Capital Power Corporation
1200 – 10423 101 Street NW
Edmonton, AB T5H 0E9
www.capitalpower.com

October 28, 2016

Mr. William Chow
Alberta Electric System Operator
Calgary Place
2500, 330 – 5th Ave SW
Calgary, AB T2P 0L4

Dear Mr. Chow,

Re: AESO Correspondence to Stakeholders Regarding Amended Process Schedule to Address Mothball Outages and Related Issues – Cancellation of October 17, 2016 Working Session

Capital Power provides the following comments in response to the AESO's notice to market participants dated October 14, 2016 ("Notice") soliciting written comments related to Phase 1 and the threshold question whether mothball outages should be implemented as a permanent feature in the Alberta market design. The Notice invited parties to respond to stakeholder comments submitted prior to the September 23, 2016 working session and to reply to the following four additional questions.

- What is the impact of mothball outages on the price signal? Does allowing for mothball outages impact the effectiveness of the price signal to indicate correct supply/demand fundamentals?
- Does allowing or disallowing mothball outages present a barrier to entry?
- How do mothball outages relate to physical and/or economic withholding?
- What are the alternative market actions available to market participants in the absence of allowances for mothball outages?

Capital Power's responses to the comments submitted by other stakeholders - which were TransAlta Corporation ("TA"), TransCanada Energy ("TCE"), Enmax Corporation ("ENMAX" or "EEC") and ATCO Power ("ATCO"), and all of whom are in favour of mothballing - are provided in Section A below, titled "Reply to Prior Stakeholder Comments." Capital Power's comments addressing the four additional questions posed by the AESO on October 14, 2016 are provided in Section B, titled "Comments on New Issues."`

At the outset, Capital Power reiterates its positions, as expressed in the letter submitted to the Alberta Utilities Commission ("AUC") on June 6, 2016 regarding the AESO's expedited rule submission and our response provided September 16, 2016 to the AESO's request for comments related to mothball outages issued August 23, 2016. Specifically, Capital Power believes that mothball outages are not compatible with Alberta's market framework, and that implementing a rule to enable such outages will undermine the fair, efficient & openly competitive ("FEOC") operation of the market. Accordingly, Capital Power believes that Section 306.7 - *Mothball Outage Reporting* (the "Mothball Rule") should not become a permanent feature in the Alberta market design framework and that the Mothball Rule should be withdrawn.

A. Reply to Prior Stakeholder Comments

Capital Power continues to believe that mothball outages are fundamentally inconsistent with the market design framework and underlying FEOC principles. Respectfully, there have been no compelling arguments or evidence presented to-date by proponents of enabling mothballing that would support the assertion that allowing a market participant to physically withhold its available capacity ("AC") in the absence of an acceptable operational reason ("AOR") is compatible or consistent with Alberta's market framework.

To the contrary, Capital Power submit the statutory scheme precludes mothball outages, and as such Capital Power disagrees with the claims presented by ENMAX and TA in this respect. ENMAX states that "Given the permissive nature of 5(b) and the explicit reference to competitive market forces in 5(d) of the EUA, EEC interprets this as a means for a participant to remove their electricity from the market for economic reasons." Additionally, ENMAX refers to Section (2)(f)(iii) of the FEOC Regulation stating "EEC believes that a participant is not required to offer into the pool if the AESO does not require the energy, in which case the AESO would approve a request to schedule a mothball outage."

For its part, TA notes "The requirement that investment in generation is dictated by market forces is also found in the *Hydro and Electric Energy Act ("HEEA")*, which prohibits the AUC from considering the economics of a generating unit of the need for electric energy when considering an application for a generating unit."

Respectfully, the references quoted by ENMAX and TA above provide no permission – explicit or otherwise – for mothballed outages, nor do they contemplate the practice. In regard to ENMAX's Section 5 claims, Section 5 (b) of *the Act* states that only "persons wishing to exchange electric energy through the power pool may do so on non-discriminatory terms and may make financial arrangements to manage financial risk associated with the pool price." Section 5(d) states the "[p]urposes of this Act are: to continue a flexible framework so that decisions of the electric industry about the need for and investment in generation of electricity are guided by competitive market forces." Respectfully, to interpret Section 5 as allowing for mothballing is incorrect.

