

Winter 2018 Capacity Assessment & Preparedness

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FERC Winter Assessment

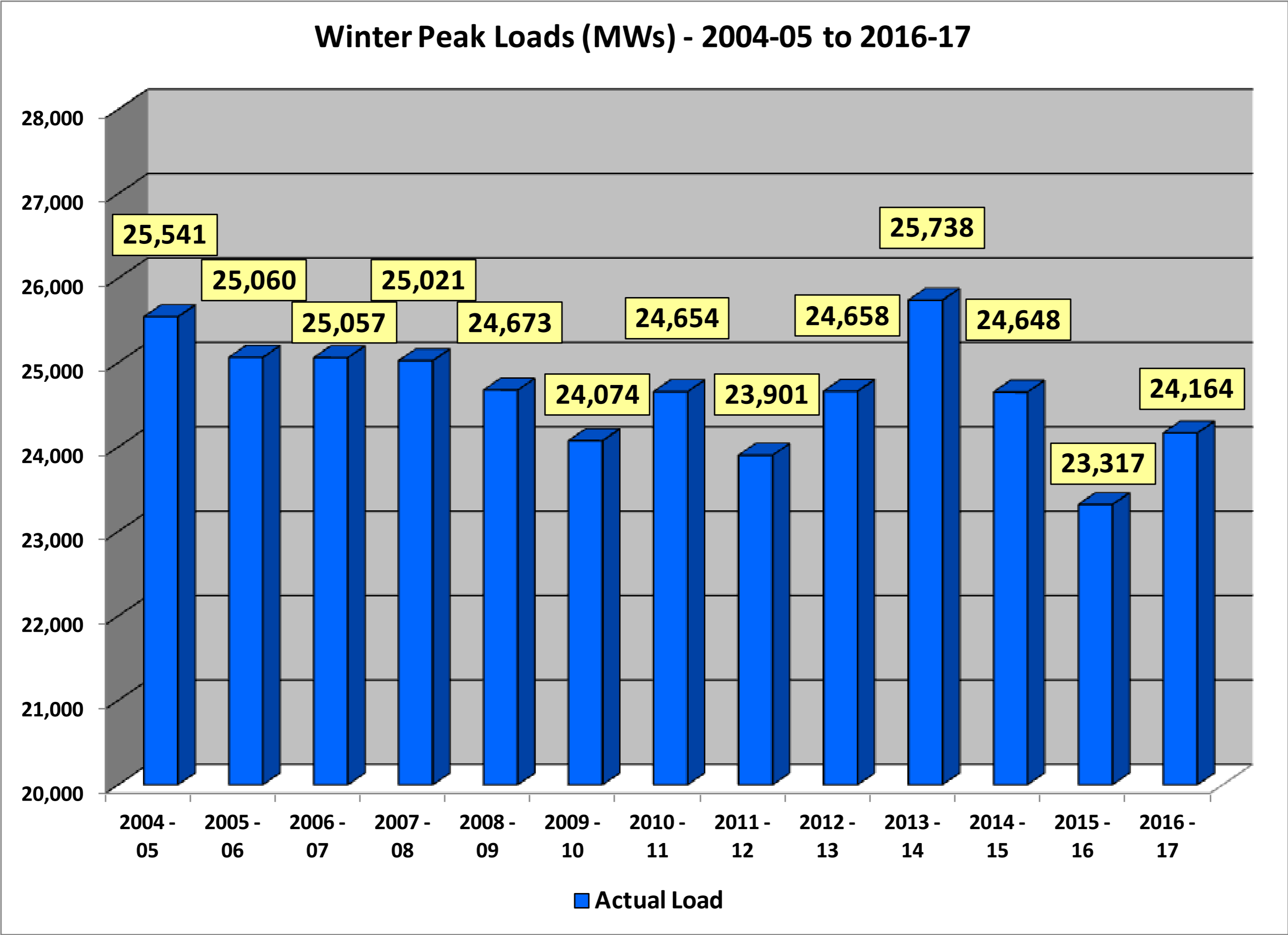
October 19, 2017



Agenda

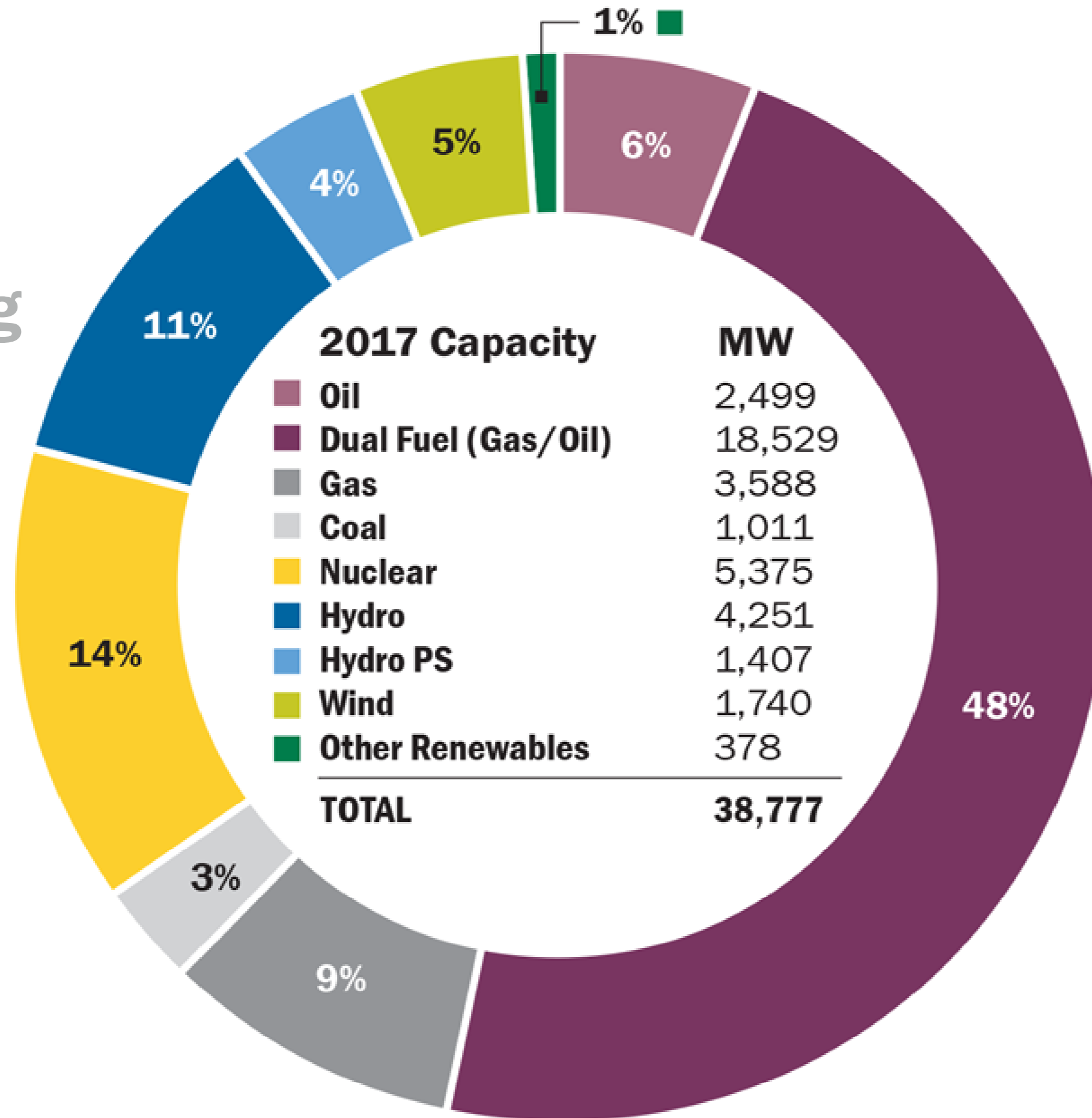
- **Overview**
 - Historic Winter Peaks
 - Capacity
 - Historic Fuel and Energy Prices
- **Winter 2017-18 Capacity Assessment**
- **Recent Market Enhancements**
- **Winter Preparedness**
 - Gas-Electric Communications
 - Situational Awareness
- **Continued Challenges**

