Upper Peninsula Power Company

U.P. Energy Task Force

July 15, 2020

Powering our communities since 1884

UPPCO Overview

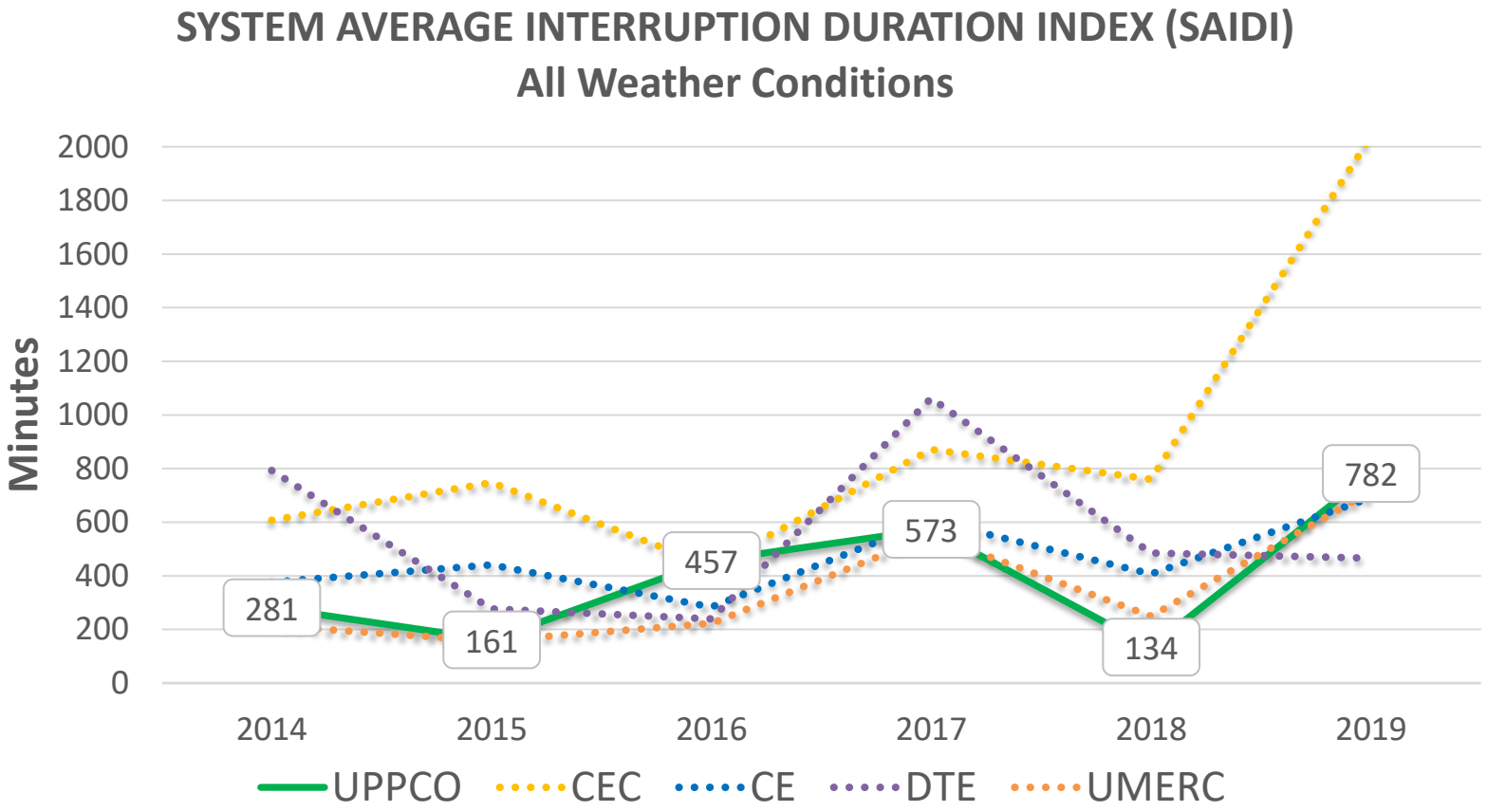
- Providing safe and reliable energy to ~52,000 customers throughout 10 Upper Peninsula counties

- Service territory represents:
  - 4,460 square miles
  - 4,469 miles of lines
  - 58 substations

- Owner/operator of 7 Hydroelectric generation stations and 2 combustion turbines providing 80 megawatts of capacity

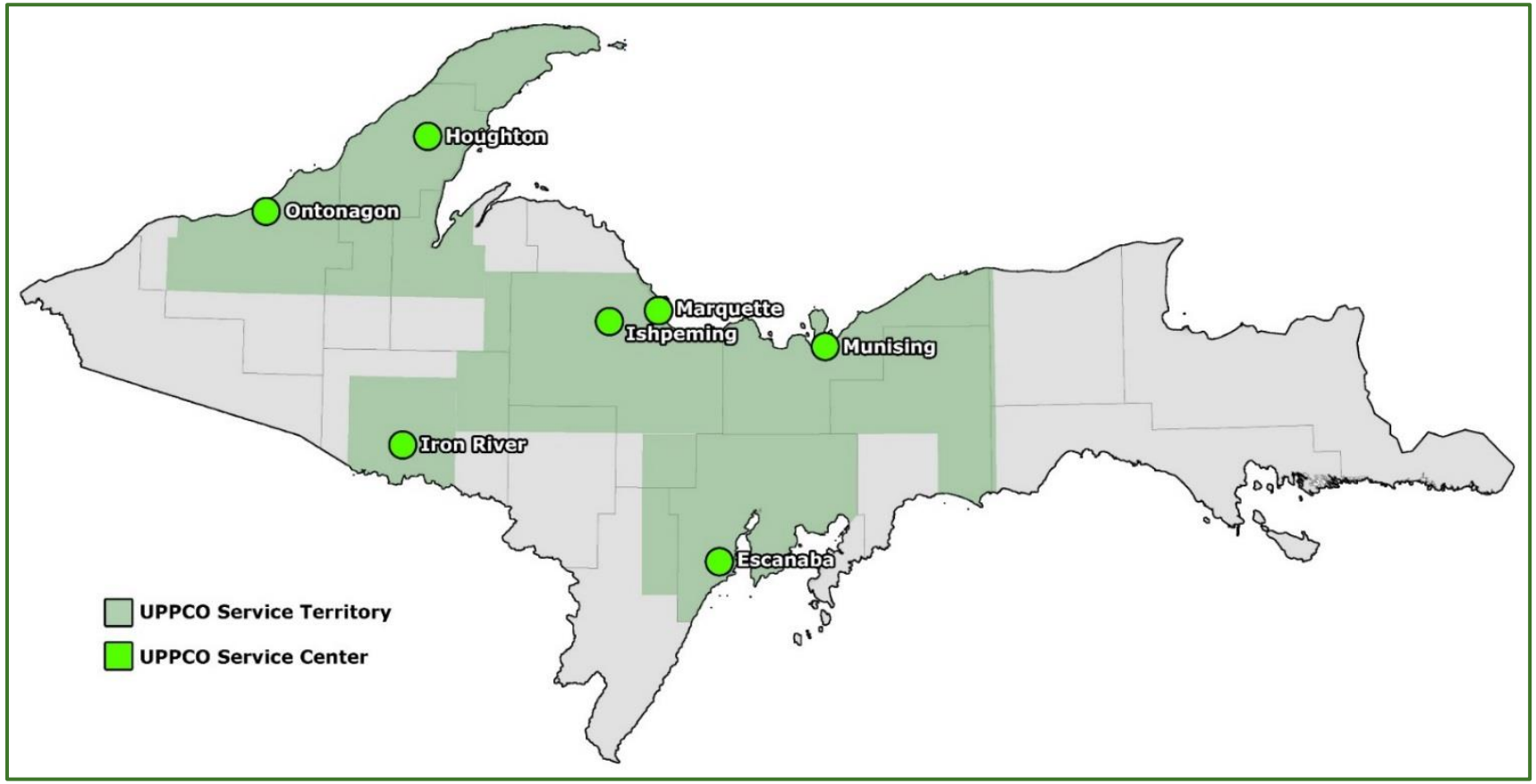
Providing Reliable Service

SAIDI = Total duration of sustained interruptions in a year divided by total number of consumers



