Estimated Impacts of COVID-19 on Recent NYCA Demand & NYISO RS-1 Energy Forecasts
Demand Analysis through 4/18/2020
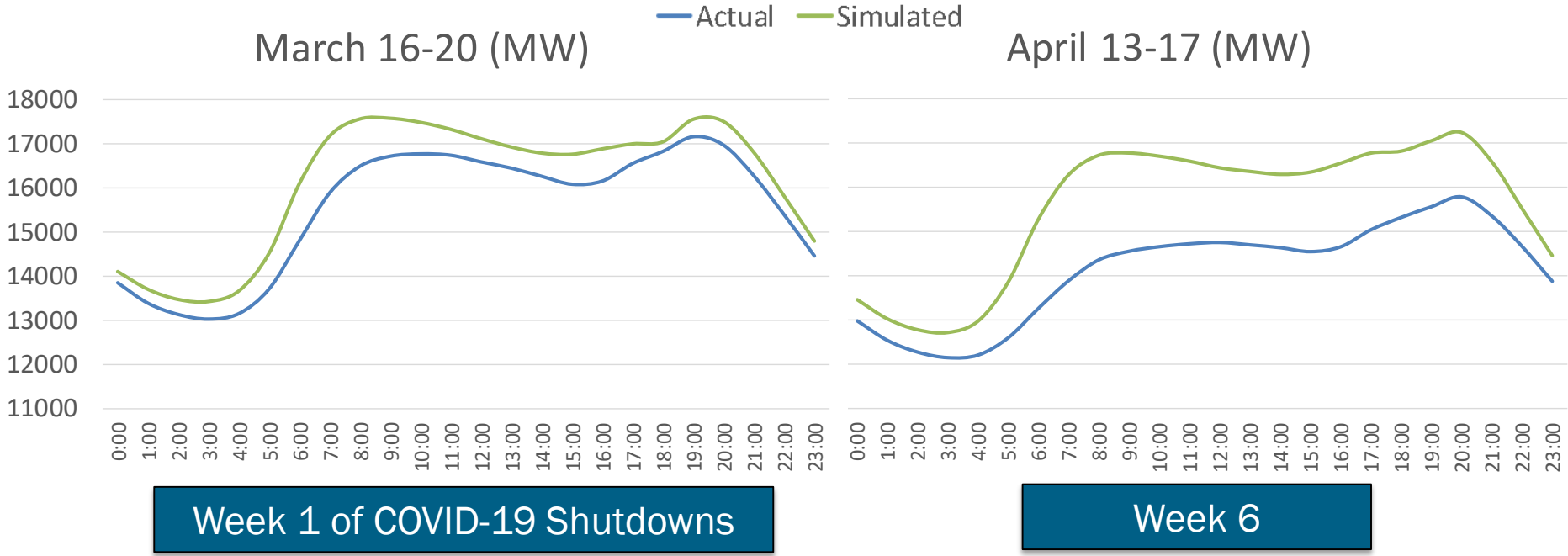
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Budget & Priorities Working Group

April 30, 2020, Teleconference

Discussion Topics

- **Estimated impacts of COVID-19 induced shutdowns on NYCA Demand**

- **2020 RS-1 Energy Forecast**

  - Year-to-Date Energy Numbers

  - Recession Scenarios

  - Updated 2020 RS-1 Forecast

- **Next Steps**

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Recent Impacts on Hourly Load Patterns

