Achieving NY's Green New Deal

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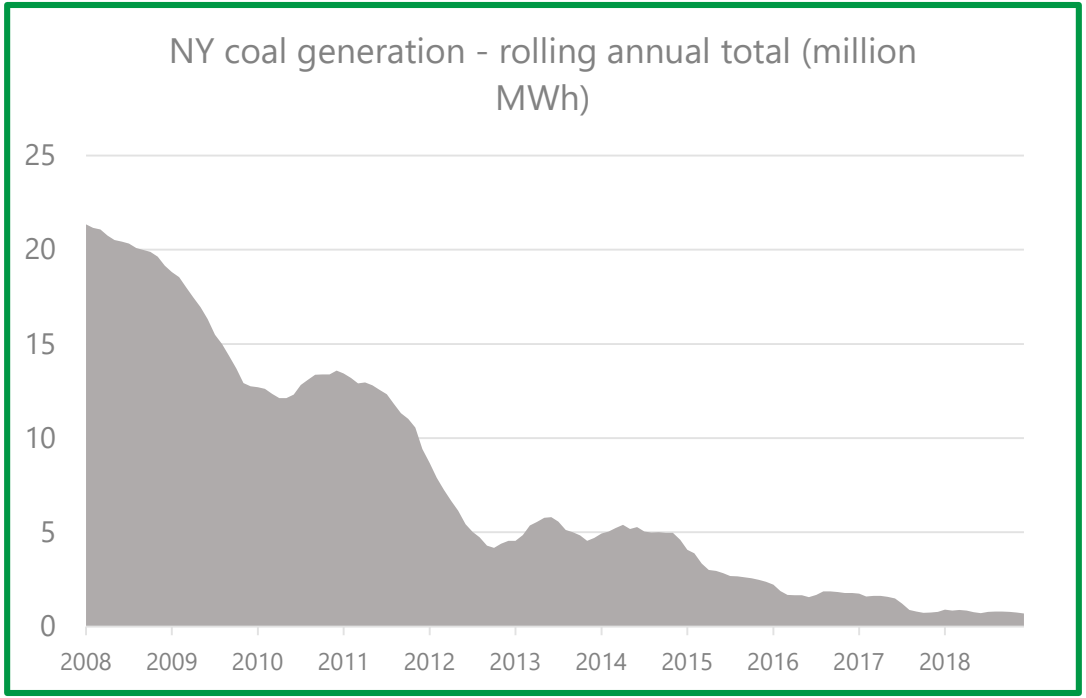
NY is beyond coal



Key Takeaways:

- **21 million MWh in 2007 to less than 1 million MWh in 2018**
- **Coal will be fully phased out in NY by 2020**
- **NY State's Coal transition commitments form a beginning framework for zero carbon New York by 2040**
- **Comprehensive, long term, well funded transition policy needed**
- **NY is national leader in commitments to high road jobs, uplifting local business & communities in clean energy transition**

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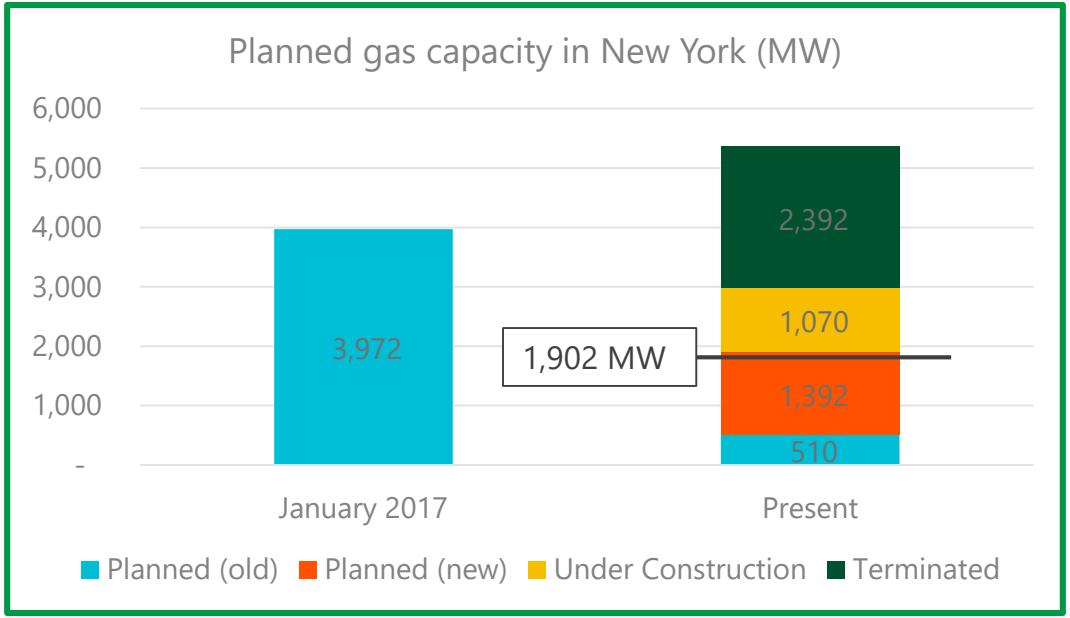
Planned gas capacity is falling

