



# Post Winter 2015/16 Review

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*Planning Advisory Committee*

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PRINCIPAL ENGINEER – SYSTEM PLANNING



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# WINTER 2015/16 WEATHER



# Winter 2015/16 Compared to Winter 2014/15

- **December 2015:** Milder than previous December
  - Energy demand of 10,160 GWh is -7.2% lower than December 2014
  - Peak load of 18,157 MW is -8.5% lower than December 2014
  - Peak occurred on December 29, 2015 at HE 18:00 at 29° F
- **January 2016:** Milder than previous January
  - Energy demand of 10,986 GWh is -6.4% lower than January 2015
  - Peak load of 19,421 MW is -5.6% lower than January 2015
  - Peak occurred on January 19, 2016 at HE 19:00 at 20° F
- **February 2016:** Milder than previous February
  - Very cold and windy on Sunday, February 14, 2016 but non-weekday
  - Energy demand of 10,095 GWh is -8.5% lower than February 2015
  - Peak load of 19,524 MW is -2.9% lower than February 2015
  - Peak occurred on February 15, 2016 at HE 18:00 at 18° F (Winter Peak)

# WINTER 2015/16 RELIABILITY PROGRAM



# 2015/16 Winter Reliability Program

- **Fuel Oil Program**

- As of January 1<sup>st</sup>, 77 units in the program for a total of 4.489 million barrels of oil
- 2.954 million barrels of the total inventory are eligible for compensation per the winter program rules
- Maximum oil program cost exposure is expected to be \$38.11M (@\$12.90/barrel)

- **Liquefied Natural Gas (LNG) Program**

- As of January 1<sup>st</sup>, 8 units in the program representing 1.278 Bcf
- Maximum LNG program cost exposure is expected to be \$2.75M (@\$2.15/MMBTU)

- **Demand Response (DR) Program**

- 6 assets in the program providing 26.5 MW of interruption capability
- Maximum DR program cost exposure is anticipated to be \$132K



# 2015/16 Winter Program Usage (thru March 31, 2016)

- Winter Program Fuel Oil Usage: Total of 260,206 BBls
  - December 2015: 21,251 BBls
  - January 2016: 75,277 BBls
  - February 2016: 153,985 BBls
  - March 2016: 9,693 BBls
- Winter Program LNG Usage:
  - December 2015: No Program LNG used
  - January 2016: No Program LNG used
  - February 2016: No Program LNG Used
- Winter Program Demand Response Usage:
  - December 2015: None
  - January 2016: One event on January 5<sup>th</sup> 7:03 am – 10:10am, all winter program DR assets dispatched
  - February 2016: None



# 2015/16 Winter Program Fuel Burns and Billing

- Winter Reliability Program Fuel Oil Burn: 260.206 BBls
  - Total Cost of Oil Program: ~~ \$35.4M
- Winter Reliability Program LNG Burn: 0 Bcf
  - Total Cost of LNG Program: \$2.58M
- Winter Reliability Program Update:
  - Final (true-up) charges for unused fuel was in the April 11, 2016 bill
  - Payment to generators for unused fuel inventory will be in the May 16, 2016 bill





# Winter Reliability Program Dual Fuel Update

- Dual Fuel Commissioning (DFC) Program
  - Participation:
    - 6 Units submitted intent to commission Dual Fuel Capability
      - 4 units for 2014/15 (1,039 MW)
      - 2 units for 2015/16 (735 MW)
    - Total additional winter claimed capability represented: 1,774 MW
  - DFC Activity and Related Costs:
    - Units commissioned (as of Dec. 31, 2015): 5 successful, 1 outstanding
    - Total NPCP Commissioning Cap: \$5.7M
      - 2014/15: \$3.56M
      - 2015/16: \$2.19M
    - NPCP Costs incurred (through March 31, 2016): \$1.38M
    - Remaining Commissioning Cap for 2015/16: \$0.2M

# WINTER 2015/16 OPERATIONS



# System Operations – December 2015

<b><u>Weather Patterns</u></b>	Boston	Temperature: Above Normal (9.9°F) Max: 69°F Min: 24°F Precipitation 4.28" –Above Normal Snowfall: 0.98" Normal: 3.73"	Hartford	Temperature: Above Normal (11.1°F) Max: 69°F Min: 23°F Precipitation 4.25" - Above Normal Snowfall: 2.56" Normal: 3.60"
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<b><u>Peak Load:</u></b>	18,157 MW	December 29, 2015	HE 18:00
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<b><u>MLCC2:</u></b> None		
<b><u>OP-4:</u></b> None		

**NPCC Simultaneous Activation of Reserve Events:**

Date	Area	MW
12/04/2015	IESO	900
12/05/2015	NYISO	1,025
12/14/2015	NYISO	1,040
12/20/2015	IESO	800



# System Operations – January 2016

<b><u>Weather Patterns</u></b>	Boston	Temperature: Above Normal ( 2.4°F ) Max: 58°F    Min: 8°F Precipitation: 3.11" – Below Normal Snowfall: 5.51" Normal: 3.92"	Hartford	Temperature: Above Normal ( 3.0°F ) Max: 59°F    Min: 5°F Precipitation: 1.96" – Below Normal Snowfall: 3.35" Normal: 3.84"
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<b><u>Peak Load:</u></b>	19,421 MW	January 19, 2016	HE 19:00
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<b><u>MLCC2:</u> 1/5/2015</b>	Capacity Deficiency	Declared: 06:30 Cancelled: 19:10
<b><u>OP-4:</u> None</b>		

<b><u>NPCC Simultaneous Activation of Reserve Events:</u></b>		
<b>Date</b>	<b>Area</b>	<b>MW</b>
1/05/16	NYISO	800
1/18/16	ISO-NE	580
1/23/16	NYISO	530
1/25/16	ISO-NE	1,231



# System Operations – February 2016

<b><u>Weather Patterns</u></b>	Boston	Temperature: Above Normal ( 2.1°F ) Max: 65°F    Min: -9°F Precipitation: 3.75" – Above Normal Snowfall: 11.69" Normal: 3.43"	Hartford	Temperature: Above Normal ( 1.6°F ) Max: 63°F    Min: -12°F Precipitation: 4.76" – Above Normal Snowfall: 21.90" Normal: 3.07"
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<b><u>Peak Load:</u></b>	19,524 MW	February 15, 2016	HE 18:00
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<b><u>MLCC2:</u></b> None		
<b><u>OP-4 :</u></b> None		

<b><u>NPCC Simultaneous Activation of Reserve Events:</u></b>		
<b>Date</b>	<b>Area</b>	<b>MW</b>
2/15/16	NYISO	560
2/16/16	IESO	800



# WORLD LNG ESTIMATED WINTER PRICES

# World LNG Estimated January 2016 Landed Prices



Source: Federal Energy Regulatory Commission • Market Oversight • Feb-2016

# World LNG Estimated January 2015 Landed Prices



Source: Federal Energy Regulatory Commission • Market Oversight • Feb-2015



# WINTER 2015/16 SUMMARY

# Winter 2015/16 Summary

- While operations this winter were relatively uneventful, challenges remain for future winters with fuel security and additional retirements
- World fuel prices have an impact on what fuel shows up in New England
  - Increased LNG injections are very helpful in maintaining grid reliability
- The Winter Reliability Program is instrumental in augmenting the fuel security of the region, primarily by boosting winter period oil inventories
- The ISO will continue to work with stakeholders on addressing the transition winters between now and 2017/18, when the Pay-For-Performance (PFP) market design takes effect

# Questions

