VOTE "NO" ON AMI

SAFE UTILITY METERS ALLIANCE (SUMA)
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Who VOTED "No" on AMI?

California—57

Counties (11)
Humboldt
Lake
Marin
Mendocino
San Francisco
San Luis Obispo
Santa Barbara
Santa Cruz
Sonoma
Tehama
Ventura

Cities (45)
Arcata
Belvedere
Berkeley
Blue Lake
Bolinas
Buellton
Calabasas
Camp Meeker
Capitola
Carpinteria
Clearlake
Cotati
Fairfax
Fillmore
Fort Bragg
Goleta
Grover Beach
Lakeport
Marina
Mill Valley
Monterey
Monte Sereno
Morro Bay
Mount Shasta
Novato
Ojai
Pacific Grove
Palo Alto
Piedmont
Richmond
Rio Dell
Ross
San Anselmo
San Rafael
San Luis Obispo
Santa Cruz
Sausalito
Scotts Valley
Seaside
Sebastopol
Solvang
Simi Valley
Thousand Oaks
Watsonville
Willits
Big Valley
Rancheria

Who VOTED "No" on AMI?

Michigan—29

Counties

Allegan
Macomb
Oakland

Cities

Allen Park
Almont
Brighton
Brighton Twp
Caro
Dearborn Heights
Fairgrove
Farmington Hills
Grosse Pointe Shores
Grosse Pointe Woods
Harrison Twp
Livonia
Madison Heights
Oak Park
Reese
Rochester
Rochester Hills
Romulus
Royal Oak Twp
Shelby Twp
Southfield
Sterling Heights
Taylor
Troy
Vassar
Vassar Twp
Van Buren Twp
Warren
Ypsilanti

Who VOTED "No" on AMI?

British Columbia

Alert Bay
Burnaby
Central Saanich
Chawathil First Nation
Clearwater
Colwood
Duncan
Enderby
Fernie
Golden
Gold River
Granisle
Hagwilget Village First Nation
Highlands District
Hornby Island
Invermere
Islands Trust (Bowen Island, all Gulf Islands)
Kootenay Boundary
Kootenay Central
Ladysmith
Lake Country / Winfield
Lake Cowichan
Langley Township
Maple Ridge
Metchosin
Montrose
Nanaimo
Nanaimo Regional District
New Denver
North Cowichan
North Saanich
North Vancouver City
Okanagan-Similkameen
Oliver
Osoyoos
Osoyoos Indian Band
Parksville
Penticton
Port Moody
Powell River
Qualicum Beach
Quatsino First Nation
Richmond
Saanich District
Salmon Arm
Sechelt
Sicamous
Sidney
Silverton
Slocan
Sooke
Squamish
Sunshine Coast Regional District
Surrey
Tofino
Ucluelet
Vancouver
Vernon
Victoria
White Rock

Who VOTED "No" on AMI?

Quebec
Laval
Longueuil
Mercier-Hochelaga-Maisonneuve
Rivière-des-Prairies–Pointe-aux-Trembles
St-Jean-sur-Richelieu
Repentigny
Brossard
Le Sud-Ouest
St-Jérôme (MRC)
Granby
Châteauguay
Mirabel
Mascouche
St-Eustache
Salaberry-de-Valleyfield
Lachine
Boucherville
Sorel-Tracy
Boisbriand
Ste-Thérèse
St-Contant
L'Assomption
Dorval
Mont-Saint-Hilaire
Deux-Montagnes
Ste-Marthe-sur-le-Lac
Ste-Anne-des-Plaines
Rosemère
Ste-Sophie (MRC)
Lavaltrie
Bécancour
St-Colomban
St-Adèle
Lachute
Prévost
Rawdon
Ste-Agathe-des-Monts (MRC)
St-Sauveur
Lorraine
Mont-Tremblant (MRC)
Otterburn Park
Saint-Hippolyte
Stoneham-et-Teewksbury
Coteau-du-Lac
St-Zotique
Saint-Philippe
Sainte-Anne-de-Bellevue
Les Coteaux
Rivière Rouge
Val-David
St-Jacques
St-Ambroise-de-Kildae
Sutton
Morin-Heights (MRC)
St-Adolphe-d'Howard
Ormstown
St-Faustin–Lac-Carré
Crabtree
Ste-Anne-des-Lacs (MRC)
St-Thomas
St-Alexis-des-Monts
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The Team

