



December 10th, 2007

To: Stakeholders

Re: Performance Targets for the Customer Interconnection Process

The AESO is pleased to issue the attached discussion paper for stakeholder review and comment.

The discussion paper proposes a set of performance measures and targets related to specific activities within the AESO's customer interconnection process and, reporting of those measures and targets.

A stakeholder session is scheduled for January 2008. To attend the session please click [Invite](#) and respond accordingly. The AESO will accept and consider written comments received by January 24th, 2008.

Sincerely,

Originally Signed By

Fred Ritter
Director, Engineering



Discussion Paper

Performance Targets for the Customer Interconnection Process

1. Purpose

The AESO recognizes that an effective and efficient customer interconnection process is important to Customers wishing to connect to the Alberta Interconnected Electric System (AIES). The AESO strives to continually improve the effectiveness of the interconnection process and to that end is proposing a set of performance measures and targets related to specific activities in the AESO's customer interconnection process.

This paper presents a set of possible performance targets for stakeholder consideration. The AESO has proposed a set of performance measures focused more on the initial stages of a project and associated activities that the AESO is directly engaged in.

The AESO continues to work with industry, including the TFOs and the EUB, for process improvements to achieve increased efficiencies throughout a project cycle; from application phase to commissioning phase. The AESO acknowledges customer concerns with not only AESO activities but also activities undertaken by other implementing agencies including the TFOs and the EUB. The AESO considers the establishment of the proposed performance measures and targets as an initial phase that specifically addresses the requirements of the Transmission Regulation and can be readily implemented by the end of Q1-2008. Subsequent work, that includes consideration of all stages of a project, will require extensive collaboration with the TFOs, the EUB and customers.

2. Stakeholder Comments

The AESO encourages and invites stakeholders to review and comment on this paper. After receiving stakeholder comments the AESO will finalize and implement the performance targets by March 31, 2008¹.

3. Background

Currently, the AESO publishes quarterly transmission project reports and a generation interconnection queue. The reports provide significant detail² on customer projects; however, neither was designed to provide performance target information.

In the interest of continuous improvement the AESO wishes to establish performance targets for certain stages within customer interconnection process. The performance targets are intended to establish target cycle times against which actual project activity will be monitored, measured and reported.

¹ The AESO plans to implement the performance targets by March 31, 2008 and comply with Section 6(1) of Transmission Regulation 86/2007.

² The quarterly reports provide detailed information on customer and system projects such as cost estimates at the various stages of the project, status of the need filing, status of the facilities application filing, and planned and forecasted in-service dates.



The AESO intends to publish the results on an annual basis and keep stakeholders informed on performance target results. The AESO will also use the results to implement enhancements to further optimize the process where issues are identified.

In addition, the AESO is in the process of enhancing its interconnection queue business practices and will provide stakeholders an opportunity to comment on the AESO's proposal through a separate consultation process.³

4. Customer Interconnection Process

In 2004 the AESO, in consultation with Industry, re-designed the customer interconnection process and developed processes to accommodate the three main project types:

- [Existing Substation process](#) (often referred to as the Type 1 Process)
- [New Substation process](#) (often referred to as the Type 2 Process)
- [Industrial Loads, Generators or ISD⁴ process](#) (often referred to as the Type 3 Process)

