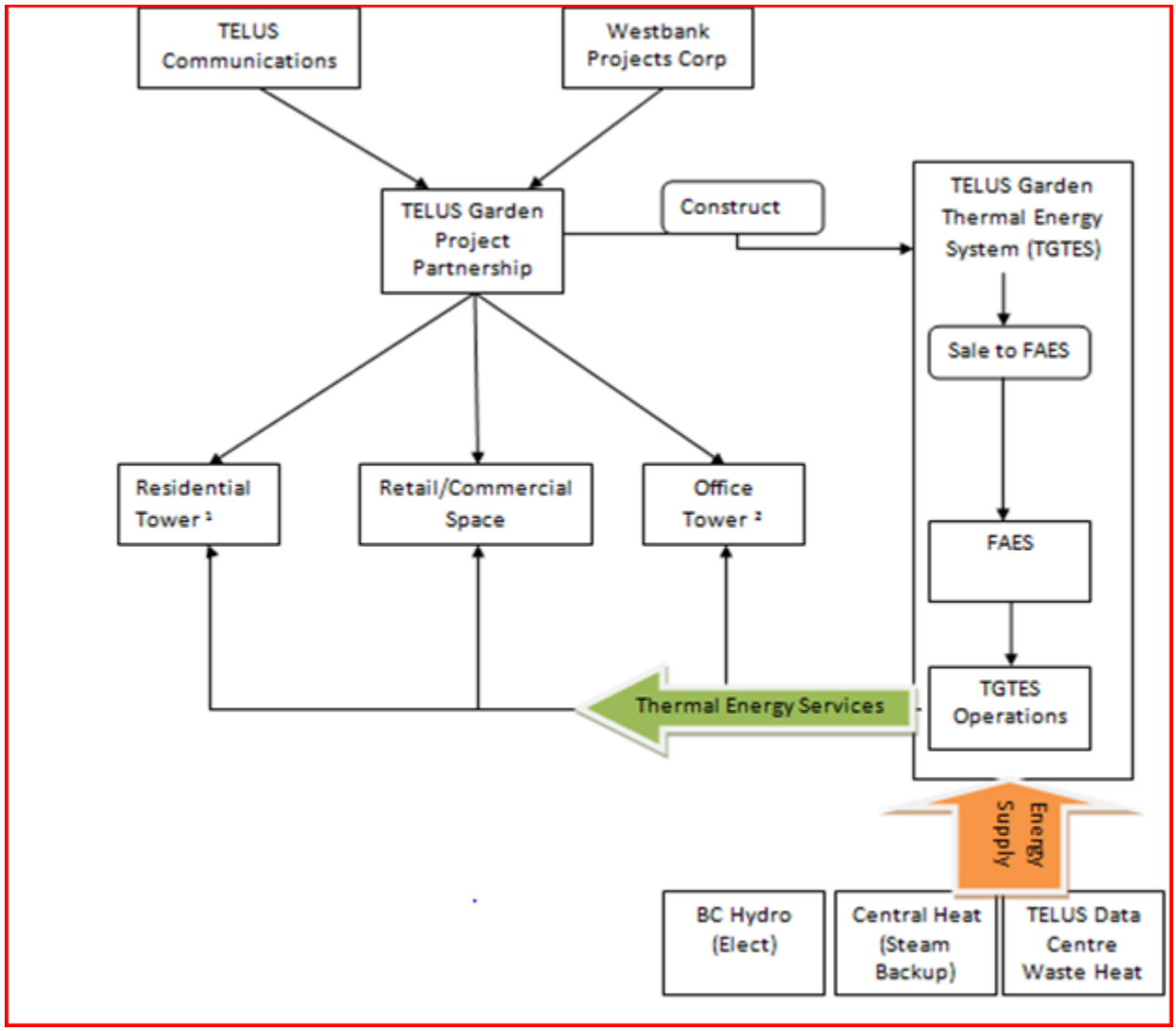
The TGTES will consist primarily of heat exchangers, chillers and heat pumps as well as site cooling towers, metering equipment and piping. Equipment, including distribution piping within the buildings beyond the primary meters, will be owned by the building owners. Backup for the TGTES in case of

outages, as well as provision of peaking supplement, will be provided by the Central Heat Distribution Limited (CHDL) steam distribution network. FAES will own and operate the Energy Centre. (Exhibit B-1, pp. 31-39)

TGTES is expected to become operational by the second quarter of 2015 given a start date for the construction of the TGTES project in the first quarter of 2013. (Exhibit B-1, p. 39)

Key stakeholders and relationships of the TGTES are depicted in Figure 1 below.

Figure 1 – TELUS Garden Thermal Energy System Stakeholders



Note 1: Residential Tower is 95% sold
Note 2: Office Tower is 55% rented (two principal tenants are TELUS Communications Inc and the law firm, Bull, Houser & Tupper LLP

Source: Derived from Exhibit B-1, p. 1

Specific Orders Sought

FAES is seeking approvals under sections 45 and 46 of the *Utilities Commission Act* (*UCA*) for a CPCN on behalf of the Partnership, as well as itself for the TGTES, allowing the Partnership to build the TGTES which would then be purchased and operated by FAES. FAES is also seeking approval under sections 59 thru 61 of the *UCA* for the necessary rate structures and design to provide thermal energy to the owners and tenants of the Project.

Specifically, FAES seeks the following approvals:

- Pursuant to sections 45 and 46 of the *Utilities Commission Act* a CPCN for the Project described in the Application;
- Under sections 59 to 61 of the Act, approval of the rate design and the rates per the service agreements;
- Approval of the non-rate base TELUS Garden Revenue Deficiency Deferral Account (RDDA);
- Approval of the non-rate base TELUS Garden Variance Account (TGVA); and
- Approval of the rate base TELUS Garden Negative Salvage Account (TGNSA)

Regulatory Process

The Commission established a Written Hearing process for the review of the Application. The Regulatory Timetable (Appendix A) incorporated one round of Information Requests (IR) from the Commission and Registered Interveners. It also included one round of Commission Panel IRs.

Registered Interveners in the hearing were:

- The B.C. Sustainable Energy Association and the Sierra Club of British Columbia (BCSEA-SCBC)
- The Commercial energy Consumers Association of British Columbia (CEC); and
- Central Heat Distribution Ltd (CHDL)

REGULATORY FRAMEWORK

In the evaluation of this Application, the Commission Panel is guided by the *UCA* and the *Clean* Energy *Act* (*CEA*).

Utilities Commission Act

Definition of a Public Utility

Section 1 of the *UCA* defines a public utility, in part, as follows: **"public utility"** means a person... who owns or operates in British Columbia, equipment or facilities for

> (a) the production, generation, storage, transmission, sale, delivery or provision of electricity, natural gas, steam or any other agent for the production of light, heat, cold or power to or for the public or a corporation for compensation, or...

The above broad, inclusive definition of a public utility has resulted in a number of applications from real estate developers and other parties planning to provide thermal energy services with a goal to enhance environmental performance for the new communities or building complexes under development.

Consistent with this trend, FAES is seeking approval for the construction, acquisition and operation of the TGTES on behalf of the Partnership and FAES.

Certificate of Public Convenience and Necessity

Subsection 45(1) of the *UCA* states:

> "Except as otherwise provided, after September 11, 1980, a person must not begin the construction or operation of a public utility plant or system, or an extension of either, without first obtaining from the commission a certificate that public convenience and necessity require or will require the construction or operation."

Subsection 46(3) sets out the Commission's powers with respect to granting a CPCN, and states, in part, that the Commission:

> "...may attach to the exercise of the right or privilege granted by the certificate, terms, including conditions about the duration of the right or privilege under this Act as, in its judgment, the public convenience or necessity may require."

Section 45(8) states that the Commission:

> "… must not give its approval unless it determines that the privilege, concession or franchise proposed is necessary for the public convenience and properly conserves the public interest."

Subsection 46(3.1) requires the Commission, in deciding whether to issue a CPCN to a public utility (other than British Columbia Hydro and Power Authority), to consider British Columbia's energy objectives, which are set out in section 2 of the *Clean Energy Act*, SBC 2010, c. 22 as well as the most recent long-term resource plan filed by the utility under section 44.1 of the *UCA*.

By Order G-50-10, the Commission provided guidelines to assist public utilities and other parties wishing to construct or operate utility facilities in preparing CPCN applications to facilitate the Commission's review of such applications (CPCN Guidelines).

The Commission Panel understands that because of the agreements signed, FAES is in fact seeking two CPCNs: the first one for the Partnership to construct the facility and the second one for FAES to acquire the completed facility and to operate it.

Setting of Rates

The Commission Panel will address the proposed rate design and setting of rates under sections 59, 60 and 61 of the *UCA.* Section 60 allows the Commission to consider cost-of-service and other rate setting methodologies. Furthermore, subsection 60(1)(b)(iii) stipulates that the Commission must have due regard to the setting of rates that encourages public utilities to increase efficiency, reduce costs and enhance performance.

Clean Energy Act

Section 2 of the *CEA* sets out British Columbia's energy objectives. Because the partnership has set reduction of GHG emissions at the site and qualification for LEED Platinum and Gold certification as some of the key objectives, the Panel will consider specifically the following objectives in granting the CPCN:

(d) to use and foster the development in British Columbia of innovative technologies that support energy conservation and efficiency and the use of clean or renewable resources;

(g) to reduce BC greenhouse gas emissions;

(i) to encourage communities to reduce greenhouse gas emissions and use energy efficiently and

(j) to reduce waste by encouraging the use of waste heat, biogas and biomass.

Alternative Energy Solutions Services Inquiry

The recent AES Inquiry Decision was released on December 27, 2012. The Report set out key regulatory principles including the purpose of regulation, and how to regulate public utility activities. Some of the highlights are summarized in the following sections.

