
IS THERE A BUSINESS CASE FOR DEMAND RESPONSE IN THE MADRI AREA?

JIM TORPEY

MADISON ENERGY CONSULTANTS

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REVENUE ISSUES

- PJM Capacity market is changing to capture locational value
- 36% reserve margin keeping capacity prices low
- Volatility in energy prices due to gas and coal price increases
- Limited actual implementation of distribution credits

SIMPLIFIED REVENUE VS. COST ANALYSIS

- **Revenue-** PJM capacity, PJM economic DR program & distribution benefits
- **Costs-** capital for infrastructure, marketing, installation, program management, dispatch management
- **Margin-** Overheads, profit, taxes, risk

ASSUMED VALUES FOR A MULTI-SCENARIO ANALYSIS- LOW/ MEDIUM/ HIGH CASES FOR FULL AND PILOT DEPLOYMENT

REVENUE ASSUMPTIONS

- Capacity Ranges
 - Low- existing capacity structure in PJM
 - Medium- adoption of RPM locational model
 - High- existing NYC/Long Island prices
- Energy Ranges
 - Low- existing NJ utility load control results
 - Medium- 2004 Manitou sub LMP results
 - High- 1999 PJM prices

REVENUE ASSUMPTIONS cont.

- Distribution Ranges
 - None- Current situation
 - Low- average of two lowest value samples of Cal/Mass utility supplied projects
 - Medium- average of six medium value samples of Cal/Mass utility supplied projects
 - High- average of two highest value samples of Cal/Mass utility supplied projects

COST ISSUES

- Technology choices drive costs (one way switch, one way thermostat, two way AMR with thermostats, etc)
- Costs much lower with full scale deployments

CAPITAL COST ASSUMPTIONS

	Pilot Project	Full Deployment
One way switch	\$250	\$125
One way enhanced thermostat	\$300	\$150
Two way multi feature	\$850	\$425

Costs are \$/customer for installed cost of equipment including network

OPERATING COST ASSUMPTIONS

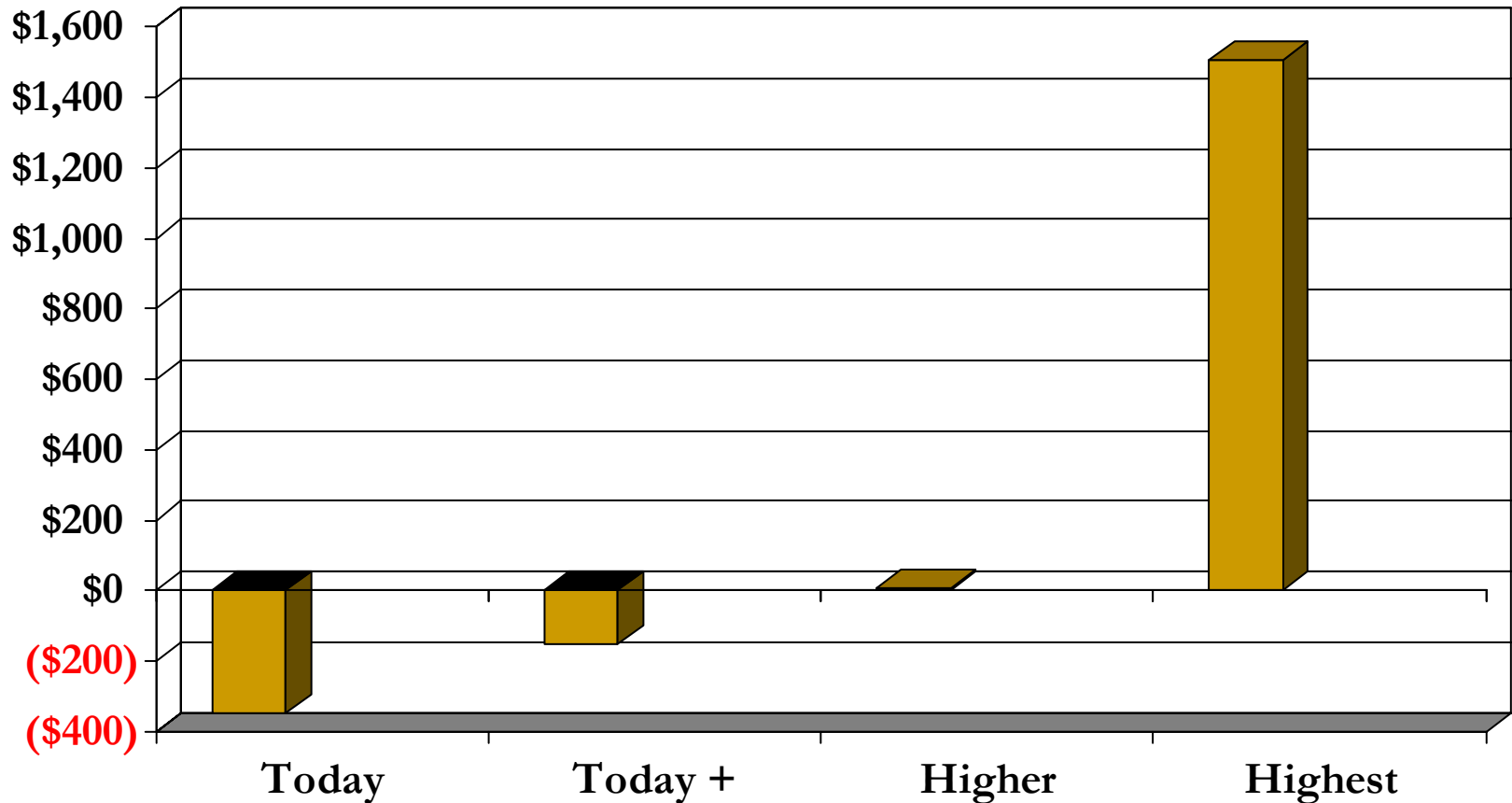
	Pilot Project	Full Deployment
Marketing, Maintenance	\$30	\$20
Dispatch Operations	\$10	\$10
OH, Taxes, Profit, Risk	\$20	\$20

