

GridWise™

Stakeholder and Institutional Adoption

Electric Distribution Transmission Program Review FY04
Landis Kannberg
Pacific Northwest National Laboratory

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Coronado, CA

The **GRIDWISE** Vision:

The addition of *information technology* will transform the power system by integrating traditional & distributed assets – from generation, T&D, to end-use – to manage the grid as a collaborative “society” of devices.

Stakeholder and Institutional Adoption Relevance

- ▶ GridWise transformation is more than technology
 - Information enables new incentives
 - Incentives stimulate non-traditional participants and behavior
 - Inspire different social, institutional, business, and operational compact(s)
- ▶ Pervasive integration of economics and operations
 - Real-time physics meets real-time markets
 - Local and global optimizations – bridges traditional boundaries
- ▶ Simultaneous transformation
 - Institutional compacts
 - Technology implementation
 - Policy

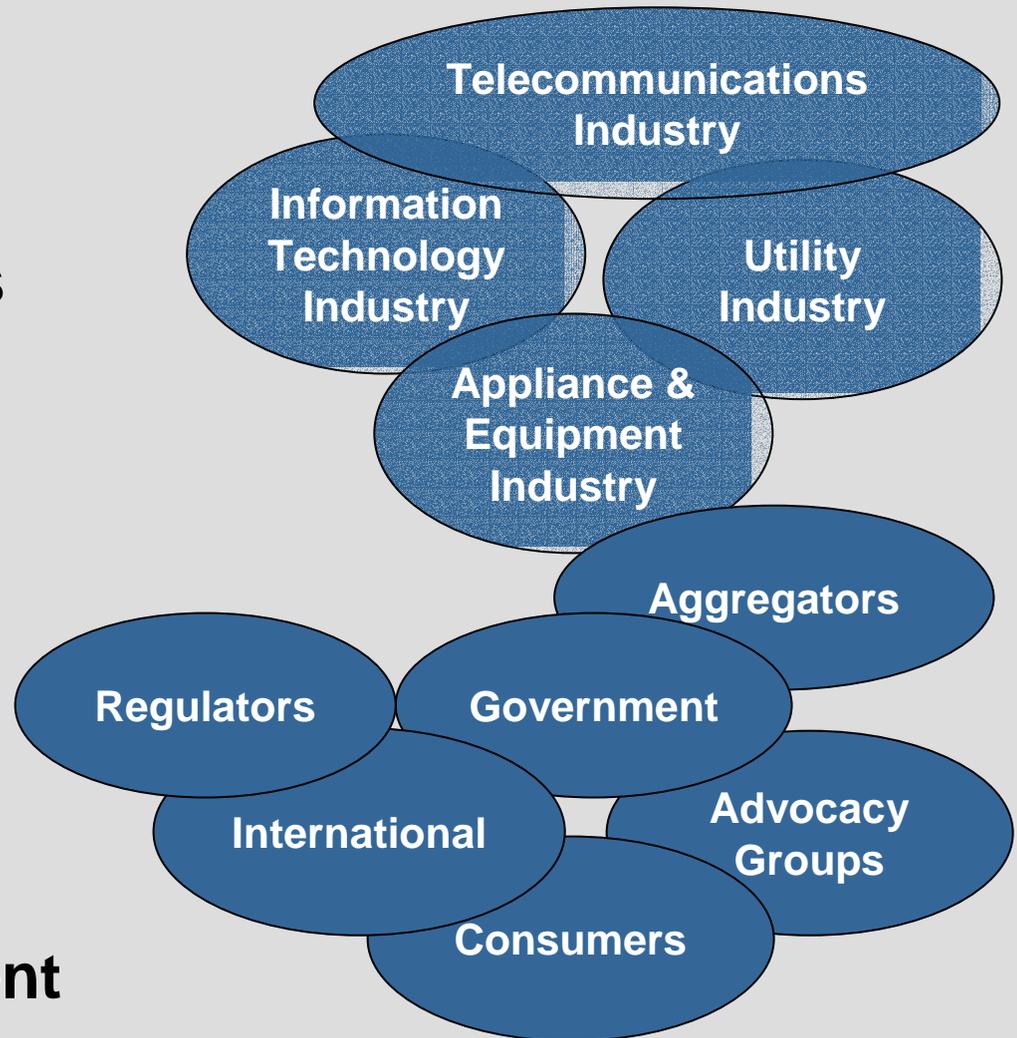
"A systematic rethinking of the power demand and supply system — not just the transmission lines — is required to bring the energy industry into the contemporary age."