- Source: Michigan Public Service Commission Docket No. 12270

UPPCO Service Territory



12 Investor Owned, Cooperative and Municipal utilities serve customers in the 10 counties that are served by UPPCO

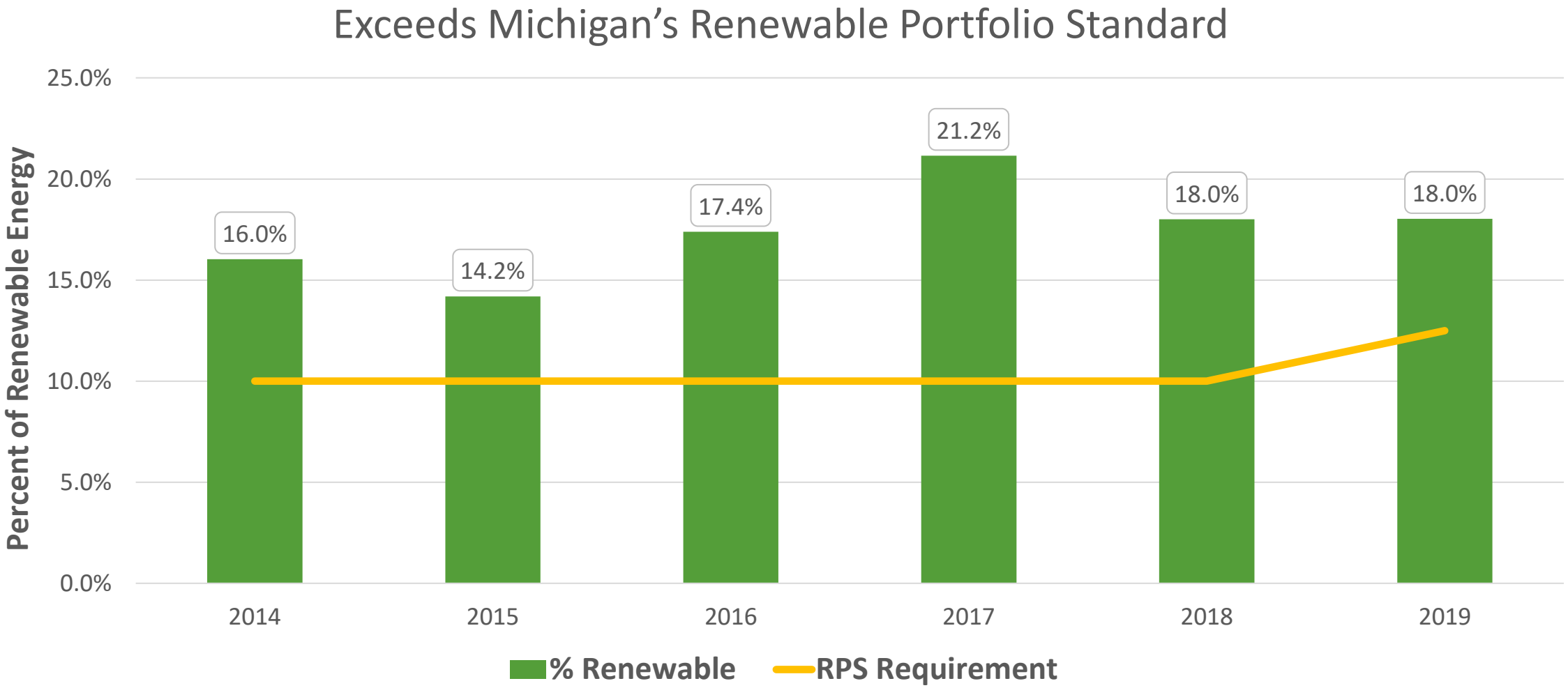
GENERATION FLEET

- UPPCO has relied on clean, renewable generation resources to serve its customers for more than 100 years
- Additional renewable energy resources are planned as set forth in UPPCO's Integrated Resource Plan (MPSC Docket No. U-20350)

Station	Type	Units	Date Built	Capacity (kW)
Hoist	Hydroelectric	2	1916	3,400
McClure	Hydroelectric	2	1919	8,480
Prickett	Hydroelectric	2	1931	2,000
Victoria	Hydroelectric	2	1930	12,200
Boney Falls	Hydroelectric	3	1921	4,100
Escanaba 3	Hydroelectric	2	1914	2,500
Escanaba 1	Hydroelectric	3	1907/1920	1,600
Gladstone	Combustion Turbine	1	1975/1987	22,567*
Portage	Combustion Turbine	1	1971	23,800*

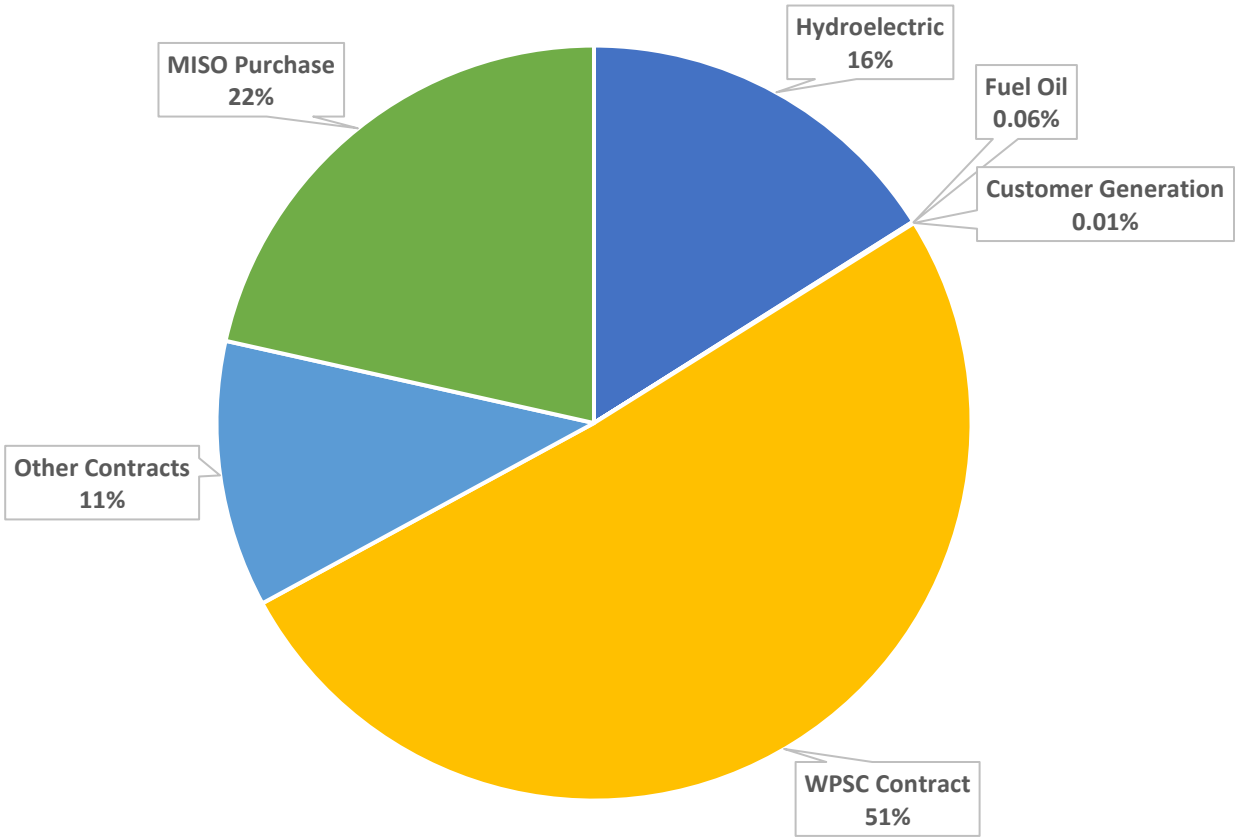
The Portage CT is targeted for decommissioning

