

AESO Market Services Stakeholder Session

May 26, 2010

Guiding Principles for 2010

Clear Interpretation of Policy Framework

Share our Research & Learnings from Other Markets

Review Progress Against Objectives 12 – 18 months



AESO issue paper identifying reason for rule change

AESO issue discussion paper

AESO issue recommendation paper

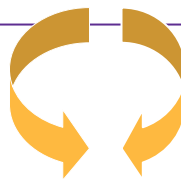
AESO issue draft rule

AESO issue final rule and submit to AUC

Definition of the Problem

Share our Data & Analysis

Iterative Consultation if New Ideas, New Concerns, New Data



Agenda

- 8:30 – 8:50 a.m.
- 8:50 – 9:00 a.m.
- 9:00 – 9:30 a.m.
 - Update on Market Services 2010 Priorities
 - FEOC Regulation – AESO Implementation Update
 - Wind Integration
 - Status of WPF Technical Rule
 - Short Term Mitigation Plans
 - Forecasting
- 9:30 – 9:40 a.m.
- 9:40 – 10:00 a.m.
- 10:00 – 10:15 a.m.
- 10:15 – 10:45 a.m.
- 10:45 – 11:15 a.m.
 - Supply Surplus
 - OR Market Redesign – 1st stage of implementation
 - Coffee Break
 - Market Suspension
 - Interties
 - Restoration
 - Framework
- 11:15 – 11:45 a.m.
- 11:45 – 11:50 a.m.

Fair, Efficient and Open Competition Regulation AESO Implementation Update

Ron Smith

Market Services Stakeholder Session

May 26, 2010

- Revised ISO Rules
 - 1.8 – Appointment of an Agent
 - 1.10 – Market Participant Behaviour Guidelines
 - 10.10 - Load Outage Reporting
- Published Load Outage Report and the Energy Market, DDS and AS Merit Order Reports
- Refined Long Term Critical Outage and System Coordination Plan-Approved Outages Reports

- Section 6(2)(a) of the FEOC Regulation requires the AESO to develop IT systems capable of identifying and tracking the market participant that holds the offer control for each offer made to the power pool
- The offer control information will augment the Merit Order Reports
- Initial scoping of the implementation requirements is underway

- The AESO will publish a Recommendation Paper that outlines the proposed implementation plans at the end of Q2 2010
- The goal of the AESO is to develop processes, IT systems, etc. that will facilitate as seamless transition for market participants as possible
- The AESO welcomes all stakeholder input

- Section 3(2) of the FEOC Regulation provides a one year exemption for all AESO approved agency agreements
- Exemption expires August 31, 2010
- On or before the expiry date, the AESO requires:
 - ‘order’ from the Alberta Utilities Commission, or
 - confirmation that ‘order’ is not required
- The AESO posted a letter May 26

Next Steps

- AESO will publish and seek feedback on the Recommendation Paper
- Input from stakeholders will be factored into the implementation plans for the offer control reporting requirements
- The AESO will provide periodic project updates



Questions?

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Wind Integration Program

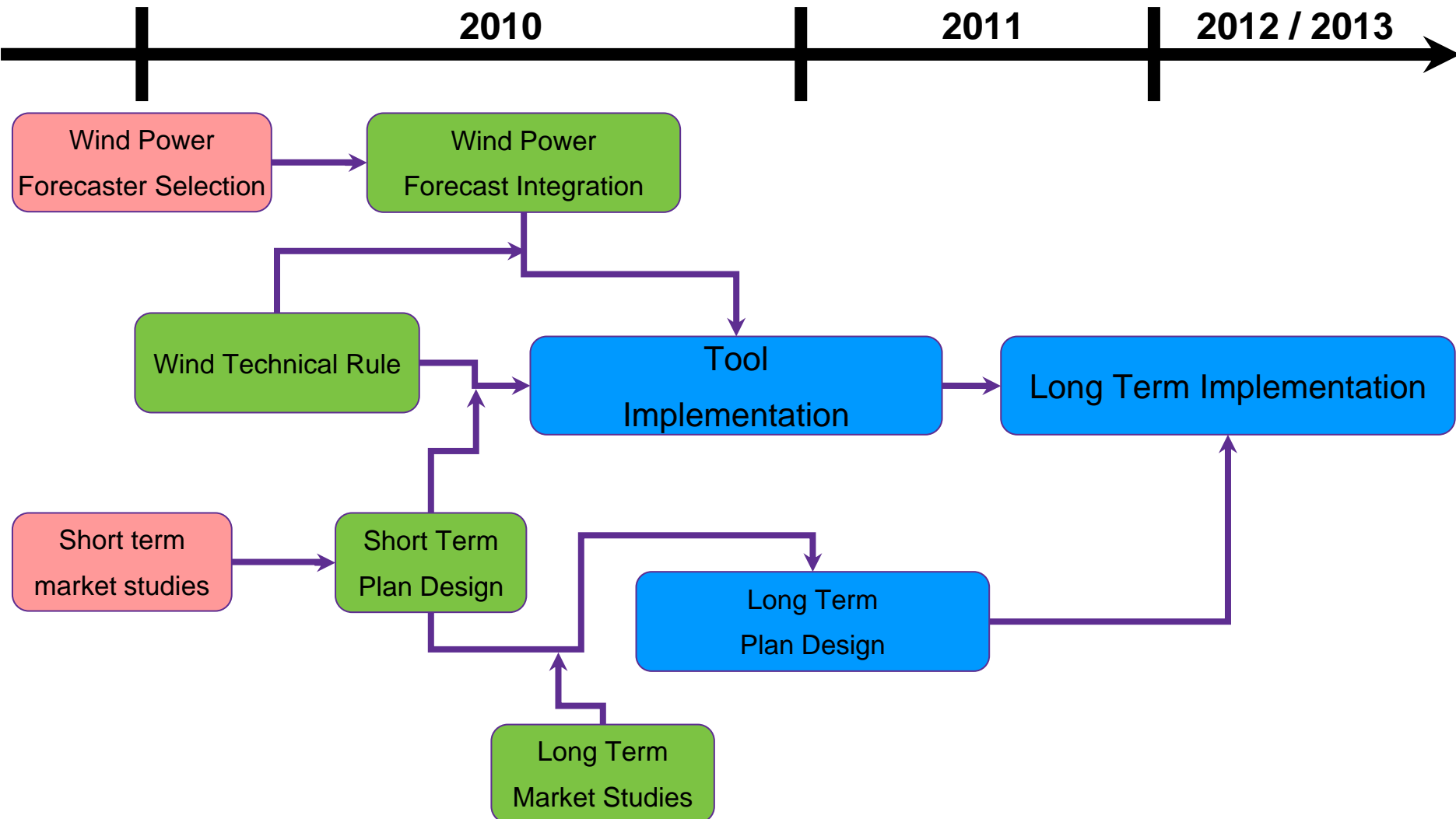
Jacques Duchesne
Market Services Stakeholder Session
May 26, 2010

