

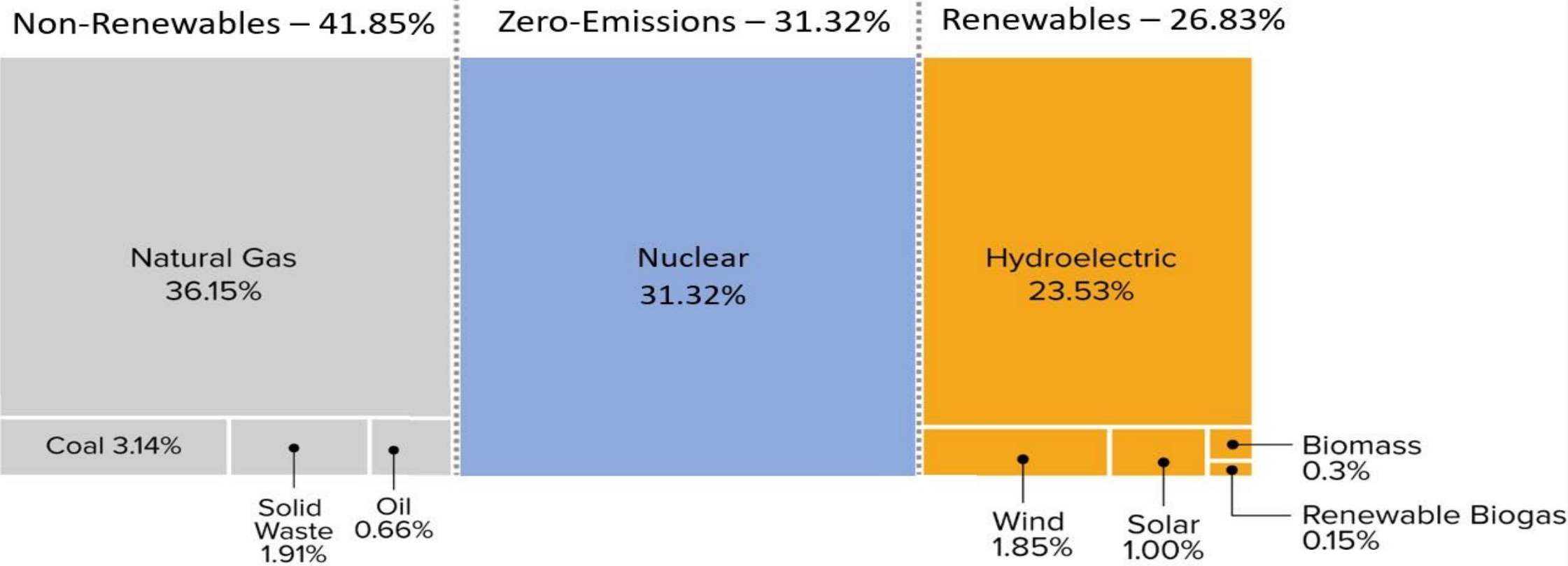
New York Clean Energy Goals

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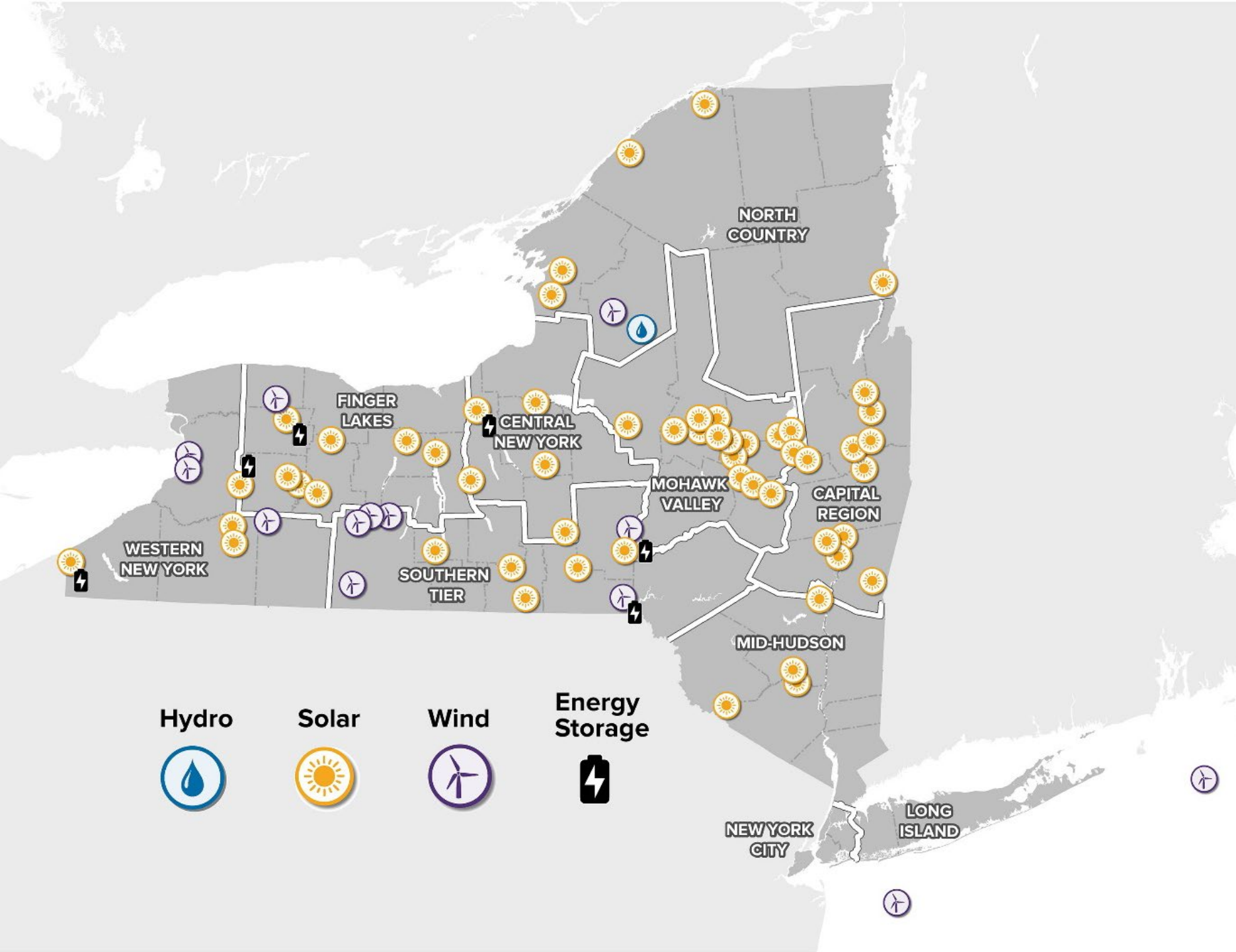
January 6, 2021



New York's 2018 Renewable Energy



*Numbers may not add up to 100% due to rounding.



Hydro



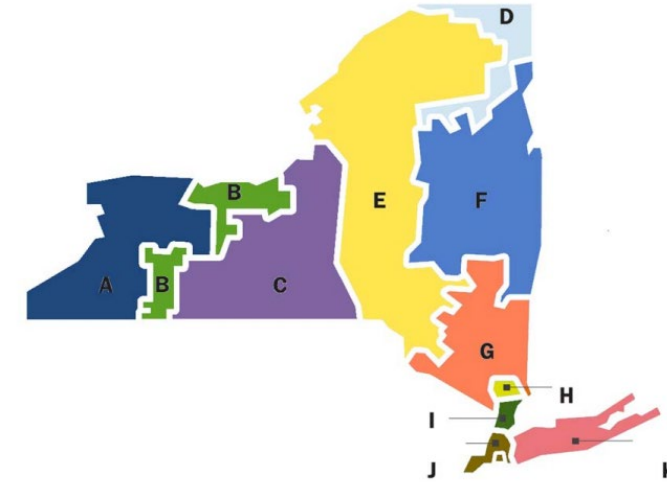
Solar



Wind



Energy Storage



Since 2017,
69 projects
6,000 MW

Climate Leadership and Community Protection Act (Climate Act)

CLEAN ENERGY ECONOMY
nearly 159,000 clean energy jobs

now

RENEWABLE ENERGY
6,000 MW of distributed solar

by 2025

RESILIENT and DISTRIBUTED GRID
1,500 MW of energy storage

ENERGY EFFICIENCY
185 Tbtu end-use savings
in buildings and industrial facilities

