Con Edison and Orange & Rockland First Technical Conference

June 21, 2023

Meeting logistics (Agenda, Q&A, etc.)

Consolidated Edison Corporation, Inc. (Con Edison) and Orange & Rockland Utilities, Inc. (O&R) (together, the Companies) filed their initial Gas System Long-Term Plan (GSLTP) on May 31, 2023. This afternoon's session is designed to provide an overview of the filing and to review logistics and next steps.

Please use the "raise hand" feature of the meeting platform so that we know when there are questions to address. (We will answer questions in the order they are received.)

Agenda

- Pathways Summary
- Clean Energy Technologies
- Decarbonization Efforts in Disadvantaged Communities
- Demand Side Decarbonization Programs
- Supply Planning
- Peak and Sales Forecast
- Gas Profile and Supply Resources
- GHG Emissions
- Capital Expenditures
- Projected Costs
- Accelerated Depreciation
- Policy Priorities

Pathways Summary – 2042

We are not expressing a preference for either the Hybrid or Deep Electrification pathway, however, further regulatory and legislative actions are required to align more closely to a pathway that achieves NYS decarbonization goals

On-track to achieve CLCPA goals

	Reference	Hybrid	Deep Electrification
Pathway description	Reflects the current legal and policy environment and economic outlook	Relies on both clean electricity and low-carbon gaseous fuels (LCFs)	Heavily electrified use of energy
Gas Volume, % reduction from 2022	173 TBTU, 18% reduction	129 TBTU, 39% reduction	49 TBTU, 76% reduction
Gas sector emissions reductions from 2022 (scopes 1 and 3)	21%	61%	82%
Gas supply mix	5% Certified Natural Gas	38% RNG; 6% Clean Hydrogen; 57% Certified Natural Gas	13% RNG; 87% Certified Natural Gas
Electric peak, % increase from 2022	Con Edison: 32% ORU: 38%	Con Edison: 25% – 40% ORU: 20% – 45%	Con Edison: 70% – 105% ORU: 35% – 70%

Clean Energy Technologies

Technology	Unit	Assumption in Pathways	Notes
Building Envelope, Insulation	*Range of % reduction in space heating load for an individual building, depending on level of retrofit*	27% – 90%	Per NYSERDA Integration Analysis
Air Source and Ground Source Heat Pumps	*Heating Season Average Coefficient of Performance (COP)*	ASHP: 2 – 2.9 GSHP: 2.9 – 3.4	Per internal analysis and Assessment of Building Electrification Technologies for NYS (EPRI)
Low-Carbon Fuels	*2042 achievable potential of RNG and clean hydrogen in the gas distribution system (% of 2022 sales)*	Up to 56 TBTU (26%)	Assumes only low-level blending for hydrogen

Decarbonization in Disadvantaged Communities

The CLCPA's direction that not less than 35% of the benefits of spending on clean energy programs flow to disadvantaged communities) is consistent with the Companies' internal corporate objectives.

- As part of our Clean Energy Commitment, Con Edison and O&R will continue to engage environmental justice advocates to build bridges within disadvantaged communities (DACs) and enhance our efforts to provide equitable distribution of benefits when designing and implementing clean energy programs and projects.
- The Companies have formed an Environmental Justice Working Group and Executive Steering committee to ensure that equity is appropriately considered in all of our work and investments.
- Pursuant to the Commission's direction vis-a-vis this GSLTP, the Companies will develop implementation plans that specify the impact of decarbonization programs we deploy on LMI and DAC communities.
- These investments, engagement and workforce development efforts focused on DACs will be described in CECONY's annual Disadvantaged Communities Report, which we expect to publish each May.

Demand Side Decarbonization Programs

- Energy Efficiency
  - Con Edison will focus on helping customers undertake comprehensive projects that include measures that reduce heating loss by better sealing a building's envelope.
  - O&R will focus on comprehensive projects, including insulation and air sealing, helping customers to reduce heating loss and improve building efficiency and comfort.

- Electrification
  - Heat pump hot water heaters
  - Heat pump space heating

- Non-Pipe Alternatives
  - Con Edison has begun to implement NPAs as substitutions for traditional gas infrastructure.
  - O&R plans to begin implementing NPA projects in the second half of 2023.

