

# RESIDENTIAL DEMAND CHARGES: A CONSUMER PERSPECTIVE

---

Note: This presentation does not reflect the views of any current or future client.



Barbara R. Alexander  
Consumer Affairs Consultant  
83 Wedgewood Dr.  
Winthrop, Maine 04364  
(207)395-4143  
E-mail: [barbalex@ctel.net](mailto:barbalex@ctel.net)

# DEMAND CHARGES

---

- What are we talking about here?  
Generally, a move to require residential customers to pay more in fixed charges and less in variable kWh charges
- Demand Rates: charge a fee that varies each month based on the customer's highest actual demand (kW)
- Increased monthly charge: charge a fixed fee that shifts some distribution costs into monthly customer charge

# CURRENT TRENDS: USING LESS AND PAYING MORE

---

- Efficiency Programs
- Smart Meter Mandates
- Renewable Energy Mandates
- Distributed Generation and Solar PV Mandates: Net Metering Subsidy Shifted to other ratepayers
- Enhanced Storm Resiliency and Distribution Infrastructure Investments
- Transmission Costs: Federal and State
- In some states, costs of low income discount or bill assistance programs

## STATES WITH PRICES THAT ARE HIGHEST ARE ALSO THOSE WITH MANDATES

---

- California: IOU average is 20 cents per kWh for 500 kWh usage
- Massachusetts: 16 cents per kWh
- New York: Highest prices and rates in continental U.S.

# California

## Electric bills differ

A survey of electricity providers, comparing October 2014 bills at different usage levels, found that the private companies charge more than municipal utilities.

	2,000 kWh	1,000 kWh	500 kWh	200 kWh
Edison	\$542.99	\$255.06	\$97.34	\$30.63
PG&E	598.05	263.86	93.11	31.50
SDG&E	723.11	311.71	116.42	34.84
<b>Private average</b>	<b>621.38</b>	<b>276.88</b>	<b>102.29</b>	<b>32.32</b>
Los Angeles	\$344.92	\$167.56	\$78.88	\$29.87
Sacramento	311.33	136.03	58.30	30.52
Anaheim	379.86	182.31	83.54	29.14
Burbank	347.67	162.66	75.87	29.25
Glendale	340.86	160.70	74.01	32.94
Pasadena	396.12	195.99	88.04	33.78
Riverside	363.57	171.55	81.23	39.86
Azusa	339.71	167.67	81.65	31.68
Banning	508.63	212.42	99.80	37.81
Colton	450.79	188.01	72.71	19.58
Imperial Irrigation Dist.	250.34	127.02	65.36	28.37
Vernon	179.17	91.10	47.07	20.65
<b>Public average</b>	<b>351.08</b>	<b>163.59</b>	<b>75.54</b>	<b>30.29</b>

Sources: Survey by Southern California Public Power Authority, San Diego Union-Tribune

Los Angeles Times

# MASSACHUSETTS

---

Customer Charge \$4.00/month Distribution Charge \*  
First 600 kWh: 3.981¢/kWh  
Excess of 600 kWh: 4.643¢/kWh

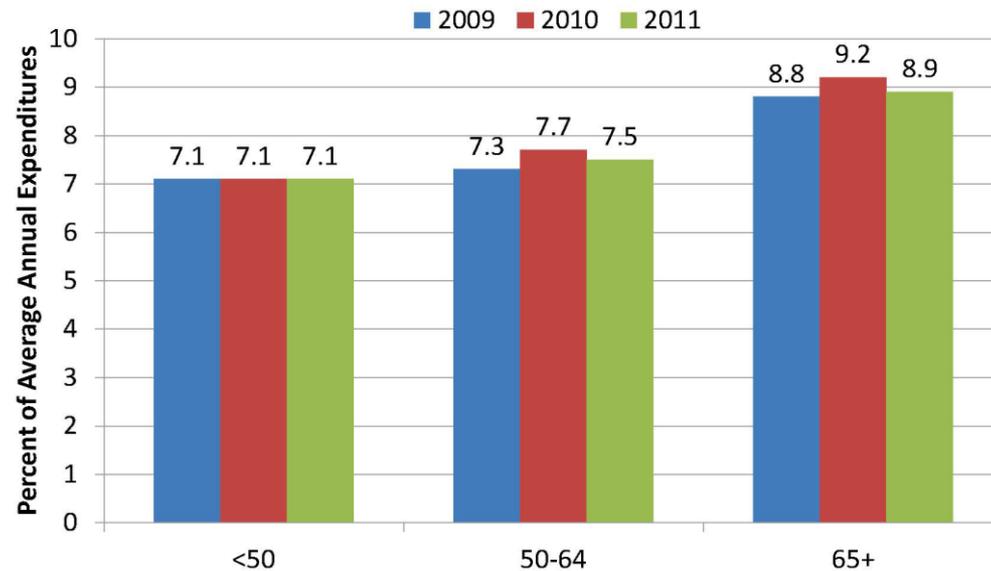
Transmission Charge 2.614¢/kWh Transition Charge (0.164¢)/kWh  
Energy Efficiency Charge 1.624¢/kWh Renewables Charge  
0.050¢/kWh

