

OPALCO

Revenue Shortfall Analysis

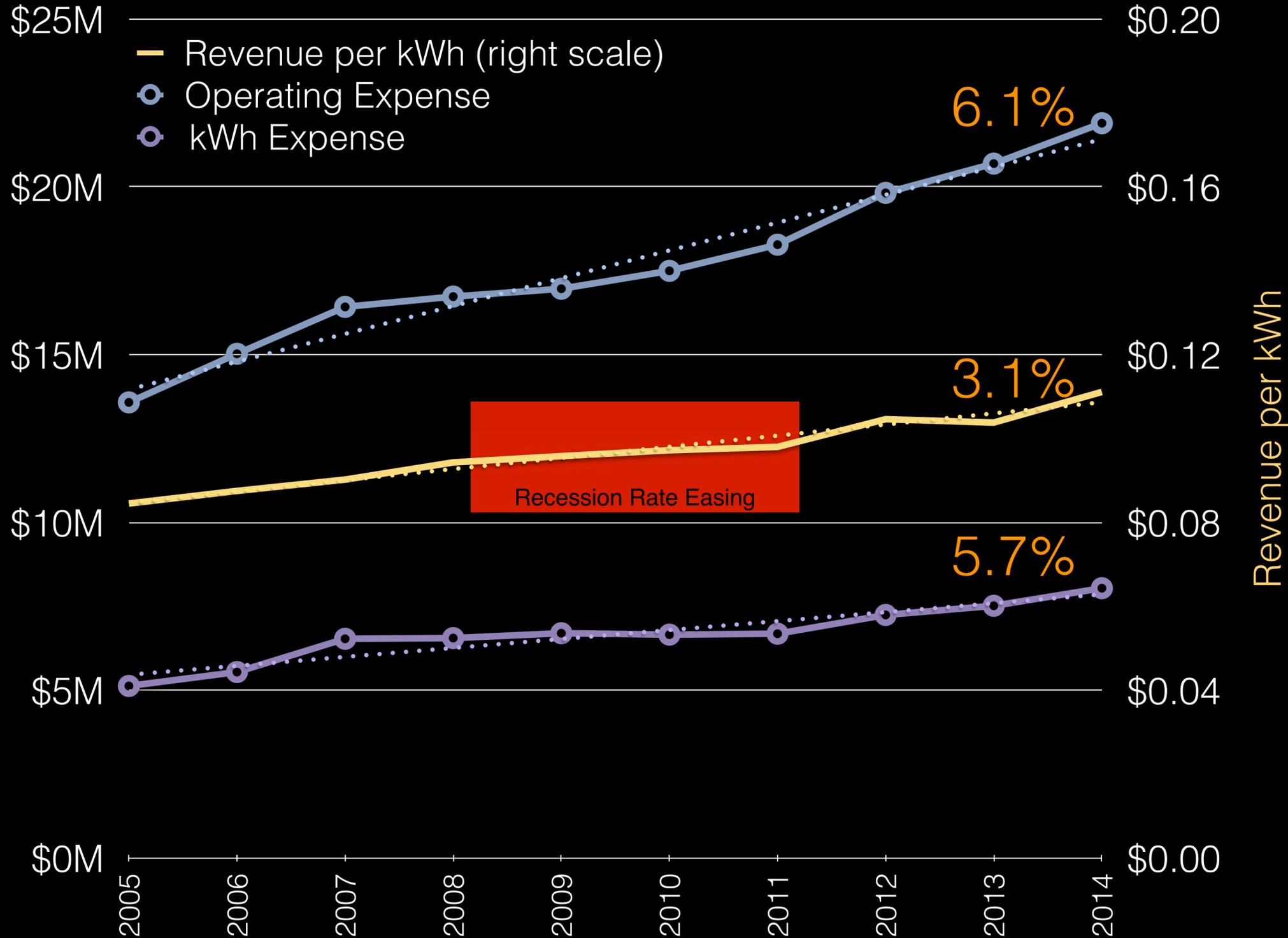
There are two distinct challenges we face.

Revenue has not kept pace with costs.

Unprecedented warming has reduced energy usage.

Revenue has not kept pace with costs.

Revenue And Expense Trends



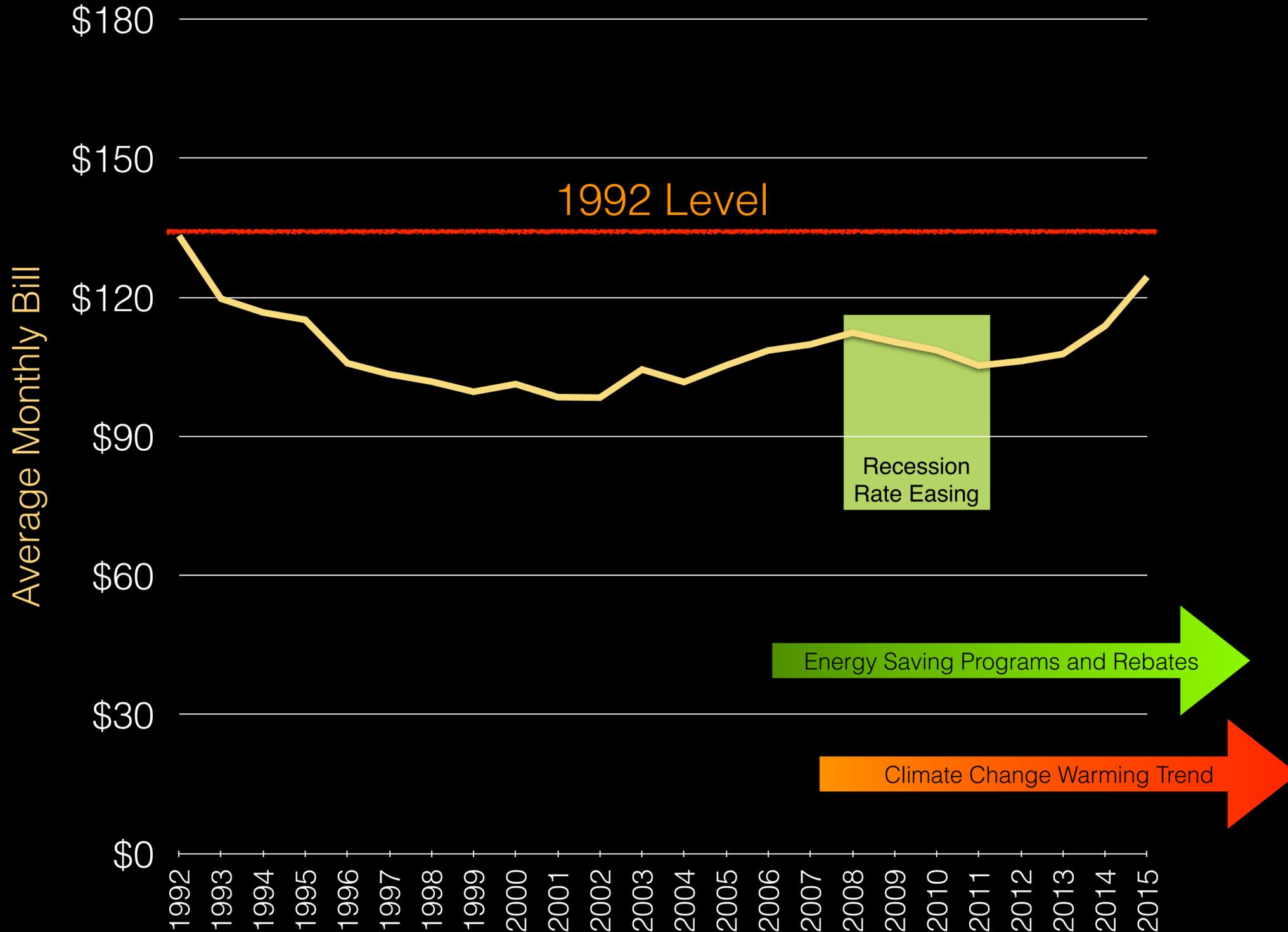
Headline

- OPALCO revenue has grown at only 3.1% annually, not keeping up with the 5.7% growth of energy expense and 6.1% growth of operating expense.

Notes

- Growth rates are average annual

History of 1,000 kWh Monthly Bill Inflation Adjusted



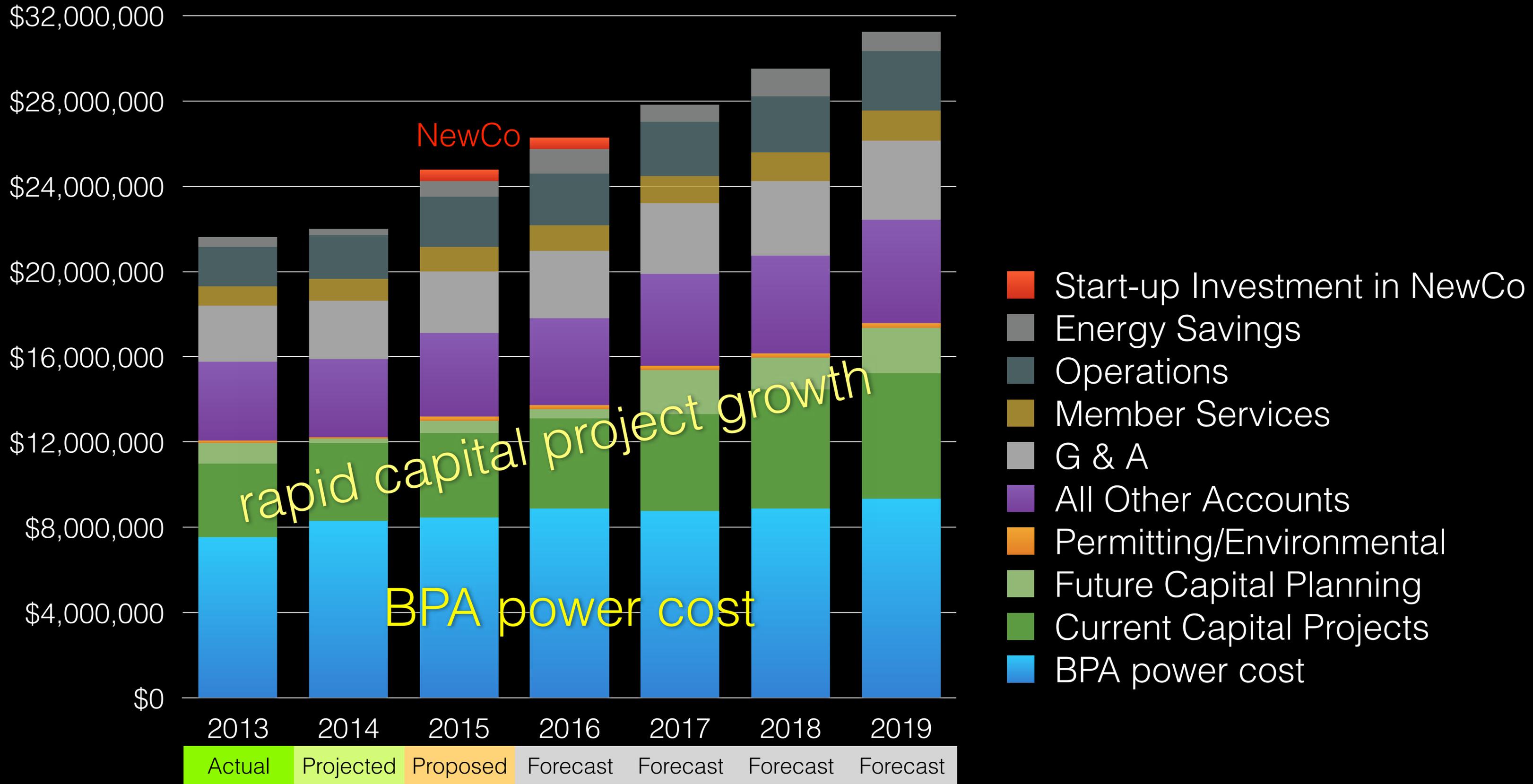
Headline

- OPALCO 2015 rates are lower than they were 23 years ago
- Rate has decreased an average of -.29% per year, 1992 through 2015

Notes

- 1992 through 2015, Residential
- Monthly bill for average OPALCO member usage of 1,000 kWh/month
- Monthly bill includes all Facility, Usage and Demand Charges.
- Rate increases postponed during 2008 - 2011 recession and after effects, to ease economic impact on county.