Principles and Guidelines for Determining the Need for Regulation

Regulation exists to protect consumers against the abuse of monopoly power but, in the AES Panel's view, the superior protection for consumers is a competitive marketplace. The AES Panel found as a fundamental principle that "regulation is only appropriate where required and is driven by the inability of competitive forces to operate with greater efficiency and effectiveness than a sole service provider." (AES Inquiry Decision, p. 14) The Report found that thermal energy projects take place largely outside the bounds of the traditional natural gas distribution utility, and that a competitive market exists for the service. (AES Inquiry Decision, p. 79)

Principles and Guidelines for Determining the Form of Regulation

Where regulation is appropriate, the AES Report contains key principles and guidelines as to how to regulate. The key principles regarding the form of regulation are:

i. "Where regulation is required use the least amount of regulation needed to protect the ratepayer.
ii. The benefits of regulation should outweigh the costs." (AES Inquiry Decision, p. 18)

For new business activities, the form of regulation should be tailored according to what is needed to protect ratepayers in a cost effective manner. Depending on the characteristics of the activity, and the types of agreements in place, regulation may range from traditional cost of service, rate of return regulation, to more light-handed forms of regulation, such as market pricing, or regulation by complaint. For example, in some cases "long term contracts setting out rates and terms and conditions of service may also provide sufficient consumer protection under light handed regulation. In other instances, it may be appropriate for the Commission to closely scrutinize new business activities until there is a track record related to the performance of this type of activity. Once such a track record is achieved, and the Commission has benchmarks or a basis of comparison upon which to judge new applications, a lighter handed form of regulation may be appropriate." (AES Inquiry Report, p. 19)

Discrete Energy Systems vs. Other Thermal Energy Systems

The AES Report differentiates between discrete thermal projects with only one customer, and other thermal projects. While both types meet the current definition of a public utility and are therefore regulated under the *UCA*, the AES Panel found that economic regulation of Discrete Energy Systems with a single customer is not warranted given the lack of natural monopoly characteristics and the lack of a need for consumer protection in light of the presence of a functioning competitive marketplace. (AES Inquiry Decision, pp. 70-71) The AES Panel found that other thermal systems meet the definition of "public utility" in the *UCA*, and are regulated. However, the degree of natural monopoly characteristics and the degree of consumer protection required will affect the form of regulation. (AES Inquiry Report, p. 76)

The AES Panel further found that in keeping with the principle of the least amount of regulation, there were serious reservations about the applicability of the regulated cost of service model across the entire regulated TES market. It reiterated the comments of the Commission in the Delta School District Decision that full cost of service regulation is the "method of last resort". The Panel noted that it is difficult to regulate efficiency, and found that market-based pricing or long term contracts may be better at promoting efficiency, cost-reduction and enhancing performance. Regulated TES utilities were encouraged to pursue market-based pricing mechanisms to "increase efficiency, reduce costs and enhance performance" as contemplated by section 60(1)(b) of the *UCA*. (AES Inquiry Decision, pp. 77-78)

The form of regulation required for thermal energy services will be established through future consultations among Commission Staff and stakeholders, in accordance with the Principles and Guidelines set out in Section 2 of the Decision. (AES Inquiry Decision, p. 78)

General Terms & Conditions Section 12A (GT&C 12A) – Alternative Energy Extensions

The GT&C 12A, including its use as an economic screening tool, which contemplated a cost-of-service methodology, was made interim effective January 1, 2012 by Order G-223-22 dated December 22, 2011. After considering submissions on the GT&C 12A, the AES Inquiry Panel ruled: "Given the Principles and Guidelines herein, it follows that no further applications should be brought forward by FEI/FAES based on GT&C 12A. FEI/FAES should nonetheless review GT&C 12A to determine if it can be eliminated altogether or if it requires an amendment to accommodate previously-approved TES projects." The Panel further directed: "Any Regulated Affiliated company which intends to own and operate TES projects requires a thermal tariff. FAES should therefore bring forward a thermal tariff for Commission review and approval based on the Principles and Guidelines contained in this Report." (AES Inquiry Decision, p. 79)

INTERVENER SUBMISSIONS

Commercial Energy Consumers Association of BC

In its Final Submission, the CEC summarizes its position in support of FAES's application for a CPCN for the TGTES and approval for the rate design and rates in the Application. A summary of key CEC submissions and considerations are included below:

- The technical and financial requirements of the Project have been met and that FAES has demonstrated a need for the Project and has selected the most cost-effective approach;
- FAES should make sure that documentation about the uncertainties of energy cost estimates are clearly communicated and available to end customers;
- The CEC accepts that Project cost overrun risk is a reality and that FAES have adopted reasonable mitigation strategies;

- FAES has a reasonable risk profile, has adequately examined risk and has reasonable mitigation options to manage the major risk scenarios;
- CEC recommends that the BCUC accept the proposed capital costs (and presumably also the 30% above the $7.9 million estimate) as reasonable for the TGTES project;
- CEC accepts the rate design, the 5-year test period and competitive 'benchmark' rates as appropriate.

  (CEC Final Submission)

British Columbia Sustainable Energy Association and Sierra Club of BC

BCSEA-SCBC confirms its support of the Application for a CPCN, rate design and rates for the TGTES in its Final Submission. BCSEA-SCBC state that the Data Centre Waste Heat supply, in conjunction with the CHDL steam connection, is capable of meeting the load and capacity requirements. BCSEA-SCBC is satisfied that the business as usual all-electric option was appropriately screened out and that the Project costs estimates are reasonable. BCSEA-SCBC also take the position that the proposed rate design is just and reasonable and not unduly discriminatory and specifically states that a fully variable rate is to be preferred since it enhances the energy conservation price signals to customers. However, BCSEA-SCBC takes no position on the quantum of the proposed rates nor the proposed return on equity and capital structure. (BCSEA-SCBC Final Submission)

Central Heat Distribution Limited

CHDL is an Intervener and also supplier to the Project as the source for back-up and peak heat energy supply through its District Energy steam service. CHDL expresses its support in general for the Project and took the opportunity to provide clarification on the CHDL forecast cost of energy to supply the Project. (CHDL Final Submission)

REGULATORY STATUS OF THE TELUS GARDEN TES

The TELUS Garden TES is being developed to serve three types of customers: residential strata, office tower, and commercial/retail unit tenants. The Project is also designed to accommodate a future potential connection to other buildings in the vicinity. FAES submits that (u)ltimately, the key issue for the purposes of the *Act* is that the service provided is "public utility" service as defined in the *Act*, and therefore subject to Commission regulation." (FAES Final Submission, p. 6)

As noted previously, the AES Report differentiates between discrete thermal projects with only one customer, and all other variants of thermal projects. The Inquiry Panel found that thermal energy systems which have more than one customer "come in a number of models and configurations". The most commonly discussed ones are district energy systems. A "typical" district energy system has certain key characteristics, including:

- Multiple customers in multiple buildings receive service through a common energy distribution system;
- The system is connected to one or more shared heat sources or central energy plants;
- There may be more than one class of customers with corresponding rates;
- Thermal energy demand is uncertain because final customers, timing and building design are unknown;
- Economies of scale are present;
- The ability to increase the centralized energy supply to meet the needs of new customers exists; and
- There are multiple stakeholders, requiring multiple agreements to be negotiated; and development tends to be longer due to the greater scope and scale. (AES Report, pp. 72, 74)

Commission Determination

The Commission Panel finds that the TGTES provides 'public utility' service as defined in the *Act* and is therefore regulated. The TGTES is currently developed as an on-site private energy system which serves three distinct customers, each representing a distinct group of end-user customers with a well defined timeline for build out and reasonable estimates for thermal energy demand. Therefore, the Panel also finds that this on-site private energy system features distinct differences from a traditional district energy system at the present time. For instance, in its present configuration it does not have some of the characteristics of the Neighbourhood Utility Service at UniverCity in Burnaby or the River District Energy project being developed in southeast Vancouver, adjacent to the Fraser River. Only if connections to other properties are built, will the TGTES take on more characteristics of a "typical" district energy system. In the continuum between discrete energy systems and "typical" district energy systems, the TGTES, without the connections to other properties, is closer to being a discrete energy system.

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY CONSIDERATIONS

In this section, the Panel will review the application in terms of the CPCN criteria previously discussed. In particular, it will examine the project need, the alternatives considered, the load forecast, the costs, the risks, alignment with BC's energy policy and the public and first nation's consultation process.

In summary, the Panel finds that the use of waste heat from the TELUS data centre is a technically feasible alternative that supports the *Clean Energy Act* while also meeting the specific environmental and technical goals established by the Partnership.

Risks include cost overruns and longevity of the free waste heat supply from the TELUS Data Centre on the cost of service and rates. However these risks are shown to be well known, manageable and acceptable.

FAES has an agreement with the Partnership to pay the actual cost of construction for the energy system, capped at up to 30 percent over the $7.9 million AACE Class 3 estimate. **Accordingly, the Panel grants a CPCN for the construction of the TGTES to the Partnership and a CPCN for the purchase and operation by FAES once the energy system meets performance specifications.**

Project Description

FAES states that under the agreements between FAES and the Partnership, FAES is responsible for seeking Commission approval for the construction and operation of the Project on behalf of the Partnership and FAES. The Partnership will be constructing the project and transferring ownership and operation to FAES once the construction is completed and the TGTES is successfully commissioned. (Exhibit B-1, p. 1) Heat for the Development, including space and domestic hot water, will primarily come from waste heat from cooling loads at the adjacent TELUS Data Centre, with peaking and 100 percent back-up heat supply provided by a connection to CHDL steam service. Cooling will be provided to the Development by transferring heat to heating loads when possible and through water-cooled chillers when heating loads do not balance the cooling loads such as would occur in warmer months. A year round base load of 1,400 kW of heat is available on a 24/7 basis in the form of warm water from the TELUS data centre. Recovery of waste heat is achieved through heat exchangers and water to water heat pumps. Heat pumps, chillers, fans and pumps will be electrically operated. FAES will own all the heating and cooling equipment including domestic hot water storage tanks up to and including the heat exchangers that provide heat and cooling to the in-building distribution piping. (Exhibit B-1, pp. 31-37)

Project Need and Justification

Construction of the TELUS Garden Development commenced in the spring of 2012. The site was re-zoned by the City of Vancouver in a Council meeting February 28, 2012 to allow a mixed-use office, retail and residential development. (Exhibit B-1, pp. 14-15) The $750 million, one-million square foot Development includes a 24 storey office tower and a 44 storey mixed-use residential condominium tower. Both towers will include some retail/commercial space. The City of Vancouver establishes planning and permitting processes and reviews including the issuance of any re-zoning and building permits. The City of Vancouver re-zoned the site to comprehensive development (CD-1) pursuant to an application by Westbank to enable a mixed-use development at a Vancouver City Council public hearing on October 18, 2011 (Exhibit B-1, p. 14).

With the Development, there is clearly a need for an energy system to provide domestic hot water and space heating and cooling for the occupants. Traditionally, these energy systems are owned by the building owners to provide energy services to the tenants. In these cases, the energy system is exempt from Commission regulation under the definition of public utility in the *UCA* where a public utility does not include "(d) a person not otherwise a public utility who provides the service or commodity only to the person or the person's employees or tenants, if the service or commodity is not resold to or used by others ..."

Commission Determination

The Panel finds that the Project need exists. The municipal planning, re-zoning and permitting requirements of the City of Vancouver establish a need for the Development including any necessary heating/cooling building systems.

Load Forecast

FAES described how the thermal energy demand forecast for the Development was modelled utilizing industry design modelling software and inputs from the ASHRAE Building Standards. (Exhibit B-1, p. 16) The Development is expected to achieve full occupancy in 2015 with the load stabilizing after this point. The annual forecast heating and cooling load for the Development is 4,591 MWh for cooling and 5,194 MWh for heating. The forecast peak heating load is 5.8 MW and the forecast peak cooling load is 5.5 MW. (Exhibit B-1, p. 17; FAES Final Submission, p. 12)

The TGTES has been designed to meet 94 percent of the annual heating demand of the Development through the use of waste heat from the TELUS Data Centre and the new towers. CHDL will provide steam service for the balance and for peak demand with a capability of providing full backup should the waste heat recovery system be unavailable (Exhibit B-1, p. 21)

Commission Determination

The Panel finds that the load forecast has been adequately estimated and that the design of the TGTES adequately addresses potential variability and disruption to meet the load. **The Panel directs FAES to file an annual report for actual energy load for the TGTES and compare to the forecast load as well as showing the amount and percentage of heat load from the TELUS Data Centre and CHDL separately**.

Analysis of Project Alternatives

In considering approval of a CPCN the Commission, in addition to need, looks at the feasibility of the project and any alternatives considered. FAES and the Partnership undertook a screening study to evaluate ten different energy system alternatives. (Exhibit B-1, p. 19) The Partnership established goals for the Development and energy system as follows:

1. Environmental – to advance the Partnership's and City of Vancouver goals to achieve high level LEED certifications, which include minimizing GHG emissions;
2. Technical – to reliably meet the thermal energy demands of the Development; and
3. Financial – to achieve competitive thermal energy rates. (Exhibit B-1, p. 19)

The Partnership's goal to achieve LEED Gold certification for the residential tower and LEED Platinum for the office tower means that one of the key parameters of the choice of energy system is the system's environmental attributes which includes minimizing GHG emissions to aid the Partnership to achieve its sustainability standards. (Exhibit B-1, p. 15; FAES Final Submission, p. 11) A "Business as Usual" (BAU) alternative considered as natural gas fired boilers and ASHRAE Minimum Efficiency Chillers, was included for comparison purposes.