- 3 unpaid professionals worked tirelessly to bring you this presentation
- A dozen or more dedicated professionals are working in a supporting capacity
- We are self-funded and have not received money from any corporation or government agency to bring you this important information

Rebuttal - General

- Technical
  - Only wireless options are being considered
  - What about Fiber Optics, Phone line, Power line communication options?
  - Transmission can be as high as 190,000 bursts per day
  - Hot Meter Bases - Digital/AMI meters more likely to short out and burn
- Dr. Asher Sheppard
  - did not address non-thermal effects
  - Interphone study (only study mentioned) has been shown to underestimate due to latency time
  - Corporations & Agencies referenced are not credible
- Dr. Robert Olsen's video did not measure in a real-time environment – transmission density is much higher
- Identified Benefits are mostly for the benefit of the utility

Cost/Benefit Analysis

- Analysis can be done with many slants
  - Profit focus – make money
  - Customer/Social focus – get services safely & affordably
- Depending on Focus, “Liabilities” (costs) and “Benefits” vary
  - SCL presents a “Profit” focus
  - SUMA (the people) are presenting a “customer” focus

Cost

- Capital Costs $70 million
  - Charged to the customer over 20 years
- Annual Costs $1.9 million
  - Rate hikes
- Breakeven year 2024
  - Not including liabilities
- $200 per year “estimated” cost of per customer
  - 31% increase to ratepayer from 2012-2018
  - Plus Meter “Accuracy”
  - Plus TOU
  - Plus Opt-Out