ENMAX's interpretations with respect to the FEOC Regulation are also incorrect. Subsection (2)(f) speaks to market misconduct of "not offering to the power pool **all electric energy from a generating unit that is capable of operating** except where" subsection (iii) indicates "the Electric Utilities Act, its regulations or the ISO does not require the electric energy to be offered." [emphasis added] The AESO has been clear in its Consolidated Authorities Document Glossary ("CADG") that the energy must be offered subject to physical limitations of the generating facility such as forced outages or those planned for maintenance to ensure adherence to minimum operating standards.

The AESO's guidance in this respect relates to the "must-offer, must-comply" provisions of the ISO Rules, which establish a clear obligation for participants to offer their Available Capacity into the market as follows:

> **"Rules obligating generators to offer all their available electricity supply into the wholesale market and to comply when that supply is dispatched. These rules prevent the physical withholding of supply."**[1] [emphasis added]

It must be noted that the prohibitions against physical withholding established by the FEOC Regulation, and the "must-offer/must-comply" rule also form part of the market framework. These obligations and expectations of participants were implemented to support the broad objectives of the EUA as established under Section 5, including the provisions that ENMAX cites as permitting mothballing. Enabling mothballing would require an inconsistent and incoherent interpretation of the framework whereby physical withholding was prohibited in certain timeframes, but permissible in others (and with potentially broad latitude and participant discretion in the latter circumstances).

In regard to the HEEA, the provision noted above and referenced by TA in its submission simply establishes the scope of what the AUC is to consider as part of its consideration of an application for a generating unit, it does not, as TA argues, allow for mothballing provisions. While market participants are free to exercise their discretion in determining when to invest in developing new generating facilities or to retire old or uneconomic ones, Capital Power disagrees that this discretion extends to the availability of its capacity once connected to the grid as is afforded by the Mothball Rule.

[1] AESO website https://www.aeso.ca/aeso/glossary-of-terms/ "Must offer, must comply".

Issue #1 – *Can mothball outages be included in the market design framework in a manner that adheres to the principles*?

Respectfully, no.

Capital Power believes mothball outages have been characterized by two scenarios through this consultation process; (i) the determination that a generating unit is not economic to operate because of market prices, or (ii) during a forced or planned outage, a generator is confronted with an investment that could render the unit's operation uneconomic.

The fact that pool prices are at historic lows has undeniably created a challenging market environment for all market participants. However, every participant is responsible for pursuing commercial and operational strategies to mitigate their financial exposure and manage their risk in accordance with individual strategies and policies. Generators can implement any number of strategies and options including, but not limited to, financial transactions such as selling their energy forward and/or operational strategies, such as cycling their generating units to optimize their generation portfolio; all of which are available within the current framework. The fact that generators are experiencing a challenging commodity market should not warrant a fundamental revision to market rules given the broader adverse repercussions doing so would have for the fidelity of the retirement and investment signal.

It is evident that that the proponents of mothball outages are doing so in an attempt to reduce, defer, or avoid costs altogether. TA, for instance, suggests that "generators should be permitted to turn their units off because they have ceased to be economic in the current market," and remain offline until such time that "market conditions improve, or should these units be required for reliability purposes, they can be brought on line." Additionally, TA states "Some generating unit operators may declare mothball status in order to defer capital costs while others may reduce/redeploy the workforce."

The reasons presented by TA should give rise for concern for several reasons. As would be the case for any unit mothballed over the course of several months, it would not likely be able to respond within the necessary timeframe of a short term supply shortfall, thus refuting the claim that mothballed units could offer reliability support. Furthermore, any compensation afforded to mothballed units directed back to service would perversely see load paying for the maintenance costs of units that should have been borne by that market participant as part of its ongoing responsibility to maintain a minimum standard of operation while connected to the AIES. Capital Power submits that compensation, if any, should be limited by a specific set of circumstances relating to demonstrable and clearly defined reliability metrics. Details regarding compensation are discussed in the following section.

TCE states that "circumstances may arise whereby the alternatives facing a generator are to operate at a loss or to retire a generating unit prematurely." Capital Power disagrees. The retirement of a generating unit should be the result of an informed business decision taking in to account the ability to operate economically over the remaining life of the asset. A generator's inability to operate economically in a given price environment simply indicates that a retirement signal has been established. As generating fleets age it is only reasonable to expect, as TA states, that "the operator's comparison is between the capital expenditure to resolve underlying maintenance issues and the unit's expected market returns." However, it is not the AESO's responsibility to assess the continued economic operation of a generating unit as suggested by TA's comment stating "The treatment of such units under a future Mothball Rule needs to be carefully considered."