The CEC states that it understands the issues involved in meeting the Partnership criteria and accepts the importance of these criteria in the decision making. The CEC submits that these must be given a very significant weighting by the Commission. (CEC Final Argument, p. 5)

The Partnership and FAES concluded from the screening study analysis that the alternative using waste heat from the existing TELUS Data Centre would offer the lowest GHG emissions at approximately 12 tonnes of CO2 equivalent (tCO2e) annually followed by the geo-exchange alternative and the air-source heat pump alternative. Regarding other alternatives,

- the BAU alternative would produce more than 1,210 tCO2e annually. (Exhibit B-1, pp. 22-23)
- The air-source heat pump alternative was eliminated on technical grounds due to insufficient roof-top space to mount the necessary heat exchange equipment. (Exhibit B-1, p. 21)
- The geo-exchange alternative was determined to have substantially higher capital costs than the data centre waste heat alternative at $6.8 million compared to $3.2 million according to the screening study. (Exhibit B-1, Table 3.5, p. 24)

Based on the screening study results of lowest GHG emissions, lowest operating and maintenance (O&M) costs and capital costs nearly $1 million or 25 percent lower than BAU, the Partnership and FAES concluded the data centre waste heat alternative is the preferred option (Exhibit B-1, p. 25).

FAES acknowledges the screening study capital cost estimates were developed to AACE Class 4 levels but used the equivalent of AACE Class 3 estimate for the capital costs included in this CPCN and Rates Application.

Commission Determination

The Panel finds that the Applicant(s) considered other feasible alternatives and selected an alternative that achieves its prescribed environmental goals and is technically feasible for provision of heat to the Development. The Panel will focus on the selected alternative in its review of just and reasonable rates and project cost and risks.

In making this finding, the Panel notes that while the selected alternative may not be the least cost alternative, it does produce the least GHG emissions. While this benefit is in-line with the environmental goals of the CoV, it isn't clear whether this level of GHG reduction was specifically required for the issuance of the building permit or the platinum LEED certification. However, in

selecting this alternative, FAES and the developer weighed economic considerations against the environmental benefits and determined that this was the most appropriate option.

In the Panel's view, the degree of regulatory oversight of alternatives required in the circumstances of a CPCN for a private energy system may differ from that required in a traditional utility project. The choice of technology for a private energy system may impact the development and building permit process and the saleability or rentability of the units in the development. In this instance, the Panel finds it is appropriate that the Partnership has selected an alternative that is technically feasible, cost-effective and has the support of the City and FAES.

Alignment with Energy Policy

FAES identified the environmental attributes of the TGTES in its Final Submission. (Exhibit B-7; Final Submission, p. 11) FAES also submits that the Project is consistent with the Provincial energy objectives and supports Section 2, sub-sections (d), (g), (h), (i) and (j) of the *CEA* by specifically utilizing waste heat in an efficient way that reduces GHG emission by approximately 99 percent versus BAU. (Exhibit B-1, p. 78) FAES notes that the use of waste heat directly support section (j) to reduce waste by encouraging the use of waste heat, biogas and biomass. (Exhibit B-1, p. 79)

Commission Determination

The Panel finds that the proposed project supports BC's energy objectives, specifically sub-section (j) of the *Clean Energy Act*, by utilizing a waste source of heat and reducing GHG emissions relative to common 'business as usual' alternatives. The Panel also finds that it supports energy objectives (d), (g) and (i).

Capital Costs

Construction Costs

The capital cost for the TGTES is estimated at $7.9 million plus $350 thousand of FAES development costs or $8.3 million. An additional $2.2 million of sustaining capital over the twenty year contract term is planned to replace capital items. The $7.9 million estimate based on a tender process carried out by ICON for the Partnership reflects quotes, estimates and contracts for equipment and services and was confirmed by ICON Pacific Construction as a Class 3 estimate with degree of accuracy range of -20% to +30% as defined in the AACE Recommended Practice No. 10S-90. The Commission CPCN Guidelines require a minimum Class 3 estimate. ICON will also be the general contractor for the entire Development. (Exhibit B-1, p. 47)

The construction cost estimate includes $6.1 million in tendered 'hard' costs for equipment, piping and installation. "Soft" costs totaling another $1.8 million include ICON's fee of 15 percent of direct capital costs or $918,000 plus the Partnership management fee of 5% of direct capital or $306,000. A contingency cost of 6 percent of direct capital or $367,000 is included in the estimate. The remaining

'soft' costs of approximately $200,000 covers engineering, consultants and legal costs. (Exhibit B-1, Table 5-1, p. 48)

FAES states that the cost estimate may be subject to variations due to design changes that occur as the Project progresses. FAES has agreed to purchase the TGTES for the actual final construction cost limited to no more than 30 percent above the $7.9 million estimate. FAES argue that the Partnership as an end-user and customer of the system is incented to manage construction costs and avoid cost overruns. (Exhibit B-1, p. 46) Since the ownership of the TGTES will not transfer until the system is operational, FAES confirms that Allowance for Funds Used During Construction (AFUDC) will not be applicable. (Exhibit B-1, p. 49) FAES does confirm however that the Partnership, through the Construction and Purchase Agreement, can seek financing costs of 10 percent, which was not specifically included in the cost estimate. FAES state that the Partnership is working hard to keep the cost estimate to $7.9 million including the financing costs. (Exhibit B-3, BCUC 1.29.1)

Commission Determination

The Panel is concerned that the Purchase Agreement includes a price that is actual costs plus 30 percent, which is the maximum range for a Class 3 estimate. The Panel notes that the estimate provided includes a 6 percent contingency amount to address design changes with the majority of construction costs contracted. It also notes the soft costs of 20 percent for the project (15 percent for ICON for Construction Management and 5 percent for the Partnership) are based on the total project costs including possible cost overruns. The Panel is concerned about the need to manage the project costs and the high level of possible cost overruns based on the possible +30 percent variance.

Although the Panel agrees that the Partnership is motivated as a future customer to manage construction costs, the Panel is concerned that its focus will likely be on the larger $750 million Development budget and less on the $7.9 million TGTES budget which can have a significant rate impact of up to nearly 20 percent on a levelized rate basis. (Exhibit B-3, BCUC 1.26.3)

Since FAES is applying with the consent of and on behalf of the Partnership for approval of a CPCN, the Panel approves a construction cost of $7.9 million plus up to 30 percent despite the Panel's concerns.

Cost of this Application

FAES includes a forecast cost of $30,000 in the cost of service to cover legal fees, intervener and participant funding, Commission costs and other miscellaneous costs related to the filing of the Application. FAES believes any costs incurred over $30,000 should be captured in the TESDA account. (Exhibit B-1, p. 59)

Commission Determination

The Panel finds that the regulatory costs associated with this Application identified by FAES may not represent the actual costs of the Application. In order to better understand the regulatory costs of this proceeding, **FAES is directed to provide the actual regulatory costs of past thermal proceedings, including Tsawwassen Springs, PCI Marine and the Delta School District.**

The Panel also notes that FAES does not currently report any of its sales of energy to the Commission for the purpose of allocating Commission overhead expenses among utilities. Accordingly, at this time, FAES incurs no costs associated with the Commission's annual levy. However, the Panel notes that all providers of thermal energy will be required to report to the Commission the amount of energy sales, on the same basis as other utilities, beginning with the Commission's 2013 reporting period.

The Panel further finds that it is not appropriate to charge any of the regulatory costs to the TESDA. These charges may have been justified in earlier applications, where broader principles were being established. However, in the thermal applications that have been brought forward to date, a number of principles have been established. It is the Panel's view that sufficient principles have been established in those previous proceedings to justify all regulatory costs associated with this application being recovered from the rates charged for this project.

O&M Costs

FAES forecast Operating and Maintenance costs over the first five years to be as shown in the table below. The total annual O&M expense is forecast to be $256 thousand in 2014 for the office tower only (first to be in service) and $292 thousand in 2015 when both the office and residential tower are occupied (Exhibit B-1, p. 59)

Table 1: Forecast Operating and Maintenance Expenses
($000's)

	2014	2015	2016	2017	2018
Labour, Materials & Supplies	40	82	83	85	87
Facilities	166	169	173	176	180
Overheads, Allocations	20	41	42	42	43
Total O&M Expenses	256	292	298	304	310

Source: derived from Exhibit B-1, Appendix G, Schedule 4

Labour, Materials and Supplies relates to regular routine maintenance and minor repairs. This represents approximately 1 percent of the total installed cost per year.

Facilities expense which makes up over half of the O&M expense relates to payments to the Partnership for the use of space that the TGTES occupies in the Development. An annual rate of $20 per square foot was used which FAES argue is reasonable based on Downtown Vancouver commercial

rates of $18 - $48 according to a market report provided (Exhibit B-3, BCUC 1.38.1 and Attachment 38.1)

Commission Determination

The Panel finds the forecast Operating and Maintenance expenses to be reasonable for the TGTES. In making this determination the Panel notes that this amount is based on a percentage of the total cost and that FAES will have opportunities to fine-tune this estimate as it gains further experience with TES projects. More importantly, as the Panel will discuss later in this decision, FAES is accepting the risk on its O&M forecasts.

The Panel finds that the annual Facilities expense, that FAES pays the Partnership, for use of space in the Development is reasonable based on market rates.

Project Risks

FAES states that all risks are manageable and appropriate mitigation strategies are in place to ensure safe and reliable service. FAES further submits that the TGTES will be comprised of "simple, conventional components with proven performance and will be designed, constructed and operated by professionals." (Exhibit B-1, p. 31) FAES provided a Risk Analysis discussing the following project risks and mitigation strategies:

- Development Undersubscribed or Not Moving Ahead
- Cost Overruns
- Stranded Asset Risk
- TELUS Data Centre Ceases Operations
- Operational Risk

A discussion of several key projects risks is included below:

Cost Overruns

FAES's statement that the TGTES will be comprised of "simple, conventional components with proven performance and will be designed, constructed and operated by professionals" (Exhibit B-1, p. 31) is somewhat contrasted when discussing project contingency where FAES describe the project as "technically complex" with an evolving detailed design that may have cost implications. (Exhibit B-3, BCUC 1.29.3) FAES set out its position with respect to cost overruns in its evidence showing that they have capped the risk at no more than 30 percent of the Project cost estimate. FAES have analyzed the potential impacts of a cost overrun of 10 percent and 30 percent showing a potential increase in the levelized cost of service from $.126/KWh to $.133/KWh (Exhibit B-1, Table 6-13, p. 73) and from $.126/KWh to $.150/KWh (Exhibit B-3, BCUC 1.26.3) respectively. FAES contend that the Partnership

and the general contractor have reasonable incentives to perform to the cost estimates (Exhibit B-3, BCUC 1.26.1).

The CEC accepts that cost overrun risk is a reality and that FAES have adopted reasonable mitigation strategies.