Revenue Allocation



Unprecedented warming has reduced energy usage.

We are in the midst of an unprecedented change in weather

The trends and analysis that follow are not unique to OPALCO

Every energy provider in the Northwest is experiencing similar impact

“Those with heavy residential member base are hurting the most.”

Bill = Rates X Weather

Warmer = Smaller Bill

Colder = Larger Bill

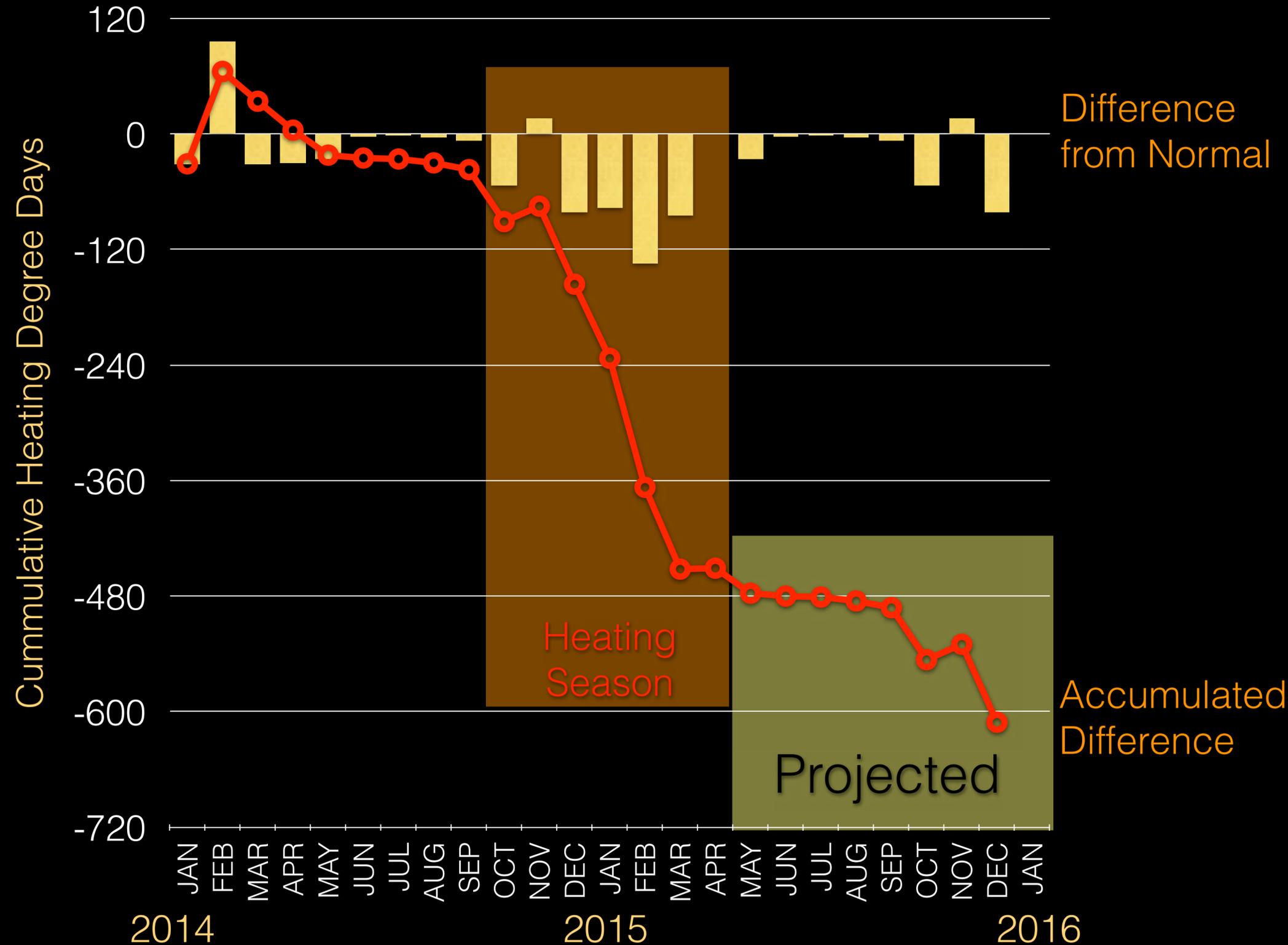
“A rate increase may not lead to an increase of member bills.”

Bill = Rates X Weather



Billing Periods	Apr 2014	Apr 2015	Difference
Billing Days:	03/12/2014 to 04/11/2014	03/12/2015 to 04/13/2015	
Days in Period:	30	32	↑ 2
Total Current Charge:	\$189.83 ←	\$105.25 ←	↓ -\$84.58 ←
Total Usage:	2,228.00 ←	1,231.00 ←	↓ -997 ←
Average Usage:	74.27	38.47	↓ -35.798
Max Temperature:	55°F	63°F	7°F
Min Temperature:	32°F	36°F	4°F
Avg Temperature:	46°F	49°F	3°F

Heating Degree Days



Headline

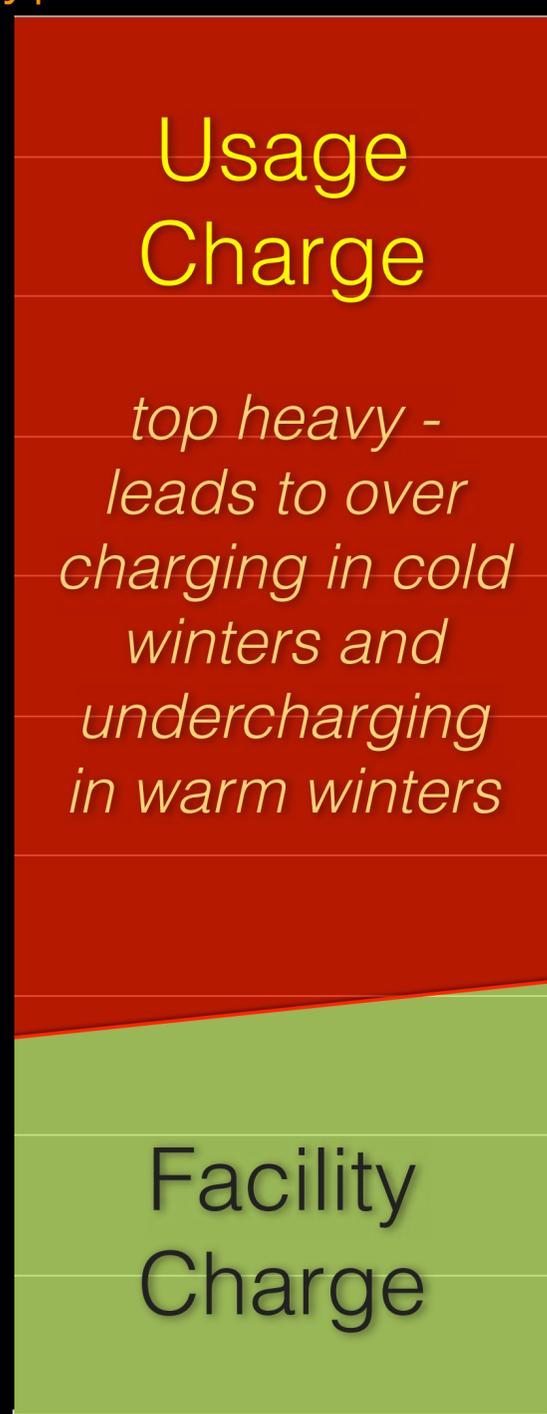
- A major decline in Heating Degree Days (HDD) started in October 2014
- In 2015, through April, HDD is down 36% from normal
- This is happening all over the Northwest region, with every electric utility and co-op

Notes

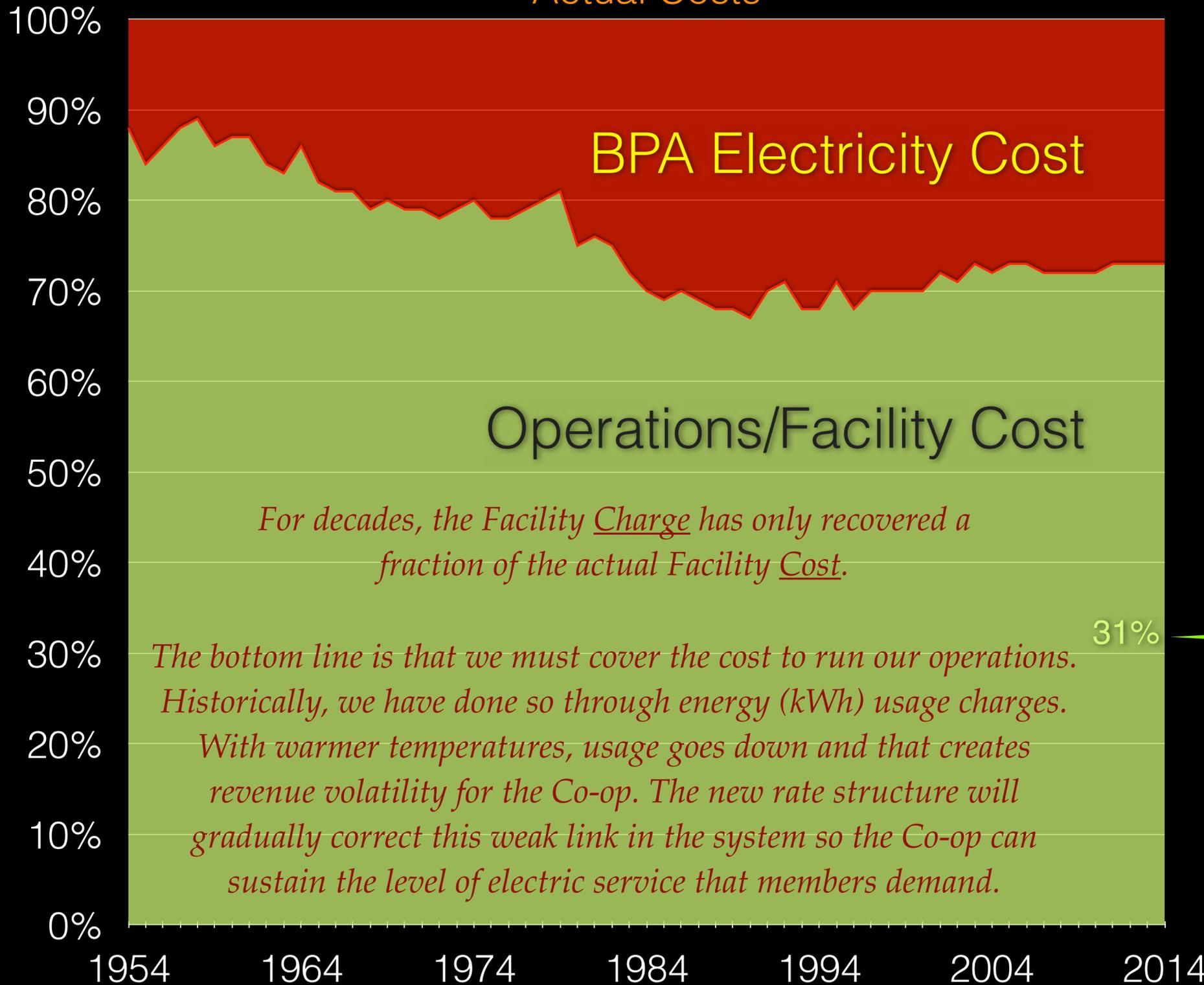
- HDD accumulate quickly in winter, slowly in summer
- Average/Normal is an average of data from 2000 through 2013, by month
- Projected HDD based on 2014 same month HDD