UPPCO's Hydros Provide Clean Energy

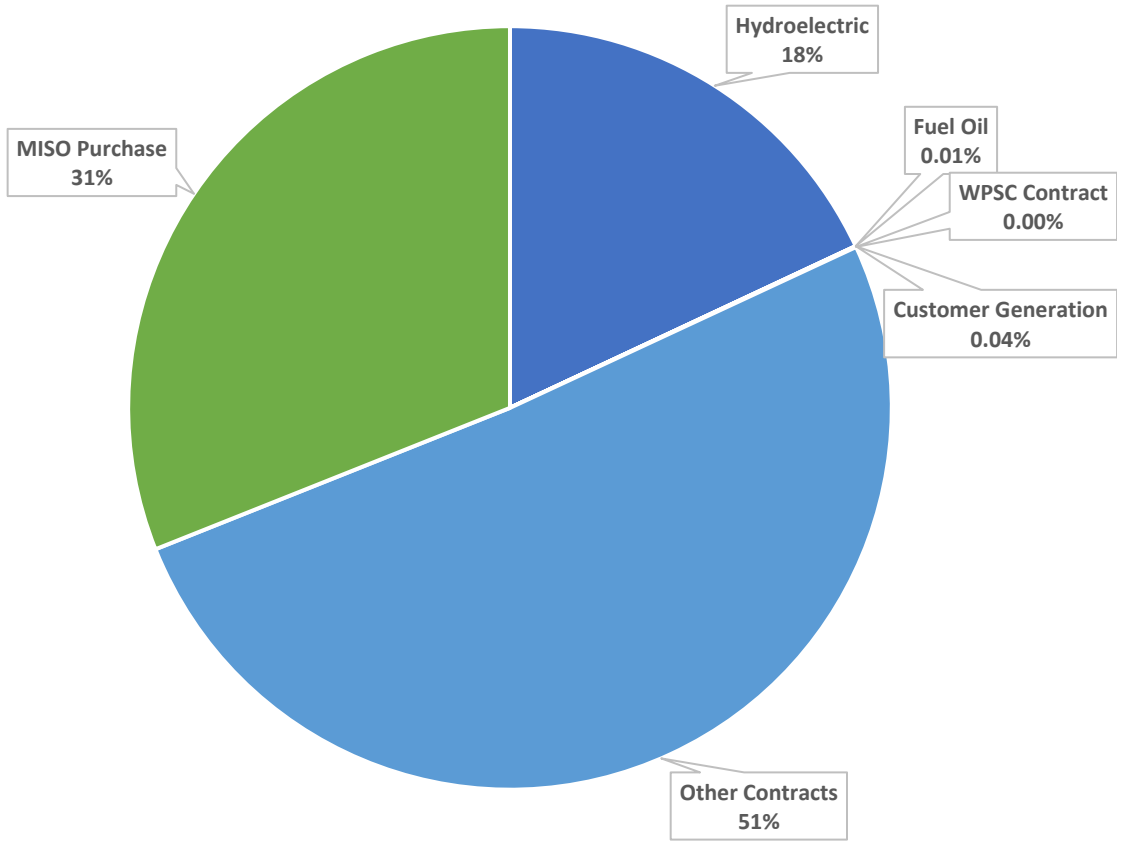


UPPCO's Power Supply Resources Have Evolved

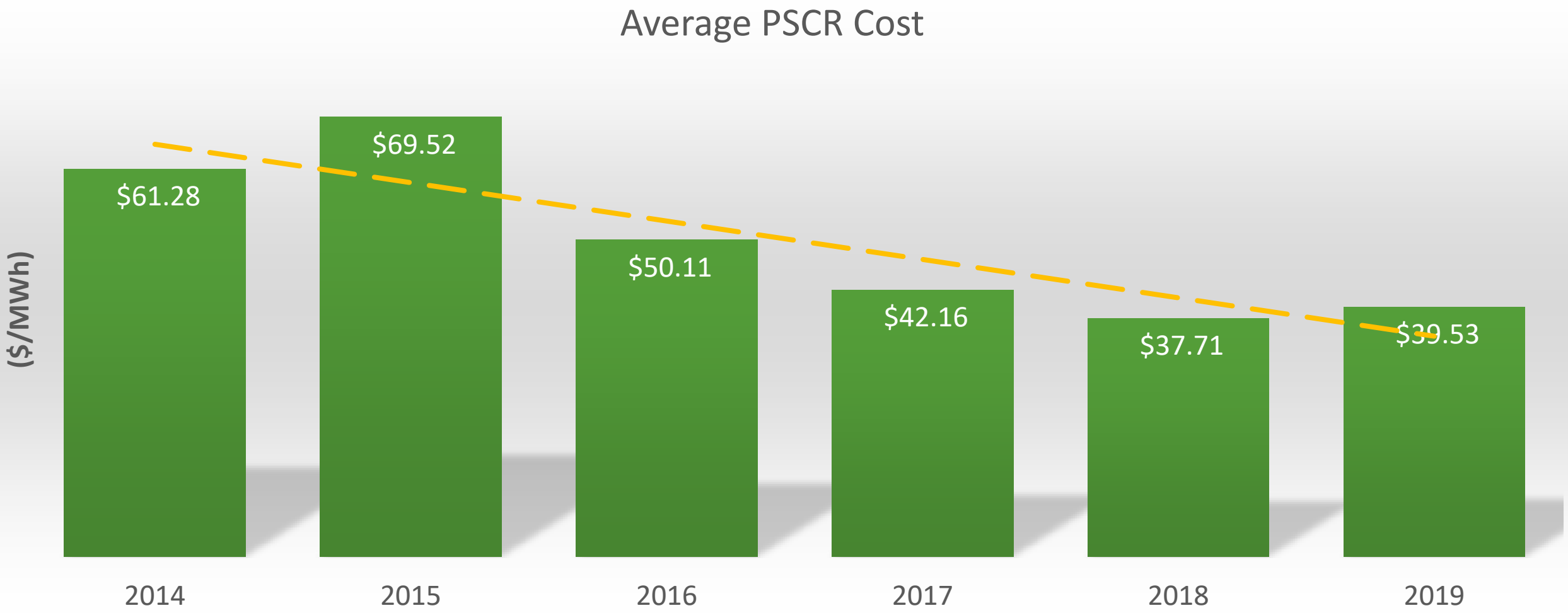
2014 Resource Mix



2019 Resource Mix



Power Supply Costs Have Decreased

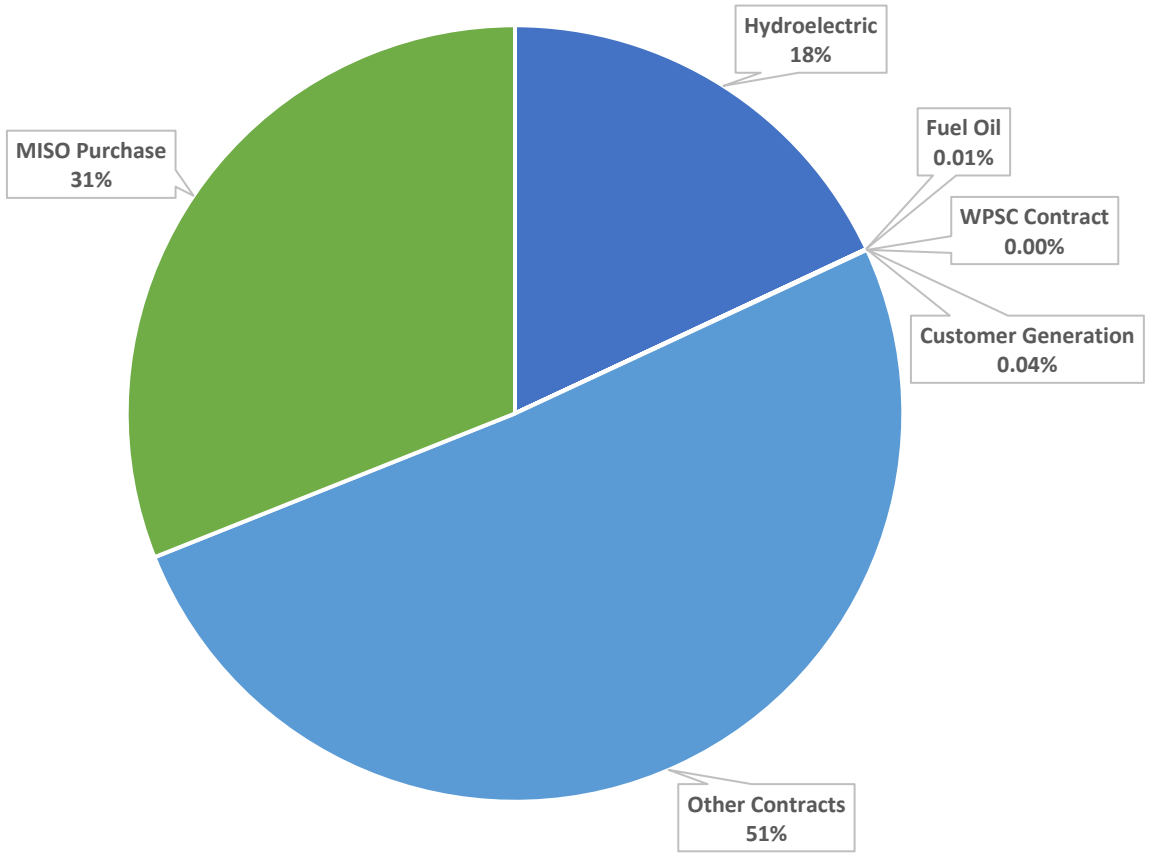


Integrated Resource Plan ("IRP")