Stranded Asset Risk

FAES has Service Agreements with the customers of the Development for an initial contract period of 20 years. The Service Agreements include payment terms to recover any unrecovered book value of initial and sustaining capital from those customers should they choose to cancel their contract or not renew their contract after the 20 year initial contract period. FAES therefore argue that the risk of these assets being stranded is low. (Exhibit B-1, p. 42)

Another potential risk is that the assets used to recover heat from the TELUS Data Centre could become stranded should that supply source become unavailable. Although FAES argue that the risk of the data centre waste heat becoming unavailable is low (see Risk item "TELUS Data Centre Ceases Operation" below), they further explain that even if it were to occur, there would be no stranded assets as all the assets would either be re-used or removed and sold (Exhibit B-7, BCUC Panel 1.4.1)

Continuity of Supply

FAES submits that the data centre waste heat is expected to be available as the thermal energy source for the TGTES throughout the 20 year planning horizon and that the risk of waste heat becoming unavailable is low. Among other reasons, TELUS has many incentives to maintain its data centre in its current location and has assured FAES and the Partnership that they have no plans to cease using the data centre in the foreseeable future. (Exhibit B-3, BCUC 1.27.1) In the event that the data centre waste heat did become permanently unavailable, FAES claims that it has the option of providing energy exclusively through CHDL or through the existing TGTES by adding a geo-exchange loop system. (Exhibit B-1, p. 42) FAES provided forecast rate impacts assuming a scenario where the steam connection becomes the primary energy source at different dates during the 20 year contract period (2019, 2024 and 2029) showing a levelized rate impact of +11.3 percent should the Data Centre waste heat become available in 2024. (Exhibit B-1, p. 43)

Commission Determination

The Panel finds that FAES has considered the foreseeable project risks and mitigation plans and accepts that the risks are manageable and appropriate mitigation strategies are in place to ensure safe and reliable service.

Public Consultation

First Nations

FAES describe the development of the TELUS Garden Project and all components as being constructed on private land owned by the Partnership or the CoV. Given the lands have previously been developed, FAES state that there are no First Nations issues or consultation to be addressed for this project. (Exhibit B-1, p. 77)

Public Consultation

As a municipal development project, the plans for the Development including the proposed energy system have been discussed with the general public and the CoV Council through a Public Open House, Public Hearing at a City Council meeting and through media presentations on the TELUS Garden website. Specifically the future customers; residential, commercial and office tenants, have been provided with disclosure statements informing them about the nature of the service FAES will provide. (Exhibit B-1, p. 75)

Commission Determination

The Panel has reviewed the material and finds that the Development permit process which included discussion of the energy system generally satisfies the need for public consultation. More specifically, the future Customers of the Development have been informed through disclosure statements allowing those individuals to make an informed choice. **The Panel is satisfied that the public and First Nations consultation requirements for CPCN consideration have been met.**

RATE SETTING AND RATE ISSUES

In this section, the Panel will first address the assumption of risk by various parties to the Project. Namely, it will consider the level of risk assumed by FAES as compared to the risks assumed by the Partnership or ultimately, the three ratepayer groups which are the occupants of the residential complex, commercial/retail units and the office tower. Second, the Panel will address the capital structure, return on equity (ROE) and cost of debt matters based on the risk exposure framework. Third, the Panel will review the three Service Agreements with the perspective of just and fair treatment of customers. Finally, the Panel will address rate setting, including the proposed rates and deferral accounts, as well as the rate design matter of fixed vs. variable rate components.

Assumption of Risk by FAES

Project Risks

In Section 6.0, CPCN Considerations, the Panel has addressed potential Project risks; namely, stranding of assets, loss of the data centre and cost overruns. The Panel agrees with FAES that the Project has a low stranding risk due to the Service Agreements requiring a termination fee. Similarly, the Panel

agrees that the risk of losing the data centre as a source of thermal energy within the next 20 years is low. In any event, this risk is mitigated by the steam connection to CHDL, which can provide a full energy source backup in the event that the TELUS Data centre ceases operations and waste heat is no longer available. FAES submits that with proven technology, coupled with FAES's experience in operating thermal energy systems, "... there is minimal to no risk in operating and maintaining the system." (Exhibit B-1, p. 43) Finally, the Panel noted that the construction risk is assumed by the Partnership which is responsible for the construction.

The Panel finds that FAES is not exposed to any construction risk, supply risk or pricing risk as the construction is the responsibility of the Partnership. CHDL is able to provide a full energy source backup, and the waste heat will be supplied at no charge by TELUS. Similarly, even if the Partnership terminates the Service Agreement, exposure to FAES is minimal because of the termination fee included in the agreements.

Forecast Revenue and O&M Risks

FAES proposes establishment of a Revenue Deficiency Deferral Account to record differences between the forecast cost of service and the forecast revenues from market rates. FAES further states that this account will record variances between forecast and actual costs or forecast revenues from market rates and actual revenues from market rates. (Exhibit B-1, pp. 53, 57, 68) FAES also proposes establishment of the TELUS Garden Variance Account to capture the variance between forecast and actual fuel costs, the impact of tax rate changes, as well as the impact of changes in the allowed capital structure and ROE. FAES states that this variance account is intended generally to capture the impact of changes in external factors beyond the control of FAES. (Exhibit B-1, p. 69)

As a further clarification, FAES confirms that it is proposing to take the load forecast risk on the revenues generated during the five-year test period. (Exhibit B-3, BCUC 1.31.2) Yet, FAES confirmed it found it inappropriate to take the risk on fuel volume or price forecast claiming "both of these items are beyond the control of the utility." FAES further explained that the load forecast risk and the quantity risk on steam or electricity is different and "not strongly correlated to each other". Specifically, FAES stated that the risks related to consumption of electricity and steam are different than the risks of total consumption because the same total annual thermal energy may be supplied using different amounts of steam and electricity that will depend on the daily weather characteristics. "This is because steam consumption which translates to total steam costs is likely to be sensitive to the year-to-year weather variations since the steam service is for peaking and backup to the waste heat base thermal energy source." (Exhibit B-3, BCUC 1.33.3.1, 1.33.2)

Nevertheless, FAES acknowledged that the forecast quantity of electricity or steam consumed is also dependent on the load forecast for the development. (Exhibit B-3, BCUC 1.33.3) When asked if FAES would be prepared to accept that only price variance be allowed in the TGVA for recovery, FAES disagree stating that "both quantity and price of the fuel costs are beyond the utility's control". (Exhibit B-3, BCUC 1.33.3.2)

Commission Determination

The Panel questions the actual amount of risk FAES is taking on the forecast demand if fuel (steam or electricity) quantity is taken out of the equation. As of September 2012, pre-sale of the strata units in the residential tower have reached over 95 percent, and major office tenants such as TELUS itself and the law firm Bull, Housser & Tupper LLP have committed to moving to the Development. The partnership has also received firm commitments from major tenants for their commercial retail units. Therefore, with such a high degree of early commitments, load forecast itself cannot involve much risk.

The Panel is not persuaded that the load forecast and fuel consumption are "not strongly correlated to each other" or that fuel quantity is beyond the utility's control. The Panel finds that FAES has operational controls over how much waste heat is utilized, and how it is optimized, to reduce fuel consumption. Furthermore, FAES has the operational responsibility and know-how to maintain the system in optimal condition. As previously noted, FAES acknowledges that "the proven technology, coupled with FAES's experience in operating thermal energy systems, results in low operation risk "and that "there is minimal to no risk in operating and maintaining the system". At the same time, the Panel recognizes there are some aspects of fuel consumption such as weather events that are outside the utility's direct control. However, operational system controls and weather forecasting history, etc., are within the utility's control. Finally, the Panel is cognizant of the subsection 60(1)(b)(iii) of the *UCA* which stipulates that the Commission must have due regard to the setting of a rate that encourages public utilities to increase efficiency, reduce costs and enhance performance.

In summary, the Commission Panel finds that if FAES is willing to take on only the load forecast risk, but not the fuel volume or fuel price forecast risk, the only risk it appears to be taking on is the risk of operating and maintenance costs which are within its control. **The Panel finds that FAES is taking very little load forecast risk. In light of subsection 60(1)(b)(iii) of the *UCA*, in the Panel's view this is inappropriate. FEI is directed to address this issue further when it re-files the rate application for this Project.**

Capital Structure, ROE and Cost of Debt

Capital Structure and Return on Equity

For this Project, FAES is seeking approval of a capital structure of 40 percent equity and 60 percent debt, with a 50 basis point (bps) risk premium over the benchmark return on equity. FAES states that this capital structure, with the 50 bps risk premium is appropriate at this time, because the TES projects are riskier than the benchmark utility because of the start-up nature of the projects, the small project size, and lack of large customer base or diversity within the customer base. (Exhibit B-1, p. 63-63)

In response to a Panel IR, FAES provided a risk comparison chart which compares the TELUS Garden Project by risk factor to the FEI natural gas business and other TES projects. This response is included as Attachment B to this Decision. (Exhibit B-7, Panel IR 5.1)

FAES submits that the item-by-item analysis that is suggested by the use of these charts does not adequately capture the broader circumstances in which the TELUS Garden Project (and similar projects) is situated. In addition to the justification for the risk premium shown above, FAES points out that it is taking on greater forecast risk than in the past. (FAES Final Submission, p. 31)

Regarding the proposed capital structure, FAES submits it now believes that the higher risk for the TES projects needs to be factored into the equity thickness for these projects and that the 40 percent equity thickness is too low. However, FAES further submits that these issues are best addressed when the AES Inquiry and the Generic Cost of Capital (GCOC) proceeding have been concluded. Accordingly, FAES proposes to record any differences in the forecast cost of service due to any changes that arise relating to the allowed benchmark rate and the capital structure, and any other changes prescribed in the GCOC proceeding, in the TGVA. However, FAES submits that the proposed 50 bps premium should be approved as it can be adjusted in the future. (FAES Final Submission, pp. 31-32)

Commission Determination

The Panel refers to its discussion and findings regarding assumption of risk by FAES in Section 6.8. In the case of project risk, forecast revenue and O&M risks, the Panel concluded that there is minimal, if any, risk that FAES could be exposed to in operating the TELUS Garden TES Project over the 20 year period. After a further review of the risk comparison chart provided, the Panel finds that an argument could be made for a negative risk premium as compared to the benchmark (the natural gas utility) in the case of this Project. In other words, an allowed ROE with a 25 to 50 bps below the benchmark ROE could be reasonable.

The Panel defers a final assessment on this matter to the GCOC proceeding, where the matter of a small utility premium is being argued. With the exception of the potential small utility premium, a decision on which is pending, this Panel finds no justification for adding a risk premium for the TELUS Garden TES Project at the present time. **Accordingly, the Panel finds a capital structure of 40 percent equity and 60 percent debt to be appropriate and approves a benchmark ROE of 9.5 percent on an interim basis pending the findings of the GCOC proceeding.** The Panel notes that Commission Order G-187-12 made the 9.5 percent benchmark ROE interim, effective January 1, 2013.

Cost of Debt

FAES has derived the proposed cost of debt of 4.91 percent for providing TES to TELUS Garden by following the methodology direction in Order G-100-12. The proposed rate reflects borrowing cost of an entity with a BBB investment grade rating and includes an additional premium to reflect the extra cost to arrange an incremental small debt issue using the Government of Canada benchmark bond yields as of September 25, 2012.

The detailed calculation is shown below.