**RENEWABLE ENERGY/
CLEAN ENERGY STANDARD**
70% electricity from renewable energy

by 2030

GHG REDUCTION
40% reduction in greenhouse
gas emissions from 1990 levels

3,000 MW of energy storage
30,000 employed in storage sector

RENEWABLE ENERGY
9,000 MW of offshore wind

by 2035

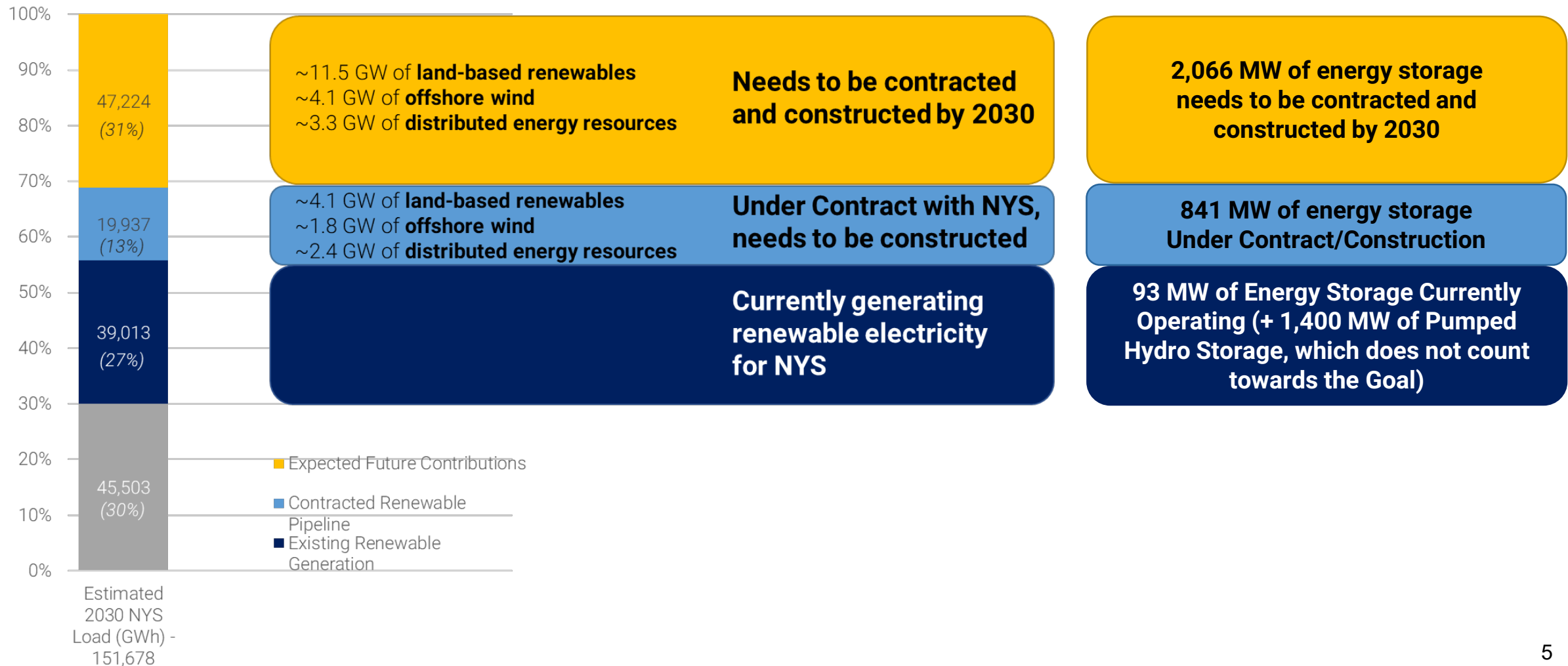
CLEAN ELECTRICITY
100% zero-emission
electricity

by 2040

GHG REDUCTION
85% reduction in greenhouse
gas emissions from 1990 levels

by 2050

Alignment with the Climate Act



Accelerated Renewable Energy Growth and Community Benefit Act

Three Major Components:

- > Office of Renewable Energy Siting
- > Clean Energy Resources Development and Incentives (Build-Ready) Program
- > State Power Grid Study and Program

The Act will:

- > advance renewable energy, drive statewide economic growth, and create jobs
- > streamline the process for environmentally responsible and cost-effective siting of large-scale renewable energy projects across the State
- > establish tools for achieving the State mandate to obtain 70 percent of the State's electricity from renewable sources by 2030 and other nation-leading goals of the Climate Leadership and Community Protection Act

Clean Energy Standard Expansion

> Alignment with the Climate Act

- Adopts 70 by 30 Goal on the path to 100 by 40
- Narrows definition of Renewable Energy (per the Climate Act)

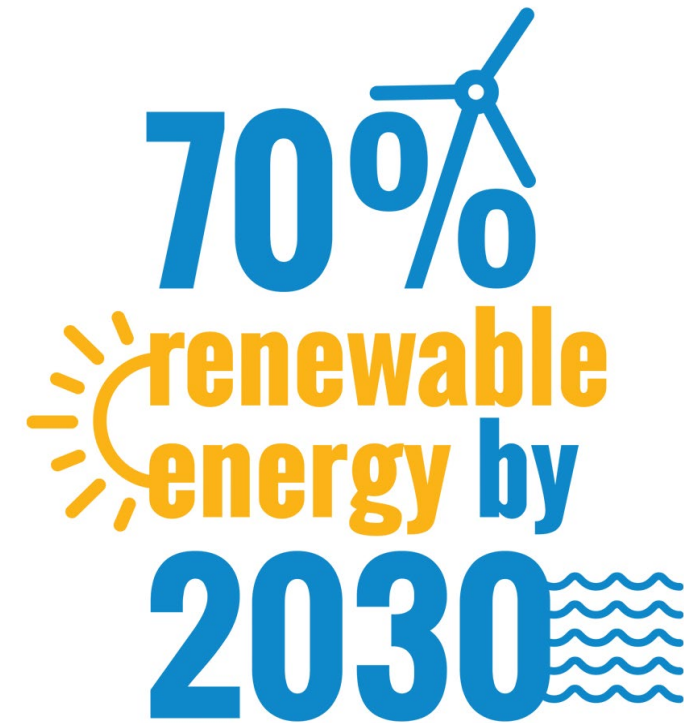
> Procurement Targets

- Tier 1 Land Based Renewables (~4,500 GWh per year from through 2026)
- Offshore Wind (~4,500 GWh per year through 2027)

> Tier 4 Program – Renewables in New York City

> Competitive Tier 2 Program – Existing Renewables

> Repowering



70%
renewable
energy by
2030

Clean Energy Standard Expansion

Tier 1

- ✓ Primary mechanism (by volume) to deliver incremental renewables to achieve Climate Act targets
- ✓ Land-Based Wind, Solar PV, small hydro

Tier 2 Maintenance

- ✓ Mechanism to provide financial support for existing renewable projects

Tier 3

- ✓ Zero Emission Credits (ZECs) for existing nuclear resources

Offshore Wind

- ✓ Second largest mechanism (by volume) to deliver incremental renewables to reach Climate Act targets, interim 5.8 GW 2030 milestone assumed toward 9 GW by 2035 target

Competitive Tier 2

- ✓ Competitive program for existing wind and hydro located in NYS

Tier 4

- ✓ Renewables located in or delivered to NYISO Zone J (NYC)

Beyond 2030

> **Electricity Demand**

- Electrification of buildings and transportation drives significant increase in annual electric load
- NYS shifts from summer peak to winter peak around 2040, driven primarily by electrification of heating in buildings and EV battery charging

> **Decarbonizing the Electricity Sector**

- Energy efficiency and managed electrification will be critical to mitigating load growth and “peak heat” impacts
- New York State has significant potential renewable energy resources and zero-carbon technology options, as well as access to adjoining states, provinces, and regional transmission systems, which offer additional options for energy supply.
 - In-state development of new resources
 - Battery storage and demand-side flexibility can play a key role in intraday balancing
 - A number of firm, zero-carbon resources can help solve interday balancing challenges, e.g. multi-day periods of low renewable output
 - Transmission investments will be needed to enable the delivery of 100% zero-emission electricity

Resources

- > NYSERDA CES: <https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard>
- > 2020 CES Order: <https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Standard/2020/October-15-Order-Adopting-Modifications-to-the-Clean-Energy-Standard.pdf>
- > Pathways to Deep Decarbonization in New York State: <https://climate.ny.gov/Climate-Resources>