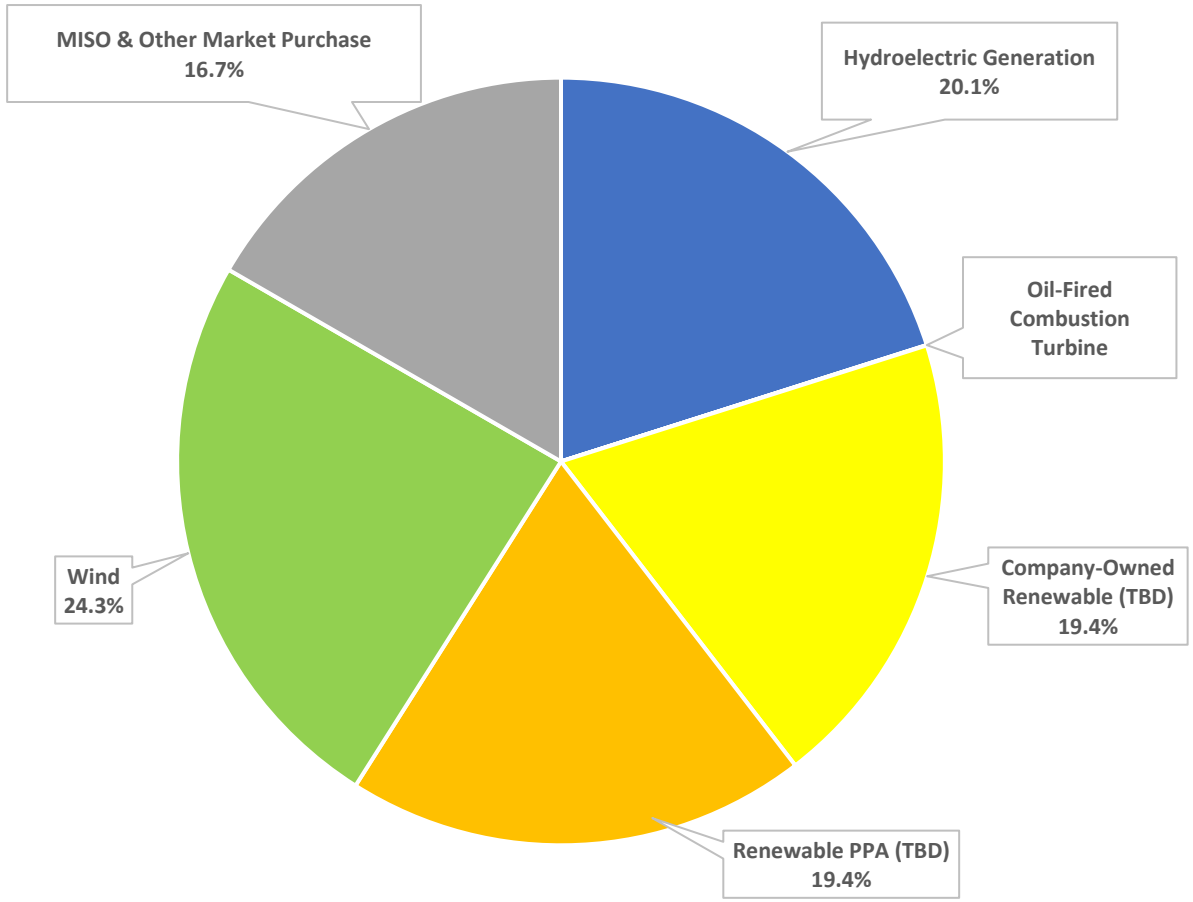
- UPPCO is moving forward with the following Integrated Resource Plan, pursuant to the MPSC's February 6, 2020 Order approving settlement:
  - Construction of new renewable energy resources in the Upper Peninsula
    - 38 MW of Wind under Purchased Power Agreements (Houghton County)
    - 62.5 MW of new renewable energy under competitively bid Purchased Power Agreement(s)
    - 62.5 MW of new company-owned renewable energy
  - Energy Waste Reduction targets increase to 1.65% in 2020, and 1.75% in 2021
  - Increase in Net Metering/Distributed Generation program cap from 1% to 2%
  - Two existing Hydroelectric generation resources moved to "in-front-of the meter"
    - Increases the amount of available Capacity to serve UPPCO customers, at essentially no cost