Billed Versus Actual Cost as a % of Total Cost

Typical Residential Bill



Actual Costs



2014

2015

1954

1964

1974

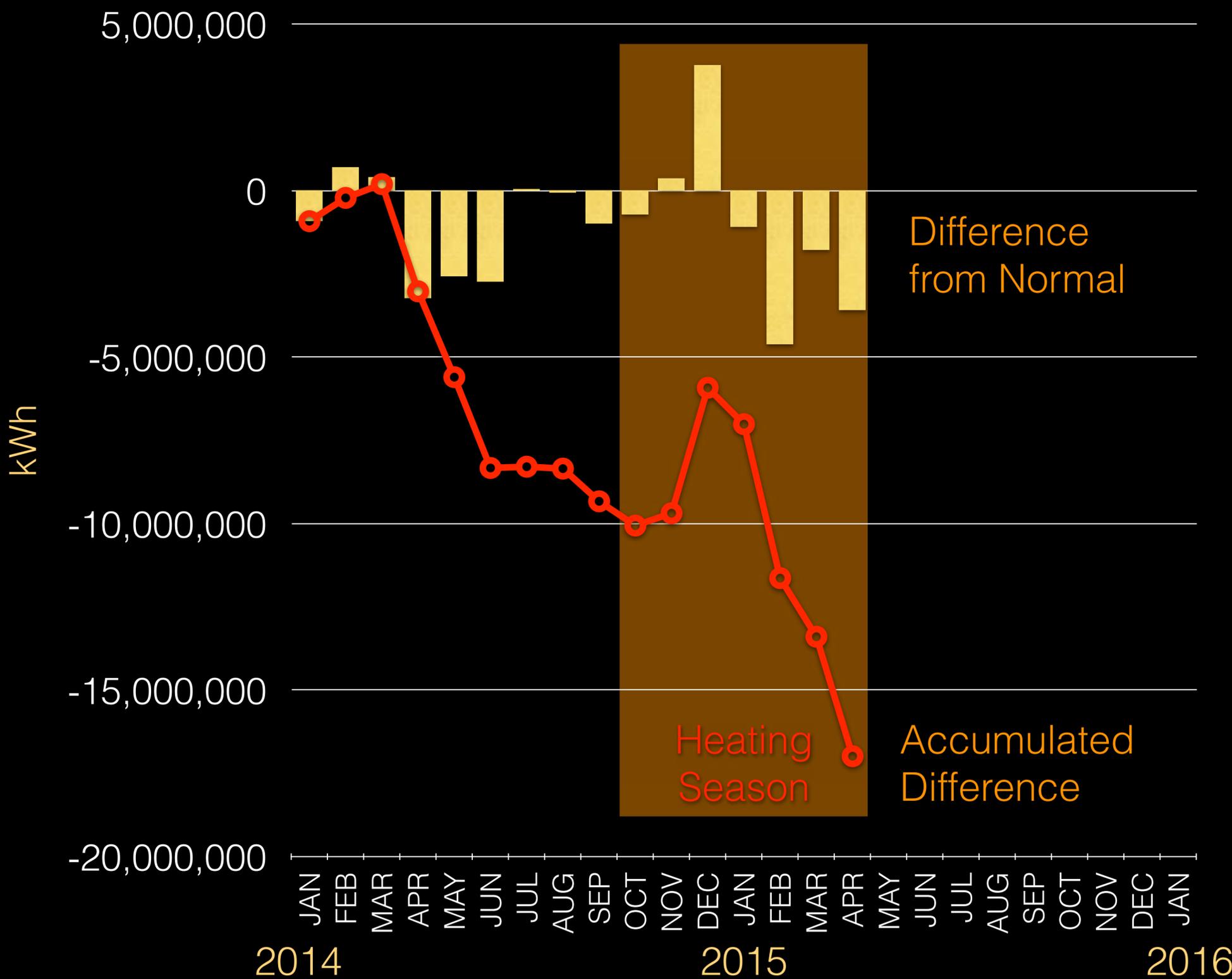
1984

1994

2004

2014

kWh Consumed



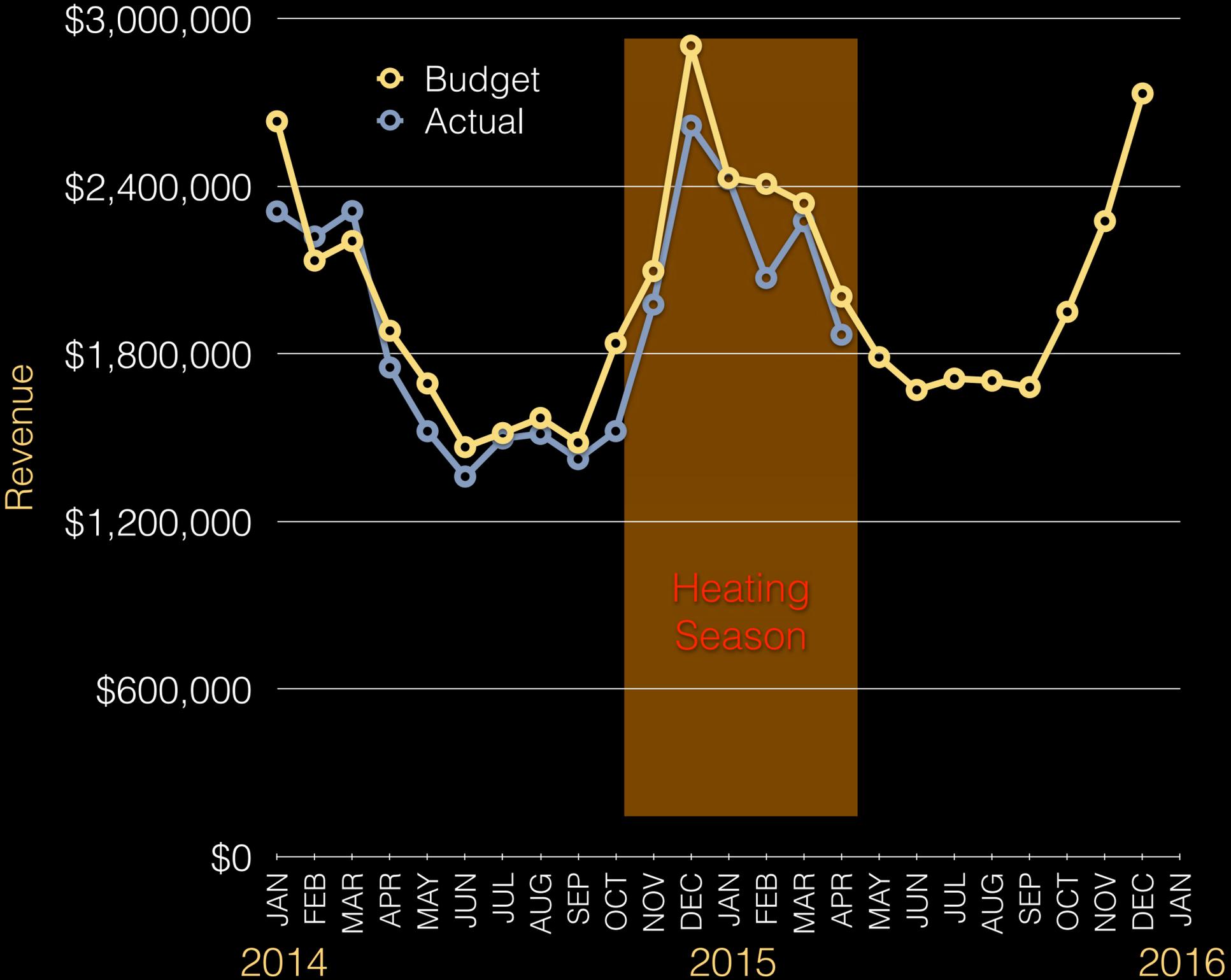
Headline

- Consumption of energy has fallen dramatically, driven primarily by warm weather, especially during this past winter heating season
- In 2015, through April, kWh is down 13% from normal

Notes

- Average/Normal kWh consumption is an average of data from 2000 through 2013, by month