Table 2: Cost of Debt

Credit Spread	CIBC Interpolated BBB 20-year rate	2.28%
	RBC Interpolated BBB 20-year rate	2.18%
	Average Rate	2.23%
GOC	CIBC Interpolated GOC Benchmark 20-year	2.32%
	RBC Interpolated GOC Benchmark 20-year	2.34%
	Average Rate	2.33%
Estimated Issuance Fee Annualized		0.35%
Total Interest Rate		**4.91%**

Commission Determination

The Commission Panel notes that FAES has correctly followed the methodology first established in the case of the Delta School District Number 37 project. **Accordingly, the Panel approves the proposed 4.91 percent cost of debt for the Project.**

Just and Fair Treatment of Customers

In this sub-section, the Panel will review the three Service Agreements to assess whether the proposed treatment of the three customer groups is fair and equitable, or whether there is potential for a preferential treatment of a main stakeholder/participant which is wearing two hats; one as a project partner and another as one of the end-user customers. Similarly, the Panel must assess whether the characteristics of the three groups are sufficiently similar to be charged one identical common rate. Finally, the Panel will address tariff matters.

The Service Agreements

The Partnership has entered into three Service Agreements, each pertaining to a type or group of customers, with FAES as the public utility service provider. They may be assigned where appropriate.

1. Residential Strata - now with the Partnership and will be assigned to the Strata Corporation once it exists;
2. Office Tower – now with the Partnership and ownership will remain with the Partnership; and
3. Retail Property – now with the Partnership and ownership will remain with the Partnership

The Commission has been presented with a rate that has been negotiated between two parties (FAES and the Partnership/Developer), and FAES is seeking approval for this rate. Each agreement has been

executed by the developer: one on behalf of the residential strata, one on behalf of the retail property, and one on behalf of the Office Tower.

As the Commission must determine whether the Project is in the public interest and whether the rates are fair and reasonable and not unduly discriminatory or unduly preferential, the Panel must establish that all customer groups are treated in a fair and equitable manner. The Panel will consider such factors as the sophistication of the parties and the alignment of interests between the party negotiating the rate and the party responsible for the rate. The best way to assess the fairness among the customers is by analyzing the different Service Agreements. This is, however, somewhat challenging as the agreements and IR responses related to the agreements were filed confidentially with the Commission.

Questions that arise include:

- Are there three customers as identified by the three Service Agreements or should the Panel consider the individual residential customers, office tower tenants and retail property tenants behind the stratas?
- Are all customers equally sophisticated or are there differences in the level of sophistication?
- Is there possible preferential treatment of TELUS as it has formed the Partnership with Westbank to construct the Project?
- Are there actually separate customer classes or is it reasonable to have an identical rate for all three customer groups?

The Service Agreements include certain elements in common, such as 20 years terms and the use of a common rate for all three customers for both heating and cooling energy. The contracts differ in the event that a customer chooses not to renew their TGTES service. While the Retail and Residential customers will have to make a termination payment, in the case of the office tower, the Partnership can exercise the option to purchase the TGTES under specific conditions stipulated in the agreement, subject to BCUC approval. (Exhibit B-1, pp. 40-41)

Contractual Differences

Under the heading 'The Service Agreements Reflect Commercial Realities' FAES states that this section of argument has been filed confidentially on the basis that it discusses the provisions of the Service Agreements that have been filed confidentially in this proceeding. (FAES Final Submission, par. 84) This section addresses the differences on a high level.

The key contractual differences in the service Agreements are as follows:

Minimum Consumption Limits

FAES was asked whether the Service Agreements currently contain minimum annual consumption amounts that would cover a significant portion of the forecast operating and capital costs of providing the service at the time of consumption, especially in light of the fully variable rate?

FAES replied that the Service Agreements do contain minimum annual consumption requirements. The minimum annual consumption limits help to ensure that one customer does not cancel service and effectively avoid payment of the termination penalty. (Exhibit B-3, BCUC 1.37.2)

Termination of the Service Agreements

FAES provided a side by side comparison of the Retail Service Agreement with the Office Agreement and the Residential Strata Agreement on a confidential basis. Accordingly, many specific differences cannot be identified in this Decision. The Application, however, pointed out that the "termination provision has specific terms set out in the Office Tower Service Agreement" and that "for the office tower, the Partnership can exercise the option to purchase the TGTES under specific conditions stipulated in the agreement, subject to BCUC approval." (Exhibit B-1, pp. 40, 41)

Other Contract Terms

It appears that Clause 20 – Special Contract Terms is included only for the Office Tower Service Agreement. FAES submits that the differences between the Service Agreements reflect the commercial reality that the Partnership owns the development and most of the TGTES is housed in the office tower portion of the Development. The other customers are protected from any change in ownership by the provisions of the Service Agreements, which require the Partnership to continue meeting the obligations under these agreements in the event that it acquires the system. FAES submits that these differences are justified by commercial realities. (FAES Final Submission, par. 84),

Commission Determination

(i) *Minimum Consumption Limits*

To the Panel, the FAES response regarding this matter seems to imply that all three Service Agreements contain minimum annual consumption amounts. However, after a closer examination of the confidential agreements, it is not clear to the Panel that the Office Service Agreement also has this requirement. Furthermore, the Panel does not have any evidence on how the minimum annual consumption requirements are defined or set for the other customers.

The Panel finds that as the occupancy of the Office building is expected to be high, and the risk of annual demand changes is minimal, there is no harm in applying the minimum annual consumption limits to the Office building as well. The use of a minimum consumption amount effectively works like

a fixed component of a rate**. The Panel finds that if a minimum consumption limit is applied at all, it should be applied to all customers.**

(ii) *Termination of Service Agreements*

After a review of the agreements, the Panel can only conclude that most of the differences in the termination clauses are related to the option for the Office Tower to purchase the system, and to the possible system expansion. **The Panel accepts that these termination related differences are reasonable**.

(iii) Other Contract Terms

The Panel finds no reason that Clause 20 should only be included in the Office Agreement. Accordingly, the Panel does not accept the Retail and Residential Group Service Agreements as a fair and just thermal tariff for those customers of the TGTES. However, the Panel would accept the Service Agreements of the Retail and Residential groups, if terms and conditions similar to Clause 20 of the Office Agreement were included in those agreements. Similarly, while the other differences are minor, there appears to be little harm in using the renegotiated Office Agreement as the basis for the other Service Agreements, with the Purchase and Termination clauses removed. This would ensure that there are no unintended consequences arising from any differences.

If some of the changes were done only for style, in the interests of preventing ambiguity, the Panel recommends that the Office contract be used as the template, with the additional clauses removed from the Residential and Retail where necessary. Alternatively, the Panel recommends that billing and payment terms should be equivalent among all customer groups**.**

Taken as a whole, because of the nature of the Project, it follows that all parties to the agreements are not equally sophisticated or do not have equal negotiating power. Therefore, the Panel finds it essential that the Service Agreement clauses, rates and the tariff all contribute towards levelizing the playing field to the extent possible. The Panel is not persuaded that, to date, all parties are equally treated in the proposed contracts. The inequality may be a "commercial reality" in a development of this nature. When FAES submits the final rates and Terms and Conditions to the Commission for approval, it must better justify the proposed rates as fair and reasonable for all three groups of customers. Nevertheless, the Panel will remain receptive to one common rate, as long as it is properly structured.

<u>Tariff Matters – Panel Discussion</u>

The Panel notes that the CHDL Agreement has a clause along the following lines:

> "The said Steam Tariff may be inspected during business hours at the Utility's office...and at the offices of the BCUC. The Customer and the Utility agree that if the wording of this contract differs from the present or future wording of the Steam

> Tariff of the Utility then the wording of the Steam Tariff will take precedence and will be binding upon the parties to this contract."

The AES Inquiry Decision has directed FAES to bring forward a Thermal Tariff for Commission review and approval "based on the Principles and Guidelines contained in this Report". As public utilities have general terms and conditions, where there are multiple customers, it is timely for FAES to consider this recommendation in conjunction with the TELUS Garden Project. Due to the construction timeline, the Panel believes that FAES has sufficient lead time to develop the required general Thermal Tariff for the Commission's review. Once approved, this tariff will be a binding contract to these and all future TES customers. It is the Panel's interpretation that the general Thermal Tariff will include common terms and conditions of service for all TES customers (which may or may not include a schedule of standard charges) while customer / project specific terms and tariff rates may be filed separately as Special Contracts / Tariff Supplements. Later in this decision, the Panel directs FAES to reconsider the rate design and rates submitted in this application and directs FAES to re-file the rate design and rate no later than 90 days prior to commissioning of the TGTES. In the event that FAES does not have an approved Thermal Tariff when it makes that filing, the Panel directs it to file a stand-alone Thermal Tariff for the TGES.

The Panel also expects FAES to come forward with a solution for addressing the different purchase and termination clauses for the Office Service Agreement. This challenge serves to highlight again that TELUS Garden TES is not a traditional public utility service with general terms and conditions, but rather a privately negotiated energy service agreement.

The Panel notes that standardization of the three agreements to the extent feasible or a General Thermal Tariff that can serve the TELUS Garden TES customers can solve the problems identified.

The Proposed Rates

Introduction

FAES states that the contracts underlying the rate design were negotiated to comply with GT&C 12A. GT&C 12A reflects a cost of service based approach to setting rates. FAES submits that the cost of service approach also complies with applicable directives from recent Commission Decisions pertaining to other FAES projects. (Exhibit B-1, p. 54)

In the AES Inquiry, that Panel expressed serious reservations about the applicability of regulated cost of service model in the TES market, describing it as a model of "last resort". However, the AES Report was received after the evidentiary record for this hearing closed and consequently, this Panel finds that GT&C 12A is still technically applicable to the review of this Application. Accordingly, the Panel has evaluated the proposed rates in this context.

Earlier in this Decision, the Panel expressed concerns over unfair allocation of risk and potential preferential treatment of one of the customer groups. The Panel is especially focused on the intergenerational equity issue, wishing to ensure that the future rate payers, signing up in 10-15 years

time, will not end up unfairly subsidizing the first generation of ratepayers. The Panel is not persuaded that the following matters have been addressed in a in a manner that results in fair rates:

- Timing of Build-Out;
- Deferred Tax Losses; and
- Setting the Initial Rate using a BC Hydro Benchmark.

As a result, the Panel finds that it is unable to approve the proposed rate design for the reasons described below. **Accordingly, the proposed rates and rate design are denied.** The Panel would consider approval of a revised rate design and rate once these issues are addressed. **FAES is directed to provide a revised rate design and rate no later than ninety days prior to commissioning of the new thermal energy facility.**

Further, this Panel holds a similar view to that of the AES Panel with regard to cost of service methodology for TES projects of this nature. Therefore, the Panel will also accept proposals for rate structures that differ from those contemplated in GT&C 12A.

Proposed Rates for TELUS Garden TES

FAES proposes to set rates for the first five years to provide what it describes as "… competitive rates for customers". FAES refers to this initial five-year rate as a "market rate". In its view, rates that are competitive with other comparable thermal energy services were needed to achieve an agreement with the Partnership. FAES states that these competitive rates are reasonable from the perspective of end customers.

