

Indiana Michigan Power Summer 2005 Preparedness

Presentation to the
Indiana Utility Regulatory Commission

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I&M Presenters

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Peak Demand – 2004

	Date	Hour Ending EST	Peak Demand MW
I&M	July 22	1500	4,016
AEP System- East Zone	Aug. 3	1700	19,049

I&M Summer 2005 Peak

Summer 2005 – Projected MW

	June	July	August
Peak Internal Demand	4,003	4,242	4,180
Committed Off-System Sales	163	238	241
Total Demand	4,166	4,480	4,421
Interruptible Demand	(226)	(226)	(226)
Net Demand	3,940	4,254	4,195

I&M Resources to Meet 2005 Peak

	June	July	August
Installed Capability	5,044	5,042	5,042
Purchases	251	251	251
Total Capability	5,295	5,293	5,293

I&M Resources -- Reserve Margins

Interruptible Demand = 226 MW

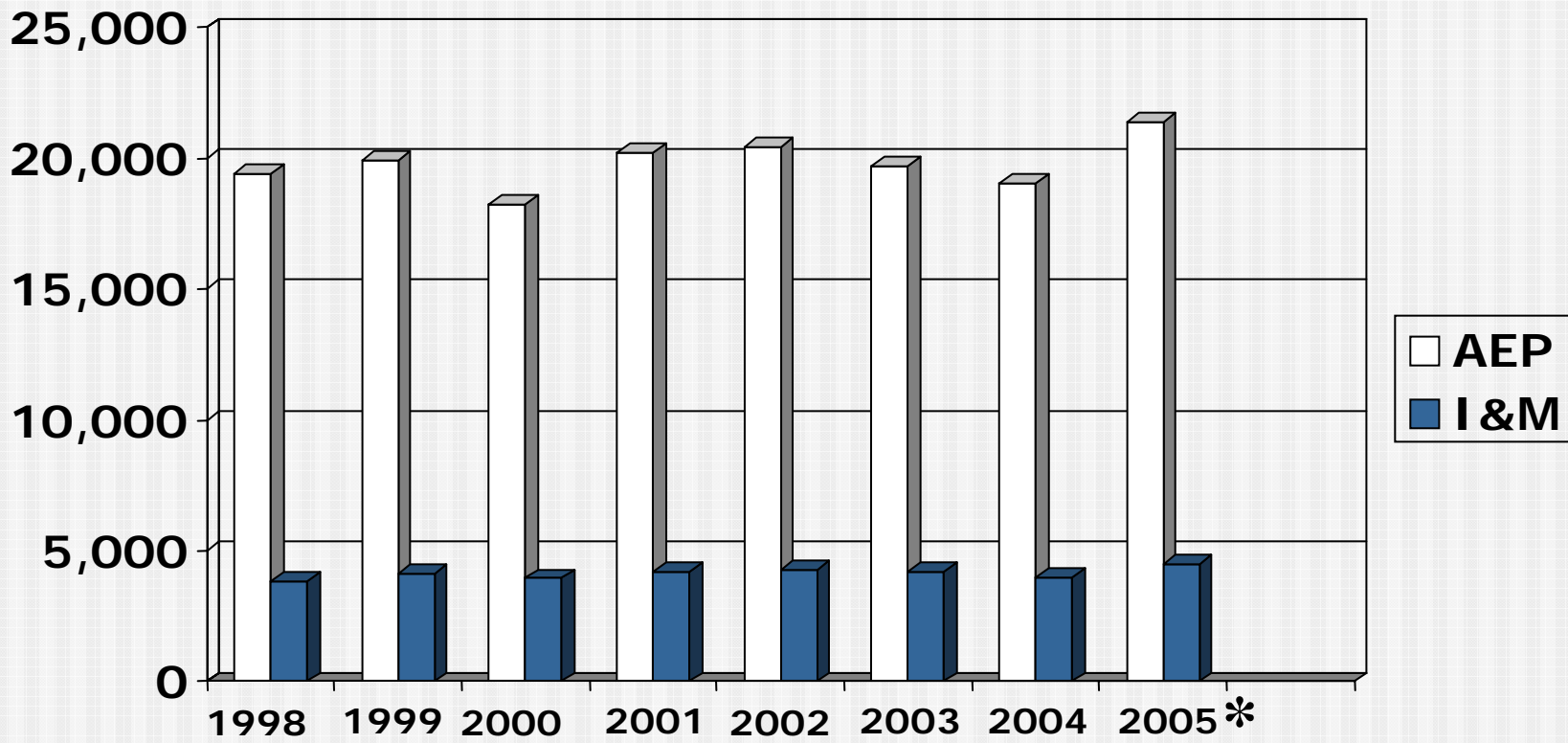
	June	July	August
Total Capability	5,295	5,293	5,293
Total System Demand	4,166	4,480	4,421
Reserve Margins Before Interruptibles (%)	1,129 27.1	813 18.1	872 19.7
Reserve Margins After Interruptibles (%)	1,355 34.4	1,039 24.4	1,098 26.2

All numbers are MW except where indicated.

Summer 2005 Peak AEP System-East Zone

Summer 2005 – Projected MW			
	June	July	August
Peak Internal Demand	18,943	20,428	19,790
Buckeye Power Load	1,379	1,428	1,428
Total Demand	20,322	21,856	21,218
Interruptible Demand	(475)	(475)	(475)
Net Demand	19,847	21,381	20,743

Summer Peaks AEP System-East Zone / I&M



* 2005 Projected

Resources and Reserve Margins AEP System-East Zone

Interruptible Demand = 475 MW

	June	July	August
Total Capability + Purchases	25,097	24,662	24,662
Total System Demand	20,322	21,856	21,218
Reserve Margins Before Interruptibles (%)	4,775 23.5	2,806 12.8	3,444 16.2
Reserve Margins After Interruptibles (%)	5,250 26.5	3,281 15.3	3,919 18.9

All numbers are MW except where indicated.

Purchase Power Agreements AEP System-East Zone

	June	July	August
OVEC	918	918	918
Summersville	20	15	16
Mone	447	447	447
Total	1,385	1,380	1,381

Additional purchases from market resources, which include Indiana merchant plants, may be made if a need arises. But the amounts and types of transactions will not be known until the specific circumstances are identified.



Reducing Peak Demand

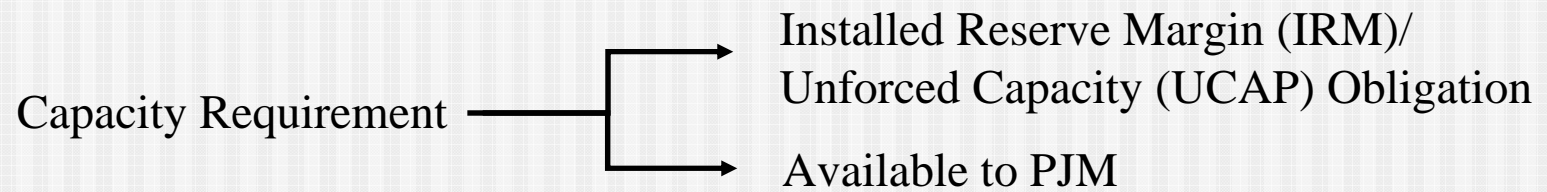
- Interruptible Loads (Indiana 226 MW at peak)
 - Contract Service Interruptible Power tariff
- Load Management Services
 - Emergency Curtailable Service
 - Price Curtailable Service
- Time-of-Day Rates
 - 2,600 Indiana customers
 - 16,500 Off-peak water heating systems
 - Off-peak demand forgiveness for large commercial, industrial customers