\* Includes: Basic Service Adjustment Factor (0.084¢), Residential Assistance Adjustment Factor 0.391¢, Storm Fund Replenishment Adjustment Factor 0.266¢, Pension/PBOP Adjustment Factor 0.244¢, Revenue Decoupling Mechanism Factor 0.179¢, Net CapEx Factor 0.223¢, Attorney General Consultant Expenses Factor 0.001¢, Solar Cost Adjustment Factor 0.007¢ and Smart Grid Distribution Adjustment Factor 0.027¢.

Basic Supply Charge in June 2015: 8.076 cents/kWh

# Energy Expenditures: Age 50+

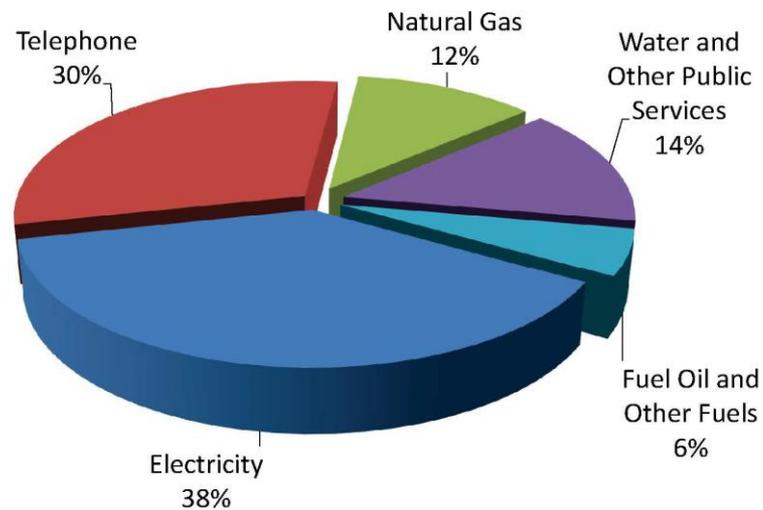
Figure 1. Utility Expenditures Comprise a Higher Percentage of Average Annual Expenditures for Consumers Age 50+



Source: AARP Public Policy Institute analysis of 2009, 2010, and 2011 Consumer Expenditure Surveys.

# ELECTRICITY IS LARGEST EXPENDITURE

Figure 2. Expenditures on Electricity Comprise the largest Portion of Utility Expenditures for 50+ Consumers



Source: AARP Public Policy Institute analysis of 2011 Consumer Expenditure Survey.

# CURRENT TRENDS: RATE DESIGN IS A ZERO SUM GAME

---

- Whatever the level of rate charges, the entire rate design must recover the test year revenue requirement for each class. For every dollar that is recovered via fixed or demand charges, a dollar less needs to be recovered from the energy charge. The converse is also true.
- Utilities are protected with “bill stabilization,” “decoupling,” and “lost sales revenue” mechanisms OR THEY WILL FILE A RATE CASE



# RETAIL COMPETITION MARKETS: 20 STATES

---

- Supposedly, the wholesale market sets generation supply prices and local utilities are not “in the game.”
- Hah! Everyone of these states have adopted mandates for efficiency, renewable generation supply, solar PV, distributed generation and the costs are imposed on distribution system ratepayers



# WHO ARE THE LOSERS?

---

- Whose bill will increase with demand charges or fixed monthly charges? Who pays for mandates and subsidies for efficiency and solar programs?
  - Low use customers
  - Low income and fixed income customers
  - Renters/multi-unit residents

# WHO ARE THE WINNERS?

---

- Who are those who are likely to benefit from demand rates and higher fixed monthly charges?
  - Upper income: investments in home improvements, new technologies and appliances; income or credit rating to purchase solar
  - Better education: understand complex rate designs and bills; time and energy to learn and respond
  - Single Family Homeowner



# RESIDENTIAL DEMAND CHARGES

---

- Is this being promoted to ensure that solar PV customers pay their fair share?
  - Consider alternative rates for solar PV customers and customers with electric vehicles

# RESIDENTIAL DEMAND CHARGES

---

- Is this being promoted to respond to the utility “death spiral” and loss of sales revenues?
  - Where are the efficiencies and performance standards?
  - Proliferation of unregulated affiliates and mergers and acquisitions to benefit shareholders
  - The “death spiral” is highly overrated in actual fact.

