

New York's Wholesale Electricity Markets

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Who is NYISO?

- **The NYISO is an independent and non-profit organization dedicated to managing NY's power grid and wholesale energy markets.**
- **Our purpose:**
 - **Maintaining** and enhancing regional reliability
 - **Operating** open and fair wholesale electricity markets
 - **Planning** the bulk power system for the future
 - **Providing** information to policymakers, stakeholders, and investors
- **The NYISO is unaffiliated with market interests and serves the public under the oversight of state, federal, and reliability organizations.**



Markets

Energy Market

- Purchase and sale of electrical energy at the wholesale level
- Evaluates competitive bids and offers
- Two Settlement System
 - Day-Ahead Market
 - Real-Time Market



Ancillary Services

- Six services which support transmission of energy while maintaining reliable operation of the power system
- Selected, scheduled, and directed by the NYISO



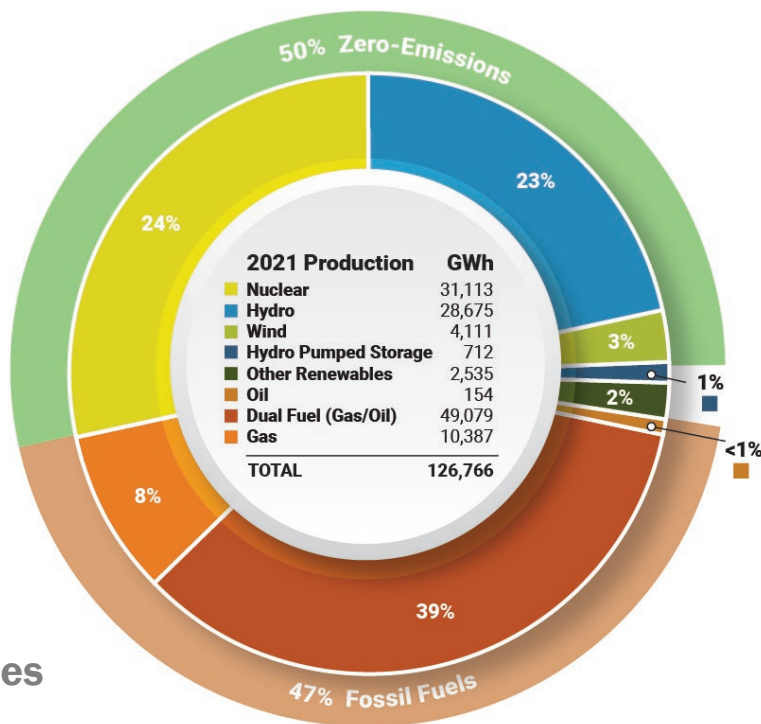
Capacity Market

- Purchase and sale of capacity between ICAP suppliers and Load Serving Entities (LSEs)
- Ensures resource adequacy and provides market signal for investment

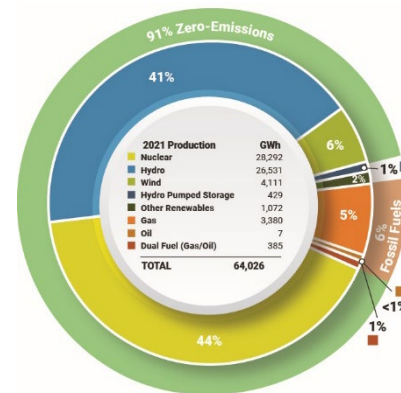


Energy Production by Fuel Source: 2021

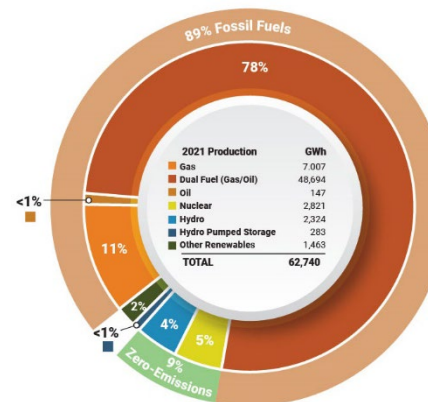
NYCA Energy Production by Fuel Source: 2021



Energy is the amount of electricity a generator produces over time



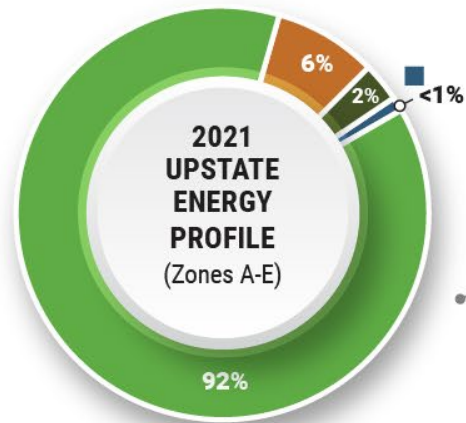
Upstate (Zones A-E) Energy Production by Fuel Source: 2021



