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# Options for Increasing Competition in the Electricity Sector

Carolinas Power Market Reform Workshop

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# Introduction



The Regulatory Assistance Project (RAP) is a global NGO providing technical and policy assistance to government officials, agency staff, and others on energy and environmental issues.

- Foundation-funded; some contracts
- Non-advocacy; no interventions

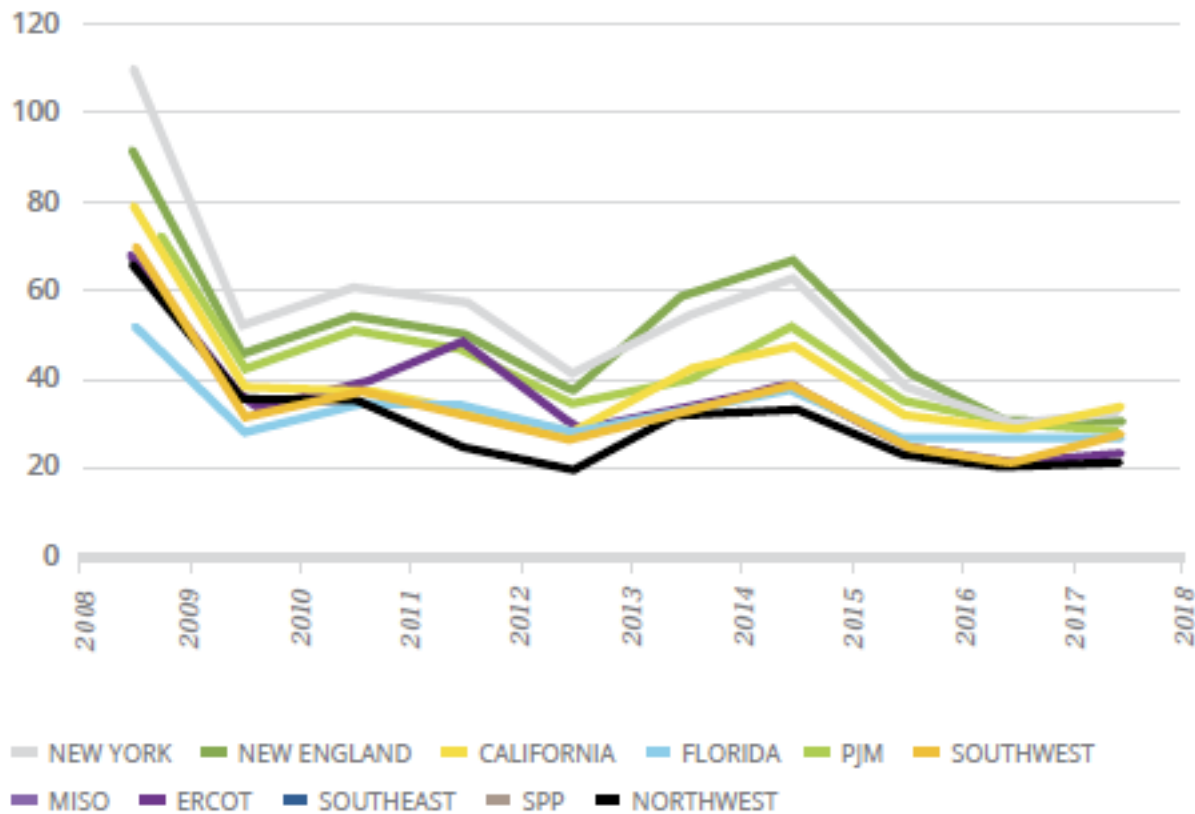
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# Some Options for Increasing Competition in the Electricity Sector

- Wholesale markets
- Retail competition
- Competitive procurement
- Performance-based regulation to create competitive pressures

