

Alberta's Capacity Market Transition

Electricity & Sustainable Energy

Alberta Energy

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Introduction

- Our current system: energy-only
 - Investors are hesitant to enter the market
- November 2016: Government of Alberta announces the transition to a capacity market framework
 - Based on recommendation from Alberta Electric System Operator, and stakeholder analysis

What is a capacity market?

- Energy-only market: pay generators only for what they generate
 - A single payment stream
 - Alberta, Texas, Australia
- Capacity market: pay generators for having capacity available
 - Payment split into two streams: energy and capacity
 - PJM, MISO, New England, New York, UK

PJM: Pennsylvania-New Jersey-Maryland Interconnection
MISO: Midcontinent Independent System Operator

Features

Pros:

- Increased revenue certainty
 - Investors continue to bear most of risk
- Supply adequacy
- Maintain a competitive market setting in which government can introduce policy objectives

Cons:

- Increased complexity and administrative costs
 - Some risk shifted to ratepayers
- Risk of oversupply due to demand forecast error

Alternatives considered: long term contracts, cost of service

Alberta's electricity transition priorities

1. System reliability
2. Environmental performance
3. Reasonable cost to consumers
4. Economic development and job creation

Policy and Technical Design

- Alberta Energy and the Alberta Electric System Operator are working closely together on the capacity market design.
- Alberta Energy consulted with stakeholders on outstanding policy questions.
- The Alberta Electric System Operator is leading development of the technical design.



Policy
Design

Technical
Design

Policy issues

- Resource adequacy
- Stakeholder involvement
- Cost allocation
- System governance

Bill 13 (legislative amendments to implement the capacity market) received Royal Assent on June 11

Cost allocation

Weighted energy method

- Assign higher weights to hours that contribute more towards the need for capacity
- Costs recovered through distribution facility owners
- The capacity market is not a new cost

AESO consolidated working groups

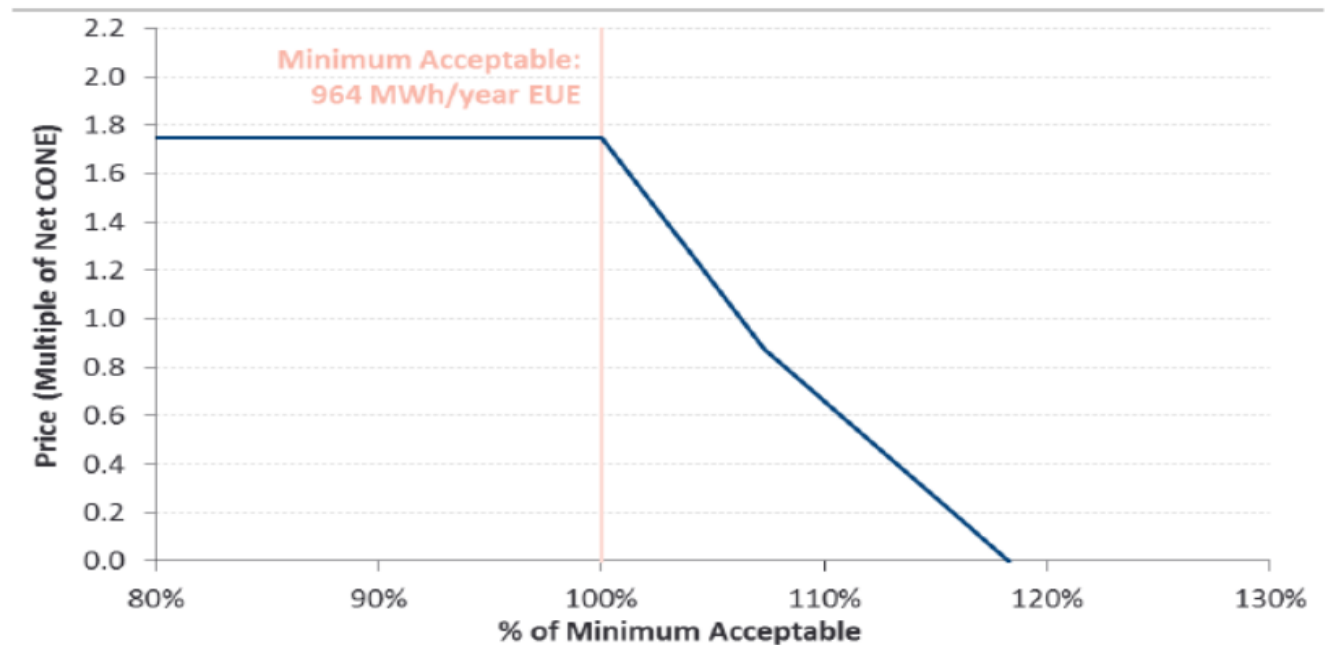
1. Capacity Market Design
 - Auction format, eligibility, payment adjustment scheme
2. Energy and Ancillary Services Markets
 - Advice on required changes
3. Technical
 - Calculation and modeling of market parameters (demand curve, costs, capacity values)

Reference technology

- Candidates:
 - Aeroderivative simple cycle
 - Frame gas simple cycle
 - Frame gas combined cycle
- Criteria for selection:
 - Frequency of development
 - Suitability as new entrant
 - Plant costs
 - Ability to meet forward period obligation

Cost of New Entry

Net CONE: Capacity market revenue required for reference technology to recover annualized return on capital



Source: AESO

Timelines

- AESO technical design completed on July 20
- Codified in rules in 2018; rules through approval process in 2019
- First capacity auction process starts in late 2019
- First capacity delivered in November 2021