# SENDING THE “PROPER PRICE SIGNAL”

---

- First, you have to understand the “signal” being sent.
- Second, you have to have the means to respond.
- When the bill is “unbundled” and the rate tiers proliferate and the surcharges are listed, what is the “signal” and who can understand it?
- Utilities emphasize the total bill and require payment to avoid disconnection

# CAN YOU UNDERSTAND THIS PRICE SIGNAL?



A PHI Company

**DISTRICT OF COLUMBIA  
RESIDENTIAL SERVICE  
SCHEDULE R**

UPDATED MARCH 6, 2015

	Billing Months of June – October 2014 (Summer)	Billing Months of November 2014 – May 2015 (Winter)	Billing Months of June – October 2015 (Summer)	Billing Months of November 2015 – May 2016 (Winter)
<b>Generation<sup>1</sup></b>				
Minimum charge *	\$ 2.28 per month	\$ 2.25 per month	\$ 2.38 per month	\$ 2.41 per month
In excess of 30 kwh	\$ 0.07207 per kwh	\$ 0.07104 per kwh	\$ 0.07589 per kwh	\$ 0.07692 per kwh
Admin Charge **	\$ 0.00400 per kwh	\$ 0.00400 per kwh	\$ 0.00350 per kwh	\$ 0.00350 per kwh

Procurement Cost Adjustment <http://www.pepco.com/my-home/choices-and-rates/district-of-columbia/tariffs/> for monthly rate

	Billing Months of June – October (Summer)	Billing Months of November – May (Winter)
<b>Transmission<sup>2</sup></b>		
Minimum charge ***	\$ 0.12 per month	\$ 0.12 per month
In excess of 30 kwh	\$ 0.00704 per kwh	\$ 0.00704 per kwh

<b>Distribution<sup>3</sup></b>		
Customer Charge Residential	\$ 13.00 per month	\$ 13.00 per month
Customer Charge Master Metered Apartments	\$ 10.25 per month	\$ 10.25 per month
First 400 kwh	\$ 0.00759 per kwh	\$ 0.00759 per kwh
In excess of 400 kwh	\$ 0.02166 per kwh	\$ 0.01512 per kwh

<b>Delivery Tax<sup>4</sup></b>	\$ 0.0070 per kwh	\$ 0.0070 per kwh
---------------------------------	-------------------	-------------------

**Public Space Occupancy**

<b>Surcharge<sup>5</sup></b>	\$ 0.00205 per kwh	\$ 0.00205 per kwh
------------------------------	--------------------	--------------------

**Administrative Credit** <http://www.pepco.com/my-home/choices-and-rates/district-of-columbia/tariffs/> for monthly rate

<b>Sustainable Energy Trust Fund<sup>6</sup></b>	\$ 0.00150 per kwh	\$ 0.00150 per kwh
--	--------------------	--------------------

<b>Energy Assistance Trust Fund<sup>7</sup></b>	\$ 0.0000607 per kwh	\$ 0.0000607 per kwh
---	----------------------	----------------------

<b>RADS Surcharge<sup>8</sup></b>	\$ 0.000294 per kwh	\$ 0.000294 per kwh
-----------------------------------	---------------------	---------------------

**Bill Stabilization Adjustment<sup>9</sup>** <http://www.pepco.com/my-home/choices-and-rates/district-of-columbia/tariffs/> for monthly rate

<b>Underground Project Charge<sup>10</sup></b>	\$ 0.00 per kwh	\$ 0.00 per kwh
--	-----------------	-----------------

\* The minimum charge includes the first 30 kWh or fraction thereof of consumption. The minimum charge for the period June 2014 through May 2015 includes an administrative charge of \$0.12 per month. The minimum charge for the period June 2015 through May 2016 includes an administrative charge of \$0.105 per month. This charge is derived by multiplying the administrative charge in effect by the 30 kWh, the quantity assumed in the minimum charge. The administrative charge is \$0.0040 per kWh from June 2014 through May 2015, and \$0.00350 per kWh from June 2015 through May 2016.

\*\* The Admin Charge was previously included in the generation rate. This is not a new charge.

\*\*\* The Minimum charge includes the first 30 kWh or fraction thereof of consumption.