Overview: Historic Winter Peaks

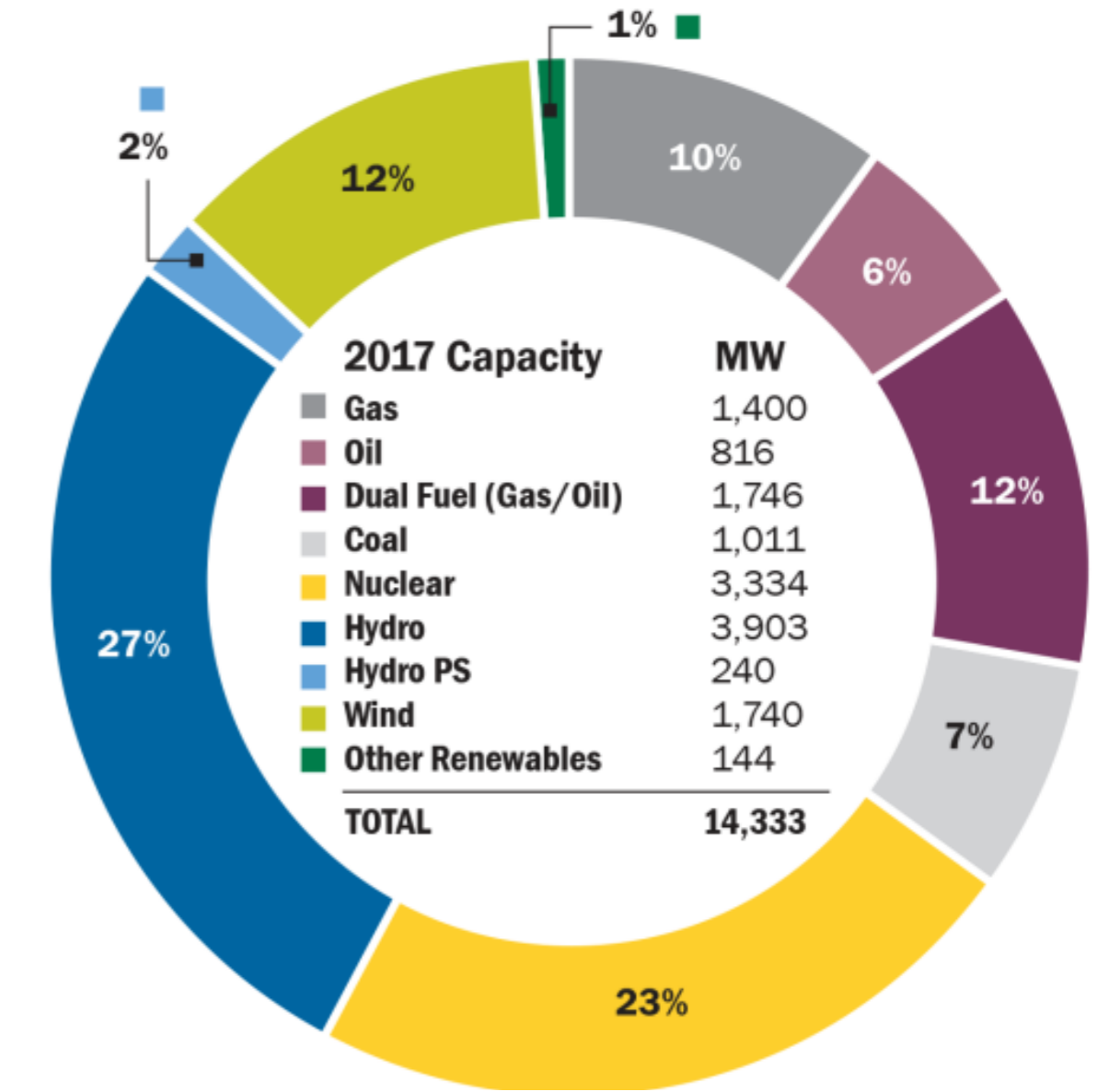


Overview: 2017 Fuel Mix – Generating Capacity