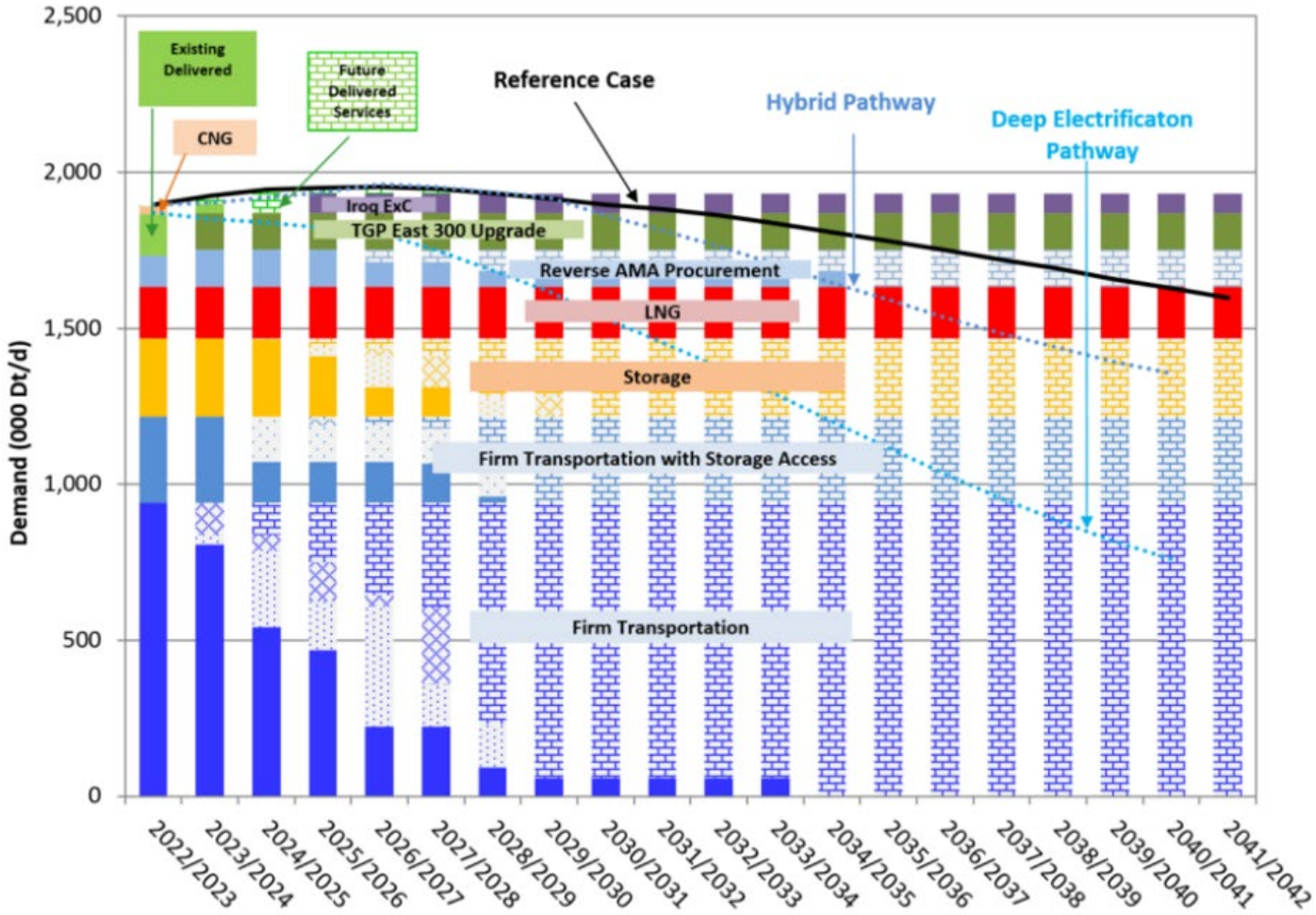
Supply Planning

- The Companies expect peak demand to reach its zenith in approximately 2026, and to begin a steady glidepath downward from that point
- If the TGP East 300 Upgrade project is completed as planned:
  - Westchester will no longer be vulnerable to supply constraints
  - Delivered services procurement will be greatly reduced
  - The current flow of supply from NYC north to support Westchester can be reversed
- If the TGP East 300 Upgrade project and Iroquois ExC are completed as planned:
  - The need for delivered services procurement will be eliminated by 2029
  - Con Edison and O&R will not need additional new construction of increased citygate-delivered pipeline infrastructure to meet firm peak demand growth
  - Con Edison's service territory in NYC may no longer be subject to supply constraints
- Currently, O&R does not have any areas vulnerable to supply constraints, but continues to monitor closely
- As firm peak demand slows and begins to decrease, the Companies will begin reducing the supply portfolio to match the changing needs of customers

Supply Planning

- Figure 27 demonstrates peak demand under all three pathways, versus the citygate supply portfolio
- The supply portfolio must be flexible enough to meet both near term growth and longer-term demand decreases
- The completion of the TGP East 300 and Iroquois ExC project reduce and then eliminate the need for delivered services in the near term
- The ability to de-contract as peak demand decreases is represented by the shading

Figure 27: Con Edison and O&R Forecasted Growth Requires No New Citygate Commitments



Peak Demand Forecasts

Gas system peak demand is projected to reduce by 16% – 76% by 2042

Approach

Reference

- Combination of the winter load growth most recently experienced and the growth expected to be realized over a twenty-year period from known projects, the economy, and consumer behavior
- The forecast also includes residential and commercial growth, and accounts for Energy Efficiency/ DSM programs, natural conservation, and other modifiers such as DG/CHP, oil to gas conversion, EoH and EoNH appliances/equipment, and any additional adjustment as required (*e.g.*, recovery from the COVID-19 pandemic).

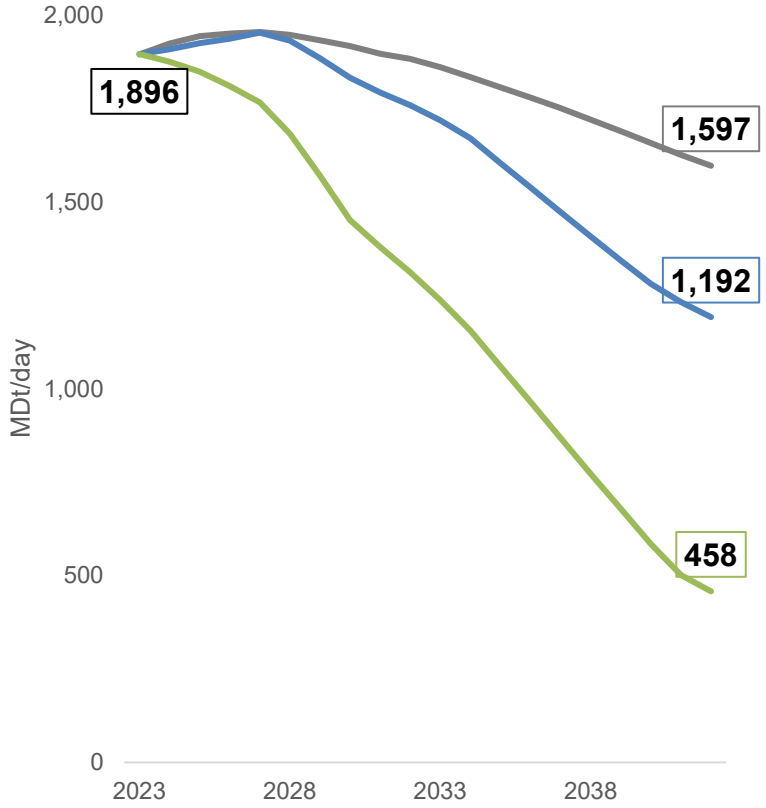
Hybrid

- Applies the sales-to-peak ratio from the Reference pathway to the sales forecast for each pathway to estimate peak demand