Life in a PJM World

Major Elements of the PJM RTO

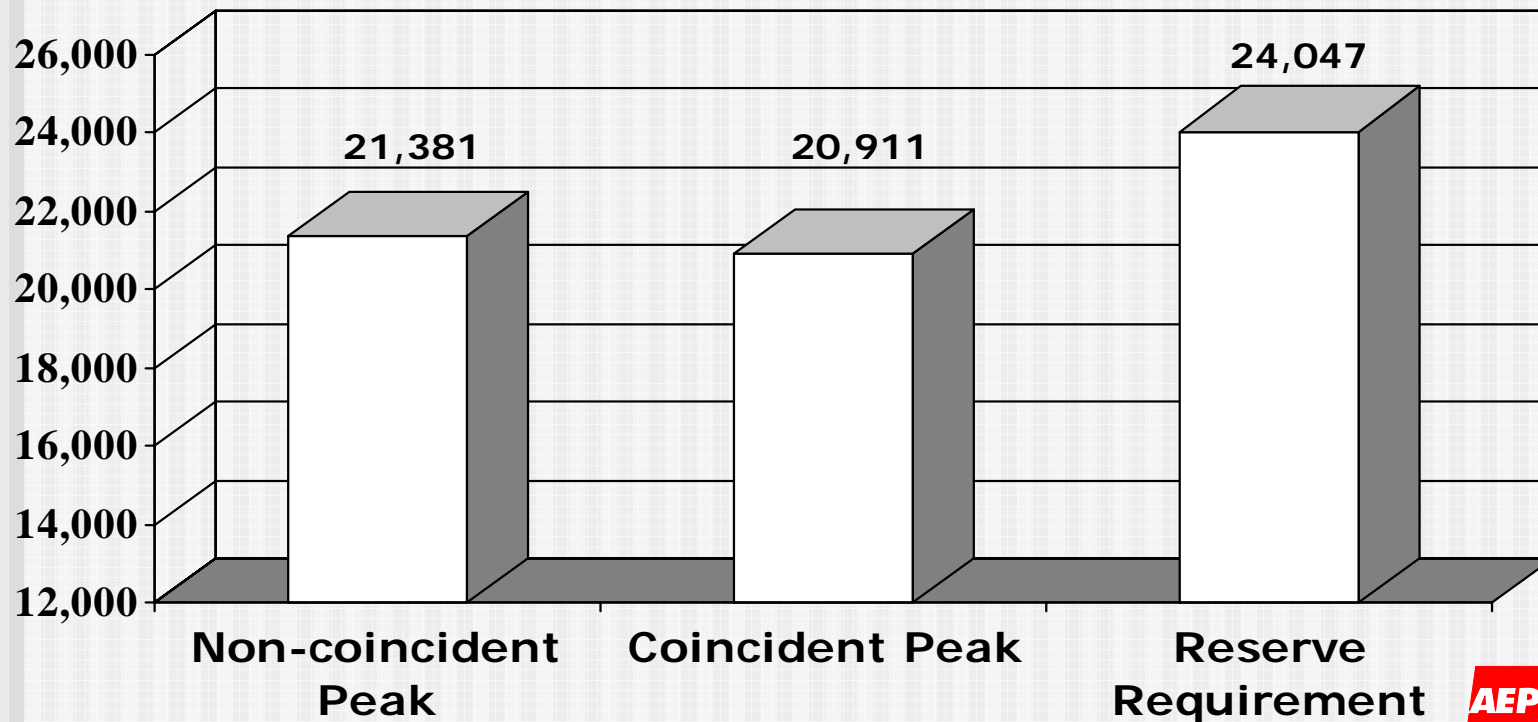
- Capacity Requirement
- Unit Commitment and Dispatch
- Congestion Management
- Reliability/Operations
- Settlement

