

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

---

**In the Matter of a Review of the Long-Term Gas  
System Plan of Consolidated Edison and Orange and Rockland Utilities, Inc.**

**Case 23-G-0147**

---

Comments of  
Natural Resources Defense Council,  
with technical assistance and analysis from Synapse Energy Economics

**Date: February 6, 2024**

## Table of Contents

<b>1. Introduction.....</b>	<b>3</b>
<b>2. The absence of a preferred pathway undermines effective planning .....</b>	<b>5</b>
<b>3. The Final LTP risks squandering the best opportunities to minimize stranded costs and manage affordability of gas service.....</b>	<b>7</b>
<b>4. Deep Electrification is the lowest risk, highest value pathway .....</b>	<b>8</b>
A. Scenario Assumptions .....	9
B. Results .....	12
i. Revenue Requirement and Rate Base.....	13
ii. Rates .....	16
i. Customer Bills .....	20
iv. Emissions.....	21
<b>5. Conclusion .....</b>	<b>23</b>

The Natural Resources Defense Council (NRDC) respectfully submits these comments on the Final Long-Term Gas System Plan (Final LTP) filed by Consolidated Edison Company of New York, Inc. (Con Edison) and Orange and Rockland Utilities, Inc. (O&R) (the Companies) with the Public Service Commission (“Commission”) on November 29, 2023, in the above-referenced proceeding.<sup>1</sup> NRDC developed these comments with assistance and analysis from Synapse Energy Economics (Synapse).

## 1. Introduction

On May 12, 2022, the New York Public Service Commission (Commission) issued its Order Adopting Gas System Planning Process in Case 20-G-0131 (Planning Order).<sup>2</sup> This order requires each gas utility to file a comprehensive, gas system long-term plan (LTP) to ensure that New York’s residents can continue to have safe, adequate, and reliable gas service as we transition to clean energy to reduce greenhouse gas (GHG) emissions consistent with the requirements and objectives of the Climate Leadership and Community Protection Act (Climate Act).<sup>3</sup> Analyses underlying each LTP must balance supply and demand over a 20-year planning horizon, considering energy efficiency, electrification, demand response, and non-pipeline alternatives (NPA). In their LTPs, each utility must present a likely and a preferred plan for its portfolio of investments and must also include an NPA-only scenario (unless it presents sufficient evidence that an NPA-only scenario is not feasible) with a benefit-cost analysis, estimated bill impacts and net present value of costs of alternative resources.<sup>4</sup>

On May 31, 2023, Con Edison and O&R filed their Initial Gas Long-Term Plan (Initial LTP), which evaluate three representative pathways (Reference, Hybrid, and Deep Electrification) that represent potential end states for the 20-year planning horizon.<sup>5</sup> These pathways vary in assumptions and produce dramatically different results.

- **The Reference pathway** reflects a continuation of existing laws and policies, continuation of existing investments in energy efficiency and electrification, and preservation of programs related to new gas service. It fails to meet CLCPA targets.
- **The Hybrid pathway** incorporates heating electrification, certified fossil gas, and low-carbon fuels (LCF), which the Companies identify as renewable natural gas (RNG), hydrogen, and synthetic natural gas (SNG). This pathway projects a moderate reduction in gas volumes and emissions by 2042.

---

<sup>1</sup> Case 23-G-0147, *In the Matter of a Review of the Long-Term Gas System Plans of Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc.*, Con Edison, O&R Gas Long-Term Plan Update (Nov. 29, 2023) (Final LTP).

<sup>2</sup> Case 20-G-0131, *Proceeding on Motion of the Commission in Regard to Gas Planning Procedures*, Order Adopting Gas System Planning Process (May 12, 2022) (Planning Order).

<sup>3</sup> *Id.* at 5, 17-18.

<sup>4</sup> Planning Order at 43 -46.

<sup>5</sup> Case 23-G-0147, *supra*, Con Edison, O&R Initial Gas Long-Term Plan (May 31, 2023) (Initial LTP).

- **The Deep Electrification pathway** assumes significant reductions in gas delivery service by 2050 to serve select large customers and that energy needs will be met almost fully through electrification and steam through Con Edison’s district heating system that the Company plans to decarbonize. This pathway projects a steeper reduction in gas volumes and in emissions by 2042.

Notably, the Companies did not choose a preferred scenario in the Initial LTP, asserting they were not expressing a preference for any scenario and that they instead will pursue a “robust decarbonization plan that meets State decarbonization goals.”<sup>6</sup>

NRDC filed comments in response to the Initial LTP recommending that the Companies in the next iteration of the LTP:

- Identify a preferred plan that is consistent with the Climate Act;
- Include modeling that is aligned with the Scoping Plan;
- Prioritize NPAs over the proactive replacement of leak prone pipe (LPP) and more precisely and effectively target replacement of only the pipes necessary for safety;
- Consider and incorporate the results of an analysis of the cost of emissions reductions achieved through the use of LCFs compared to alternatives like electrification;
- Fix problematic cost and emissions assumptions regarding LCFs, and target these fuels to the end-uses for which electric alternatives are not readily available; and
- Not include certified fossil gas.

On September 22, 2023, the Companies filed their Revised Gas Long-Term Plan (Revised LTP), which was not substantially different from the Initial LTP despite containing several updates to their key projected outcomes for each scenario.<sup>7</sup> NRDC filed comments highlighting how the Revised LTP does not include all information the Commission and stakeholders need to understand and provide meaningful input, including several areas where the Companies asserted they would provide additional information in the Final LTP rather than in the Revised LTP. NRDC’s comments also highlighted how the Companies’ modeling of the Revised LTP continued to use several questionable assumptions about certified gas, hydrogen, and RNG; lacked a bottom-up assessment of customer-level choice and economics and the incorporation of this assessment into their modeling; and, emphasized risky gas-system investments and costly fuels rather than on reducing proactive pipe replacement and infrastructure investment in the gas system more broadly.

NRDC’s comments on the Revised LTP also contained modeling analysis conducted by Synapse using its Gas Rate Model (GRM)<sup>8</sup> that included an additional Modified Hybrid scenario

---

<sup>6</sup> *Id.* at 4.

<sup>7</sup> Case 23-G-0147, *supra*, Con Edison, O&R Gas System Long-Term Plan (Sept. 25, 2023) (“Revised LTP”).

<sup>8</sup> The GRM allows Synapse to project gas utility rates based on different scenarios for utility investment, sales, and financial models. Synapse used input data from annual utility reports to state regulators, alongside data from the Pipeline and Hazardous Materials Safety Administration (for gas pipeline investment data) and rate cases (such as depreciation and cost-of-service studies) to build a model of the past up to the present. The model tracks utility plant

that combines the higher fuel costs and the fuel mix from the Companies' Hybrid case, with an end of the proactive LPP replacement program in 2030/2031, to evaluate how rates would evolve if higher supply costs from incorporation of expensive LCFs and certified gas into the mix and from continued gas system investments prompt customers to reduce demand or migrate from the system at a faster pace. The analysis demonstrates the significant contribution of the higher fuel supply cost associated with LCFs to increases in rates and highlights how prolonged investments in LPP replacement creates substantial risk of stranded costs as sales decline and customers depart the system, which would leave the most vulnerable customers to bear the costs of the increasingly expensive system.