Deep Electrification

- *[same methodology as Hybrid]*

Firm Peak Demand by Pathway



Sales Forecasts

Gas sales are projected to reduce by 22% – 78% by 2042

Approach

Reference

- Uses projected customer counts and modifiers to the base period volumes

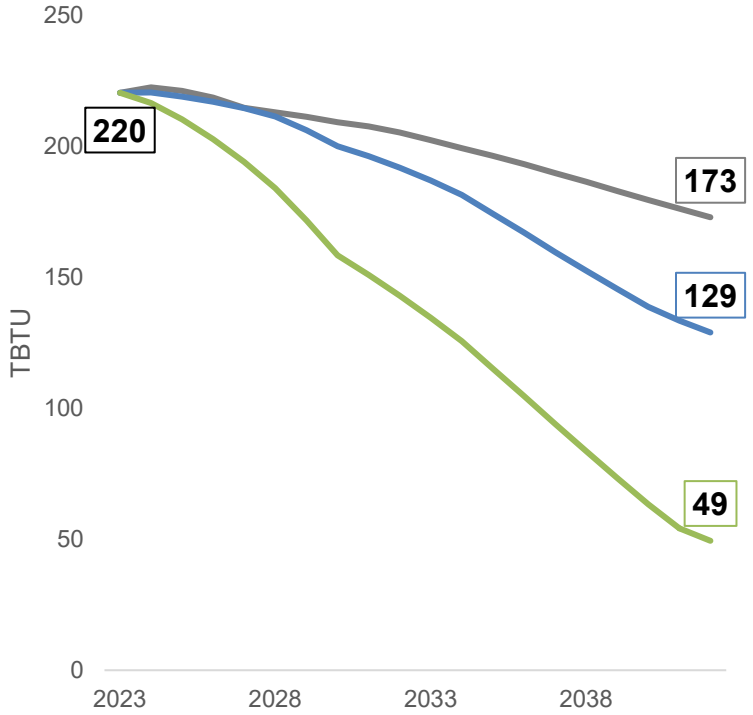
Hybrid

- Uses estimates of market share (square footage) for heating fuels and energy consumption for each fuel to estimate energy use intensity (EUI)
- EUI and market shares evolve over time due to EE, electrification, and phasing out of oil

Deep Electrification

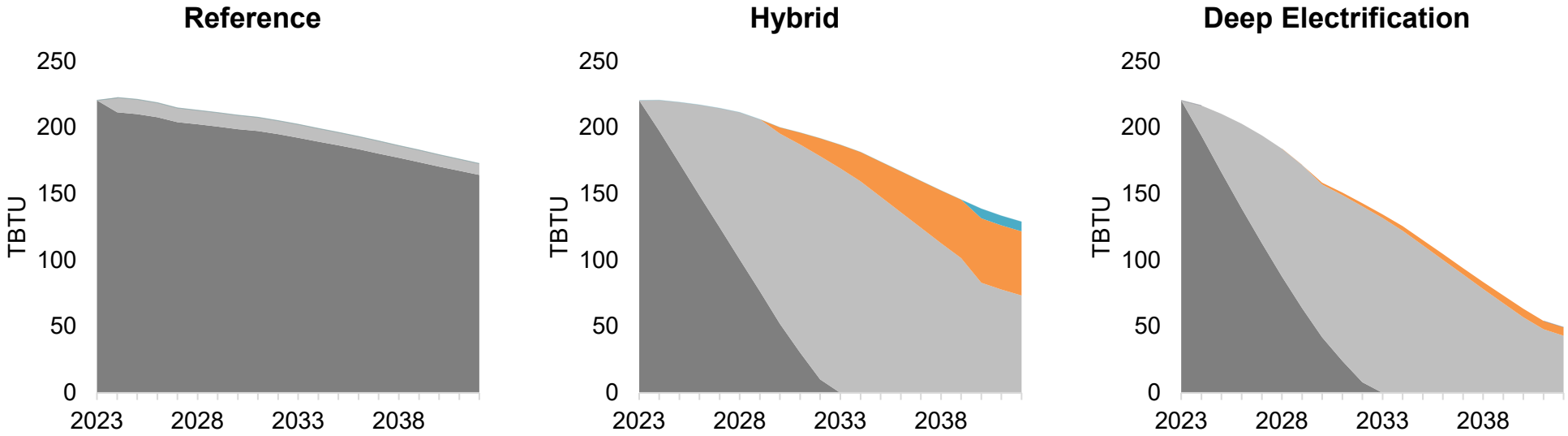
- *[same methodology as Hybrid]*

Gas Sales by Pathway



Gas Profile and Supply Resources

- Fossil natural gas
- Certified natural gas
- Renewable natural gas (RNG)
- Clean hydrogen

