Smart Meters
Opt-Out Options

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Briefing Outline

Policy Issues

- What are the policy issues?
- What are the Technical options?
- Technical option assessment
- Policy implications
- Supporting public policy

Policy Issues

- Should advanced meters be mandatory or voluntary?
- **How to craft an opt-out option that does not undermine the advanced metering or utility system smart grid business case?**
- How should the cost of an opt-out provision be allocated?
  - Costs should be allocated to those that opt-out, or
  - Costs should be "socialized" and distributed across all customers.
- What are the implications of a smart meter opt-out provision for rate, demand response, electric vehicle, and other smart grid initiatives?

Policy Objectives

For the opt-out customer	Utility	All Other Customers
Low cost	Acceptable Cost	Little or no cost impact
Credibility	• System Functions • System Maintenance • Limited operational impacts	System Functionality
Low or zero radio emission exposure	Minimal compromise of overall smart meter network function	No Service Impacts

Security is an objective for all.

The Meter /Communication Options

	Meter Option	Meter Location	Com. Option	Interval Data	Data Availability
1	Electromechanical (Legacy)	Wall	None	No	Requires Visit
2	Simple Digital	Wall	None	No	Requires Visit
3	Automated: Walk/Drive-by	Wall	Radio-on	No	Requires Visit
4	Advanced / Smart Meter	Wall	Radio-off	Yes	Requires Visit
5	Advanced / Smart Meter	Wall	Radio-on	Yes	On-demand
6	Advanced / Smart Meter	Pole Top, remote	Radio-on	Yes	On-demand
7	Advanced / Smart Meter	Wall	WiMAX	Yes	On-demand
8	Advanced / Smart Meter	Wall	Cellular Telephone	Yes	On-demand
9	Advanced / Smart Meter	Wall	Landline Telephone	Yes	On-demand
10	Advanced / Smart Meter	Wall	Power Line	Yes	On-demand
11	Advanced / Smart Meter	Wall	Wired Broadband	Yes	On-demand

Notes:
Landline telephone line is dedicated to meter, installed by utility.

Meter Applications: Customer Options

	Meter Option	Rate Options	Billing Options	Customer Data Access	In-Home Display Support
1	Electromechanical (Legacy)	1,2	1	No	No
2	Simple Digital	1,2	1	No	No
3	Automated: Walk/Drive-by	1,2	1	No	No
4	Advanced / Smart Meter Radio-Off	1,2,3,4,5	1	Yes (delayed)	No
5, 6	Advanced / Smart Meter Radio-on	1,2,3,4,5	1,2,3	Yes	Yes
7-11	Advanced / Smart Meter Other Comm	1,2,3,4,5	1,2,3	Yes	Yes

Rate Options:
1. Flat
2. Tiered
3. TOU / PTR *
4. Dynamic (CPP, VPP)*
5. RTP *

Billing Options:
1. Standard monthly meter read cycle
2. Custom billing date
3. EE, DR option analysis

* Necessary to support electric vehicles, storage, ancillary services

Meter Applications: System Options

- Improved service & delivery efficiency
  - Outage management
  - Automated feeder reconfiguration
  - Voltage optimization
  - Energy assurance under system stress

  Affected very little* by opt out.

- Customer services
  - Remote service on/off
  - Remote demand limiting

  Completely precluded for opt out customers.

*If a very small % of sites opt out.

Meter Opt-Out Decisions

- California
- Maryland
- Vermont
- Naperville, IL
- Nevada
- Burbank, CA
- Georgia
- Quebec

Other / Pending Decisions

- Detroit Edison, MI
- Glendale Water and Power, CA
- Texas, Arizona
- Department of Energy and Climate Change, UK
- BC Hydro, Canada

California

- Decision by CPUC for all IOUs
- Meter type
  - Legacy meter
    - PG&E and SDG&E: induction meter
    - SCE: induction meter or drive-by meter
- Fees*
  - $75 at start
  - $10 monthly

*Fees lower for disadvantaged customers.

