FTR Credit Working Group Meeting #6

FTR CWG
June 26, 2008

ISO new england

Agenda

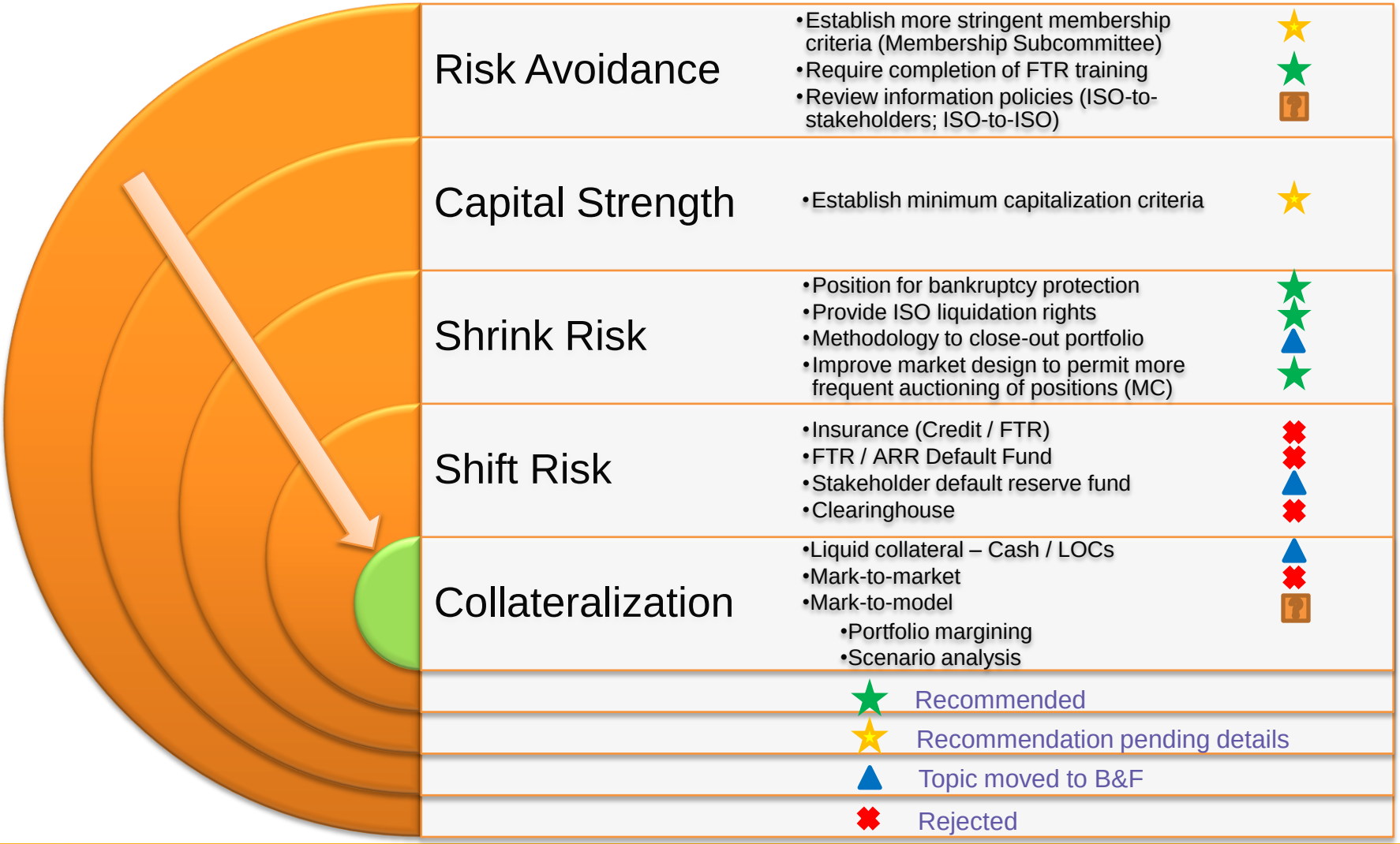
- Overview of working group approach toward risk management
- Status update on items addressed through working group
- Establish recommendation for minimum capitalization proposal
- Discussion of Mark-to-Model FTR margining methodology