UPPCO's Post-IRP Power Supply Resource Mix

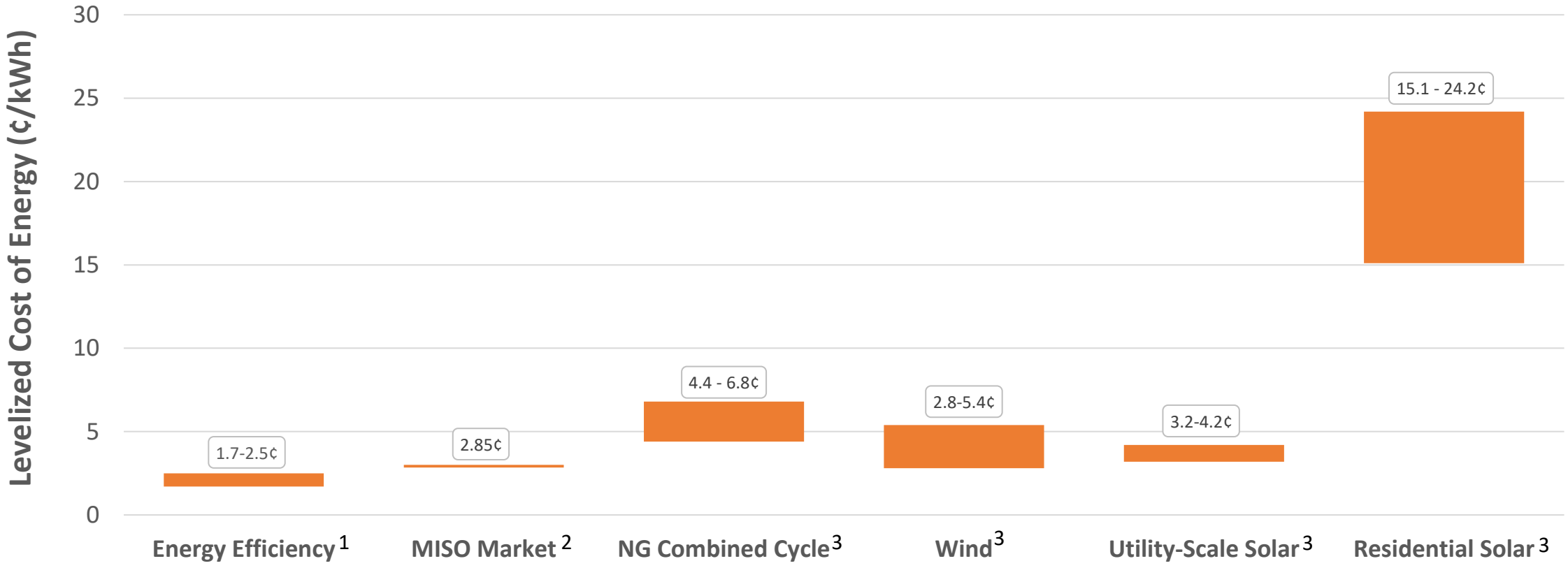
2019 Resource Mix



Post-IRP Resource Mix



Comparison of Levelized Costs

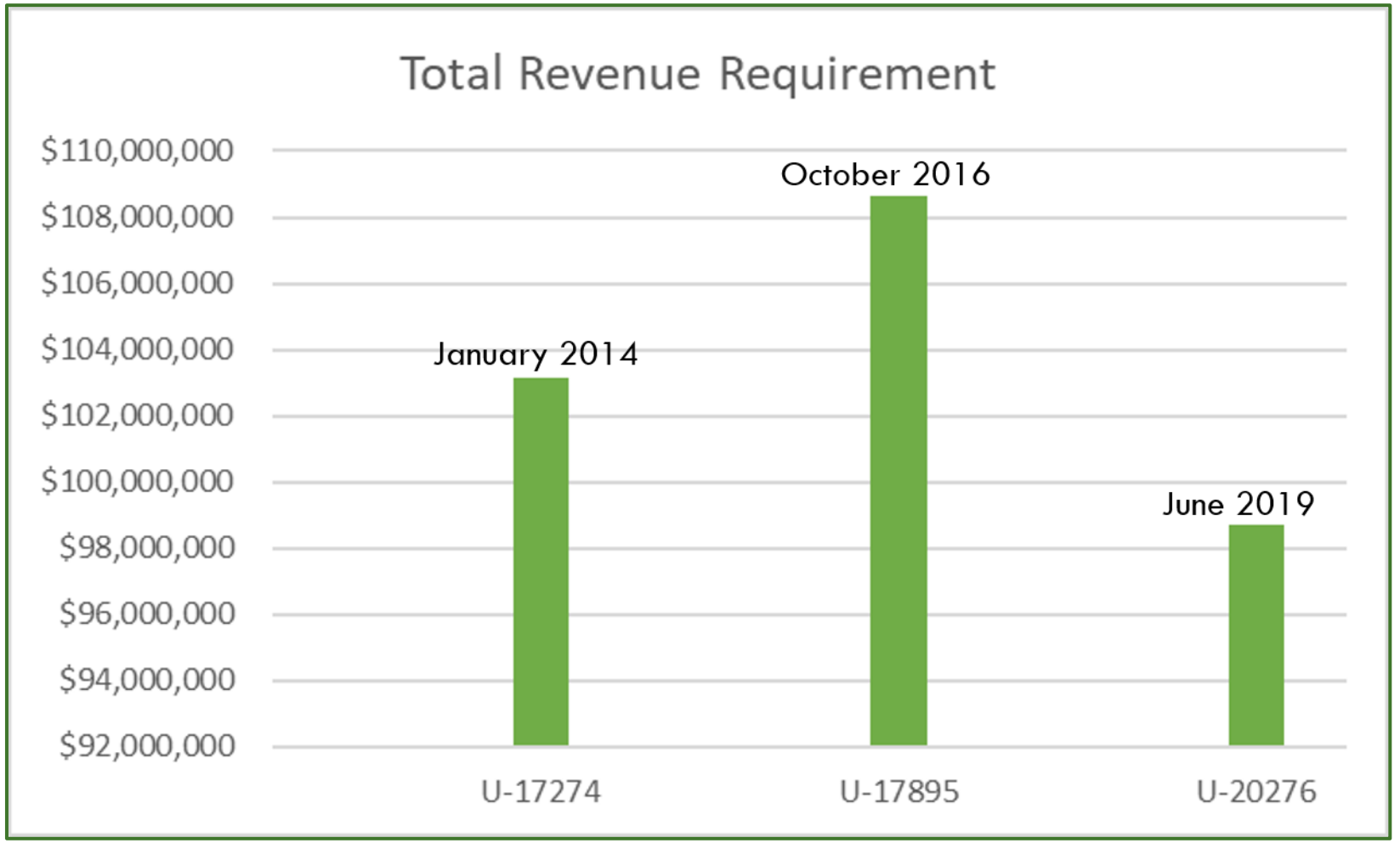


Source: [1] UPPCO's current and forecasted Energy Efficiency costs
[2] UPPCO's average cost of market-based energy for 2019 (MISO Energy Market purchases)
[3] Lazard's Levelized Cost of Energy Analysis, Version 13 (November 7, 2019)

Let's Talk Rates

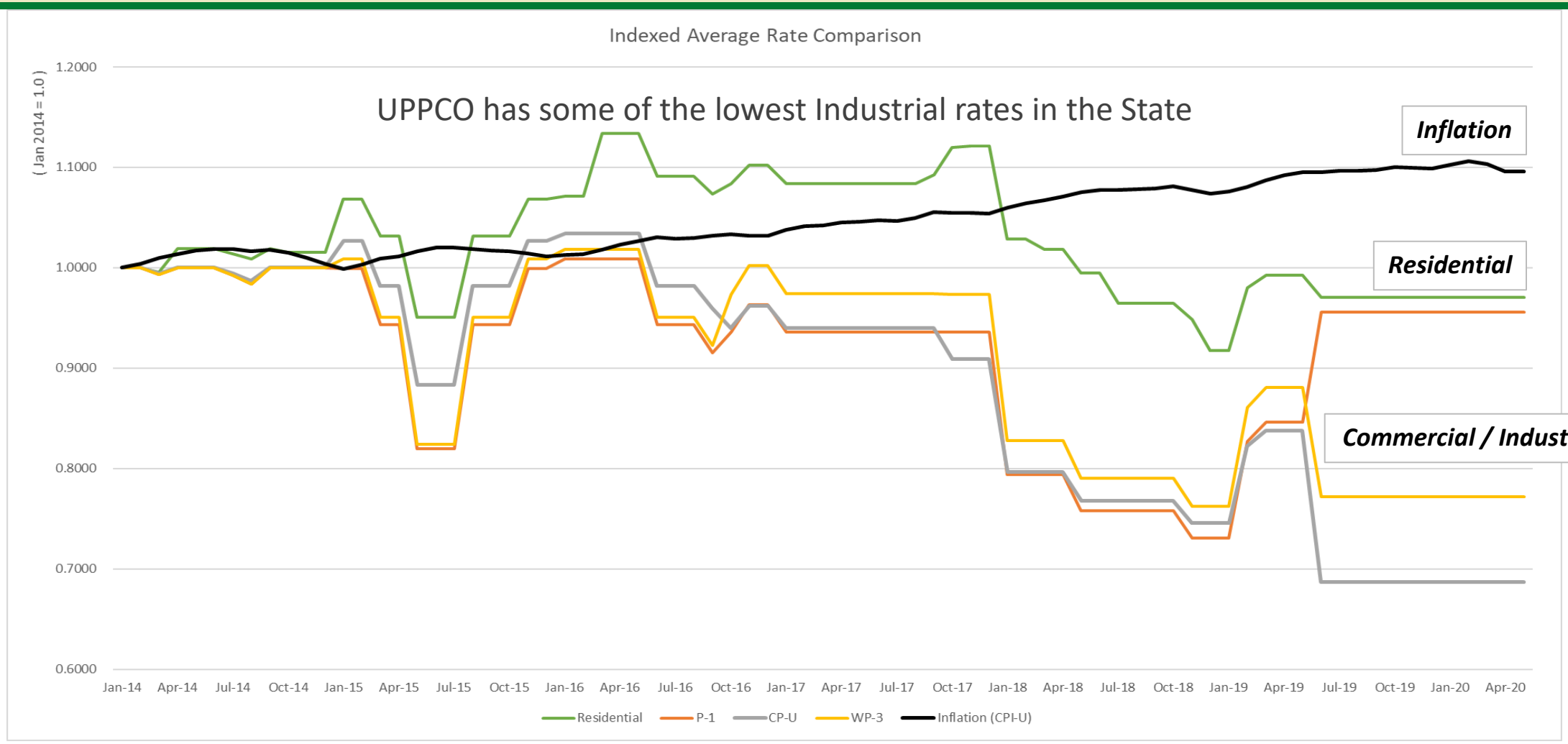
- Rates are set to recover the utility's annual Revenue Requirement by calculating the "cost-to-serve" each customer class
- Rates are a function of variable costs (Power Supply), fixed costs (Distribution), public policy costs and Investor ROI (cost of capital)
- Power Supply, Distribution and some public policy charges are assessed on a volumetric basis ($/kWh)
- Large Commercial and Industrial customers are assessed a Demand Charge