The Final LTP contains some modest changes to the LTP pathways as well as several areas of new discussion and data, including additional affordability data, discussion on work done to date relative to Disadvantaged Communities, and discussion that reiterates the Companies' decision not to select a preferred pathway. On December 12, 2023, PA Consulting Group Inc. filed their Final Report on the Final LTP (PA Final Report).<sup>9</sup>

NRDC submits these comments to emphasize the key shortcomings of the Companies' LTP and to provide further rate analysis sensitivities for the Hybrid Pathway. These additional analyses underscore the serious risks associated with the Hybrid Pathway, including the potential for a rate crisis that drives unmanageable customer defections and significant stranded costs.

NRDC recommends that the Commission reject the Companies' Final LTP and direct the Companies to develop a preferred pathway that directionally aligns with the Deep Electrification Pathway to minimize risk of noncompliance with New York's emission reduction and climate justice objectives and to protect the long-term interests of ratepayers and the environment. The effort should focus largely on identifying opportunities to avoid additional investment in the gas distribution system, especially in Disadvantaged Communities, and deploy integrated strategies to responsibly transition swaths of the system from a dependency on pipeline-delivered fuels. Importantly, these modifications should be completed now—not in three years—to ensure the LTP is capable of informing the investments proposed in Con Edison's next rate filing.

## **2. The absence of a preferred pathway undermines effective planning**

Con Edison and O&R's failure to identify a preferred pathway in their Final LTP represents an unacceptable deviation from the Planning Order that undercuts the intent and effectiveness of the long-term gas system planning process. The Commission's Planning Order plainly requires that "each long-term plan include the likely and preferred portfolios of investments, summarizing

---

in service, depreciation, capital additions and retirements, operations and maintenance, and income taxes. It accounts for capital structure and changes in tax rates. Looking forward from the present, the model allows testing scenarios for different levels of investment and customer growth or decline, pipeline replacement programs, early retirements, stranded costs, and changes in depreciation rates. Synapse has developed ways to map changes in customer numbers to changes in miles of pipeline in service and other aspects of capital plant.

<sup>9</sup> Case 23-G-0147, *supra*, PA Consulting Final Report – NY Long Term Gas Planning (Dec. 11, 2023) ("Final Report").

the cost and bill impacts and the emissions impacts from the preferred option, the no-infrastructure option, and any other options suggested in the long-term plan.”<sup>10</sup> Accordingly, the Companies in their LTP must identify a preferred pathway and consider alternative scenarios for evaluation in the gas system planning process. The Commission should clarify that utilities must meet all of the substantive requirements set forth in the Planning Order in every iteration of the LTP, and that it is noncompliant to wait for the final LTP to include fundamental requirements like conducting BCAs.

Of note, in its recent Order concerning the LTP of National Fuel Gas (NFG) (NFG LTP Order), the Commission confirmed that the Planning Order intends for each gas utility to present a preferred pathway along with alternative scenarios, and expounded on the benefits of this approach:

As envisioned in the Planning Order, NFG presented its proposed long-term plan together with a number of scenarios it evaluated, and throughout the proceeding it continued to evaluate other scenarios based on input from stakeholders. By presenting a preferred plan as intended, NFG allowed the stakeholders, Staff, and this Commission to focus on ways to improve and refine the pathway forward. The intention behind requiring alternative scenarios, including a “no infrastructure option” is to provide comparators to the utility’s proposed plan, both regarding individual aspects and the plan as a whole. In contrast, presenting a number of scenarios without differentiation of the steps needed to achieve them would not enable an LDC, stakeholders, Staff or the Commission to appropriately focus resource allocation or avoid unnecessary infrastructure.<sup>11</sup>

Requiring utilities to identify a preferred pathway and alternative scenarios, and to conduct analysis of the cost, bill, and emissions impacts of the alternative options enables effective long-term planning by promoting transparency, accountability, and alignment with policy objectives.

Con Edison and O&R chose not to select a preferred pathway and postponed including a meaningful affordability analysis until the release of the Final LTP, diverging from the specific instructions of the Planning Order. The Companies expressed their strong belief that “it is premature to [select a preferred pathway] at this time” and that they “need to continue to plan and prepare for a range of possible outcomes.”<sup>12</sup> The Companies also reasoned that each pathway in their Final LTP has a range of BCA ratios, which overlap with each other, and cited uncertainties going forward in regulatory, legislative, and technological developments that are out of their control.<sup>13</sup> While uncertainties are inherent in any 20-year long-term plan, these do not excuse the failure to identify a preferred pathway or the delayed inclusion of an affordability analysis. Such

---

<sup>10</sup> Planning Order at 50.

<sup>11</sup> Case 22-G-0610, *In the Matter of a Review of the Long-Term Gas System Plans of National Fuel Gas Distribution Corporation*, Order Implementing Long-Term Natural Gas Plan With Modifications, at 22 (Dec.14, 2023) (NFG LTP Order).

<sup>12</sup> Final LTP at 4.

<sup>13</sup> *Id.* at 5.

omissions hinder clarity regarding the strategic direction for transitioning the Companies' gas systems, thereby affecting both regulatory oversight and public understanding.

Importantly, the Companies also asserted that the Reference Pathway, which represents the current trajectory of established programs and policies that fall well short of Climate Act targets, will inform their investments in the near-term, based on their belief that “as New York State makes more progress in implementing the clean energy transition, the Reference case will converge with the Hybrid and Deep Electrification Pathways.”<sup>14</sup> Though we understand that future state directives may ultimately impact the Companies' path forward, we are concerned by this approach because it is noncompliant, insufficient, and risks further entrenching New York's dependence on traditional gas system infrastructure and combustion fuels that are harmful to human health and the environment.

### **3. The Final LTP risks squandering the best opportunities to minimize stranded costs and manage affordability of gas service**

The lack of a preferred pathway coupled with the near-term strategy of using the Reference Pathway to guide investment decisions until the State makes more progress in implementing the clean energy transition sets the Company on a risky path that could foreclose the most strategic options available for right-sizing the gas distribution system to be compliant with Climate Act objectives. In the Final LTP, the Companies present Hybrid and Deep Electrification as two potential pathways that are capable of meeting Climate Act emission limits that share many initial actions up to 2030, after which they significantly diverge.<sup>15</sup> This approach is misleading in two key aspects.

Firstly, Hybrid and Deep Electrification should not be viewed as paths to the same outcome; they actually lead to dramatically different futures for the gas system over the 20-year planning horizon. This difference impacts various aspects of the LTP, including infrastructure transition, investment, operations and maintenance, and emissions reduction. These differing end states also have notable consequences for achieving the statewide emission limits set by the Climate Act; however, the LTP somewhat obscures these implications because the planning horizon concludes in 2043. This leaves a substantial gap before the Climate Act's 2050 emission goals, potentially resulting in the need for substantial emissions reduction efforts and associated cost increases in the final years leading up to 2050.<sup>16</sup> This is particularly true for the Hybrid Pathway, which projects to only reduce gas sector emissions by 62% compared to the 87% for Deep Electrification, and more heavily depends on questionable assumptions about the cost, availability, and emission reduction potential of LCFs.<sup>17</sup>

---

<sup>14</sup> Final LTP at 5.

<sup>15</sup> Final LTP at 99.

<sup>16</sup> See Building Decarbonization Coalition, *The Future of Gas in New York State*, at 66 (March 2023).

<sup>17</sup> See PA Final Report at Table 1.