Approach Toward Dealing with Credit Risk

- Avoid the risk
- Be financially capable of withstanding market risk
- Make default risk as small as possible
- Evaluate opportunities to shift remaining risk
- Collateralization

*Concept from 2005 ISDA Collateral Guidelines

Issue Identification and Status



- Require completion of FTR training
- Position for bankruptcy protection
- Provide ISO liquidation rights
- Improve market design to permit more frequent auctioning of positions (MC)

RECOMMENDATIONS

Recommendations

- Risk Avoidance
  - ★ Require completion of FTR training to access FTR market
    - "Qualitative" component to minimum eligibility criteria (min capitalization = "Quantitative")
    - Training at individual level rather than at company level
    - ISO develops & administers training
    - Details to be presented at August B&F meeting
- Shrink Risk
  - ★ Position for bankruptcy protection
    - CWG consented to recommendation at 06/05/08 meeting
    - Draft language to be presented for review at July B&F
  - ★ Provide ISO the right to liquidate portfolio of defaulted FTR participant
    - CWG consented to recommendation at 05/23/08 meeting
    - Draft language to be presented for review at July B&F
  - ★ Improve market design to permit more frequent auctioning of positions (MC)
    - CWG consented to recommendation at 05/08/08 meeting
    - B&F consented to recommendation at 05/12/08 meeting
    - Recommendation to be heard at "all-hands" informational meeting
      - To be held prior to Markets Committee meeting on July 1, 2008
      - Opportunity to express opinion of importance of recommendation

- Establish methodology to close-out defaulted FTR portfolio
- Evaluate the creation of Stakeholder default reserve fund
- Accept only Cash / LOCs for margining FTR requirements

ISSUES MOVED TO BUDGET & FINANCE SUBCOMMITTEE

Issues Moved to Budget & Finance Committee *(To be discussed at July 17 B&F meeting)*

- Shrink Risk
  - Establish appropriate methodology to deal with defaulted FTR participant
    - Immediate liquidation of FTR portfolio?
    - Permit time for Participant to market its portfolio?
    - Permit selective or require complete sell – down of open FTR positions?
    - Auction individual paths or entire portfolio as “all-or-nothing”
    - Liquidate in subsequent auctions as pure price-taker?
- Shift Risk
  - Stakeholder default reserve fund
    - Create reserve fund as a layer of protection prior to mutualized default allocation
    - All stakeholders contribute to fund balance
    - Form of “self-insurance”
- Collateralization
  - Require FTR FA requirements be met through the use of Cash or Letter of Credit only

- Establish more stringent membership criteria (Membership Subcommittee)
- Establish minimum capitalization criteria