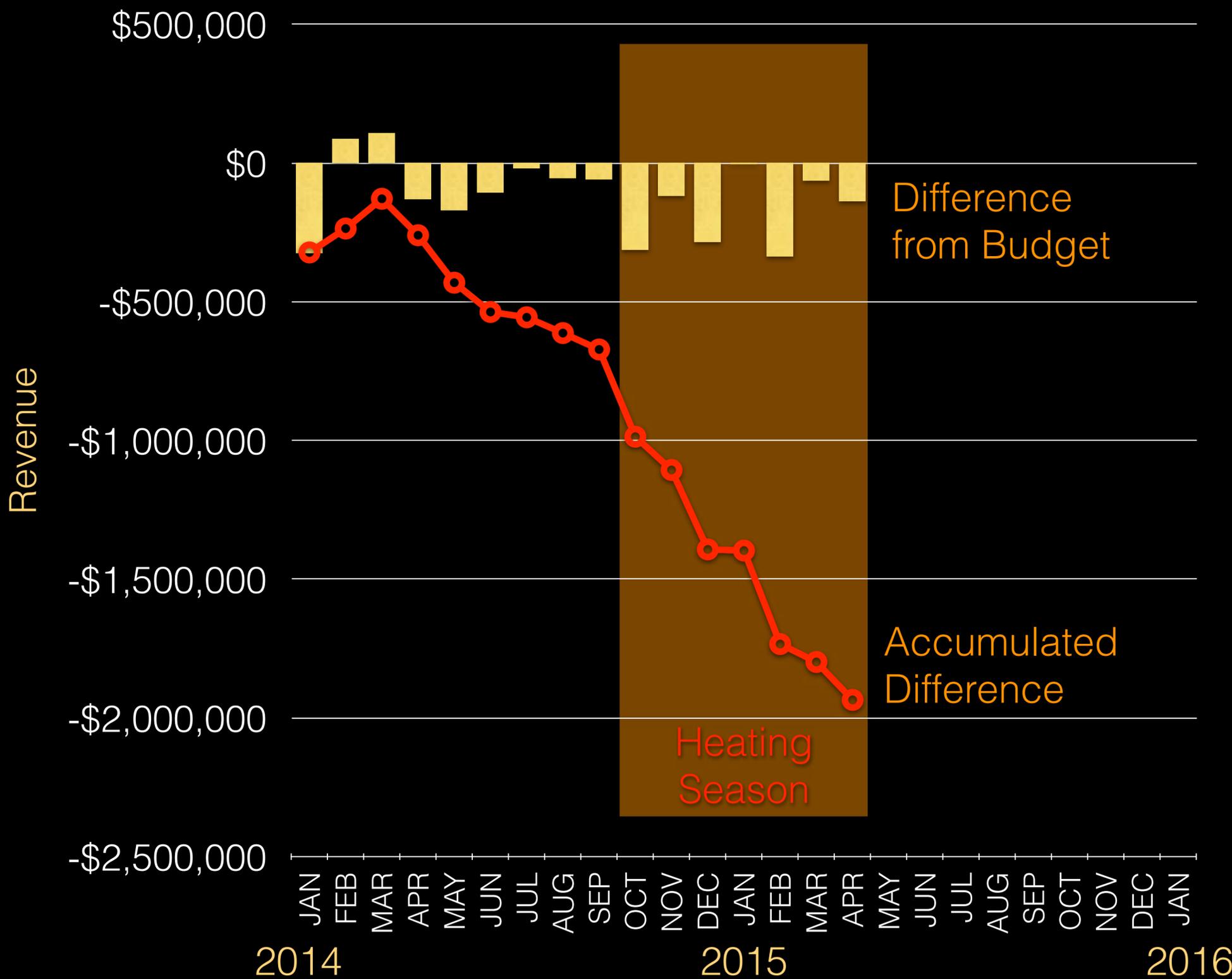
Revenue: Budget Versus Actual



Headline

- With the warming trend, and despite rate increases, in every month since March 2014, Actual revenue has been less than Budget

Revenue: Budget Versus Actual



Headline

- Driven primarily by warm weather, 2014 revenue was \$1.4 million less than Budget. During the 2014/2015 heating season the revenue decline accelerated to almost \$2 million shortfall.

Notes

- Budget is based on Heating Degree Day projections from OPALCO's load forecast, based upon long range weather projections from numerous sources, including BPA.

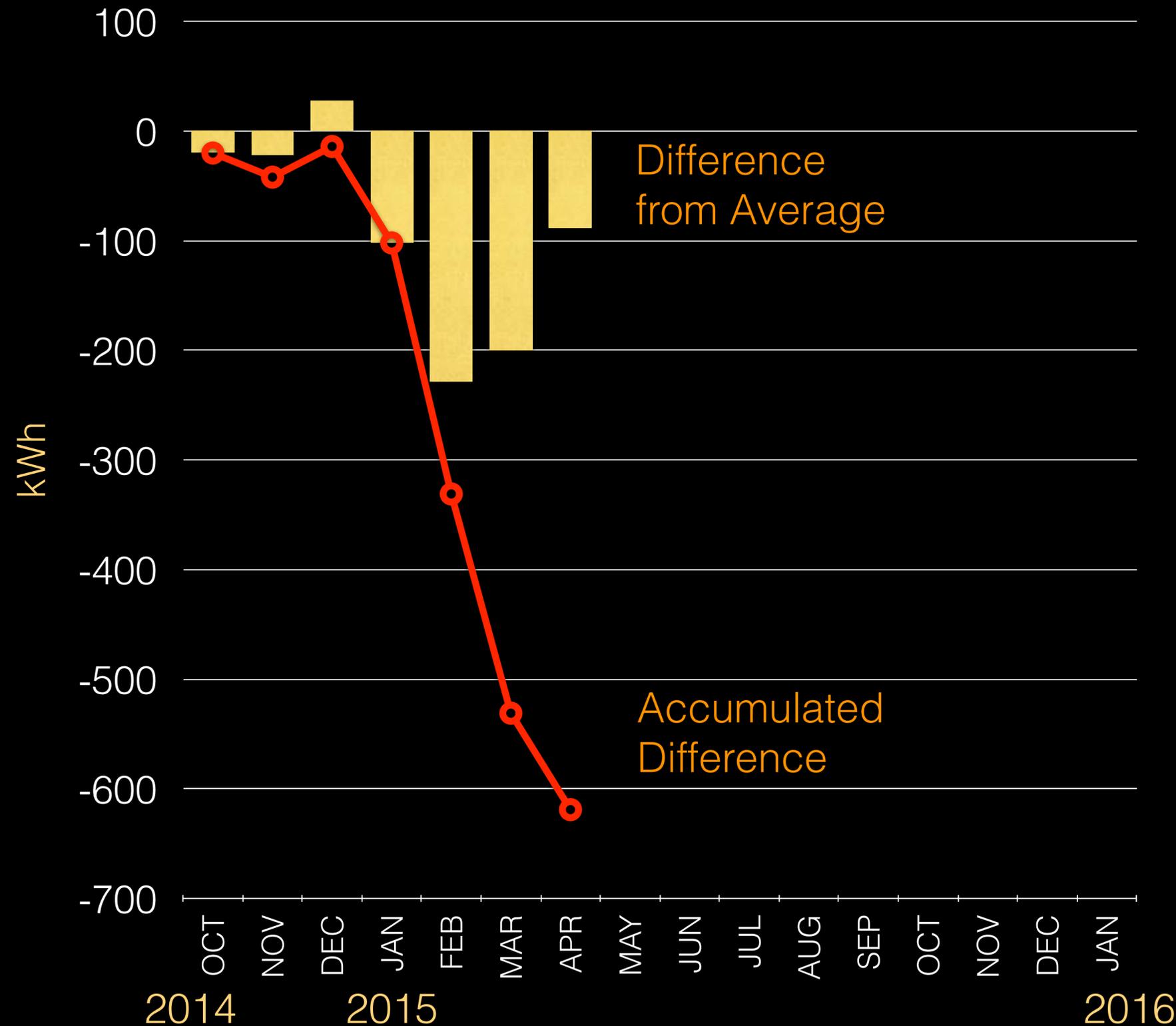
Average Residential kWh Consumed: 2014/2015 Heating Season

Headline

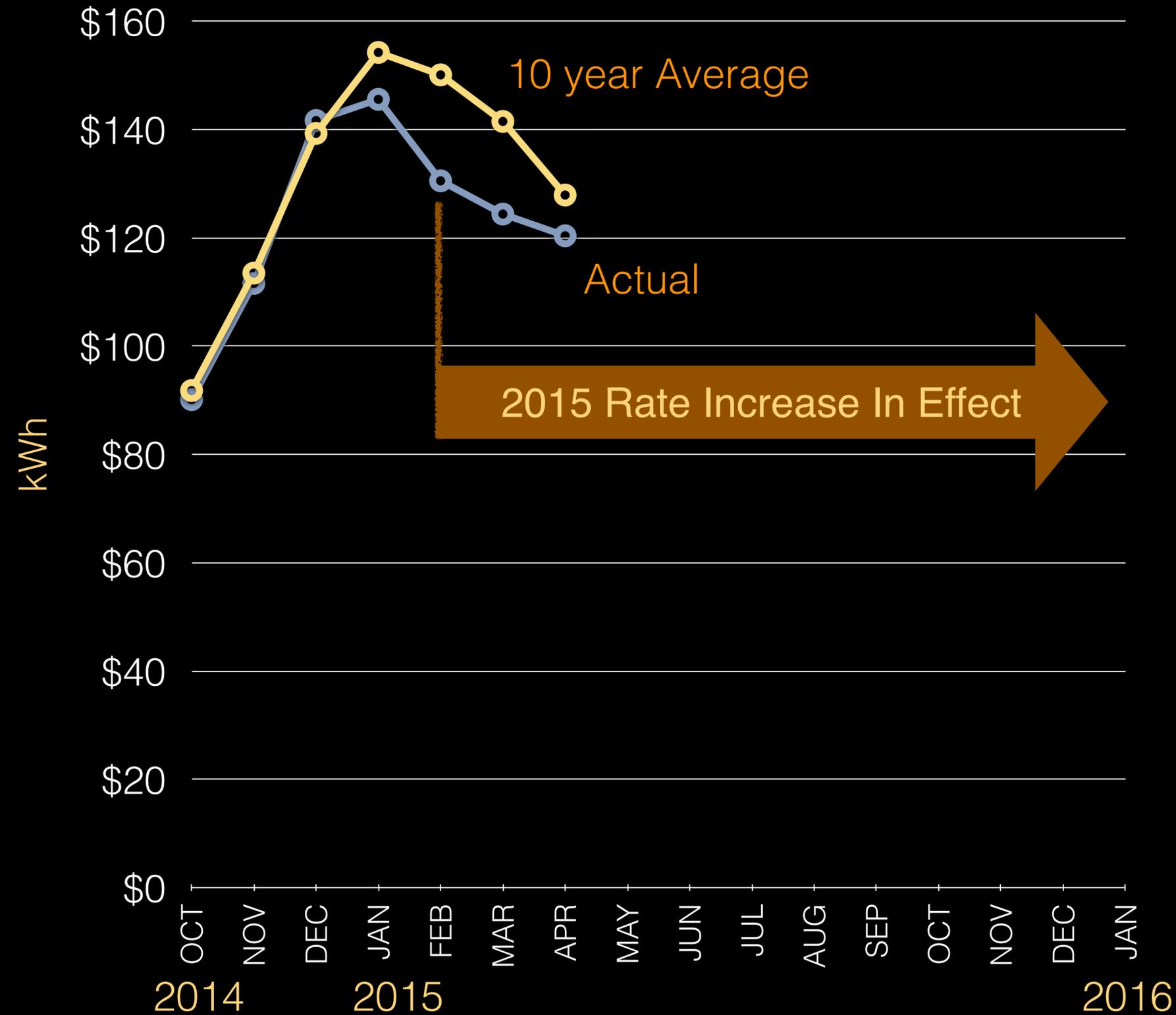
- The average residential OPALCO member used much less energy during the 2014/2015 heating season

Notes

- Average/Normal kWh consumption is a 10 year average - 2005 through 2014, by month
- Average Residential member uses about 1,000 kWh per month.