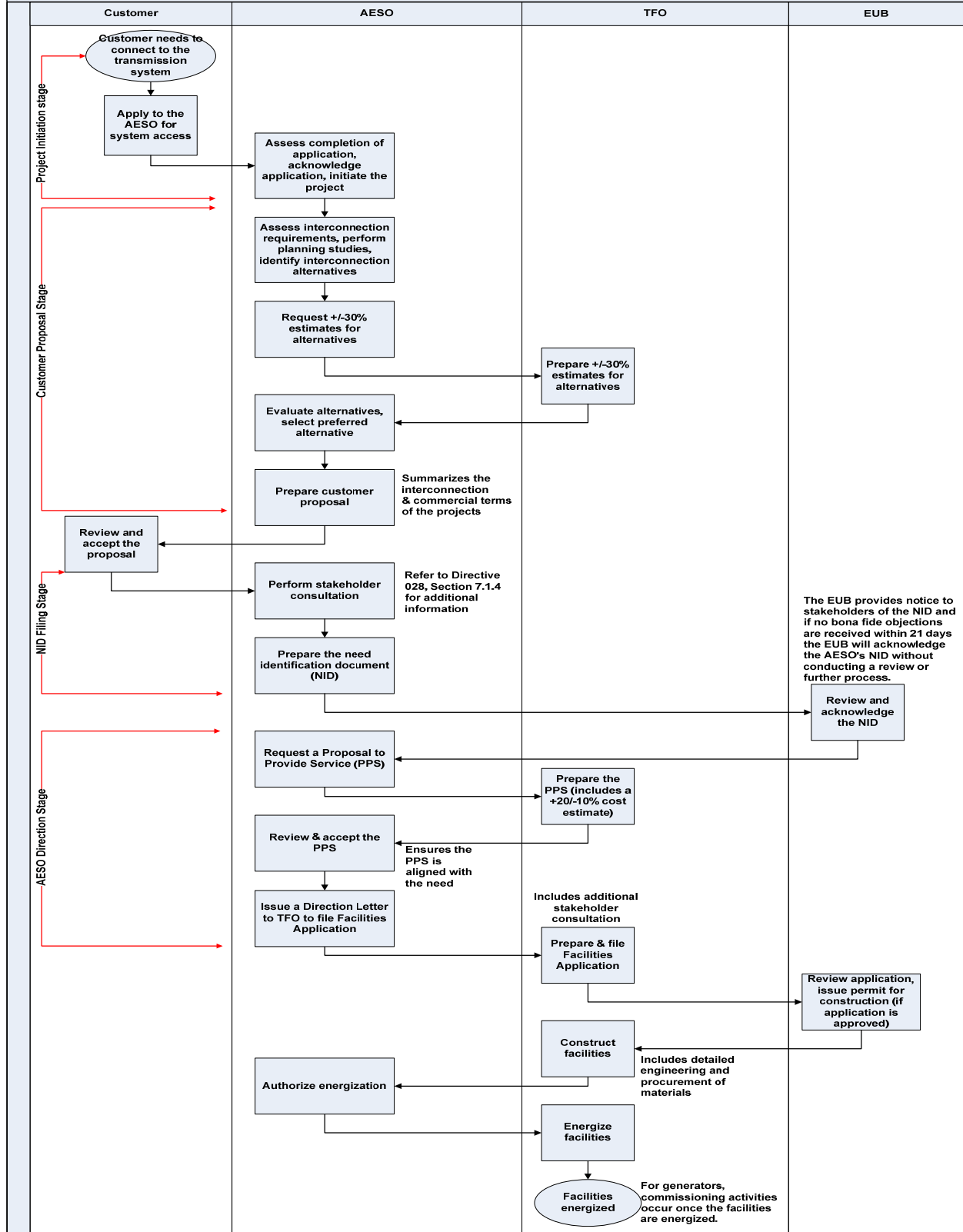
The processes are similar and do have some differences particularly at the early stages of the process. As well, the processes tend to vary with complexity; Existing Substation projects tend to be less complex than New Substation and Industrial Load, Generator, ISD projects. Stakeholders wishing to obtain a more detailed understanding of each process are encouraged to click on the links above and review the individual processes.

The diagram below is intended to present a generic overview of the customer interconnection process and highlight (red arrows) the suggested target areas for performance metrics.

³ Discussion Paper: Interconnection Queue Business Practices, September 26, 2007 and Stakeholder consultation on October 19, 2007.

⁴ ISD is a party with or seeking an industrial system designation.

High Level Overview – Customer Interconnection Process



5. Recent Process Enhancements

Since 2004, several process enhancements have occurred including but not limited to:

- Amendment to the AESO tariff enabling the AESO to delegate responsibility to Transmission Facility Owners (TFOs) for managing security and agreements directly with customers. This enhancement allows for more effective and direct interaction between customers and TFOs.
- Streamlined the need filing process for needs identification documents (NIDs) per Transmission Regulation 5 (5) b. NIDs for customer projects (and for system projects less than ten million dollars) are filed with the Alberta Energy and Utilities Board (EUB) and published on the EUB's website as public information for twenty-one days. Provided no bona fide complaints are received the project can continue through the process without formal review by the EUB. This process is often referred to as the abbreviated needs identification process.
- Implemented a preliminary meeting between the Distribution Facility Owners (DFO) and the AESO for new substation projects prior to formal submission of the preliminary assessment application by the DFO. This enhancement is intended to reduce the re-work and cycle times for new distribution substation projects.
- Implemented practices with DFOs to ensure compliance with Section 101 of the Electric Utilities Act.
- Improved the customer interconnection process documentation and published this on the AESO website to ensure customers have consistent, complete and accurate process information.

The AESO now intends to further enhance the process and implement performance targets as discussed in this paper.

6. Possible Customer Interconnection Performance Targets

Key parties involved with customer interconnections include:

- Customers (DFOs, Industrial Loads, Generators and ISDs)
- TFOs
- The EUB
- The AESO

The overall effectiveness of the interconnection process relies on each party's ability to perform certain activities in a timely manner.