It further states that the "market rate" is expected to produce a revenue deficiency of $499,000 between the forecast cost of service and forecast rate revenues for the initial five year test period. (Exhibit B-3, Attachment 45.4 to BCUC 1.45.4, updated Appendix G, Schedule 11, line 3.) This deficiency will accumulate in the Revenue Deferral Deficiency Account (RDDA) for which FAES is requesting approval. CEC suggested a RDDA cap of $500,000, (CEC Final Submission, p. 22) to which FEI submitted that the RDDA is already subject to a "cap", which is the forecast $499,000 balance, with a potential upward 30 percent adjustment for final capital costs. The deficiency will be recovered in the remaining 15 years of the contracts. (Exhibit B-1, pp. 53-54, 66, 68)

FAES states that the rates charged for the first five years of the contract have been mutually agreed upon using a benchmark based on BC Hydro residential electricity rates at 50 percent Tier 1 and 50 percent Tier 2 plus a 5 to 10 percent premium. FAES has adopted this approach from the River District Energy (RDE) application approved by Order G-2-12. In that hearing, the Panel approved a benchmark rate set in this manner. (Exhibit B-1, pp. 66-67) In justifying the rate, RDE submitted that: "… a rate premium of up to 10 percent higher than electricity rates may be justified when considering additional intangible benefits to consumers such as the higher quality of service associated with hydronic heat, environmental benefits, reduced exposure to future commodity price changes, and the additional floor

space freed up within individual projects". (RDE Decision, p. 28) FAES believes that the facts and circumstances that led the Commission to approve a benchmark energy rate for RDE with a premium of up to 10 percent are equally relevant for the TELUS Garden Project. (Exhibit B-7, Panel IR 1.3.2)

Specific Panel Concerns

(i) Timing of Build-Out

FAES expects that while the majority of the project capital will be in service within the first year of the Project, only approximately half of the expected total demand for the system will be in place for the first year. This will no longer be the case by the end of the second year when the second tower is complete and occupied. Without the smoothing influence of the market rate, this demand profile would result in a disproportionately higher rate in the first year as compared to the second year. FAES submits that "…these attributes are common amongst new utility systems, whereby the initial capital investment puts competitive pressure on initial rates." (Exhibit B-1, pp. 66-67)

(ii) Timing of Tax Benefits

With respect to the timing of the tax benefits, FAES states that the initial capital related costs are not offset by higher tax benefits in the early years. It explains that it does not have sufficient taxable income to absorb the CCA deductions and therefore, the tax benefit of such deductions is not immediately recoverable against taxes otherwise payable. As a result, the large CCA deduction creates a loss for tax purposes that is carried forward and is forecast to offset tax expense into the twentieth year of the contract. FAES submits that since the benefits of the tax deductions are spread out throughout the contract, it is appropriate that the impact of the initial capital costs is also spread out throughout the contract. However, in the application, FAES proposes to utilize $79,000 of CCA deductions in the first year to reduce taxable income to zero. According to the financial schedules provided by FAES, the TELUS Garden Project pays no income tax until the year 2032. (Exhibit B-1, pp. 65-66, Appendix B, Schedule 5)

(iii) Setting the Initial Rate using a BC Hydro Benchmark

When asked to include the "Benchmark" scenario in the screening test, FAES responded that this scenario is "… not considered a feasible alternative as it does not meet Project environmental goals due to higher GHG emissions (396 tCO2e) when compared to ASHP, Geo-exchange and Data Centre Waste Heat alternatives."

FAES was requested to provide a calculation of a "market rate" for the first five years of service that is 10 percent higher than the cost of the energy required for the "Business as Usual" configuration of heating and cooling (natural gas fired boilers and ASHRAE minimum Efficiency Chillers) used in the screening study. FAES responded that this calculation will not produce a "market rate". However, in the RDE hearing RDE submitted that the "…. comparable levelized cost of natural gas heat for building types comparable to River District is currently very similar to electricity under a typical residential load profile." (RDE CPCN Application, Exhibit B-1, p. 37; RDE CPCN Application, Exhibit B-5, FEU 1.7.1) FAES

further stated that the requested calculation only considers the fuel cost (i.e. natural gas) and doesn't account for the cost of the thermal system required to convert and deliver that energy. (Exhibit B-7, Panel IR 1.3.2, 1.3.3)

FAES also stated that electricity alone may be considered as a simple benchmark "market rate" proxy for thermal energy " … on the assumption that energy is produced with 100% efficient baseboard heaters and provided a premium is applied to allow for the lifecycle cost of the baseboard heaters (i.e. electricity rate plus 10%)." (Exhibit B-7, Panel IR 1.3.3) However, this is the same 10 percent that FAES had previously argued was justified by the RDE project like circumstances "… intangible benefits to consumers such as the higher quality of service associated with hydronic heat, environmental benefits, reduced exposure to future commodity price changes, and the additional floor space freed up within individual projects" as addressed in Section 4.4.2.

Notwithstanding that the 10 percent premium is doing double duty, FAES provides no evidence that this premium would indeed cover the capital cost of the electrical heating system or over what period. However, it has provided a capital cost of $3.2 million for the benchmark case – a cost equivalent to the cost of the data centre waste heat recovery system provided in the same screening study. (Exhibit B-7, Panel IR 1.3.2)

Commission Determination

(i) Timing of Build-Out

The Panel finds there is insufficient justification to defer significant costs incurred during the first five years of operation, potentially in excess of $500,000, to future ratepayers. This deferral results in a rate that is discriminatory and thereby unjust and unreasonable. Although FAES indicates that the proposed rates are "competitive", the Panel echoes the findings in the PCI Marine decision and fails to draw the connection on how deferring costs to a future period in order to provide a competitive rate, is just, fair and reasonable, as required by the *UCA.*[1] However, the Panel agrees that given a build-out period during which time a return is required on the fully deployed capital, but there is not yet a full customer base to provide that return, a levelized rate is just and reasonable. To the extent that the "market rate" meets this need, the Panel agrees with the use of it. FAES indicates that without smoothing there would be a disproportionately higher rate in the first year as compared to the second year, when the second tower is complete and occupied. Accordingly, the Panel finds that a rate smoothing mechanism is appropriate for this period only.

If FEI continues to maintain that a cost of service methodology is the most appropriate rate setting model, the Panel directs FAES to develop a rate smoothing mechanism for the two year build-out period that accommodates the inequities caused by the two year build-out period, and provide a justification for that rate. The amount of revenue deferral must be strictly limited to revenues that are uncollected because actual demand was less than forecast demand because units were unoccupied. The balance in the RDDA should commence amortization beginning Year 3 (at build-out) and

[1] FAES PCI Marine Gateway Decision, September 27, 2012, pp. 33-34

continuing through the 20 year term of the contracts. The rate must also transition to an unlevelized rate starting Year 3, or FAES can bring forward a rate proposal that incorporates a levelized rate going forward.

(ii) Timing of Tax Benefits

With regard to the timing of the tax benefits, the Panel finds no relationship between the timing of tax benefits and the need for a "market rate". Tax benefits reduce the taxable income of a project. If taxable income is reduced to zero, there will be no inclusion in rates of the income tax payable. FAES has provided evidence that there will be no income taxes paid for the first 18 years of the project's life. Thus there is no tax related burden to ratepayers during this period.

(iii) Setting the Initial Rate using a BC Hydro Benchmark

With regard to using British Columbia Hydro and Power Authority (BC Hydro) rates for the benchmark, the Panel is concerned that BC Hydro rates don't reflect the true marginal cost of electricity. The Panel notes in the 2012 to 2014 BC Hydro Revenue Requirements application, there was over $4 billion forecast in deferral and other regulatory account balances for F2013 and these balances are forecast to increase. These balances reflect electricity costs that are not recovered in a current period.

Further, this benchmark methodology based on electricity rates implicitly assumes that the rate of conversion from electricity to heat is 100 percent, yet FAES provides no evidence this is the case. **Accordingly, the Panel finds this particular benchmark unsuitable as a proxy for the cost of an alternative supply of thermal energy.**

In addition, the purpose of the 10 percent premium is unclear. In the Application, FAES adopted RDE's submission, from its previous proceeding, that the premium reflects the benefits of the unique nature of the energy system. However, in the Panel IR it argued that it reflects the cost of the electrical energy delivery and conversion system – i.e. baseboard heaters and associated electrical infrastructure. The Panel notes that without this cost element, the benchmark rate understates the true cost of the thermal energy from an electrical source. Due to this lack of clarity, the Panel can make no determination on the appropriateness of the 10 percent as a premium to this or any other benchmark.

The Panel questions the appropriateness of a benchmark that is based on a non-feasible alternative. In an unregulated environment, where competition for goods and services exists, vendors generally price their offerings with the knowledge that customers have other options available. The Panel is not convinced that this is the case here. FAES submits that the electric heat approach doesn't meet the environmental goals of this project.

To the extent that the environmentally acceptable solution (i.e. the data centre heat recovery system) is more expensive than a readily available alternative, the Panel agrees that this could potentially make the environmentally acceptable solution less attractive. However, there has been no evidence provided that this is the case. To the contrary, the screening study shows that the data centre heat

recovery system is more cost-effective than other available options. In particular, it has the lowest O&M of all options and lower capital cost than the BAU alternative. Further, the Panel finds that even if the proposed solution was more costly, that would not justify a rate design that provided a lower rate for the first five years by transferring costs to future ratepayers.

Use of Deferral Accounts and Related Carrying Costs

FAES proposes three different deferral accounts as follows.

The Revenue Deferral Deficiency Account will capture the variance between the forecast revenues obtained from the proposed rates and the forecast cost of service during the initial five year test period. The RDDA is proposed to be a non-rate base deferral account attracting an allowance for AFUDC. FAES confirms that the sole purpose of this account is to facilitate adoption of market based rates through deferring a portion of the cost of service, thereby enabling FAES to offer competitive rates initially (Exhibit B-1, p. 68)

The Telus Garden Variance Account, a non-rate base account which is also proposed to accrue AFUDC, will capture the variance between forecast and actual fuel costs, the impact of tax rate changes, as well as the impact of changes in the allowed capital structure and ROE, and any other changes prescribed in the Generic Cost of Capital proceeding. (Exhibit B-1, p. 69)

The Telus Garden Negative Salvage Account will be a rate base account to track negative salvage associated with this Project. The TGNSA will capture both the annual removal provision, as well as the actual cost of removal. (Exhibit B-1, p. 70)

Carrying Cost on Deferral Accounts

The Commission has, in the past, accepted that short-term deferral accounts (less than 1 year) will normally accrue short-term interest while long-term deferral accounts (longer than 1 year) are to accrue a carrying cost which may include an equity return, such as AFUDC or weighted average cost of capital (WACC). However, in the last FortisBC Inc. Revenue Requirements Decision dated August 15, 2012 (FortisBC Decision), the Commission has provided some insights into the fundamental properties of certain deferral accounts and has determined that "deferral accounts are regulatory assets, not true capital assets" and therefore the appropriate return is the weighted average cost of debt.

Commission Determination

The Panel acknowledges that FAES appears to have attempted to distinguish between controllable versus non-controllable costs in this Project by way of the different uses of the proposed deferral accounts. This addresses the concern that was identified in the PCI Marine Gateway decision[2] and also differs from the Tsawwassen Springs project wherein FAES' shareholder will accept the risks of

[2] FAES PCI Marine Gateway Decision, September 27, 2012, p. 28

variances in the costs of service from what has been included in the proposed rates in that project.[3] However, there are other considerations of the Panel that have not been appropriately addressed in this proceeding.

RDDA

In the previous section of this Decision, the Panel found it inappropriate that some $499,000 of the actual cost of service for customers during the first 5 years would be recovered from the customers during the last 15 years of the term. While this mechanism is similar to the use of charging a levelized rate over the life of the term, the issue of intergenerational inequity is a serious concern that has not been appropriately addressed in this proceeding. However, the Panel has previously found that rate smoothing during the short build-out period is appropriate and should be significantly less than $499,000. In that circumstance, it is appropriate that there would be a balance in the deferral account. Accordingly, **the Panel finds that an RDDA is appropriate in limited circumstances and will be willing to approve it when reapplied for in that context**. Further, rate smoothing may be appropriate over longer periods, provided it does not give rise to issues of intergenerational equity.