Average Residential Bill: 2014/2015 Heating Season



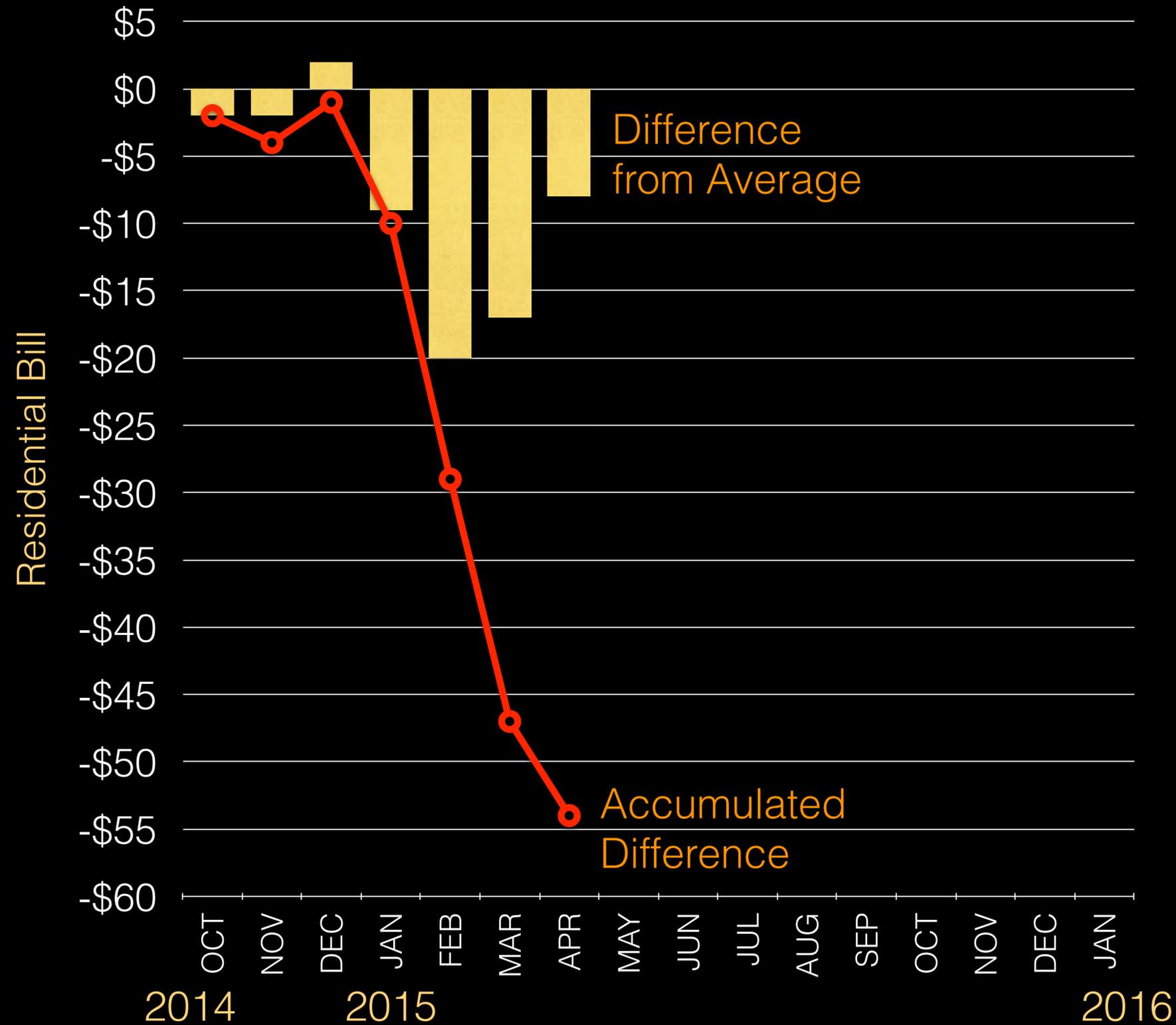
Headline

- Despite rate increase, the average residential bill decreased

Notes

- Average/Normal residential kWh consumption is a 10 year average - 2005 through 2014, by month
- Average is not inflation adjusted

Average Residential Bill: 2015 Heating Season



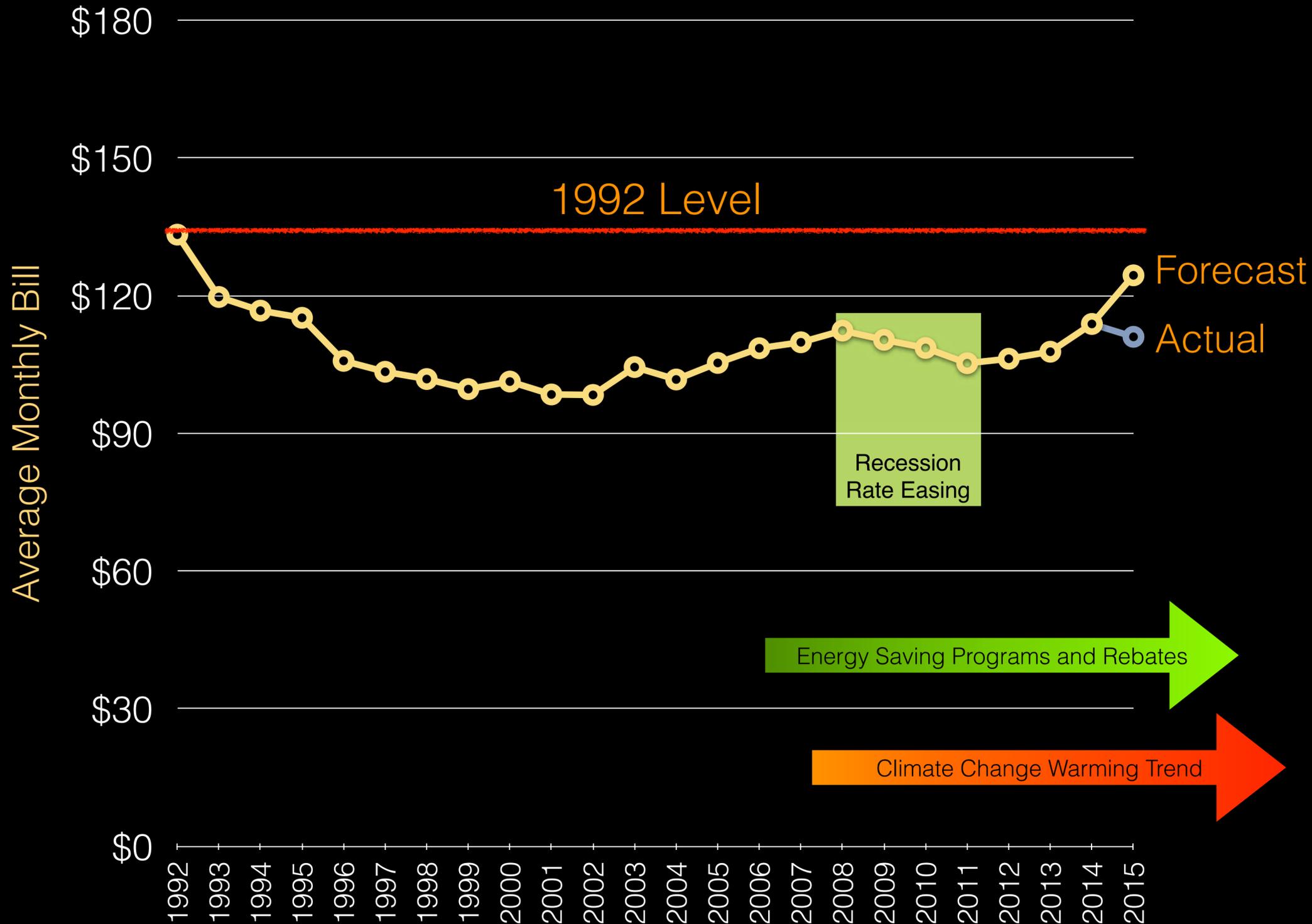
Headline

- Despite the rate increase, the average residential bill has decreased about 10%

Notes

- Average/Normal residential kWh consumption is a 10 year average - 2005 through 2014, by month
- Average is not inflation adjusted

History of 1,000 kWh Monthly Bill Inflation Adjusted



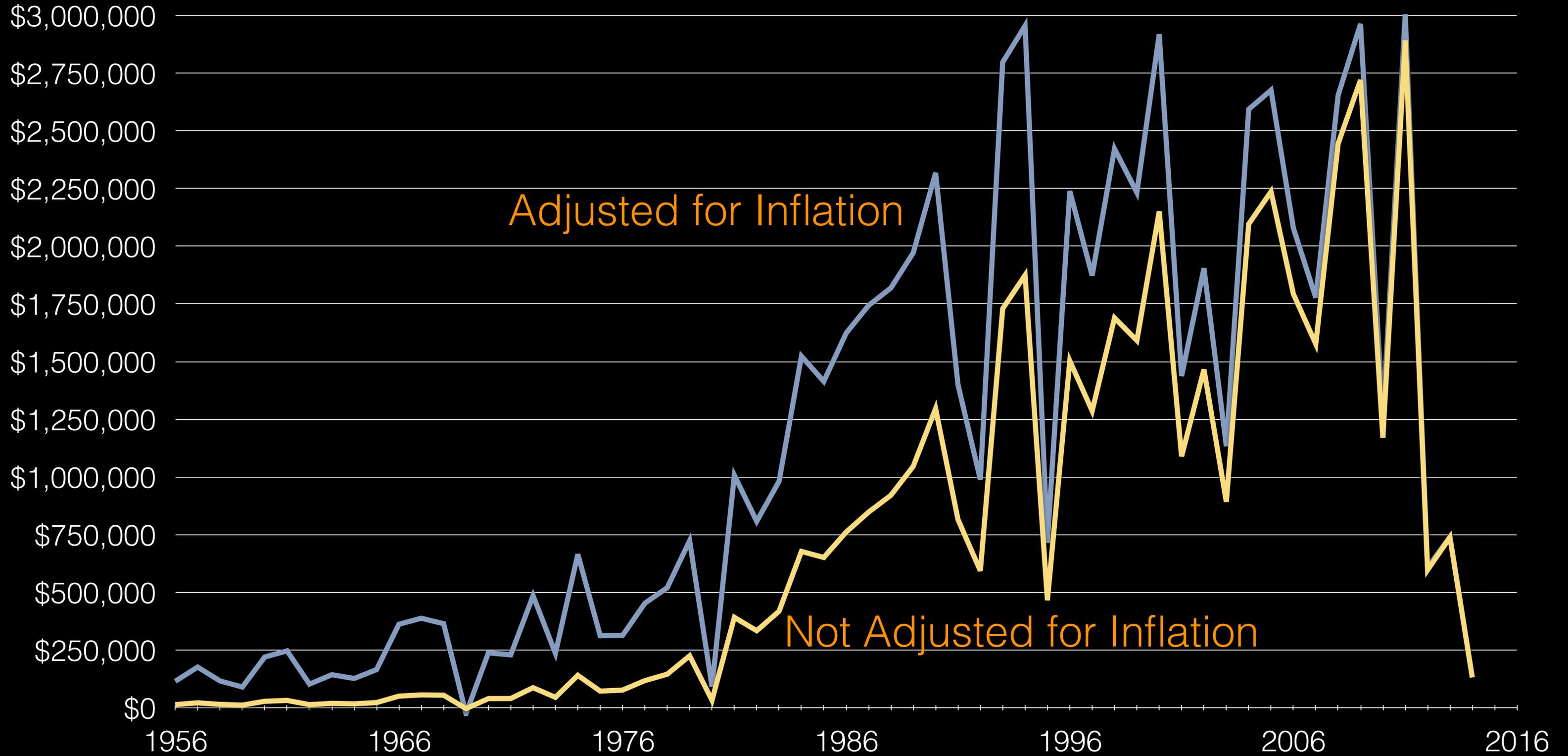
Headline

- OPALCO 2015 rates are lower than they were 23 years ago
- Rate has decreased an average of -.29% per year, 1992 through 2015

Notes

- 1992 through 2015, Residential
- Historically, average OPALCO member usage has been 1,000 kWh/month
- Monthly bill includes all Facility, Usage and Demand Charges.
- Rate increases postponed during 2008 - 2011 recession and after effects, to ease economic impact on county.