While the AESO does not have direct control over all activities throughout a project, four process stages have been identified where the AESO does have significant influence and where performance targets could be established. These process stages are as follows:

1. **Project Initiation stage** – “AESO receipt of complete application information⁵ from the Customer” to the “AESO’s acknowledgement of such complete application information”.

Customers wishing to access the transmission system are required to apply to the AESO. Upon receipt of the application information the AESO confirms that the information is complete, formally acknowledges the application and initiates a project.

2. **Customer Proposal stage** – “AESO’s acknowledgement of complete application information” to the “AESO’s issuance of a customer proposal”.

Once a project is initiated planning studies are performed to identify possible interconnection alternatives. Once alternatives are identified the AESO requests +/-30% cost estimates from the TFO for each alternative⁶. After receiving the cost estimates the AESO evaluates the alternatives, selects a preferred alternative and prepares and issues a customer proposal detailing, along with other information, the commercial terms for the project. Stakeholders should note that this stage is dependant on a cost estimates from the TFO.

3. **Need Filing stage** – “Customer’s acceptance of the customer proposal” issued by the AESO to the “AESO filing of the need identification document (NID) with the EUB”.

Once the customer accepts the customer proposal the AESO prepares and files a NID with the EUB. The NID documents the project need, the interconnection alternatives considered (with cost estimates), why each of the alternatives did not adequately address the project need, and, recommends the preferred alternative with supporting rationale.

4. **AESO Direction stage** – “EUB acknowledgement on the NID” to the “AESO’s issuance of a letter to the TFO”, directing the owner of a transmission facility to submit, for EUB

⁵ Customer application information could include a combination of: preliminary assessment application, fee, data forms, new substation supporting information and an interconnection proposal.

⁶ On existing substation projects the AESO typically will not request cost estimates from the TFO as alternatives and costs estimates are submitted as part of the interconnection proposal. Refer to the existing substation process for additional information.

approval under the Hydro and Electric Energy Act, a transmission facility proposal to meet the need identified. This letter is often referred to as the Direction Letter.

Upon receipt of the EUB’s acknowledgement of the NID the AESO requests a Proposal to Provide Service (PPS) from the TFO. The TFO prepares and submits a PPS with a +20/-10% cost estimate to the AESO. The AESO reviews the PPS, ensures the technical components of the PPS are aligned with the project need and functional specifications and, verifies the preferred alternative remains valid based on the +20/-10% cost estimate. Once the AESO completes its evaluation and review of the PPS a Direction letter is issued to the TFO.

7. Additional Information

In order to provide further context for Stakeholders, supplemental information on actual cycle times, TFO cost estimates, volume of projects and other factors that can impact cycle times is provided below. Stakeholders are encouraged to consider the supplemental information when suggesting reasonable cycle times.

Actual Cycle Times

The table below provides median⁷ cycle time information for each suggested target area discussed above. Please note that days are calculated in **calendar days**.

Process	Project Initiation Stage Application to Application Acknowledgement	Customer Proposal Stage Application Acknowledgement to Customer Proposal	Need Filing Stage Acceptance of Customer Proposal to NID Filing	Direction Stage NID Acknowledgement to Direction Letter
Existing Substation	11 days	55 days	11 days	34 days
New Substation	Insufficient Data	Insufficient Data	Insufficient Data	Insufficient Data
Industrial Load, Generator, ISD	13 days	Insufficient Data	21 days	37 days

⁷ The median is the value found at the exact middle of the set of data whereby 50% of the actual cycle times are below the median and 50% of the actual cycle times are above the median.

TFO Cost Estimates

The AESO is dependant on TFOs for cost estimates in two of the suggested target areas:

- **Customer Proposal stage** – “AESO’s acknowledgement of complete application information” to the “AESO’s issuance of a customer proposal”.
- **Need Filing stage** – “Customer’s acceptance of the customer proposal” issued by the AESO to the “AESO filing of the project need with the EUB”.

Discussions were held with TFOs to understand the general time required to generate cost estimates. The average times are presented below. Ranges have been used to allow for unknown factors such as the complexity and number of options being estimated.

Target Area	Cost Estimate Required	Average time required by TFOs
Acknowledgement to Customer Proposal	+/-30% estimate	1 – 2 months
Acceptance of Customer Proposal to NID Filing	+20/-10% estimate	2 – 4 months

Volume of Active Projects

Total active customer and system projects as at October 2007 was, 175 and 43 respectively.