Also of note, the Companies' pathway analysis appears to be based on systems costs calculated using coupled-together models that rely on highly uncertain assumptions, which risks a number-slinging exercise among stakeholders and the Companies in which nuance is lost and time is wasted.<sup>18</sup> NRDC agrees with the PA Final Report, and similarly argued in prior comments,<sup>19</sup> that that the Companies should “[c]onduct an optimization process to identify and develop a long-term plan Pathway with the highest emissions reduction potential and lowest impact on affordability while maintaining system reliability and safety”, as well as “conduct a sensitivity analysis to demonstrate the modeling robustness and share a view on the most sensitive assumptions and variables with the Stakeholders and the Commission to assess the prudence of these assumptions.”<sup>20</sup> Ultimately, this needs “to focus on integrated, locally-focused planning that seeks to right-size the gas distribution system to be compliant with the [Climate Act’s] objectives. Such analysis should focus largely on identifying opportunities to avoid additional investment in the gas distribution system and deploy integrated strategies to responsibly transition swaths of the system off of a dependency on pipeline delivered fuels.”<sup>21</sup>

Second, despite apparent similarities until 2030, Hybrid and Deep Electrification involve divergent investment and implementation schedules. As the PA Final Report identifies:

While that outcome may be the case to some extent, successful deployment of NPA and electrification solutions requires significant lead time, and the Companies would need to redirect some of the capital that is earmarked for pipe replacement toward electrification efforts and thus it is hard to imagine that Companies can successfully pursue both pathways and both strategies at the same time.<sup>22</sup>

Following the Reference Pathway suggests continued, rapid, and expensive proactive replacement of pipes, leading to over-investment in traditional gas infrastructure. This approach may foreclose the best opportunities for downsizing the gas system in a way that aligns with the Climate Act objectives. Consequently, it risks favoring the Hybrid Pathway, missing the opportunity to adopt the more CLCPA-aligned Deep Electrification pathway.

Crucially, while the Deep Electrification pathway allows for the future use of LCFs if they are proven to be effective and cost-efficient, the Reference/Hybrid approach may foreclose the necessary timely actions required for a successful transition to Deep Electrification.

#### **4. Deep Electrification is the lowest risk, highest value pathway**

The pathways analysis results presented in the Final LTP can give the false impression that the Hybrid Pathway is a reasonable middle ground because its projected outcomes tend to split the

---

<sup>18</sup> See *id.* at 67.

<sup>19</sup> See NRDC Comments on the Revised LTP at 22-23.

<sup>20</sup> PA Final Report at 11.

<sup>21</sup> See Building Decarbonization Coalition, *The Future of Gas in New York State*, at 67 (March 2023), available at <https://buildingdecarb.org/resource/the-future-of-gas-in-nys>.

<sup>22</sup> PA Final Report at 12.



difference between the Reference and Deep Electrification pathways.<sup>23</sup> In reality, the Hybrid Pathway rests on a number of problematic assumptions about the availability, costs, and emission reduction potential of LCFs,<sup>24</sup> requires significantly greater investments in traditional gas system infrastructure, and thereby creates substantial risk of stranded costs in the future as sales decline and customers depart the system, which would leave the most vulnerable customers to bear the costs of the increasingly expensive system. In contrast, the Deep Electrification scenario is more consistent with the emissions reduction requirements of the CLCPA and will reduce risk of stranded assets and unrealistic estimates of emissions reductions associated with LCFs over the mid- to long-term.

To better understand the risks inherent to the Hybrid Pathway, Synapse updated its Gas Rate Model<sup>25</sup> analysis of the Hybrid and Deep Electrification Pathways presented in NRDC's Comments on the Revised LTP based on the changes made in the Final LTP and included two additional scenarios to evaluate the sensitivity of key assumptions of the Hybrid Pathway. The modeling shows how the Hybrid Pathway, with the high supply costs of LCFs and prolonged proactive pipe replacement, ultimately leads to higher bills as customers reduce their gas use and defect from the gas system in reaction to higher prices.

#### **A. Scenario Assumptions**

Synapse added two sensitivity scenarios to explore variations of the Hybrid Pathway: the Customer Defection and Downsized System scenarios. These scenarios anticipate reductions in customer numbers and total fuel sales, similar to those projected for the Deep Electrification scenario. Both maintain the Hybrid Pathway's fuel composition, utilizing a higher proportion of hydrogen and RNG compared to the Deep Electrification pathway.

**Customer Defection Scenario:** In this scenario, Con Edison continues its proactive pipe replacement program until 2040, aligning with the original Hybrid Pathway plan. The Customer Defection scenario aims to demonstrate the effects of high-cost LCF supply and continuous investment in pipe replacement, especially as customers start leaving the gas system or reduce their usage in response to increasing gas bills.

**Downsized System Scenario:** In contrast, for Con Edison, the Downsized System scenario assumes that capital expenditures for proactive pipe replacement cease in 2031. This scenario is

---

<sup>23</sup> See PA Final Report at table 1 and table 4.

<sup>24</sup> See NRDC Comments on the Revised LTP at 8-13.

<sup>25</sup> The GRM allows Synapse to project gas utility rates based on different scenarios for utility investment, sales, and financial models. Synapse used input data from annual utility reports to state regulators, alongside data from the Pipeline and Hazardous Materials Safety Administration (for gas pipeline investment data) and rate cases (such as depreciation and cost-of-service studies) to build a model of the past up to the present. The model tracks utility plant in service, depreciation, capital additions and retirements, operations and maintenance, and income taxes. It accounts for capital structure and changes in tax rates. Looking forward from the present, the model allows testing scenarios for different levels of investment and customer growth or decline, pipeline replacement programs, early retirements, stranded costs, and changes in depreciation rates. Synapse has developed ways to map changes in customer numbers to changes in miles of pipeline in service and other aspects of capital plant.

designed to explore the outcomes of the Hybrid Pathway's LCF strategy combined with more aggressive efforts in NPAs to avoid investments in pipe replacement.

In summary, both scenarios follow the Hybrid's low carbon fuel mix and have decreased gas sales and customer retention from Hybrid as Proposed, but they differ in their approach to pipe replacement, offering insights into the financial and operational impacts of varying potential evolutions of the Hybrid Pathway.

*Table 1. Pathways Critical Assumptions: Con Edison*

	Reference	Deep Electrification	Hybrid As Proposed	Customer Defection	Downsized System	
End date of GIRRP	2040	2031	2040	2040	2031	
2043	Customers (thousand)*	929,704	365,159	614,004	365,159	365,159
	Sales (TBTU)	152	31	110	31	31
	Cert. fossil gas (TBTU)	7.6	24.0	64.0	18.0	18.0
	RNG (TBTU)	0.0	6.0	39.0	11.7	11.7
	Hydrogen (TBTU)	0.0	0.0	7.0	2.0	2.0
	Simple weighted average fuel price (\$/MMBtu)	\$6.36	\$9.21	\$11.70	\$11.70	\$11.70

*Sources: Final LTP, p. 70 (end date of GIRRP). Final LTP Appendix C (fuel price, volume, and sales), Appendix B (customers), Synapse modeling (Downsized System and Customer Defection)*

*\*Synapse projected to 2043 from 2042 values provided by the Companies.*

For O&R, Synapse only modeled one sensitivity of the Hybrid Pathway, the Customer Defection scenario, because O&R already plans to end its proactive main replacement program in 2030 across all pathways; therefore, low carbon fuels mix is the only changing variable in our modeling for O&R. The O&R Customer Defection scenario maintains the 2030 MRP end-date, assumes decreased customer retention and gas sales consistent with Deep Electrification, and applies the LCF fuel mix from Hybrid. O&R Customer Defections is meant to show the impacts of a costlier fuel mix and reduced number of customers.

