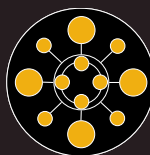


The power of
integration

UISOL

Utility Integration Solutions, Inc.



DRBizNet

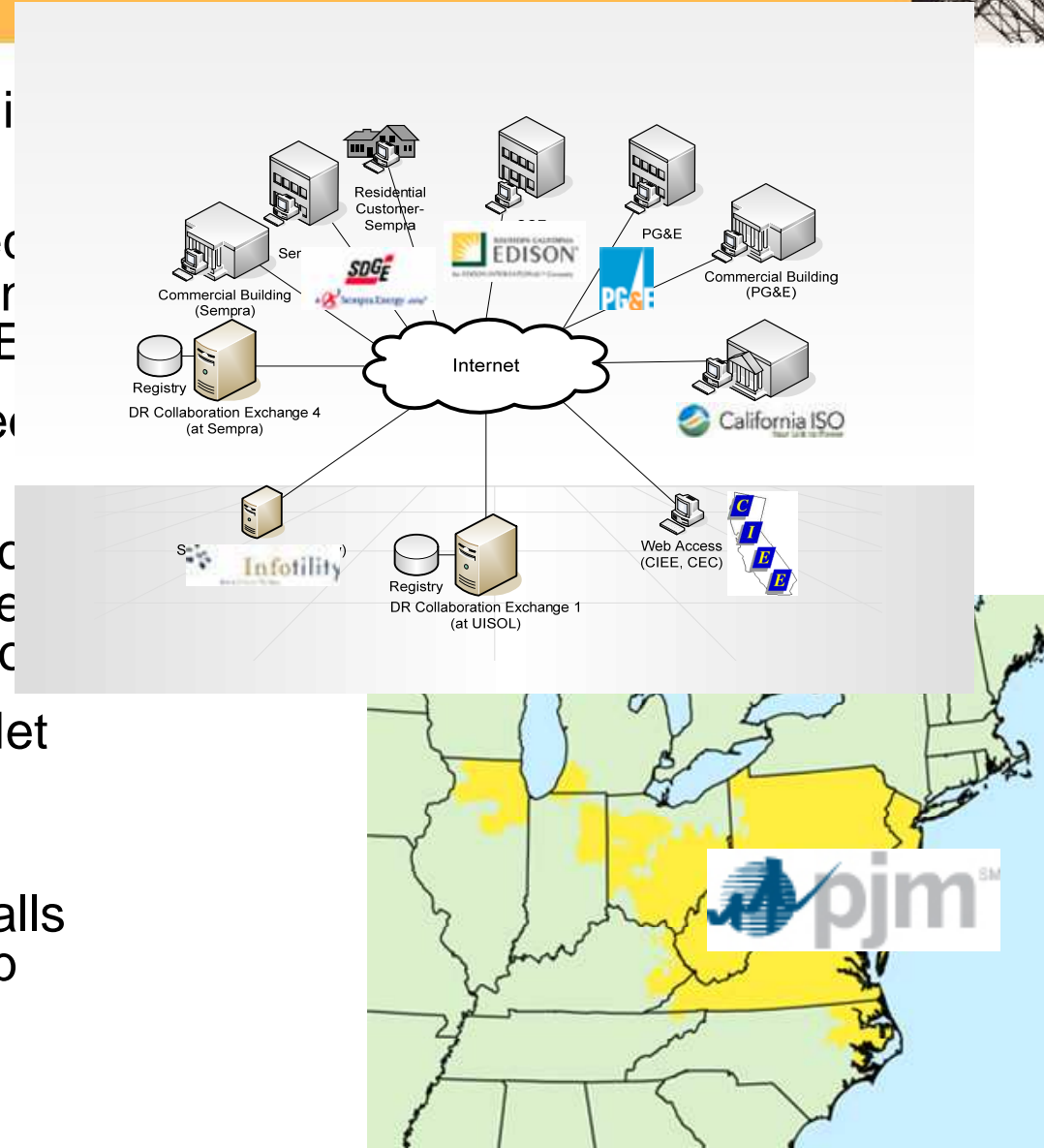
Demand Response Business Network

Travis Rouillard
SVP, UISOL

September 2009

DRBizNet History

- 2001 - Initial vision published in Power Economics
- 2004 - R&D begins as a project funded through ETD and PIER, managed by CIEE
- 2005 - Prototype demonstrated to CA stakeholders
- 2006 - Statewide demonstration between CAISO, utilities and demand aggregators
- 2007 - UISOL begins DRBizNet commercialization
- 2008 - PJM signs as first customer, CAISO installs version in their DR Lab
- 2009 - DRBizNet goes live at PJM (in June)

