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Gas System Long-Term Plan

Technical Session 11.06.24

Focus Topic – Bill Impacts & Affordability

Cases 20-G-0131 & 23-G-0676

Logistics and Background

James Keating
Manager, Gas Transformation & Planning

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Meeting Logistics

- Central Hudson Gas and Electric (CHG&E) is presenting at the Technical Session to provide Stakeholders with a summary discussion of Bill Impacts and Affordability from it's Gas System Long Term Plan.
- Questions will be taken throughout the presentation. 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).

Overview

Josh Bode
Demand Side Analytics

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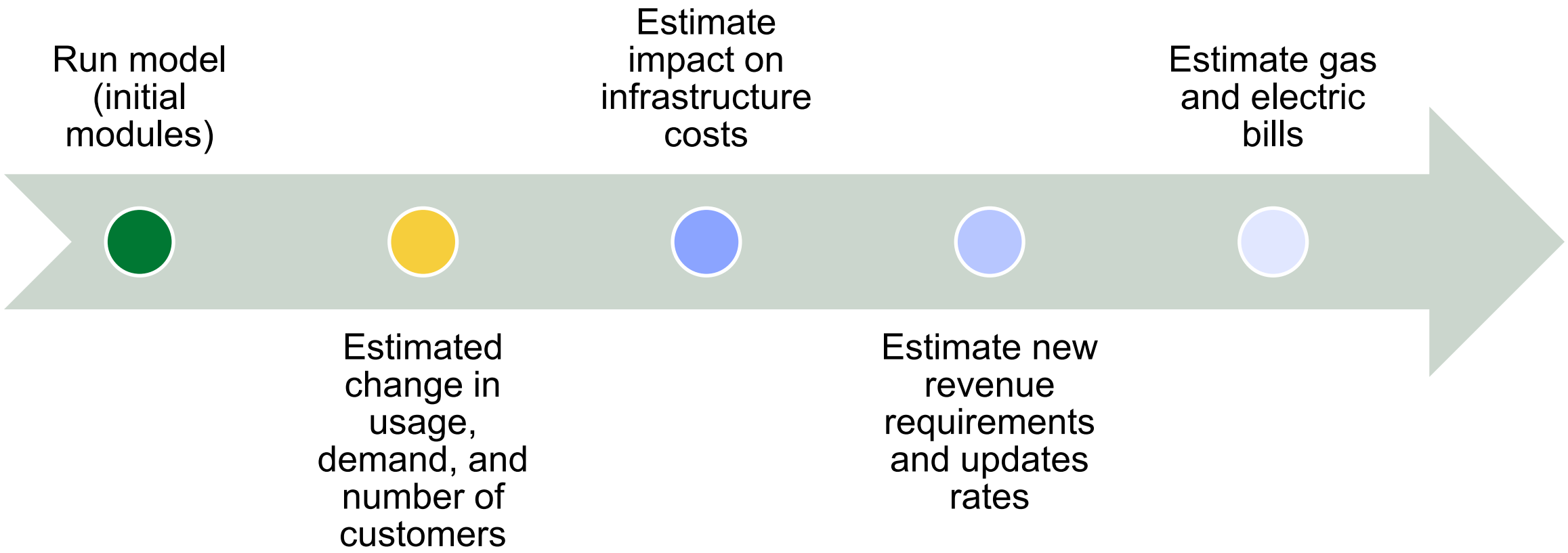
Agenda

- Overview of bill impact analysis process
- Impacts of change in usage, demand, and customers
- Impact on infrastructure costs
- Impact on revenue requirement and calculation of new delivery and supply rates
- Typical customer bill impact given the new rates
- Updates for the final GSLTP
- Q&A