Other Factors

Several other factors can impact cycle times:

- Complexity of projects
 - Existing substation projects tend to be less complex than New Substation or Industrial Load, Generator, ISD projects.
- Resource levels (ie staffing, including consultants)
- Completeness of data received from customers
- Size and type of development
- Evaluation of the distribution and transmission alternatives
- Establishing the commercial terms
- Customer driven changes, i.e. re-evaluation of site locations
- Stakeholder consultation requirements per EUB Directive 028

The AESO suggests that performance targets be established for each of the target areas discussed above and for each process type. The AESO proposes this approach to ensure that reasonable cycle times are established while incorporating project variations.

Stakeholder Comments

The AESO encourages and invites Stakeholders to provide written comments on:

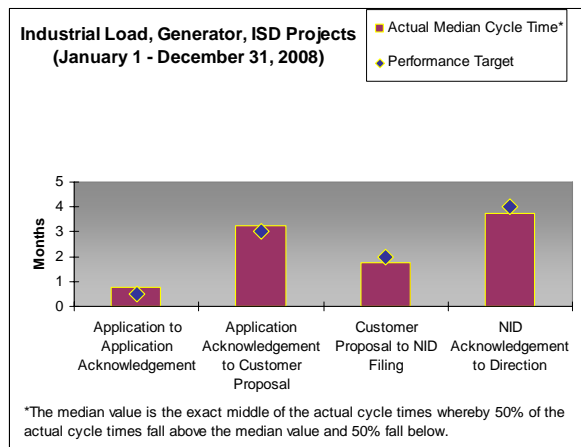
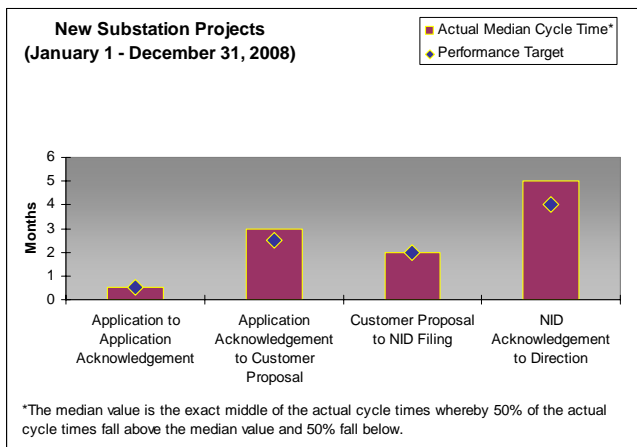
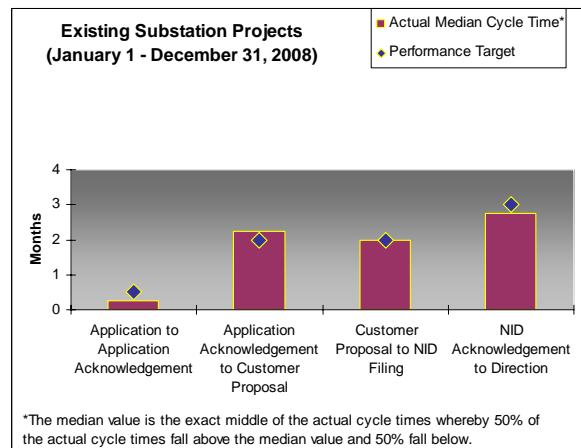
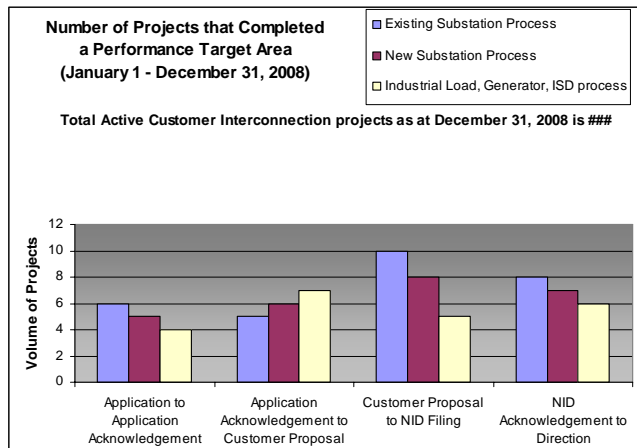
- The target areas; specifically do stakeholders feel the four areas proposed are appropriate areas to target and measure?
- The performance targets (cycle times) for each target area; specifically what do stakeholders’ feel are reasonable cycle times for each target area and for each process type?

8. Reporting

8.1 Customer Interconnection Performance Targets

Once performance targets are implemented the AESO will report actual information against the performance targets. The AESO suggests that information regarding the number of projects completing a target area and, actual median cycle times may be appropriate reporting metrics, and, that annual reporting may be an appropriate frequency. The graphs below present these concepts for consideration.