Dr. Vernon Smith,
George Mason University
Nobel Prize Winner in
Economics, 2002
The Wall Street Journal,
August 20, 2003

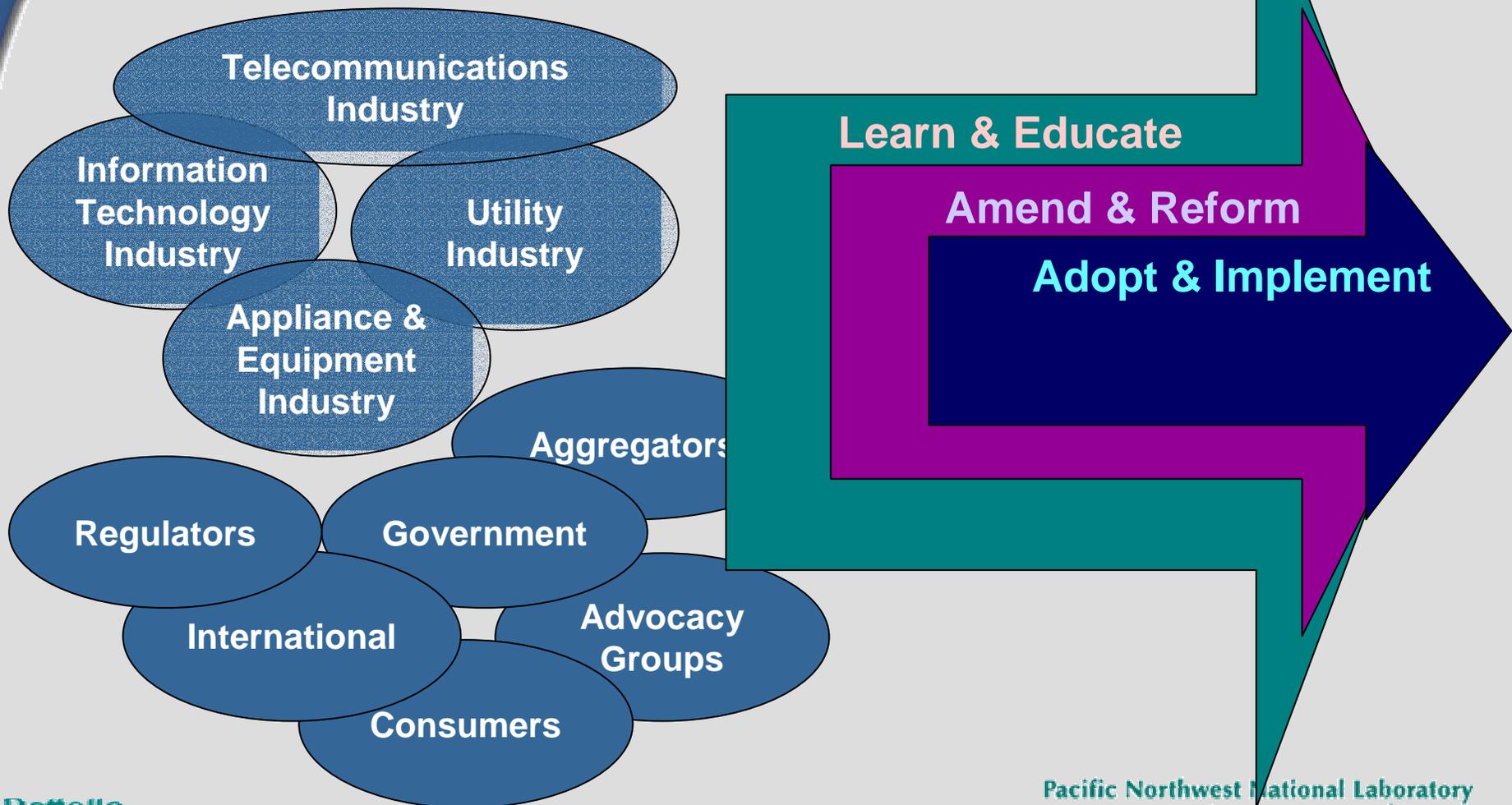
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Stakeholder and Institutional Adoption Challenges

- ▶ A more diverse and complex set of stakeholders
- ▶ Limited “value” basis
- ▶ Absence of proven incentive structures
- ▶ Absence of business models
- ▶ Institutional impediments
 - Regulatory
 - Utility business model
 - Jurisdictional
- ▶ One source insufficient



