Natural Gas Long-Term Capacity Second Supplemental Report for Downstate New York

Public Meeting

July 14, 2021

5:30p.m. – 8:00p.m.

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Tonight's agenda

1	Welcome & Introduction – *Rudy Wynter, President, National Grid NY*
2	Our Responsibility & Commitment to Net Zero: *Stephen Caldwell, VP, Future of Heat*
3	Context & Background of Report
4	Demand-Supply Gap
5	Our Proposed Solution
6	Contingency Scenarios & Fallback Options
7	Feedback & Next Steps

Serving customers today, while preparing for the future of cleaner energy

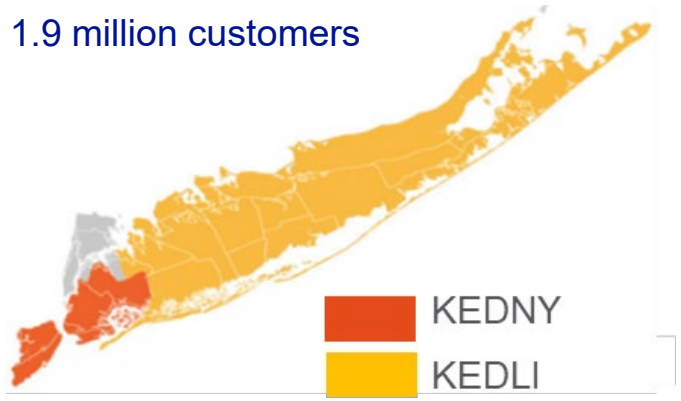
We provide delivery of safe, reliable, affordable energy to our nearly two million customers in New York City and Long Island . . . while taking important steps on our path to a cleaner energy future

- Helping set the stage for a cleaner energy future through increasing use of renewable gas, hydrogen-blending studies, geothermal loop systems
  - Collaborated with industry stakeholders to develop set of interconnection guidelines addressing gas quality standards for renewable gas
- Through National Grid Ventures we're making significant investments in solar, wind, and battery energy storage projects across the U.S.

4.6K employees

1,400 square mile service areas

1.9 million customers



National Grid: Committed to Net Zero

- Our own net zero plan released Oct. 2020
  - Explores a wide range of solutions as we transition to the affordable, reliable clean energy future our customers want and deserve
- **Collaboration:** Landmark Study: *Pathways to Carbon Neutral NYC* – April 2021
- **Team:** NYC Mayor's Office of Sustainability, Con Edison, National Grid; included consultancy team and 25-member technical advisory committee
- **Objective:** Create a body of work that can provide insight into key net zero carbon options, risks, and tradeoffs as NYC transitions to carbon neutrality

A critical responsibility: ensuring customers have the energy they need – especially on the coldest days of winter

- To meet the critical daily energy needs of all our customers, we have to plan years in advance so our system can safely and reliably deliver gas - particularly during the coldest days of winter.
- We plan according to a **Design Day** standard, which takes into account customer use, economic forecasting data to determine the amount of gas we need to deliver for *both current and future customers*
- If customer usage exceeds capacity – there is an **energy gap that risks leaving our customers vulnerable**
- This report addresses how we can protect customers and resolve this gap

FOCUS ON:

Natural Gas Long-Term Capacity Second Supplemental Report for Downstate New York

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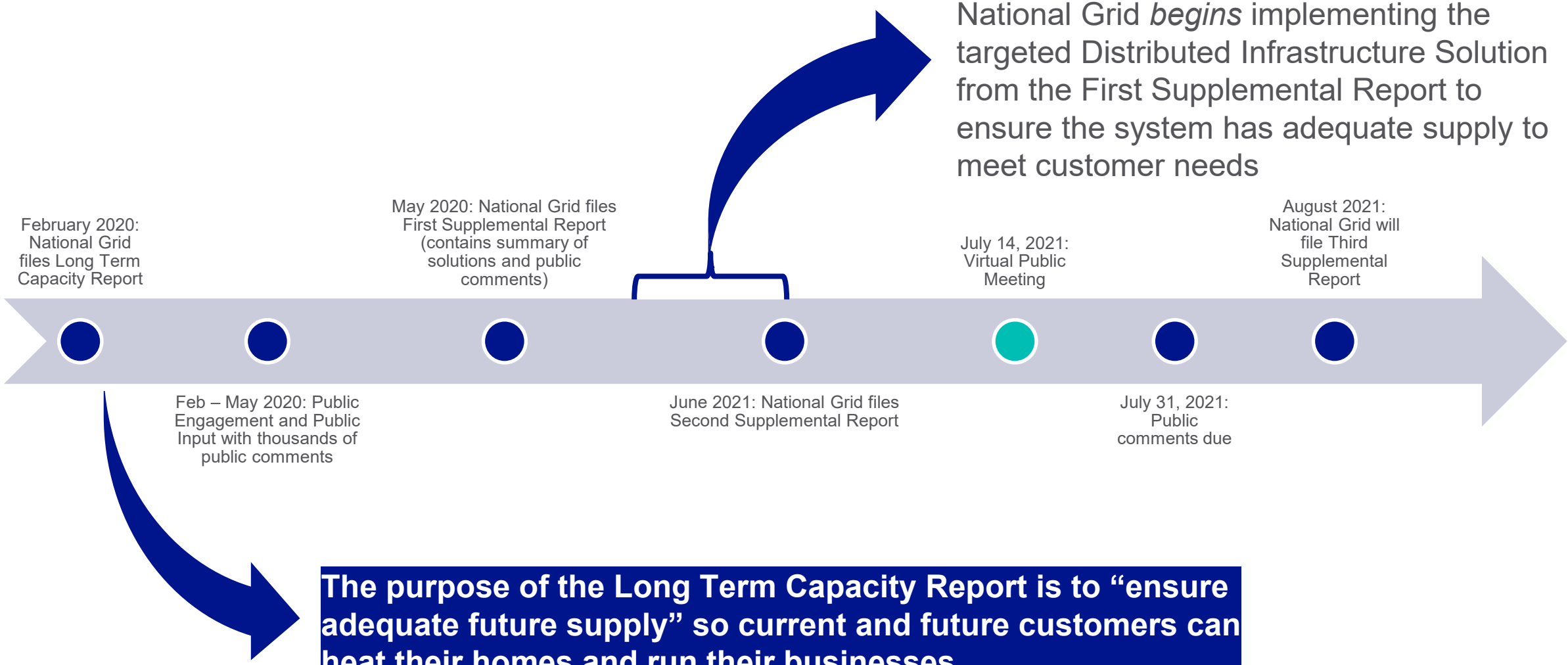
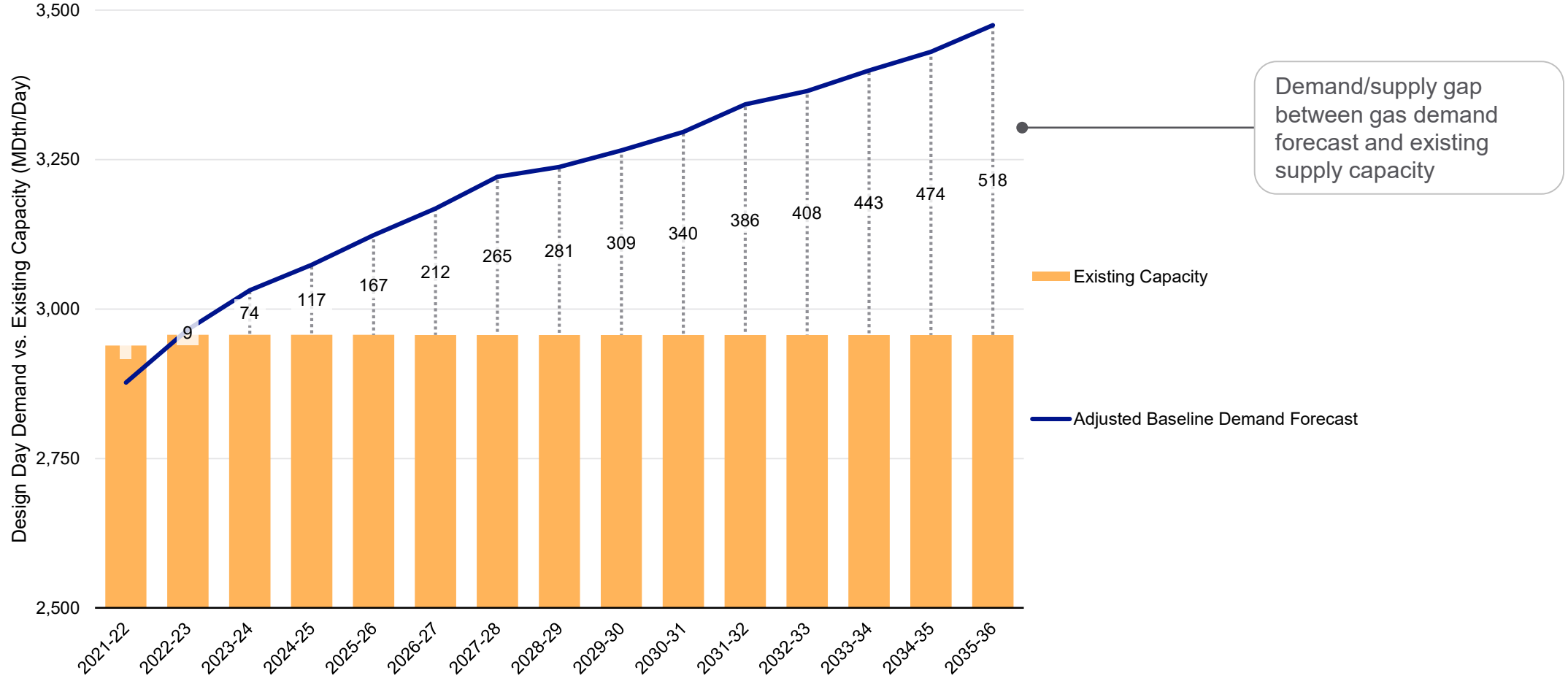
What's in the report?