Results in \$/kw for operating and dispatching for economic benefits

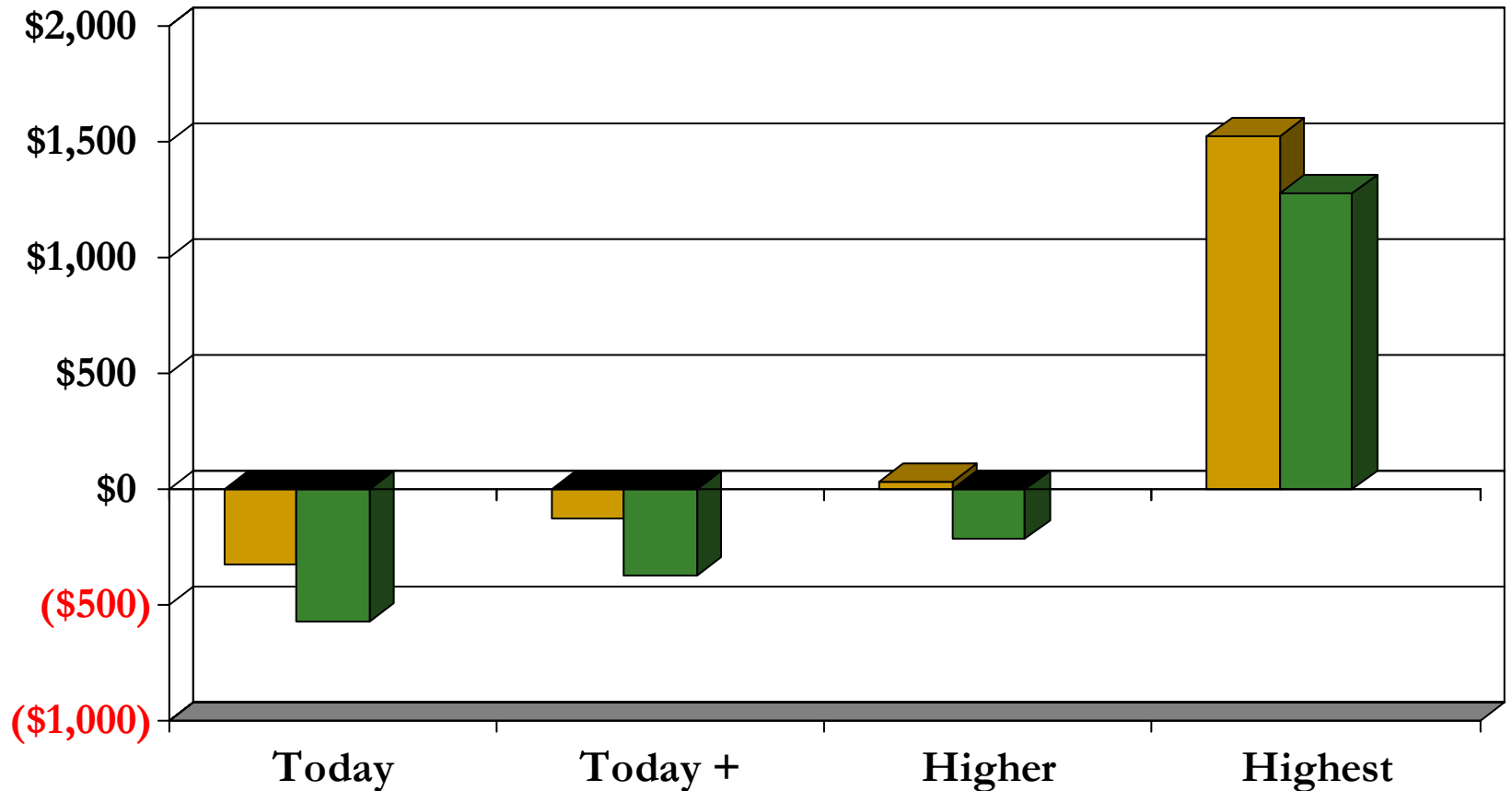
Scenario Descriptions

Scenarios A-D	<u>Capacity</u>	<u>Energy</u>	<u>Distribution</u>
A. Today's Market	Low	Low	None
B. Today's market plus	Med	Med	Low
C. Higher prices	Med	Med	Med
D. Highest prices	High	High	High