Table 2. Pathways Critical Assumptions: O&R

		Reference	Deep Electrification	Hybrid As Proposed	Customer Defection
End date of MRP		2030	2030	2030	2030
2043	Customers*	111,462	41,596	90,560	41,596
	Sales (TBTU)	19.3	8.1	14.4	8.1
	Cert. fossil gas (TBTU)	1.0	6.0	7.9	4.4
	RNG (TBTU)	0.0	2.0	5.7	3.2
	Hydrogen (TBTU)	0.0	0.0	0.8	0.5
	Simple weighted average fuel price (\$/Dekatherm)	\$6.36	\$10.03	\$12.78	\$12.78

Sources: Final LTP, p. 72 (end date of MRP). Final LTP Appendix C (fuel price, volume, and sales), Appendix B (customers), Synapse modeling (Customer Defection)

\*Synapse projected to 2043 from 2042 values provided by the Companies.

## B. Results

Table 3 and Table 4 show some of the key outputs from Synapse’s modeling. Cells are color coded to contextualize each scenario’s performance relative to the other scenarios. Green indicates the most favorable outcome, yellow indicates average, and red indicates the least desirable outcome for the state and ratepayers.

*Table 3. Key Outputs: Con Edison*

Scenario Name	GHG Emissions Reduction (2022-2043)	Bill Impact Analysis Average YOY Increase (2023-2043)	Revenue Requirement (\$M in 2022\$)	Key Takeaways
<b>Reference</b>	22%	2.0%	\$2,506	This scenario maintains business-as-usual operations and does not meet New York State’s emission reduction targets
<b>Hybrid (as Proposed)</b>	61%	4.0%	\$1,994	Assumes relatively stable customer base and maintains the existing gas system
<b>Deep Electrification</b>	88%	3.2%	\$1,446	Assumes significant customer loss and decreases gas system footprint
<b>Downsized System</b>	89%	3.5%	\$1,446	Same as Deep Electrification but with higher proportion of LCFs
<b>Customer Defection</b>	89%	4.8%	\$1,994	Same as Deep Electrification but with prolonged pipe investment

*Notes: Modeling adopts Companies’ assumptions about emissions associated with hydrogen, RNG, and certified gas. Year-over-year (YOY) bill impacts show the average annual change in customer bills from one year to the next.*

Table 4. Key Outputs: O&R

Scenario Name	GHG Emissions Reduction (2022-2043)	Bill Impact Analysis Average YOY Increase (2023-2043)	Revenue Requirement (\$M in 2022\$)	Key Takeaways
<b>Reference</b>	31%	2.8%	\$295	This scenario maintains business-as-usual operations and does not meet New York State's emission reduction targets
<b>Hybrid (as Proposed)</b>	66%	4.5%	\$271	Assumes relatively stable customer base and maintains the existing gas system
<b>Deep Electrification</b>	78%	5.7%	\$196	Assumes significant customer loss and decreases gas system footprint
<b>Customer Defection</b>	81%	6.3%	\$196	Same as Deep Electrification but with higher proportion of LCFs

Notes: Year-over-year (YOY) bill impacts show the average annual change in customer bills from one year to the next.

**i. Revenue Requirement and Rate Base**

Most notably, revenue requirement and rate base reveal the impact of prolonged pipe replacement. For Con Edison, revenue requirement (Figure 1) and rate base (Figure 2) reveal the impact of the later proactive LPP replacement program end date in the Con Edison Customer Defection and Hybrid as Proposed scenarios. Rate base and revenue requirement decrease steadily in the Downsized System and Deep Electrification scenarios starting around 2030 when pipe replacement ends. Prolonging pipe investment until 2040 will lead to heightened revenue requirements beyond 2043.

Figure 1. Revenue Requirement: Con Edison

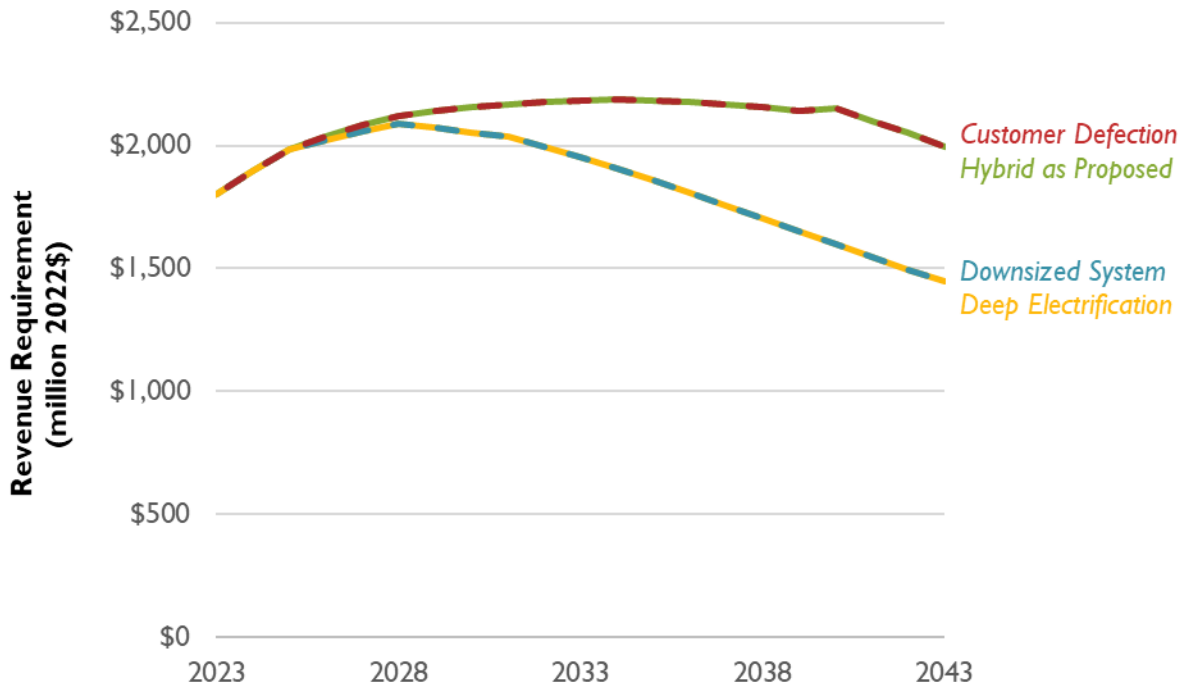
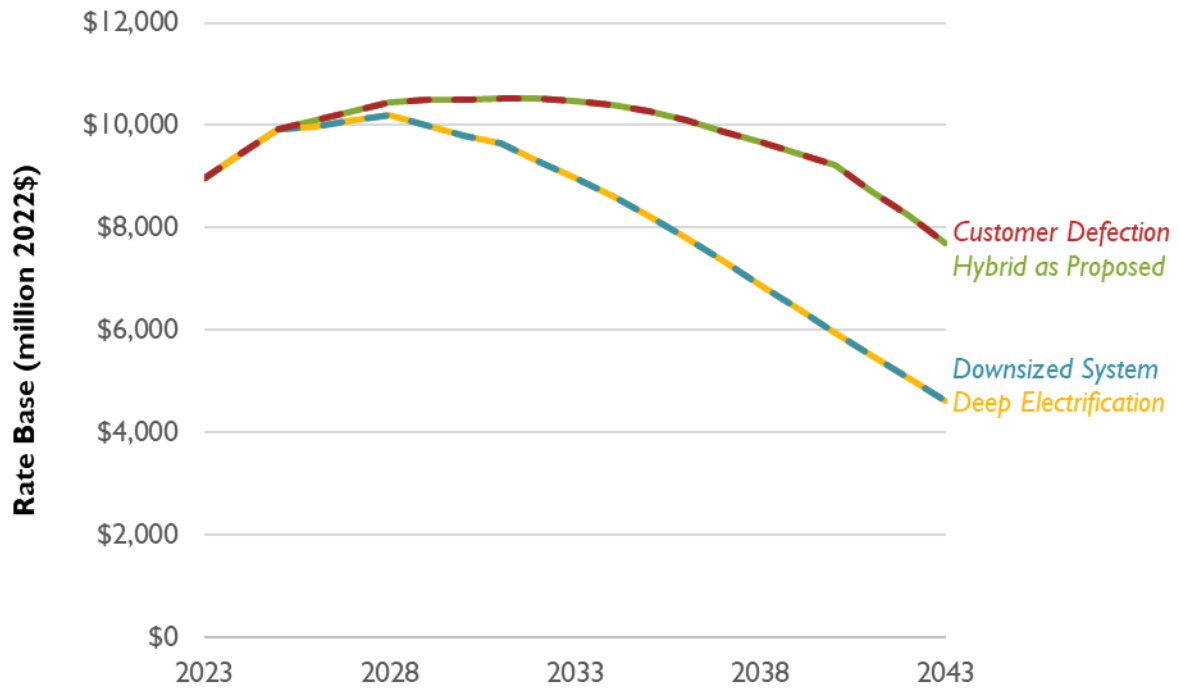