Major Elements



PJM Capacity Requirement

IRM = 15%, Diversity = 2.2%, Eq RM = 12.5%

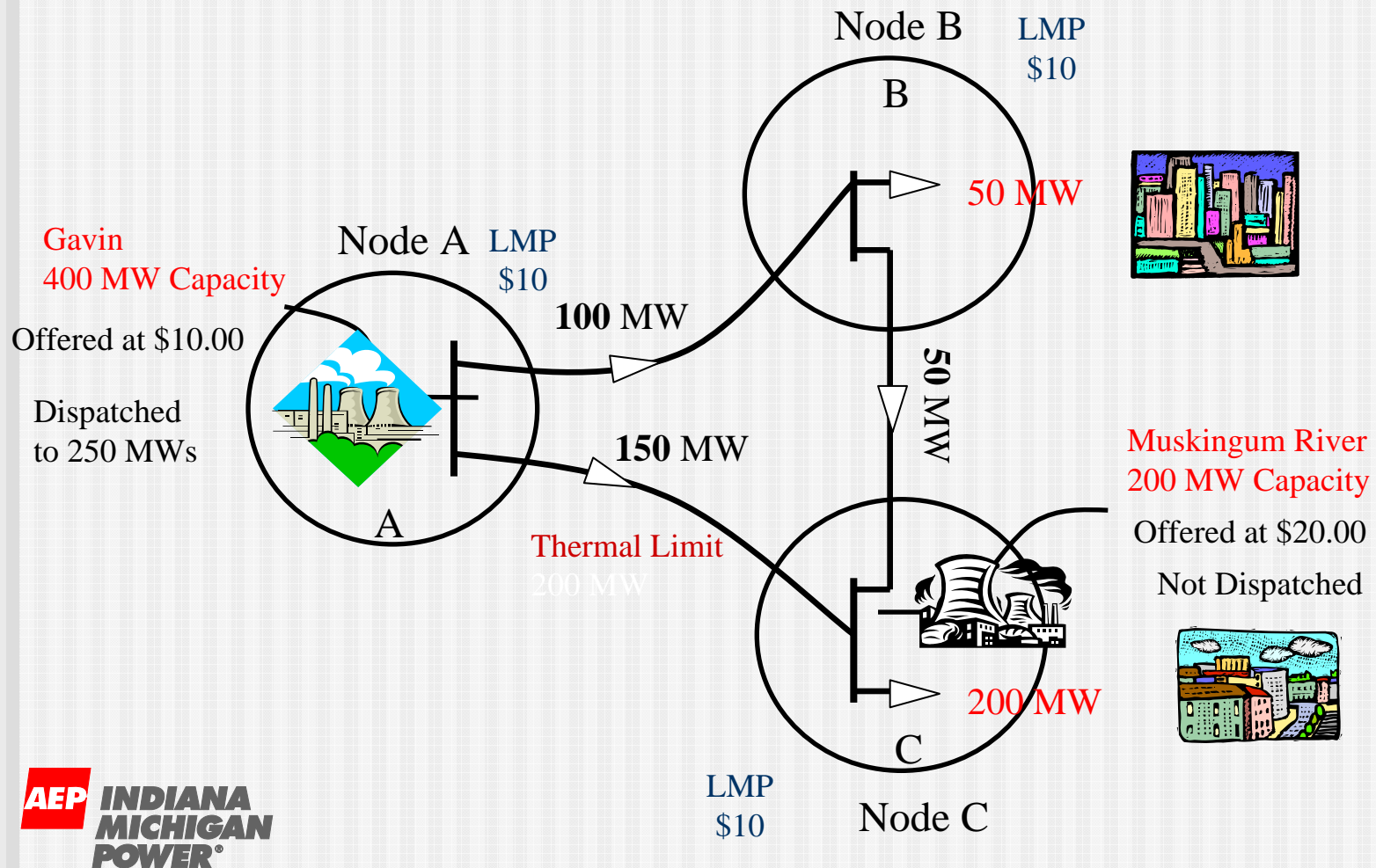


Major Elements

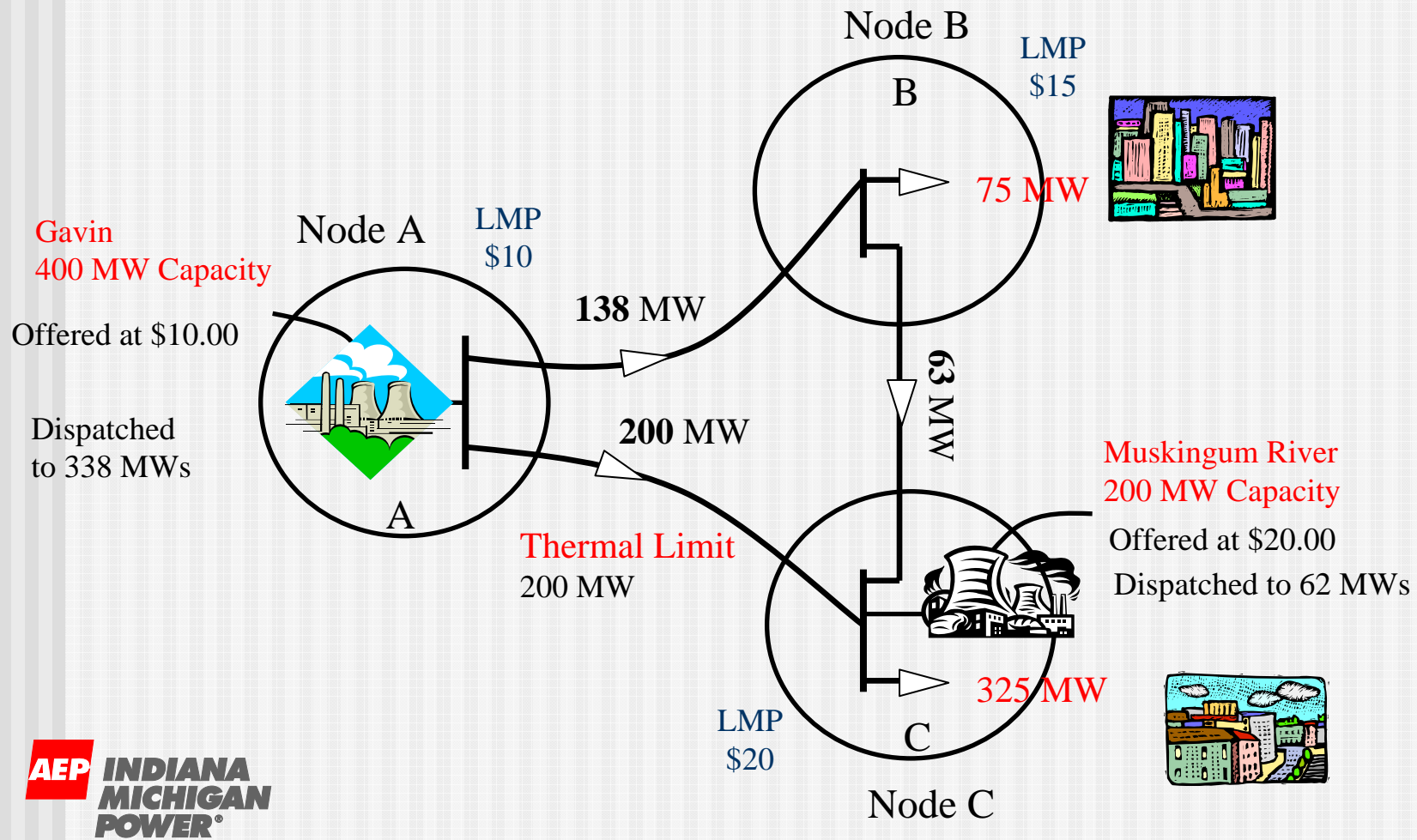
Capacity Requirement ———→
IRM / UCAP Obligation
Available to PJM

