NEW YORK STATE | Department of Public Service

Three Empire State Plaza, Albany, NY 12223-1350
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September 18, 2023

Hon. Michelle Phillips
Secretary to the Commission
New York State Public Service Commission
Three Empire State Plaza
Albany, NY 12223-1350

Re: Case 20-E-0197 – Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act.

Dear Secretary Phillips:

The slides for the State Scenario presentation for tomorrow's Energy Policy Planning Advisory Council (EPPAC) meeting are attached. As you indicated in your August 18, 2023 Notice, the first meeting of the EPPAC will be held virtually through Webex on September 19, 2023, from 10:00 a.m. to 1:00 p.m., to assemble the EPPAC and discuss the State Scenario described in the Order Approving a Coordinated Grid Planning Process (Order) issued on August 17, 2023. As the Commission noted in the Order, interested stakeholders may attend and listen but only EPPAC members will be speaking and actively participating in the meeting. The meeting will be recorded and a link to the recording will be filed in this proceeding. The following link and information may be used to attend the meeting and the agenda is below.

https://meetny.webex.com/meetny/j.php?MTID=m319470b1a236f0e06572b8627a25e797
Phone-Only Access: (518) 549-0500
Access Code: 161 410 9447

Agenda
1. Welcome and introductions (DPS)
2. Objectives for the meeting (DPS)
3. State Scenario presentation (NYSERDA/DPS)
4. Administrative matters: (All)
   a. Meeting schedule
   b. Communications
   c. Other

Questions concerning the EPPAC should be directed to EPPAC@dps.ny.gov.

Sincerely,

Jalila Aissi
Assistant Counsel

Integration Analysis Proposed Case

9/19/2023

NYSERDA & DPS

Contents

State Case Background

> State team has been developing this scenario leveraging prior work

> The State Case will be used to support two related workstreams
  - NYISO Outlook and CGPP

> Scenario will be provided to NYISO by October 1

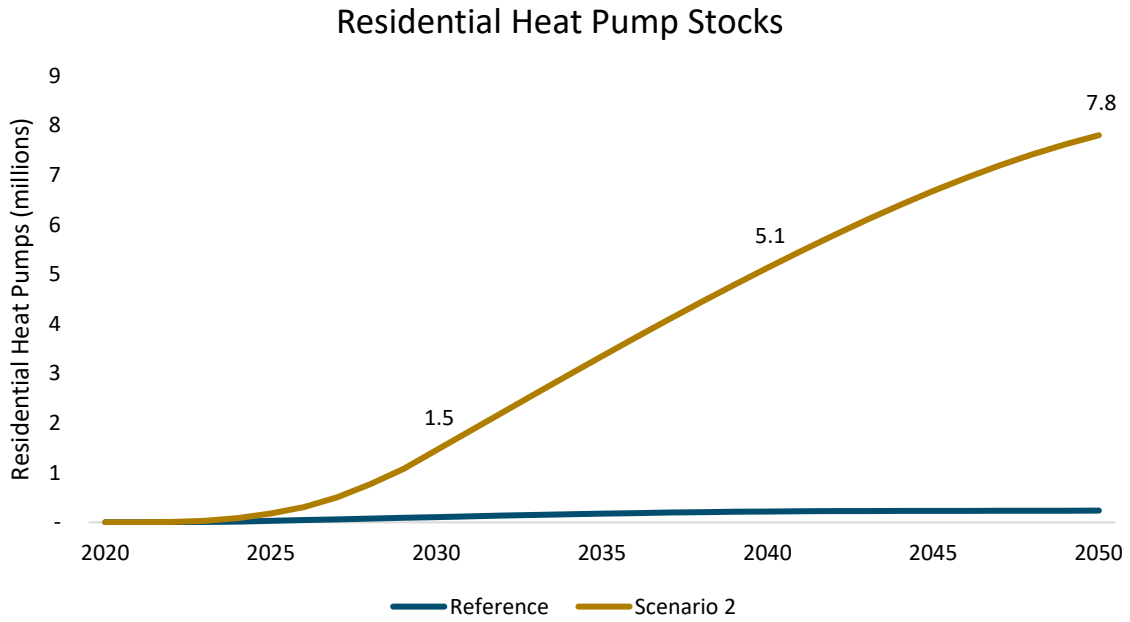
> EPPAC will work on additional 2 scenarios contemplated for CGPP