Figure 2. Rate Base: Con Edison



For O&R, revenue requirement (Figure 3) and rate base (Figure 4) do not show an impact of greater LPP replacement because the O&R Hybrid as Proposed, Customer Defection, and Deep Electrification scenarios all have an MRP end-date of 2030. The greater number of customers and fuel sales in Hybrid as Proposed contribute to the higher revenue requirement and rate base.

Figure 3. Revenue Requirement: O&R

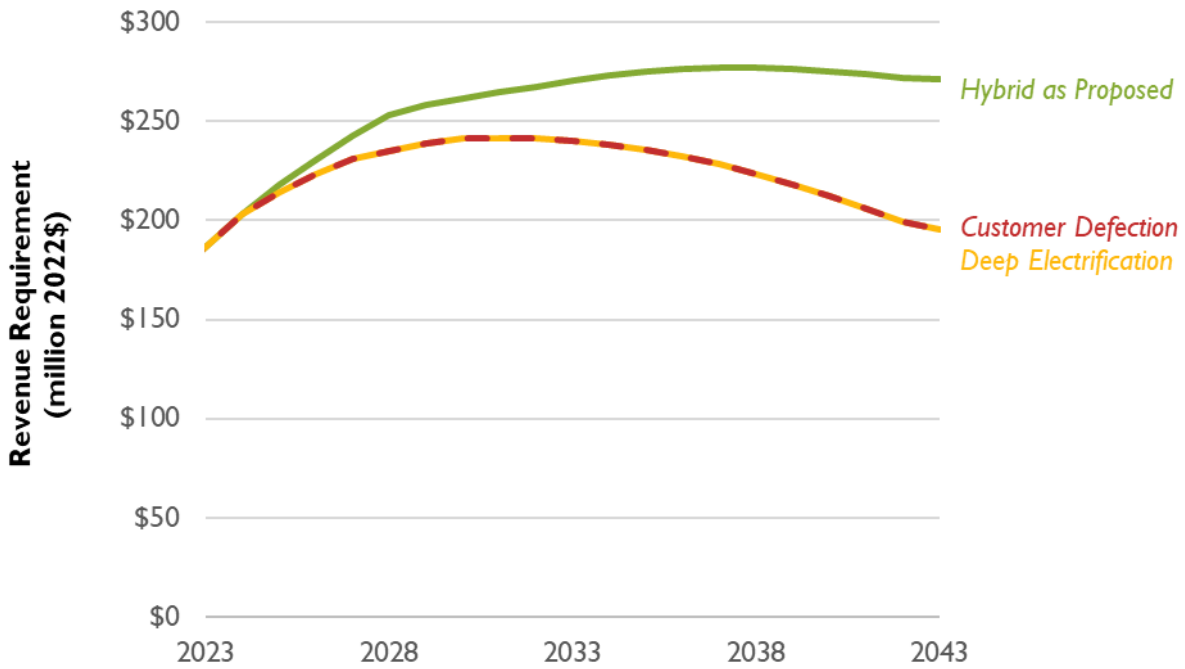


Figure 2. Rate Base: O&R



A larger revenue requirement means higher rates for customers. High gas rates paired with cheaper electric alternatives will drive customers to depart from the gas system in favor of lower cost electric-powered end uses. As instances of customer defection increase, the Companies risk not being able to recover their revenue requirement, ultimately leading to stranded costs. For both companies, the higher revenue requirement in Hybrid as Proposed leaves more at stake for stranded costs compared to Deep Electrification.

Indeed, Deep Electrification’s lower overall revenue requirement offers enhanced flexibility for managing affordability and enables more cost-effective implementation of these various strategies. For instance, if policymakers decide to distribute the burden of stranded costs among utility shareholders, electric ratepayers, and/or taxpayers, the reduced financial demands of Deep Electrification would mean fewer costs need to be shifted to these groups to achieve the same affordability outcomes. This approach maintains flexibility and enhances opportunities for effectively managing affordability.

**ii. Rates**

The Customer Defection scenario, which sees higher levels of LCFs prompting customer electrification, leads to the highest rates across both companies, demonstrating the significant risks associated with unmanaged customer defection from the gas system. Comparing delivery rates with and without fuel costs highlights the impact of costly LCFs on rates.

In the case of Con Edison, the Customer Defection and Downsized System scenarios both make use of hydrogen and RNG in the same proportions as the Hybrid as Proposed scenario. The



Deep Electrification scenario does not include hydrogen in its fuel mix and utilizes less RNG and more certified natural gas than Hybrid as Proposed. Comparing Figures 5 and 6 demonstrates the impact of the costlier fuel mix in the Customer Defection and Downsized System scenarios relative to Deep Electrification. Although Hybrid as Proposed has the same costly fuel mix, greater sales and number of customers lead to lower overall rates.