- Overview of the Wind Integration Program
- Status of Wind Technical Rule
- Wind Power Forecasting
- Short Term Integration Plans



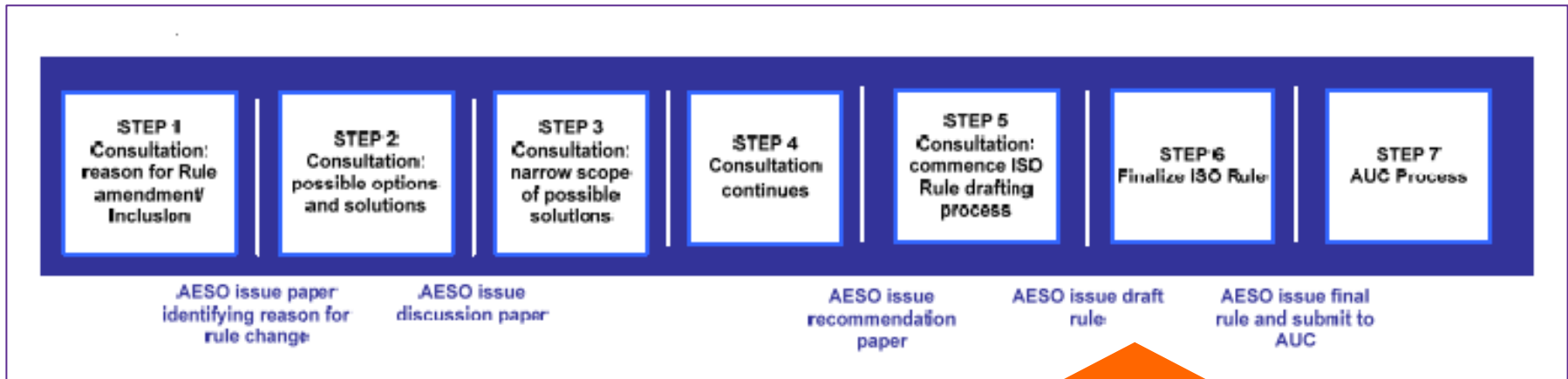
- Short term wind integration management plan designed and implemented to safely integrate 1100 MW of wind by end of 2011
- Long term wind integration plan designed for 4000 MW of wind by 2013

Wind Integration Program – High Level View



Wind Technical Rule – Status

- 2nd draft of rule issued for consultation – May 6th
- Comments back on 2nd draft – May 21st
- AESO responses to comments – June 10th
- AUC filing – June 28th



Wind Technical Rule – Objective

- Power limiting
- Add to applicable wind power facilities
 - ramp rate limiting and
 - over frequency control
- Add wind power forecasting requirements to all wind power facilities

Key Points – Technical Rule

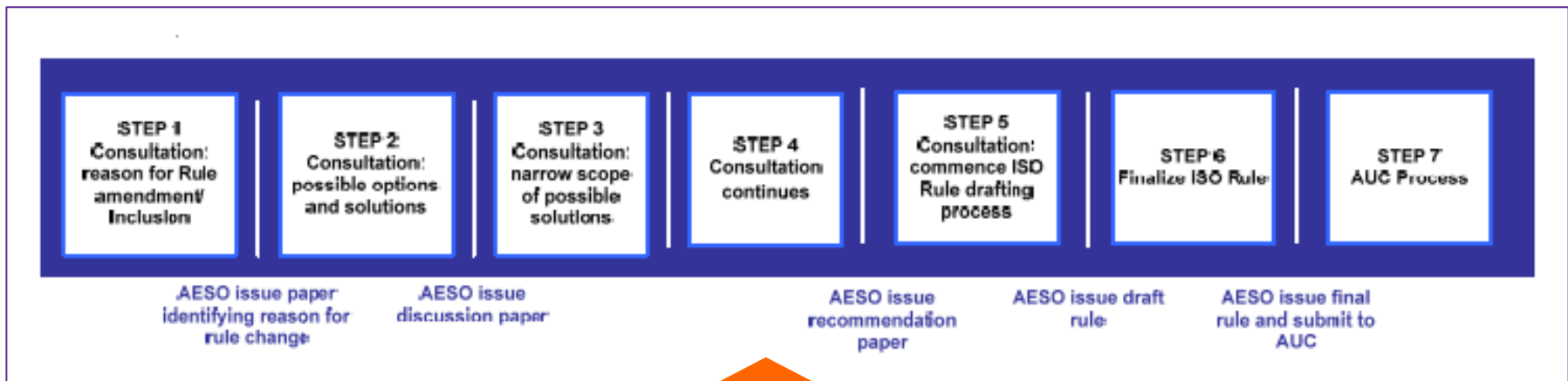
- The Wind Technical Rule is:
 - Applicable to **all** wind power facilities; any considerations for existing and new facilities will be addressed in the Rule
 - In most cases the technical intent remains the same as in the predecessor standard
 - Primarily to add requirements for physical infrastructure at wind power facilities for wind power forecasting capability, power limiting, ramp rate limiting and over-frequency control
- Proposing effective date of 180 days post AUC approval to provide existing facilities a reasonable period of time to add or modify equipment at wind generating facilities