RECOMMENDED PENDING DETAILS

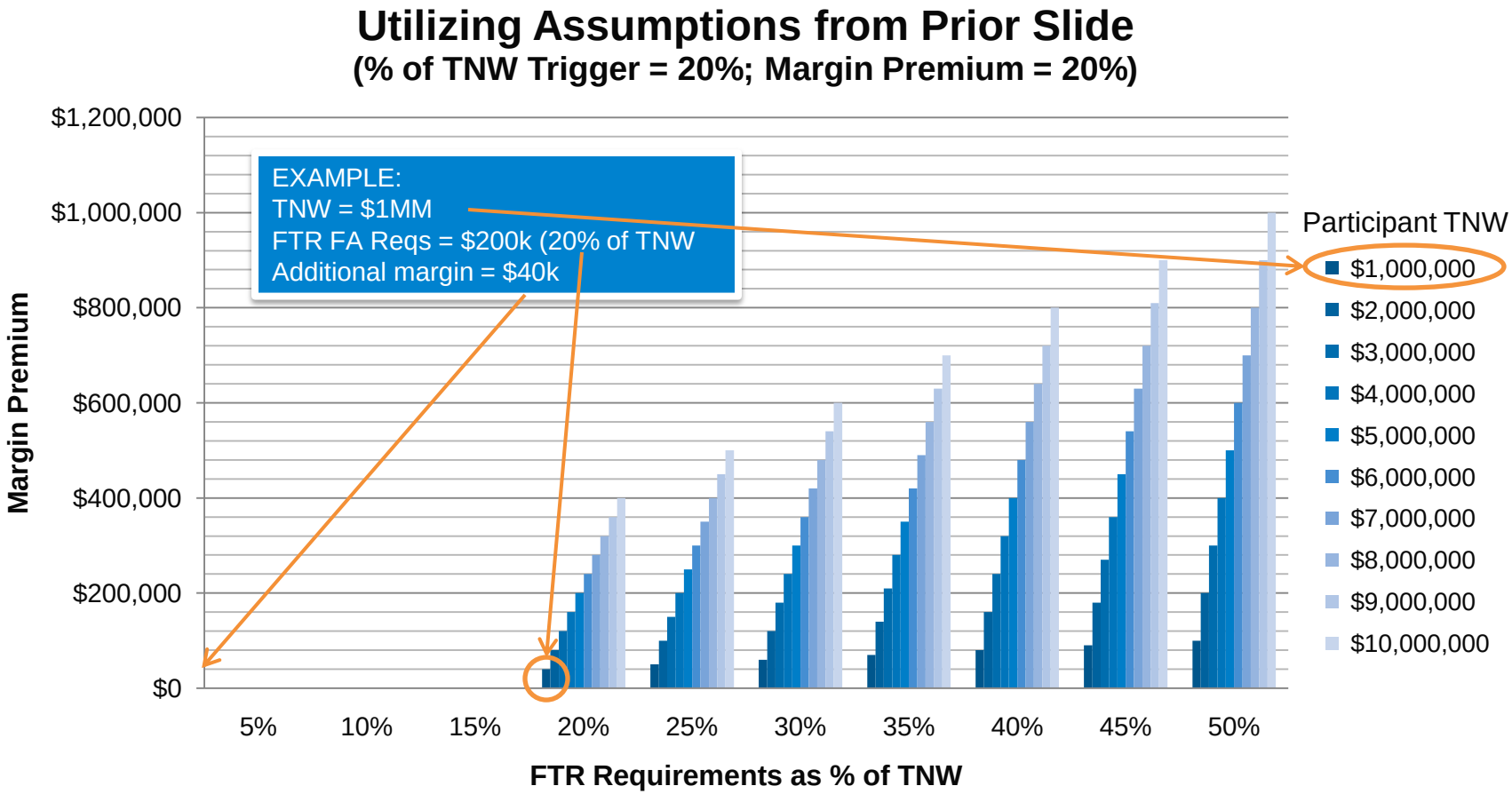
Establish Recommendations

- Risk Avoidance
  - ★ Establish more stringent membership criteria (Membership Subcommittee)
    - Develop straw proposal for next FTR CWG
- Capital Strength
  - ★ Min Capitalization Criteria for FTR Market Participation Only
    - Thinly capitalized Participants at greater risk of failing to meet prospective margin calls
    - Uniqueness of FTR market merits targeted application of requirement
      - Lengthy forward exposure
      - High price volatility
      - Lack of adequate market liquidity
        - Few players – total of 46 FTR holders (Jan – Jun ’08)
        - High concentration of FTR ownership – 6 participants owned ~ 80% of FTR MWs in ’08
        - No effective means to sell out of forward positions
      - No forward price curve
    - Failure to meet criteria does NOT preclude FTR market participation