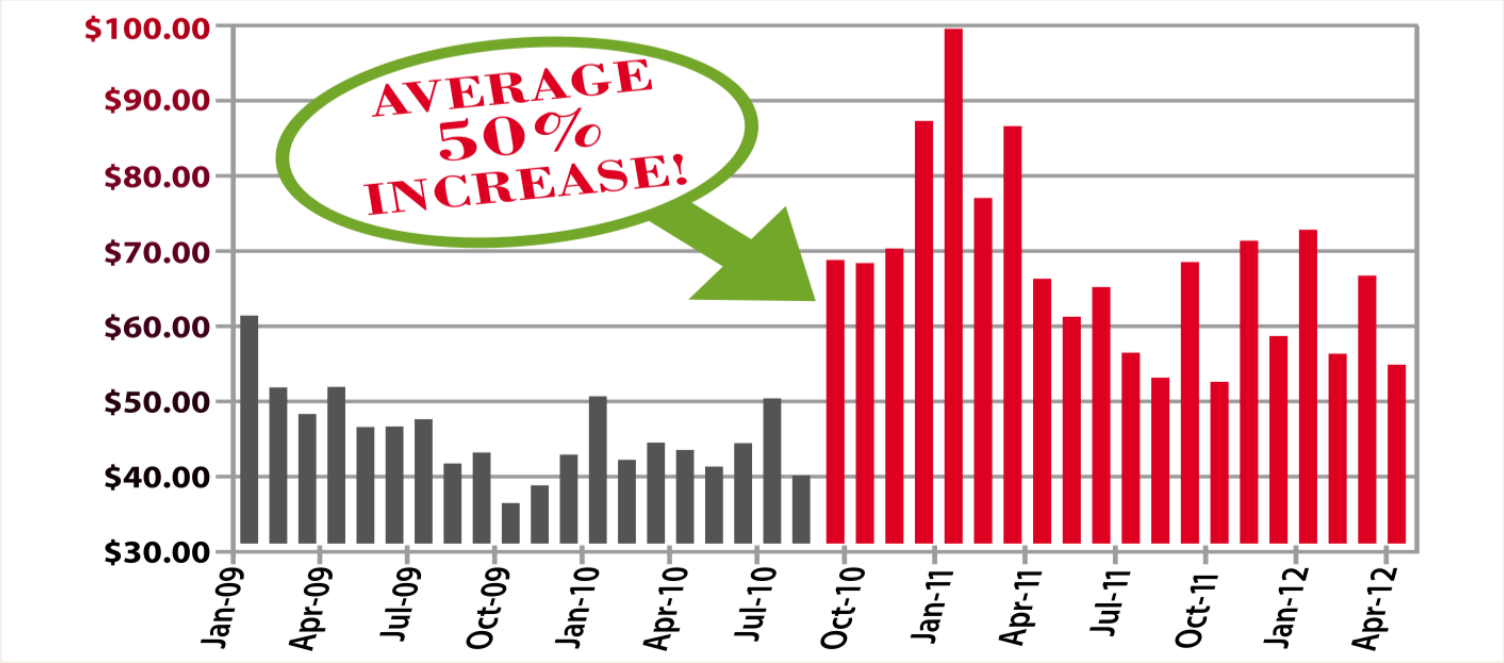
AMI Costs

Estimated AMI Costs for City Light

Line Item	Acquisition + Deployment Cost	Annual Operation + Maintenance
AMI Meters ($ thousands)	$60,715	$184
Communication Infrastructure	5,108	549
Master Station & IT Integration	2,739	153
Program Management	1,657	
Operations		1,034
Totals ($ thousands)	$70,220	$1,921
Overall acquisition + deployment cost per meter served = $171.00		

This is what we Expect

An SDG&E customer's bills show what the Utilities don't want YOU to know:

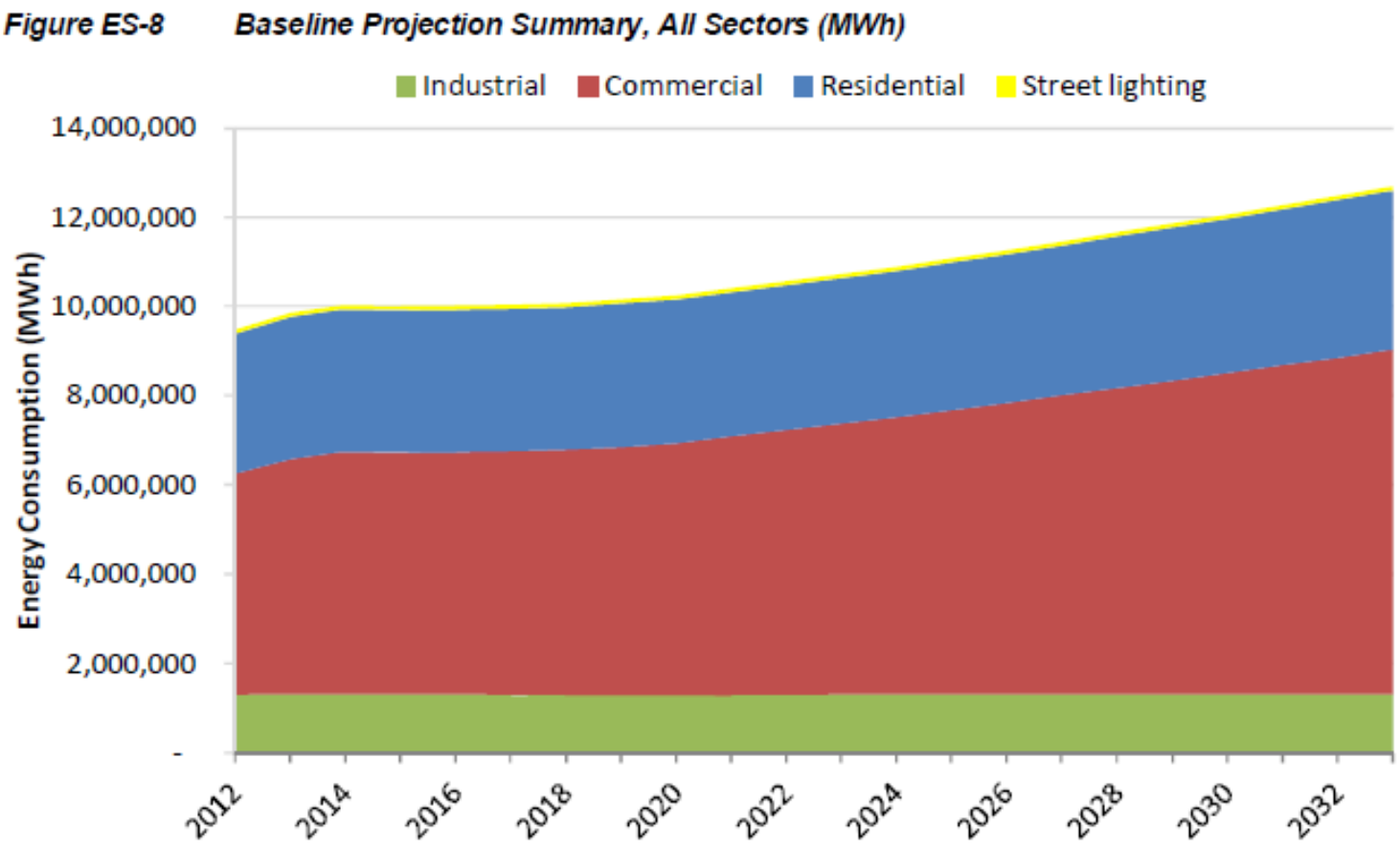


(Bills before and after "smart" meter install in Sept. 2010)