Maryland

- Legislature mandated smart meters in 2008
  - Maryland PSC authorized deployments
  - Many details not yet resolved
  - No opt out decision
- Meter type
  - House Bill 878 in committee
  - Calls for opt out with analog meter
- Fees
  - TBD

Vermont

- Decision by Central Vermont Public Service
  - Largest utility in the state
  - Merging with 2nd largest (Green Mountain Power)
- Meter type
  - Analog meter
- Fees
  - $0 to start
  - $10 monthly

Naperville, IL

- Decision by Naperville City Council
- Meter type
  - Commercial electronic meter (no radio)
- Fees
  - Illinois law forbids certain cross-subsidies, cited by City Council: Opt out accounts bear all costs.
  - $68.35 to start
  - $24.75 monthly

Nevada

- Decision by PUC of Nevada
- Meter type
  - Drive-by meter
- Fees
  - Determination in process
  - Opt out accounts to bear full opt out costs
- Opponents vow court fight

Burbank, CA

- Decision by Burbank City Council
  - Have declared they will follow CPUC example
- Meter type
  - Digital meter proposed (no radio)
- Fees (current Burbank Water & Power proposal)
  - $165 to start
  - $20 monthly

Georgia

- Decision by legislature
  - Senate Bill 459 requires free opt out
  - Passed 9 March 2012
  - House action pending
- Meter type
  - Analog meter
- Fees
  - Pending legislation requires $0 fees

Quebec

- Decision by Hydro Quebec
  - Program proposed by utility, details pending
- Meter type "non-radio"
- Fees proposed
  - Régie de l'énergie principle: ***Options by individuals are paid for by those who request them.***
  - $98 + tax to start
  - $17 + tax monthly

Opt-Out : Cost of Service Impacts

Recurring Costs

- Monthly manual read
- Off-cycle reads
- Service switching
- Billing process
  - Nonstandard process
  - Read errors
  - Maintain obsolete IT
- Registration shortfall
- Cash flow delay

One-time Costs

- Opt out meter
- Customer education
- Remediate network impacts
- Meter shop facilities, training
- IT accounts, records, billing
- Restore smart meter

Opt-Out : Who Pays

- Traditional regulatory axiom: ***Non-standard service customers pay the cost of that service.***
- Costs per opt-out account (typical)
  - Monthly recurring cost $10 to $50
  - One-time up-front cost $150 to $800
  - Vary widely with
    - Utility size, IT resources, etc.
    - Number of opt-out accounts
- Key question:
  What, <u>if any</u>, opt-out costs should be "socialized"?

Opt-Out : Implications

- Will smart meter opt-out homes be allowed to require the utility to relocate transformer radios to distant poles?
- Will public libraries have to provide WiFi-shielded carrels?
- Will opt-out accounts be in-eligible for smart grid benefits?
  - EV charging
  - TOU rates

One Pragmatic View …

- No verifiable basis for concern
  - Radio emission, health concerns unproven
  - Accuracy verified
- <2% of customers request opt out
  - Likely to decline over time as benefits increase
  - Diverse concerns, difficult to satisfy with a single solution
- Opt out program and related costs are high
  - Costs will be continue to be challenged
  - Exposure leads to higher cost legislative action
- One good answer: KISS
  - Leave the legacy meter in place
  - Call it done

Little value in arguing about it.

Pro-active Steps to Minimize Customer Concerns

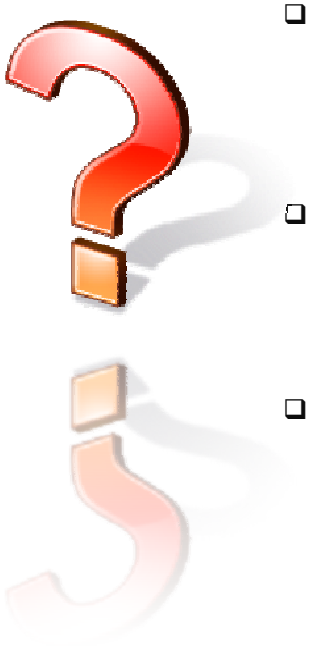
- ❑ For utilities that have not yet initiated smart metering
- ❑ Inform / educate customers in advance
  - Create realistic expectations
    - Smart grid plans, purposes, costs, benefits
    - Smart grid issues, timing, consequences
  - Validate bills (new meters vs. old) before bill activation
  - Help customers derive personal value from smart meter data
    - Access to tools / web site on Day 1
    - Give customers choices
    - Offer transition plans, alternatives

If customers are to be more involved, utilities must proactively inform them.

Future Issues – Future Risks

- …

Contact Information



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