Issue #2 – *What considerations need to be made to ensure that mothball outages adhere to the principles?*

The AESO has an obligation to ensure the reliable operation of the AIES. Similarly, market participants have a corresponding obligation not to place reliability at risk.[2] It is noteworthy that those supporting mothball outages appear to identify the potential for AIES reliability issues to arise from adoption of the practice, and recognize the need to adopt provisions to mitigate against that potential. TA, TCE, and ENMAX reference

[2] Section 16 of the *Electric Utilities Act* outlines the AESO's duty to exercise its powers and carry out its duties to, among other things, provide for the safe, reliable and economic operation of the interconnected electric system and to promote a fair, efficient and openly competitive market for electricity. Section 2(g) of the FEOC regulation notes conduct by a market participant that does not support the FEOC operation of the market includes disrupting or impairing the safety or reliability of the interconnected electric system.

grid reliability in conjunction with mothball outages. TA says "[it] "is confident that mothball outages can occur without compromising the reliability of the Alberta electric system. However, the details regarding how units will be brought back online to maintain reliability will need to be carefully considered by all parties to this consultation." TCE says it "understands that the AESO's reliability mandate may, during a significant supply shortfall event, necessitate it to issue a directive that would require a mothballed generating unit to return to service. Even though it would seem unlikely for such an event to occur while a facility is on a mothball outage, TCE recognizes the need for such consideration in a market rule concerning mothball outages." Lastly, ENMAX indicates "the development of the criteria….., must ensure fairness and reliability of the system."

Beyond the incompatibility of mothballing with the market framework, Capital Power submits that the acknowledgement by proponents of mothballing that the practice may raise reliability issues provides further justification for the practice to not be made a permanent feature of the market, and for the interim rule to be revoked.

Those supporting mothball outages have all suggested that mothballed generating facilities directed to return to service ought to be reasonably compensated. While the ISO Rules currently do include provisions to provide fair compensation for generators directed back to service by the AESO, some proponents of mothballing appear to contemplate a broader scope and nature of compensation that ought to be available in respect of mothballed outages.

TA says "[c]onstraining generators to run uneconomically, or be forced to make significant investments in old plants in a market environment where such investments cannot be justified is not fair and does not conform with the fundamental structure of Alberta's energy only market." TA goes further to say "Markets are not efficient and will eventually collapse if generators are forced to run their units unprofitably. Capital Power respectfully disagrees. As mentioned above, generators have options to mitigate risk and generators are not forced to make investments in old plants. Enabling the pricing signal to incent efficient retirement and investment signals will continue to ensure timely investment in new capacity, as it has since market opening in 2001.

Capital Power submits the present market reporting systems do not disclose information regarding mothball outages. Capital Power agrees that data transparency, with or without mothball outages, is an important issue in Alberta's market. Regardless of whether mothball outages become a permanent feature, the standard to comply with a dispatch for long-lead time ("LLT") assets is no different than any other type of generating facility.

In its prior comments, TCE stated that "should any anti-competitive concerns arise, such concerns could be addressed by the MSA in its application of its mandate and could include the development of enforcement guidelines identifying mothball outage behaviour that it would consider inappropriate." Capital Power agrees, and would encourage the MSA to develop guidelines on a proactive basis.

Issue #3 – *Are there elements of the principles that are inconsistent or do not align with mothball outages? If so, please provide detail*.

Capital Power's position remains unchanged – the principles must not and cannot be altered to fit with mothball outages.

Issue #4 – *Are there requirements that could be implemented to mitigate the inconsistencies that mothball outages present in relation to the principles?*

There is disagreement among generators regarding the return to service criteria. TA requests "maximum flexibility…to ensure generators have the ability to respond to market signals" to introduce shorter mothball outage cancellation requirements "to allow renewable units such as wind to react quickly to market conditions." TA also requests extending the 6 month minimum response time to a directive because the "[s]ix-months response time for a directive should be re-evaluated as these are not operationally realistic in some cases. Differences in plant condition, lay-up strategy, and equipment technology will require different start up times to ensure a safe return to service." ATCO, however, makes a contrary request for "removing the 6 months minimum return time restriction." Capital Power submits that if mothball outages are to become a

permanent feature of the market, a minimum 6 month response time is reasonable because it would mitigate short-term opportunistic behaviour.