Overview of process



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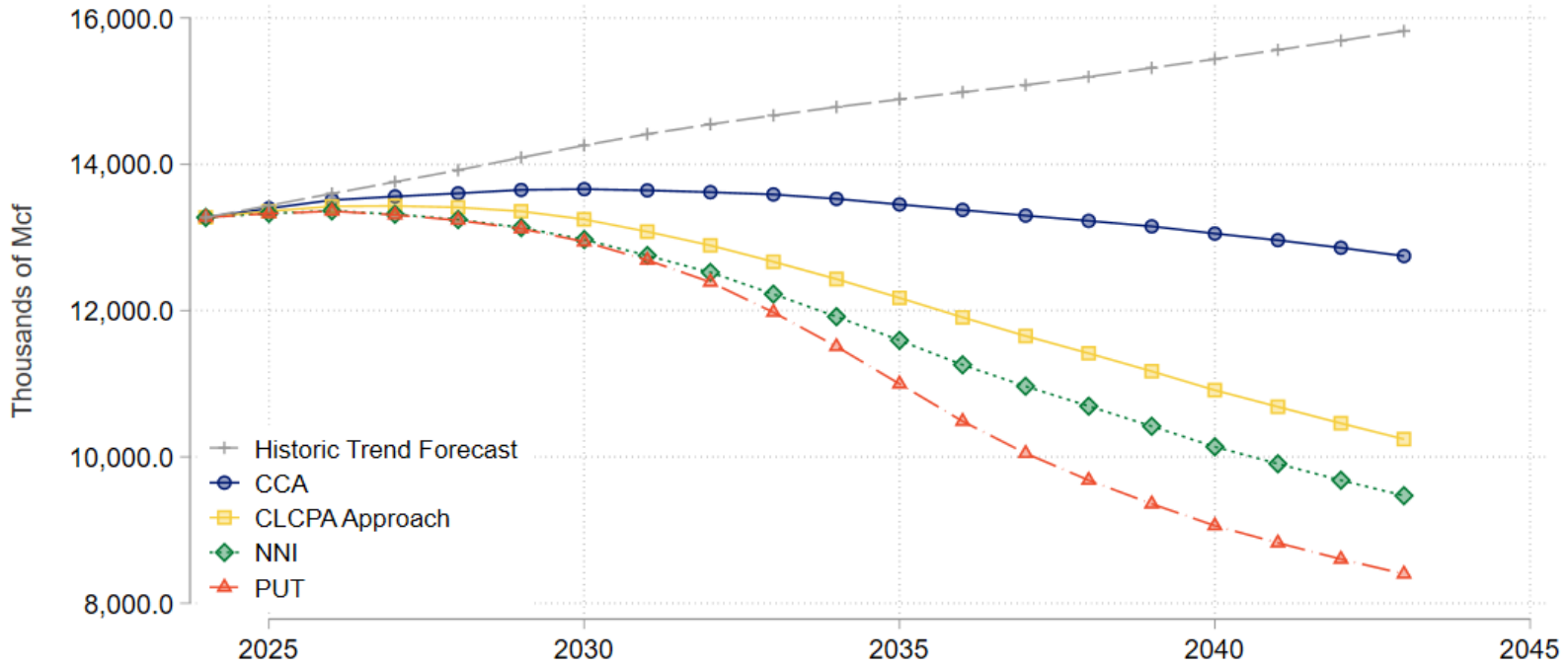
Estimated change in usage, demand, and number of customers

Implications of changes in gas sales



- A decrease in sales, means fewer CCF to collect delivery revenue requirements
- If gas revenue requirements do not change, it should lead to higher gas delivery rates, decreasing affordability
- Due to electrification, electric sales go up
- If electric delivery revenue requirements do not change, electric rates decrease
- However, gas and electric revenue requirements are, in fact, impacted by building electrification