Annual Revenue Requirement Trend

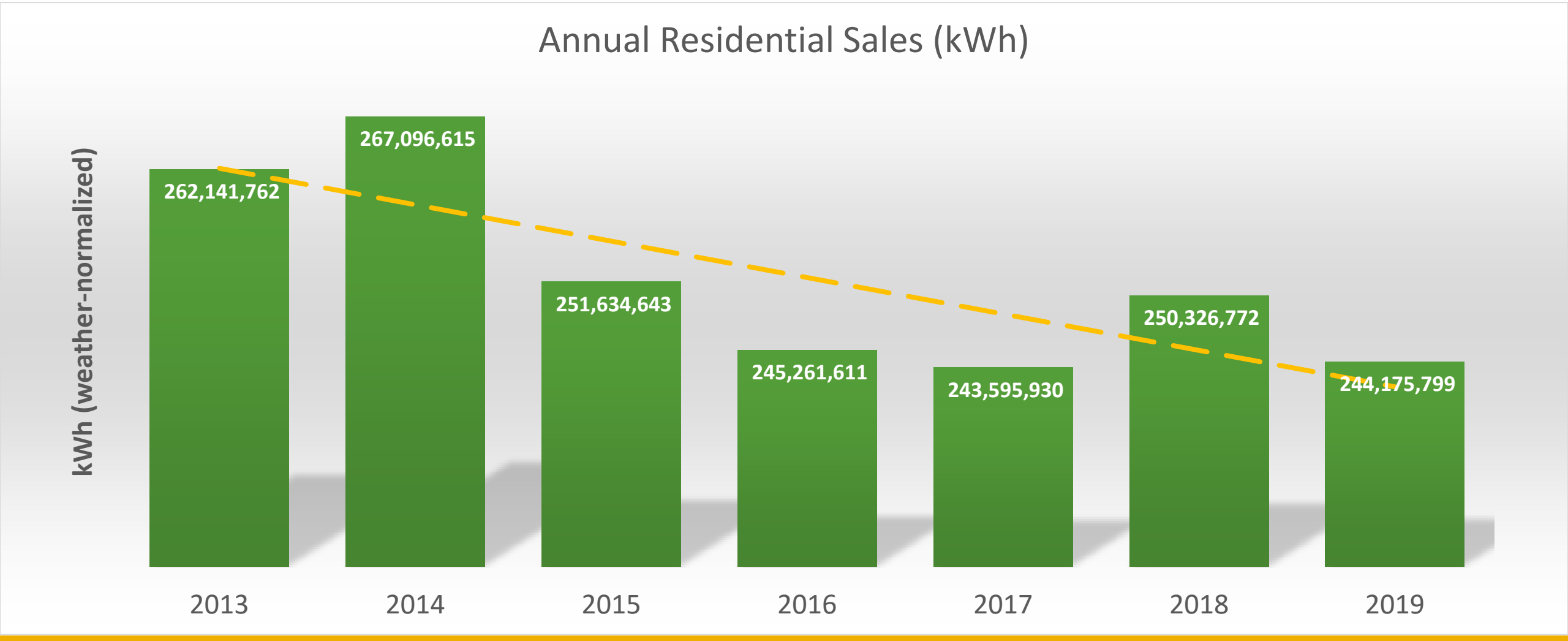


Revenue Requirement is set through MPSC approved Rate Cases

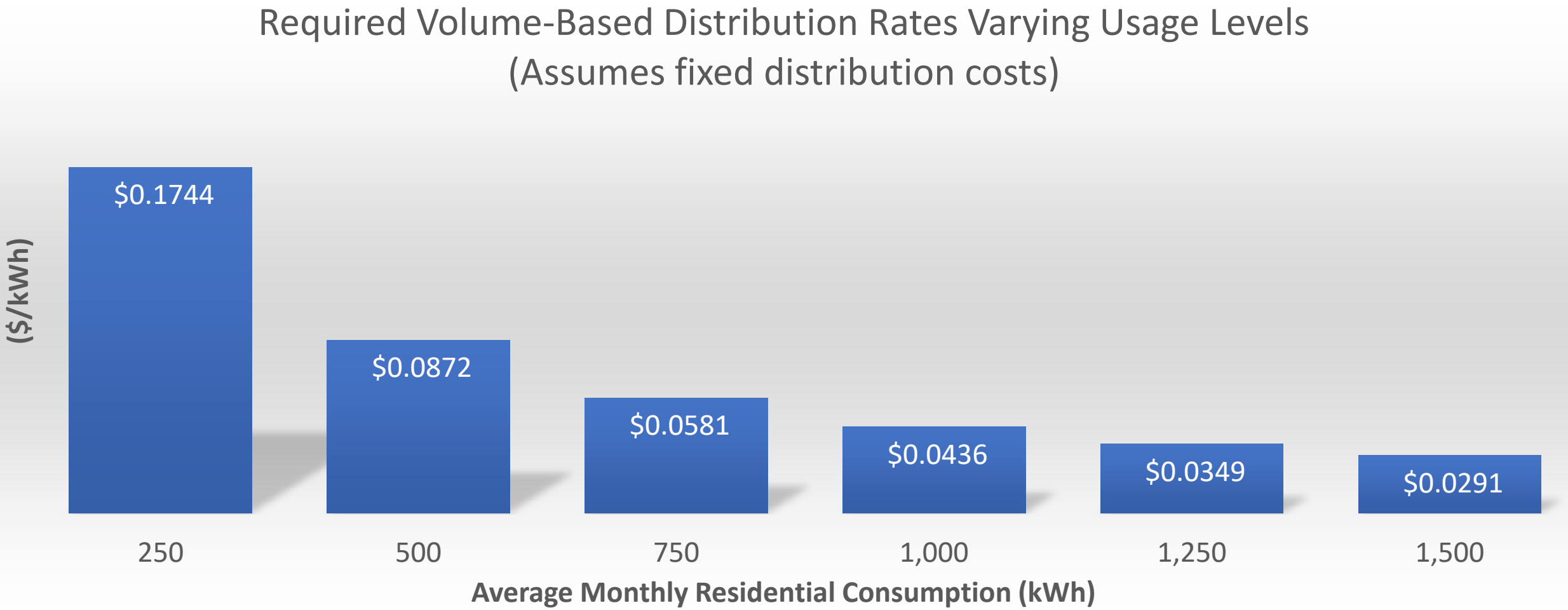
Rates Have Been Trending Downward

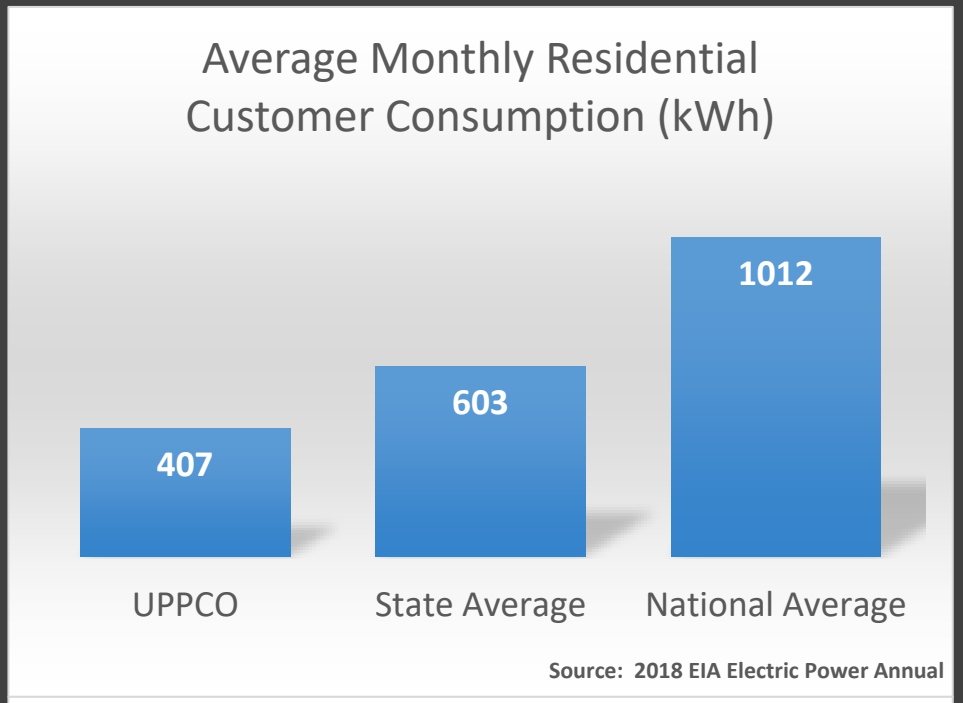


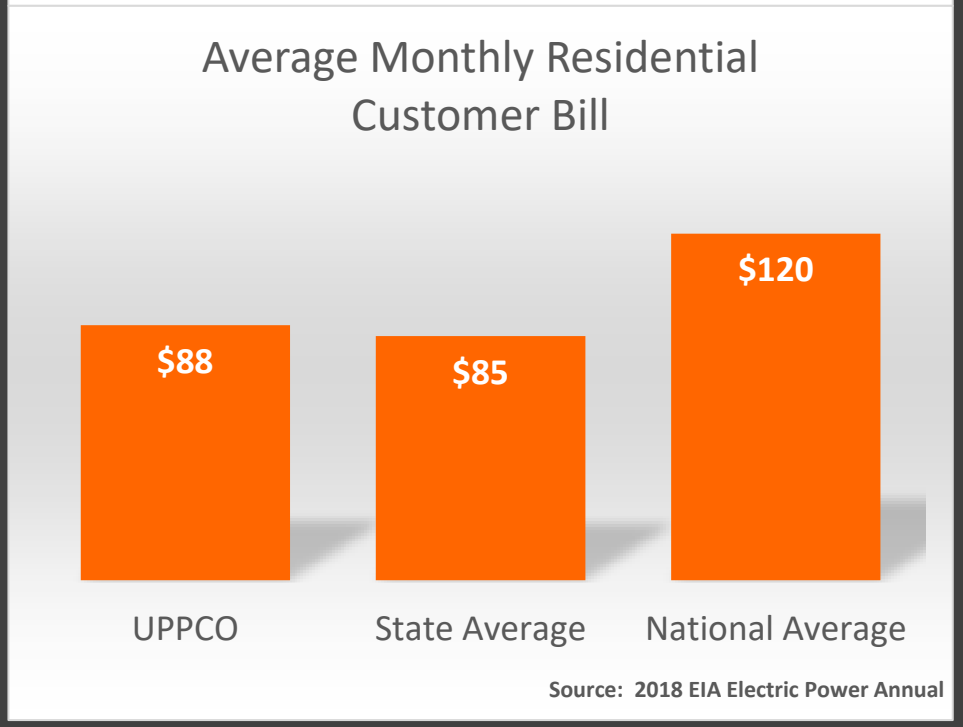
Residential Customers Are Using Less Energy



Lower Usage Leads to Higher Volume-Based Rates





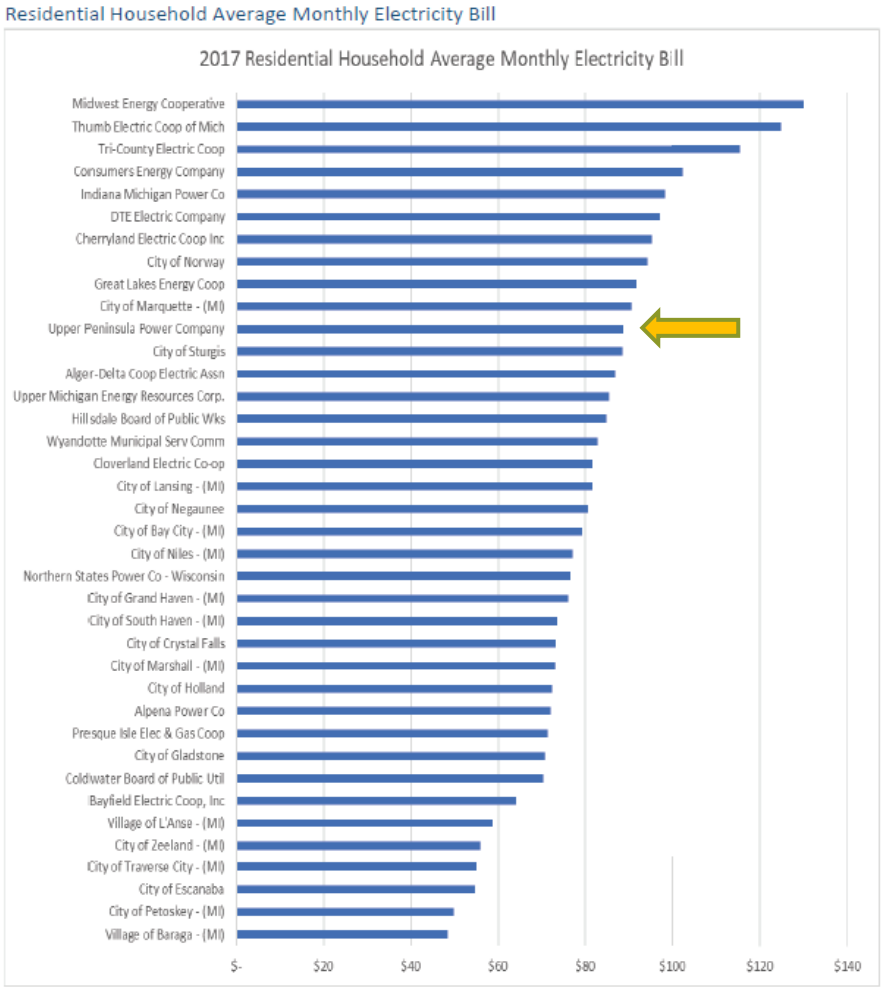


How do we compare?