March 16-20 (MW) — Week 1 of COVID-19 Shutdowns

April 13-17 (MW) — Week 6

Legend: Actual, Simulated
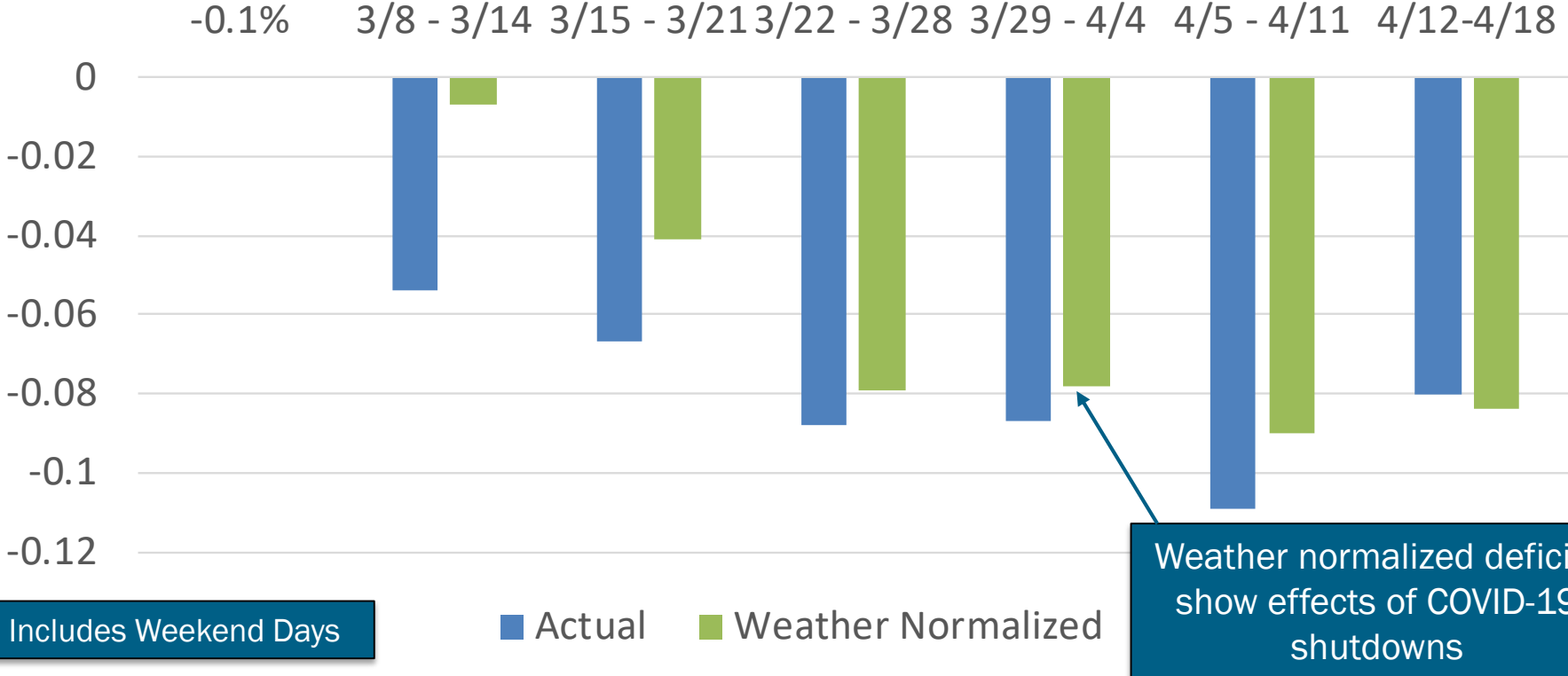
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Recent Impacts on Hourly Load Patterns