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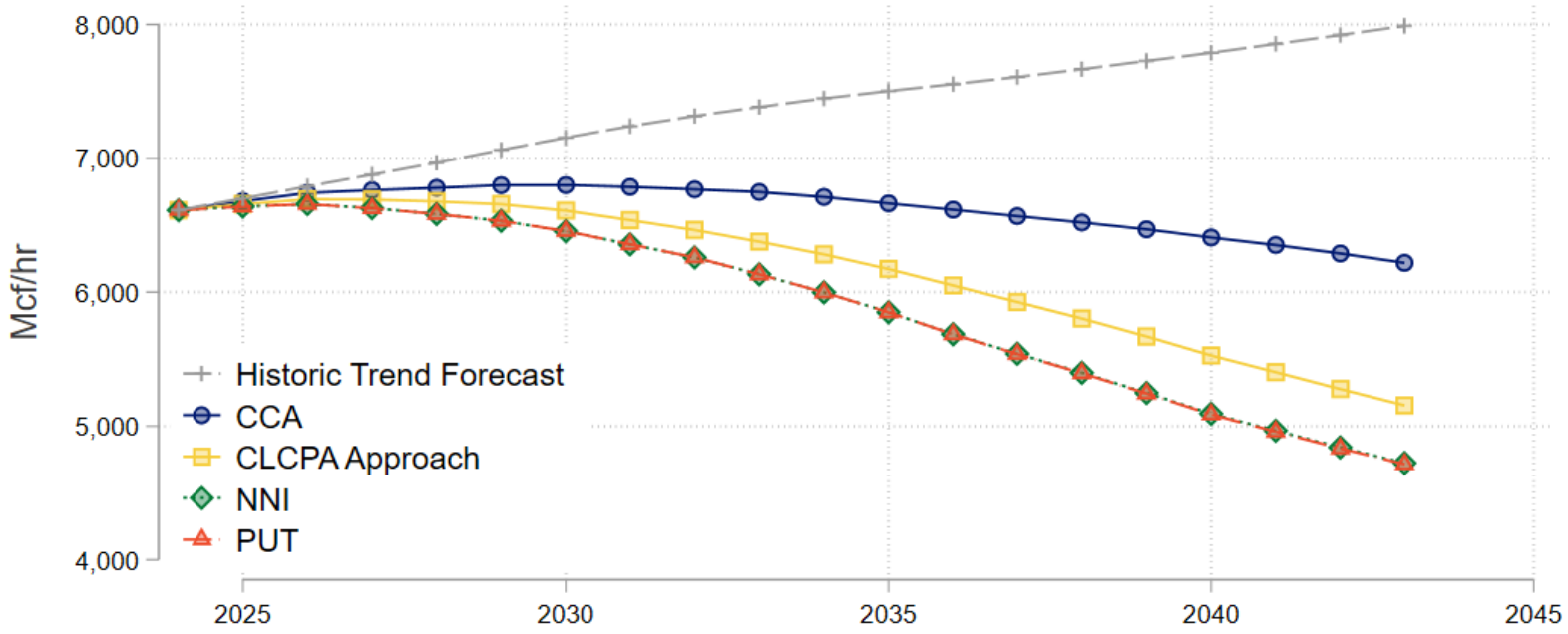
Implications of changes in peak demand



- A decrease in peak demand for highly loaded local gas systems can help avoid the need for infrastructure reinforcements
- Avoiding distribution capital costs avoids increases to revenue requirements, which affects rates and improves affordability
- The gas demand load relief has to be at the right location, right time, and the right amount to avoid gas reinforcements
- Increases in peak demand in the electric systems can lead to the need for electric T&D investments, which increase the electric delivery revenue requirements and rates