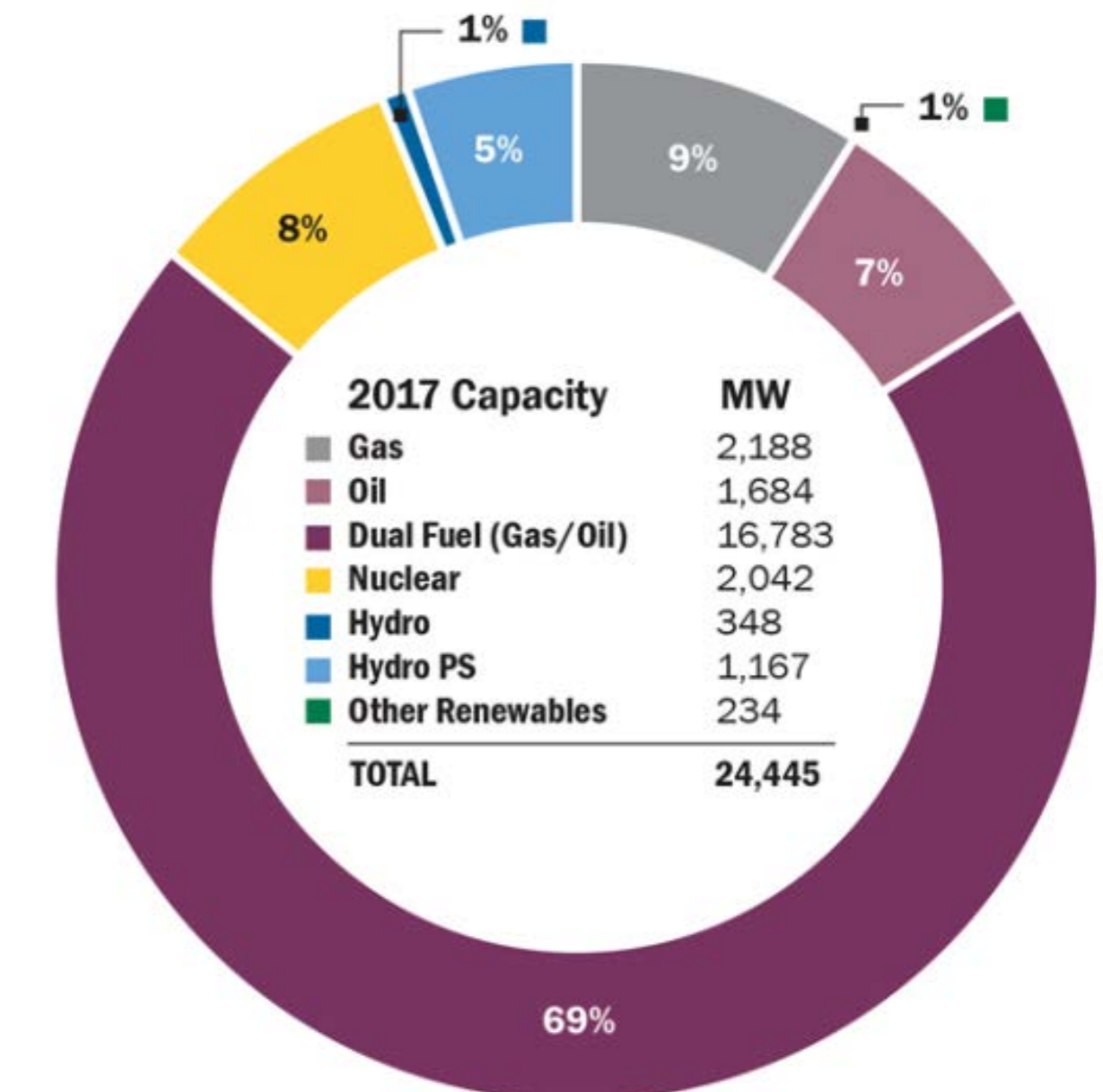
New York
Statewide
Generating
Capacity
by Fuel
Source