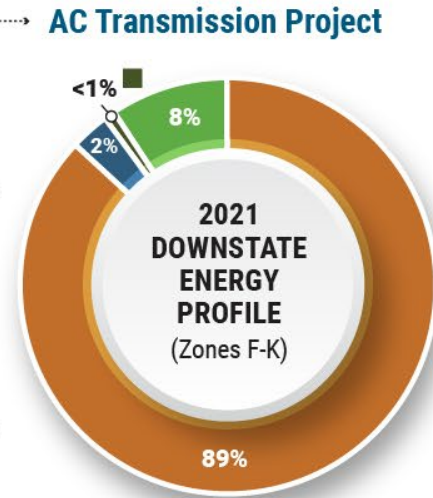
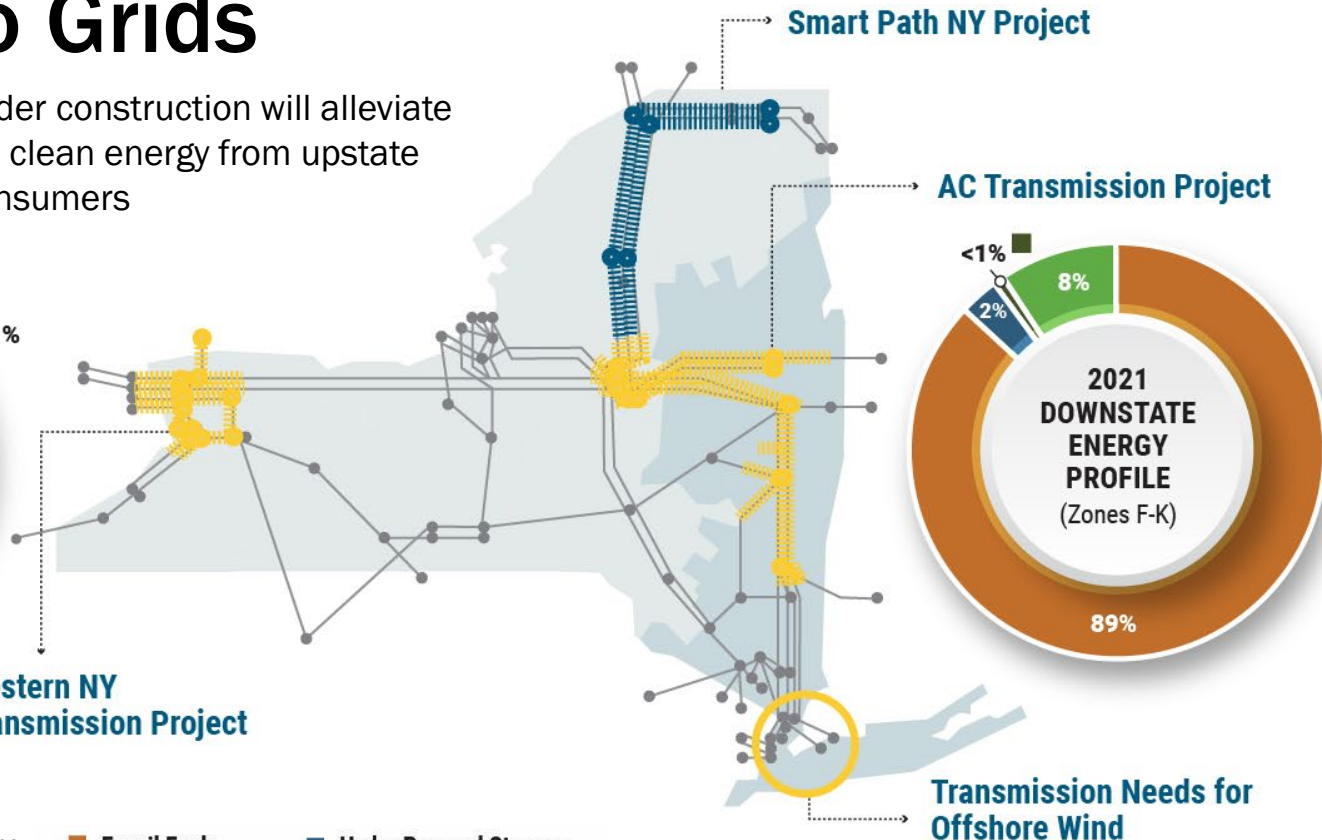
Downstate (Zones F-K) Energy Production by Fuel Source: 2021

Tale of Two Grids

Transmission upgrades under construction will alleviate constraints to deliver more clean energy from upstate resources to downstate consumers



Western NY Transmission Project



Transmission Needs for Offshore Wind

2021 energy production from:

- Fossil Fuels
- Zero-Emissions
- Hydro Pumped Storage
- Other Renewables

Capacity Accreditation

- **The resource mix is evolving, and the NYISO's markets must accurately value resources for the attributes they provide in meeting system reliability.**
- **The Capacity Accreditation project will determine the methodology for calculating Capacity accreditation factors for different resource classes.**
- **NYISO's Capacity Accreditation Proposal will ensure an efficient ICAP Market that supports reliability and public policy goals through a marginal accreditation approach.**
 - A marginal accreditation approach can facilitate entry of public policy resources at a lower consumer cost than an average accreditation approach.
 - Valuing resources based on their marginal contribution to meeting resource adequacy needs is critical to inform efficient public and private investment decisions with the grid in transition.

Grid in Transition and Balancing Intermittency

- **Dispatchability and flexibility are key resource attributes that must exist to operate a reliable electric grid. The Grid in Transition and Balancing Intermittency efforts seek to ensure these resource attributes exist in our future, lower emission, generation fleet**
- **2022 Grid in Transition Study looked at net load to understand increasing variability in the electric grid**
 - The study finds that in the next 8-9 years, average ramp up needs increase, but maximum ramp needs are flat and comparable to 2021. Beyond this period, both average and maximum ramp up needs are increasing.
- **The Balancing Intermittency effort will evaluate grid characteristics, resource attributes, and potential new market products that may be necessary to continue reliably maintaining system balance in the face of growing uncertainty in the electric grid.**
 - Assessing fleet startup, ramp capability, and the evolution of intermittent forecast error over time could inform whether we could create a new reserve product with a longer “notification time”.
 - Exploring fleet capability and intermittent forecast duration error could inform whether we should create a new “sustainability requirement” for reserves products.

Our Mission & Vision



Mission

Ensure power system reliability and competitive markets for New York in a clean energy future



Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation