

Dumb Policies and Smart Grids: A Utility Perspective

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Desert Sky Group
LLC

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Providing Clarity for Changing Industries

At Desert Sky Group, our people have been in the field and in the Board room with backgrounds in regulation and rates, engineering, as CXOs, and as mission critical project managers. We understand the roles and accountabilities of utility and energy leaders and apply the knowledge and clarity necessary to achieve measurable return on investment for our customers.

Our unique approach to problem solving and client interactions, combined with our comprehensive industry knowledge, subject matter expertise and experience, enables us to deliver cutting-edge guidance and support to utility and energy clients around the world.

Market Research ,
Trends , Analysis
& Benchmarking

- Competitive Intelligence, SWOT Analysis, In depth surveys, customized research, market planning, market intelligence
- 100% of primary research is conducted in-house, maintains excellent relationships with utilities, commissions, consumer advocates

Subject Matter
Expertise &
Testimony

- Experts from the utility and energy industry
- Expert testimony, rebuttal testimony, expert witness services, unblemished testimony record

Project Management,
Oversight &
Quality Assurance

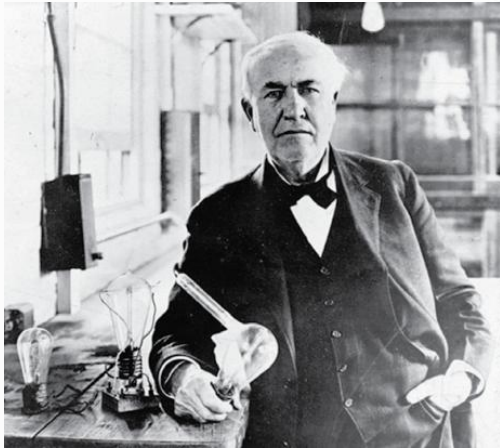
- Program management, project management, effective and proven methodologies, Quality Assurance, Integration planning
- Industry experts with experience to reduce risk, single point of contact for utilities, service providers, third parties

Definitions

- AMI – advanced metering infrastructure
- AMR – automated meter reading
- ARRA – American Recovery and Re-investment Act of 2009
- BPO – business process outsourcing
- CC&B – customer care & billing
- CIS – customer information system
- DA – distribution automation
- DMS – distribution management system
- EAct 2005 – Energy Policy Act of 2005
- FAO – finance/accounting outsourcing
- HRO – human resources outsourcing
- PDA – personal digital assistant
- PHEV – plug-in hybrid electric vehicle
- SCADA – supervisory control and data acquisition

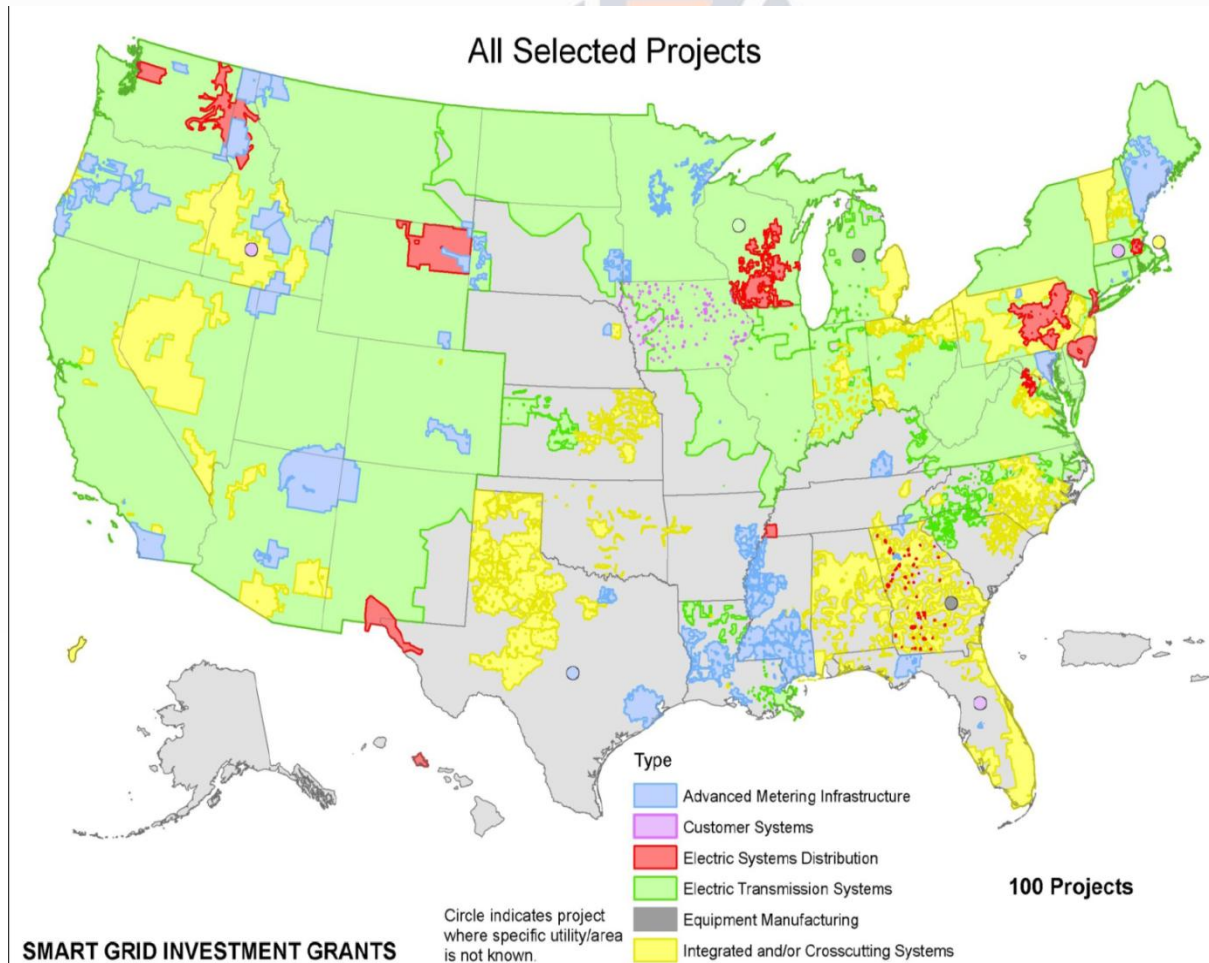
What Constitutes “Smart?”

Edison vs Graham Bell

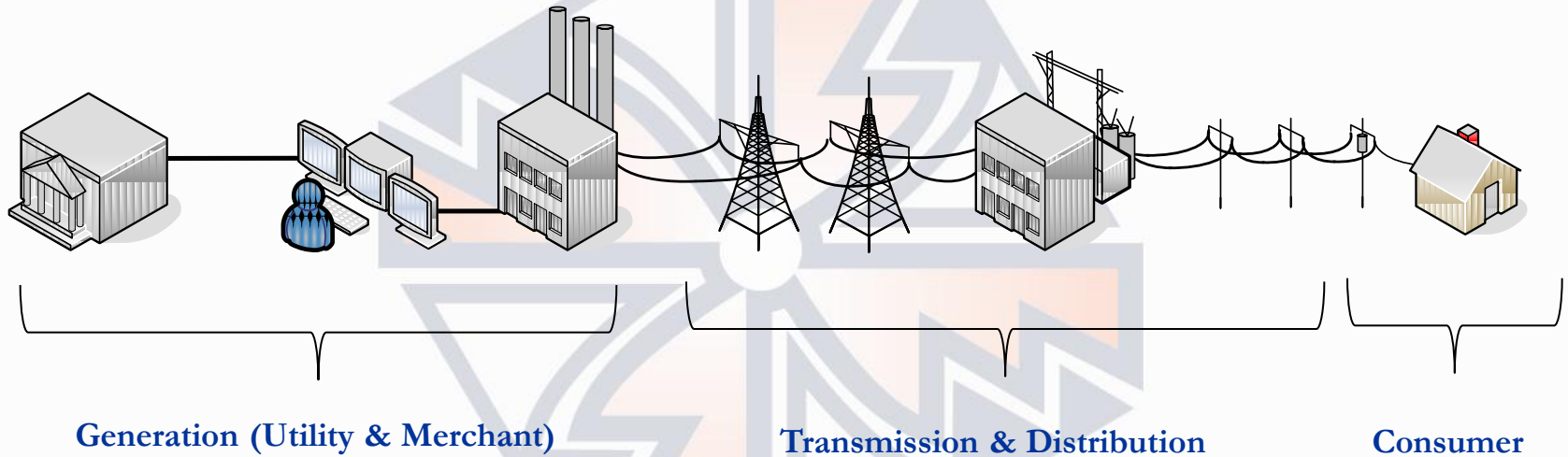


If Alexander Graham Bell were somehow transported to the 21st century, he would not begin to recognize the components of modern telephony – cell phones, texting, cell towers, PDAs, etc. – while Thomas Edison, one of the grid’s key early architects, would be totally familiar with the grid.