Capital Power is concerned with TA's request for "[r]educed compliance obligations while in a mothball state." It is not reasonable to expect operational exemptions and relaxation of standards for a mothball unit as suggested by TA because doing so could impair Alberta's grid operations.

B. Comments on New Issues

Issue #5 - What is the impact of mothball outages on the price signal? Does allowing for mothball outages impact the effectiveness of the price signal to indicate correct supply/demand fundamentals?

In the absence of a mothball outage rule, TCE noted that generators would be forced to "retire prematurely."` Capital Power disagrees. Mothballing would have a negative impact on the price signal and its effectiveness to correctly signal retirement or investment. In the context of current market conditions, low prices signal that additional supply is not necessary. The persistence of low prices should, at some point, incent the retirement of older, more costly forms of generation making way for new investment. Permitting mothball outages diminishes the signal to retire and in fact, erects barriers to exit for ageing units. This is discussed in further detail in the following section.

The presence of mothballed capacity places downward pressure on future prices despite not physically generating or being available for dispatch since market participants know that capacity can, and will, be returned to service above a certain price threshold. Mothballed generators may remain commissioned despite their continued availability depressing future wholesale pricing outcomes due to barriers to exit or for purposes of strategic entry deterrence of new investment. ENMAX appears to have recognized this very situation where in its comments state "Market signals and the incentive to build/invest in Alberta could be distorted if there is insufficient information about mothballed units that may or may not return to the market."

For its part, TA suggested "there is nothing inefficient about allowing units which are unprofitable to take a mothball outage." To justify its position, TA noted that mothball outages would result in efficiencies arising from deferring maintenance and capital expenditures and reducing or avoiding O&M costs. In light of these comments, Capital Power submits that this further emphasizes concerns raised above regarding the impact of mothballing on reliability. Prolonged periods of low prices may discourage necessary maintenance expenditure on Alberta's ageing coal generating fleet. Forced outage rates will rise and ultimately, long-run reliability may be tested rather than bolstered as some market participants suggest. Where short term adequacy may be tested, mothballed capacity will not likely be available within the necessary timeframe to respond to events such as unexpected plant outages. Further, reduced maintenance investment and mothballed generating facilities render the aggregate supply inherently more unstable where, all things being equal, prices will become more volatile, with long 'bust' periods followed by sudden 'spikes' leading to compressed timeframes for requisite new generation and disorderly exit from the market.

Issue #6 - Does allowing or disallowing mothball outages present a barrier to entry?

Mothball outages erect barriers to both market entry and exit not support or promote the FEOC operation of the market. It is notable that the introduction of new barriers to entry and exit would be avoided by simply not permitting mothball outages. The MSA defines a barrier to entry as "costs that must borne by new entrants that incumbents do not (or have not had to) incur" and distinguishes these barriers as either structural or strategic.[3] A strategic barrier to entry is reflective of an incumbent's actions that create or maintain a barrier to entry. In the case of mothball outages, the mere possibility that significant amounts of capacity could return to service in a shorter time-frame than a new build could dissuade that investment in new generation. As noted by the MSA, "[n]ew entrants and investment may be dissuaded if they believe prices are only high because of market participant control, reasoning that post entry the controlling incumbent may set prices at a level that would not enable the entrant to recover costs. Potential entrants may also be deterred if they

[3] P.20, MSA State of the Market Report 2012.

observe a large amount of capacity being economically withheld"[4] – or in the case of mothball outages, physically withheld.

Barriers to exit are obstacles that must be overcome by incumbent market participants and like a barrier to entry, can be defined as costs that must be borne by incumbents that new entrants do not (or have not had to) incur. In the context of mothballing, barriers to exit can be categorized into following groups:

i. 'Sweating' ageing thermal plants: There are substantial costs associated with decommissioning and permanently shutting down a generating facility. Generators near the end of their useful life carry very low economic costs (i.e. sunk costs) so are likely to 'sweat' assets until the marginal cost of operations and maintenance exceeds revenues obtained from reduced operating duties.

ii. Avoiding non-trivial site remediation costs: Ongoing mothballing of plants, rather than permanent retirement, is likely a preferred option as site remediation costs are postponed. In effect, mothballing represents a free policy call option for a plant owner.

iii. First-mover disadvantage: Participants have a disincentive to retire due to ''first-mover disadvantage.'' Economic theory (and game theory) tells us that actions taken by any one supplier to reduce capacity will make competitors better off.