Upstate
(Zones A-E)
Generating
Capacity by
Fuel Source

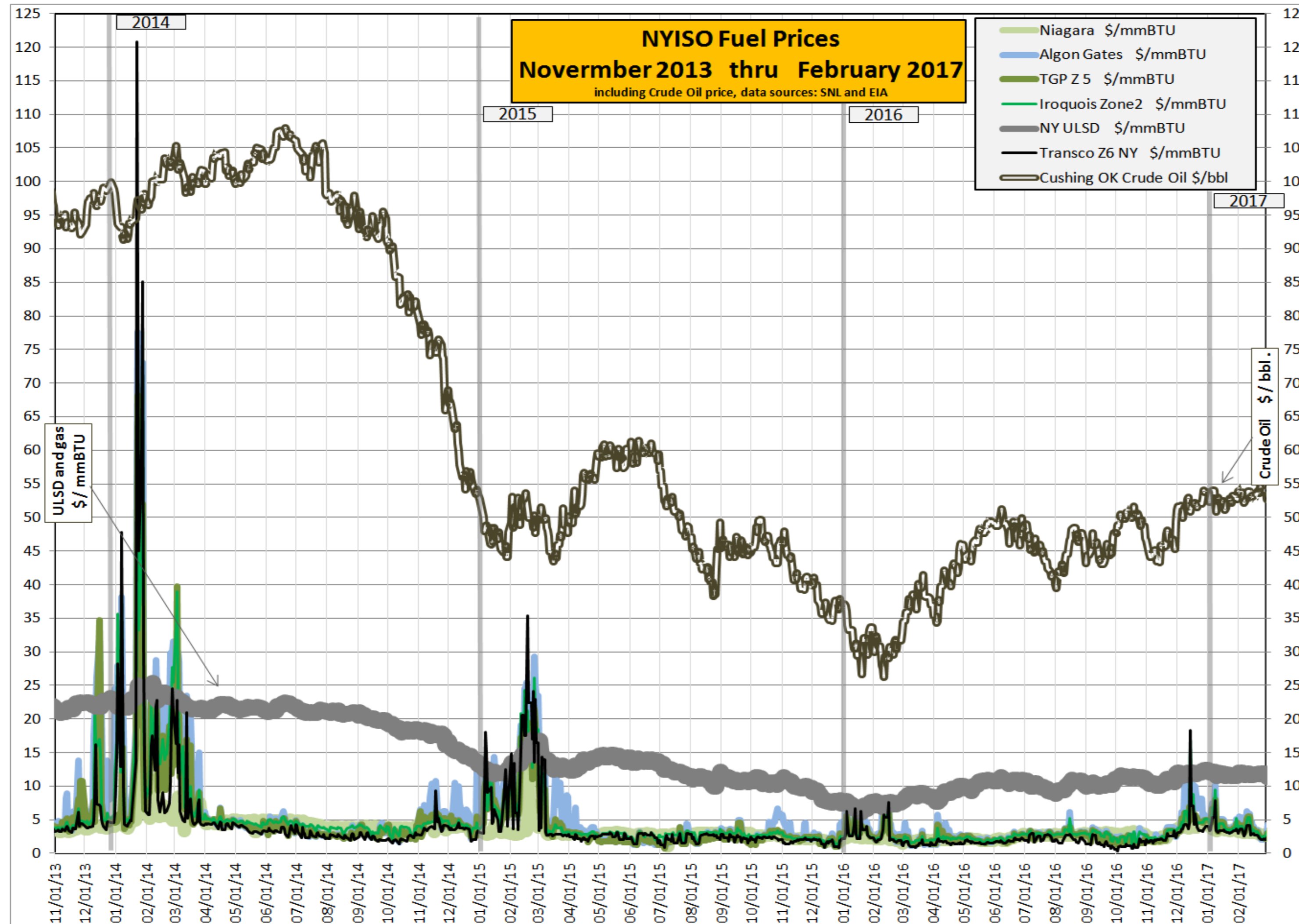


Downstate (Zones
F-K) Generating
Capacity by Fuel
