



New Technologies to Insure Energy Reliability

Federal Energy Regulatory Commission
Midwest Energy Infrastructure Conference

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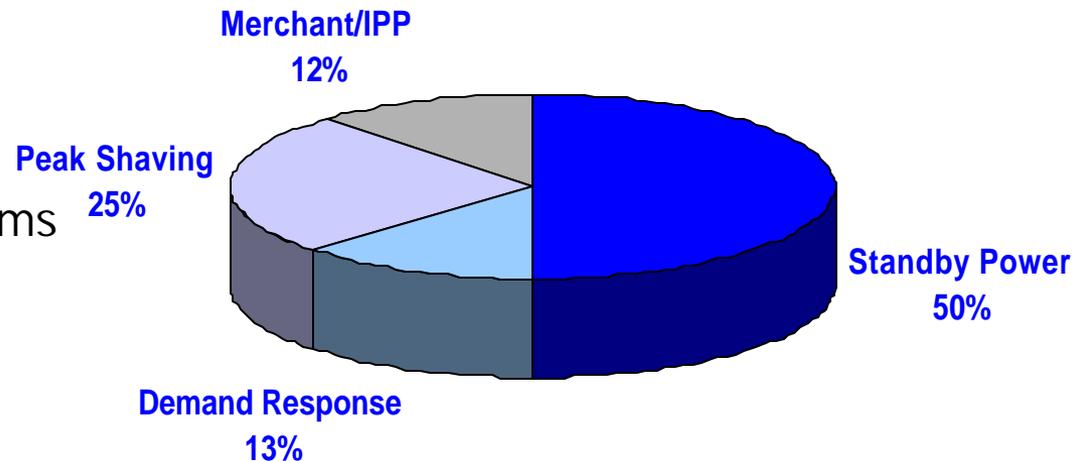
Chicago, IL



..... Encorp Metrics

- ✓ Incorporated 1994
- ✓ Approximate number of employees 100
- ✓ Total Megawatts controlled by Encorp 560+
- ✓ Number of Encorp controllers shipped 1,338
- ✓ Percentage of Projects Interconnected 95%¹
- ✓ Total number of customers 172
- ✓ Breakdown of projects by application

- Standby power
- Peak shaving
- Merchant/IPP
- Demand response programs
 - Interruptible rates
 - Time of use rates
 - Peak sharing



¹ in the past 2 years

Power – To the People, For the People & By the People

Innovative Energy Technologies Coupled with Standard Market Designs Can Pave the Way for Customer Choice

- ✓ **New rates: curtailable, time-of-use & real-time pricing allows for grid optimization**
- ✓ **Standardized price signals that link supply & demand**
- ✓ **Interconnection standards to allow networking of distributed energy technologies with the grid**
- ✓ **Demand response programs to manage capacity constraints & load pockets**
- ✓ **Green power / renewable energy markets to create environmental sustainability**
- ✓ **Virtual Power Plants™ to usher an intelligent, interactive & more reliable grid**

Recommended Strategies



The Future Infrastructure Should Possess:

- ✓ High degree of locational value
- ✓ Low costs via leveraging existing resources
- ✓ Quickest deployment
- ✓ Minimal environmental impact
- ✓ Proven Technology
- ✓ Operational Flexibility
- ✓ Scalability

Distributed Energy – A Catalyst for a New Energy Infrastructure

- ✓ Energy independence (fuel diversity vs. fossil fuel dependency)
- ✓ Grid security (vulnerability to terrorist threats are less for "1,000" 1 MW plants vs. "1" 1,000 MW plant)
- ✓ Grid reliability (reduces constraints & risk of blackouts)
- ✓ Environmental sustainability (renewables are inherently cleaner)
- ✓ Energy efficiency (getting more usable output per fuel input)

The Chicago Story: City Government Works with the Utility to Build a DER Network



**Common Objective:
Reliability & Savings
via Networking Six
City Owned Backup
Generators to Interact
with ComEd**



..... Emerging Directions

"The **Virtual Power Plant™** provides backup electricity in the case of a power outage, but it also can relieve pressure on Commonwealth Edison when we have really hot days with high humidity. This allows us to be much more efficient and to realize higher cost savings."

– *Marcia Jimenez, Chicago's Commissioner of Environment*

"The city envisions expanding its **Virtual Power Plant™**."

Chicago Tribune, July 4, 2002