Operating Margin

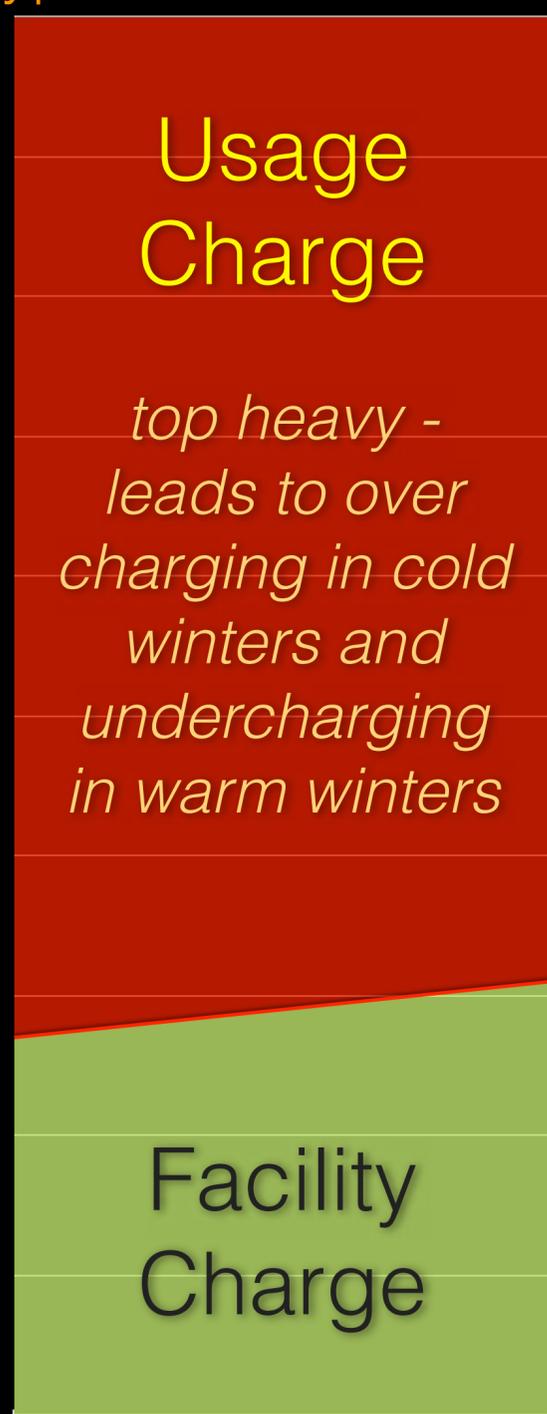


Traditional Rate Setting Principles

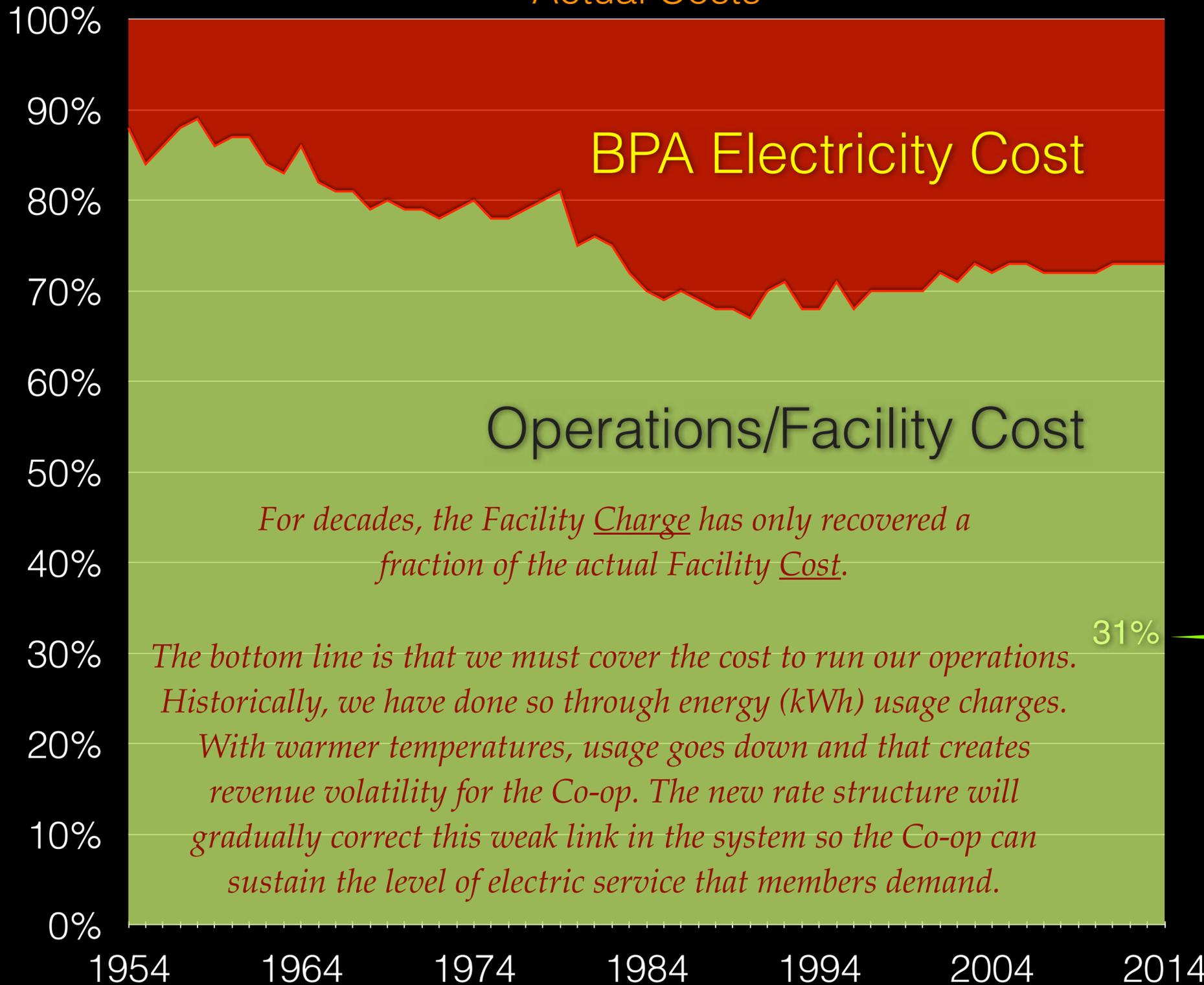
- Rates should meet revenue requirement
- Rates should be cost based
- Rates should be “Just, Reasonable and Not Unduly Discriminatory or Preferential” – “Fair and Equitable”
- Rates should be easy to understand and administer
- Rates and the cost allocation process should conform to generally accepted rate setting techniques
- Rates should provide revenue stability to the utility and rate stability to the consumer