3,972 MW in Jan. 2017 and 1,902 MW now



Key Takeaways:

- **Sierra Club has been tracking planned gas plants since January 2017**
- **Three combined cycle planned power plants were terminated:**
  - **Astoria Repowering: 1,040 MW**
  - **Roseton: 600 MW**
  - **Caithness LI: 752 MW**
- **Cricket Valley (1,070 MW) under construction.**
- **Remaining projects are still at the planning stages but vigorous public opposition exists & won't stop.**
- **New Gas is incompatible with 100 percent decarbonized electric sector.**

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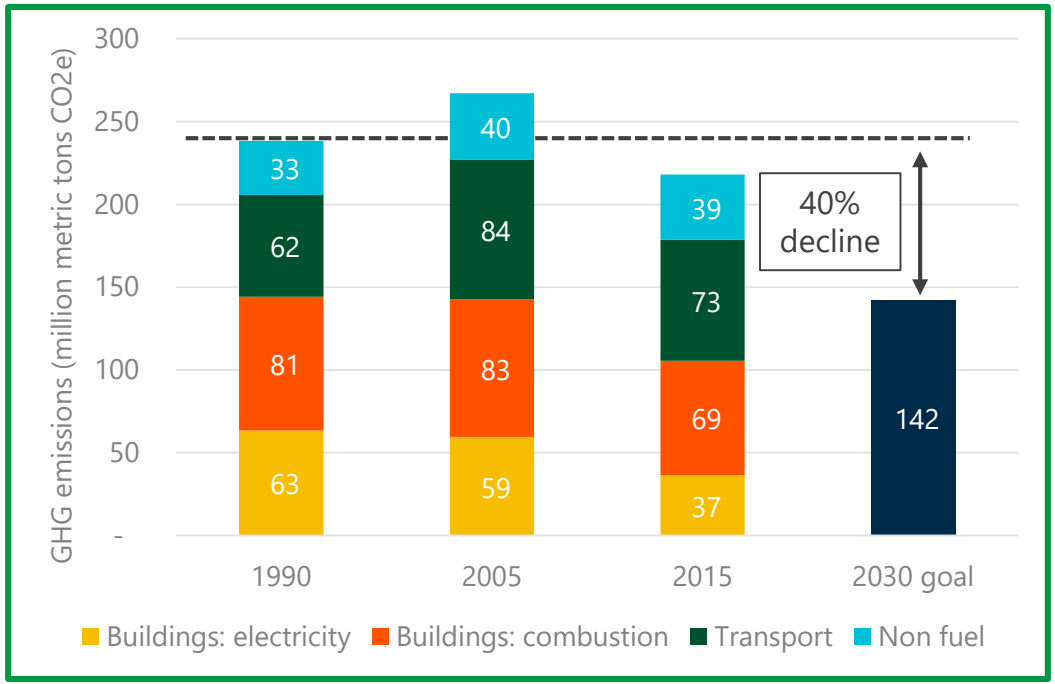
40% by 2030 GHG goal



Key Takeaways:

- **Aggressive action needed in transport and buildings needed to meet 40% goal**
- **2015 progress to date is -9% off 1990 baseline**
- **Transport emissions have increased since 1990 but decreased since 2005**
- **Building emissions (both electricity and combustion) have declined from 144 MMT (1990) to 106 MMT CO_2e (2015)**

What does it take to get to 50% CES?