NYCA/Zone-J Load Profile - Weekday Diurnal Load Changes
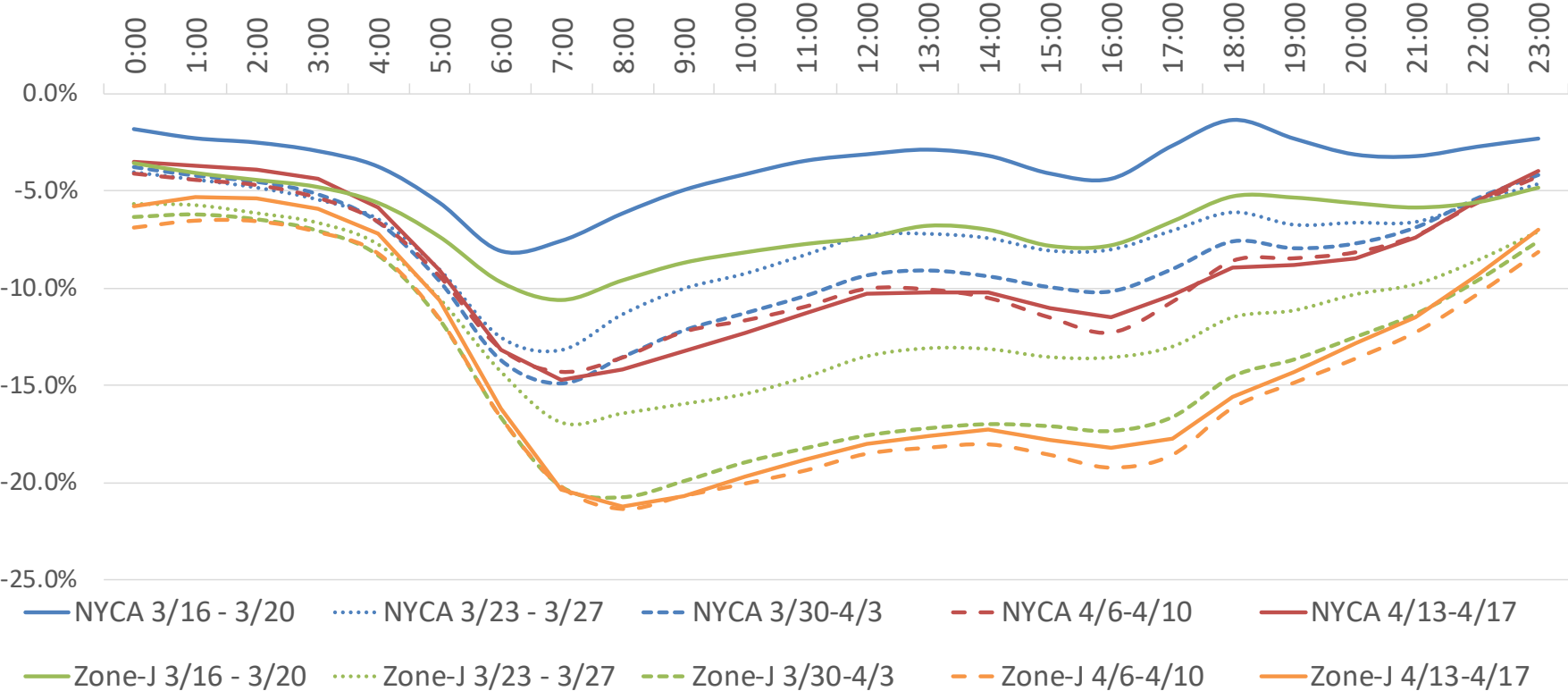
Recent Impacts on Daily Energy by Week

Weekly Energy Use -% Versus Expected (NYCA)