Commitment & Dispatch ———→
Bid vs. Self-schedule
Security Constrained /
Locational Marginal Pricing (LMP)

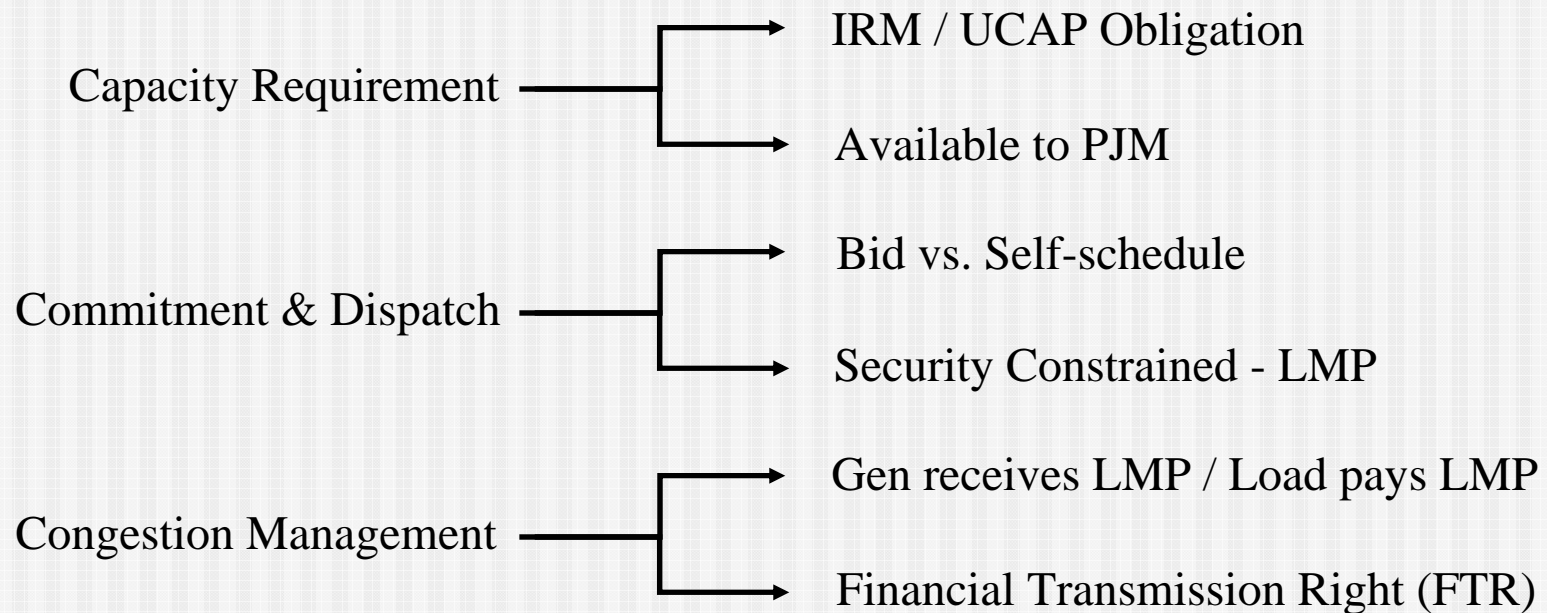
Unconstrained System Valid Economic Solution



