



**Market Structures Working Group
June 2003**

**Voltage Support Service Provided by
Merchant Transmission**

David Clarke
www.lipower.org

Purpose

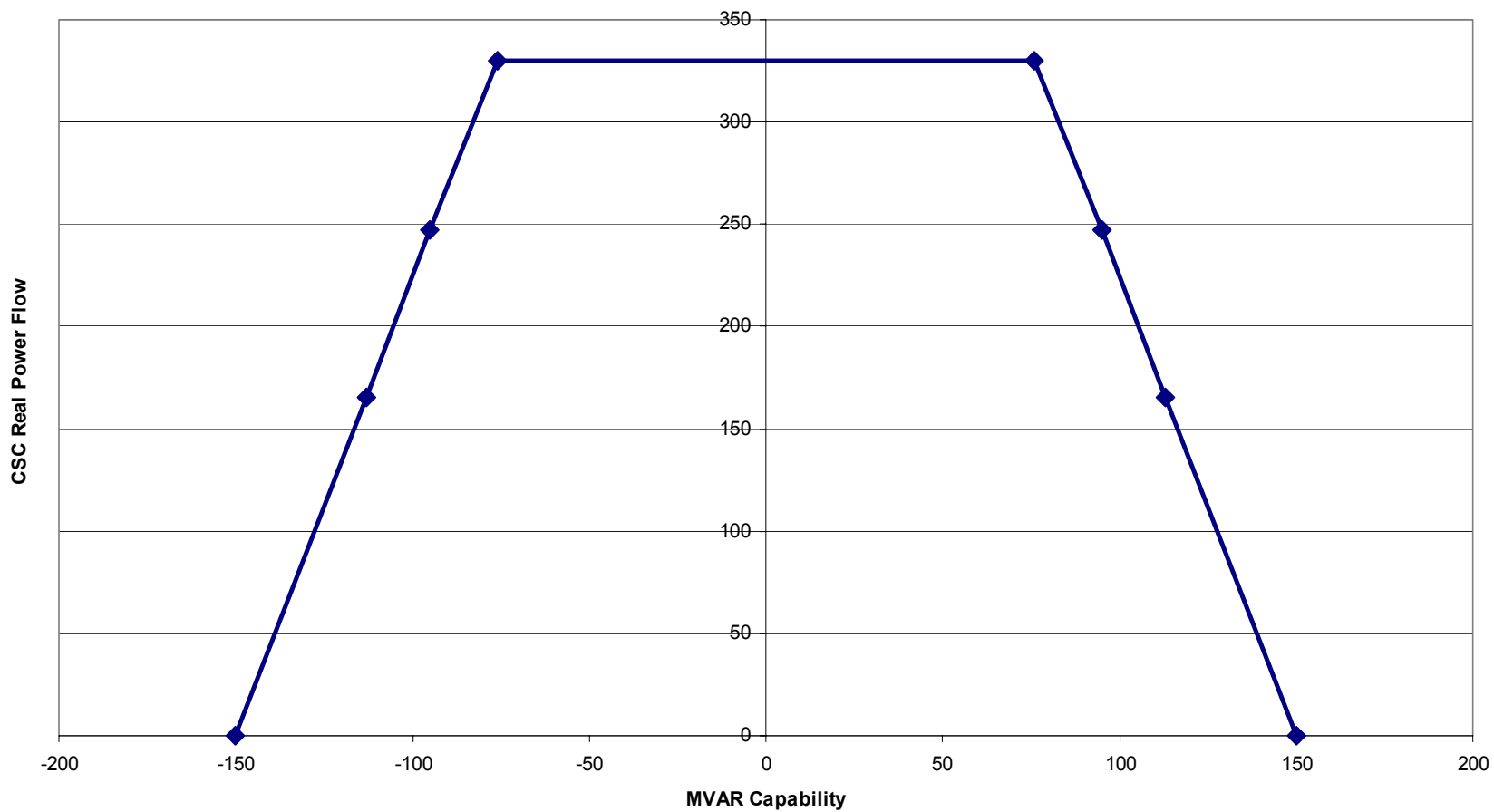
- Present a high level description of the VAR issues surrounding merchant transmission.
- Describe the reactive power characteristics of the Cross Sound Cable (CSC) HVDC facility.
- Chart a course for recognizing Voltage Support Service (VSS) provided by merchant transmission facilities.

Description of the Issue

- HVDC technology used for merchant transmission facilities such as Cross Sound Cable (CSC) can be set to maintain voltage within certain bounds and can rapidly change production and consumption of VARs on demand.
- As with merchant generation, merchant transmission relies on market revenues.
- LIPA seeks to extend the tariff definition of those qualifying for VSS payment to include merchant transmission facilities where the technology employed supports controllable VAR production.

CSC Reactive Power Capability

CSC Reactive Capability at Different Levels of Flow



Physical Properties of the Cable

- While generation MVAR capability varies with real power output, CSC MVAR capability varies with real power flow.
- CSC can deliver up to 150 MVAR leading or lagging with zero flow if the terminal equipment is energized.
- Like generation, the cable can respond to voltage set points with similar response rates.
- Can also change VAR production or consumption on demand from either local control center or if implemented from NYISO.

Cable VSS Revenue Considerations

- Generator with similar attributes would receive \$3915 /MVAR capability per year, or approximately \$600K (more, if both positive and negative VARs were ultimately compensated).
- CSC is treated as a supply alternative: No mechanism for recovering costs of cable through regulated TSC exists – a feature of merchant transmission in general.
- Absent VSS for merchant transmission, CSC provides this service and is uncompensated.
- Correct pricing of ancillary services provided gives new merchant transmission an incentive to provide these services.

Current NYISO Tariff

- Market Services Tariff, Rate Schedule 2, Section 2.0
 - “Each month, Suppliers whose Resource(s) meet the requirements to supply Installed Capacity, as described in Article 5 of the ISO Services Tariff, and are under contract to supply Installed Capacity shall receive one-twelfth ($1/12^{\text{th}}$) the annual payment for Voltage Support Service.”

Proposed Approach to VSS Tariff

- Distinguish merchant transmission from regulated transmission that receives cost recovery through a TSC mechanism.
- Modify Tariff sections to include definition of Merchant Transmission capable of responding to voltage set points or VAR production/consumption request, as eligible to receive VSS payment