Existing projects – Tier 2

Existing hydro, wind, and solar projects

New projects – Tier 1

New procurements for offshore wind, onshore wind, and utility scale solar projects

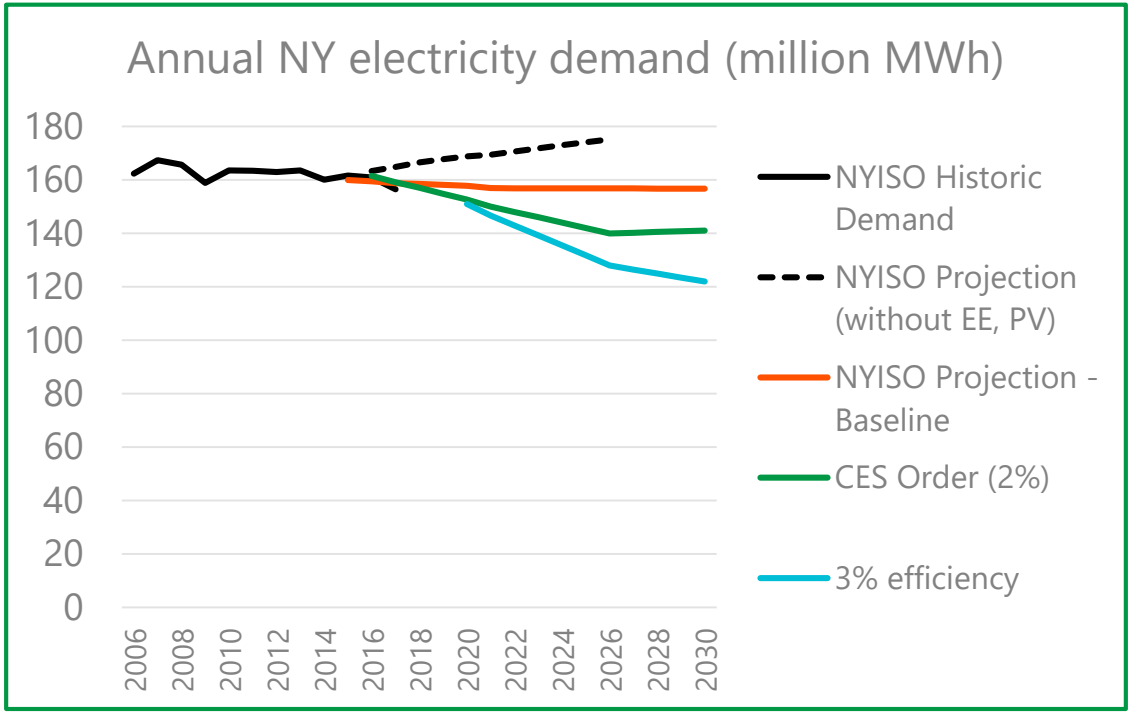
DER's flourish

NY Sun, behind the meter battery storage, and demand response

Aggressive EE

2% under current CES and NY moving now towards 3% annual fuel neutral EE achievement