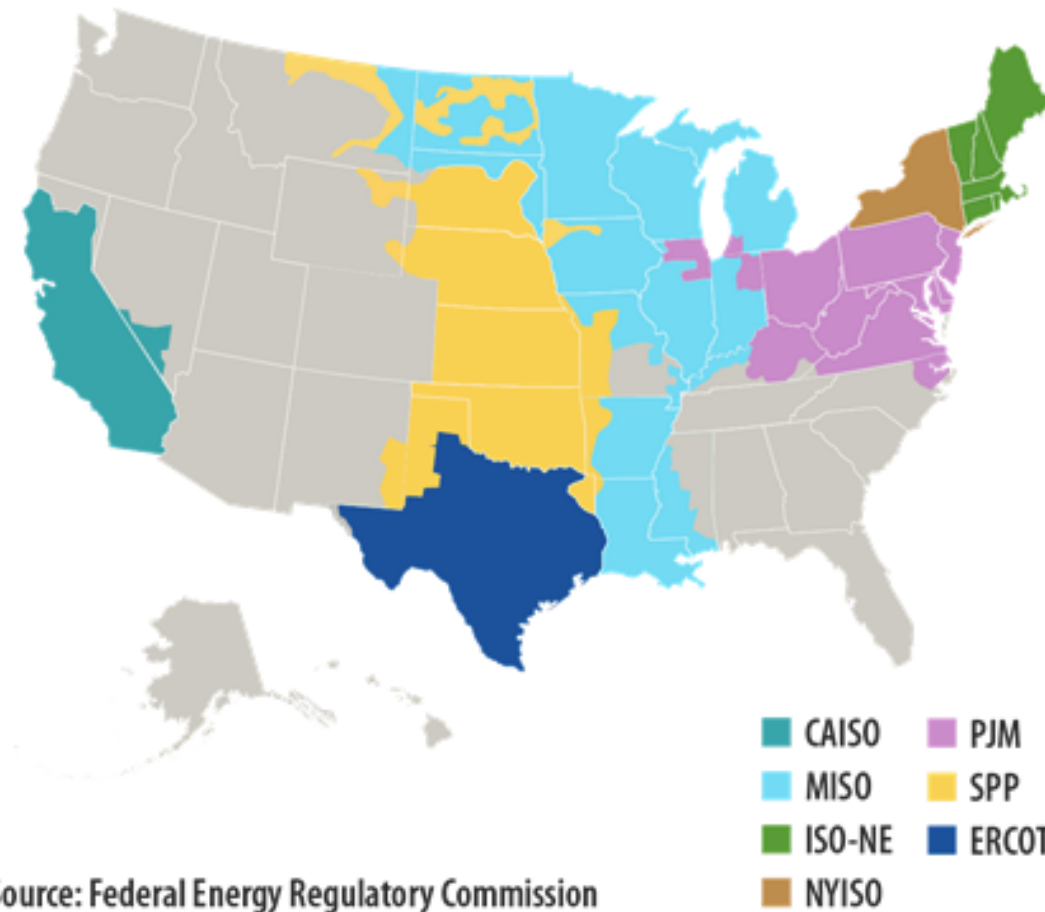


# Wholesale Power Prices (\$/MWh – Real 2017)



Source: BNEF, 2018. Image taken from Goggin, et al, "Customer Focused and Clean: Power Markets for the Future. Wind Solar Alliance. November 2018.

# Wholesale Electric Power Markets



Source: FERC, taken from <https://www.epa.gov/greenpower/us-electricity-grid-markets>

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# Evolution of Wholesale Markets

## Markets in the past:

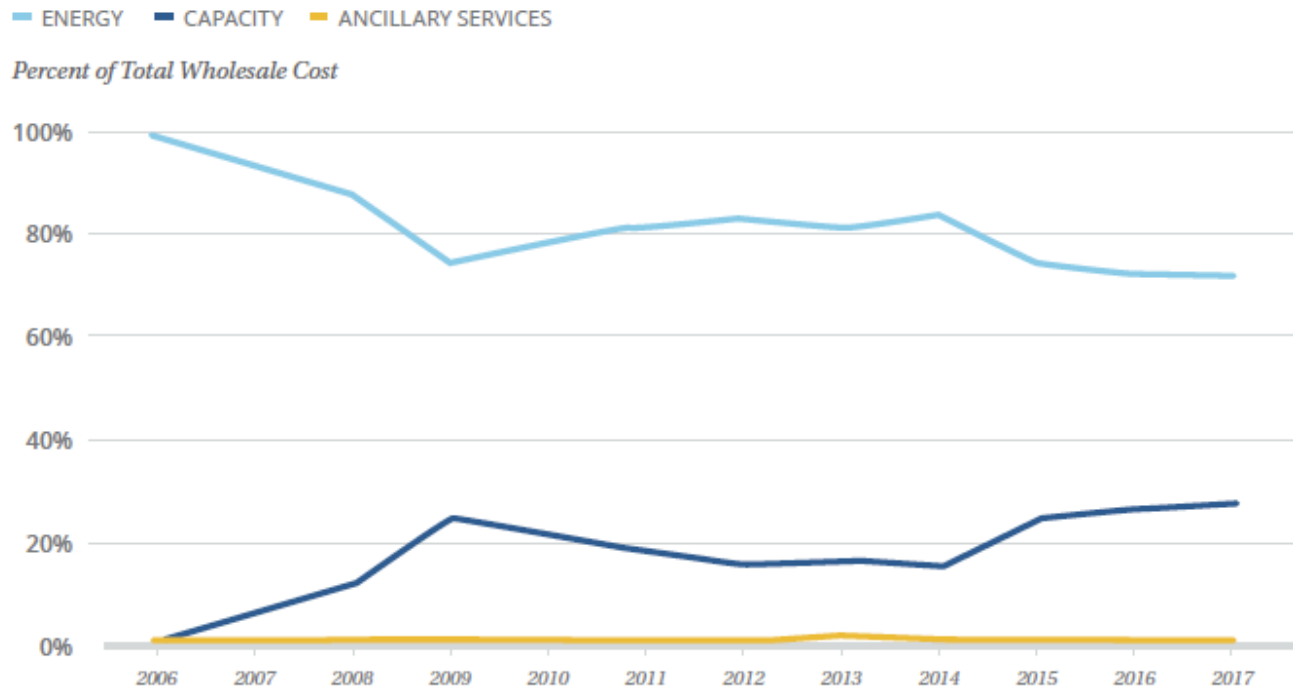
- Dominated by large, inflexible central station power plants
- Few wind and solar generators
- Predictable demand
- Excessive operating reserves

## Markets in the future:

- Near-zero energy cost of renewables
- Low cost natural gas
- State policy goals around clean energy
- Non-discriminatory access to markets
- Need for flexibility