- Demand forecast refresh
- Supply forecast refresh
- Demand-supply capacity gap projections
- Progress we have made on the targeted Distributed Infrastructure Solution
- Assessment of the contingency options to the targeted Distributed Infrastructure Solution
- Conclusions

Context for the Second Supplemental Report



The heart of the matter: *We see a demand/supply gap by winter 2022-23*

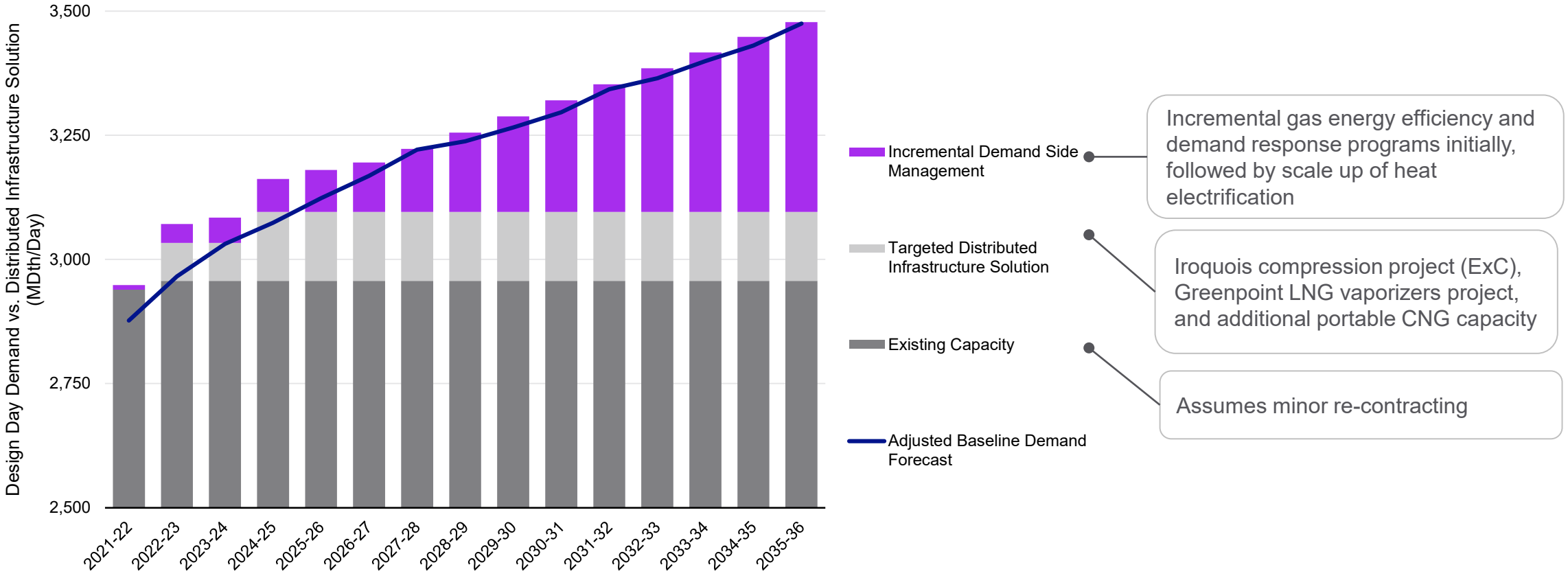