Constrained System Valid Economic Solution



Major Elements



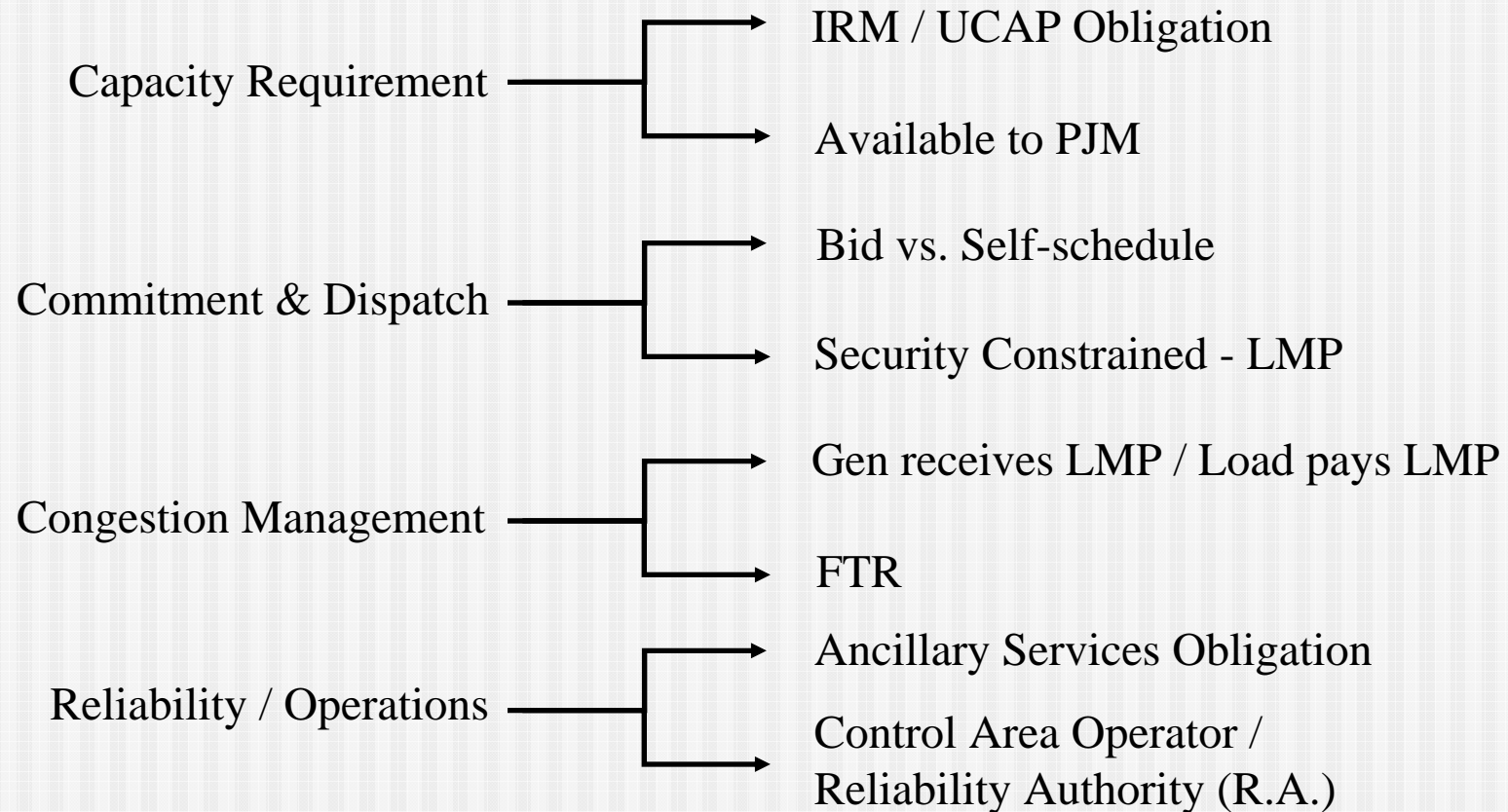
Financial Transmission Rights



$$\text{Congestion