# Challenges with Capacity Markets

## Energy, capacity and ancillary services as shares of total PJM market revenues

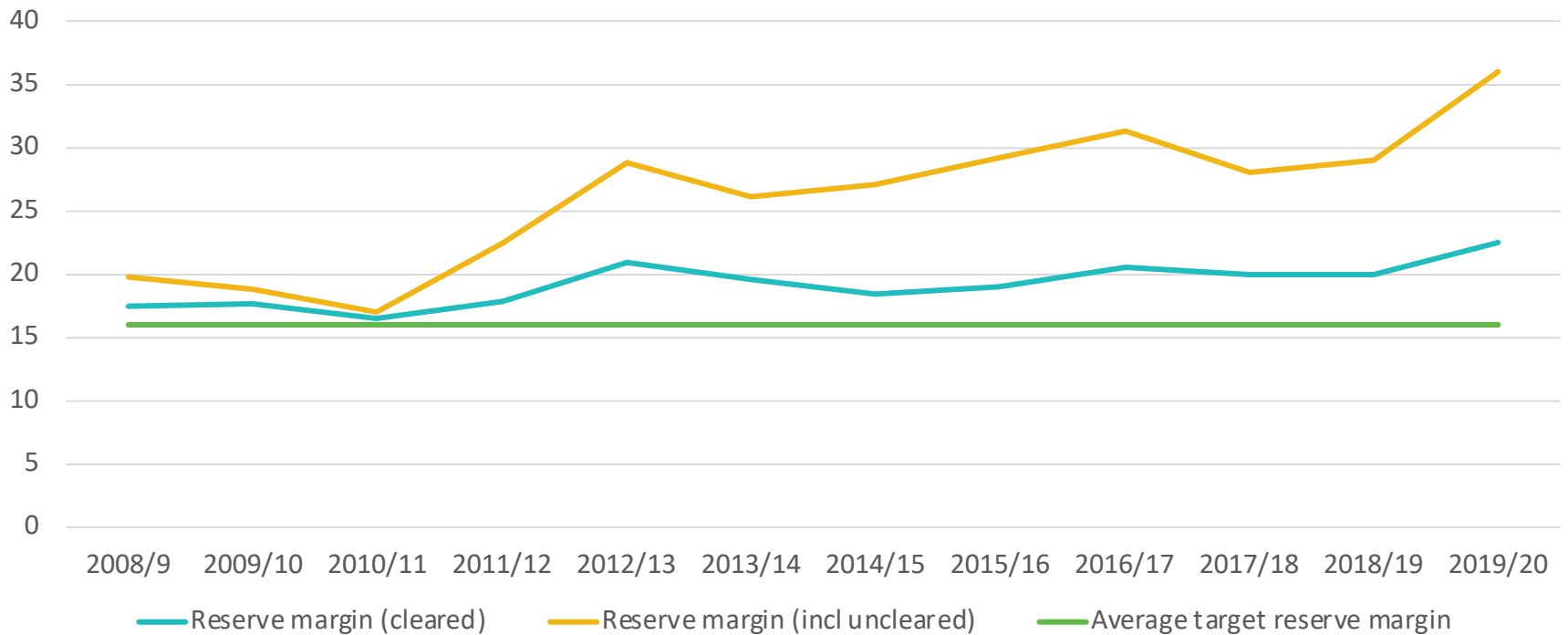


Data from PJM, 2017. Image from Goggin, et al, "Customer Focused and Clean: Power Markets for the Future. Wind Solar Alliance. November 2018.



# Challenges with Capacity Markets

## PJM Reserve Margin Expansion since adoption of capacity market

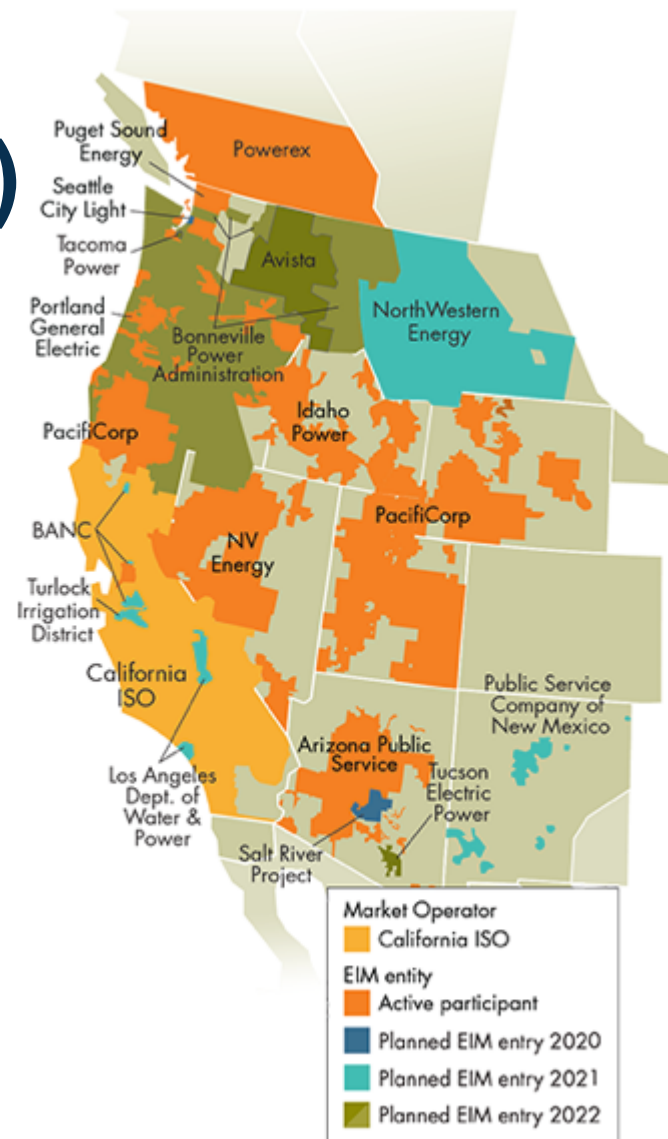


Source: PJM data, compiled by J. Chen, Nicholas Institute for Environmental Policy Solutions, Duke University.