<sup>1</sup> Rates are effective with Usage on and after the period as referenced above

<sup>2</sup> Effective Usage on and after December 1, 2014

<sup>3</sup> Effective Usage on and after April 16, 2014

<sup>4</sup> Effective January 1, 2009

<sup>5</sup> Effective March 1, 2014

<sup>6</sup> Effective October 1, 2010

<sup>7</sup> Effective Billing Month of October 2010

<sup>8</sup> Effective Service on and after March 1, 2014

<sup>9</sup> Effective January 1, 2010

<sup>10</sup> Effective Usage on and after January 1, 2015

# CUSTOMER UNDERSTANDING:

## Georgia Power Optional Residential Demand Rate

---

- **There are two ways to manage your bill on the Residential Demand Rate:**
- Avoid simultaneous use of major appliances. If you can avoid running appliances at the same time, then your peak demand would be lower. This translates to less demand on Georgia Power Company, and savings for you! Each month the demand resets after your meter is read.
- Shift energy usage away from the On-Peak time periods (2 PM – 7 PM, Monday – Friday, June-September, excluding holidays).  
Here are four ways to shift usage:
  - Use a programmable thermostat to increase the temperature in your home to 78-80 degrees during summer weekdays
  - Use a timer on your water heater
  - Avoid using major appliances such as washers, dryers and dishwashers during the peak time period
  - Use a timer on your pool pump so that it automatically shuts off
- **Who could benefit from the Residential Demand Rate?**
- Customers who pay attention to WHAT appliances are running and WHEN the appliances are running
- Customers who have a programmable thermostat and have timers on other appliances

# COMED IN ILLINOIS: MANDATORY DEMAND CHARGES

---

- ComEd in Illinois has promoted legislation to move all residential customers to demand charges and has linked this proposal with new investments in Distributed Energy Resources.
- The result: ComEd's revenues guaranteed by fixed charges.
- ComEd operated a 8,000 opt out dynamic pricing pilot in 2012 that recorded no statistically valid peak load reductions or usage reductions!
- ComEd gets its mandates through legislation and without any reliance on evidentiary hearings that document costs and benefits.



## DO YOU REALLY BELIEVE MOST CUSTOMERS CARE ABOUT HOURLY PRICES AND “DEMAND” FACTORS FOR THEIR APPLIANCES?

---

- Customers will be engaged if the options are understandable, easy to implement, automated where possible, result in measurable bill savings, and presented by a trusted advisor;
- Most Likely Success with Peak Time Rebates and Direct Load Control (“set it and forget it”)
- The market for solar PV is possible only with taxpayer and ratepayer subsidies that are not sustainable in their current form in the long run

# AFFORDABLE ESSENTIAL ELECTRIC SERVICE

---

- Affordability is a key criterion
- One size does not fit all: What may work in Arizona in terms of generation prices, housing, climate, and customer base may not be reasonable in New York or Massachusetts
- Rate design based on average costs is not a sin!
- Consider changes from the customer's perspective: moderation in mandates and rate design changes



# RATE DESIGN PRINCIPLES

---

- Who are the winners and losers? Bill impacts are key to develop and consider by regulators
- Consider short term costs and long term estimated predictions; risk analysis is crucial to identify and consider since we know from experience that regulators and policy wonks do not predict the future accurately
- Can you explain it to customers without technical jargon or economic theory?
- Is it fair to lower use, low income, fixed income and multi-unit customers?
- Are you predicting generation supply cost reductions? Or other predicted benefits in performance or affordability? Who assumes the risk of achieving these benefits?

# RATE DESIGN POLICIES

---

- Default rate design for residential customers should be flat rate
- Customer charges should reflect costs of customer specific charges and not common distribution charges
- Demand charge rates are highly unlikely to be reasonable or appropriate for vast majority of residential customers
- Offering rate options may be reasonable but should be approved only where benefits to all customers exceed the costs
- Solar PV customers should pay their fair share of distribution services and costs

# BIBLIOGRAPHY

---

- Bornstein, Severin, "Is the Future of Electric Generation Really Distributed?", <https://energyathaas.wordpress.com/>
- Allcott, Knittel, Taubinsky, "Tagging and Targeting of Energy Efficiency Subsidies," E2w Working Paper (May 2015)  
<http://e2e.haas.berkeley.edu/pdf/workingpapers/WP018.pdf#page=1>
- Costello, Kenneth, "Not so Fast: Why the Electric Industry May be Heading in the Wrong Direction," Public Utilities Fortnightly (March 2015)
- Alexander, Barbara, "An Analysis of State Renewable Energy and Distributed Generation Mandates on Low Income Consumers: Recommendations for Reform (September 2014)