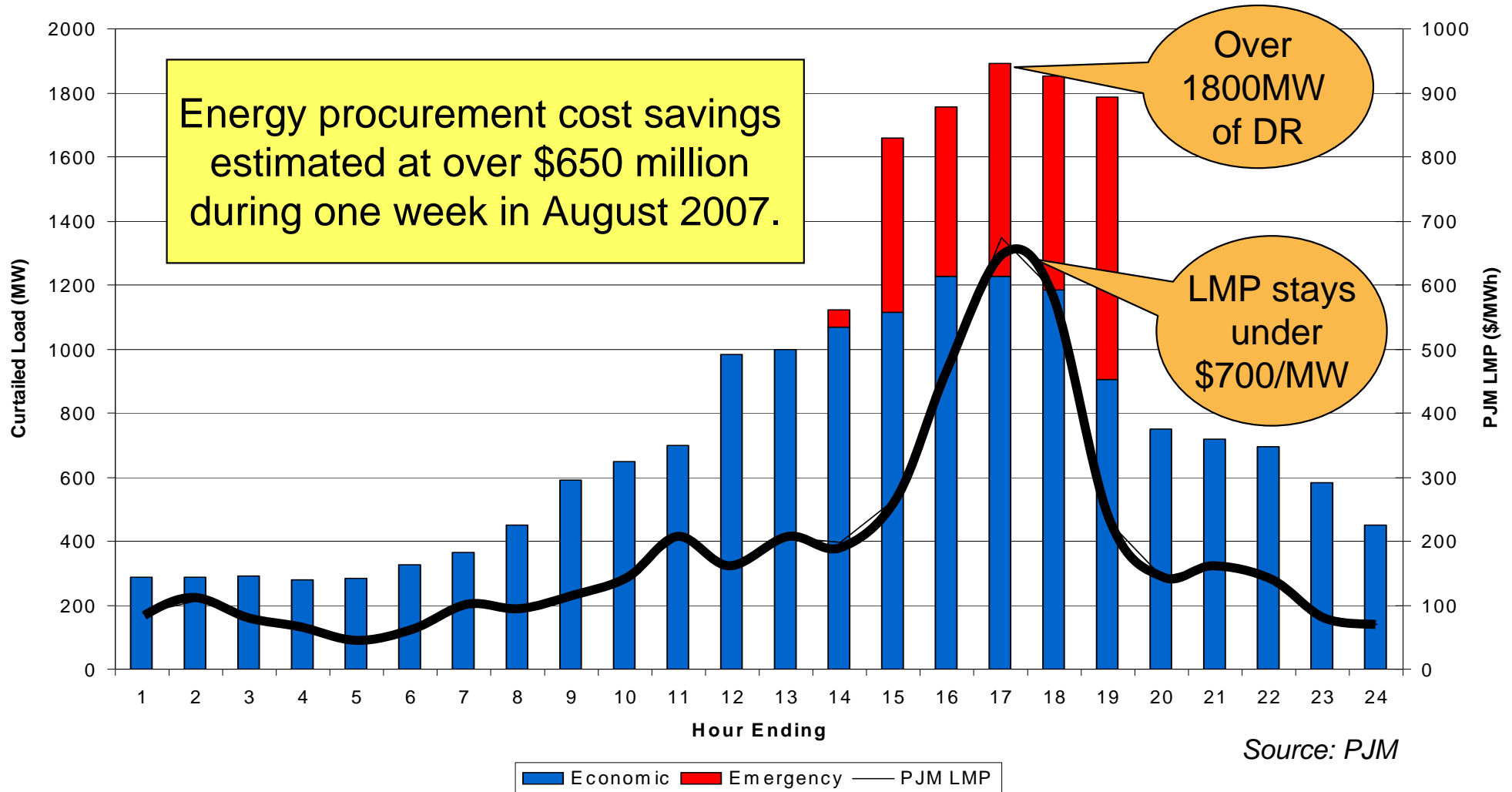


Background: DR at PJM

Largest integrated energy and DR market in the world



Demand Side Response Scheduled Curtailments
August 8, 2007

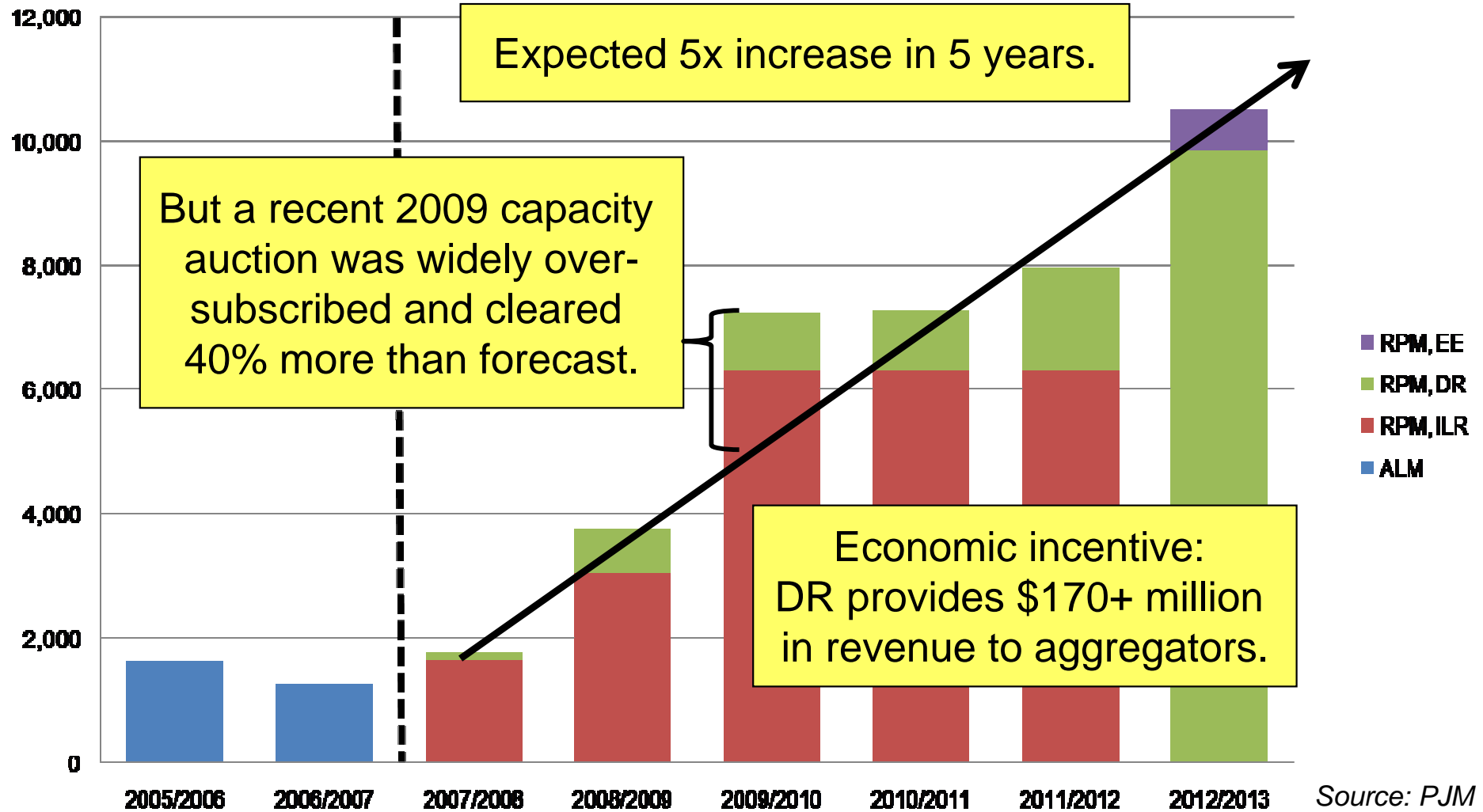


PJM's Key Challenge: Growth of DR

Over 7000 MW of demand resources and growing



Demand Side Participation in Capacity Markets



Side Effects: Complexity and Change

PJM was out-growing their in-house DR management software



- **More DR products**, each with different business rules
 - Economic, emergency, and ancillary service programs
 - Qualification, enrollment, events, and settlements are all different
 - Workflow processes can span multiple organizations and systems
 - Market and regulatory forces driving continuous change
- **More DR resources**, becoming smaller and more varied