Source

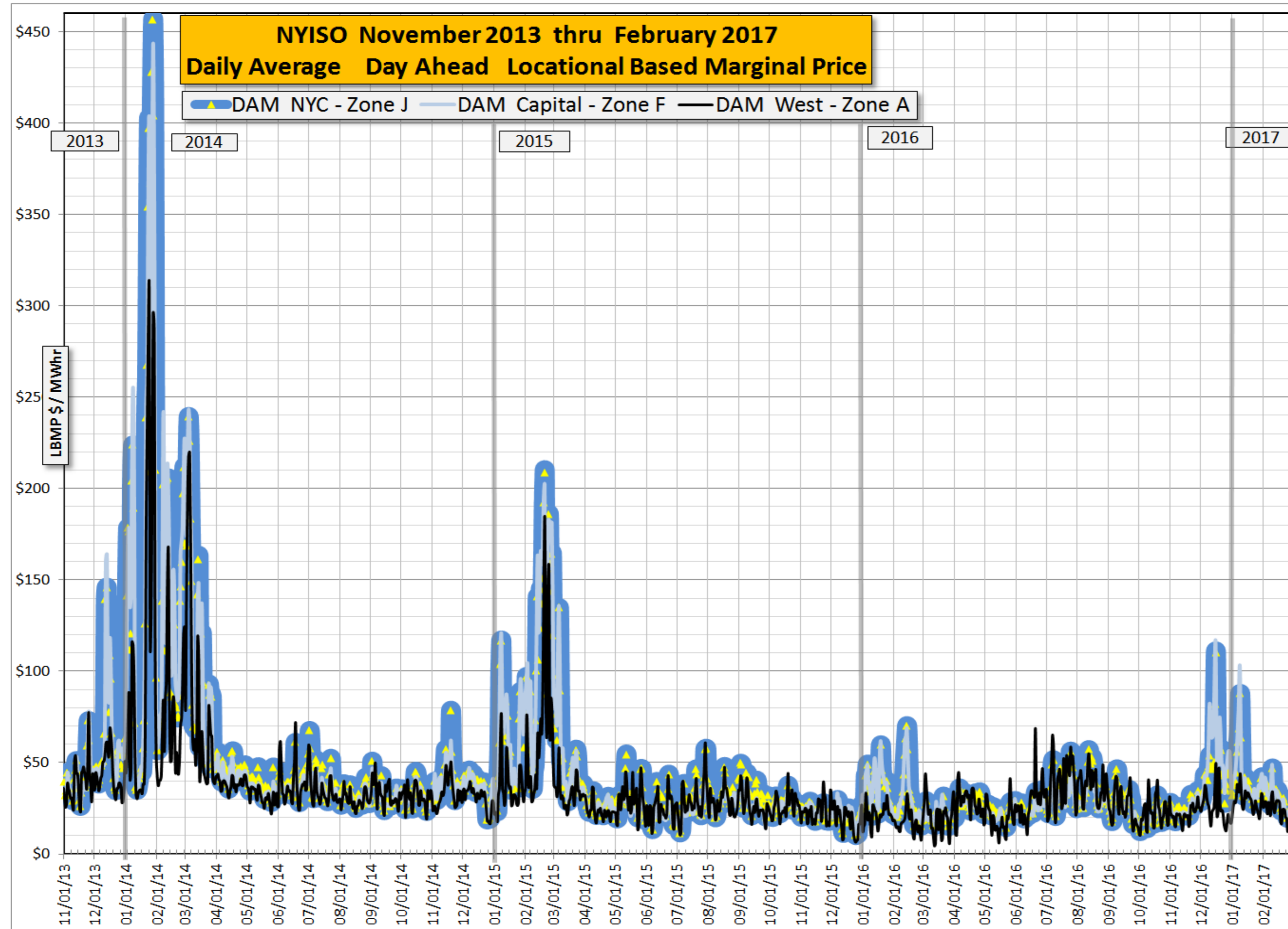


- 79% of NYC Capacity is Dual Fuel
- 95% of NYC is Dual Fuel or Natural Gas fired