- Contract signed with WEPROG – Jan 15
- Wind power forecast based on global weather data available on AESO website – June 03
- Communicate with wind farms owners with specific requirements (IT protocol) – June 2010
- Combined wind forecast data from individual wind farms and global weather data – Nov 2010
- Integrate wind power forecast into AESO's systems – early 2011

- Reliable system operation – allows the System Controller to incorporate wind power forecast into operations
- Fair and efficient market operation – minimize the invoking of wind power management (i.e. curtailment)
- Efficient use of reserve – use additional reserve only when high wind power variability is forecast

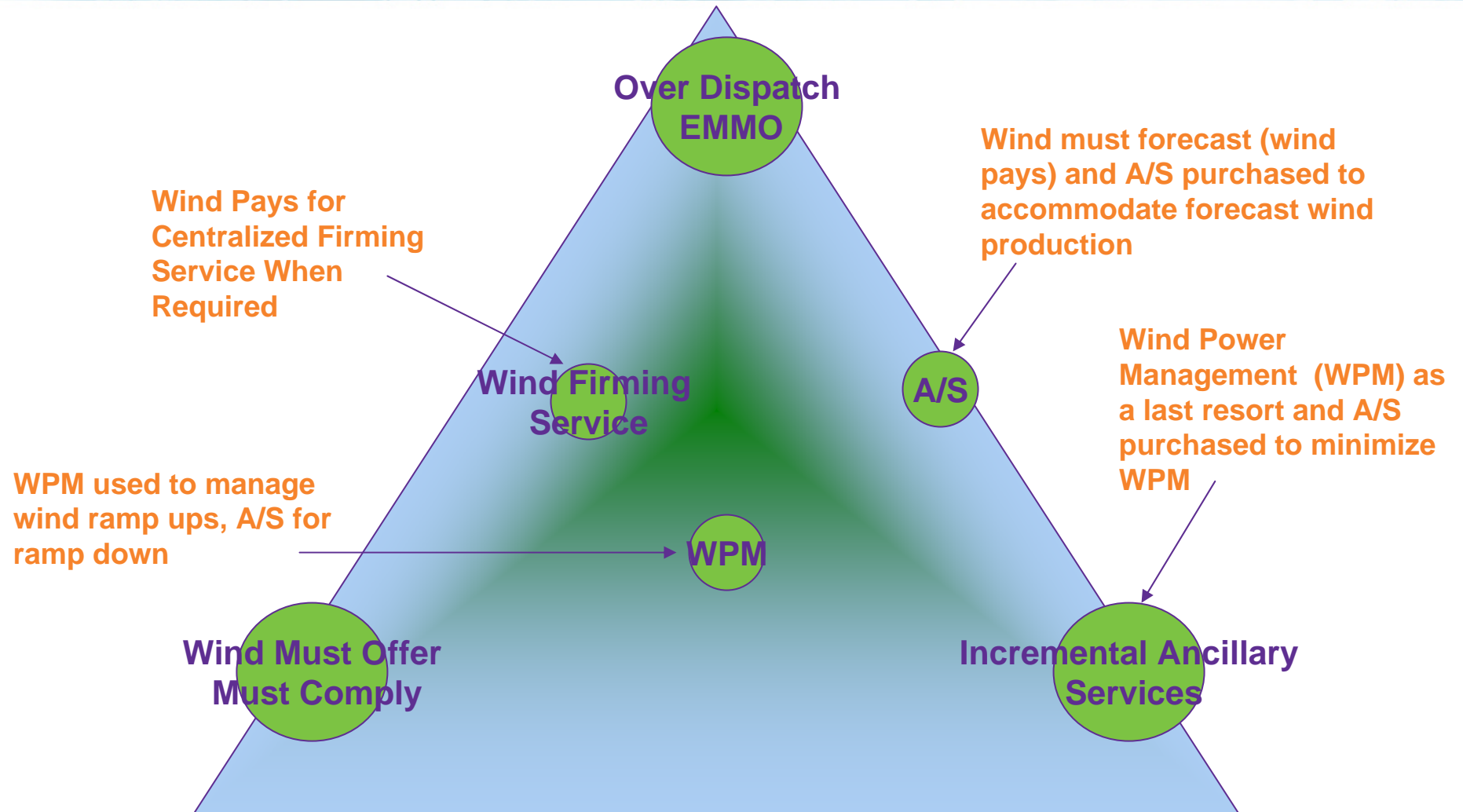
Short Term Integration Plans – Status

- Discussion paper posted – May 6
- Comments due back – May 28 (extended one week)
- Recommendation paper – target June 30
- Implementation of short term solution – ongoing
- Issue long term Discussion Paper – Q4 2010



- Any potential suite of wind integration tools must ensure the safe and reliable operation of the system
- Market solutions are preferable to administrative solutions
- The energy market merit order is the primary tool for balancing energy requirements on the system
- All generation should be treated fairly while recognizing their unique characteristics
- Ancillary services are a tool to protect the system from events that cannot be reasonably controlled

Short Term Integration



Three tools can be implemented for use by 2011:

1. Incremental operating reserve such as regulating reserve and contingency reserve can be used to help manage wind variability
2. Wind power management can be used to limit wind generation when the power cannot be accommodated on the system
3. The energy market merit order can be ramped up and down to balance the system

- Ancillary services
 - Is there a role for incremental volumes of Ancillary Services? Regulating and Contingency Reserve are useful tools. Both Active and Standby Reserve can be used to mitigate wind.
 - If there is a role for incremental Ancillary Services, develop a procurement plan. It may be based on the wind power forecast or near real-time operational considerations. Active and Standby Reserve may play a role in the plan.