Includes Weekend Days

■ Actual   ■ Weather Normalized

Weather normalized deficits show effects of COVID-19 shutdowns

Regional Impacts on Daily Energy Patterns

2020 Weather Normalized Load Relative to Expected Load, 7-Day Moving Average (Daily Energy)
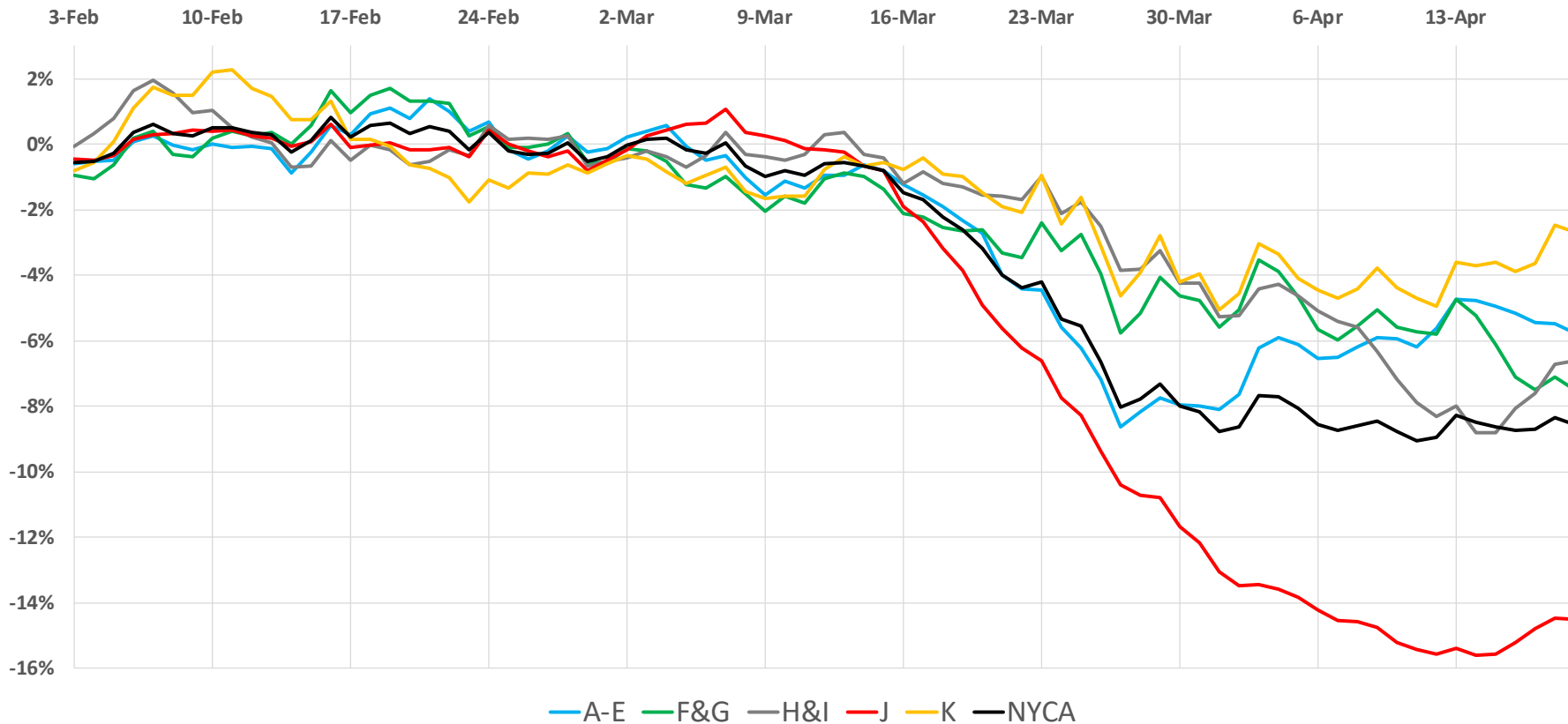
NYCA Energy: Budget Status To Date

	NYCA GWh		Shortfall		
	RS-1 / Budget	Actual	Due to Forecast revision (a)	Due to Weather & Economy (b)	Total (a) + (b)
Jan 2020	13,540	12,941	-37	-562	-599
Feb 2020	12,470	11,970	-34	-466	-500
Mar 2020	12,570	11,516	-34	-1,020	-1,054
Apr 2020	11,170		-30		
May 2020	11,820		-32		
Jun 2020	13,050		-36		
Jul 2020	15,410		-42		
Aug 2020	14,800		-40		
Sep 2020	12,970		-35		
Oct 2020	11,820		-32		
Nov 2020	11,750		-32		
Dec 2020	12,930		-35		
Total	154,300		-420	-2,048	-2,468

- Prior to COVID-19, forecast was adjusted downward by 420 GWh versus the original budget forecast to account for declining energy consumption.

- Combined with mild weather in January and February and the initial impact of stay-at-home orders in March, the 2020 RS-1 basis is already 2,468 GWh below budget projection

Impact of Likely Recession

- Rate Schedule 1 energy throughput is expected to underrun the original forecast in 2020 through a recession and in 2021 as the economy recovers.

- Preemptive monetary and fiscal measures by the government are expected to mitigate impacts and spur quicker recovery than previous recessions.