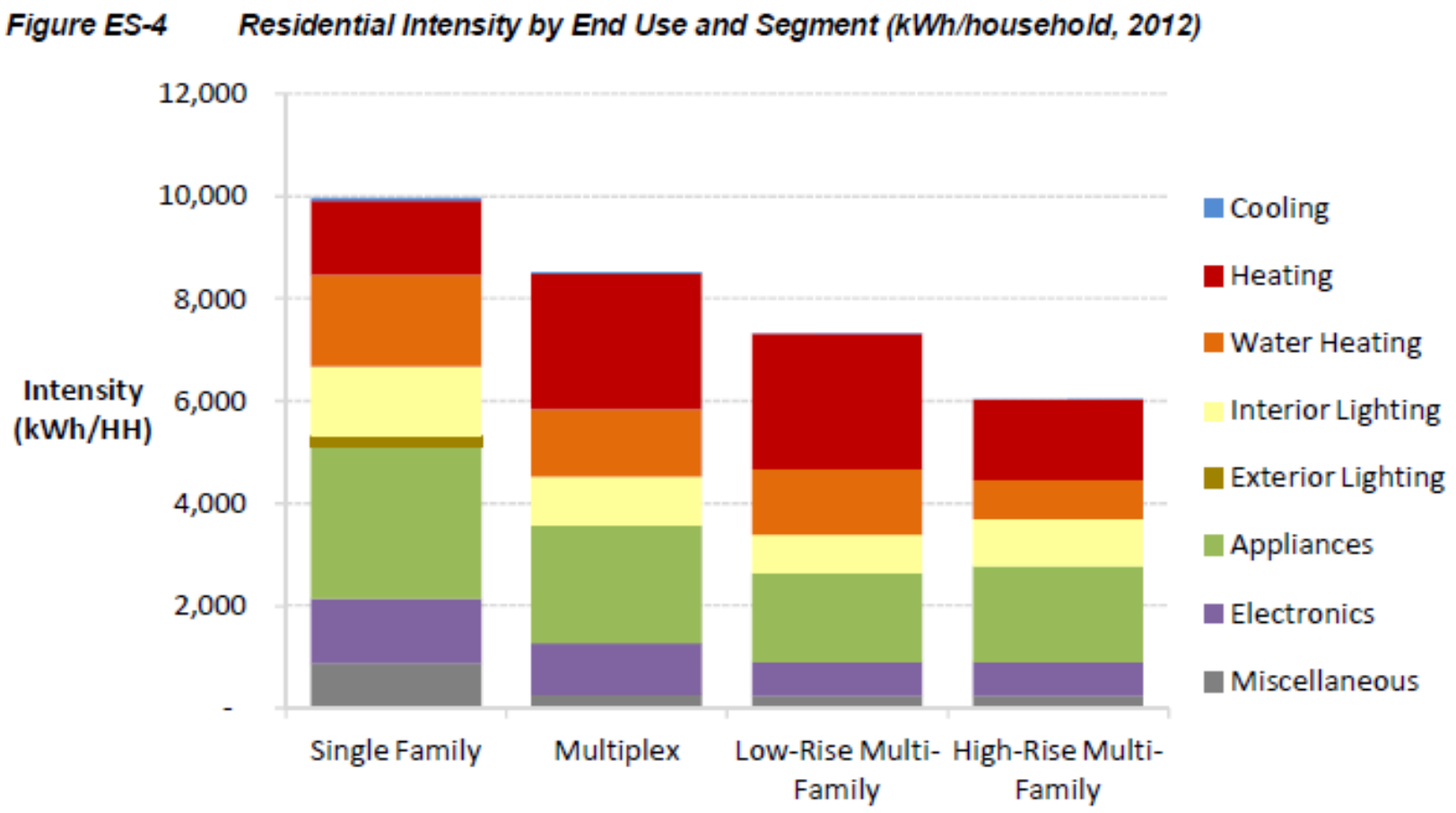
Liabilities

- "Estimated"
  - The costs/savings are speculative and likely conservatively projected. There are costly unknowns and there are "no" successful examples.
  - Southern California Edison estimated their rollout at $1.6 billion and actual cost was $5 billion
- "Accuracy"
  - SCL is claiming that the new meters will uncover significant undercharging, one of their biggest operational benefits according to their chart, worth ~25% of their savings
  - Energy Conservation data shows a different story
    - Residential energy usage is consistent and predictable
    - SCL shows efficiency details in their own data
    - http://www.seattle.gov/light/Conserve/docs/SCL_2013.pdf

Consistent & Predictable



Detailed Usage



Liabilities (cont.)

- Health
  - Swiss Re SONAR: Emerging Risk Insights report for the Insurance Industry – June 2013
  - National League of Cities Presentation
  - The EPA Naval Medical Research Institute reported in 1981 known effects of RF radiation
  - Independent Studies versus Industry Studies
- Fire Hazard – City Light will include shut-off sensors
  - Numerous utilities are being forced to replace defective AMI meters
    - Portland, OR – PGE
    - Lakeland, FL – Lakeland Electric
    - Philadelphia, PA - PECO
    - Saskatchewan, CA – SaskPower
    - Arizona Public Services