- Wind Power Management (WPM)
 - Determine the conditions that trigger WPM and reflect these in an ISO WPM rule
 - Develop a WPM tool to distribute wind power limits and curtailment across facilities. The tool must be in place and operational by 2011. Lack of a tool and protocol would likely result in more wind curtailment than required in order to ensure reliability.
- Integrate the wind power forecast into the overall integration package

Questions?

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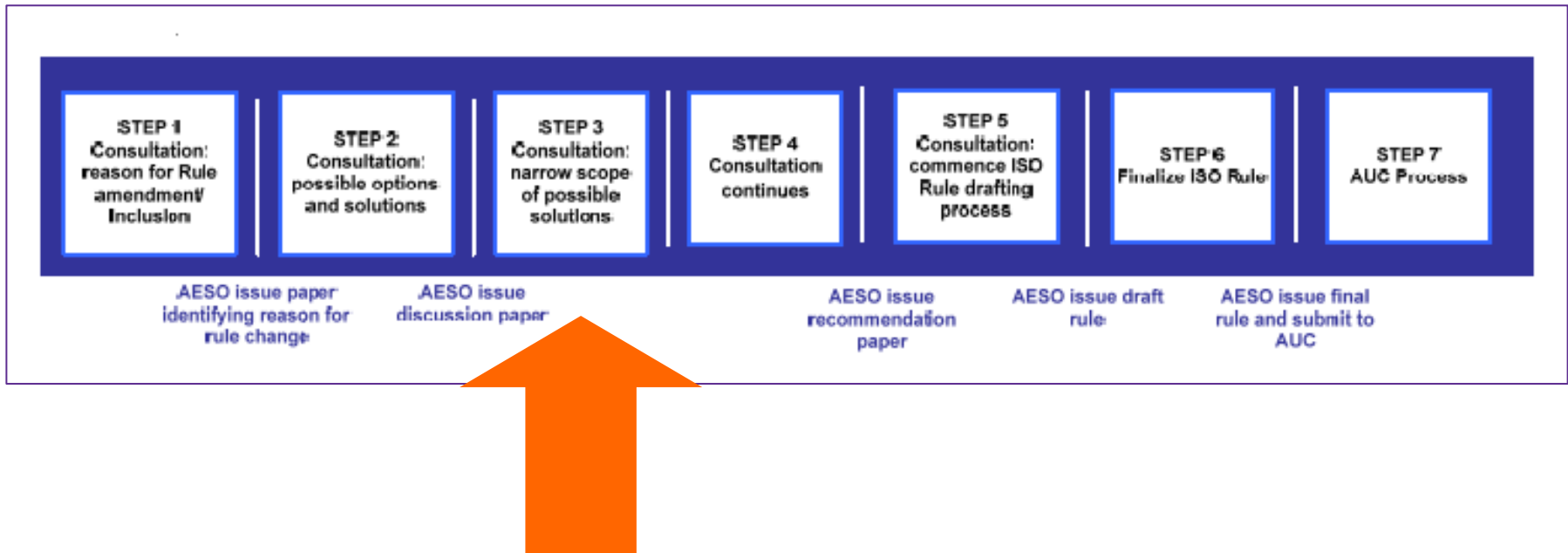
Supply Surplus Initiative Update

Ruppa Minhas

Market Services Stakeholder Session

May 26, 2010

- Supply Surplus Discussion Paper posted for stakeholder comment on April 29, 2010
- Stakeholder comments due May 28, 2010 (extended from original date of May 20, 2010)



Supply Surplus Paper Components

- Provides a background and assessment of:
 - Existing rules and procedures
 - Previously proposed protocols
 - Options for managing supply surplus conditions
- Paper proposes a short term solution and initiates discussion on the long term options

- Supply Surplus was originally included as part of the Market and Operational Framework for Wind (“MOF”)
- Stakeholder comments on the MOF recommendation paper for wind suggested that further and broader consultation was required
- To ensure that the rules and procedures are updated so that all generators are treated fairly
- To ensure the rule is positioned properly to consider future changes

Factors that Contribute to Supply Surplus Conditions

- Low levels of:
 - Demand
 - Exports

- High levels of:
 - Base-load generation
 - Imports
 - Wind Generation
 - Hydro availability during spring run-off

Options for Consideration

- Short term:
 - No exemption for wind
 - No exemption for co-generators
 - Scheduling of exports within T-2 or within the delivery hour
 - Voluntary Generator Curtailment Request (VGCR)
- Long term:
 - Market rules for wind generation
 - Voluntary Generator Curtailment Program (VGCP)

- The MOF recommendation paper for wind proposed a new term: Minimum Operating Level (MOL)
- Both MOL and Minimum Stable Generation (MSG) are physical limits, determined by the participant
- The current definition of MSG may benefit from some refinement
- AESO questions the need for both MSG and MOL

Risks if Supply Surplus Conditions are Not Managed Appropriately

- Challenges maintaining supply-demand balance
- Potential for control area violations
- Impact on generators and load from over-supply



Questions?