Billed Versus Actual Cost as a % of Total Cost

Typical Residential Bill



Actual Costs



2014

2015

1954

1964

1974

1984

1994

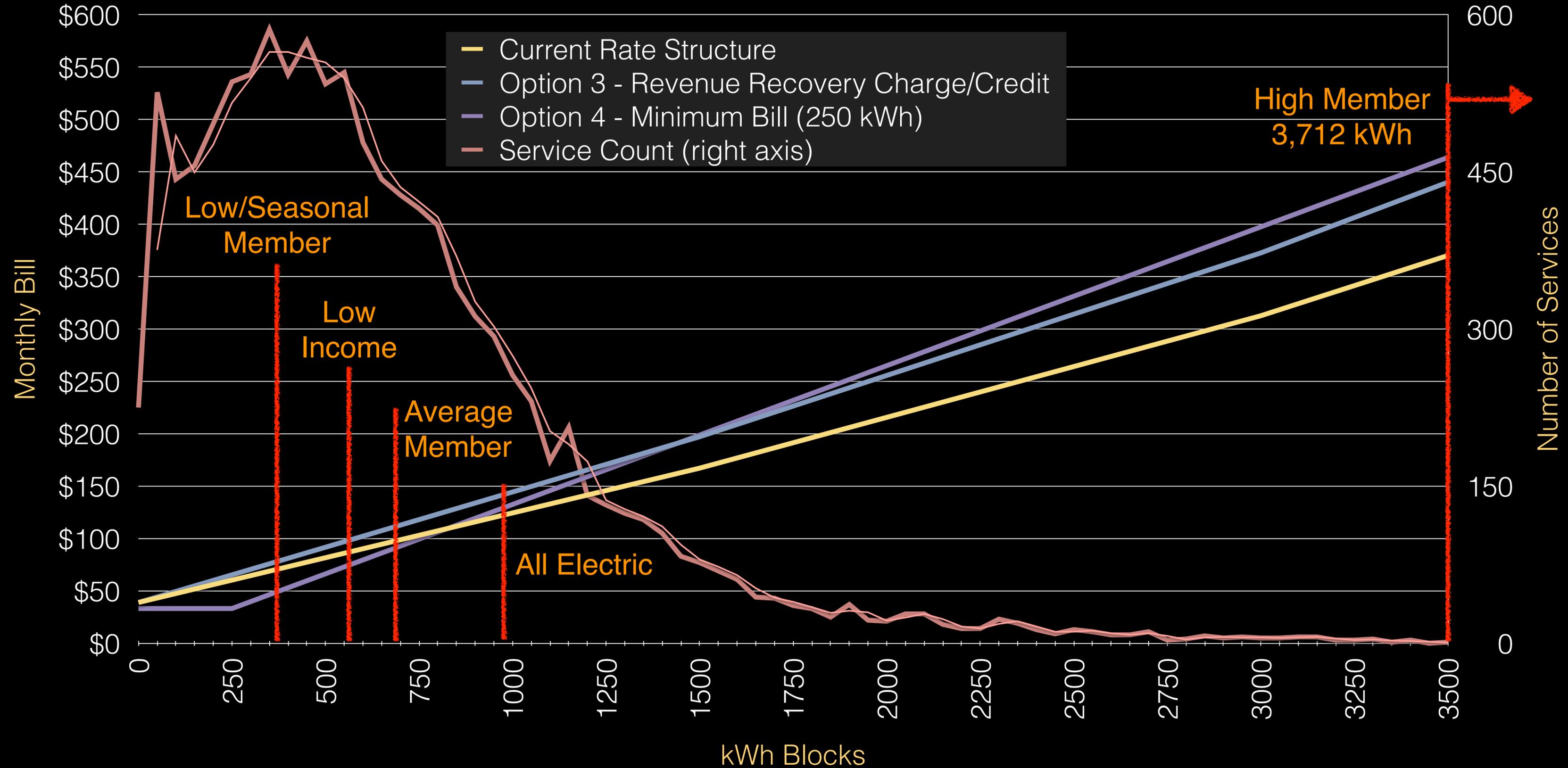
2004

2014

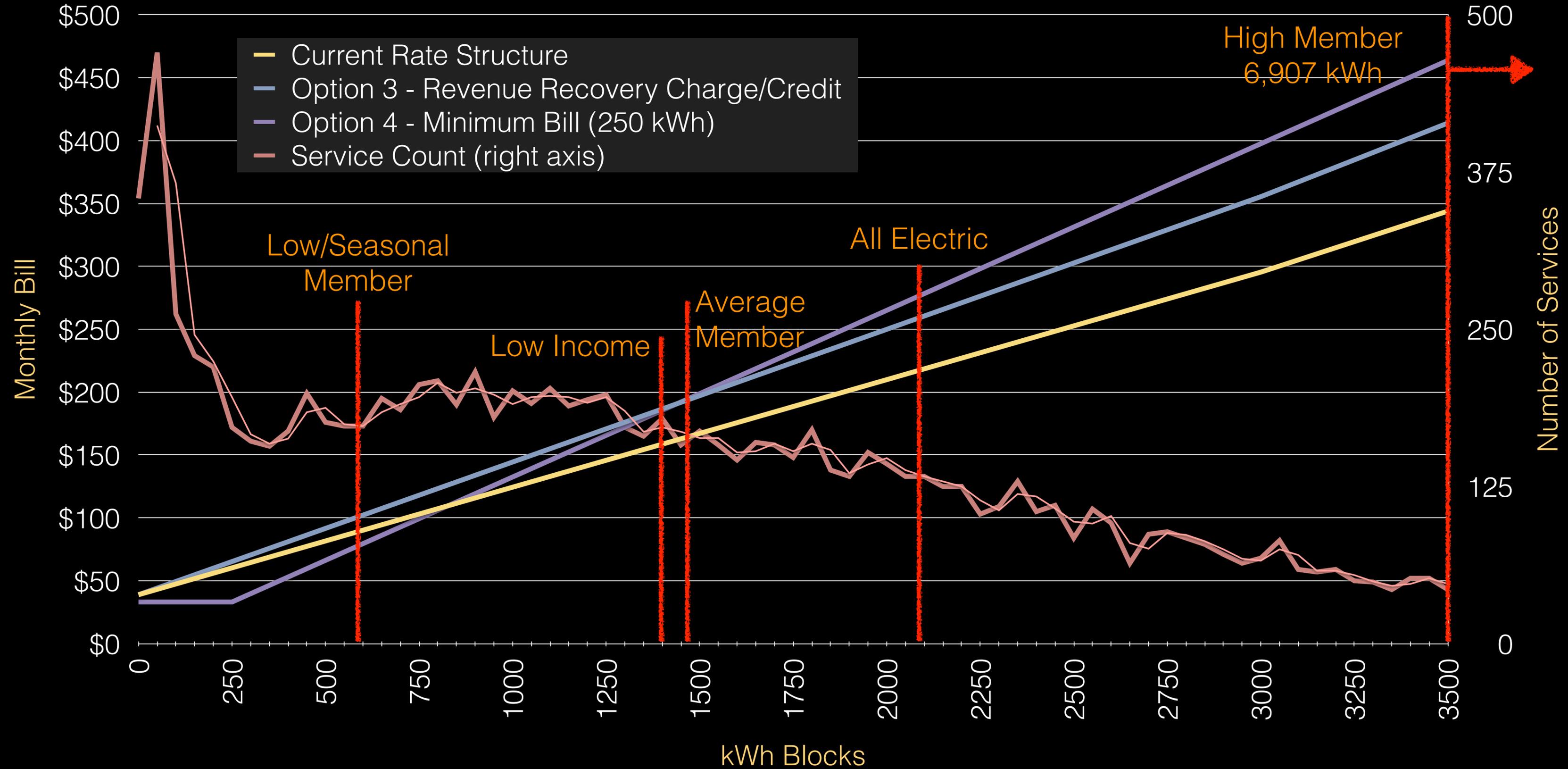
Traditional Rate Setting Principles

Residential	Current	Option 1	Option 2	Option 3	Option 4
		general rate increase 2¢	expense based CRC	revenue based RRC	variable kWh with min. Bill
Base/facility Charge	38.90	38.90	38.90	38.90	depends on min.
Usage Charge (¢/kWh, first block)	8.55¢	10.55¢	8.55¢ + calc	10.30¢ + calc	est. 13.25¢ avg.
Meets revenue requirement	Didn't	✓	✓	✓	✓
Cost based	✓	✓	✓	✓	depends on min.
Fair and Equitable	✓	✓	✓	✓	depends on min.
Easy to understand and accept	✓	✓	✗	✗	✗
Easy to setup and administer	✓	✓ very	✓	✓	✗ setup
Conform to rate setting techniques	✓	✓	✓	✓	✗
Provide revenue stability to the utility	trending that way	✓	✓	✓	✓
Provide rate stability to the member	✓	✓	✗	✗	✗
Withstand legal challenges	✓	✓	✓	✓	✗
Encourages EE&C	trending lower	✓	✓	✓	✓
Avoids fuel switching	✓	✓	✓	✓	✗ market
Avoids bill shock (comparative)	✓	✓	✓	✓	✗ high-users
Weather-driven Volatility	less	✗	✗	✗	✗

Summer Comparison



Winter Comparison

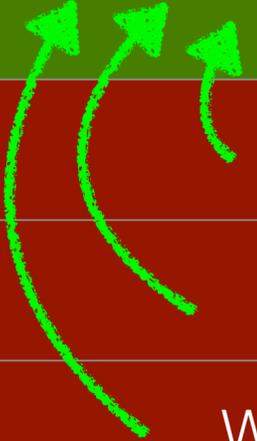


Carbon Footprint in San Juan County

Informed by the ongoing Integrated Resource Plan (IRP)

San Juan County, Washington Carbon Footprints - Simplified Estimate

Fuel	Amount Used	CO2 Intensity	Tons CO2	Share
Electricity	215,000,000 kWh	48lbsCO2/MWh	5,160 T	10%
Gasoline	2,700,000 Gallons	8.9x10 ⁻³ MT/Gal	26,433 T	48%
Propane	1,896,750 Gallons	5.2x10 ⁻³ MT/Gal	10,849 T	20%
Wood/Other	1,802 cords	6,600 lbs/cord	5,946 T	11%
Agriculture			1,718 T	3%
Waste Treatment/Recycling			4,664 T	9%
Total			51,435 T	100%