Swiss Re SONAR Report

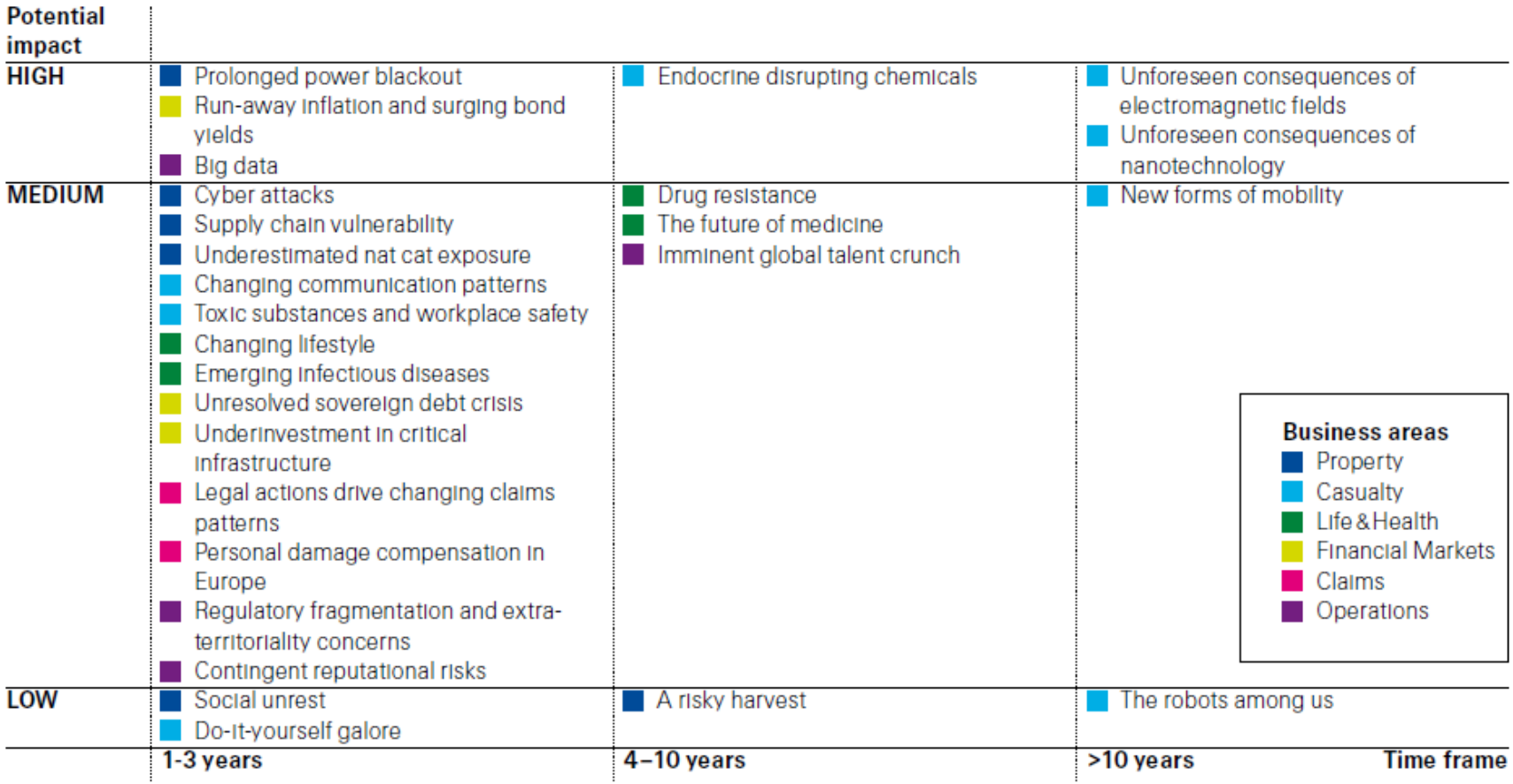


Figure 1
Overview of the emerging risk topics covered in this report by timeframe and potential impact. Colour coding indicates which area of the insurance business would potentially be most impacted by the respective risk.

Liabilities (cont.)

- Privacy and Household Security Risk
  - Privacy versus Confidentiality
  - DOE survey
    - 75% consider it very or somewhat important that electric usage data be kept confidential
  - Data Privacy - City Light is bound by RCW 42.56.335
    - Addresses other government agencies
    - Says nothing about selling to 3rd Parties
  - Security - Data will be encrypted
    - City Light is protected but not the customer
    - Customers have no infrastructure security
  - Puerto Rico utility – "smart" meter hacking may have cost the utility hundreds of millions of dollars

Privacy Concerns

Summary of Privacy Concerns Related to Smart Meters

Application Group	Example Concern	References
Illegal Uses	Burglars finding out when homes are unoccupied. Stalkers tracking the movements of their victims.	(Lisovich et al., 2010; Quinn, 2009; Cavoukian et al., 2010; McDaniel, 2009; Lerner and Mulligan, 2008; Subrahmanyam, 2005)
Commercial Uses	Targeted advertising: use of individual or aggregated household smart meter data to target advertising at a specific household or individual. *Note*: Use of aggregated or 'anonymous' data may be more acceptable than use of individual household data. Insurance adjusting e.g. do you tend to leave your appliances on when away from home?	(Lisovich et al., 2010; Quinn, 2009; Cavoukian et al., 2010; McDaniel, 2009; Anderson and Fuloria, 2010; Bohli et al., 2010)
Uses by law enforcement agencies	Detection of illegal activities e.g. sweatshops, unlicensed commercial activities, and drug production. Verifying defendant's claims e.g. that they were 'at home all evening'.	(Lisovich et al., 2010)
Uses by other parties for legal purposes	In a custody battle: do you leave your child home alone? In a landlord–tenant dispute: is the property over-occupied?	(Quinn, 2009)
Use by family members and other co-inhabitants	One householder 'spying' on another e.g. parents checking if their children are sleeping or staying up late playing video games. Partners investigating each other's behavior.	(Hargreaves et al., 2010)