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Operating Reserve Market Redesign – 1st Stage of Implementation

Daniel Clark

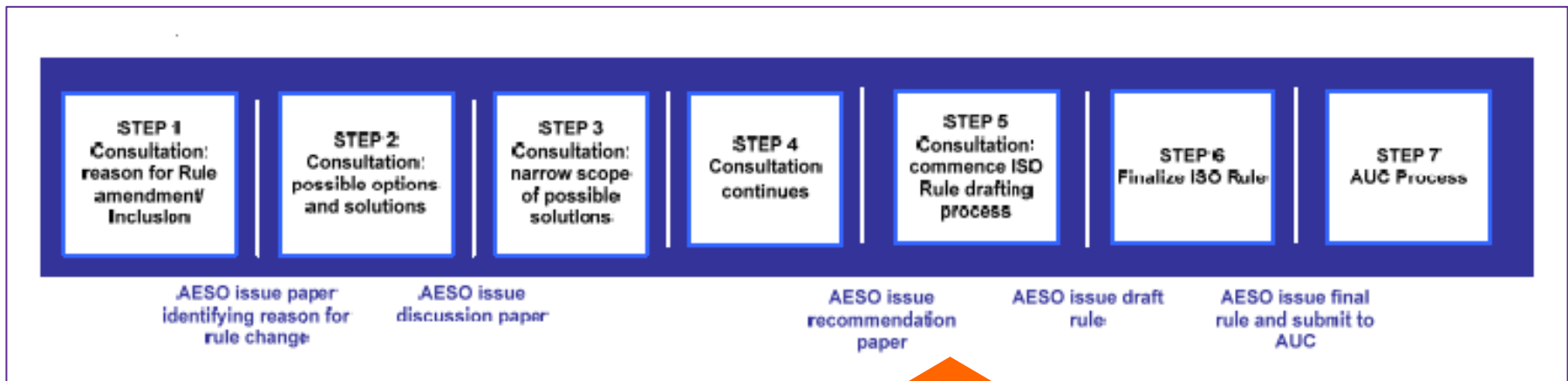
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May 26, 2010

- Status update on current Operating Reserve (OR) market re-design initiatives
- Review phase 1 implementation strategy
 - Full D-1 procurement
 - Improved OR market reporting

Status Update

- OR re-design overview – March 4, 2010
- OR re-design revised Recommendation Paper
- Response to comments – May 27th, 2010

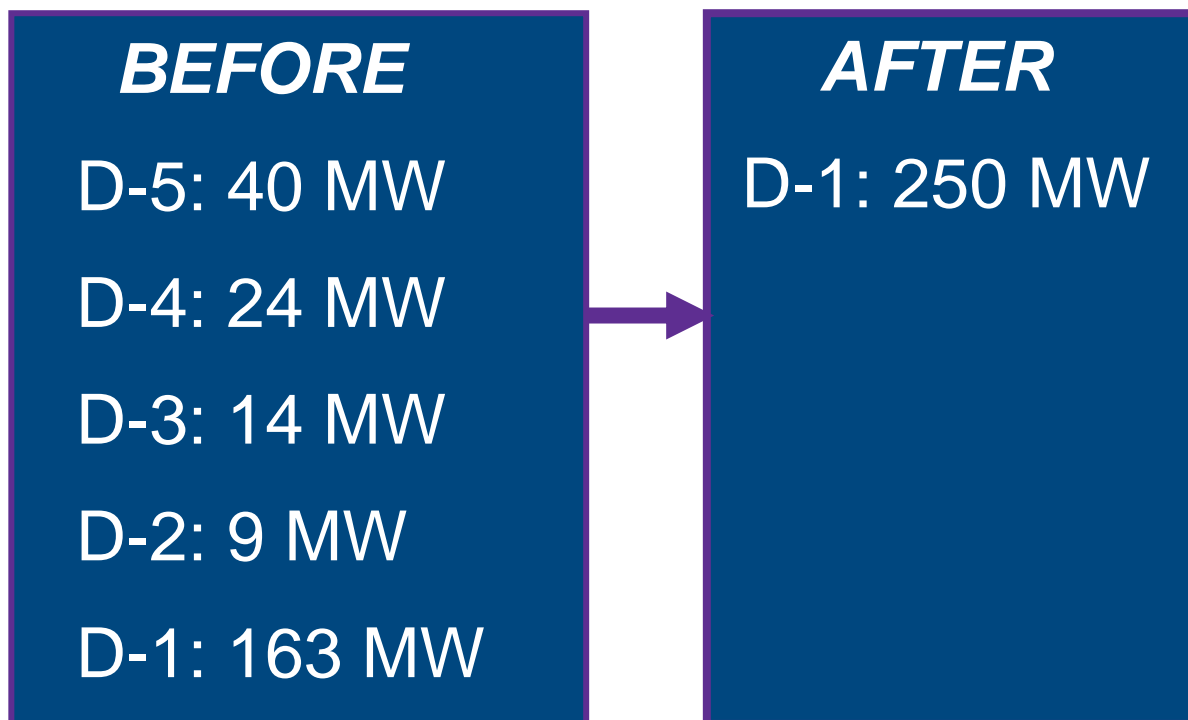


OR Re-design Implementation – Phase 1

- Multi-day procurement to be eliminated – All volume procured on a day ahead basis (D-1)
- All other market aspects will remain unchanged
- Improved OTC reporting

Volume Changes

- All ACTIVE & STAND-BY volume will be procured on D-1
- Example: Our volume forecast indicates we will require 250MW of active spinning reserve on-peak



Procurement Schedule

- On Monday D-1 is Tuesday
- On Tuesday D-1 is Wednesday
- On Wednesday D-1 is Thursday
- On Thursday D-1 is Friday
- On Friday D-1 is Saturday, Sunday and Monday
- On holidays D-1 is the last business day before the holiday. If a holiday occurs in conjunction with a weekend, then the holiday is procured in addition to the weekend.
- No volume will be procured on D-2 through D-5, although this option still exists if chronic D-1 problems are encountered.