Stakeholder and Institutional Adoption Overall Strategy



Stakeholder and Institutional Adoption Strategy & Objectives

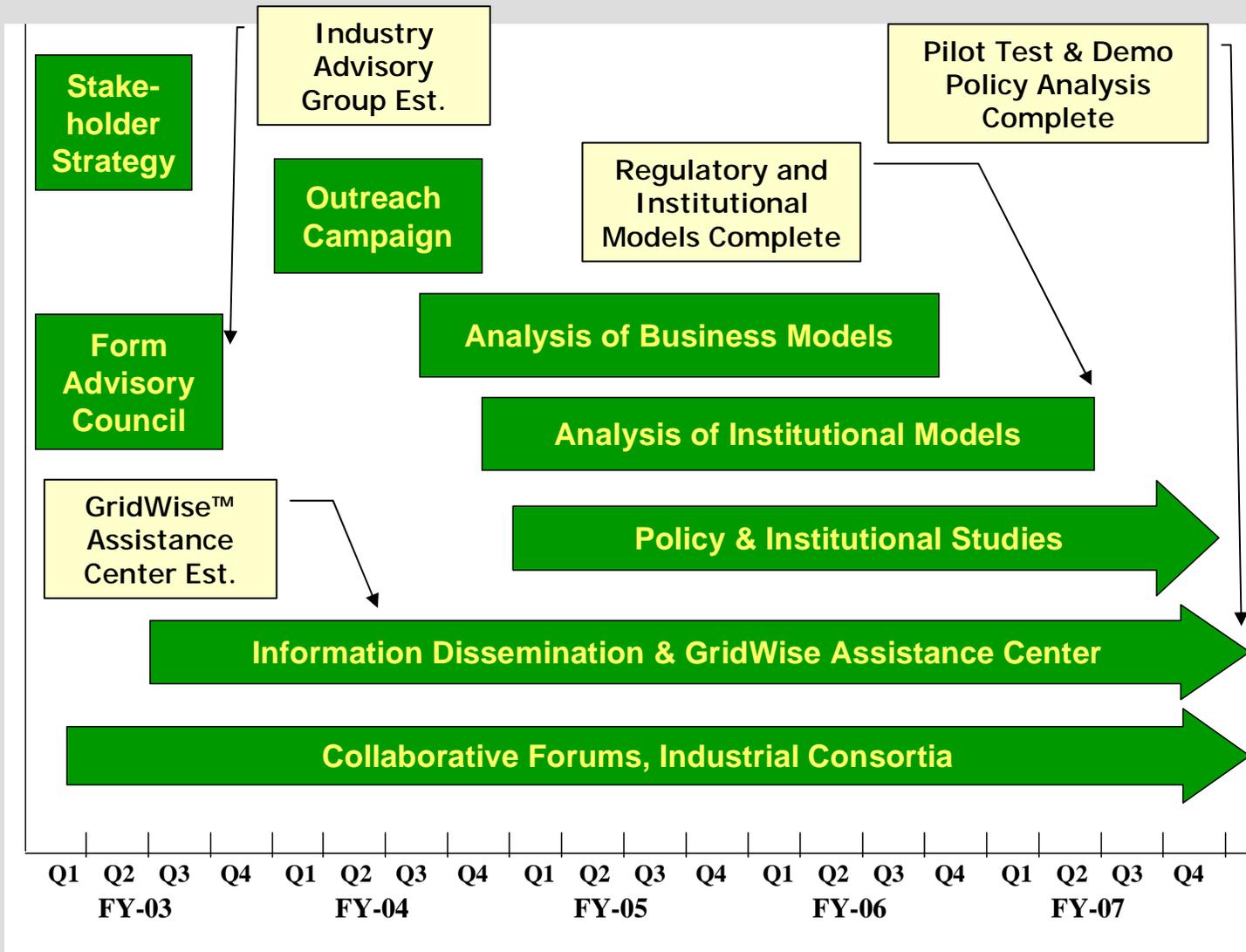
▶ Short-Term:

- Develop a Program Advisory Board – utilize to assist in strategic planning
- Develop an Industry Consortium, utilize to define technical gaps
- Develop and disseminate GridWide information
- “Blue Ribbon Benefits Assessment”

▶ Long-Term:

- Develop & Explore Potential Business Models (link to Pilot Tests & Demo’s)
- Develop & Explore Institutional Models (link to PT’s & Demo’s)
- Explore regulatory and policy impacts, options and alternatives
- Inform and assist interested parties via Assistance Center
- Establish and/or participate in relevant Forums, Conferences and Meetings