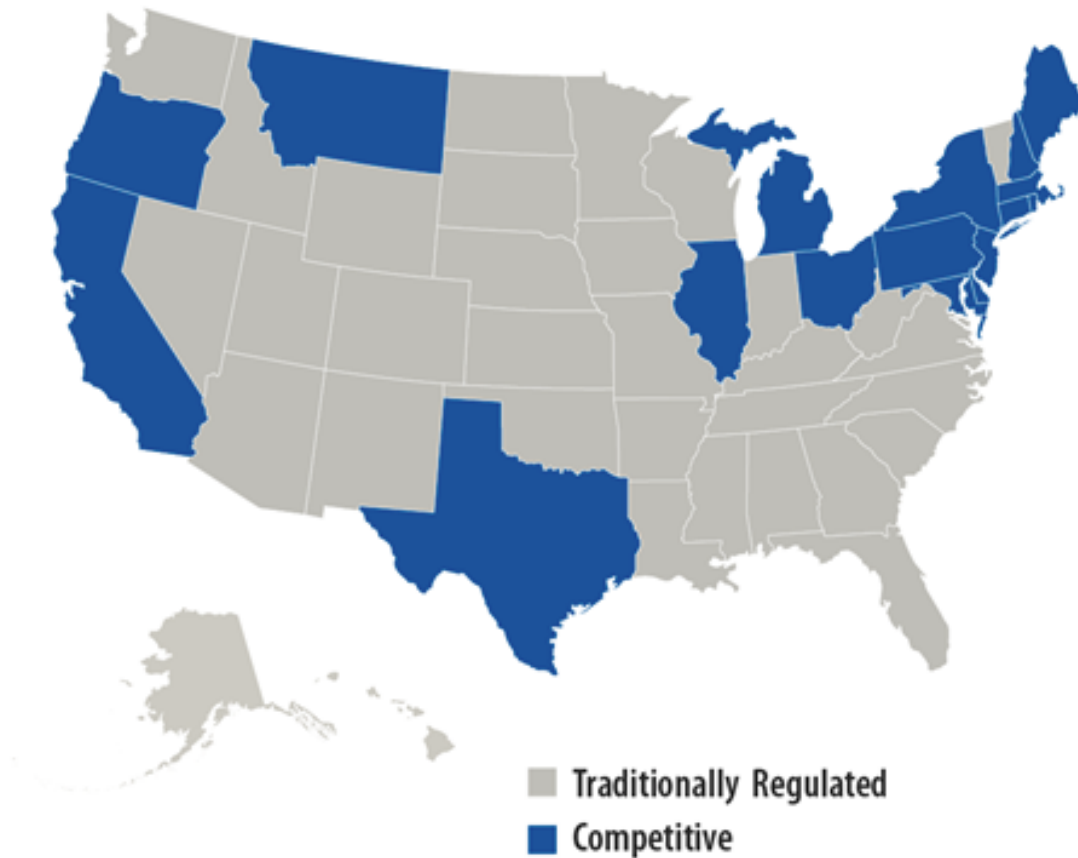
# Western Energy Imbalance Market (EIM)

- Real-time bulk power trading market
  - ~\$800 million in benefits
- Day-ahead market under development
  - Governance issues
  - Resource sufficiency test



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# Retail Electric Power Markets



Taken from <https://www.epa.gov/greenpower/us-electricity-grid-markets>

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# Community Choice Aggregation



## Power Generators

The CCA purchases electricity on behalf of the entire community from traditional or green power sources.



## Utility

The existing utility continues to deliver the electricity using the same power lines and billing mechanisms.



## End Users

Customers benefit by receiving lower cost power, often with higher green power contents and minimal effort.