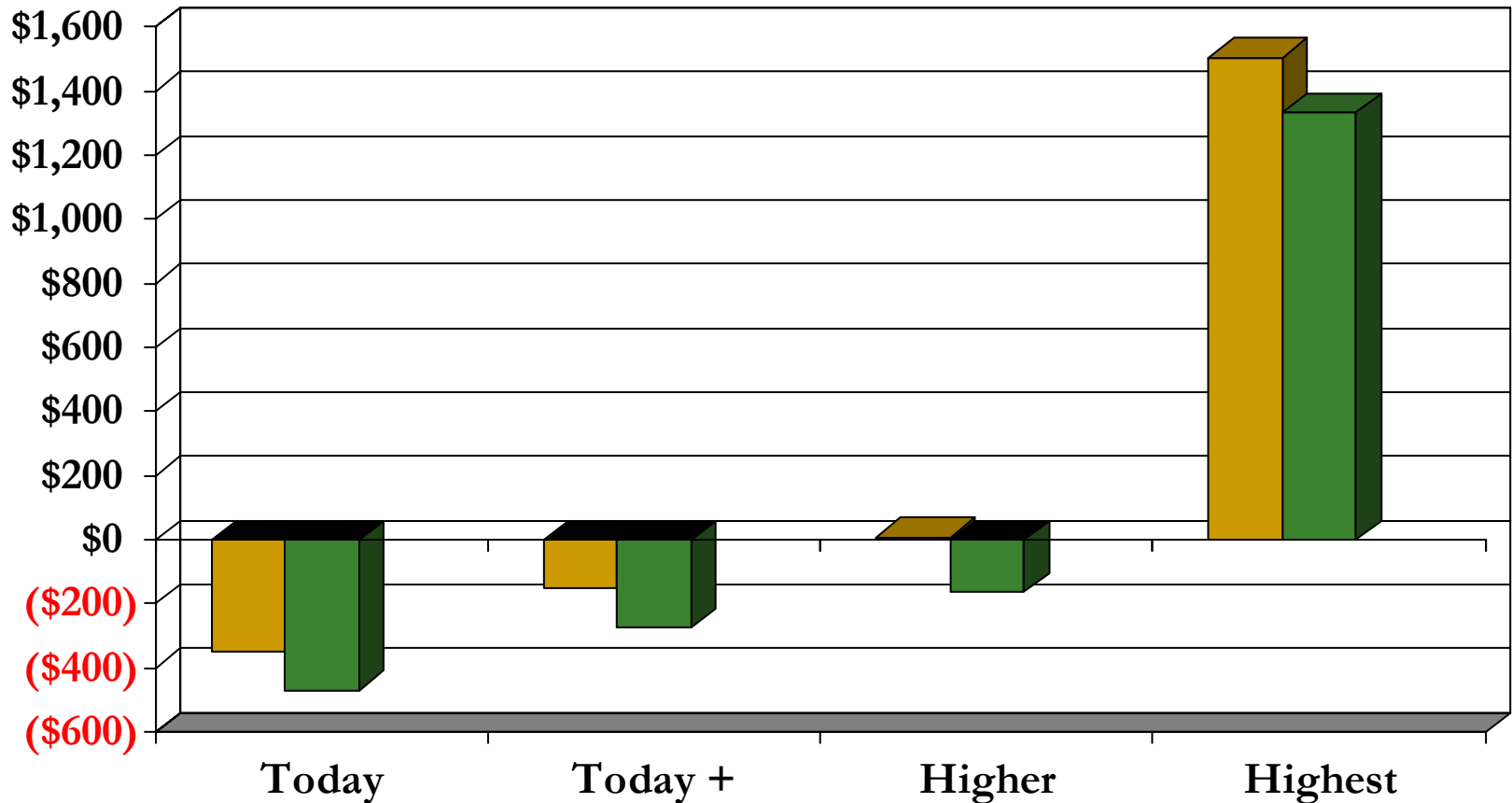
10 Year NPV of Income Stream from Thermostat based DR System Deployed across Service Area



Range of 10 Year NPV for Technology Options Deployed across Service Area



10 Year NPV of Thermostat based DR System Full Deployment versus Pilot



WHAT DOES IT ALL MEAN?

- A DR business is not supported by the PJM market today.
- A business case is supportable if prices increase within conceivable but unlikely ranges in the near future.