Source: Table 1 of "Smart Meter Data: Balancing Consumer Privacy Concerns with Legitimate Applications," McKenna, et. al., *Energy Policy*, 41 (2012) pp 807-814.

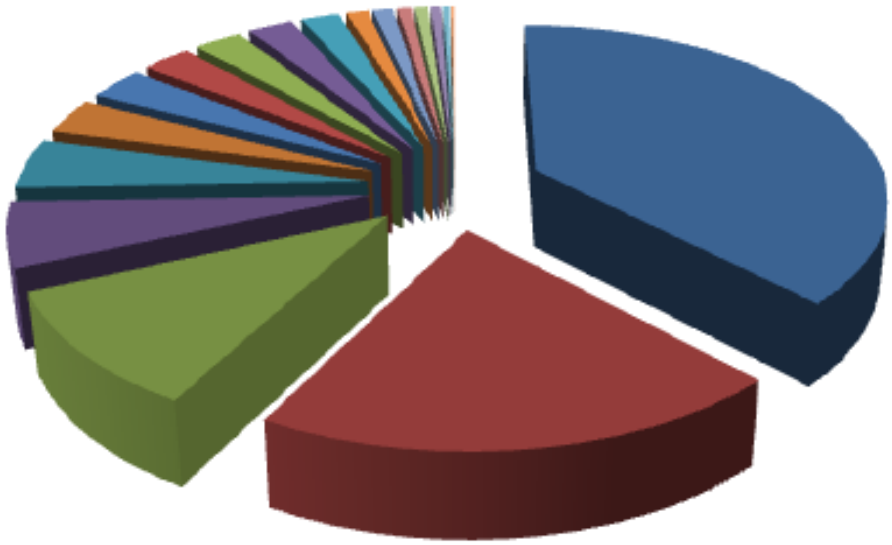
Liabilities (cont.)

- Smart Grid Instability/Vulnerability Risk
  - AMI meters in Seattle will give 400,000 new access points to attack the grid
  - US Senate – "The US electricity grid is dangerously vulnerable to sabotage by hackers, spies and terrorists, despite a seventy year effort to protect it from cyber attacks"
  - CIA Director, Leon Panetta – "I've often said that there's a strong likelihood that the next Pearl Harbor that we confront could very well be a cyber attack that cripples our power systems, our grid"
  - Grid is unstable even without AMI meters
    - Consider the 2003 East Coast Blackout
    - There are only 9 substations needed to take out all of the US for months

SCL Benefits

- 18 “Smart” Grid Benefits were listed - June 26, 2012
  - AMI Meters are NOT required to achieve benefits of “Smart” Grid
  - Virtually all benefits are to the Utility NOT to the customer
  - There are essentially NO Energy Savings (Environmental Impact & Conservation)
    - Carbon Dioxide Reduction
      - At least 50 less vehicles on the roads annually
      - More efficient, and less frequent field investigations & work
    - System support for Plug-in Electric Vehicles
    - Net metering Solar and distributed generation
    - Greater conservation information and tools
    - Potential to manage appliances and load remotely (Home Area Network)
  - Operational Savings for SCL

SCL Operational Benefits



- Meter Reading
- Meter Accuracy
- Cash Flow on Standard Billing
- Billing QA/QC Exceptions - Backoffice
- Meter Replacement & Salvage
- Avoided Transformer Overloads
- Connects, Disconnects, & Acct Transfers - Office Process
- Right-of-Way Maintenance
- Connects, Disconnects, & Acct Transfers - Field Process
- Uncollectible Accounts on Standard Billing
- Unbilled Accounts
- Billing QA/QC Exceptions - Field
- Meter Data - Miscellaneous
- Transformer Loading & Sizing
- Outage Restoration
- Group Accounts
- Billing QA/QC Exceptions - Meter Testing
- Bill Complaints & Questions

Notes:

- Benefits are shown for the year following deployment completion, after which inflation may affect some more than others.
- Includes benefits in traditional utility operations only
- Benefits of new customer programs and distribution management excluded

Customer Benefits?