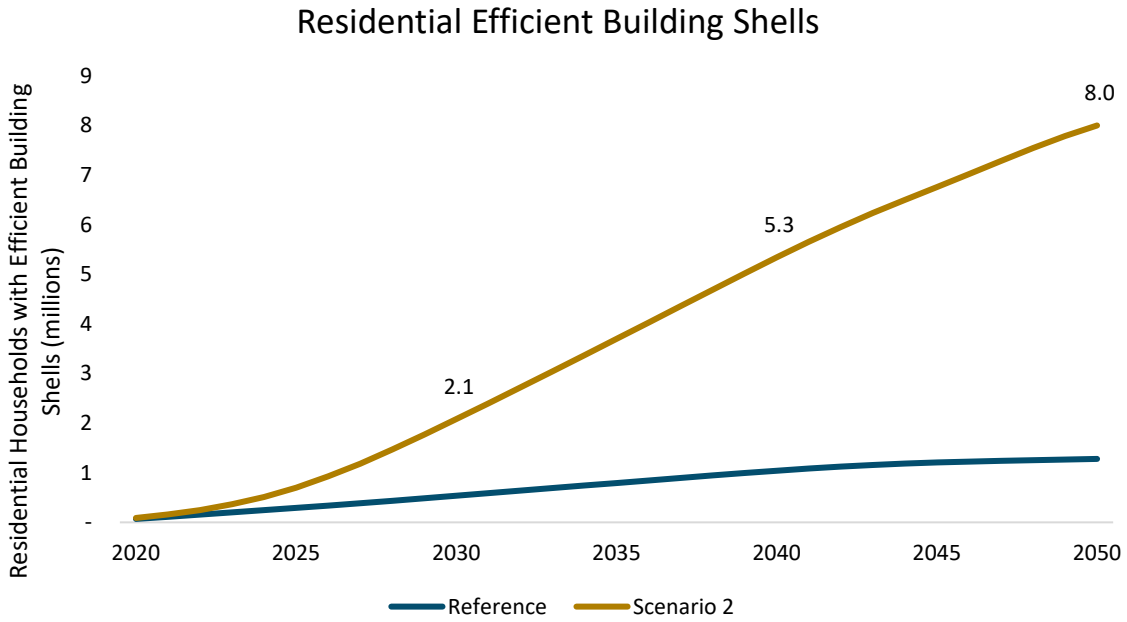
Integration Analysis Context

- The Integration Analysis is NYSERDA's economywide decarbonization pathways model used to illustrate how the state can achieve the sectoral requirements and emission limits of the CLCPA
- The model was developed to support deliberations of the Climate Action Council for the Final Scoping Plan. Assumptions are informed by feedback from sectoral Advisory Panels as well as input from the independent Technical Advisory Group
- The CLCPA-compliant IA cases share more in common (high levels of electrification and energy efficiency) than what makes them different (technology options for hard to electrify end uses)
- The State team proposes to use a revised version of IA Scenario 2: Strategic Use of Low Carbon Fuels for the NYISO Outlook and for CGPP
- That case was updated as part of ongoing NYSERDA modeling (more to be discussed later). However, core assumptions and topline findings remain the same