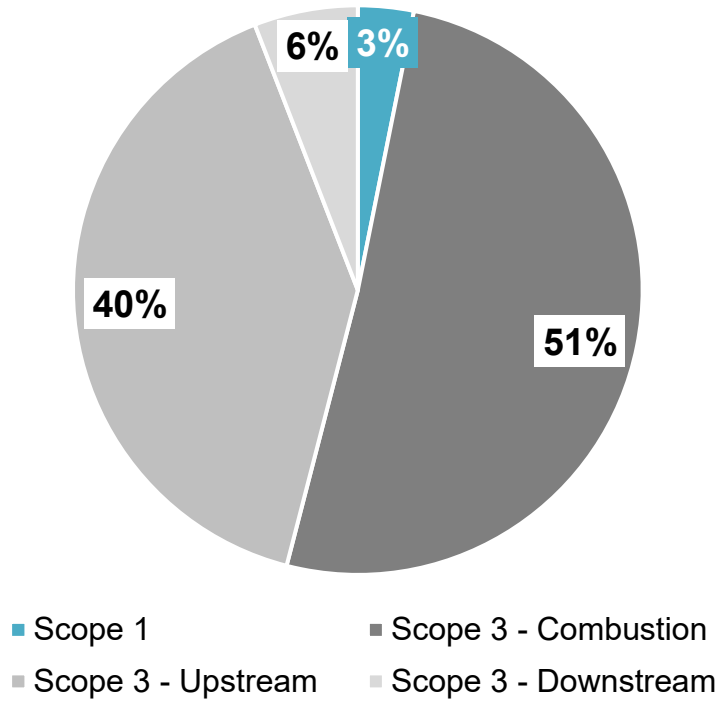


Fuel	2042 blend %	2042 blend %	2042 blend %
Fossil natural gas	95%	--	--
Certified natural gas	5%	57%	87%
RNG	--	38%	13%
Clean hydrogen	--	6%	--

Gas Sector GHG Emissions

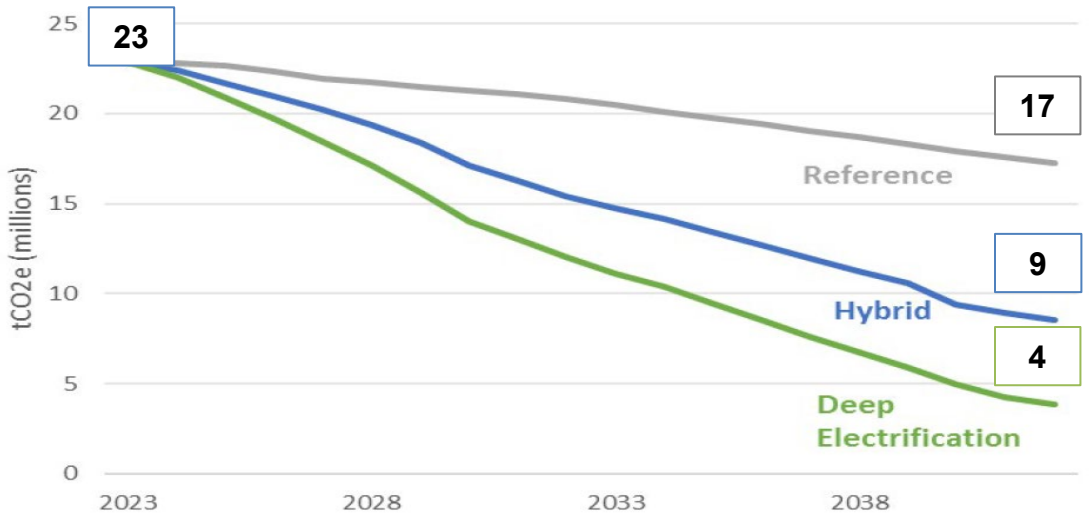
Over 95% of the Company's gas sector emissions come from scope 3; over time, emissions are projected to decrease due to reduced volumes, introduction of low-carbon fuels, and continued methane leak reduction on our system

2022 Gas Sector GHG Emissions



Sources: Sustainability Report, NYS GHG Inventory

Gas Sector GHG Emissions by Pathway



Emissions Rates

tCO_2e/MMBTU (20-Year GWP)	2022	2030	2042
Fossil Gas	0.1041	0.1026	0.1012
Certified Gas	0.0846	0.0832	0.0817
Renewable Natural Gas	0.0624	0.0609	0.0595
Clean Hydrogen	0.0000	0.0000	0.0000

Capital Expenditure

- Reference

Figure 35: Con Edison Reference Pathway Projected Capital Spending (2023-2042)