Efficiency is working for NY

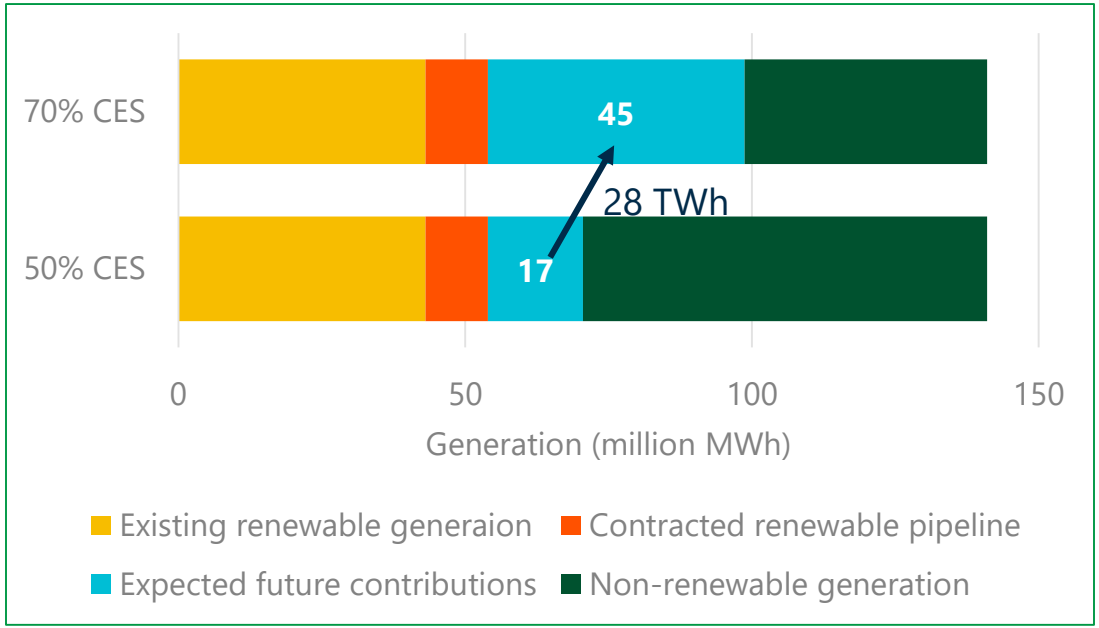


Key Takeaways:

- **Electricity usage fell by 2.75% between 2016 and 2017 efficiency gains are happening!**
- **Peak demand is only projected to grow by 0.13% per year from 2018-2028**
- **2%/year efficiency to be achieved with CES Order**
- **New 3% efficiency fuel neutral target must be locked in and achieved by utilities.**
- **NY continues increase distributed solar**

70% by 2030 is possible

Jump of 28 million MWh in incremental procurement



Key Takeaways:

- **A hypothetical scenario could be that the 45 million MWh of electricity needed could be:**
  - **25% utility solar**
  - **25% on-shore wind**
  - **50% off-shore wind**
- **This would translate (roughly) to:**
  - **6,000+ MW solar**
  - **3,500 MW on-shore wind**
  - **5,000 MW off-shore wind**
- **Over 1,000 MW of solar awarded in 2018 solicitation**
- **Offshore wind target has bumped from 2,400 MW by 2030 to 9,000 MW by 2035**

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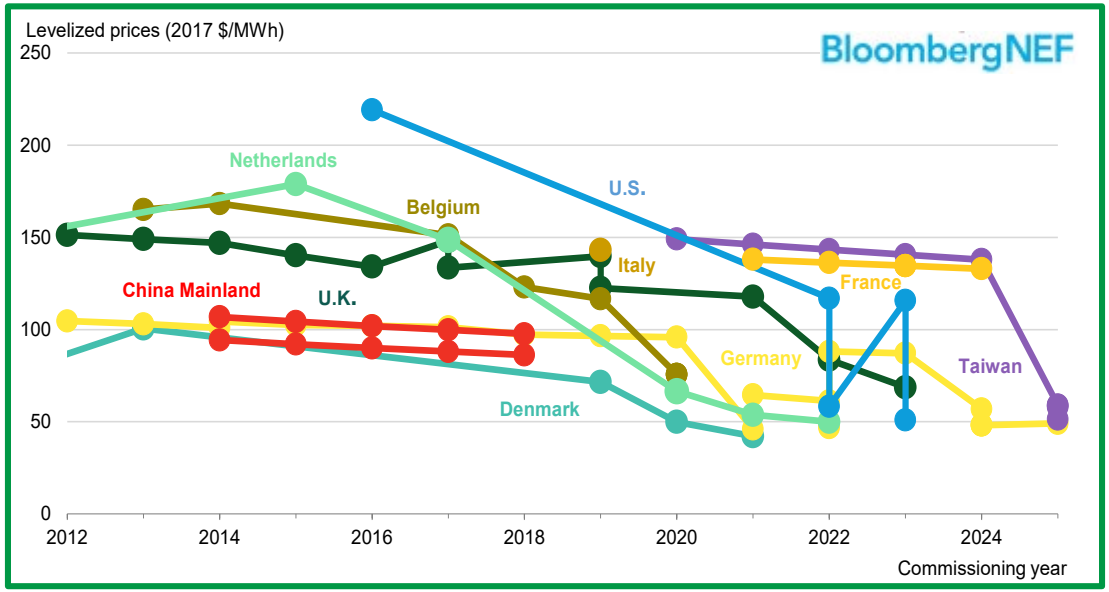
Offshore wind's time has come

Industry is taking off and prices are falling



Key Takeaways:

- **Bloomberg New Energy Finance forecast for cumulative offshore wind capacity in the U.S. by 2030 has nearly doubled in one year:**
  - **Jan 2018: 6,220 MW**
  - **Sept 2018: 10,245 MW**
  - **Dec 2018: 11,486 MW**
- **Costs decreasing significantly**
- **Regional pipeline is robust, NY has most aggressive goals in region**
- **NY is poised to be regional hub for industry and a nation leading clean energy transition model**

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