Figure 3. Rates, Delivery Only: Con Edison

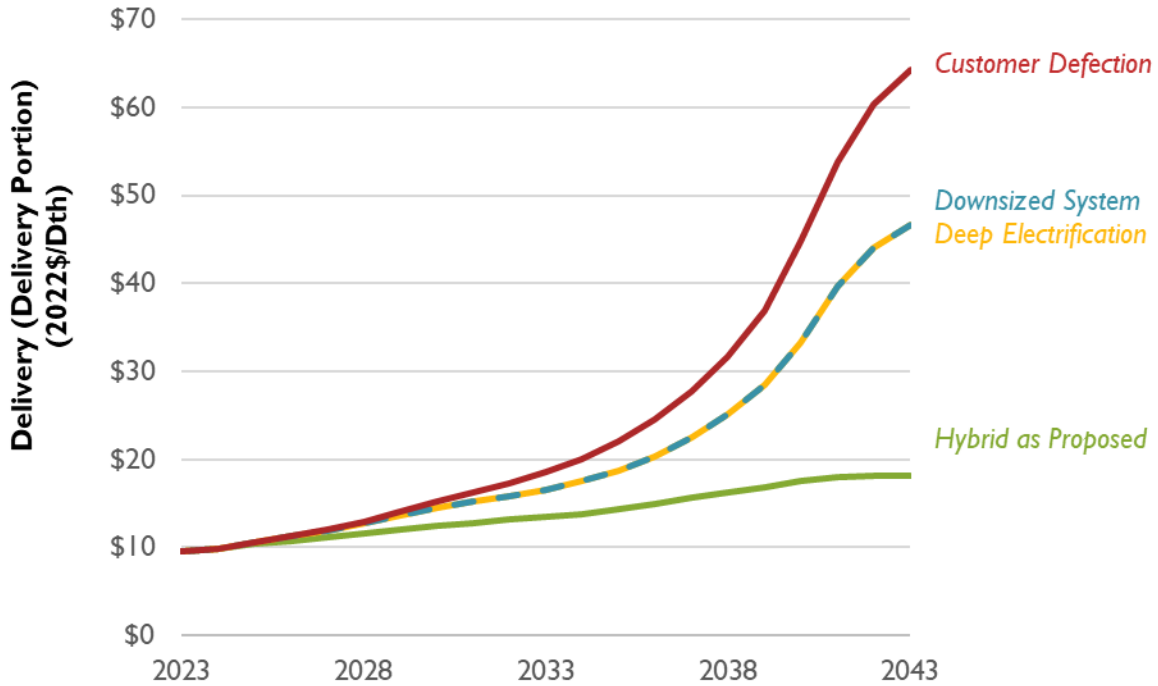
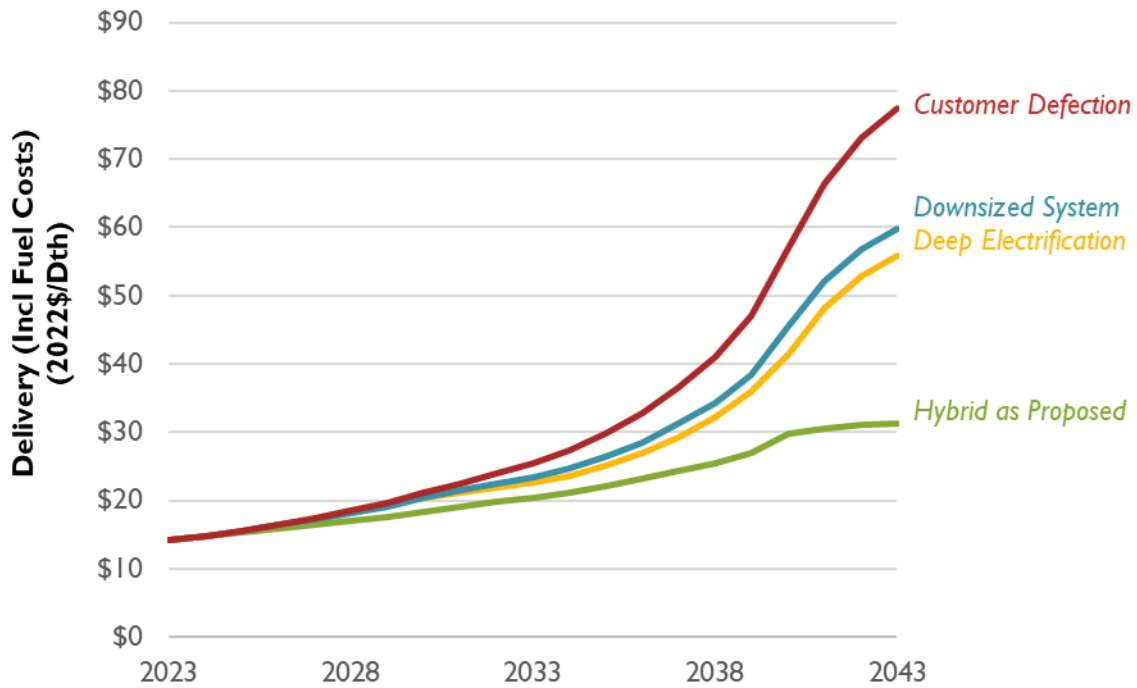


Figure 6. Rates, Including Fuel Costs: Con Edison



Rates for the O&R Customer Defection scenario follow the same logic as Con Edison. Figure 7, showing delivery rates absent fuel costs, displays Customer Defection and Deep Electrification in unison because both scenarios serve the same number of customers and have the same level of fuel sales. However, in Figure 8 where fuel costs are included in the delivery rate, the Customer Defection scenario soars above O&R’s Deep Electrification and Hybrid as Proposed as a result of costly LCFs.

Even though Hybrid as Proposed has lower rates across both companies, the Customer Defection scenario shows the impact of LCFs proportional to fuel sales. If the Companies follow the Hybrid as Proposed scenario and future sales and number of customers drop, their delivery rates may rise as high as levels of the Customer Defection scenario.

Figure 7. Rates, Delivery Only: O&R

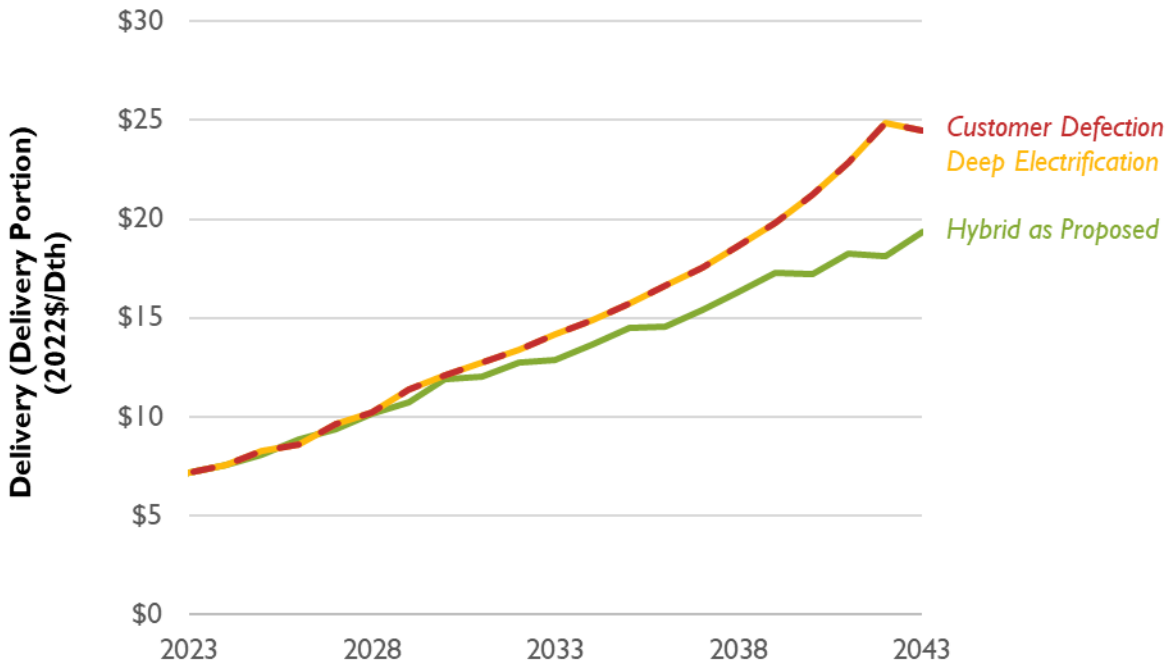
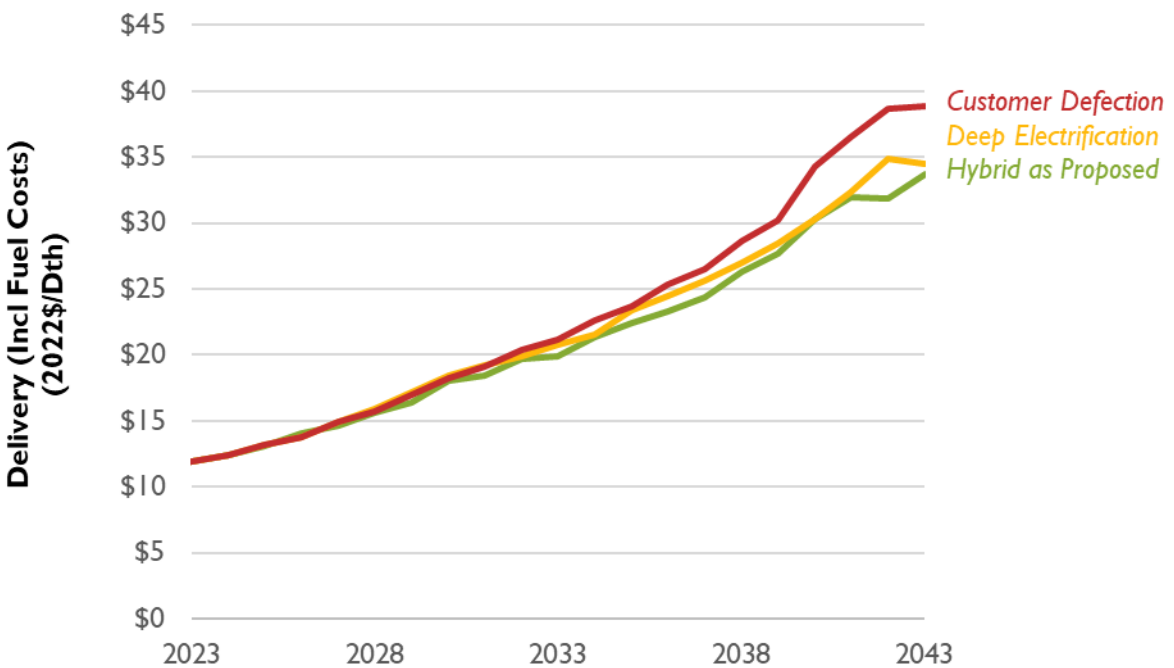