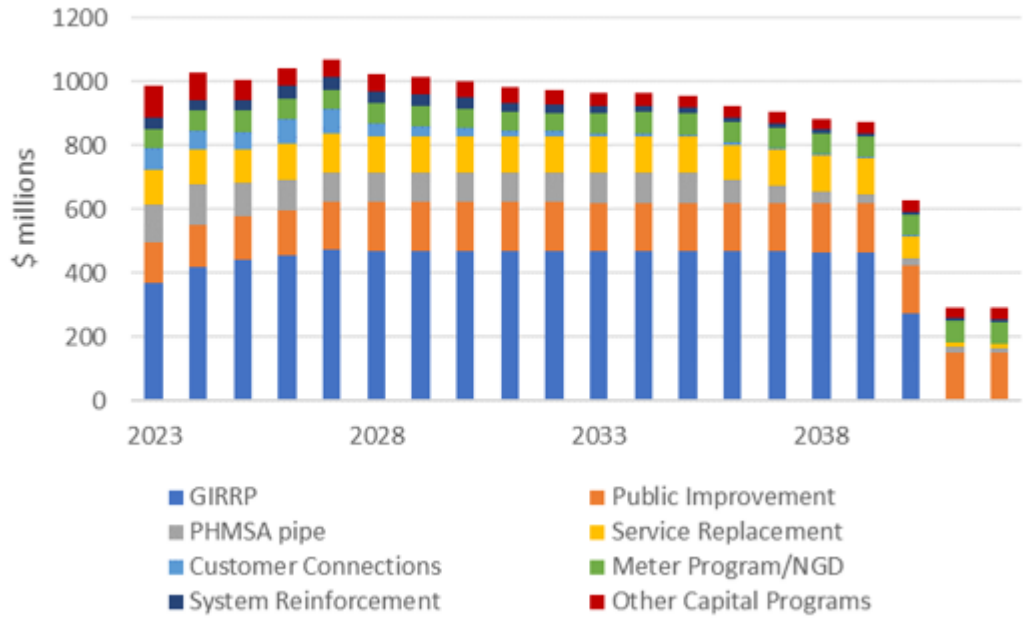
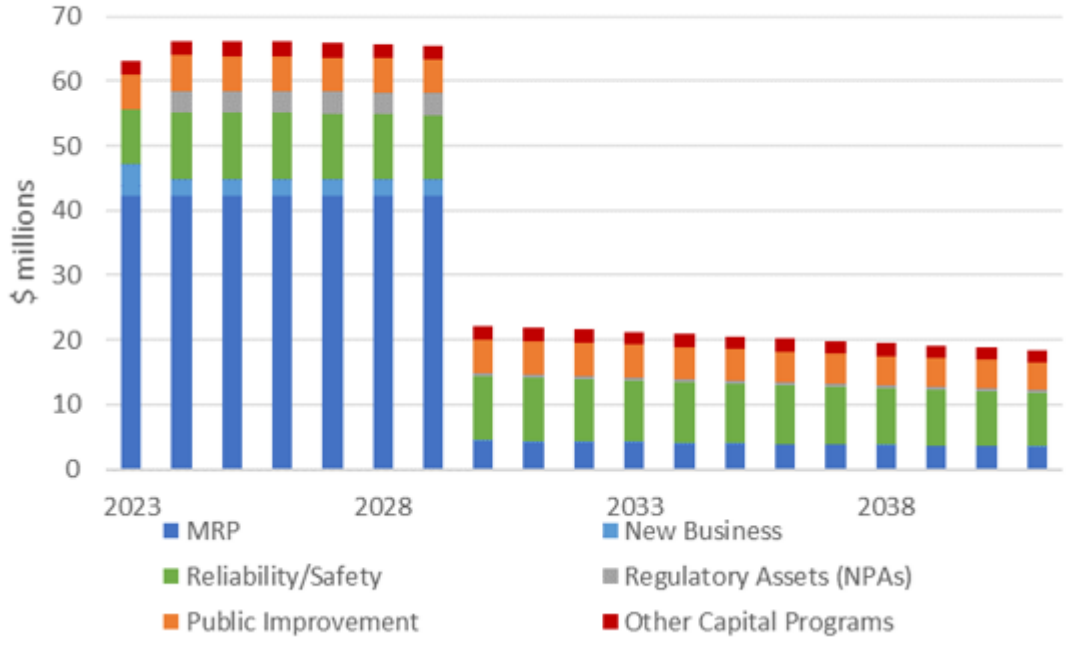


Figure 36: O&R Reference Pathway Projected Capital Spending (2023-2042)



Capital Expenditure

- Hybrid

Figure 43: Con Edison Hybrid Pathway Capital Expenditure (2022-2042)