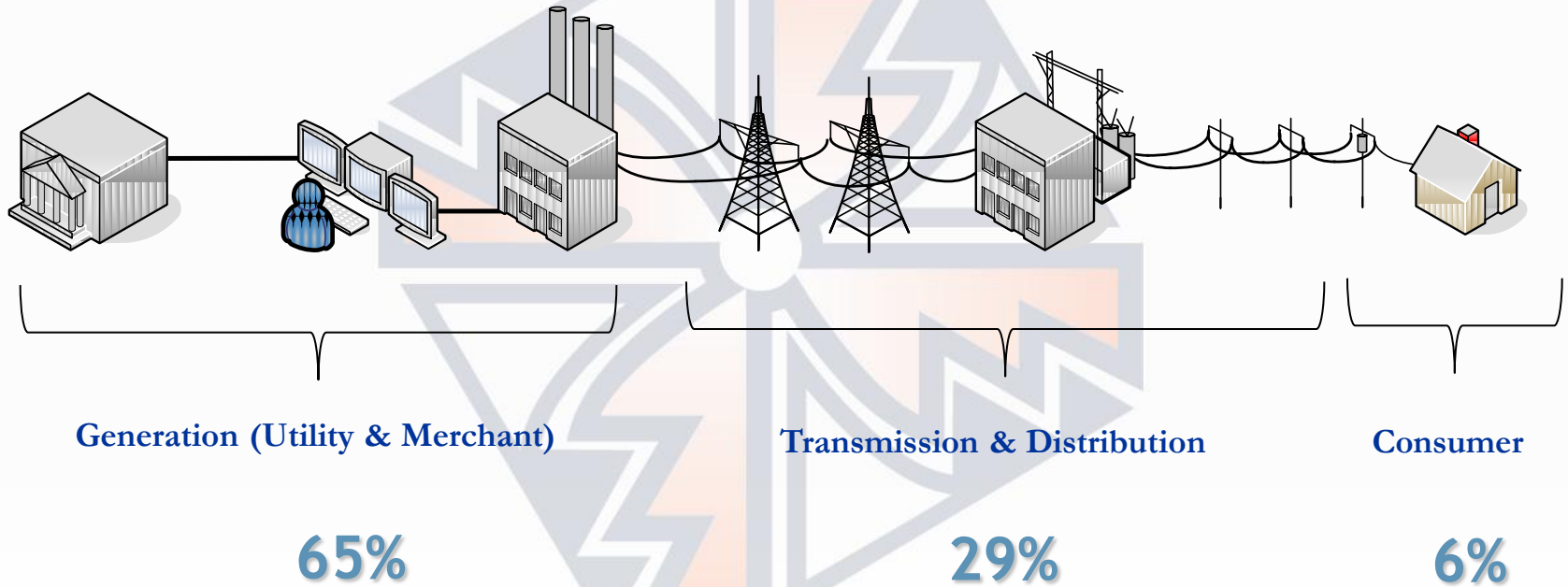
\$3.4b Stimulus Funding for Smart Grid



Electric Value Chain

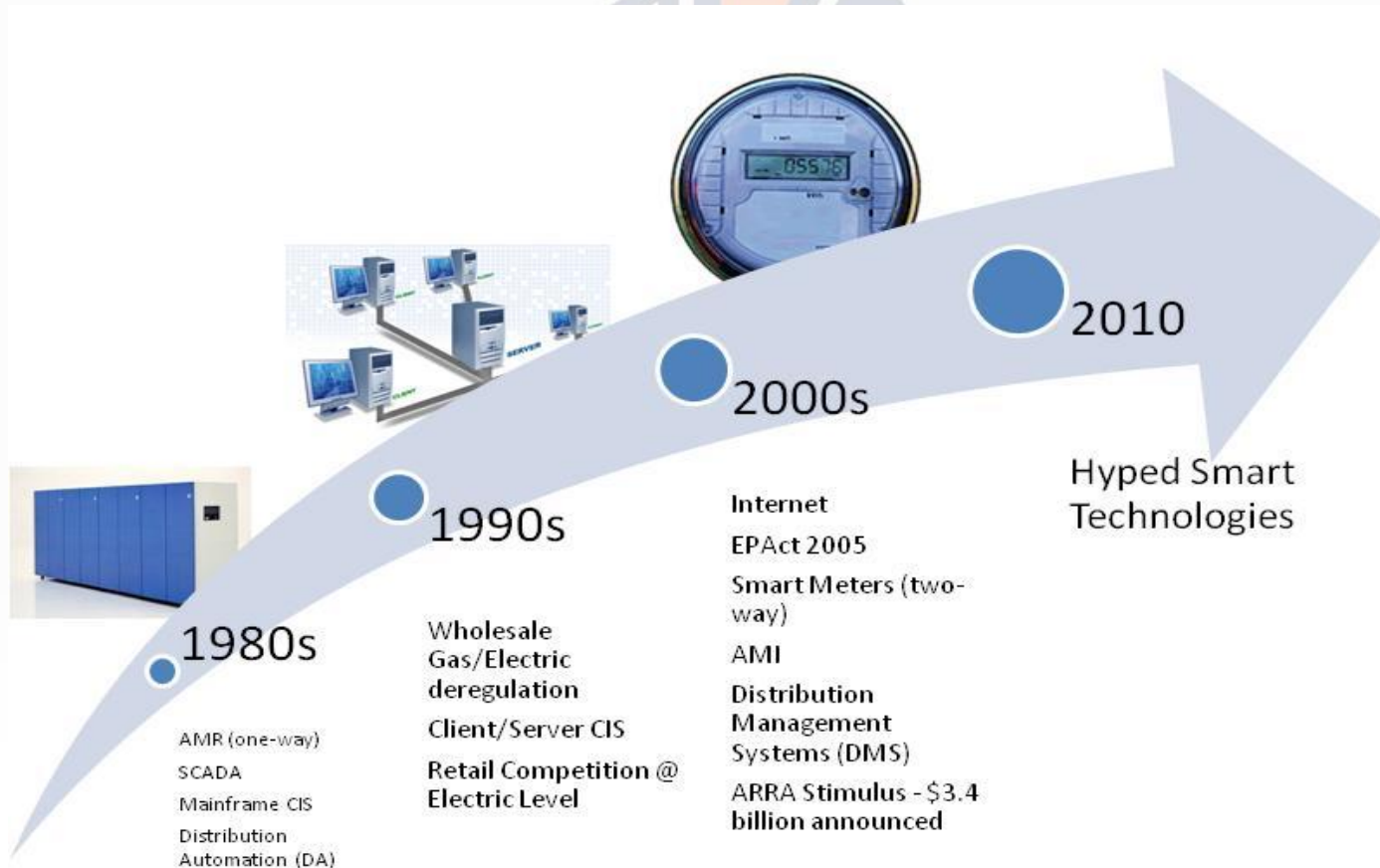


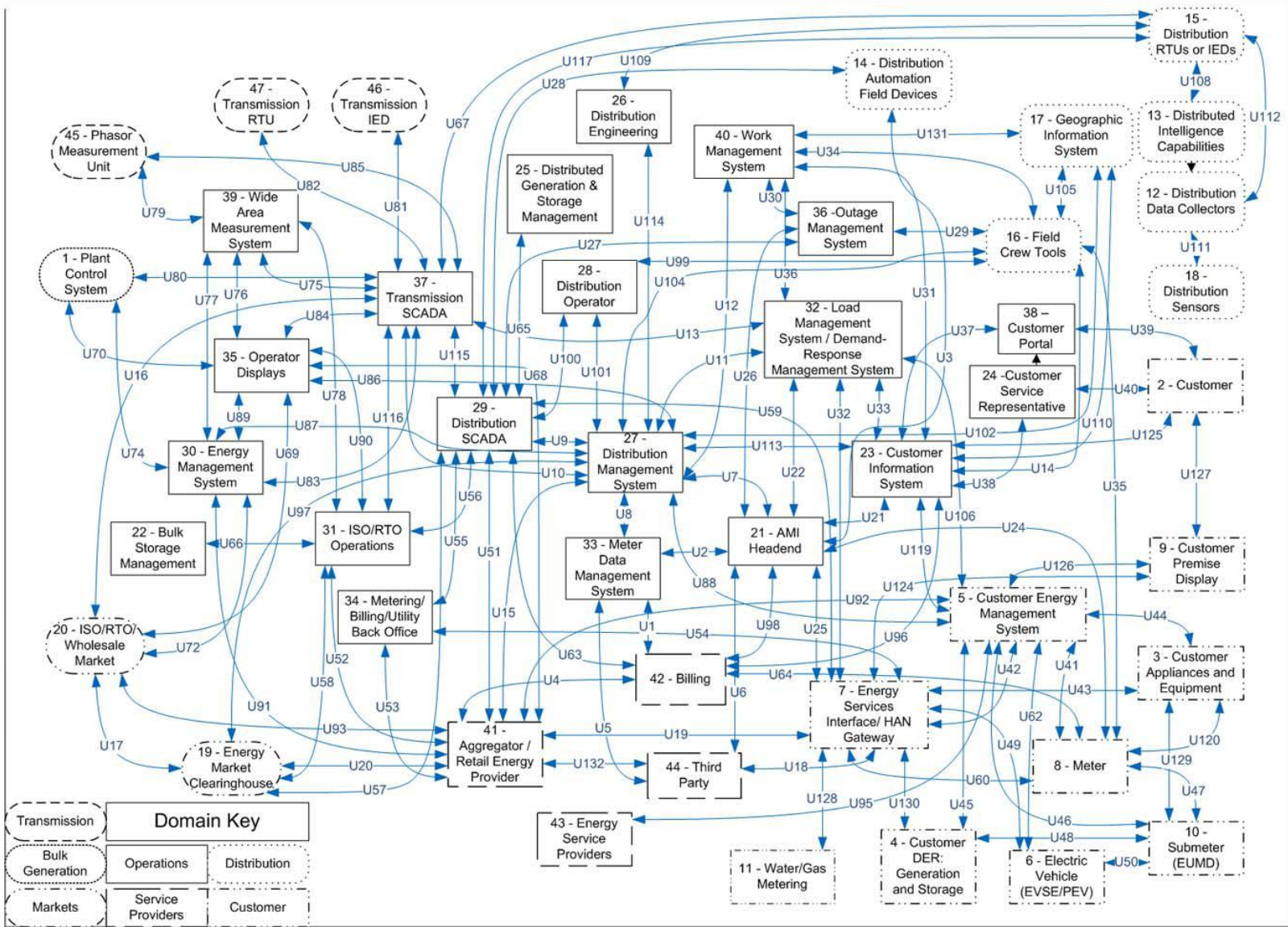
Electric Value Chain



Electric Utility Cost Structure

Utility Industry Historical Context





“Smart” functionalities that impact consumers

- Dynamic Prices
- Smart Appliances
- PHEVs
- Distributed Generation
- Portals
- Pre-Pay
- Remote Connect/Disconnect
- Automated Outage Notify
- Settle across utilities
- Real-time billing (no batch)
- Customer self-service
- Communication channels
- Security

Ownership Structure

- Investor-owned regulated by state/provincial commission
- Municipal “regulated” by city council
- Cooperative “regulated” by members
- Energy Retailers not really regulated unless serving “price-to-beat” consumers

Investor-owned: SmartPowerDC, Pepco

1. Located in the Nation's Capital - Washington D.C.
2. The pilot program was initially recommended by the Office of the People's Counsel (OPC) and funded by Pepco shareholders
3. Involves ALL stakeholders by design
 - Regulatory (DC Public Regulatory Commission)
 - Consumer groups (OPC and DC Consumer Utility Board)
 - Distribution utility (Pepco)
 - Utility worker's union (IBEW Local 1900)
4. Stakeholder collaboration encouraged dialogue and understanding resulting in technology breakthroughs
5. Three different pricing plans tested at the same time
 - Hourly, critical peak price, critical peak rebate