Figure 4. Rates, Including Fuel Costs: O&R



**i. Customer Bills**

Figure 9 and Figure 10 display forecasts for customer bills across different scenarios for both Con Edison and O&R. In these forecasts, the Customer Defection scenario results in the highest bills for customers of both companies. Specifically, O&R's higher bills in the Customer Defection scenario are attributed to expensive fuels, while Con Edison's higher bills in the same scenario are due to both costly fuels and extended investment in LPP replacement.

For O&R, the reason why bills are lower in the Hybrid as Proposed scenario compared to the Deep Electrification scenario is that the Hybrid scenario assumes a larger customer base. In the case of Con Edison, despite also assuming more customers in the Hybrid as Proposed scenario than in the Deep Electrification scenario, customer bills are higher in the Hybrid scenario. This increase is due to the added expenses of LCF supply and sustained investment in pipe infrastructure.

*Figure 5. Customer Bills: Con Edison*

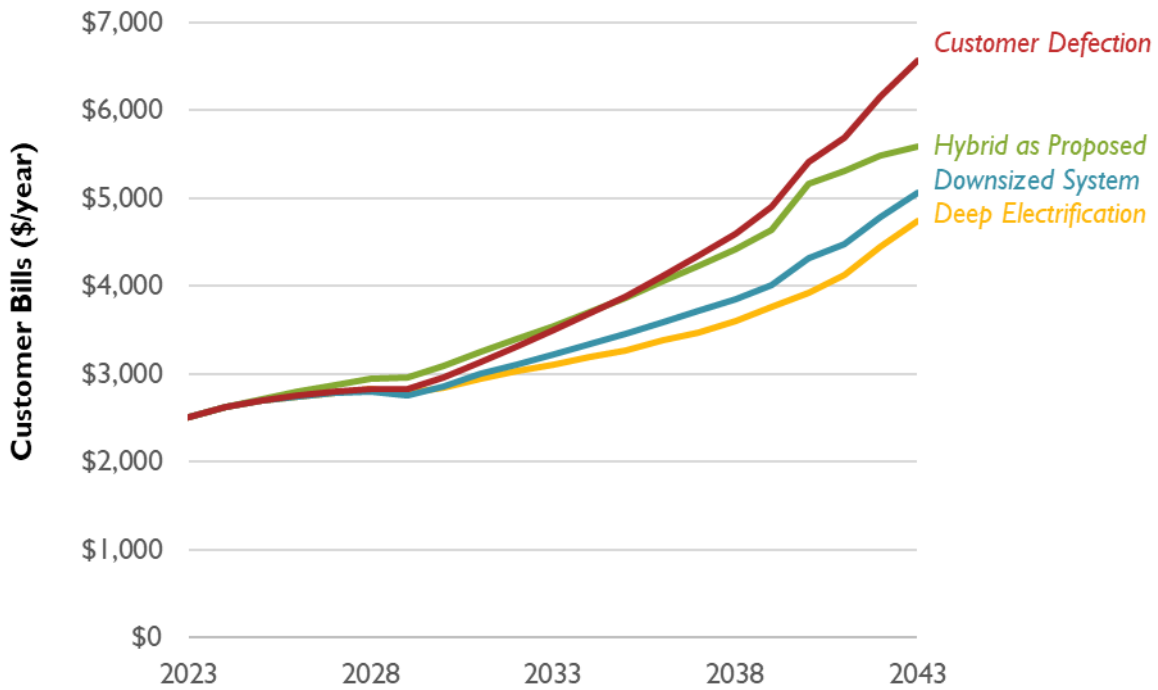
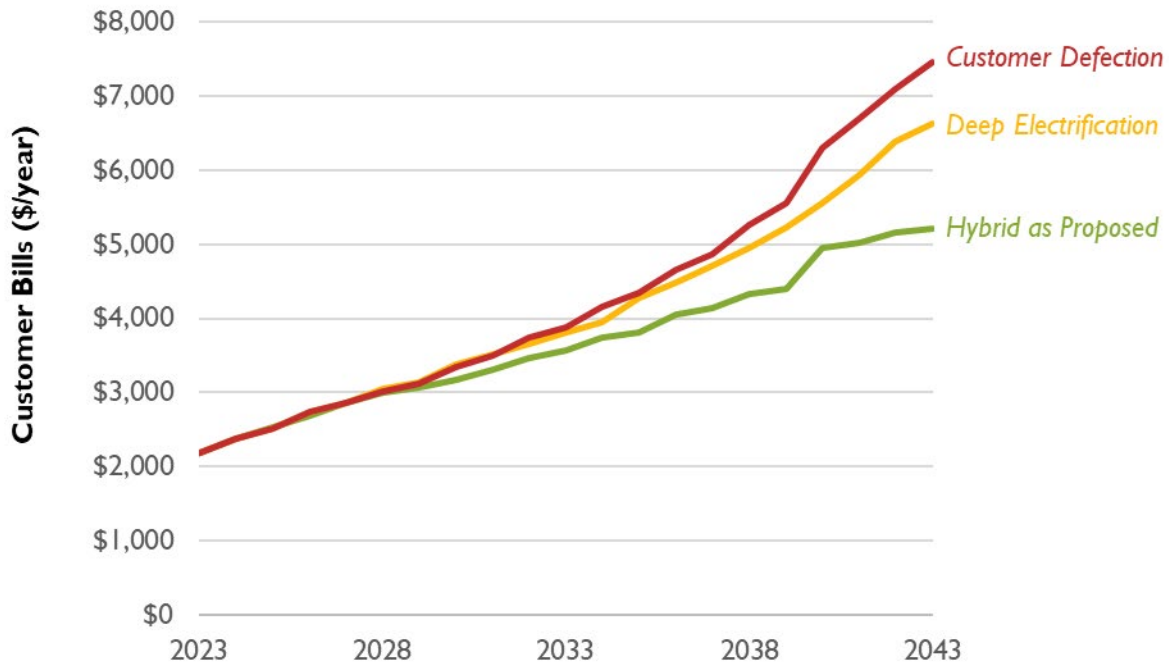