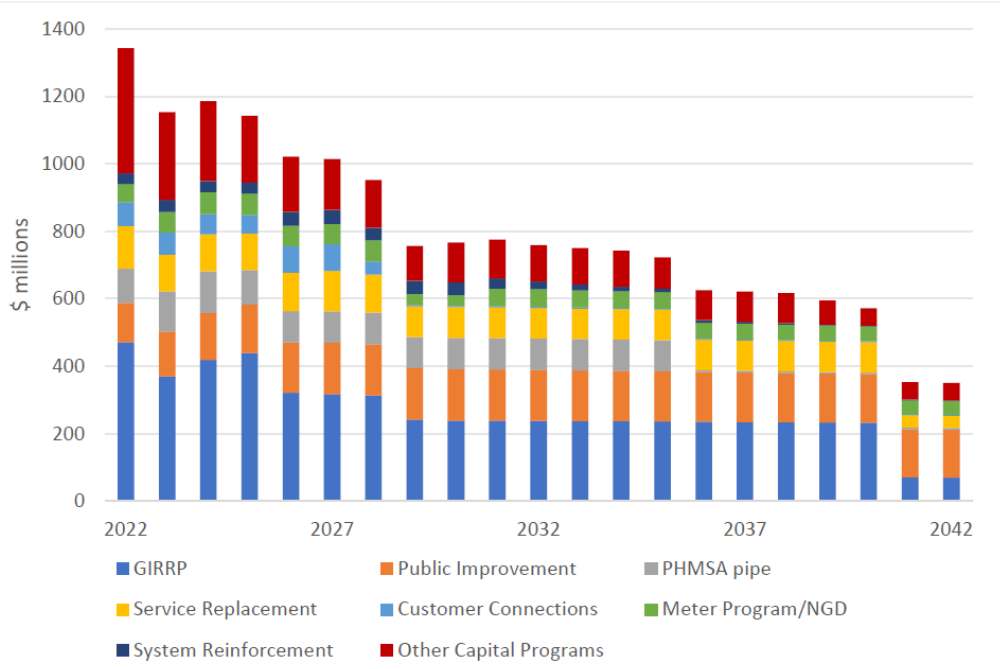
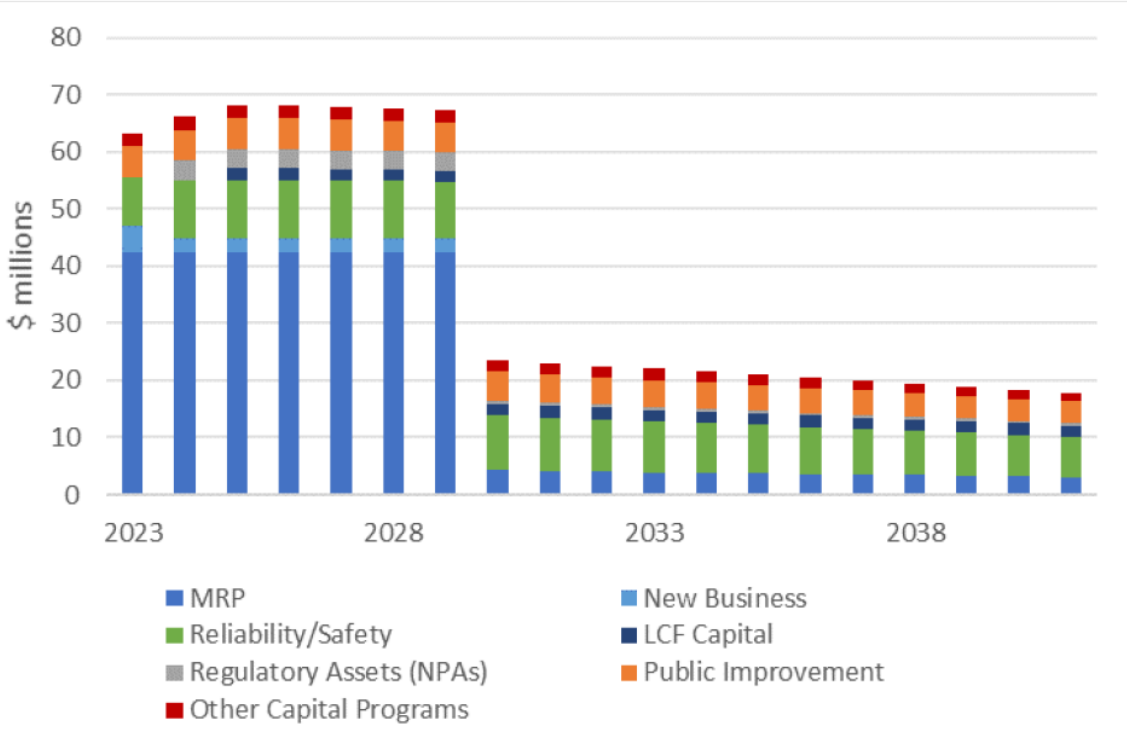


Figure 44: O&R Hybrid Pathway Projected Capital Spending (2023-2042)



Capital Expenditure