Investor-owned: SmartPowerDC, Pepco

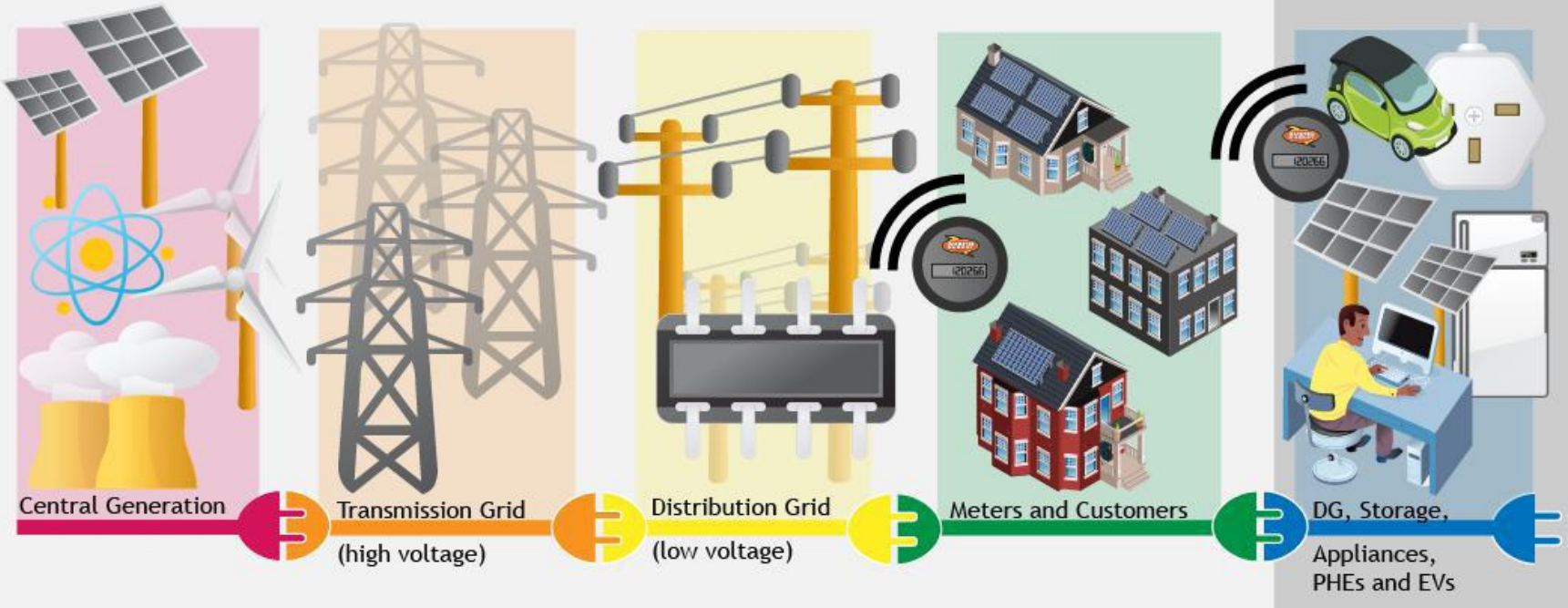
- **Communicate more.** Current levels and approaches are not sufficient to reach many customers... customers want PHI to be more “proactive” in communicating
- **Forthright.** Confusion about rates and bills breeds suspicion and mistrust; explaining why PHI does what it does will help project transparency and trustworthiness
- **Recognition.** Customers need personalized feedback and recognition to encourage behavior change
- **Walk the Talk.** Show customers what (and why) PHI is acting on its own to: a) contain costs; b) improve the environment; c) set a good example
- **Affordability.** Will continue to challenge PHI’s credibility... address it head-on

Investor-owned: SmartPowerDC, Pepco

- **Green = dollars + carbon.** Personal environmental stewardship is a key motivator for a cross-section of customer types... but never divorced from cost
- **Information.** Customers want to know What to do to save money/energy, and How to do it (tools, not just suggestions)
- **New Media.** Customers in all demos are open to opting-in to digital communication channels to receive / exchange information
- **Under-promise/over-deliver.** Especially as relates to new pricing plans... timing is crucial
- **CSRs.** Customers will rely heavily on customer service representatives for information... “Smart Advisory Help Desk”

Municipal: Austin Energy

Phase 1: Smart Grid 1.0



Municipal: Austin Energy Utility

Benefits

- Reduced operating costs (fewer truck rolls)
- Improved outage management –ability to quickly determine if power is off or on
- Reduced number of delayed and estimated bills
- Reduced energy theft
- Monitor and manage power factor rates
- Lower procurement costs
- Improves load profiler
- Improves distribution load management and planning
- Greater historical load and usage data
- Better asset management and maintenance
- Reduces need for additional generation and transmission capacity
- Supports any market price-responsive tariff requirements