Figure 6. Customer Bills: O&R



The modeling highlights that the Hybrid as Proposed pathway, as pursued by the Companies, does not sufficiently prioritize reducing proactive pipe replacements and broader infrastructure investments in the gas system. This oversight could lead to a rate crisis, resulting in unmanageable customer defections and significant stranded costs. The Customer Defection scenario's rates and bills, particularly in the 2040s, underscore these risks associated with the Hybrid as Proposed pathway.

In essence, the Hybrid as Proposed strategy for transitioning the gas system not only subjects the Companies to a high risk of incurring stranded costs but also is likely to impact Disadvantaged Communities disproportionately, especially in terms of affordability. This approach, therefore, raises concerns about both financial stability and equitable treatment of communities.

#### iv. Emissions

Emissions were calculated by multiplying each scenario's fuel volume by the Companies' provided emissions factors. Across both companies, the Customer Defection scenario yields the lowest level of emissions due to a low sales volume and the use of LCFs. However, the marginal emission savings from the Customer Defection scenarios relative to the Deep Electrification scenarios comes at a very high cost in terms of rates, bills, and risk of stranded costs. In fact, the emissions savings from the use of RNG and hydrogen blending in this scenario are so minimal that they are almost negligible.

Figure 7. Total Emissions: Con Edison

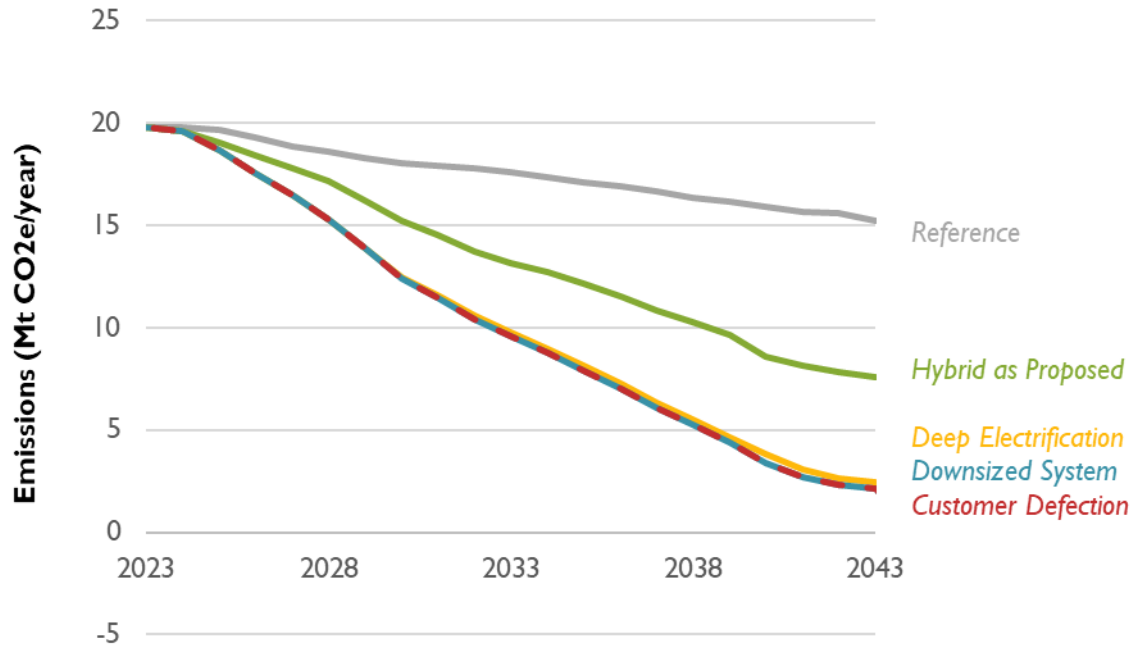
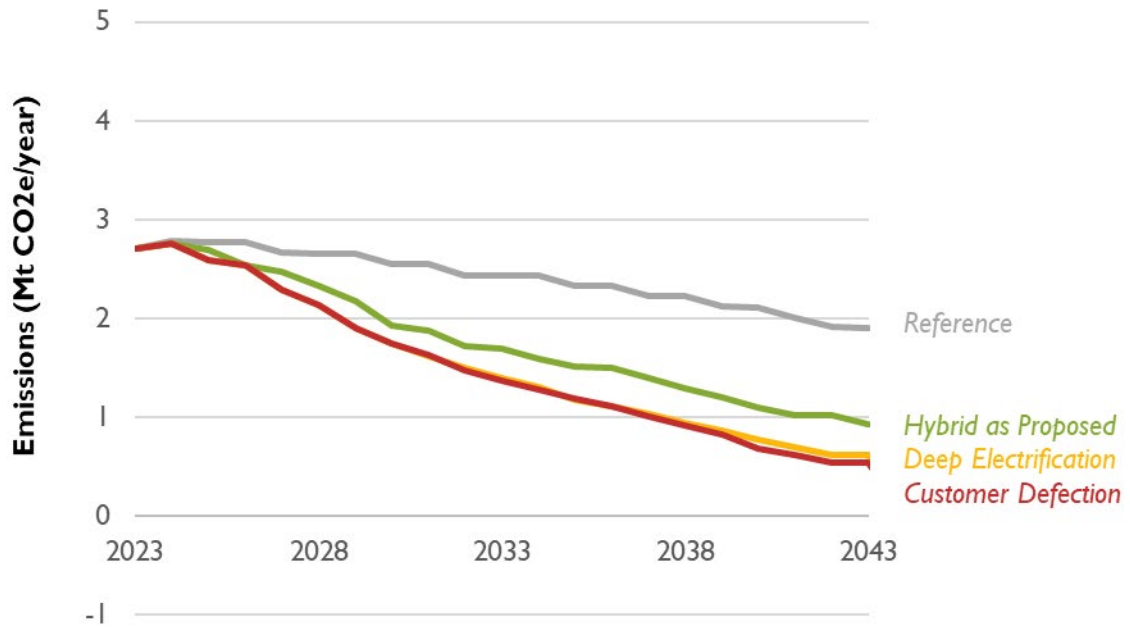


Figure 8. Total Emissions: O&R



## **5. Conclusion**

NRDC recommends that the Commission reject the Companies' Final LTP and direct the Companies to develop a preferred pathway that directionally aligns with the Deep Electrification Pathway to minimize risk of noncompliance with New York's emission reduction and climate justice objectives and to protect the long-term interests of ratepayers and the environment. The effort should focus largely on identifying opportunities to avoid additional investment in the gas distribution system, especially in Disadvantaged Communities, and deploy integrated strategies to responsibly transition swaths of the system off of a dependency on pipeline-delivered fuels. Importantly, these modifications should be completed now—not in three years—to ensure that they are capable of informing the investments proposed in Con Edison's next rate filing.