

MSC - Gaining a Complete Picture

- Understanding the Costs AND Benefits of products and services related and unrelated to the ISO
- As a group we need to think about all direct/indirect and quantifiable/non-quantifiable impacts of the products offered, traded and cleared within and outside of the ISO
 - Remove our focus off of a very incomplete calculation or any one-sided view
 - Costs and benefits will be quantifiable and unquantifiable and related to different sectors within our own organizations.
 - Understand how others within your organization might be impacted
 - Understand how other market participants might be impacted
 - Understand how products, services, information and much more all work together in an organized market
- Scoping – We will complete a much more thorough discussion around very detailed benefits within the scoping process



MSC - Risk Products

- CRR's are - “Risky” Financial Products
 - What qualifies CRR's as “Risky” products?
 - Subjective term - Labeling of products that could add value, transparency, prudent risk management, and allow market participants a level of sophistication in managing their complex portfolios?
- Question: Is this term or label “Risky” misunderstood by market participants and potentially removing them from participation in certain products?
- Are there other factors – Credit/Collateral, increased risk management, clarity on trading multiple products, regulatory risks?
- DMM Claims – A Lack of Efficiency – “Its easy to make money”
 - No consideration for cost of capital
 - No consideration for the cost of risk management
 - No consideration for ANY costs direct or indirect



MSC - Differentiating Between Physical and Financial Market Participants

- Physical and Financial Participation
- Why are we focusing on a distinction between physical and financial participation in the markets?
 - Can financial market participants have physical components or risk imbedded within their portfolios?
 - Can physical market participants have financial components or risks imbedded within their portfolios?
 - Any time an organization takes locational position and the opposite location position in another they are creating a financial position called “basis”
 - Example – Off take purchase from Generator A – Sale to LAP-XYZ - This example would create a financial position for this organization “basis” in which it is exposed based on the settlement of the products bought and sold
 - Is there a misunderstand or lack of understanding on how physical and financial products work together in managing risk?



DMM - Bilateral Markets

- Bilateral Markets – DMM’s Suggestion is to “Turn back time”
- Turning back time – The purpose of an LMP market – Behavior based on price - The value of an LMP market is related to transparency, liquidity, flexibility, optionality and much more. Turning back time would defy the fundamental reasons why we implemented a nodal market.
- DMM has not address any unintended consequences or increased costs, burdens related to their proposal



DMM – Understanding ALL of the Costs and Benefits

- Understanding the Costs AND Benefits
- Reminder - As market participants and representatives for our organizations we need to think about all impacts of the products offered, traded and cleared within and outside of the ISO.
- DMM calculation – Simple calculation that leaves out many benefits
- Analysis does not take into consideration many tangible and intangible benefits related to:
 - Increased reliability
 - Transparency
 - Liquidity
 - Hedging
 - Risk Premiums
 - Project Finance, PPAs, RFPs, etc., etc.
 - Short and Long-term Infrastructure Investment
 - Community Choice Aggregation
 - Prudent Risk Management
 - Value of allocated CRRs



DMM - Continued

- If removal of CRR or full allocation to load, the DMM's proposal has no evaluation on added direct or indirect costs and burdens back to load;
 - All items listed on the previous slide – could have a counter or negative impact directly or indirectly to load – There is no evaluation to determine the unintended consequences and costs
 - Market power
 - Stranded generation
 - Prudent risk management and hedging
 - Risk premiums
- DMM proposal does not address inadequacy as they have refocused to “efficiency”



DMM - Term & Evaluation

Auction Efficiency: *(not used by most ISOs)*

- What is Auction Efficiency?
- What determines or how is Auction or CRR Efficiency measured?
 - Does “efficiency” change in higher fuel price environments?
 - Does “efficiency” change in higher or tighter regulated markets?
 - Is “efficiency” impacted when transparency, participation and other factors deter market participation?
- What costs have the DMM included in their “efficiency” claims?
 - Various costs of capital by organization?
 - Costs of risk management, systems, personnel?
 - Cost of market liquidity, transacting, and other market costs?

Evaluation:

- What tangible and intangible benefits to load have the DMM included in their efficiency claims?
- Which benefits have not been included?



DMM - Understanding All of the Costs and Benefits

- Evaluation of tangible and intangible benefits to the market related to the CRR product
- Using the outline on slide 5 and 6 – Review areas of evaluation related to market participant usage or transparency, price discovery, hedging, etc.
 - CAISO must understand that not all transactions touch the CAISO – Must be willing to understand all aspects and drivers of project finance, hedging, risk premiums, infrastructure investment and so on.
 - On the opposite side - Review potential increased costs or burdens to load with the removal of these benefits and the introduction of new potential unintended consequences; for example: Market Power



DMM - Open Access

- Open Access (Financially) – FERC’s intention for the product

“We reject the arguments that the sole purpose of FTRs is to return congestion revenue to load and the market should therefore be redesigned to accomplish that directive. FTRs were designed to serve as the financial equivalent of firm transmission service and play a key role in ensuring open access to firm transmission service by providing a congestion hedging function.”

January 31st 2017 – FERC - Docket Number: EL16-6-002, EL16-6-003, ER16-121-001

- Addressing -a \$0 offer price
- What is the proper value?
 - Can we arbitrarily put a value on CRRs?
 - What are the unintended consequences if not sold? Cost? Lost Revenue? Increased Risk?
- Why are some not participating?
 - Credit Costs?
 - Incremental Reporting and other Costs?
 - Cost of risk management and evaluation of products? System’s Infrastructure?
 - Minimal risk management on allocated CRRs?
 - Allocation CRRs are sufficient?
 - Perceived value or risk associated with the product?
 - Regulatory Risk or Barriers?
- Study: What’s the deterrent from participation in the CRR markets?



Scoping - Transmission Outages & Modeling

- Evaluating Transmission Outages and Modeling
- New Constraints and Nomograms - Implementation
- Running a contingency analysis
 - What is the congestion cost impact of using a nomogram instead of full a contingency analysis?
- Evaluation of using the same PNode modeling in the DA and CRR markets?
- Outage scheduling: What dollars are being transferred from the transmission company within the IOU to the load
 - Categorize outages into emergency, non-emergency, other
 - Which ones could have been post-poned and therefore been modeled in the auction.
 - What's the average submittal heads-up on major transmission outages?
 - Did we get it in enough time to model in the CRR market?
 - Evaluation of the cost to load when a particular event was not modelling as an outage but could have been with outage management criteria
- Do other ISOs address this? If so, how?



Scoping - Current Transmission Transparency

- Transmission Outage (Staging) Transparency
- What is the purpose of removing transparency to market participants related to outages during certain periods during auctions?
 - Information drives behavior – removing information can significantly add risk
 - Does the CAISO run auctions knowing of outages that are not within the network model and/or not transparent to market participants participating in the auction?
 - Is this a reason why some do not participate?
 - What are the pros and cons in being 100% transparent with outage information and staging at any point in time?



Scoping - What has been done and what more can be done?

- What Areas of the CRR Market have been addressed?
 - What CAISO changes within the systems, processes, modeling have enhanced the current disconnect and possible contribution to revenue shortfall between an auction full network model and the day-ahead model?
 - What changes can have an impact on “efficiency” – Not sure that this can be studied since “efficiency” is a subjective term
- What else can be done?
 - Annual Auction – 12 Discrete Months?
 - Underlying CRR modeling or systems updating?
 - Nomogram implementation?
 - Outage Management?
 - Transparency?
 - Communication?