Municipal: Austin Energy Consumer Benefits

- Reduce outages significantly
- Increase power quality significantly
- Faster notification and restoration times from outages
- Receive usage information to better understand and manage their bills, and ability to participate in energy efficiency and demand response programs
- Reduced inconvenience by no longer needing to unlock gates and tie up dogs for meter reads
- Improvements in timeliness and accuracy of billing, fewer estimated bills
- Remote service turn-on and shut-off
- Customer can call utility customer service for real-time meter read or via in-home display, portal, smart phone
- Customer can manage smart appliances via portal / IHD
- Ability to use in pre-pay, TOU, real-time, etc.

Energy Retailer: Direct Energy



Before Pilot



After Pilot

Energy Retailer: Direct Energy

Consumer Expectations - that thing attached to your hand

Google search results for "energy management"
136 million 'hits' in 0.33 seconds



ATT mobile real time usage and billing information
45 seconds

iTunes download of entire Beatles anthology:
3 minutes

Delayed stock price information on CNN.com
20 minutes

Digital acceptance of Federal Tax Return from Internal Revenue Service
2 days

Average delivery time for an energy bill
30 days

Consumers don't view the meter or thermostat as the primary interface for the *data rich and intelligent real-time assistance*

that is expected from a home energy management solution.

And you need a multi-screen solution.



Disconnected Consumer and Utility Perspectives

Consumer Perspective

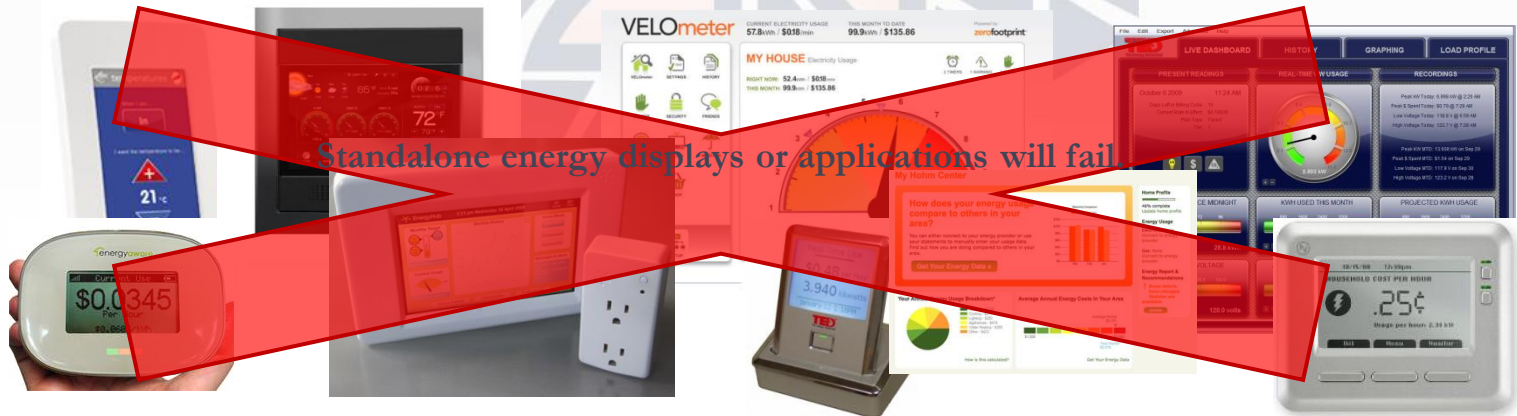
Traditional Utility Perspective

Groceries Family Activities Career
 Medical Doctor appt.
 Traffic Pets Credit Card Bill
 Work Tasks Car Payment Friends
 \$\$\$ Vacation Weather Mortgage
 School Energy Bill Retirement
 Elderly Parents Home Maintenance Dinner



kWh Rate Base Regulatory
 Reliability CAPEX/OPEX
 Base Load Demand Response
 Net Generation Peaking
 Load

To raise energy usage awareness a consumer service must acknowledge the noise level and fit into consumers' lifestyle not simply show up and expect attention.



Energy Retailer: Direct Energy

Sailing the sea of customer desires...in search of relevance



More information can be found at:

- www.smartgridcc.org
- www.sgiclearinghouse.org
- www.gridwise.org
- www.ieee-pes.org
- www.caba.org

Thank You!



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