- Increased cost
  - 31% increase in rates is NOT acceptable
- Increased risk
  - Privacy, Fire & Health risks are NOT acceptable
- Benefits - (AMI meter NOT required)
  - Distribution Management; Voltage optimization, automated feeder sectionalizing
  - New Customer Programs; Demand response, load management, electric vehicles
  - Societal – Economic; Improved regional business climate
  - Societal – Environmental; Long term energy use reductions

Better Ways to Invest

- Trends are toward Distributed/Off-Grid Solutions
  - Report: Increasing number of homeowners turning on to off-grid living – 9/5/14
- Renewable Energy
  - Distributed PV or Wind farms
- Conservation Program
  - City Light – "Conservation is the least-cost, least risk, greatest environmental benefit"
  - "Money invested in conservation gets much more back in benefits for the utility, for those directly doing the conservation and for the general public."

Previous Conservation Goals

Five Year Plan			
Year	aMW[1]	MWhs[2]	$ Million[3]
2007	7.25	63,510	$20.19
2008	8.4	73,804	$25.03
2009	12.2	180,521	$41.94
2010	14.5	307,070	$46.13
2011	15.1	439,561	$50.17
2012	15.3	573,807	$51.33
2008-2012 TOTAL	**65.5**	**573,807**	**$214.60**

Total Energy 2012

Table ES-3 Customer Counts and Energy Sales by Sector, 2012

Sector / Rate Class	Number of meters (customers)	2012 Electricity sales (MWh)
Residential	362,524	3,146,951
Commercial	40,084	4,961,098
Industrial		1,294,369
Street Lighting	3,301	91,879
Total	**405,909**	**9,494,297**

Conservation vs. Smart Meters

- "Conservation is the least-cost, least risk, greatest environmental benefit"
  - Smart meters very risky, high cost, little environmental benefit
- Savings: City Light-$274m, Participating Customers-$169m, Service Territory $120m
  - Higher customer rates, not savings
- CO2 reductions: 1m metric tons
  - Little or no environmental benefit
- Employment: 1,700-3,400 more jobs
  - Fewer jobs, meter readers laid off
- Smart meter costs reduce investment in conservation and its benefits

Vote “NO” on AMI

- Invest “our” money in creating real customer benefits
- “Liabilities” are unacceptable risk to customers
- Energy costs are too high already, customers cannot afford to pay for experimental projects
- Yes! We have to do something!
  - Distributed Energy
  - More Conservation
  - More Renewables

Timothy Schoechle, PhD

is author of the landmark white paper, “Getting Smarter About the Smart Grid”, published by the National Institute for Science, Law and Public Policy in Washington, D.C. This white paper critiques the present approach to the smart grid and describes what a truly smart electricity grid would look like, one that is capable of integrating “distributed” power generation from renewable and sustainable energy sources without the privacy, security, cost, reliability, radiation, or potential public health impacts of the present approach. Dr. Schoechle has been engaged in engineering development of electric utility gateways and energy management systems for over 25 years. He is an expert on the international standards system and serves as secretariat of ISO/IEC SC32 Data Management and Interchange, and Secretary of ISO/IEC SC25 Working Group 1, the international standards committee for Home Electronic Systems. Dr. Schoechle is a founder of BI Incorporated, pioneer developer of RFID technology, and former faculty member of the University of Colorado College of Engineering and Applied Science. He holds an M.S. in telecommunications engineering and a Ph.D. in communications policy from the University of Colorado.