 - Each resource has different attributes, contacts, history, and availability
 - Desire to aggregate smaller resources to meet participation levels
 - Need for lower-barrier communication channels (email, web, voip)
 - Goal to reduce administrative effort and costs per resource enrollment
- **More DR transactions**, as the demand side substitutes for generation on a more daily basis
 - Need to streamline event-meter-settlement lifecycle
 - Need to centralize and automate baseline calculations for improved efficiency, accuracy, and audit-ability

DRBizNet: Provides PJM Scalability

Transparency and execution of larger work-queues



- ✓ Streamlined user-interface
- ✓ Complete web-services interface for heavy users
- ✓ Register resources for multiple DR programs
- ✓ Support aggregation of smaller retail resources
- ✓ Consolidated notifications
- ✓ Automated M&V and baseline calculations
- ✓ Automated settlements and adjustments
- ✓ Administrative reports

Registration Details:

Name	TK basic economic agg site	Program	Economic
Registration ID	R2229	LSP	ECS
Effective Date	04/23/2009	Status	New
Termination Date	04/23/2010	Hold Status	<input type="checkbox"/> Scheduling <input type="checkbox"/> Settlements

Resource List Table:

Location	Meter Qualified	State Approval	Load Reduction (in KW)	Peak Load Contribution	Retail Rate (Cents/KW)	Energy Loss Factor (in KW)	Capacity Loss Factor (in KW)
TK emergency full R - 000094	N/A	N/A	100.0	3500.0	65.0	1.003	1.004
12 E St. Nowheresville, Illinois, 12345	N/A	N/A	100.0	3500.0	65.0	1.003	1.004
TK Standard CBL 5 day - 000007	N/A	N/A	100.0	3500.0	65.0	1.003	1.004
12 E St. Nowheresville, Illinois, 12345	N/A	N/A	100.0	3500.0	65.0	1.003	1.004
Total/Avg			200	7,000	65	1.003	1.004

Pie Chart Data:

- Emergency DR Full = 61
- Emergency Energy Only = 5
- Total = 146

DRBizNet Notification for program OPENADR:

```

drx5@drbiznet.net
Sent: Thu 12/11/2008 3:17 PM
To: sneumann@uisol.com

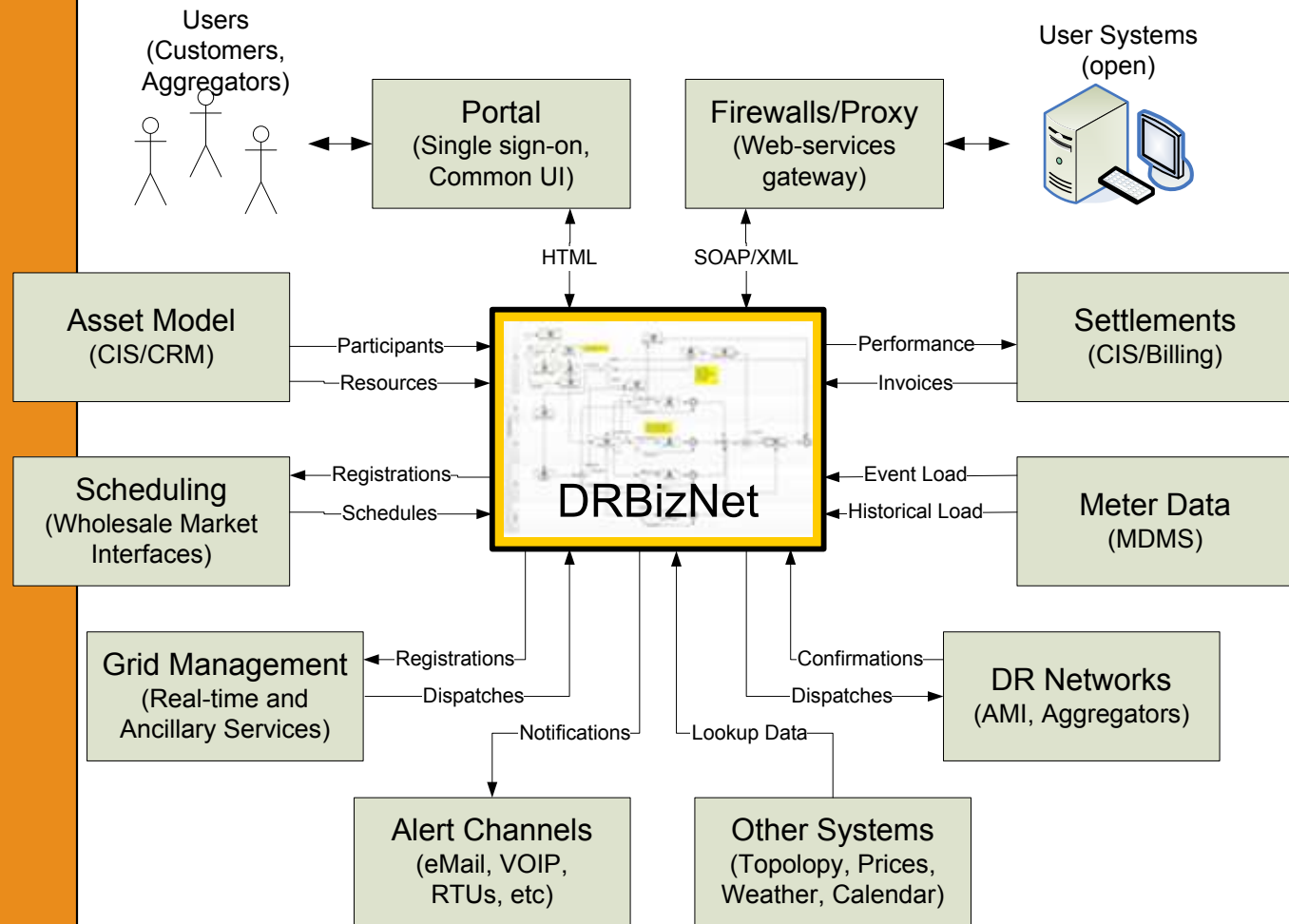
DRBizNet notification for program OPENADR. Program start at
2008-12-12T15:17:21-08:00, end at 2008-12-12T18:17:27-
08:00. Request ID = 500000988 For more details go to
http://sc2.uisol.net:8241/ShowRequest?ID=500000988 DRBizNet
home page: http://drlab.uisol.net
    
```

DRBizNet: Provides PJM Flexibility

Supporting new business rules and market opportunities



- ✓ Manages the complete DR process lifecycle
- ✓ Handles multiple DR programs, resource types, event types, and baseline rules
- ✓ Supports dynamic, product specific business rules and multi-party workflows
- ✓ Integrates existing systems using open protocols
- ✓ End-to-end process visibility and control



Summary and Next Steps

UISOL is committed to DRBizNet as a SmartGrid solution



- **DRBizNet at PJM**

- Project started in July 2008, went live in June 2009
- 1100+ users from 250+ organizations managing over 7000+ resources
- Used successfully all summer, participant feedback has been positive
- Already have new regulatory and business rule change requirements

- **DRBizNet at CAISO**

- Installed in the CAISO DR Lab to manage demo programs and events
- Communicates with Akuacom DRAS and other open devices
- UISOL is helping CAISO plan opening a wholesale DR market in 2010
- DRBizNet also part of DOE stimulus grant proposal by CAISO and PG&E

- **DRBizNet roadmap for other ISOs, utilities, aggregators**

- Expand support of distributed resource types and parameters
- Enhance communication with open ADR, AMI, and HAN technologies
- Further automation of registrations, notifications, M&V, and settlements