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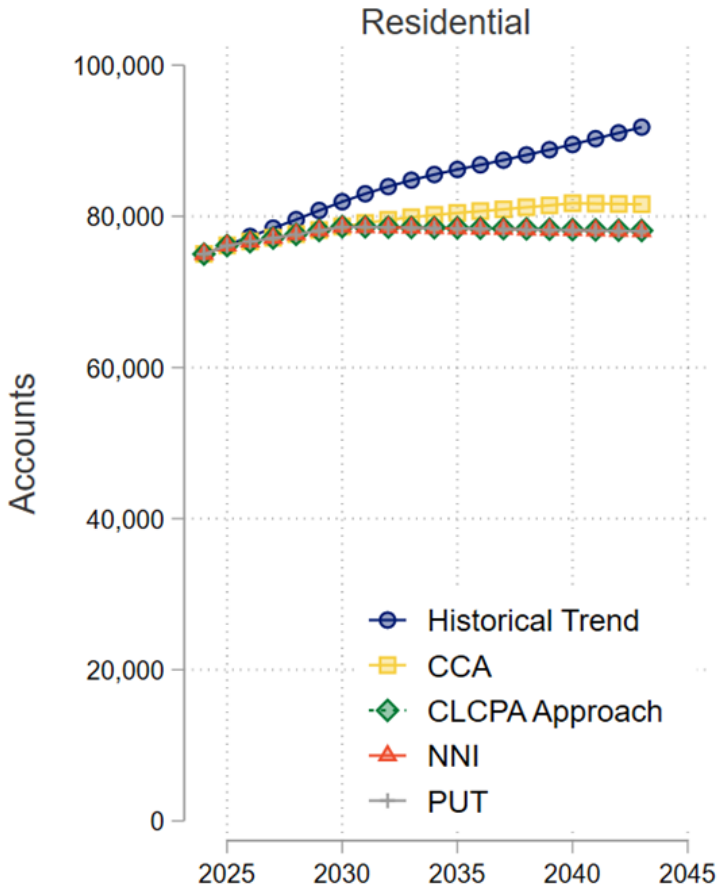
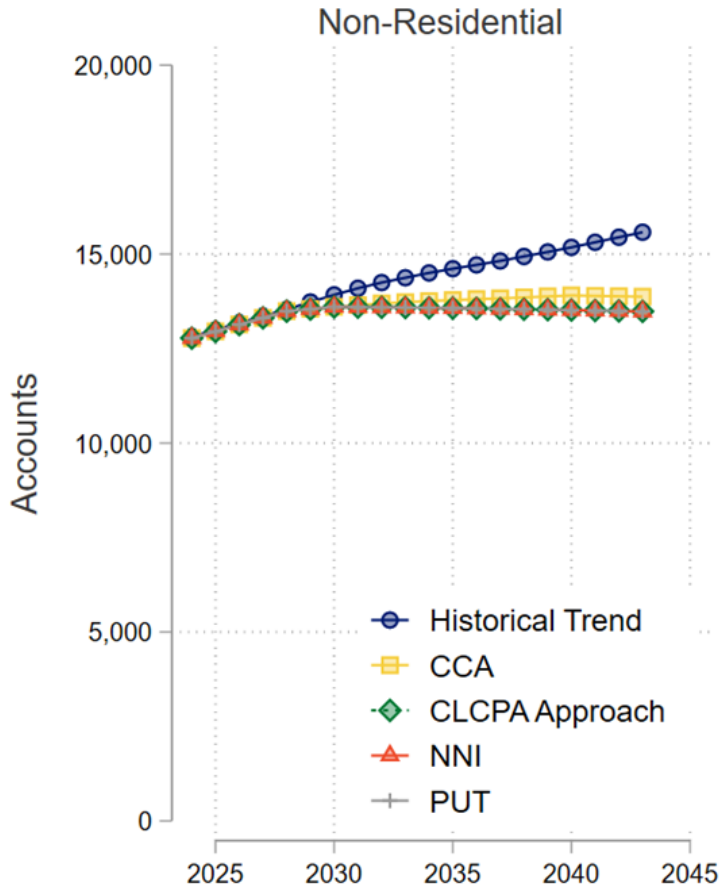
Change in customer counts and connections





- By law, Central Hudson currently has an obligation to connect gas customers who request gas service and are within 100 feet of the gas system
- New connections have associated capital costs
- A decrease in gas connection due to codes and standard and building electrification incentives can help reduce gas connection costs, thus lowering delivery revenue requirements, and rates
- Residential customers who request gas connections are presented with available electrification opportunities. The customer makes the final decision.

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Directional impacts on delivery rates

	Change in Sales	Change in local peak demand	Change in new gas connections
Gas delivery rates	↑ Higher rates due to lower gas sales	↓ Avoided infrastructure costs also mitigate rate increases	↓ Avoided gas connections also mitigate rate increases
Electric delivery rates	↓ Lower rates due to higher electric sales	↑ Higher peak demand leads to additional infrastructure costs and rate increases	=

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Estimate impact on infrastructure costs

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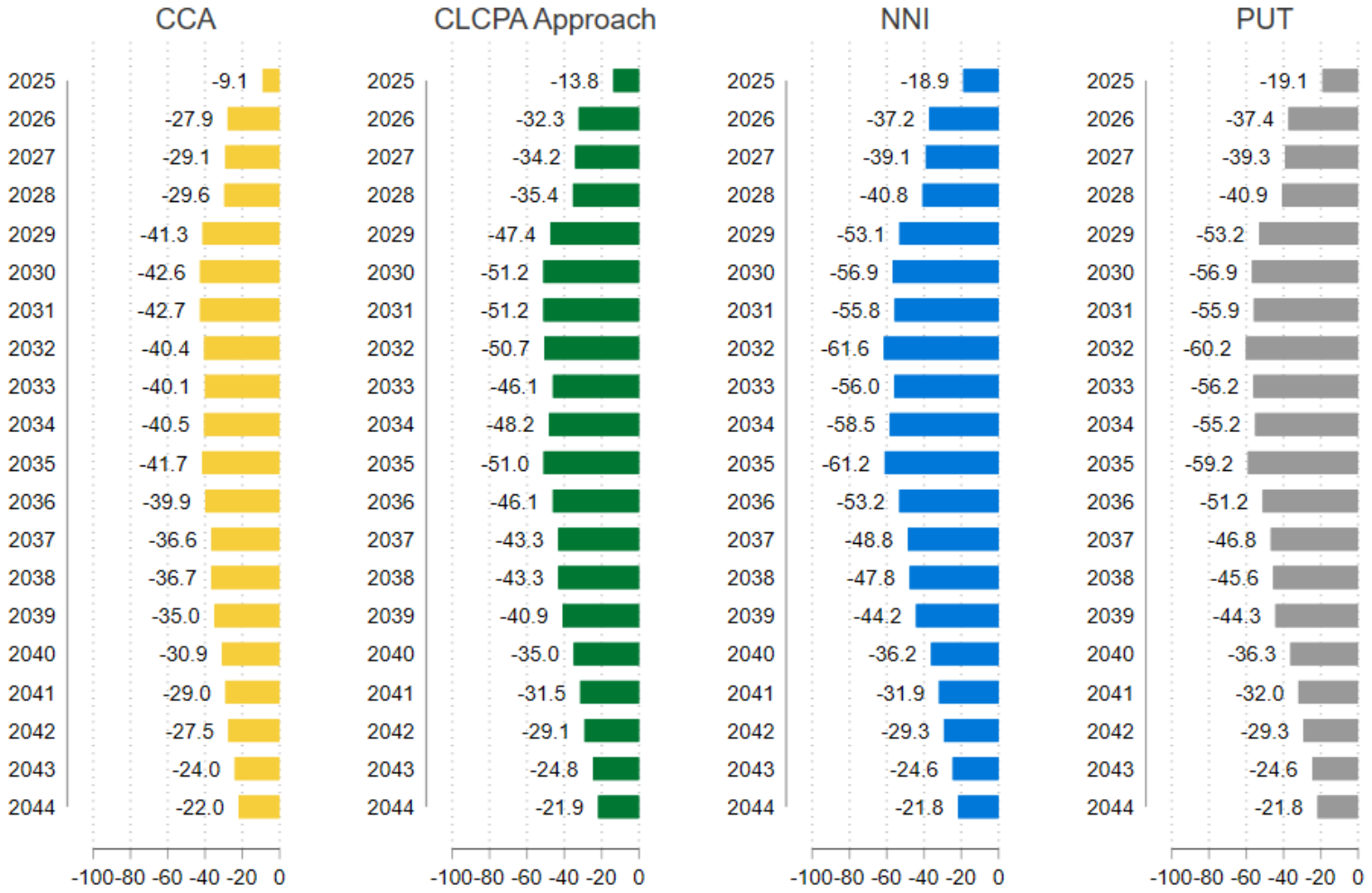
Estimated impact on gas infrastructure costs

($2024 Millions)



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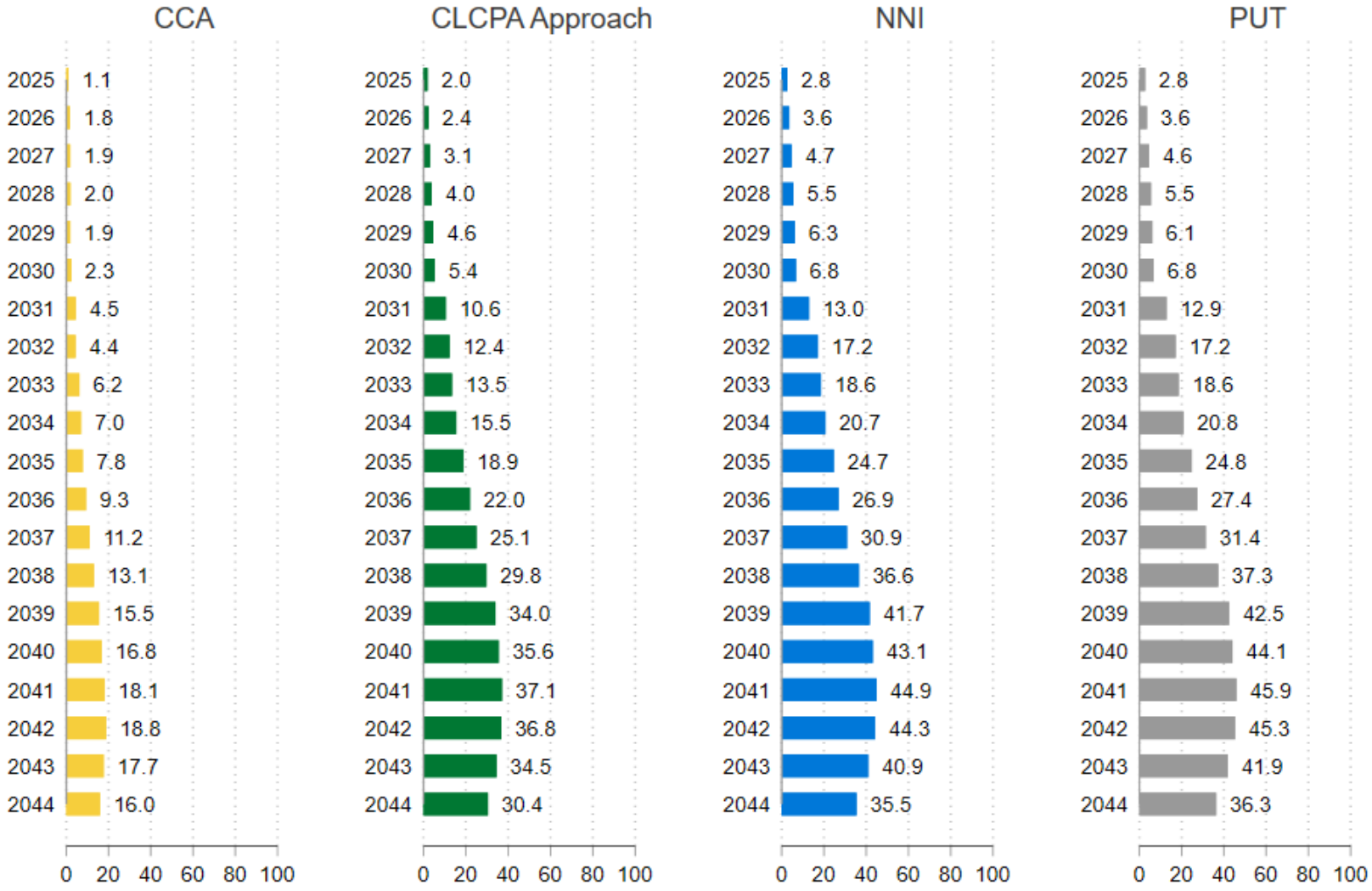
Estimated impact on electric infrastructure costs for gas sites only

($2024 Millions)



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Key Takeaways

1. The GSLTP activities can help avoid gas capital costs and revenue requirements, reducing the impact on higher rates due to reduced gas sales

2. The focus on building electrification will lead to higher electric capital costs and revenue requirements, countering some of the electric delivery rate reductions due to higher electric sales

3. Gas savings happen sooner while electric cost increases occur later in the forecast period. For higher building electrification scenarios, electric costs can exceed gas savings in later years (>2035).

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Calculate revenue requirements and rates

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How changes in infrastructure costs are converted into revenue requirements and rates

INCREMENTAL CAPITAL COSTS
(EXPENDITURES)

SPREAD OVER BOOK LIFE

ADD CARRYING COSTS (TAXES, FINANCING, ETC.)

ADD TO REVENUE REQUIREMENTS

CALCULATE NEW DELIVERY RATE
(NEW REVENUE REQUIREMENTS /NEW GAS SALES)

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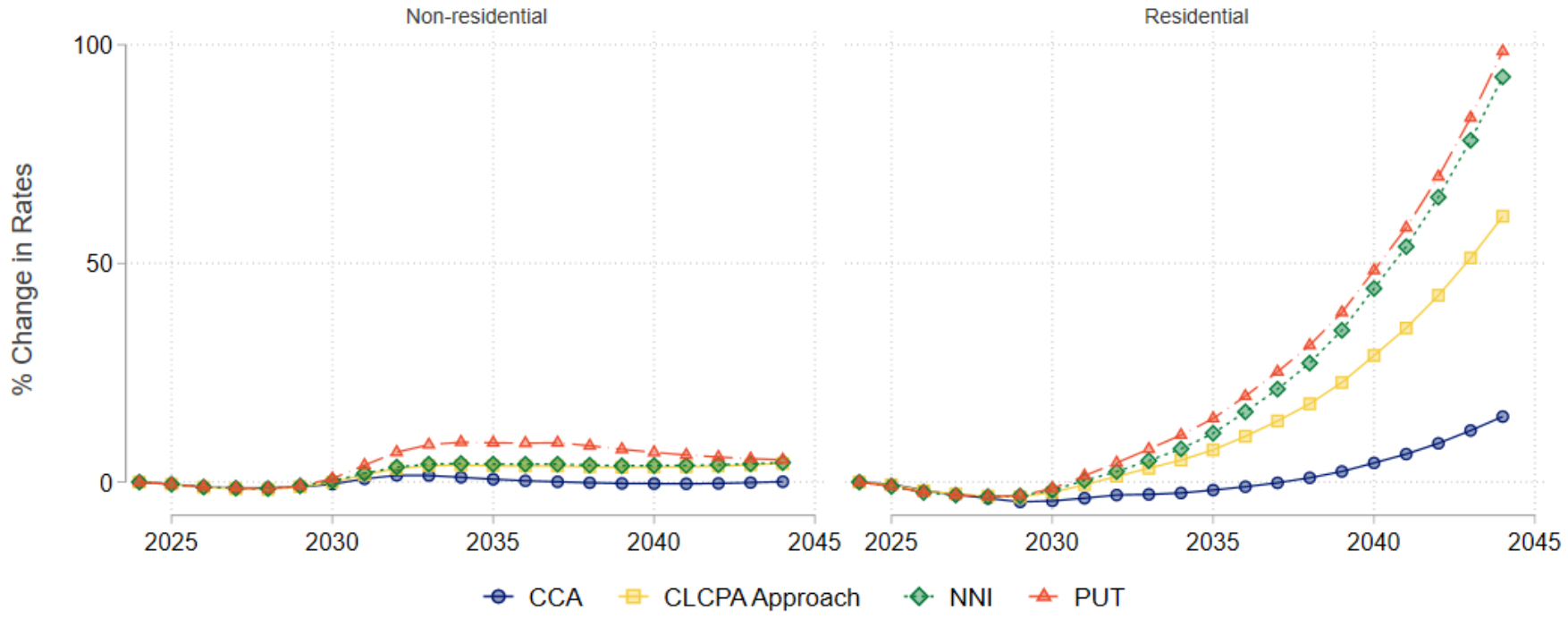
Change in Gas Rates Over Time