General D-1 Timeline

WATT-EX

- 9:00 a.m. All markets open – AESO posts bids
- 9:40 a.m. Active Regulating Reserve market closes
- 9:50 a.m. Active Spin Reserve market closes
- 10:00 a.m. Active Supplemental Reserve market closes
- 10:10 a.m. Stand-by Regulating Reserve market closes
- 10:20 a.m. Stand-by Spin Reserve market closes
- 10:30 a.m. Stand-by Supplemental Reserve market closes

OTC*

- 10:10 a.m. Required volumes email sent to participants
- 10:30 a.m. Deadline to receive OTC offers from participants
- 11:15 a.m. Volumes awarded to participants

*All OTC times are approximate

- Currently two OTC reports available on AESO website
 - Daily OTC transactions report
 - Weekly Market Report
- Updates to the existing daily OTC transactions report
 - Volume weighted average of trade price for each product by on-peak and off-peak
 - Consistency with other reports

Reports

Version: prod 6_1_1_17

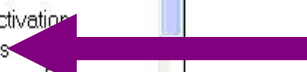
- Current
- Historical
- Trading Page
- Supply Forecast

Select Report: Select a Report
Select Format:
Begin Date: (MM/DD/YYYY)
End Date: (MM/DD/YYYY)

- Select a Report
- SETTLEMENT
 - Metered Volumes (All)
 - 2007 December Production Summary
- TRADING
 - Actual Forecast
 - Pool Price
 - Pool Weekly Summary
 - Pool Monthly Summary
 - Import Export Graph
 - Historical Trading
 - Daily Average Price
 - System Marginal Price
 - Regulating Reserves
 - TMR Reference Price
 - DDS Market
 - DDS Historical Trading
 - Load Outage
 - Merit Order Snapshot - Energy
 - Merit Order Snapshot - Ancillary Service
 - Merit Order Snapshot - DDS
 - Daily Market Report
 - Weekly Market Report
- BALANCING POOL
- AS TRADING
 - Standby & Backstop Activation
 - Daily OTC Transactions
 - Weekly Operating Reserve Price
- TRADING Pre-Quick Hits

the Report navigation bar,
 use cursor over each area.

Begin Date: (MM/DD/YYYY) **End Date:** (MM/DD/YYYY)



THE POWER OF POSSIBILITY

Reports

Select Report: **Select Format:** **Begin Date:** (MM/DD/YYYY) **End Date:** (MM/DD/YYYY)

ASP Daily OTC Transactions

ACTIVE RESERVES						
Date	Regulating					
	Off Peak			On Peak		
	Price	Volume		Price	Volume	
2010-05-17	\$145.96	208		\$488.56	269	
Date	Spinning					
	Off Peak			On Peak		
	Price	Volume		Price	Volume	
2010-05-17	-	-		\$695.72	163	
Date	Supplemental					
	Off Peak			On Peak		
	Price	Volume		Price	Volume	
2010-05-17	-	-		\$683.94	254	
STANDBY RESERVES						
Date	Regulating					
	Off Peak			On Peak		
	Wtd Avg Premium	Wtd Avg Activation	Volume	Wtd Avg Premium	Wtd Avg Activation	Volume
2010-05-17	-	-	-	-	-	-
Date	Spinning					
	Off Peak			On Peak		
	Wtd Avg Premium	Wtd Avg Activation	Volume	Wtd Avg Premium	Wtd Avg Activation	Volume
2010-05-17	-	-	-	-	-	-
Date	Supplemental					
	Off Peak			On Peak		
	Wtd Avg Premium	Wtd Avg Activation	Volume	Wtd Avg Premium	Wtd Avg Activation	Volume
2010-05-17	-	-	-	-	-	-

Implementation Timeline

- Go live date: Monday July 5, 2010
 - D-1 on July 5th will include all remaining volumes
 - D-1 volumes will incrementally increase each day
 - Full D-1 volume – Friday July 9, 2010
- Updated OTC report to be available online – July 5, 2010

Questions?

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Market Suspension Rule Review

Ruppa Minhas

Market Services Stakeholder Session

May 26, 2010

- Background
- Purpose of discussion paper
- Guiding principles of market suspension rule review
- Pricing methodology
- When market suspension is considered
- Market management tool failure
- AIES system failure
- Non-competitive outcomes
- Next steps
- Discussion/Questions

- Market suspension rule in place since 1999
- Rule in place today is similar to original rule, minor updates in early 2000
 - Rule review and update to the rule is required
- Issued Identification paper published for stakeholder comment in July 2009

Purpose of Market Suspension Discussion Paper

- Outline options for updating the market suspension rule
- Update pricing methodology

Guiding Principles of Market Suspension Review

- Market suspension must be used as a last resort
- The market should not be suspended for normal market activity
- The market price should be visible and transparent to all competitors
- Rules should be fair and reasonable for all market participants
- Market suspension rule changes must balance design complexity and implementation simplicity

- Under the current rule 6.9.4, the price when a market suspension is declared is:
 - System Marginal Price (SMP) will be \$50/MWh in the event of a blackout
 - SMP will be set at the last block receiving an energy market dispatch prior to the energy market suspension
 - If AUC declares a market suspension, SMP is set at the price ordered by the AUC