Status of our targeted Distributed Infrastructure Solution to help bridge the gap

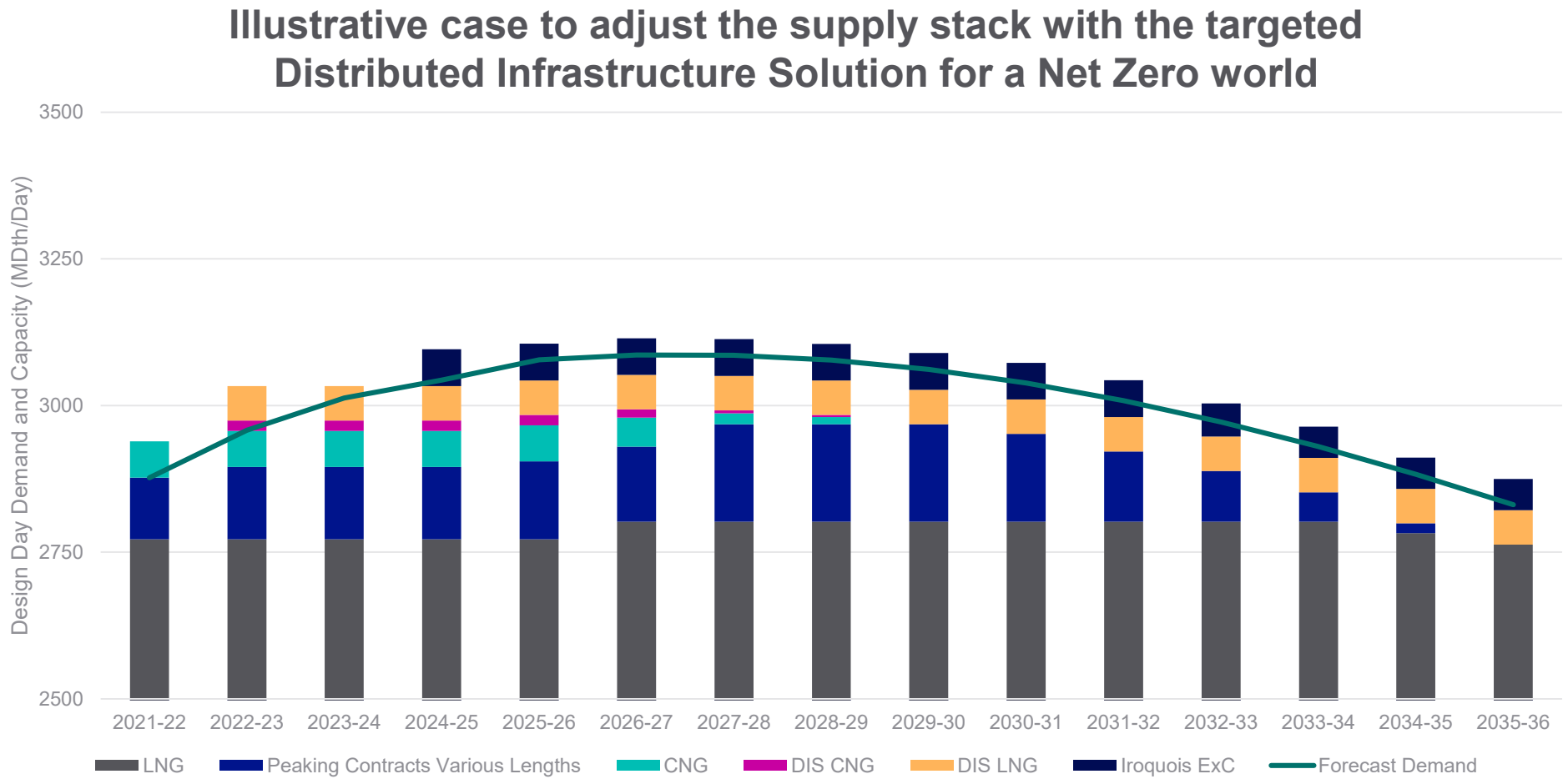
The targeted Distributed Infrastructure Solution is a plan that relies on enhancements to existing infrastructure paired with aggressive demand side management initiatives like energy efficiency and increased electrification to help customers reduce gas usage. We are attacking the problem from both the supply side and demand side to safely and reliably deliver energy to our customers.

