

Market Services Update

November 15, 2007 Stakeholder Session

Reliable **Power**

Reliable **Markets**

Reliable **People**



Market Services Session Agenda



- Introductory Comments
- Operating Reserves Market Redesign
 - Issues and Project Plan
 - Introduction of Conceptual Design Option
- Section 18 Transmission Regulation
 - Outage Coordination
 - AS Directive
 - Reliability Unit Commitment
 - Load Curtailment Priority Plan
- Congestion Management Update
- Next Steps

Operating Reserves Market

Issues and Project Plan

Conceptual Design Option

Operating Reserves Market Redesign Project



- Current OR market design 2001
- Assessment of current market
 - Consider stakeholder issues
 - Consider DOE Market Policy (June 2005)
- Objective
 - Design an OR market which is consistent with sections 5 & 6 of EUA
 - Not OR at minimum cost
- Project Plan
 - Develop design options to address issues. Could implement changes in Phases
 - Phase 1- continuing to utilize NGX platform
 - Phase 2- alignment with T-2 energy market

Operating Reserves Market Issues and Challenges



- Current market overly complex for size
 - Energy market (>\$4B) is less complex than OR market (~\$200M)
- AESO as single buyer influences the market
 - AESO discretion on bid price
- Hydro PPA contractual obligations influence market
- Equilibrium pricing
 - Intended benefit of equilibrium pricing not materialized
 - Equilibrium clearing OR market which is indexed to another equilibrium clearing market (energy), creates “free option”

Operating Reserves Market Issues and Challenges



- Perverse contractual terms
 - Insufficient liquidated damages
 - Liberal force majeure definition
- Month/week/day ahead procurement of OR, while energy market is moving to T-2
- Two distinct and different OR markets within one (OTC and NGX)
 - NGX: equilibrium pricing, AESO submits Bid in market, fully transparent, effective/efficient platform
 - OTC: pay as offered, no AESO Bid, limited transparency, cumbersome manual process

Operating Reserves Market Project Plan



- Comments on October Discussion paper by November 23
- AESO will consider these comments then issue a Conceptual Design Option paper in December
- Establish process for stakeholder input on challenges and design considerations
 - Steering committee?
 - Working Group?
 - Open design forum?

Operating Reserves Market Concept – Phase 1



- Phase 1 design considerations include:
 - Continue to utilize NGX platform
 - Remove AESO as buyer of OR
 - Maintain determination of OR providers at D-1
 - Discontinue OTC market
 - Others?

Phase 1 implementation commence in Q2 2008

Operating Reserves Market Concept – Phase 2



- Phase 2 design considerations include:
 - Convergence with energy market
 - Self Procurement
 - Others?

Phase 2 implementation commence in 2009/2010

Transmission Regulation – Section 18

Generator Outage Coordination, Ancillary Services, Reliability Unit Commitment and Load Curtailment Priority Plan

Generator Outage Coordination

Section 18(1)



- Outage schedules generally based on asset requirements, crew availability and market information
- Rolling 24 month outage information reporting required coincident with implementation of QH rules
- The Electricity Policy Framework indicates supply should meet forecast load plus reserves plus the single largest contingency to ensure system reliability (adequacy)

Generator Outage Coordination

Section 18(1)



- Recommendation:
 - Rules for changes to outage schedules based on:
 - Adequacy assessment for outage coordination based on forecast load plus reserves plus the single largest contingency
 - Outage reports and adequacy assessment information to market
 - Request to re-schedule outages, escalation process and directives
 - All outage directives and compensation claims referred to MSA
 - Compensation
 - Keep whole including crew, crane and demonstrable contract costs
 - No payment for lost opportunity due to changing market conditions

Ancillary Services

Section 18(1)(a)



- AESO ancillary service directives required for system security covered in ISO MPR 6.7.1 - compensation is addressed under interim Article 11 of the AESO tariff
- Formal EUB negotiated settlement process is ongoing and may address some, but not all, issues related to ancillary service procurement, directives and compensation
- Recommendation:
 - Ancillary service procurement, directives and compensation should be treated holistically and addressed within AESO rules, respecting the outcome of the EUB negotiated settlement / hearing process

Reliability Unit Commitment

Section 18(1)(b)



- Reliability unit commitment is a logical extension of short term adequacy rules including must offer, must comply, T-2
- Recommendation:
 - Generators are expected to make start decisions consistent with AESO short term adequacy forecast thereby minimizing need to commit / direct units
 - Adequacy assessment for RUC based on forecast load plus reserves
 - If directive is given at “lead time” limit, all MWs must be available
 - If directive is given inside “lead time” limit, restatement is permitted to reflect available MWs consistent with ramp profile
 - All RUC directives and compensation claims referred to MSA

Reliability Unit Commitment

Section 18(1)(b)



- RUC is considered an “in market” directive
- Recommendation:
 - Compensation options:
 - Energy market receipts including marginal unit compensation, generators retain offer control
 - Guaranteed keep whole payment for all variable costs including start up, minimum stable generation and minimum run time
 - Offer min stable at variable cost and balance of plant at cap
 - Receive guaranteed costs and forfeit energy receipts
 - Generators can return to normal energy market operations (offer control and energy receipts) by providing notice equal to lead time of unit
 - Other?