Recommendation: Minimum Capitalization Criteria

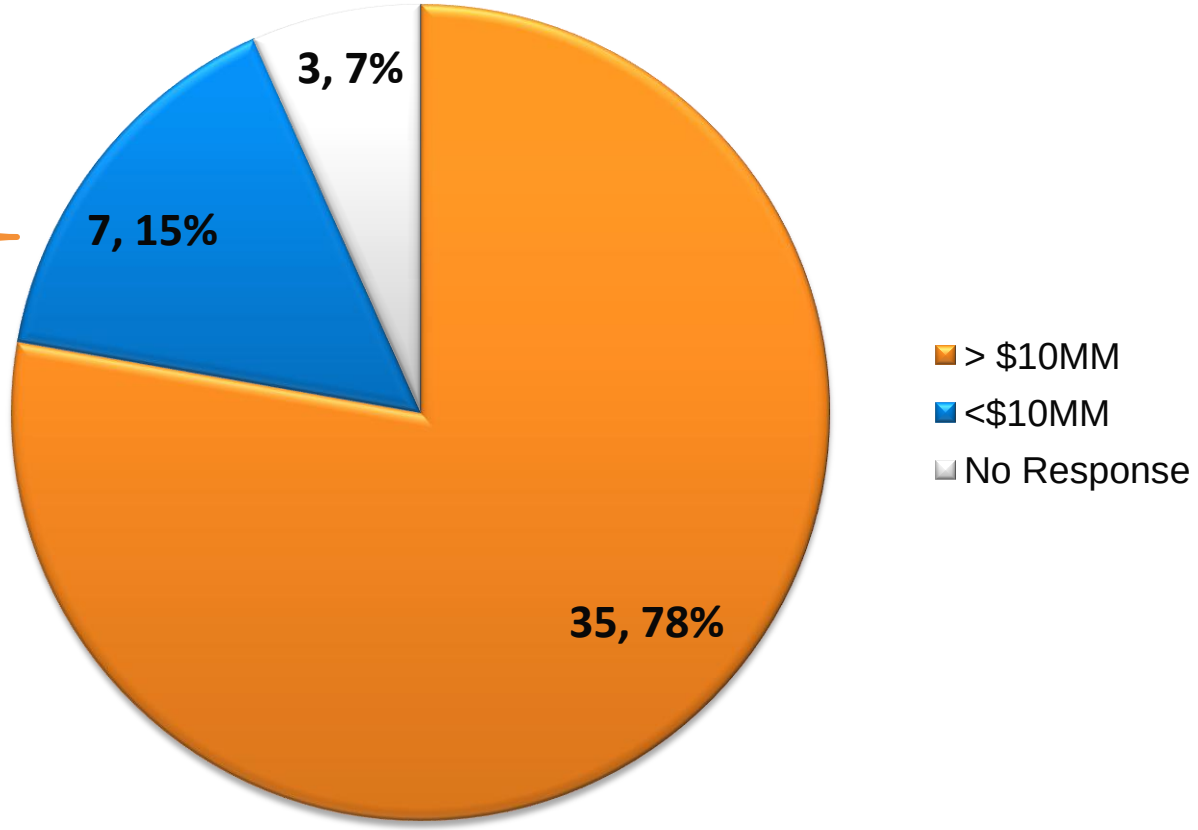
- Proposed approach:
  - **If** (1) a Designated FTR Participant has a Tangible Net Worth of less than **$10 million**
  - **and** (2) that Designated FTR Participant's FTR Requirements are greater than **20 percent** of that Market Participant's Tangible Net Worth,
  - **then** for purposes of calculating the amount of additional financial assurance that that Designated FTR Participant must provide under this Policy, its total FTR FA Requirements will be automatically increased by **20 percent**.
    - *May want to define premium on a sliding scale of TNW utilization*
  - **Not permitted to maintain FTR Requirements in excess of 50% of TNW**
  - **May utilize affiliate guaranty for purposes of establishing TNW value**
    - **Affiliate guaranties payment / margin obligations of FTR participant**
    - **Guaranty does not count as available margin**