Stakeholder and Institutional Adoption



FY-03 Activities – Stakeholder and Institutional Adoption GridWise Board

- ▶ **Purpose: Provide a vehicle for gaining strategic insight from key industry representatives**
- ▶ **CEO Coalition – Convener with access to broad range of future minded CEO's and willingness to engage in "Energy Infomatics" topic.**
- ▶ **CEO's, Sr. VP's, Directors**
 - **Alstom Esca, IBM, PJM, Rockport Capital, Sempra Energy Solutions, Battelle**
- ▶ **Meetings in December '02, April '03, June '03, September '03,**
- ▶ **GridWise Alliance Declaration**
- ▶ **\$65K – '03**

FY-03 Activities – Stakeholder and Institutional Adoption Industry Coalition

- ▶ **Purpose: Provide vehicle for assembling practitioners in a coordinated effort to advance and implement GridWise concept**
- ▶ **Spirae: Consultant with history of experience in GridWise related technical and business engagement**
- ▶ **Progress:**
 - Skamania (& previous) Workshop
 - Small group engagement – Alstom, IBM, DOE, PNNL
 - Development of straw man structure
 - Trial balloons with other stakeholders
 - Review Board consideration
 - Draft business plan
 - Incorporation
 - Draft MOU w/ DOE
- ▶ **\$95K – ‘03**

The GridWise Alliance Founders are:

**Robert Dickerman, President
Sempra Energy Solutions**

**Phillip Harris, President/CEO
PJM Interconnection, LLC**

**JD Hamerley, President/CEO
Alstom Esca Corporation**

**David Samuel, General Manager
IBM Global Energy & Utilities
Industry**

**Charles McDermott, CEO
The Rockport Group**

**Michael Lawrence, Director
Battelle Energy**

SK Chauhan, CEO

UAI

Battelle

30 Oct 03



The GridWise™ Alliance Declaration

Whereas we believe that an efficient, affordable electricity transmission and distribution system is a cornerstone of our national prosperity and American way of life; and

Whereas we believe in the importance of new energy and information technologies in improving the efficient use of the energy system and providing significant system and consumer benefits; and

Whereas we believe in the need to enhance national security by enhancing the resiliency of the grid.

We therefore declare our intention to lead the transformation of the U.S. electric system into the information age—from central generation, transmission, distribution, down to customer appliances and equipment. This objective supports the “National Electric System Vision” espoused by a cross section of industries and the Department of Energy. As leaders of this transformation, we will strive to achieve a future in which:

- Empowered consumers directly benefit from participation in energy markets.
- Information technologies will revolutionize energy systems as they have revolutionized other aspects of U.S. business.
- Market participants create value by developing and deploying solutions that cross enterprise and regulatory boundaries.
- Security and reliability are enhanced by an information-rich grid that is flexible and adaptive.



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FY-03 Activities – Stakeholder and Institutional Adoption

Messaging and Branding

- ▶ **Purpose: Distill GridWise into key messages, landmark, brochure, and web site for effective communication**
- ▶ **Girvin: Well established branding firm with extensive credentials**
- ▶ **Progress:**
 - **Landmark –**
 - **Umbrella Message –**
 - **Key Messages**
 - **Energy Industry**
 - **IT Industry**
 - **Regulators**
 - **Brochure**
 - **Web-site**
 - **Style Guide**



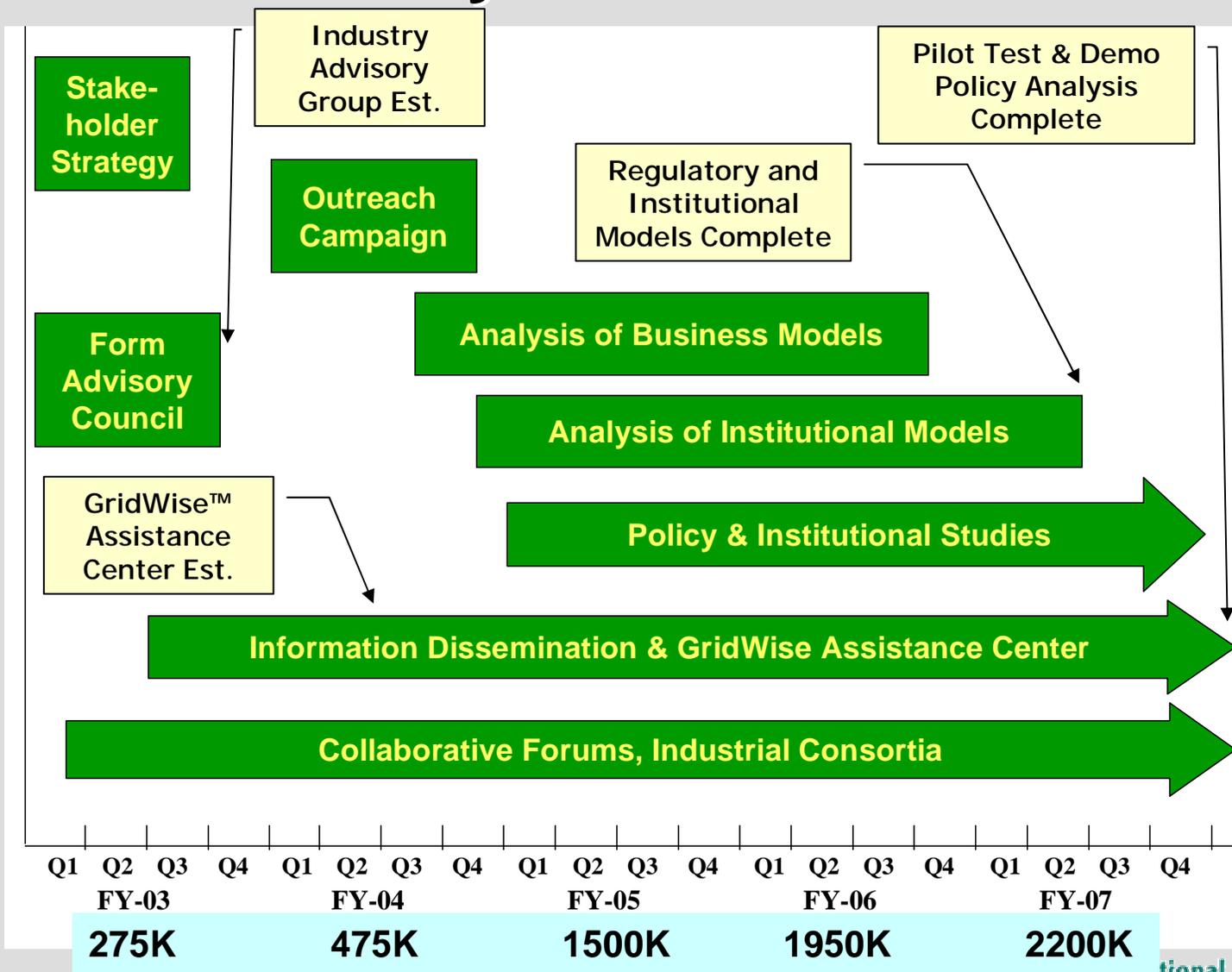
▶ **\$82K - '03**

FY-03 Activities – Stakeholder and Institutional Adoption

Planned Activities for FY04

- ▶ **Assist Establishment of GridWise Alliance**
 - **MOU with DOE; Cooperative plan of action**
- ▶ **Establish Assistance Center (information resource)**
- ▶ **Outreach Campaign – “Engage and Explore”**
 - **Information preparation**
 - **Share information (e.g. NARUC, Industry, NGO’s, Demo’s)**
 - **Characterize Issues**
 - **Explore collaborative opportunities**

Stakeholder and Institutional Adoption Outyear Activities



FY-03 Activities – Stakeholder and Institutional Adoption

Interactions & Collaborations

- ▶ Review Board – Alstom, IBM, PJM, Rockport, Sempra ES,...
- ▶ Other Industry
 - PECO, PGE, PacifiCorp, Avista, AEP, EPRI, Ebidrola (Spain), CESI (Italy)
- ▶ NGO's
 - EEI, NARUC, NWPPC, IEEE, PNWER, CEO Coalition members, Midwest-NE Institute, SEBA, ...
- ▶ Government
 - Various PUC members, staff (agency, legislative), CEC

Summary

- ▶ Engagement with Stakeholders on GridWise concept
- ▶ Establishment of CEO Review Board
- ▶ Exploration of Industry Consortium
- ▶ Merged result – GridWise Alliance
- ▶ GridWise Concept refinement
- ▶ Poised for broader engagement
 - GridWise Alliance
 - Stakeholder forums
 - Information resource

Contact Information

Landis Kannberg

PO Box 999, MSIN: K5-02
Richland, WA 99352

(509) 375-3919

landis.kannberg@pnl.gov