- Deep Electrification

Figure 52: Con Edison Deep Electrification Pathway Capital Expenditure (2022-2042)

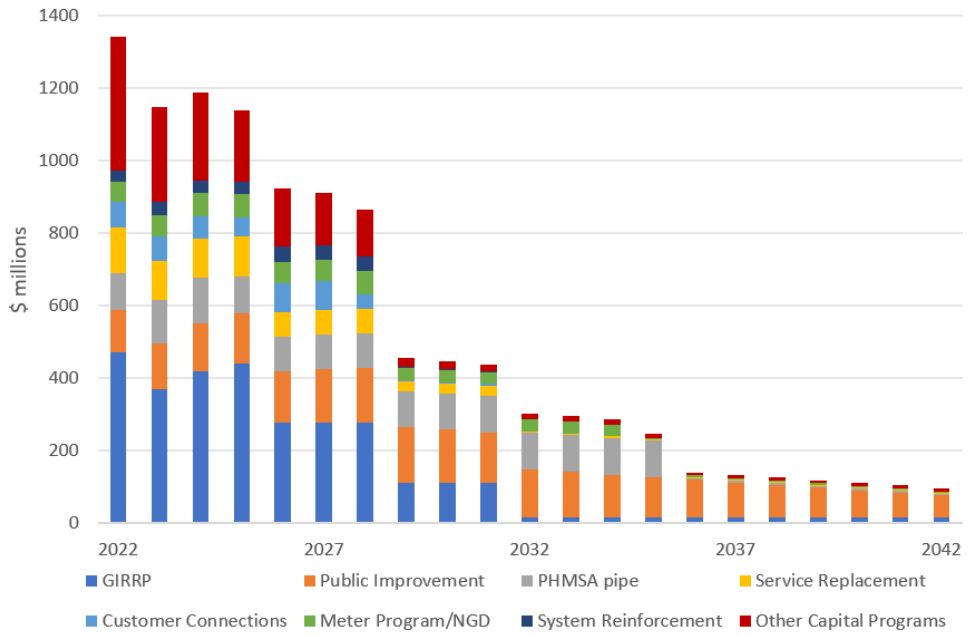
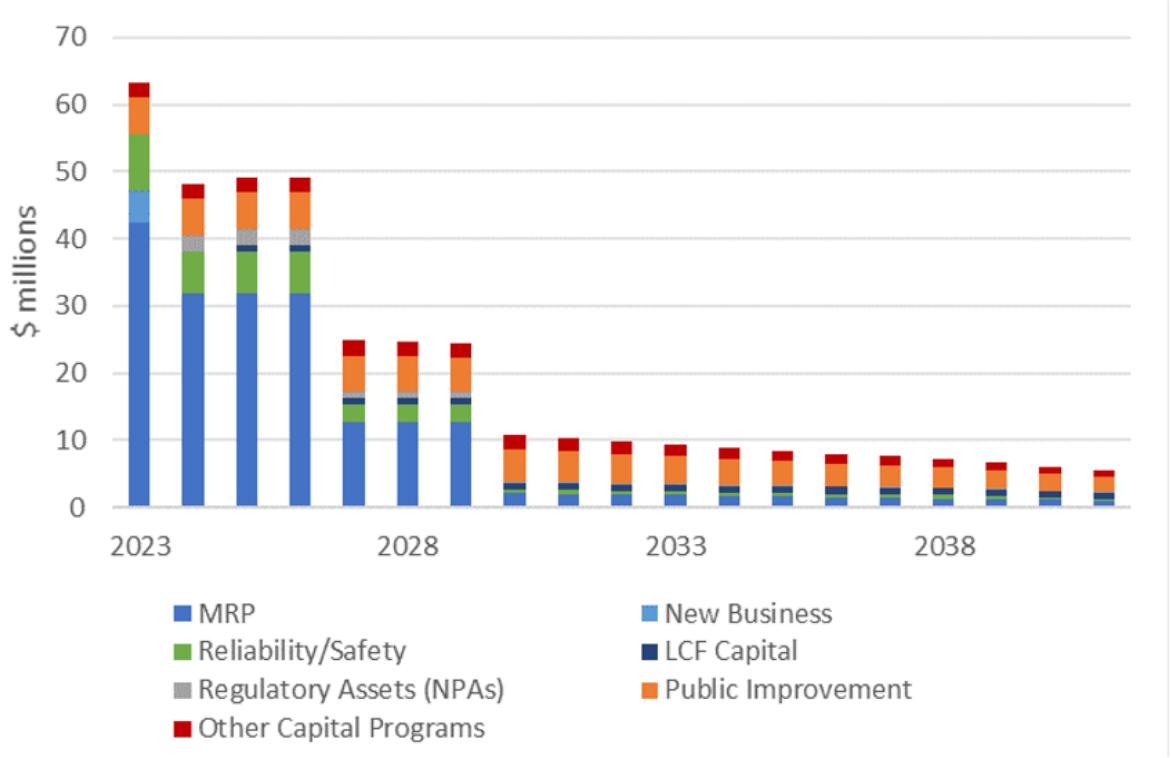