Graphic from <https://www.epa.gov/greenpower/community-choice-aggregation>

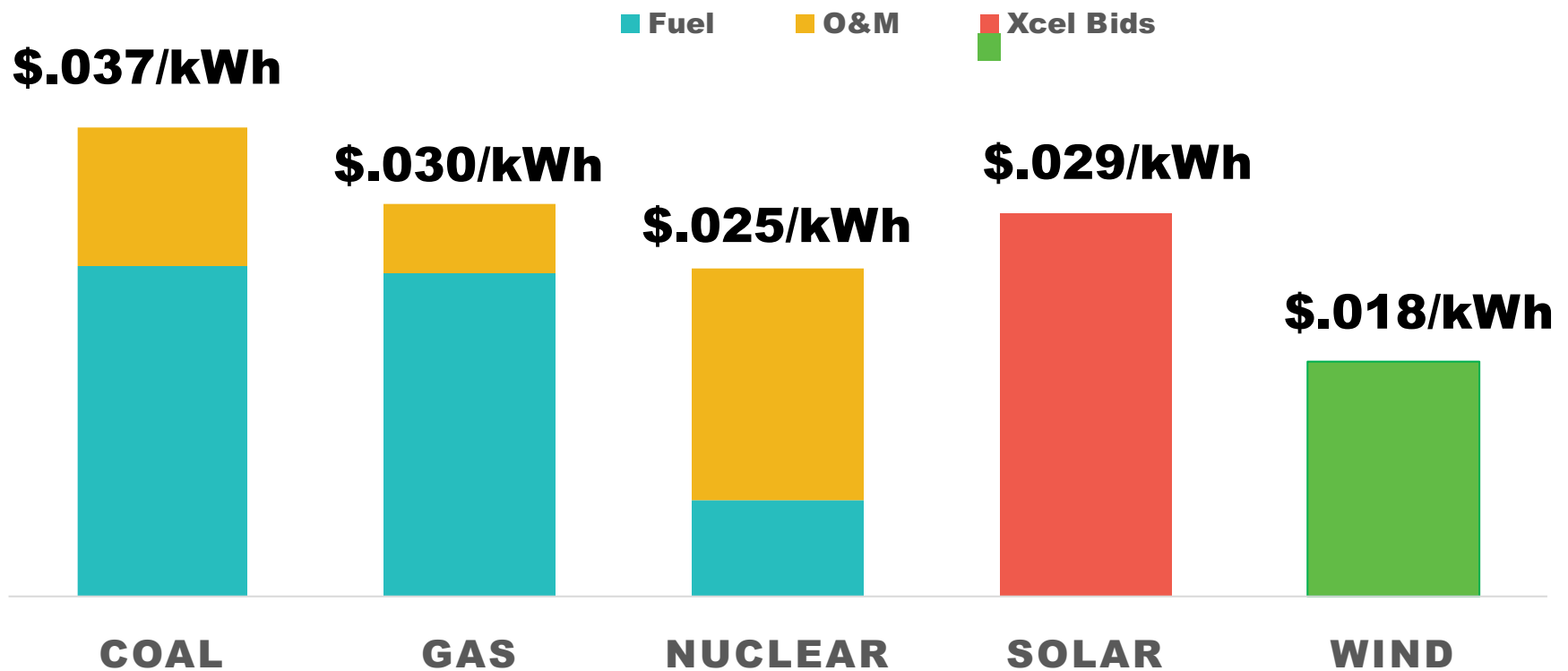
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# Competitive Procurement

- Starts with a resource need
- Solicit proposals for alternatives to fulfill the resource need
- Review prices and attributes of alternatives
- Compare alternatives using criteria (e.g. cost and policy preferences)

# Competitive Procurement

## Existing plant costs vs. Xcel CO bids – late 2017



Existing Plant Average Fuel and O&M from USEIA Table 8.4 Electric Power Annual 2016

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# Xcel Energy Plan – mid 2018

Wind: \$.011/kWh  
Solar: \$.023/kWh  
Solar plus storage:  
\$.030/kWh



Image credit: Jeffrey Beall, Wikimedia

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# Competition from Distributed Resources

- Distributed resources increasingly able to meet grid needs; provide market value
- Traditional utility regulation disincentivizes investment in distributed solutions
- Regulators can invite or require evaluation of alternatives
- Identify needs through planning processes or other means





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# ConEd's Brooklyn-Queens Demand Management Project

- \$1 billion traditional solution avoided with a \$200 million approved investment
- Only \$70 million spent through 2017, \$95 million in net benefits
- Customer and utility side demand reductions
- Incentives for ConEd to achieve demand reductions



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# Can PBR lead to competitive outcomes?

- Reduce ROR on traditional investments, increase earnings opportunities on other activities
- Move toward “TOTEX” model
  - Incorporates both CAPEX and OPEX
- Allow ROR on contracts
- Beware potential pitfalls – there is good PBR and bad PBR

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# Conclusions

- Many options for increasing competition, reducing costs, and expanding renewable energy
- Benefits of wholesale energy markets are achievable without need to join capacity market
- Regulation can invite, require, and incentivize competitive solutions to system needs

# About RAP

The Regulatory Assistance Project (RAP)<sup>®</sup> is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at [raponline.org](https://raponline.org)



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