Overview: Fuel Prices



Overview: Energy Prices



2017-2018 Winter Capacity Assessment

NYISO Base-case Analysis

- 12,800 MW Projected capacity margin for 50-50 peak winter conditions
- 11,176 MW Projected capacity margin for 90-10 peak winter conditions

NYISO Natural Gas Supply Limitations Scenarios

- 4,275 MW Projected capacity margin for 90-10 peak winter conditions and loss of all gas supplies
- 7,039 MW Projected capacity margin for 90-10 peak winter conditions and receive only firm gas supplies

Recent Market Enhancements

- **November 2014** Established capability to allow generators to provide expected costs for day-ahead reference level development
- **November 2015** Implemented enhancements to Shortage Pricing to incent generators to secure sufficient fuel to meet day-ahead schedules
- **November 2015** Increased the Total Operating Reserve Requirement from 1965 MW to 2620 MW
- **FERC Order 809** NYISO market closes at 5 AM (EST/EDT) and posts day-ahead electric schedules around 9:30 AM
- **June 2016** Enhanced Scarcity Pricing for Demand Response activations deployed
- **Ongoing** Continuing discussions with Stakeholders on fuel assurance in the form of capacity market enhancements

Winter 2017-18 Preparedness

- Seasonal generator fuel surveys indicate oil-burning units have sufficient winter starting oil inventories along with arrangements for replacement fuel
- The NYISO has performed on-site visits of generating stations to discuss past winter operations and preparations for upcoming winter, including:
 - Generation testing
 - Cold-weather preventative maintenance
 - Fuel capabilities, and
 - Fuel switching capabilities
- Existing Minimum Oil Burn procedures defined by the New York State Reliability Council (NYSRC) establish fuel switching requirements at certain cold weather thresholds to secure electric reliability for NYC LDC gas pipeline contingencies
- Tariff changes to reflect new NYSRC dual fuel testing rules applicable to combine cycle units in New York City were approved by FERC in September

Gas Electric Communications

- A communications protocol is in place with NY state agencies to improve the speed and efficiency of generator requests to state agencies for emissions waivers if needed for reliability
- An emergency communication protocol is in place to communicate electric reliability concerns to pipelines and gas LDC's during tight electric operating conditions
- **FERC Order 787**
The NYISO has modified its code of conduct per the Order to accommodate pipeline requests for reliability information

Situational Awareness

- **Control Room gas-electric support**
- **Video Boards**
 - Northeast interstate pipeline system is displayed
 - Operational Flow Orders are posted with enhanced brightness
- **A web-based, fuel survey “portal” provides generator fuel information to the operators**
 - Updated weekly by generators
 - Updated daily during cold weather conditions

Continued Winter Challenges

- **Gas Availability** | Gas LDC retail load has gas transportation priority over electric power generation during cold weather conditions
- **Extended Cold Weather Conditions** | Burn rates of alternative fuels can exceed replacement rates of alternative fuels during extended cold weather or when oil costs are below gas costs for an extended period of time
- **Emissions challenges to dual fuel capability** | Burning oil may be further restricted by reduced NOx emission limits, less Northeast refinery capability, or potential for reduced carbon emissions targets
- **New gas pipeline siting remains challenging**

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

- **Maintaining and enhancing regional reliability**
- **Operating open, fair and competitive wholesale electricity markets**
- **Planning the power system for the future**
- **Providing factual information to policy makers, stakeholders and investors in the power system**



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