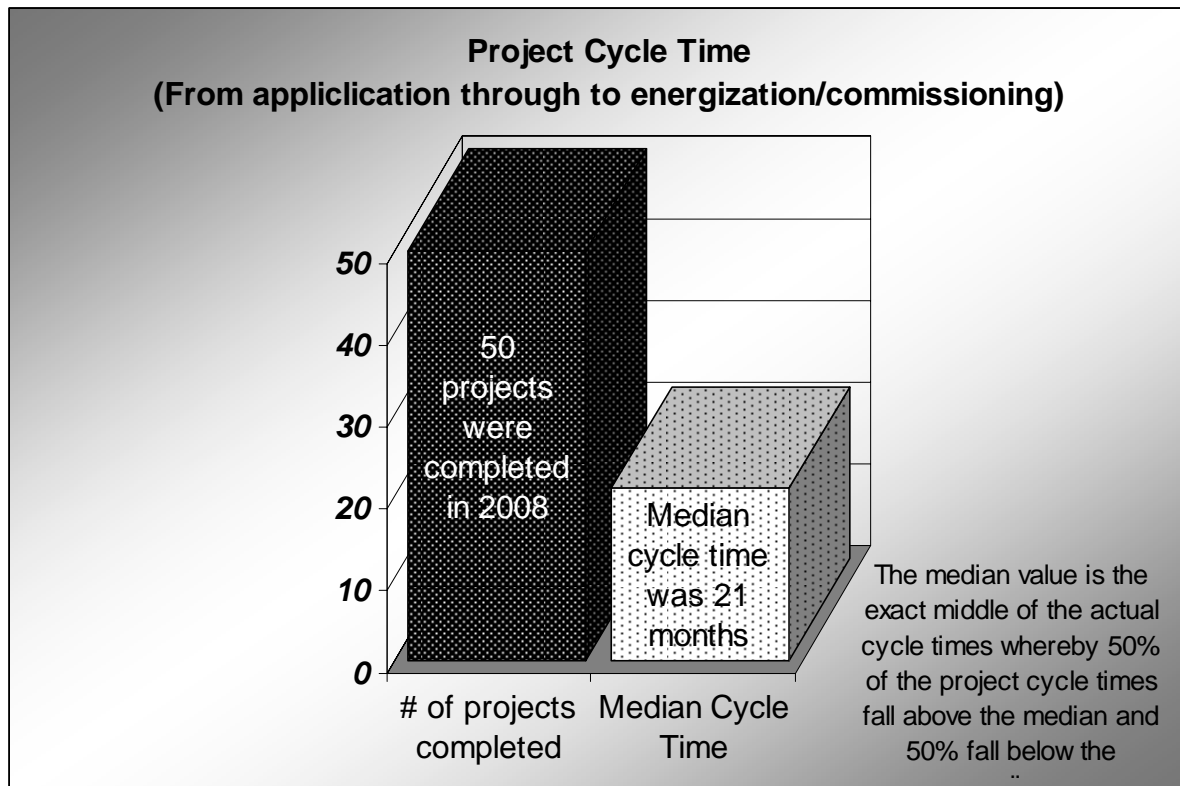
NOTE: The graphs presented are not intended to propose cycle times nor are they based on actual data; the data and graphs have been prepared for illustration purposes only.



8.2 Other Reporting

The AESO continues to work with industry, including the TFOs and the EUB, for process improvements to achieve increased efficiencies throughout a project cycle; from application phase to commissioning phase. The AESO suggests it may be useful to understand the overall cycle time of a project – from application through to energization or commissioning as the case may be. The AESO suggests that this information initially be reported as an individual statistic rather than a performance target metric. As further stakeholder consultation is performed and as determined useful, the project cycle time statistic could evolve to a performance metric. The graph below suggests reporting for project cycle times.

NOTE: The graph presented is not based on actual data; the data and graph has been prepared for illustration purposes only.



Stakeholder Comments

The AESO encourages and invites Stakeholder to provide written comments on:

- The graphs; specifically do the suggested graphs provide Stakeholders with the information necessary to remain informed on customer interconnection projects?
- The frequency of reporting; specifically do stakeholders consider annual reporting adequate?



9. Summary

The AESO encourages and invites stakeholders to review and comment on this paper. A stakeholder session is scheduled for January 9th, 2008. To attend the session please click [Invite](#) and RSVP accordingly. The AESO will accept and consider written comments received by January 24th, 2008.

After receiving stakeholder comments the AESO will finalize and implement the performance targets by March 31, 2008