- On average, UPPCO's residential customers only consume ~67% of the energy that is consumed by Michigan's residential customers (statewide average) and ~40% of the national average
- Low energy consumption (kWh/month) drives up the volumetric pricing ($0.00/kWh) equating to higher volume-based rates
- The average bill for an UPPCO residential customer is only 3% above the statewide average

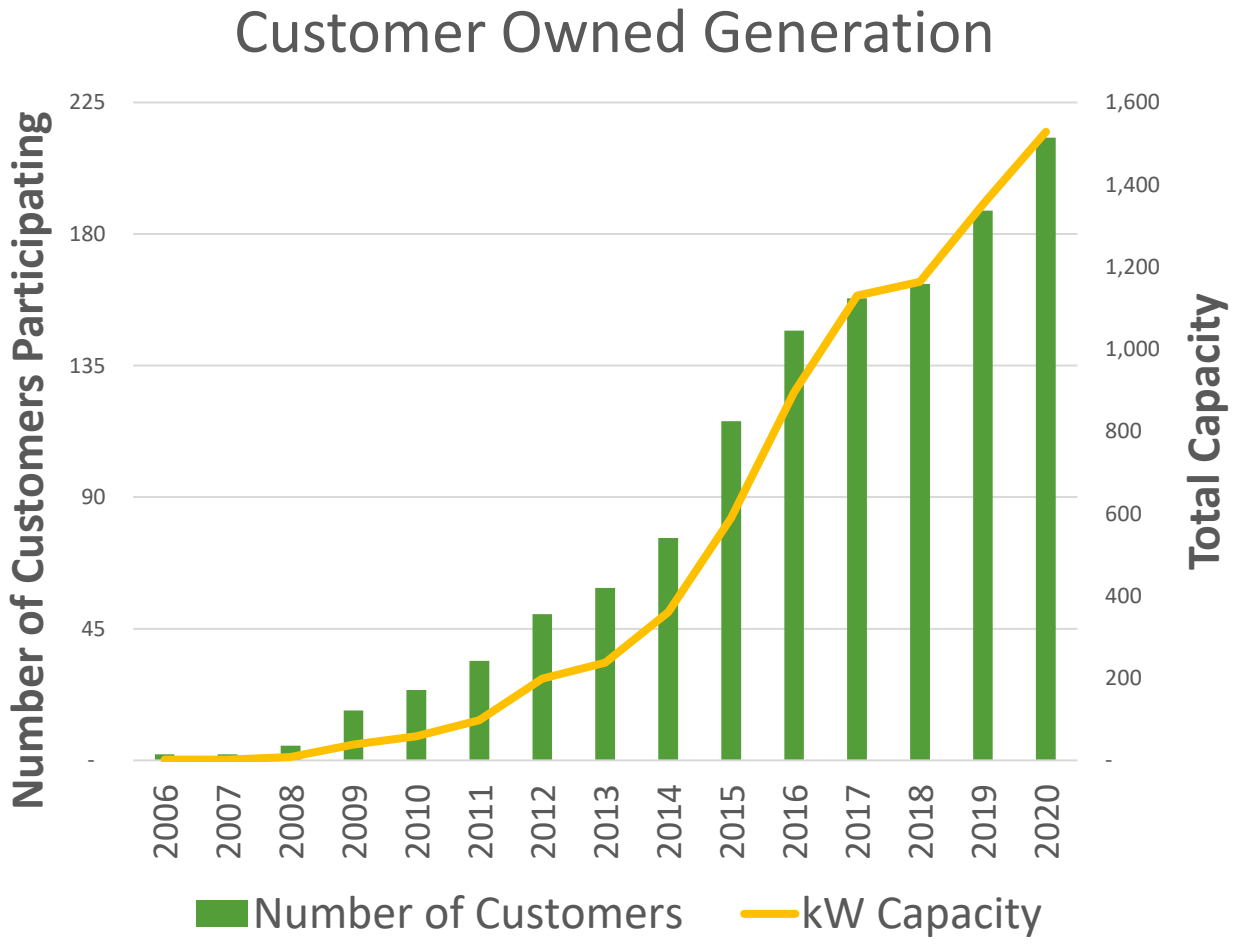
Independent Comparison of Average Monthly Bills

