



Integrated DER:

- Operational & Planning
- Assessing IDER Firmness
- Planning Tool Gap Analysis
- Reliability Impacts on Ops, Planning, Forecasting

**EPRI SMART GRID DEMONSTRATION
TASK 1.3 DESCRIPTION**


DYNAMIC ENERGY GROUP LLC

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Task 1.3 Overview



- Section 1** Traditional Planning vs. Integrated Resource Planning (IRP)
- Section 2** IRP for Distributed Energy Resource (DER) Integration
- Section 3** Identification of Reliability Impacts on System Ops, Planning and Forecasting
- Section 4** Planning Tool Gap Analysis
- Section 5** Approaches for Assessing IDER Firmness



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Integrated Resource Planning (IRP)

- IRP is a planning process for electric utilities that evaluates many different options for meeting future electricity demands and selects the:
 - optimal mix of resources that,
 - minimizes the cost of electricity supply while,
 - meeting reliability needs and,
 - other objectives
- IRP considers all supply and demand as potential delivery system contributors and integrates them into a common framework

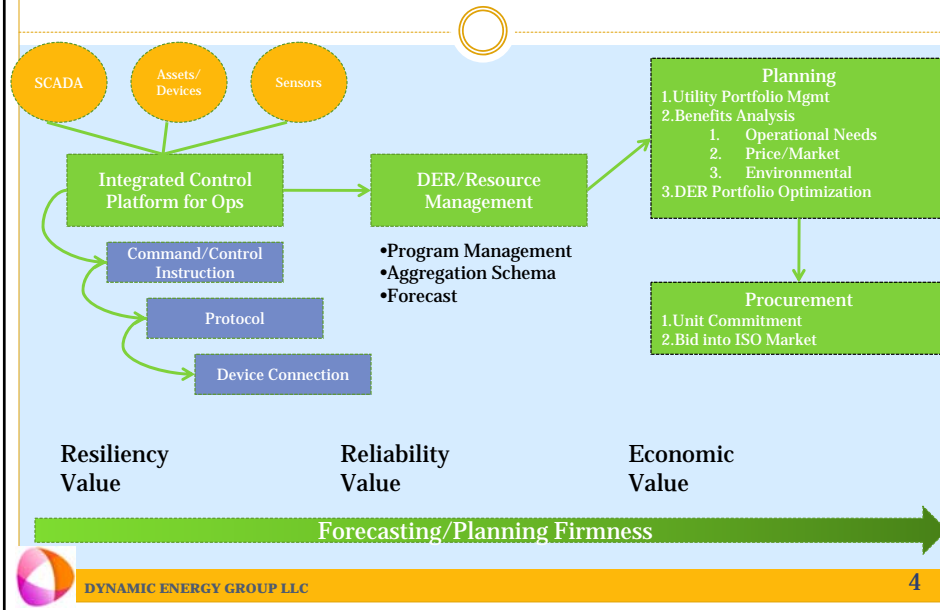


IDER Into IRP Forecasting Model

- | | |
|---|---|
| 1. Identify plan objectives | Expanded to include supply and demand |
| 2. Collect data | |
| 3. Developing demand forecasts | Deterministic Load Profiling; Strategic Load Growth |
| 4. Resource evaluation: <ul style="list-style-type: none">1. calculating avoided costs2. conducting benefit-cost analysis3. considering environmental externalities | Site specific (POD) evaluation of resources |
| 5. Select most promising options | Consequential operation benefits |
| 6. Conduct uncertainty/scenario analyses | |
| 7. Identify contingencies | |
| 8. Develop action plan | Real time capability expands plan design |
| 9. Implement plan | Real time data collection and analysis |
| 10. Monitor and revise | "Fine tuning" in real time |



IDER Evaluation for Forecasting/Planning



IDER Integrated into IRP Planning Model

1. Identify plan objectives
 2. Collect data
 3. Developing demand forecasts
 4. Resource evaluation:
 1. calculating avoided costs
 2. conducting benefit-cost analysis
 3. considering environmental externalities
 5. Select most promising options
 6. Conduct uncertainty/scenario analyses
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 9. Implement plan
 10. Monitor and revise
- Expanded to include supply and demand
- Deterministic Load Profiling; Strategic Load Growth
- Site specific (POD) evaluation of resources
- Consequential operation benefits
- Real time capability expands plan design
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- "Fine tuning" in real time