TGVA

As previously mentioned, the Panel acknowledges FAES' attempt to identify non-controllable costs in the TGVA and its willingness to capture and flow-through these costs through the use of a rate rider appropriately to customers. However, the Panel is not convinced that all of these proposed costs are completely beyond the control of the Company. While changes to tax laws and any results stemming from the GCOC proceeding may be appropriately categorized in this deferral account, the Panel believes that the forecast of fuel costs may be at least somewhat controllable. For example, as previously discussed, FAES has some operational control over the amount of waste heat utilized.

While FAES confirms that it intends to "take the load forecast risk on the revenues generated during the five-year test period", it also attributes fuel costs to be an external factor beyond the control of FAES (Exhibit B-1, p. 69) when fuel costs are determinative from the volume variances in the load forecast. This issue has already been addressed in detail in Section 4.1.2 above, where the Panel expressed concern over the unwillingness of FAES to take on hardly any risk. **Accordingly, the Panel finds that FAES should accept more risk in this area. Any costs that are truly uncontrollable should be passed through to ratepayers in as timely a fashion as possible, for example, through the use of a rate rider.**

[3] FAES Tsawwassen Springs Development Compliance Filing, August 30, 2012, p. 2

TGNSA

The Panel finds that the proposed use of the TGNSA appears to be appropriate and consistent with FEI's treatment of negative salvage. However, with the denial of the rates proposed in this Application, the Panel makes no determination on the establishment of this deferral account. **Instead, the Panel directs FAES to address the issue of negative salvage in its future rate design and rates application**.

Carrying Cost on Deferral Accounts

The Commission Panel finds that the reasoning behind the FortisBC Decision is appropriate and applicable to any deferral accounts that are approved in the subsequent TGTES rate application. **FAES is directed to calculate the carrying costs on deferral accounts using the weighted average cost of debt.**

Variable Component of Rate – No Fixed or Basic Charge

FAES is proposing the use of a single volumetric rate design, which it submits is appropriate given that the TGTES will operate as one integrated thermal energy system with energy sharing. FAES will charge the same per kWh rate to each of the three types of customers. FAES states that "(w)hen all customer groups receive heating and cooling by using one integrated thermal energy system, there is no reason to have different rates for the different customers." In addition, there is currently no load consumption information available to support different rates for the three different customers. (Exhibit B-1, pp. 70-71; FAES Final Submission, pp. 21-22, para. 61)

FAES gives the following reasons in support of a 100 percent variable rate:

1. "A 100% variable rate enables customers to easily identify their effective costs of thermal energy;
2. It provides a conservation incentive for customers to limit their energy consumption;
3. It is an administratively efficient, easily communicated and equitable method of allocating costs between customers;
4. The variable rate structure represents the rate format that FAES is utilizing for most other TES projects at this time; and
5. All customers benefit from the energy sharing attributes of the system."

   (Exhibit B-1, pp. 70-71)

In response to a CEC IR regarding the future use of a combined fixed and variable rate structure or tiered rate structure, FAES states that "while a fully variable rate structure is not the only solution possible, it is an appropriate solution in this instance because introducing a fixed component to the rate can weaken the incentive for customers in this Project to conserve as well as for the operator to forecast accurately. Given the general predictability and stability of demand, and the generally

inelastic nature of the service, FAES continues to rely on the principles that support a variable rate structure. These principles are simplicity, understandability and ease of administration. In short, FAES sees no compelling reason or benefit to deviating from the fully variable rate that is proposed for this service." (Exhibit B-4, CEC 1.10.3)

FAES confirmed that the Service Agreements do contain both minimum and maximum annual consumption limits. (Exhibit B-3, BCUC 1.37.2; FAES Final Submission, para. 83) Maximum Consumption limits are provided to ensure that if a customer's demand exceeds their contractual limit, their service can be curtailed to ensure that other users of the system are not compromised, since they are utilizing capacity that has been installed to serve the needs of other customers. (FAES Final Submission, October 26 2012 Letter attached from the PCI Marine Gateway proceeding) FAES notes that the "minimum annual consumption limits help to ensure that one customer does not cancel service and effectively avoid payment of the termination penalty." There is no evidence in this Proceeding as to how the minimum consumptions are set, or at what percentage level. (Exhibit B-3, BCUC 1.37.2)

In the Marine Gateway Proceeding, FAES argued that "(u)nder the current rate design with a single rate, a fixed/variable rate design levied on all users, large or small, "… has the potential to adversely affect small users if their usage characteristics are not in line with others in (the) rate class or group." (Marine Gateway Proceeding, Exhibit B-13, BCUC 2.13.5) FAES states that the consumption limit provisions in the TGTES Service Agreements are similar to those found in the Service Agreements for the Marine Gateway service. FAES confirms that all of the statements made in the October 26, 2012 letter regarding consumption limits in the Marine Gateway hearing apply to the service that will be provided at TELUS Garden. (FAES Final Submission, para. 83)

The Commission did not accept the energy conservation argument as a compelling rationale for using fully variable rates. However, the Commission agreed that "given the scale of the Marine Gateway project and its integrated nature, in the absence of multiple rate classes and, assuming a single rate, a fixed charge component has the potential to adversely affect small users if their usage characteristics are not in line with others in their rate class or group. Given the nature of the Project, the lack of current consumption data and difficulty with determining a fair fixed component, which would not unfairly discriminate between customers, the Panel accepted the use of fully variable rates." (FAES Marine Gateway Decision, p. 41)

In support of the current rate, FAES has stated that the variable rate structure represents the rate format that FAES is utilizing for most other TES projects at this time, and which was approved in the Delta School District and PCI Marine Gateway proceedings. The Panel would like to affirm that these prior approvals do not imply that a fully variable rate will always be appropriate. The Commission has noted in both the Delta School District and Marine Gateway proceedings that other district energy providers have chosen to implement a mixed fixed and variable charge. (FAES Marine Gateway Decision, p. 40) While a fully variable rate was approved for the Delta School District project, the approval was in the context of a single customer. A single fully variable rate was approved for Marine Gateway on the basis of a lack of consumption data, and administrative simplicity.

Commission Determination

The Panel finds that a completely variable rate may be appropriate in this case, but requires further clarity about minimum annual consumption limits. As FAES has not provided any details on how the minimum consumption limits are set, the Panel is unable to determine that the consumption limits are applied fairly, or if they have the potential to adversely affect small users if their usage characteristics are not in line with others. Further, where a minimum consumption limit is used, the Panel notes it should be applied equivalently to all customers as stated previously.

A fully variable rate can be particularly sensitive to the load forecast. If the forecast load doesn't materialize – as could happen if the building is more energy efficient than planned – a fully variable rate will under-recover more than a fixed-variable rate does. However, in the Panel's view, in the current rate design, the use of a minimum annual consumption limit, approximates a fixed component to the variable rate.

In conjunction with its rate filing, FAES is directed to formalize its position on minimum annual consumption limits in a transparent fashion. This includes providing information on minimum annual consumption limits for the three service agreements and the justification for the limit. FAES must also explain how the minimum consumption limit differs from a fixed charge.

Cost of Service vs. Alternative Forms of Regulation

FAES has developed the TGTES rates on the basis of the requirements of FEI's GT&C12A, to allow the Project to be assigned back to FEI pending the completion of the AES Inquiry. (Exhibit B-1, p. 54) The recently issued AES Inquiry Decision found that regulated thermal services are most appropriately undertaken through a separate Affiliated Regulated Business. (AES Inquiry Decision, p. 79)

Traditional cost of service rate regulation, where utilities earn a regulated rate of return on assets in service or "rate-base", is not the only rate setting methodology available to the FAES. As FAES themselves assert in evidence they adopted from the AES Inquiry, there are "competing price/risk models". (AES Inquiry, FEU Final Submission, paras. 169-172) Several information requests asked FAES to compare the efficiency, performance and cost incentives, and associated risk allocation of these different models. (Exhibit B-3, BCUC 36.0; 37.0)

FAES believes that cost of service rates and alternative rate designs can and should co-exist in the thermal energy marketplace. As Fortis Energy Utilities argued in the AES Inquiry:

> "Cost of service rates and performance based rates for TES are nothing more than different ways of allocating risk between parties. Each presents a different value proposition from the customer perspective. Cost of service rates flow through to customers the actual costs of service, including a pre-determined regulated rate of return. Performance based contracts have the potential to provide greater price

> certainty on components of the overall price, but the provider must still recover its cost of service plus a return on investment.
>
> These competing price/risk models play out in any number of examples from the private sector. For instance, every construction project requires the project owner and the construction contractor to negotiate an acceptable allocation of risk. Two common ways to approach this risk allocation is "time and materials plus mark-up" (akin to the cost of service rate) and "fixed price contract" (akin to performance based rates). In circumstances where construction risks are significant (e.g. subsurface conditions for an Horizontal Directional Drill contract), the owner will pay less if it assumes more risk of overruns and will pay a substantial premium for the price certainty of a fixed-price contract."
>
> (AES Inquiry, FEU Final Submission, paras. 168-169)

FAES notes that in the case of a performance based model adopted for a new thermal system, the utility service provider would typically be taking more risk in offering a fixed (or pre-set) price stream and would require a higher return in exchange. "Some customers will value the potential for lower rates on a cost of service approach, while others may value the price certainty provided by other types of models (even if this certainty may come at a higher cost than a cost of service approach)." (Exhibit B-3, BCUC 36.1, 37.1)

In this Proceeding FAES was asked about their willingness to assume greater capital and operating risks over the first 20 years of the Project, through the use of levelized rates with no regulatory deferral accounts. (Exhibit B-3, BCUC 37.1) FAES confirms in their Final Submission that they would not be willing to provide service at TELUS Garden "if the Commission directed it to fix the rates for a 20-year period at the level of the "Forecast Annual Rates $/kWh" found in Appendix G, Schedule 12, Line 24, while still allowing for a pass-through of uncontrollable costs such as fuel prices, ROE, taxes. The "Forecast Annual Rates $/kWh" do not reflect the risk adjusted rate of return that would be required for a 20 year test period, and as a result FAES could not accept the approach suggested in BCUC 1.37.1." (FAES Final Submission, para. 81) FAES believes that fixing the rates for a 20-year period for this service may result in a skewing of risks and rewards too much in one direction or the other over such a long time period. (Exhibit B-3, BCUC 37.1) FAES did not comment on the adjusted rate of return which would be necessary for them to accept the additional capital and operating risk.

In response to a question about mechanisms in place in the TGTES to encourage FAES to enhance performance and reduce costs, FAES noted that incentive ratemaking was not yet possible for the TGTES, due to the lack of operating history or an established cost base. (Exhibit B-3, BCUC 1.36.1; 1.36.3)

FAES submits that in the TGTES they are "incented to control costs and improve efficiencies", by assuming forecast risk for controllable costs such as operating and maintenance costs. (FAES Final Submission, para. 76) The variable controllable O&M costs, after deducting for the fixed operating cost

items such as facilities, amounts to 10 percent of the total annual revenue requirement, as shown below:

Table 3: Forecast operating risk assumed by FEI during the 5 year test period (Thousands of $)

	2016	Percentage of O&M	Percentage of Annual RR
1.Labour & Materials & supplies	83	28%	7%
2. Overheads and Shared Services Allocation	42	14%	3%
3. Sub-total variable O&M	*125 (1+2)*	*42%*	*10%*
4. Facilities	173	58%	
5. Total O&M	**298 (1+2+4)**	**100%**	**24%**
6. Total Revenue Requirement	1,242		100%

Source: Exhibit B-1, Appendix G, Schedules 1 and 4.

