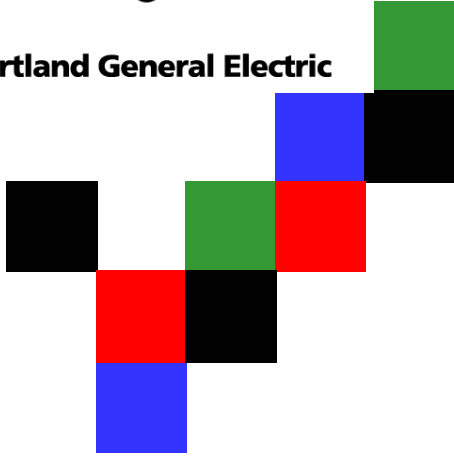




Portland General Electric



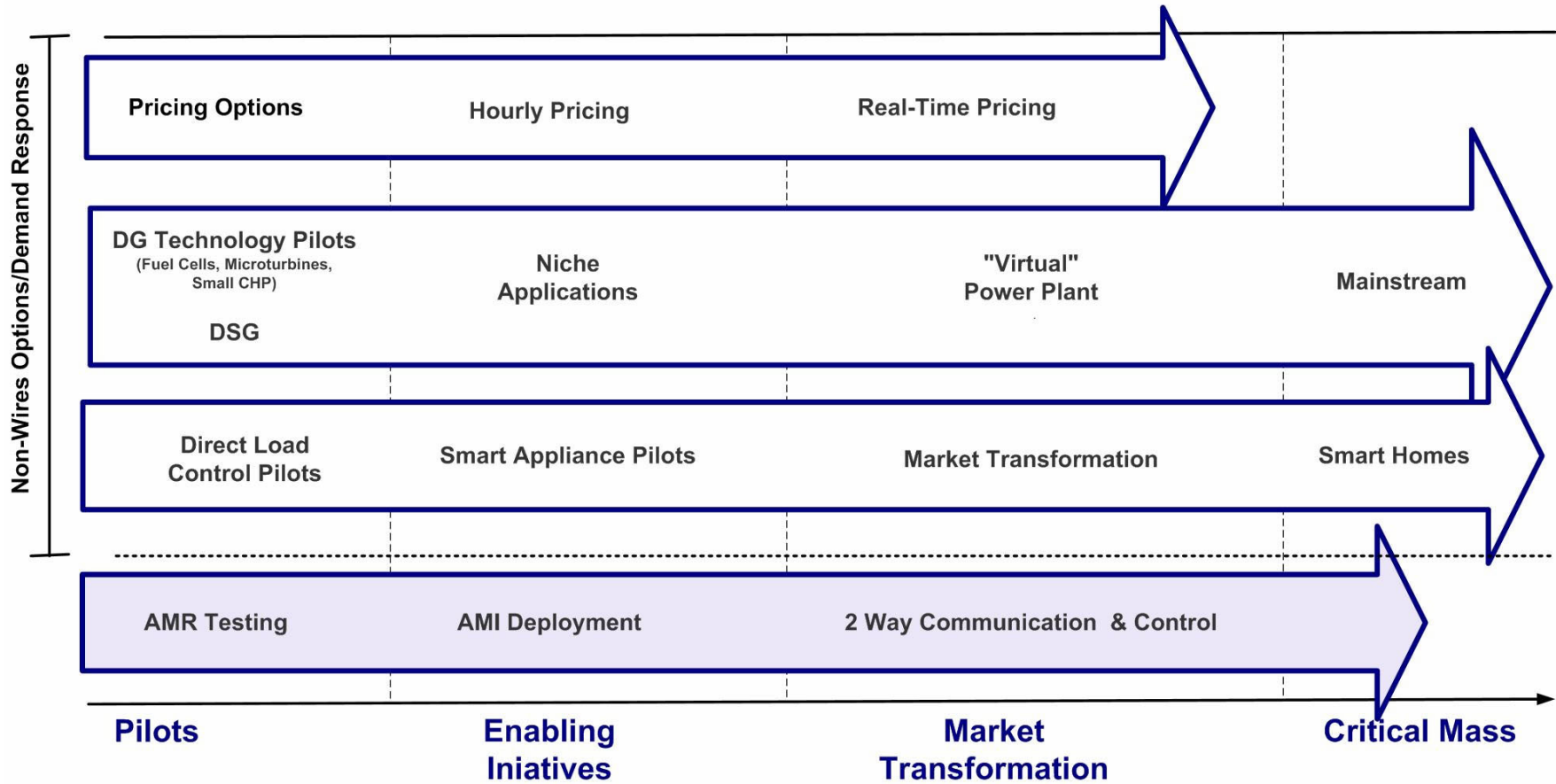
Advanced Metering Demand Response Programs

Oregon Public Utility Commission Workshop

***Doug Kuns, Manager Pricing and Tariff
January 6, 2005***



Evolution of Non-Wires Options/Demand Response





Demand Response Programs

Pricing Options

Residential and Small Commercial Customers

- ◆ Time-of-Use (TOU) Price Option
 - ▲ TOU energy pricing: On, Mid and Off-Peak Prices
 - ▲ Summer and Winter Differences in On and Mid-peak Hours
 - ▲ About 2,000 customers participating
 - ▲ Customer Driver: bill savings

Large Nonresidential Customers

- ◆ Daily, Monthly and Quarterly Energy Price Options
 - ▲ Market tracking with On and Off-Peak pricing
- ◆ Annual Cost of Service Pricing
 - ▲ On- and Off-Peak Prices



Demand Response Programs

Large Non-Residential Incentive Programs

Demand Buyback – Voluntary

- ▲ 16 customers; 35 MW load
- ▲ Customer paid for measured load reductions at announced price
- ▲ Available load reductions change over time
- ▲ No current actions with current market prices

Load Reduction Program – Emergency Curtailment

- ▲ Pre-set load reduction
- ▲ Option for customers with reliability needs
 - Customers may avoid emergency rolling black outs
- ▲ Does not involve financial incentives
- ▲ Load reductions are measured by feeder circuit



Demand Response Programs

Research and Pilot Activities

Residential

- ▲ Direct Load Control Test Programs
 - Space Heat
 - Water Heat

- ▲ Other Research Examples
 - Meter Usage Display
 - “Smart” Chips



Demand Response Programs

Research and Pilot Activities (cont.)

Large Non-Residential Customers

- ▲ Real-Time Pricing
 - Voluntary price response program

Other Related Activities

Dispatchable Standby Generation

- ▲ 23 MW under contract



Going Forward

Continue to...

- ◆ Test and implement economic, customer-supported load control and pricing opportunities.
- ◆ Keep the window open for customer demand response proposals.