Updating the pricing methodology – options for consideration

Similar day demand patterns	The Pool Price would be set at an administrative price, which compares demand patterns using historical data
30 day rolling average	The Pool Price would be set equal to the 30 day rolling average
Reference Price	The Pool Price would be set equal to the Transmission Must Run reference price
Status Quo	No change to the market suspension pricing methodology from today
Same day of the week	The Pool Price would be set using the weighted average of the four most recent same day of the week prices

Market Management tool failure

- Continue to operate the market if possible
- Options: limited market operation or market suspension upon failure of tool
- Limited market operation upon failure of tool
 - Energy market operates using last merit order prior to the outage
 - Paper merit order
 - DDS market suspended
 - Relies on automated systems
 - Generators operating in Ancillary Services (AS) market continue to operate
 - If additional AS required, System Controller (SC) would direct assets using the last AS merit order
 - Payments to suppliers on the margin suspended
 - Relies on automated systems

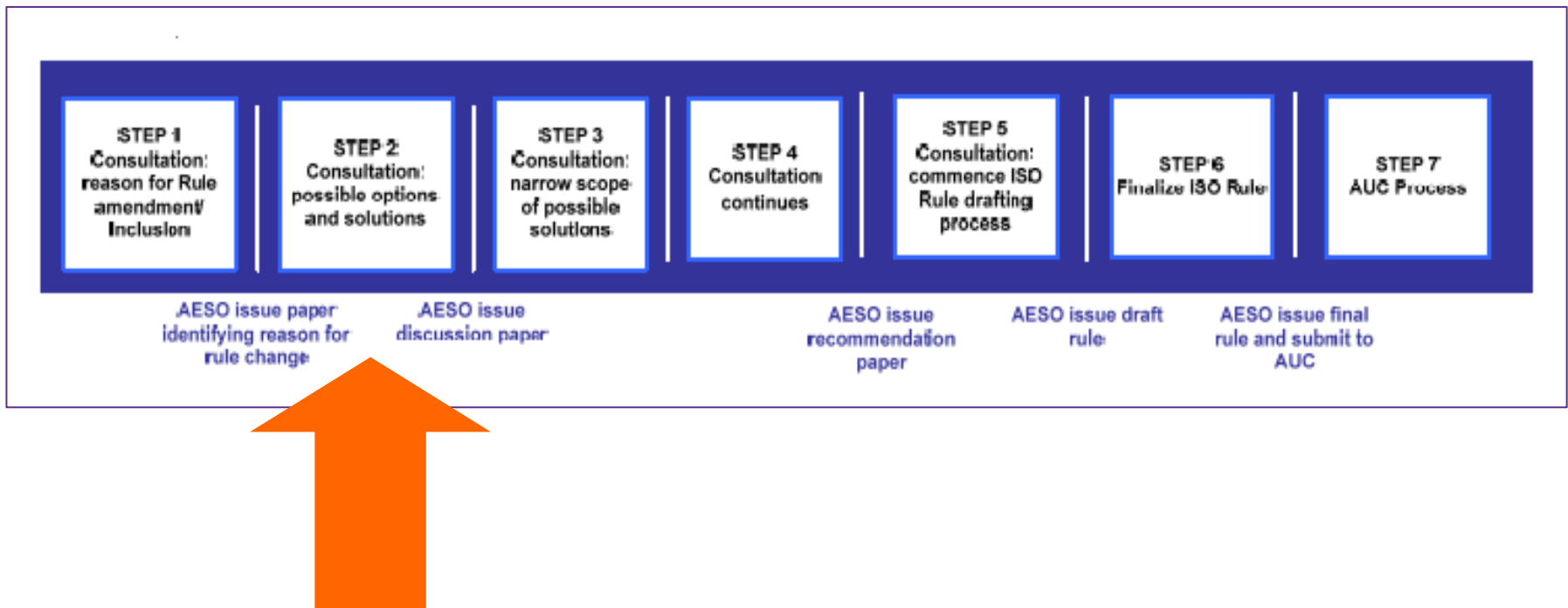
- Suspend all markets upon failure of tool – not a preferred option
 - SC would still be using the last merit order prior to the outage as a starting point for the energy and AS markets
- Primary difference between limited market operation and this option:
 - Price is set administratively if market is suspended
 - SC is not required to follow the merit order if market is suspended

- Stakeholders generally supported the relevance of the current market suspension rules related to reliability, such as:
 - Blackout
 - SC forced to abandon the workplace
 - AIES breaks up into two or more electrical islands
- Appropriate to handle on a case by case basis

- The AESO questions the need to have rules to suspend the market for non-competitive outcomes
- There are measures already in place for insufficient energy supply or supply surplus over an extended period of time and non-competitive conditions as a result of a system failure
- AESO seeks stakeholder feedback

Next Steps

- Discussion paper will be out for comment soon
- Consultation will follow the normal stakeholder consultation process



Questions?