Load Drivers - Buildings

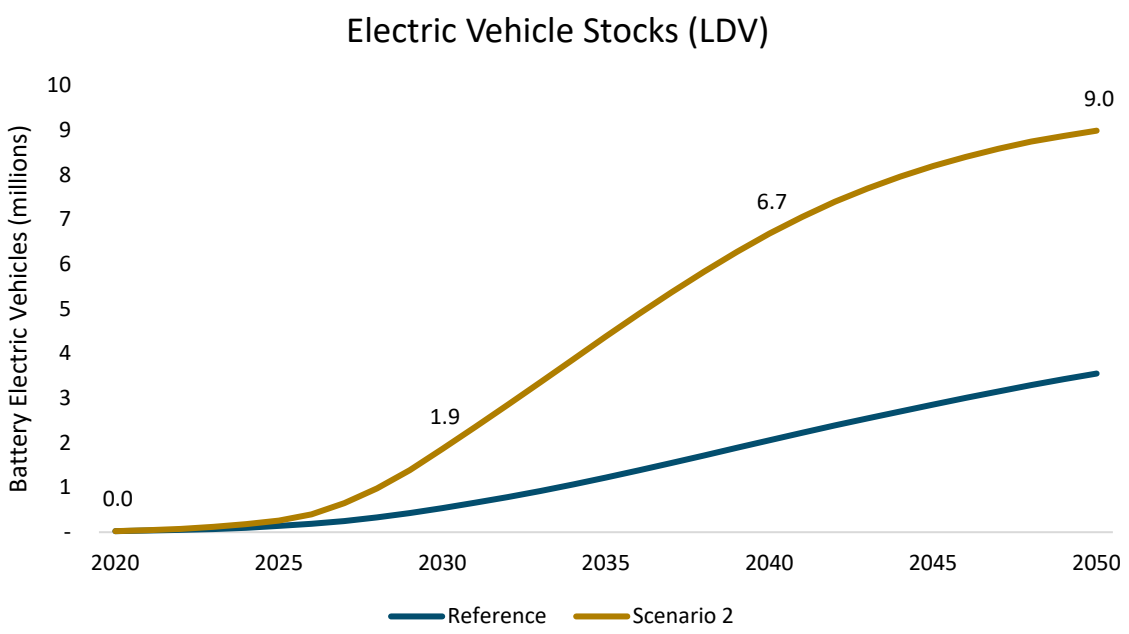
> Mitigation scenario heat pump stock trajectory is in line with the Advisory Panel's recommendations on achieving 100% zero-emission sales shares in residential single-family by 2030 and residential multi-family by 2035