Figure 53: O&R Deep Electrification Pathway Capital Expenditure (2022-2042)

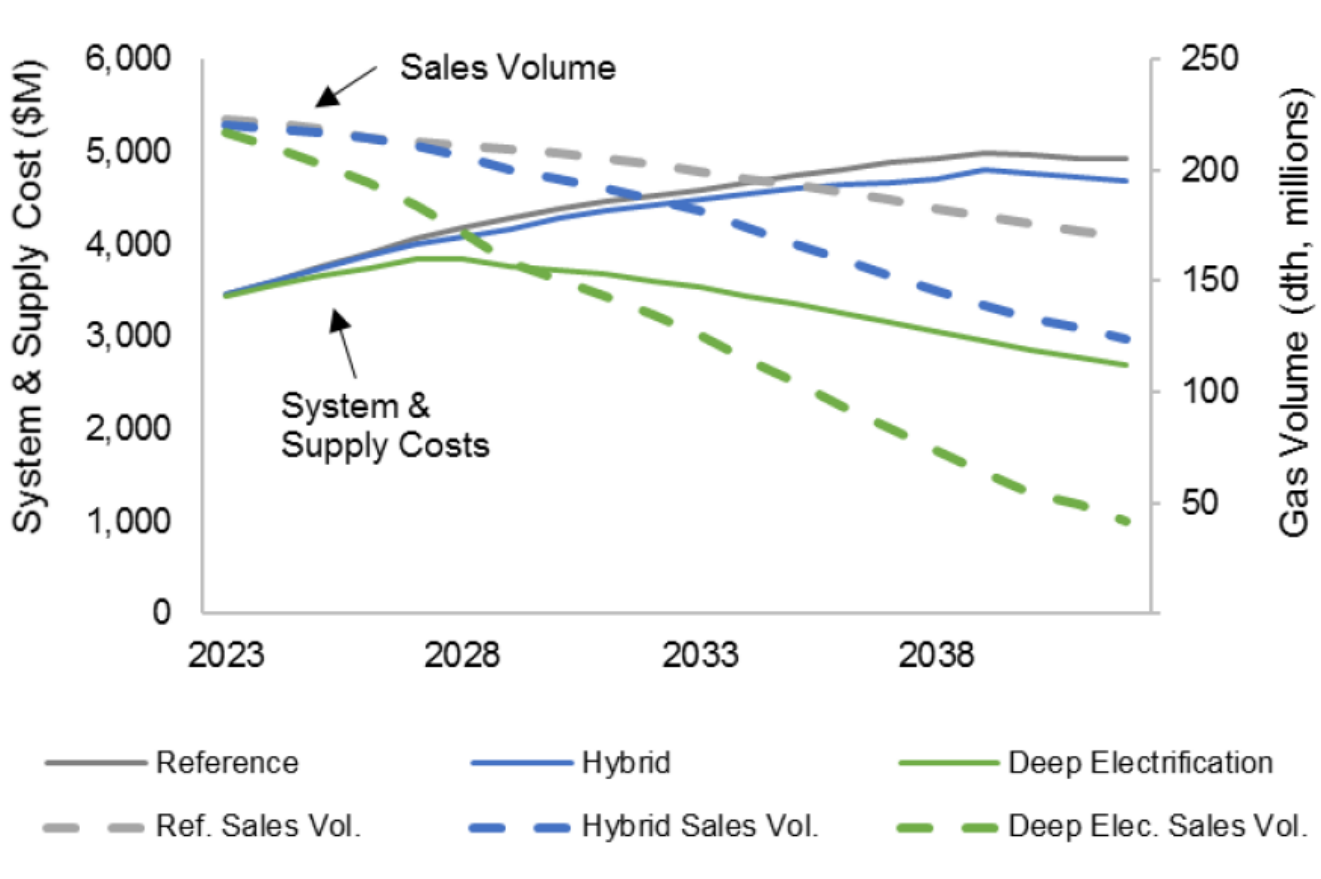


Projected Costs

- Reference
  - The Companies' combined rate base is forecasted to grow at a compounded annual growth rate of approximately 2%.
  - Customer costs grow from approximately $3.5Bn to $5bn by 2042.
- Hybrid
  - Reflect estimates of the Companies' capital investments and O&M costs required annually to reach the projected end state.
  - Annual O&M expenditures begin to decline after 2030 consistent with the timing for retirement of main and service assets.
  - The added expenses of using LCFs such as hydrogen blending in the larger distribution system, such as elevated leak response and regulator station replacements/retrofits, were included in the O&M cost estimates.
- Deep Electrification
  - Costs are projected to decline by 51% compared to the Reference pathway due largely to the significant decrease of the Companies' main replacement programs and other capital-intensive programs as system use declines and the distribution system is decommissioned
  - Annual O&M expenditures begin to decline starting in 2030 consistent with timing for significant abandonment of main and service assets
  - While system costs will decline significantly, so will the base of customers to which such costs apply

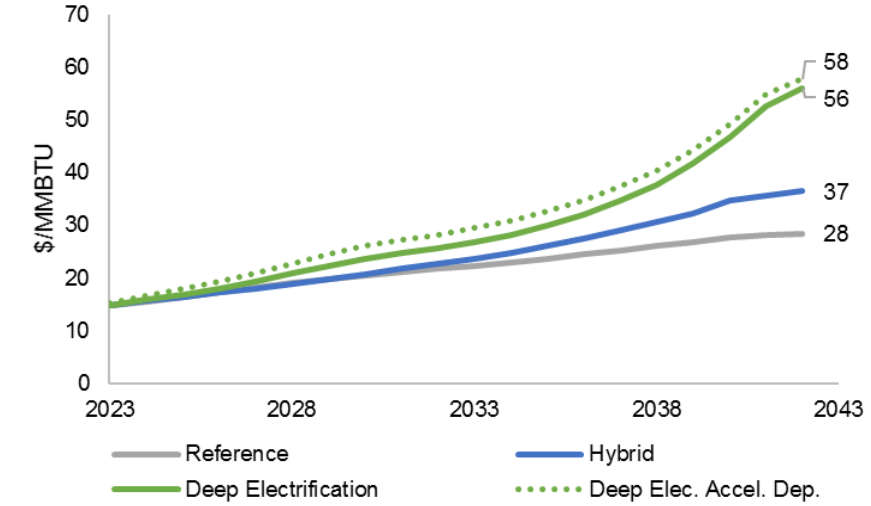
Projected Costs

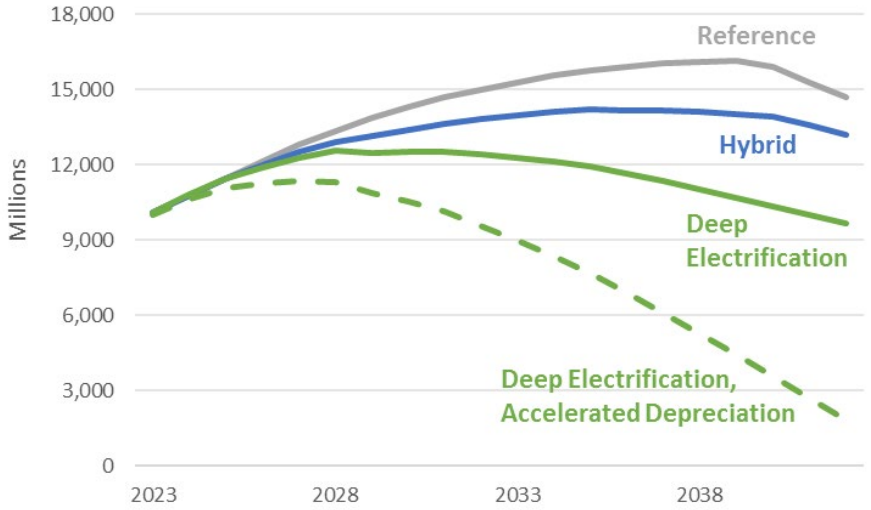
Figure 62: Gas System and Fuel Supply Costs and Sales Volume (2023-2042)



Accelerated Depreciation

- Gas system costs are borne by a declining number of customers
- This challenge is particularly acute for the Deep Electrification Pathway (although it applies to the Hybrid Pathway too)
- Con Edison and O&R evaluated how accelerated depreciation can help mitigate this challenge
- These figures illustrate that the System Rate impact of accelerated depreciation (at right, top) is modest
- However, the reduction in rate base by 2043 under accelerated depreciation (Deep Elec. Pathway) is significant





Policy Priorities

- Maintain an economic framework that supports continued operation of a safe, reliable, resilient gas delivery system that mitigates customer and utility impacts throughout the clean energy transition
- Reduce capital investment in the system by gradually reducing the gas geographic footprint
- Emphasize the continued importance of overall energy system reliability during the clean energy transition
- Continue to advocate for significant increases in energy efficiency to improve overall efficient use of energy in buildings