Cost} = [\$30 - \$25] = \$5 / \text{MWh}$$

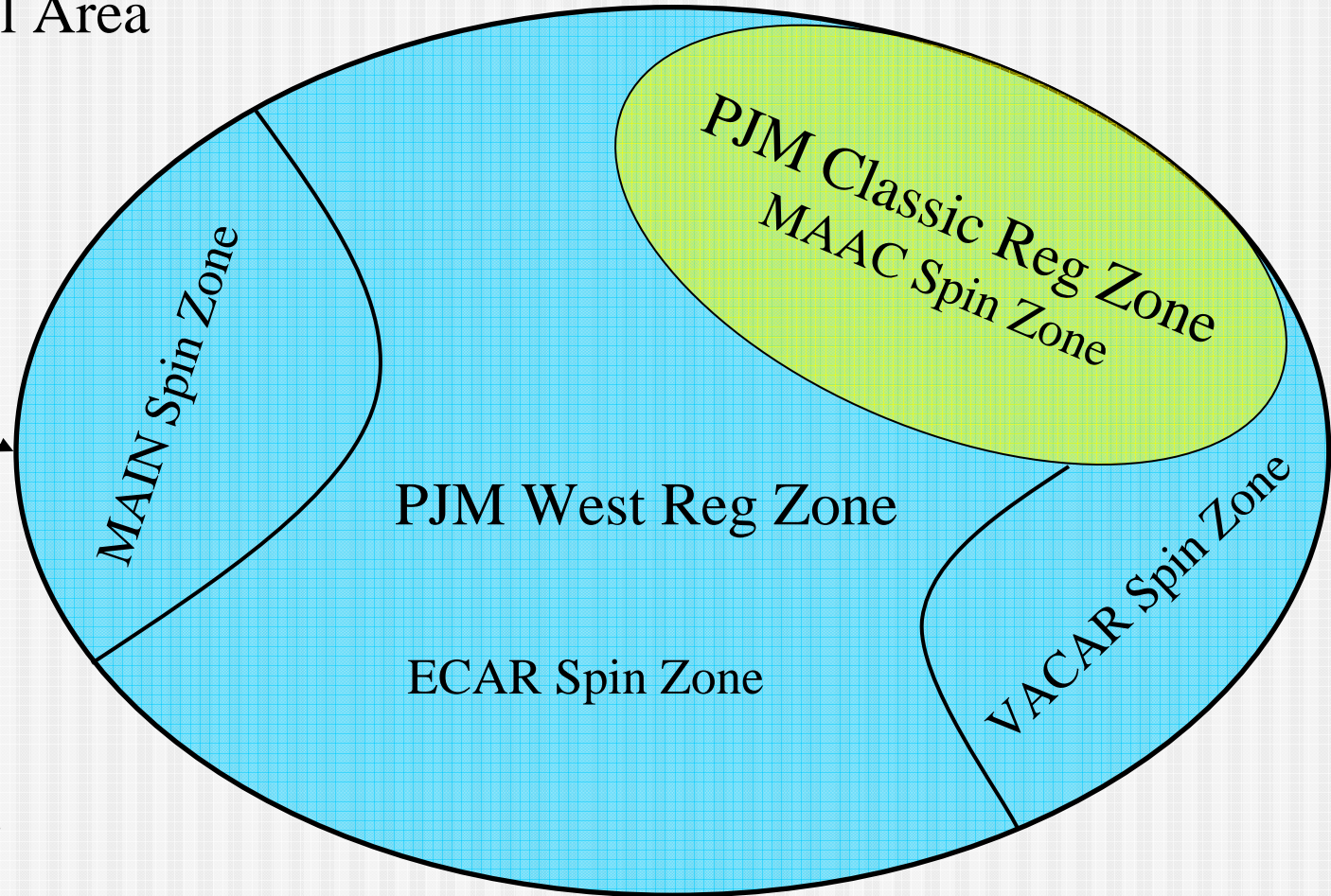
$$\text{FTR Revenue} = \$5 / \text{MWh} \times 100 \text{ MW} = \$500 / \text{hr}$$