Min Cap Example: Incremental Margin Requirements at Various TNW Levels



Min Cap Example: TNW of 2008 FTR Participants

- 4 (of 7) have indicated Parent with TNW >$10MM
  - Aggregate FTR FA reqs of group is <$4MM
- 3 have not provided info on parent (if any)
  - Aggregate FTR FA reqs of group is <$1MM



- Mark–to–Model approach

COLLATERALIZATION DISCUSSION

Generalized Approaches for Valuing FTRs

- Technical approach
  - Relies upon statistical analysis of historical data to forecast potential returns
  - Basis for every ISO's FTR credit policy
  - Foundation of traditional commodities margining methodologies (e.g., initial margin, variance margin (mark-to-market), settlement margin, etc.)
- Fundamental Approach
  - Simulation of system operations to predict future values given set(s) of input assumptions
  - Basis for most long-term planning decisions
    - Generation
    - Transmission
    - Outage coordination
    - Reliability

Generalized Approaches for Valuing FTRs (cont'd)

	Technical	Fundamental

Advantages	• Transparent
	• Relatively straightforward methodology
	• Easily replicated by Participants
	• Reflective of actual observed congestion patterns
		• Commonly used in planning decisions
		• Explicitly considers the impact of changes to system conditions
		  • planned/unplanned outages
		  • additions/retirements
		  • interface limits
		  • fuel prices / load , etc.)
		• Can be used to identify concentration risk
		• Feasible to identify pending exposures

Disadvantages	• Does not account for known/unknown changes to system conditions
	• Impossible to predict the impact of a new generator or transmission line
	• Results less robust without extensive historical dataset
	• Doesn't account for regulatory changes (e.g. changes to market rules, dispatch procedures, system topology, etc.)
	• Doesn't identify concentration risk
		• Complex
		  • Many parameters and assumptions
		  • Requires use of simulation modeling software
		• Requires definition & evaluation of large number of scenarios

Select Model Input Parameters

- Generators
  - Operational Parameters
    - Variable Heat Rates
    - Fuel type – dual fuel consideration
    - Start-up, min-run, min-load, seasonal claimed capability, emission constraints, unit availability, fuel contracts, …
  - Fuel Prices
    - Contract pricing
    - Spot price forecast
      - Natural Gas
      - Fuel Oil
  - Variable O&M
- Asset Additions / Retirements
  - Generation
  - Transmission
- Outages – Generator, Transmission
  - Scheduled
  - Unscheduled - probabilistic

Select Model Input Parameters (cont'd)

- Load Levels
  - Seasonal
  - Peak / Off-Peak
  - Regional
  - Dispatchable demand
  - Reserves / Contingencies
- Imports/Exports
- Virtual Transactions
- Transmission System
  - Line ratings
  - Interface limits
  - Contingencies

Sensitivities

- Should assess FTR sensitivities to changes to input assumptions
- Necessary to determine appropriate scenarios
- Numerous model iterations may be necessary for sensitivity analysis
  - Monte Carlo
  - Tornado measure of relative sensitivities
- Determine metric for sensitivity analysis
  - Total FTR returns?
  - Total system congestion?
- Inputs evaluated in isolation / combination?

Sample Questions When Determining Scenarios

- What is appropriate basis for selecting scenarios?
  - Most likely?
  - Largest sensitivities?
  - Customized to fit FTR portfolios?
- How many scenarios are enough?
- Should scenarios include changes to multiple inputs?
  - Correlation matrix
- How frequently should scenarios be updated?
- How frequently should simulations be run throughout the month?

Hot to create M-t-Model Margin Requirement

- How to use scenarios in establishing margin requirement?
  - FTR portfolio margin based upon single scenario with largest loss?
  - Margin based upon blend of all scenarios – risk adjusted?
- Continue to utilize historic volatility perspective?
  - Base potential future exposure on blend of historic and modeled scenario exposure?
  - Utilize the max of historic and scenario exposure?
- Possible to use M-t-Model prior to FTR award?
  - Optimize the bid portfolio to assess largest possible award exposure