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Intertie Restoration Update

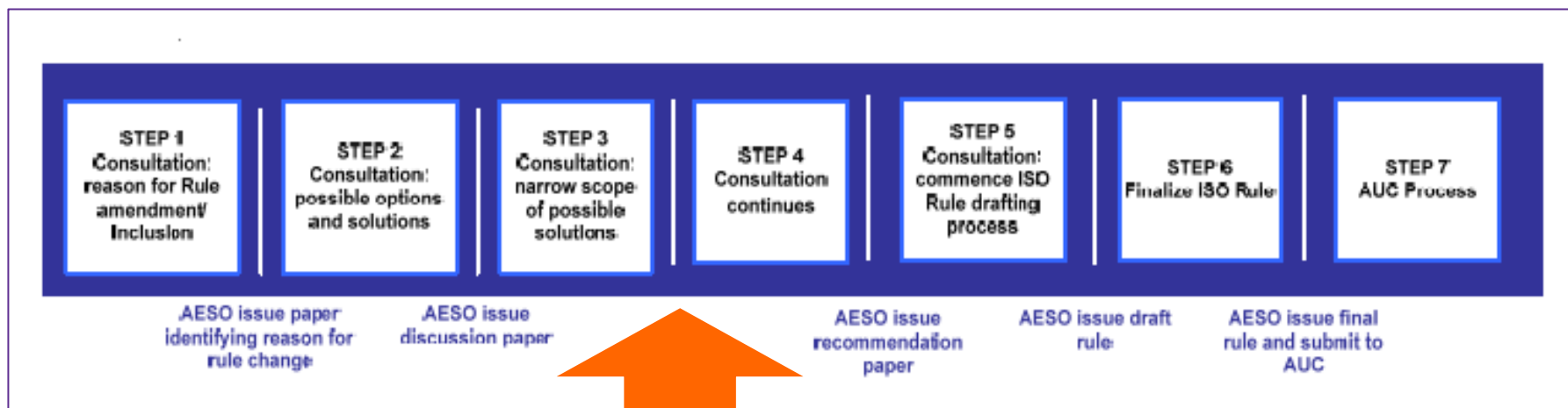
Kris Aksomitis

Market Services Stakeholder Session

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Discussion Paper Released

- Transmission Regulation obligates AESO to restore existing interconnections
- AESO Discussion Paper identified options
 - LSSi and GRAS
- Stakeholder Comments Received April 16, 2010
 - AESO responses should be complete early June



AESO Workgroups Formed

- LSSi workgroup formed to develop product for import restoration
 - First meeting held May 11
 - Product design workshops scheduled for June 1 in Calgary and June 8 in Edmonton
 - Full workgroup meeting scheduled for June 15
- Forthcoming deliverables Include:
 - Product design
 - AESO Recommendation Paper for LSSi implementation
 - Procurement process and ISO Rule changes where required

- GRAS workgroup formed for export restoration
 - First meeting held May 17
 - Workgroup agreed to examine a range of possible options for increasing export capacity (including GRAS)
 - Next meeting scheduled for June 4
- Forthcoming deliverables Include:
 - List of options and a ranking protocol to assess priorities
 - AESO Recommendation Paper for export restoration implementation
 - Procurement process and ISO Rule changes where required

Questions?

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Intertie Framework

Darren McCrank

May 26 Stakeholder Session

May 26, 2010

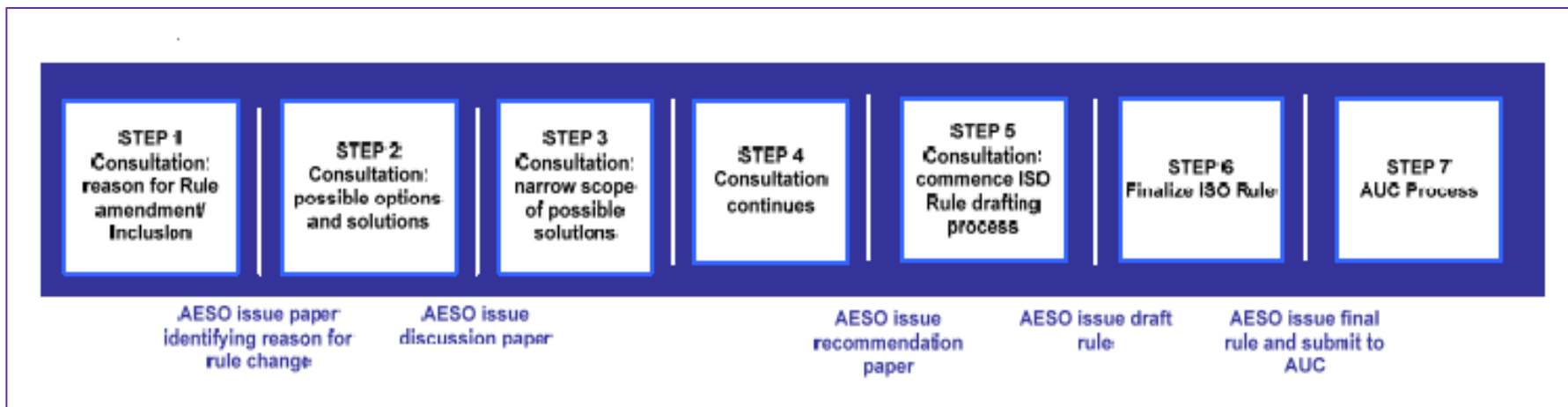
Intertie Framework Discussion Paper Stakeholder Feedback Requested

- Principles of design
- Real-time dispatch/scheduling (priced bids and offers)
- Transmission rights
- Product priority
- Available Transfer Capability (ATC) allocation tiebreaker

- Current practice is Last In, First Out (LIFO) on each intertie at hh:45
- New rule required when you have multiple interties to/from multiple jurisdictions sharing ATC (Sask & B.C. interties)
- Proposed options (stakeholder feedback requested):
 - LIFO at xx:yy before the hour
 - AESO cuts off submissions once shared ATC is met
 - Pro-rata between scheduling participants at xx:yy
 - Pro-rata between lines at xx:yy

- Comments due May 28
- Short Term Plan – ATC allocation tiebreaker
 - Issue draft rule for consultation June 2010
 - File rule with AUC August 2010
- Long Term Plan – Intertie Framework
 - Respond to stakeholder comments June 2010
 - Issue recommendation paper September 2010
 - Consult on recommendation paper Q4
 - Implement recommendation 2011
 - Rule/product/tariff development
 - System tool upgrades as required

Process



Long term plan –
Intertie framework

Short term plan draft
rule – ATC allocation
tie breaker

Questions

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Questions?