Load Curtailment Priority Plan

Section 18(2)



- AESO practice is to direct wire owners to shed load
 - Shed mix of non-critical residential, commercial and industrial customers for transmission constraints and supply shortfall
- Policy direction:
 - Continue with current practice for transmission constraints
 - Develop a load curtailment priority plan that sheds industrial and large commercial customers first in the event of supply shortfall
- Recommendation:
 - Policy direction requires further discussion and analysis to develop implementation plan - design, metering, communication and control infrastructure
 - May encourage greater load participation in energy market and opportunity to provide services such as ILRAS and LSS

Transmission Regulation – S18

Next Steps



- Recommendation Paper
 - Overview of rule and compensation recommendations
 - Participant feedback including comments and alternatives for rule and/or compensation design welcome
- Rules Process
 - Rules required by April 11, 2008 per Transmission Regulation
 - Rules language to follow reflecting consideration of feedback

Congestion Management Update

Congestion Management Definitions



- **Foreseen congestion** - defined as normal operating conditions with all transmission elements in service
 - planned tx outages with long lead times and TMR effective
- **Unforeseen congestion** - defined as abnormal operating conditions with one or more transmission elements out of service (contingency or forced outage)
 - planned tx outages with short lead times and/or TMR not effective

Congestion Management Recommendation



- Recommendation for Foreseen Congestion:
 - Utilize AS procurement process to contract for TMR
 - Dispatch TMR and DDS as required according to rules
- Recommendation for Unforeseen Congestion:
 - Determine effective generation and load
 - Eliminate use of trigger participant in real time
 - Curtail opportunity services
 - Direct TMR and dispatch DDS if required and/or effective
 - Energy market re-dispatch
 - Constrain down using reverse merit order (RMO) then pro-rata
 - Dispatch up using energy market merit order
 - Curtail downstream DTS using RMO then pro-rata dispatch

Congestion Management Participant Feedback



- Prefer unconstrained or reconstituted price with separate constrained on and constrained down payments
- Consider RMO unfair and prefer pro-rata
- Consider use of RAS inappropriate
- Concerns regarding:
 - Impact on price (distortion) and cost to load
 - Frequency of unforeseen congestion events
 - Market sustainability in the event of severe congestion

Congestion Management Response to Stakeholder Feedback



- *Prefer unconstrained or reconstituted price with separate constrained on and constrained down payments:*
 - Out-of-market solution with administrative payments
 - Constrained down payments not consistent with policy
 - Market (price) signal does not encourage competitive response
 - Operator not positioned to move into supply shortfall procedures
 - What happens after T-2?
 - Are generators willing to have energy market offers frozen during congestion?
 - If not, then price and sustainability concerns are not addressed

Congestion Management Response to Stakeholder Feedback



- *Consider RMO unfair and prefer pro-rata:*
 - RMO is effective, consistent with legislation and policy
 - RMO is due discrimination, part of normal dispatch protocol
 - AESO needs to develop effective pro-rata protocol in any event
 - AESO may consider moving to pro-rata earlier than proposed
- *Consider use of RAS inappropriate:*
 - RAS effective in terms of allowing new participants to access both the grid and the market while tx system upgrades are underway
 - As the alternative is to delay access, the AESO considers this an appropriate and efficient use of the tx resource
 - RAS schemes are developed as part of the interconnection process and are not part of the real time congestion management protocol

Congestion Management Response to Stakeholder Feedback



- *Concerns regarding:*
 - *Impact on price (distortion) and cost to load*
 - Most congestion events are short term in nature
 - Congestion distorts the market signal regardless of protocol
 - The market signal (both price and dispatch risk) is directionally correct for suppliers and facilitates a competitive response for all but the most severe congestion events
 - *Frequency of unforeseen congestion events*
 - Frequency of unforeseen congestion is difficult to predict

Congestion Management Response to Stakeholder Feedback



- *Concerns regarding:*
 - *Market sustainability in the event of severe congestion*
 - AESO shares this concern for severe congestion events
 - Generators collectively determine price through their offers
 - AESO plans to post information when abnormal congestion occurs
 - Severe congestion (frequency, duration, magnitude) **may** create unsustainable market outcomes and lead to market suspension and administrative pricing based on frozen offers, highest heat rate in the fleet, spread to Mid-C, etc.
 - Real time “competitive” analysis based on agreed upon metrics and thresholds may be required
 - Further work to be done pending FEOC policy direction

Congestion Management Next Steps



- Formal response to stakeholder comments
- Final recommendation/position
 - Pending FEOC policy direction
 - Overview of rule and compensation recommendations
- Rules Process
 - Rules language to follow reflecting consideration of feedback

Other Projects

Market Suspension Rules (ISO Rule 6.9)



- Current market suspension rules require examination to address issues related to:
 - Suspension causes / events
 - Administrative pricing options
- Scope for analysis of market suspension broadens in light of recent FEOC discussions
 - Recommended real time market power mitigation design is premised on unconstrained system and competitive outcomes
 - Should the system become severely constrained so that market outcomes are unsustainable, administrative rules may be required
- Next steps to be determined

Dispatchable Interties



- AESO in discussions with BCTC and Sask Power to enable intra-hour dispatchability on the interties in June, 2008
- AESO intends to implement dynamic scheduling as part of the EMS upgrade release 2.0 in Q4, 2009
- Next Steps:
 - Recommendation Paper
 - Overview of rule recommendations
 - Participant feedback including comments and alternatives for rule design
 - Rules Process
 - Rules by Q2, 2008
 - Rules language to follow reflecting consideration of feedback

Market Advisory Committee (MAC)



- The Power Pool used to receive input and advice from participants through the Operations Committee
- Given the relatively broad scope of work identified in the market roadmap, AESO would like to create a similar committee to provide input and advice on market issues
- Seeking input and nominations from participants for the Market Advisory Committee
- AESO will seek balanced representation and determine final composition of the committee

Questions? Comments?



- Contacts:
- Operating Reserves Market
 - Paul Barry – 539-2737
- Transmission Regulation – Section 18, Congestion Management, Market Suspension and Dispatchable Interties
 - Doug Simpson – 539-2494
- Market Roadmap, Market Advisory Committee, General
 - Cliff Monar – 539-2479