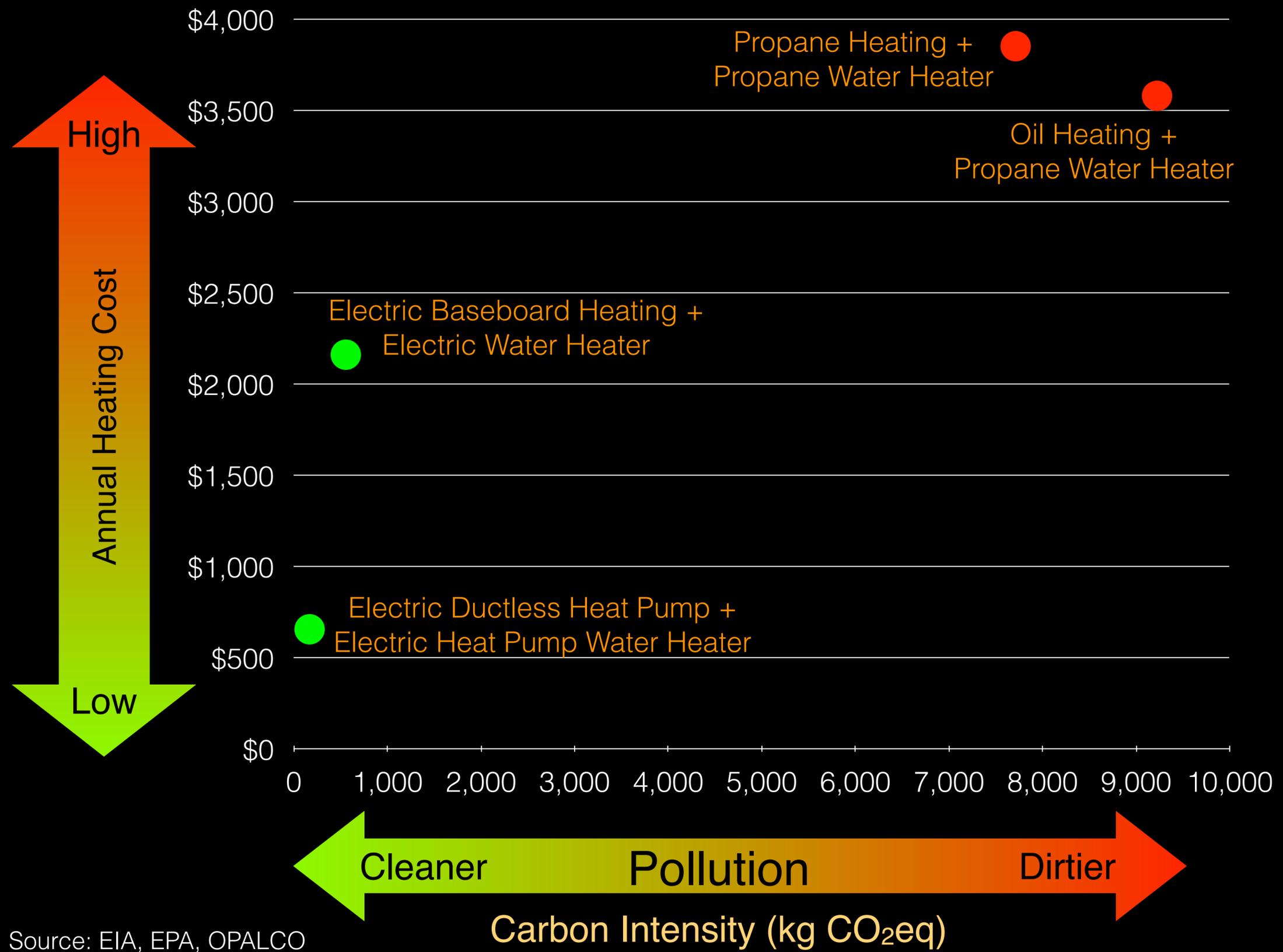


43,228 T

79%

~3.2 T/person/year

Combining Home and Water Heating: Annual Cost and Carbon Footprint



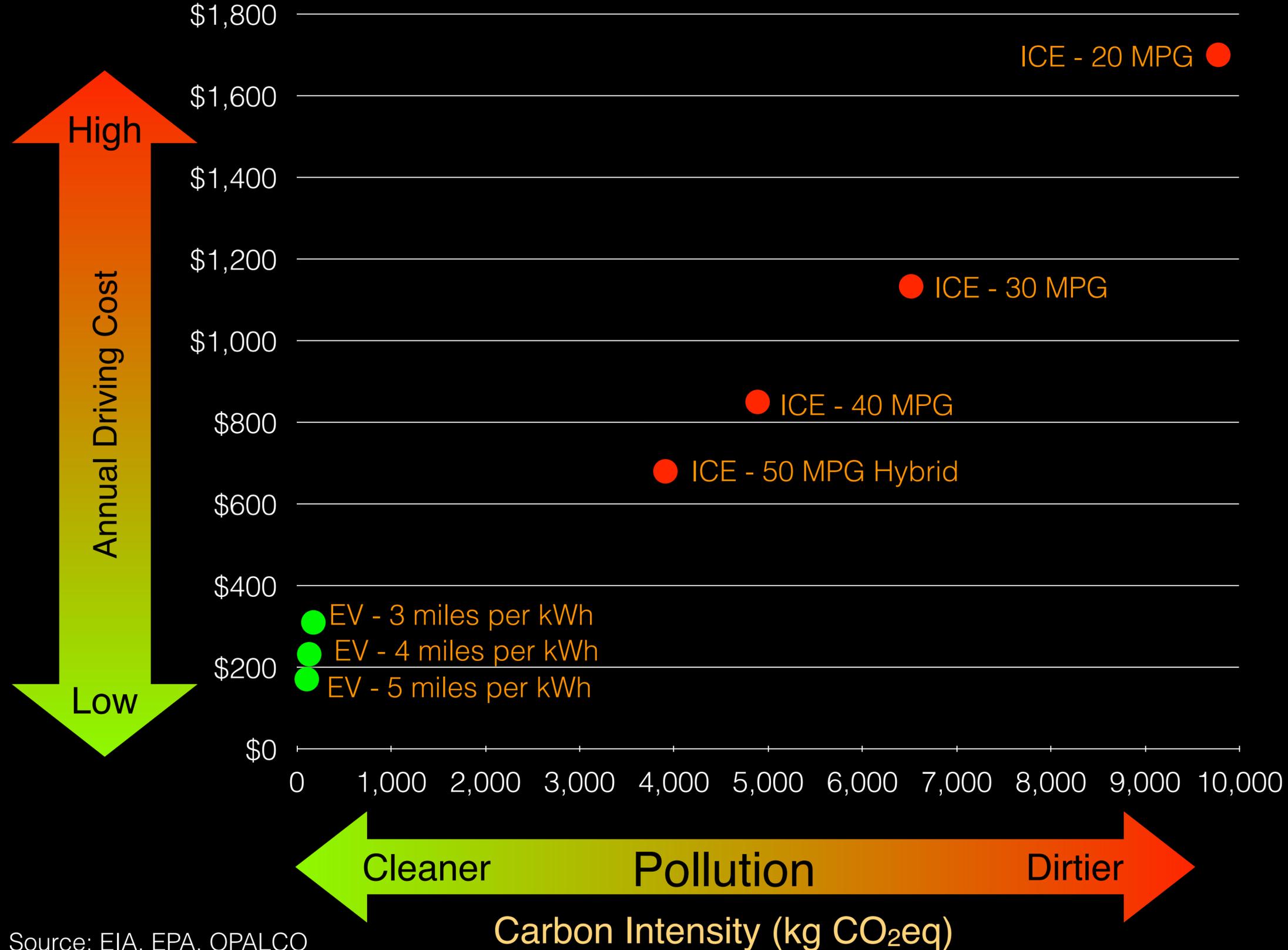
Headline

- An all electric home is about 2 to 6 times lower cost to heat the space and water, and 15 to 45 times cleaner, with much less wasted energy than propane or heating oil.

Notes

- In a typical home, what is the total annual cost and carbon footprint, for various combinations of heating and water heaters?
- GREEN** = Electric heaters
RED = Propane/Oil

Driving A Car: Annual Cost and Carbon Footprint



Headline

- Electric vehicles energy cost about 3 to 10 times less than gasoline vehicles, depending on the MPkWh and MPG, emitting up to 200 times less CO₂.

Notes

- Driving 10,000 miles per year
- Internal Combustion Engine (ICE) car getting 20 to 50 Miles Per Gallon (MPG)
- Electric Vehicle (EV) getting 3 to 5 miles per kWh of electricity (e.g. Nissan Leaf)
- Electric price is based on OPALCO rate plan through 2020. Regular octane gasoline price two year average through February 2015.
- **GREEN** = Electric Vehicles (EV)
RED = Internal Combustion Engines (ICE)

Energy Fair: Nissan Leaf Incentive

Wilson Nissan of Bellingham

For any in stock 2015 Nissan Leaf, Wilson Nissan offers the following "Special Pricing" to any OPALCO Member

Example

2015 Nissan Leaf S
stock #N5246, equipped with Quick Charge Package, Floor Mats and Splash Guards

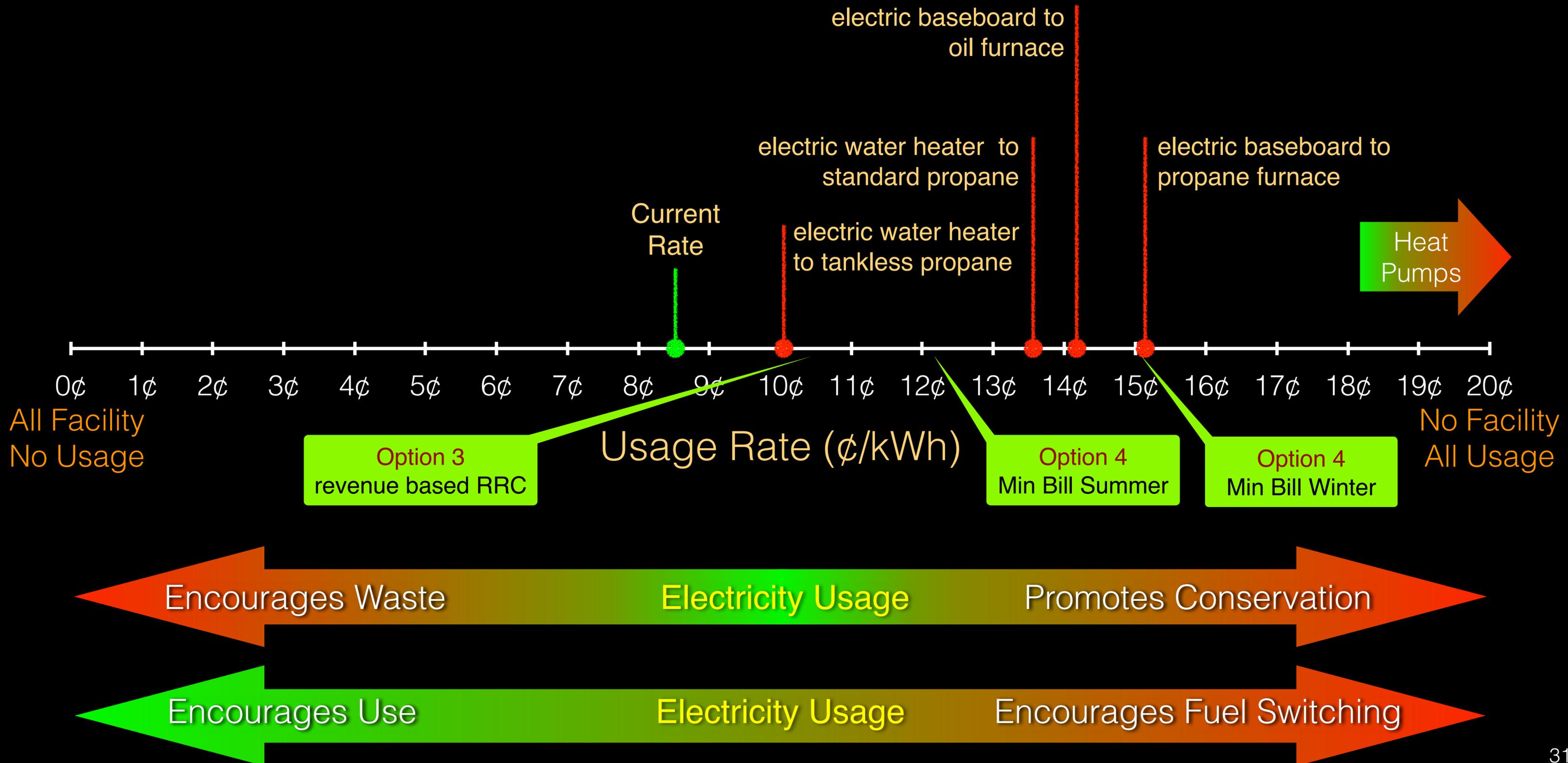
2015 Leaf model S

MSRP	\$32,000
Dealer Invoice	\$30,611
OPALCO member discount	-\$1,000
Net Price	\$29,611
Nissan financing rebate*	-\$3,500
Federal EV Tax Credit	-\$7,500
No sales tax on EVs	\$0
Net projected cost	\$18,611

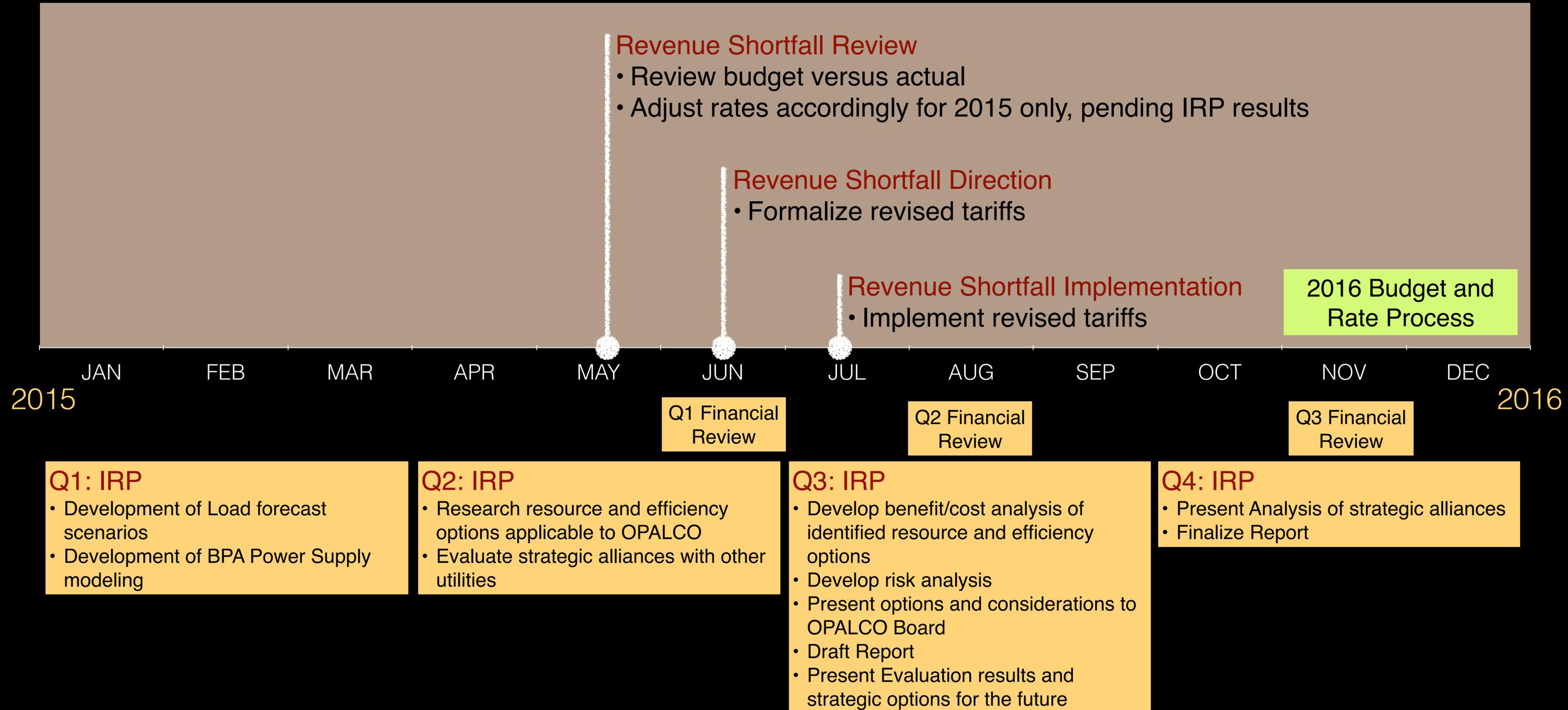


*Nissan Incentives may vary depending on model and time of delivery

Fuel Switching Analysis



Budget, Rate and Integrated Resource Plan Time Line



Thank You