These barriers to exit further incent the delay of retirement. In conjunction, both barriers delay the replacement of old inefficient units with cleaner, more reliable, and more efficient generation.

Issue #7 - How do mothball outages relate to physical and/or economic withholding?

Mothball outages are physical withholding, not economic withholding. Physical withholding and economic withholding are well-founded concepts in Alberta's wholesale electricity market design framework. The former is expressly prohibited, while the latter is permissible in conjunction with other market rules and oversight. If there are no physical limitations on a generating unit's available capacity, it must be offered in to the market and if dispatched, the generator must respond accordingly. During the last market design update, the AESO noted that "[t]he Policy Framework also establishes that intra-Alberta generators must offer all available energy and that the total volume may only be restated for acceptable operational reasons. As such, there is no provision for "generation that does not wish to run" to electively withhold energy from the market."[5] Based on this, mothball outages are - in principle - no different than physical withholding.

According to the MSA, "[p]hysical withholding is a term used to describe a situation where a generator that is otherwise available is not offered into the market. Physical withholding is not generally associated with the Alberta market as generators must be offered unless they have an AORs as defined under the ISO rules."[6] AORs are conditions related solely to the operation of the generating asset. Conditions related to transmission constraint or **market-related conditions that are solely economic are not AORs**.[7] [emphasis added] Although mothball outages are proposed as a construct of the ISO Rule framework, it is clear that mothball outages are not consistent with the exception provided within an AOR to withhold capacity. For the preceding reasons Capital Power disagrees with TA's statement that in the short term "[a]llowing economics to dictate when units need to be removed from the market for economic reasons fully conforms with Alberta's framework."

Issue #8 - What are the alternative market actions available to market participants in the absence of allowances for mothball outages?

In the absence of mothball outages, the alternative action available to market participants is to rely on the existing long-lead time asset rule with modifications to the reporting requirements to ensure greater market transparency of aggregate supply availability particularly with respect to long-lead time generating facilities.

As found by the Commission in Decision 2009-007, "…the LLT Rule is intended to address circumstances occurring close to real time when the AESO anticipates a short term supply shortfall." From this, it is

[4] P.21, Ibid.
[5] P.2, AESO Final Quick Hits Comment Matrix
[6] p.7, MSA Assessment of Static Efficiency in Alberta's Energy-Only Electricity Market
[7] p.4, AESO AOR Discussion Paper

reasonable to conclude that a LLT generator must be available close to real time in order to receive and comply with a directive in such a shortfall scenario.

Some market participants have suggested they have always had the right to determine if and when to take outages for their own units. To the extent that the underlying reason for taking such outages is based on physical limitations or for operational reasons, rather than economics alone, Capital Power does not disagree. Mothball outages are however an economic decision and do not conform to must-offer, must-comply obligations.

Additionally, generating unit operational requirements have been under development by the AESO for several years – since at least 2013. The most recent draft stipulates that a legal owner of a generating unit must operate and maintain the facility to a minimum standard for as long as the generating unit remains connected to the transmission system.[8] As a result, any request to relax compliance obligations must be rejected.

Concluding Comments

Capital Power believes the mothball outage rule should not be made a permanent feature of Alberta's market because it is incompatible with the principles underlying Alberta's wholesale electricity market. The market presently provides all the necessary tools for market participants to manage market exposure and make informed business decisions whether to continue to operate or retire their existing generating unit(s). Mothball outages stand to distort price signals, introduce barriers to entry and barriers to exit, and potentially open doors for anti-competitive behavior. The fact that proponents of mothball outage acknowledge potential reliability issues provides further rationale to revoke the Mothball Outage Reporting Rule.

Accordingly, Section 306.7 of the ISO Rules, Mothball Outage Reporting Rule should be withdrawn.

Please contact me at (403) 717-8941 if there you have any questions.

Regards,

Steve Kanerva
Director, Regulatory & Environmental Policy

cc: Santi Churphongphun, Capital Power

[8] Subsection 3(2), Proposed new Section 502.6 - Generating Unit Operational, Version 2.0