When asked if FAES would consider alternative price setting models, FAES adopted the submissions made by the FEU in the AES Inquiry (FEU Final Submission, paras. 167-172) regarding why the cost of service model is a valid choice for customers. FAES believes that it is important to recognize that the Partnership wants to go forward with cost of service rates, and has proceeded on that basis. (Exhibit B-3, BCUC 1.37.4) "FAES does not believe it is appropriate at this time to pursue incentive ratemaking or alternative pricing approaches for the TGTES." (Exhibit B-3, BCUC 36.3.2)

FAES submits that there is no "one size fits all" rate design for thermal energy services, and that the evidence in this proceeding establishes that cost of service rates are appropriate for this Project and should be approved. (FAES Final Submission, para. 80)

Commission Determination

There are generally two ways of deciding how to allocate risk: one method allocates risk to the party which is best able to mitigate those risks; the other to the party which requires the smallest premium to accept that risk, resulting in the lowest price.

In the TGTES, FAES is essentially arguing that the ratepayer will accept the capital and operating risk over the life of the project, in return for a lower price. The Panel accepts that in the context of the current rate-based cost of service model, and given the starting point where the customer is assuming most of the risk, that is the natural and obvious trade-off.

The Panel agrees with FEU that in general, an alternative model which shifts a greater burden of the risk away from the customer and towards the owner/operator requires a greater rate of return. However, the Panel does not have sufficient information to conclude that this would necessarily result in higher prices to the customer over the longer term. An owner/operator assuming greater capital and operating risks would also have a greater incentive to control capital costs, design appropriately

and otherwise mitigate risks at the outset of the Project. They are subject to the same competitive pressures and commercial realties which FAES cite as a key factor in their rate negotiations.

In setting regulated rates under section 60 of the *UCA*, the Commission "may use any mechanism, formula or other method of setting the rate that it considers advisable." This includes the use of market prices where they are available. The Panel notes that both fixed price and "materials plus mark-up" models are both possible in the current thermal market, without the use of rate base or regulatory deferral accounts, or the additional cost and complexity of rate-base regulation.

The Panel reaffirms the conclusion of the Commission in the Delta School District proceeding that the traditional cost of service rate-setting methodology is the method of last resort. It was developed in the context of natural monopolies which provided the output for an entire market, and for which no market price was available. The thermal market is competitive, with many providers and, as FEI points out, market pricing options which provide the same benefits of cost of service, namely "materials plus mark-up" with a lower rate of return.

The Panel accepts that this project was developed and negotiated with the Partnership under the requirements of GT&12A and the cost of service rate setting model, prior to the conclusion of the AES Inquiry. **However**, **the Panel remains unconvinced of the superiority of the rate-base, regulated rate of return of model for thermal energy projects. Accordingly, FAES and other thermal providers are encouraged to use market pricing mechanisms which are currently available in the general thermal market, and which do not rely on rate base or regulatory deferral accounts.**

ASSIGNING CONTRACTS TO FEI AND ALLOCATION OF COSTS

In the application, FAES states: "[t]his Project was originally intended to be carried out by FEI, and as a result all of the project development activities have been carried out to date by FEI. In light of the Delta School District Decision, FEI has decided to bring this Application forward under FAES pending the outcome of the AES Inquiry. Should the Commission approve the provision of thermal energy service by FEI as a class of service, then FEI and FAES may assign the service from FAES to FEI. The service contracts enable FAES to assign the contracts to a regulated affiliate of FAES without the consent of the customer." (Exhibit B-1, p. 5)

As noted previously in this Decision, the AES Inquiry also found that TES Projects that are not exempt from regulation are most appropriately undertaken through an Affiliated Regulated Business. (AES Report, p. 79)

FAES is an affiliate of FEI, with no employees, and relies on FEI and FEI's parent company, Fortis Holdings Inc., to provide all resources for the services it provides. (PCI Marine Decision, pp. 3, 52-3) Thus, FAES is not a standalone entity and relies wholly on intercompany transfers to function. The Commission has expressed concerns about the appropriateness of the modified Transfer Pricing Policy for cross-charges between FEI and FAES in the Delta School District Project Compliance Filing. The Commission noted that the current, fully integrated, business structure requires a great deal of diligence to prevent cross-subsidization. (Reasons for Decision attached to Order G-71-12, p. 4) In the

AES Inquiry, the Panel expressed concerns about intercompany cost allocations between FEI and FAES. In particular, it cited the difficulty that FEU has demonstrated in tracking and documenting these costs in FEU's 2012-2012 Revenue Requirements Application. As a result, the Panel found that to eliminate the potential for cross subsidization, in addition to a cost allocation methodology, a substantial effort is required to establish appropriate accounting controls. (AES Report, p. 79)

The AES Panel further found that sharing of services among affiliates should be done on the basis of the higher of market price or the fully allocated cost of such service. (AES Inquiry Decision, p. 81)

Commission Determination

Given the findings of the AES Inquiry, the Commission Panel directs that this Project not be assigned from FAES to FEI.

In previous decisions, such as Delta, Tsawwassen Springs, PCI Marine and the AES, concerns were noted with issues of cost allocation, both between FEI and FAES and between projects in FAES. This Panel restates those concerns. In addition the Panel notes that there is no code of conduct in place. The Commission Panel directs FAES to address these issues when it files the TGTES rate application. **FAES must provide a complete description of the services that FEI and other affiliated companies are providing or will provide to FAES, the cost at which those services are being provided and the rational for that cost. FAES must also provide a description of the methodology for the allocation of overhead cost to each project within FAES.**

SPLITTING CPCN AND RATES IN FUTURE APPLICATIONS.

This application for a CPCN and rates was filed with a request for an expedited approval to meet the construction schedule. This places considerable pressure on all parties to review the application as quickly as possible.

The construction schedule anticipates a period of almost two years from the time the CPCN is issued to the time the rates are required to be in place. Under normal circumstances, in an application of this nature, the Commission would review the CPCN expenditure and the rate together. The Panel finds that considerable efficiencies could have been gained by bringing forward the CPCN application separately from the rate application. Accordingly, when there is a long period between the issuance of the CPCN and the commissioning of the plant, the Panel suggests that FAES consider separate applications for the CPCN and the rates.

SUMMARY OF KEY DETERMINATIONS

This Summary is provided for the convenience of readers. In the event of any difference between the Directions in this Summary and those in the body of the Decision, the wording in the Decision shall prevail.

	Directive	**Page**
1.	The Panel grants a CPCN for the construction of the TGTES to the Partnership and a CPCN for the purchase and operation by FAES once the energy system meets performance specifications.	15
2.	The Panel directs FAES to file an annual report for actual energy load for the TGTES and compare to the forecast load as well as showing the amount and percentage of heat load from the TELUS Data Centre and CHDL separately.	16
3.	The Panel finds that the Applicant(s) considered other feasible alternatives and selected an alternative that achieves its prescribed environmental goals and is technically feasible for provision of heat to the Development.	17
4.	The Panel finds that the proposed project supports BC's energy objectives, specifically sub-section (j) of the *Clean Energy Act*, by utilizing a waste source of heat and reducing GHG emissions relative to common 'business as usual' alternatives. The Panel also finds that it supports energy objectives (d), (g) and (i).	18
5.	Since FAES is applying with the consent of and on behalf of the Partnership for approval of a CPCN, the Panel approves a construction cost of $7.9 million plus up to 30 percent despite the Panel's concerns.	19
6.	FAES is directed to provide the actual regulatory costs of past thermal proceedings, including Tsawwassen Springs, PCI Marine and the Delta School District.	20
7.	The Panel further finds that it is not appropriate to charge any of the regulatory costs to the TESDA.	20
8.	The Panel finds that FAES has considered the foreseeable project risks and mitigation plans and accepts that the risks are manageable and appropriate mitigation strategies are in place to ensure safe and reliable service.	22
9.	The Panel is satisfied that the public and First Nations consultation requirements for CPCN consideration have been met.	23

	Directive	**Page**
10.	The Panel finds that FAES is taking very little load forecast risk. In light of subsection 60(1)(b)(iii) of the *UCA*, in the Panel's view this is inappropriate. FEI is directed to address this issue further when it re-files the rate application for this Project.	25
11.	The Panel finds a capital structure of 40 percent equity and 60 percent debt to be appropriate and approves a benchmark ROE of 9.5 percent on an interim basis pending the findings of the GCOC proceeding.	26
12.	The Panel approves the proposed 4.91 percent cost of debt for the Project.	27
13.	The Panel finds that if a minimum consumption limit is applied at all, it should be applied to all customers.	30
14.	The Panel accepts that these termination related differences are reasonable.	30
15.	The Panel notes that standardization of the three agreements to the extent feasible or a General Thermal Tariff that can serve the TELUS Garden TES customers can solve the problems identified.	31
16.	The proposed rates and rate design are denied.	32
17.	FAES is directed to provide a revised rate design and rate no later than ninety days prior to commissioning of the new thermal energy facility.	32
18.	If FEI continues to maintain that a cost of service methodology is the most appropriate rate setting model, the Panel directs FAES to develop a rate smoothing mechanism for the two year build-out period that accommodates the inequities caused by the two year build-out period, and provide a justification for that rate.	34
19.	The Panel finds this particular benchmark unsuitable as a proxy for the cost of an alternative supply of thermal energy.	35
20.	The Panel finds that an RDDA is appropriate in limited circumstances and will be willing to approve it when reapplied for in that context.	37
21.	The Panel finds that FAES should accept more risk in this area. Any costs that are truly uncontrollable should be passed through to ratepayers in as timely a fashion as possible, for example, through the use of a rate rider.	37
22.	The Panel directs FAES to address the issue of negative salvage in its future rate design and rates application.	38

	Directive	**Page**
23.	FAES is directed to calculate the carrying costs on deferral accounts using the weighted average cost of debt.	38
24.	The Panel finds that a completely variable rate may be appropriate in this case, but requires further clarity about minimum annual consumption limits.	40
25.	In conjunction with its rate filing, FAES is directed to formalize its position on minimum annual consumption limits in a transparent fashion.	40
26.	The Panel remains unconvinced of the superiority of the rate-base, regulated rate of return of model for thermal energy projects and encourages FAES and other thermal providers to use market pricing mechanisms which are currently available in the general thermal market, and which do not rely on rate base or regulatory deferral accounts.	43
27.	Given the findings of the AES Inquiry, the Commission Panel directs that this Project not be assigned from FAES to FEI.	44
28.	FAES must provide a complete description of the services that FEI and other affiliated companies are providing or will provide to FAES, the cost at which those services are being provided and the rational for that cost. FAES must also provide a description of the methodology for the allocation of overhead cost to each project within FAES.	44

DATED at the City of Vancouver, in the Province of British Columbia, this 5th day of February 2013.

Original signed by:

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D.M. MORTON
PANEL CHAIR/COMMISSIONER

Original signed by:

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L.A. O'HARA
COMMISSIONER

Original signed by:

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B.A. MAGNAN
COMMISSIONER