- Even though UPPCO has the 3rd highest residential rate (volume-based) in the State, the average monthly bill is nearly the State average.
- UPPCO's average monthly bill for residential customers is 11th in the State at $89 per month.
- UPPCO's monthly fixed charge ($15/month) for residential customers is below other UP-based utilities ($25/month). A higher monthly fixed charge helps reduce volume-based rates for residential customers.
- Most distribution costs are fixed and warrant a higher fixed monthly charge verses recovery through volume-based rates.
- UPPCO's residential rates have declined ~12% since 2016.



Customer Owned Generation

- Michigan's Net Metering program was established in 2008 under Public Act 295
- Regulated utilities were required to permit customer participation up to a 1% cap
- The program created cross-subsidization between participating and non-participating customers
- UPPCO hit the 1% cap in June 2016
- Michigan's Distributed Generation program was created in 2016 under Public Acts 341 and 342 to phase out the Net Metering program



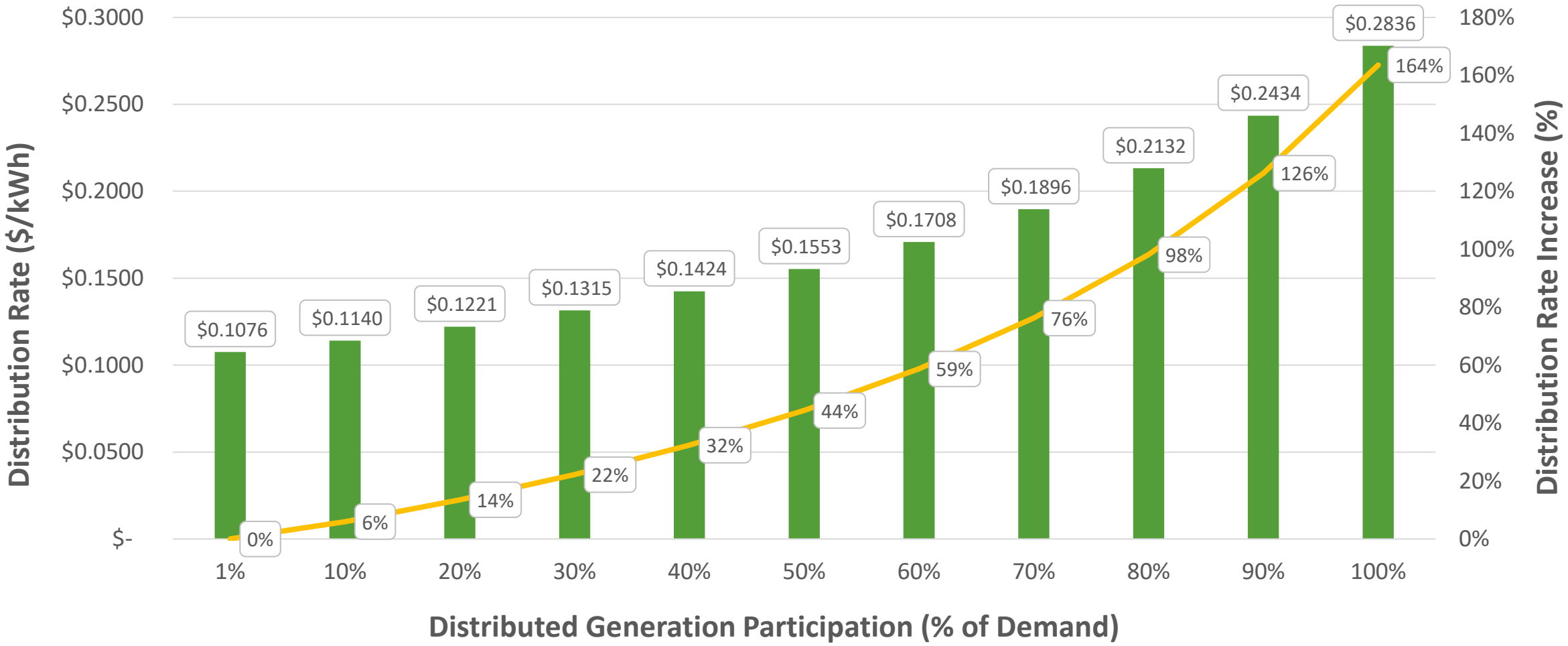
Impact of Net Metering/DG on Power Supply Rates

- Net Metering customers have received as much as 20.5¢/kilowatt-hour (kWh) for the excess energy they produced and exported to the distribution system
- By comparison, UPPCO's average Power Supply cost was less than 4.0¢/kWh for 2019
- As a result, non-participating customers have been subsidizing Net Metering customers, paying as much as 5 times more for the energy that is being produced by their neighbors
- Under the MPSC approved Distributed Generation Rider, UPPCO is currently applying a credit of 7.4¢/kWh following the MPSC-approved In-flow/Out-flow method
- This is nearly double the Company's average annual Power Supply cost for 2019

Impact of Net Metering/DG on Distribution Rates

- UPPCO's 2% Voluntary Cap is set at 2,560 kW based on its 5-year average Demand (1% Statutory Cap is 1,280 kW).
- 1% Cap equates to 1,457,664 kWh of customer-owned energy, per year, and $156,844 of revenue shift from DG customers to non-DG customers through an increase in rates.
- 8% participation equates to $1M in revenue shift (cross-subsidization) per year.
- $1M shift in revenue increases the Distribution Rate by $0.0049/kWh to meet the same Revenue Requirement.
- Utilities would have to charge a higher monthly fixed charge to resolve the cross-subsidization that occurs when DG is integrated into the utility's system. Using the example set forth above, a $60 monthly customer charge would provide adequate resolution and the Cap could be eliminated.
- UPPCO's fixed monthly charge for a residential customer is only $15/month per meter. By way of comparison, some U.P.-based member-regulated cooperatives and municipally owned utilities have monthly charges that are ~$25/month.

Impact of Net Metering/DG on Distribution Rates



Energy Waste Reduction

- UPPCO's Energy Waste Reduction (EWR) program has reduced energy consumption by ~98,500 MWh since enactment of Public Act 295 of 2008
- UPPCO began administrating the EWR program on January 1, 2018
- UPPCO's EWR program is delivered through partnerships with local non-profits
  - Superior Watershed Partnership (Low-income energy assessments and solar projects)
  - Northern Initiatives (Small Business energy efficiency loan program)
- Customer centric
  - $1,204,482.77 of carry over funding was returned to customers in 2018
  - Responsive to customer needs
    - Father's Day Flood of 2018 (appliance replacement and recycling)
    - COVID-19 (virtual Home Energy Assessments)
  - Low-income program expansion
    - Increase in EWR spending targeting most vulnerable customers
    - Program benefits exceeded program costs in 2018 and 2019

Demand Response

- CP-U, WP-3, and RTMP rate classes are eligible to participate in UPPCO's Demand Response programs.
- 42% of UPPCO's Capacity requirements are met through Demand Response resources.
- Higher Demand Response results in lower purchased Capacity costs for customers.
  - Purchased Capacity costs are allocated to customer classes based on average demand.
- Increased reliance on behavioral demand response programs may put system reliability at risk (the Grid is planned to meet Peak Demand conditions).
  - If participating customers do not respond appropriately when called upon for interruption, the grid may not have sufficient resources available to meet total demand.

For more information

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