Major Elements



Reliability / Operations

PJM Control Area



Major Elements

Capacity Requirement → IRM / UCAP Obligation
→ Available to PJM

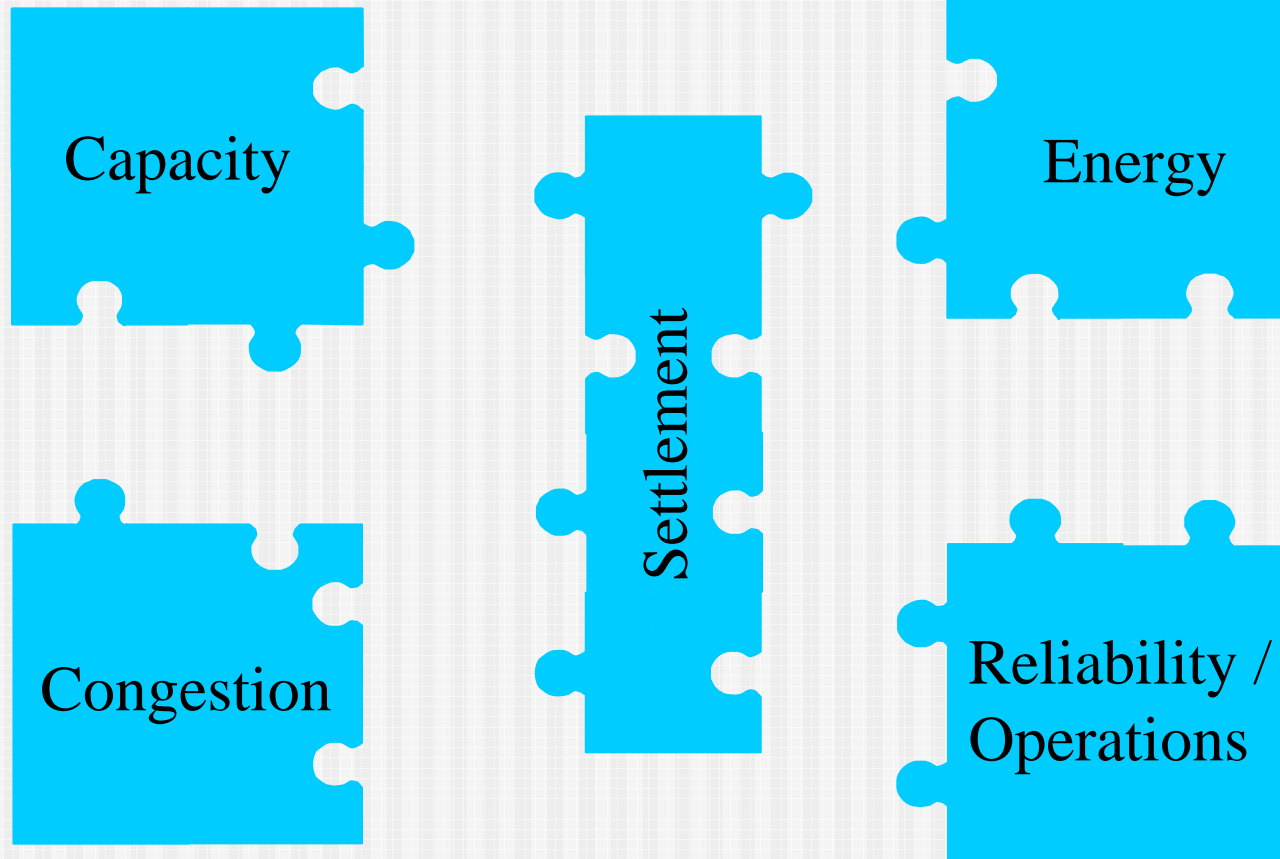
Commitment & Dispatch → Bid vs. Self-schedule
→ Security Constrained - LMP

Congestion Management → Gen receives LMP / Load pays LMP
→ FTR

Reliability / Operations → Ancillary Services Obligation
→ Control Area Operator / R.A.

Settlement → Day-ahead / Real-time Financially Binding
→ Real-time "Imbalance" From Day-ahead 23

The Elements Fit Together



MISO Day 2

- No significant impact on Indiana Michigan Power's operations as a result of MISO Day 2 start-up
- No impact on AEP's capacity obligation or its available supply
- No impact on AEP's pool operation and settlement
- MISO and PJM are now using a market-to-market approach to congestion management
 - ✓ No noticeable impact on congestion patterns that impact operations
- Transactions between AEP East and AEP West are now subject to congestion across MISO but AEP received an FTR to hedge the congestion

Questions?