Maximizing Existing Interstate Infrastructure Capacity	Additional Portable Compressed Natural Gas (CNG)	Liquefied Natural Gas (LNG) at Greenpoint	Iroquois ExC Project	New Demand Side Management Initiatives
• Replaced short-term, contracts for existing capacity with long-term contracts to improve ongoing availability	• Established the largest portable CNG operation in the country • Approaching limit of portable CNG capability (market, operations)	• Applied for permits to use our existing site for increased LNG vaporization to get more peak supply from the **existing** LNG storage asset	• Subscribed to increased capacity on **existing** Iroquois interstate infrastructure enabled by upgrading compression facilities	• To help customers use less gas: • Increased energy efficiency • Increased demand response • Increased electrification of heating

The targeted Distributed Infrastructure Solution eliminates the gap and ensures we can meet customer needs as we transition to a cleaner energy future



The targeted Distributed Infrastructure Solution can be adjusted for a Net Zero world

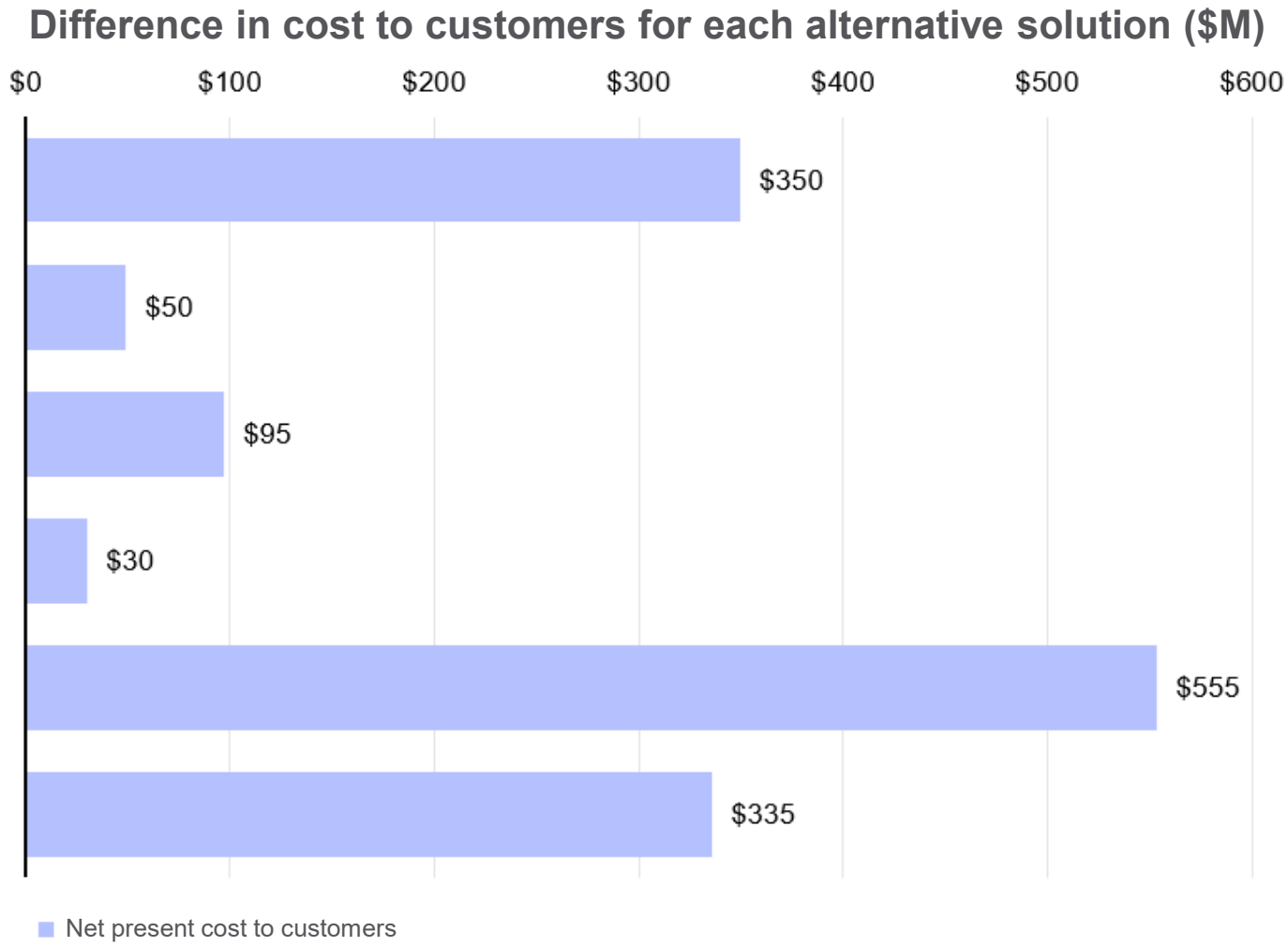


We've proposed alternative solutions if the targeted Distributed Infrastructure Solution is not implemented

Alternative	Size (MDth/Day)	Description	Key Risks
Clove Lakes Trans-mission Loop	80	8 miles of new 30-inch steel transmission main in Staten Island to take more gas from the TETCO Goethals Take Station and transport it to previously supply-constrained areas.	Permitting: federal, state and local Timeline could be 5+ years.
LNG Barge	50 per barge	Purchase and construction of specialty barges which would be towed into place. Locations include water access, pier capacity and gas system takeaway.	Sourcing LNG to be Federally compliant Siting and permitting: federal, state and local Construction of barge, pier & short infrastructure Timeline could be 5-6 years.
Incremental Demand Response	Variable	Includes both direct load control through connected thermostats and other devices and C&I	Number of customers and level of participation. Potential for customers to override price or control signals Timing of program ramp rate