- Projections:
  - Residential load will be higher during sequestration
  - Majority of impact will be on commercial load, thus ConEd will see the largest decline
  - Manufacturing activity has been in decline and as it shrinks, bulk of industrial load loss will be upstate
  - Currently a warmer than normal summer is likely, so relatively higher cooling load may ameliorate some load loss

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Forecast Recession Scenarios

- <u>Shallow</u>: shock = -1.4% plus a two-quarter recession with -2% declines per quarter

- <u>Deep</u>: shock = -3.2% plus a two-quarter recession with -5% and -2% drops in each quarter

- <u>Extreme</u>: shock = -4.8% plus a three-quarter recession with -16.0%, -5.5%, -0.9% drops in each quarter

Recession Quarterly Profiles
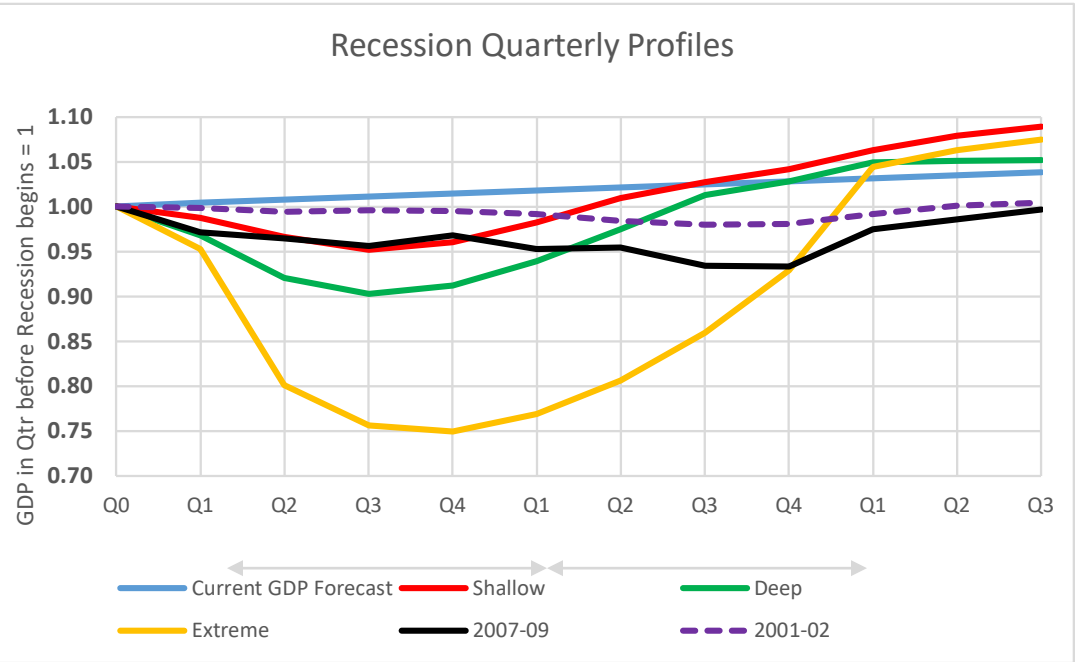
- *Note: All GDP changes are relative to the preceding quarter*

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Range of RS-1 GWh Outcomes

		Shallow Recession + Low Impact	Shallow Recession + High Impact	Deep Recession + Low Impact	Deep Recession + High Impact	Extreme Recession + Low Impact	Extreme Recession + High Impact
2020	Normal Summer	148,100	147,000	146,000	144,000	139,900	134,800
	Above-normal Summer	149,400	148,400	147,300	145,300	141,200	136,100
2021		151,000	150,800	149,500	148,600	140,900	135,600

- The impact of GDP on energy consumption is projected to range from a Low Impact of 44 GWh/$billion to a High Impact of 66 GWh/$billion per year

- 145,000 GWh is the best forecast for 2020 at this time, assuming a "deep" recession with medium impact to energy consumption under normal weather conditions (6% lower than original RS-1 budget forecast)

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Next Steps

- **NYISO Operations and Demand Forecasting Team continue to monitor and assess the impacts of the COVID-19 shutdowns**
  - Track daily/hourly energy deficits vs. expected values
  - Track changes to load-weather sensitivity
  - Track available medium and long-term economic forecasts and continue to consult with Transmission Owners on sector impacts
- **Update RS-1 Forecast in May-June 2020**
- **Short-term Forecasting System updates for Day-Ahead and Real Time Commitment**

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Questions?

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Our mission, in collaboration with our stakeholders, is to serve the public interest and provide benefit 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 policymakers, stakeholders and investors in the power system

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