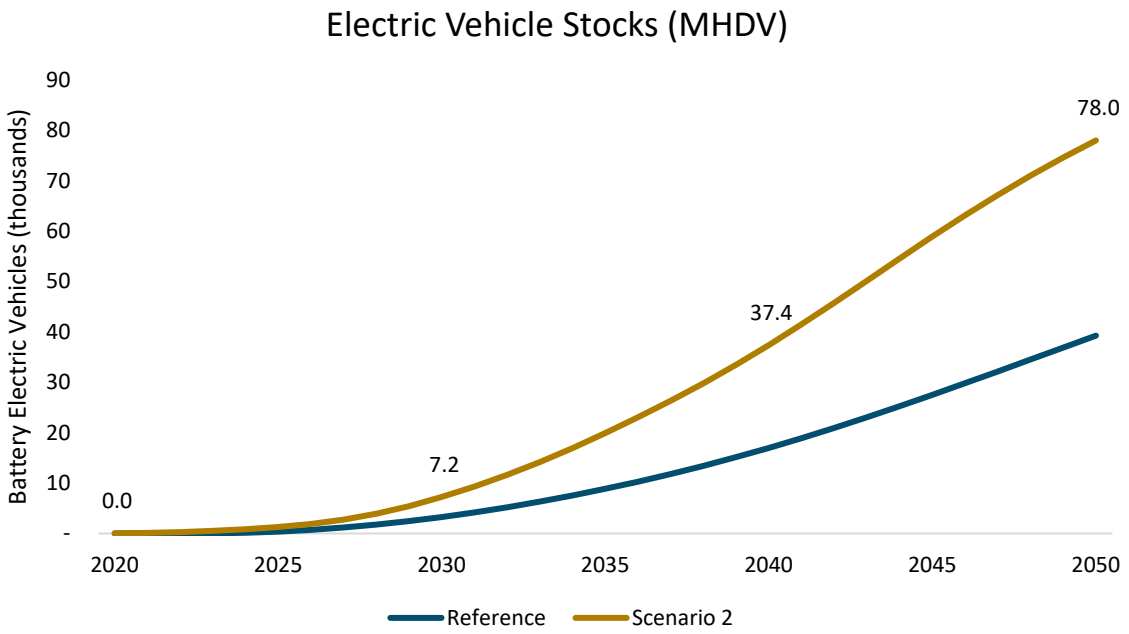




Load Drivers - Transportation

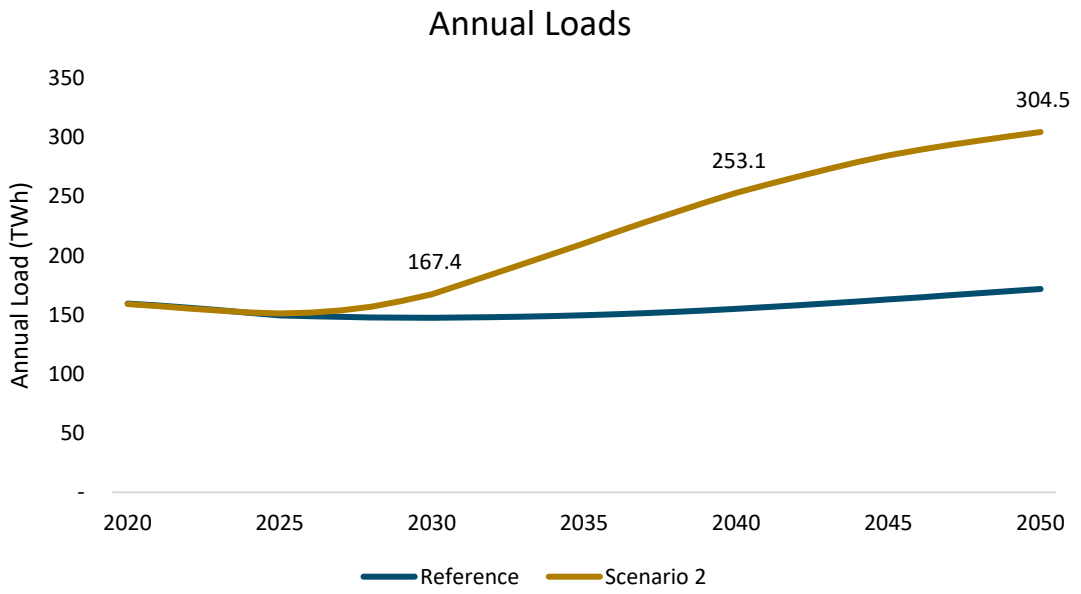
- Significant growth in EV sales, and resulting EV stock, is needed to achieve CLCPA emission limits. Economics and policy targets (e.g. ZEV MOU, Advanced Clean Cars, and Advanced Clean Trucks) will contribute to deployment
  - LDV: 100% 2035 zero-emission vehicles sales
  - MHDV: 100% 2045 zero-emission vehicle sales