Electrification	Variable	Converting space heating from gas to electric	Levels of customer adoption and timing of program ramp rate Performance of electric networks under new load

The contingency solutions are riskier and costlier than the targeted Distributed Infrastructure Solution

Scenario	Contingency Solution
ExC Rejected (LNG Vaporization on Time	LNG Barge + Incremental DR and Electrification
LNG Vaporization Delayed (ExC on-time)	Incremental DR and Electrification
LNG Vaporization Rejected (ExC on-time)	Clove Lakes Transmission Loop + Incremental DR and Electrification
ExC and LNG Vaporization Delayed	Incremental DR and Electrification
ExC and LNG Vaporization Rejected	Clove Lakes Transmission Loop + LNG Barge + Incremental DR and Electrification
80% of Distributed Infrastructure Sol'n DSM	LNG Barge + Incremental DR



In summary

- Our responsibility is to ensure a safe, reliable and affordable energy system for both current and future customers
- We have plans in place and are moving to a net zero future
- Demand continues to grow in the near term in the short-term, but once policy and demand side management kick in, we expect to see demand drop
- We have a solution in place to address current demand-supply gaps in which targeted existing infrastructure enhancements will allow for a transition to a net zero future
- The contingency solutions are riskier and costlier than the targeted Distributed Infrastructure Solution
- We welcome stakeholder feedback on this report, its findings and its evaluation of contingency approaches

We want to hear from you

Learn more

Website

- Summary Report with a review of options
- Report available in multiple languages
- Posting of Virtual Meeting
- Frequently Asked Questions

Read the Report

- Physical copies available at various libraries in New York City and Long Island

Tell us what you think

In writing

- Take the survey on ngridsolutions.com. Send comments directly to the New York Public Service Commission (see website for details)

At tonight's meeting

- During feedback session

In August 2021, we will file our Third Supplemental Report, which will include public feedback.

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