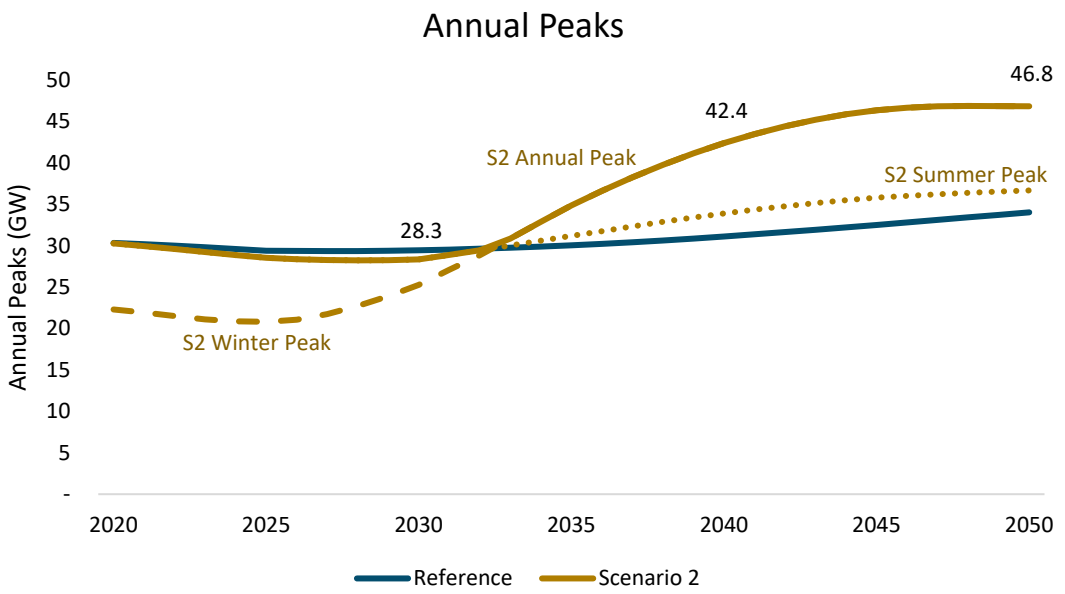




Resultant Loads and Peaks

- Loads and peaks are driven by significant economywide electrification, but mitigated by significant energy efficiency (e.g., building shell investments, flexible EV charging) in mitigation cases
- By 2050, loads increase by 90+% and peaks increase by 55+% relative to starting year values. By 2035, the Mitigation scenario shifts from summer to winter-peaking





Other Key Assumptions

- **Treatment of DEFRs**: DEFRs are modeled as thermal resources using green hydrogen
- **Trading with neighboring regions**: Under mitigation scenarios, NYISO is modeled as having zero net imports by 2040 on an annual basis, to be consistent with zero-emissions power sector requirement. Clean energy policies of neighboring zones were included at a high level.
- **Tier 4 treatment**: Both CHPE and CPNY are included in Mitigation scenarios
  - CHPE is modeled as injecting 1,250 MW of firm capacity into NYISO Zone J, with 95% capacity factor
    - Generation from CHPE is modeled as incremental to the 70% by 2030 requirement
  - CPNY is modeled as adding 1,300 MW of bi-directional transfer capacity between Zone A-E and J
    - CPNY upstate renewable generation is modeled as contributing to the 70% by 2030 requirement
- **ELCCs**: ELCCs were developed for renewables and storage using E3's Loss of Load Probability model

Modeling updates since Final Scoping Plan

> As part of ongoing modeling work, updates were made to the Integration Analysis that was published in the December 2022 Final Scoping Plan, including:

- Improved representation of annual and peak space heating load
- Higher Planning Reserve Margin (up to 18% by 2050, compared to 10%)
- Higher flexibility of LDV charging
- Updated ELCCs – higher contributions from renewables and storage portfolio

> The updates did not have a significant impact on key topline cost and benefit metrics, but some metrics relevant to this exercise are slightly different

- Annual loads decrease marginally, with 2050 annual loads 4 TWh (1%) lower than the Scoping Plan
- Peak loads are moderately lower in the near-term, but trend higher than the published version from 2035 onward. The updated 2050 peak is ~2 GW (5%) higher than the published version
- Higher peak load and planning reserve margin needs drive higher zero-carbon firm capacity build (<2 GW)
  - This increase is mitigated by the increased ELCC contribution of storage + renewables

Available at: https://www.nyserda.ny.gov/About/Publications/Energy-Analysis-Reports-and-Studies/Greenhouse-Gas-Emissions