- The analysis did not address potential changes in rate design structure
- The focus was on the overall $/Ccf, irrespective of billing determinants.
- Plot includes supply + delivery rates
- The changes in rates over time incorporates both change in sales volume and avoided capital costs

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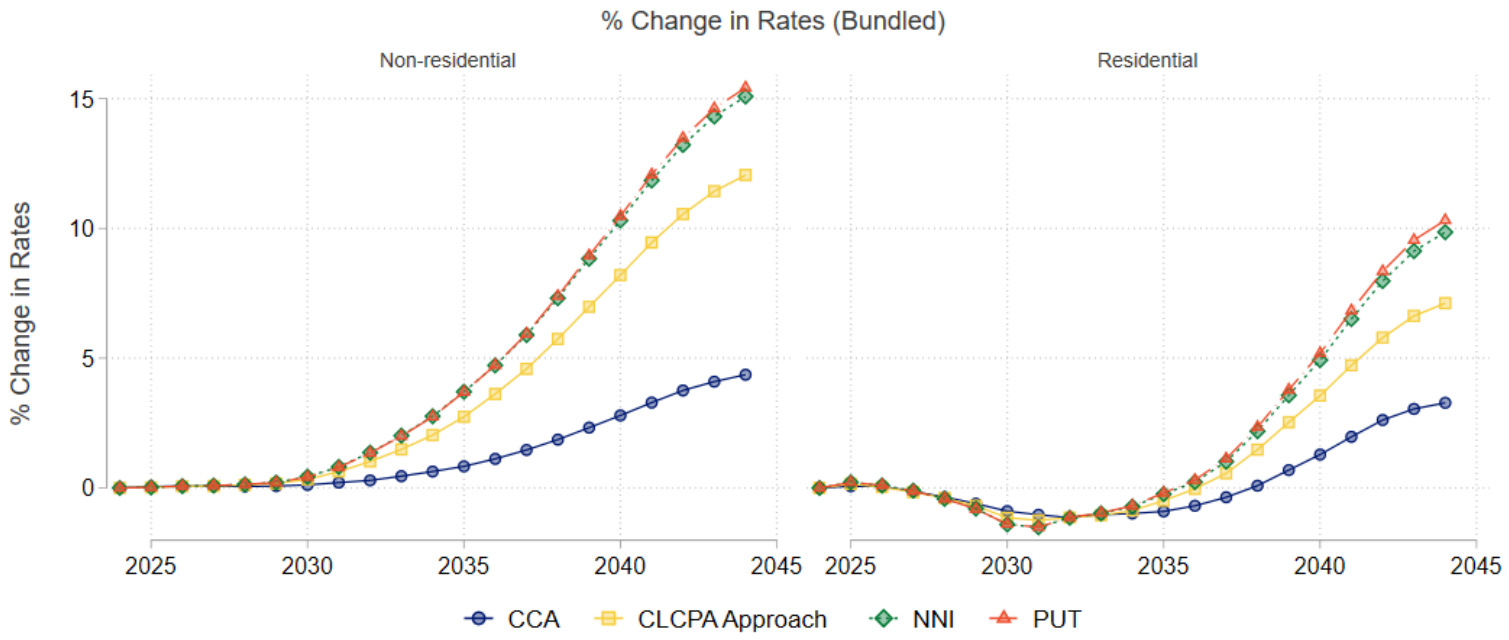
Change in Electric Rates Over Time
(Gas customers only)



- The analysis did not address potential changes in rate design structure
- The focus was on the overall $/kWh, irrespective of billing determinants
- Plot includes delivery + supply rates. Supply costs are held constant. In practice, supply rates could increase substantially with electrification
- The changes in rates over time incorporates both change in sales volume and avoided capital costs
- The analysis does not include factors unrelated to natural gas that could impact rates (e.g., electric vehicles).

Key Takeaways

1. The net impact is that gas rates will go up with electrification
2. Electric rates are stable (or decreasing) over the first 10 years
3. As electric loads reach T&D operating limits, it requires infrastructure reinforcements, leading to higher rates

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Bill Impacts for the typical Customers (Average active customer)

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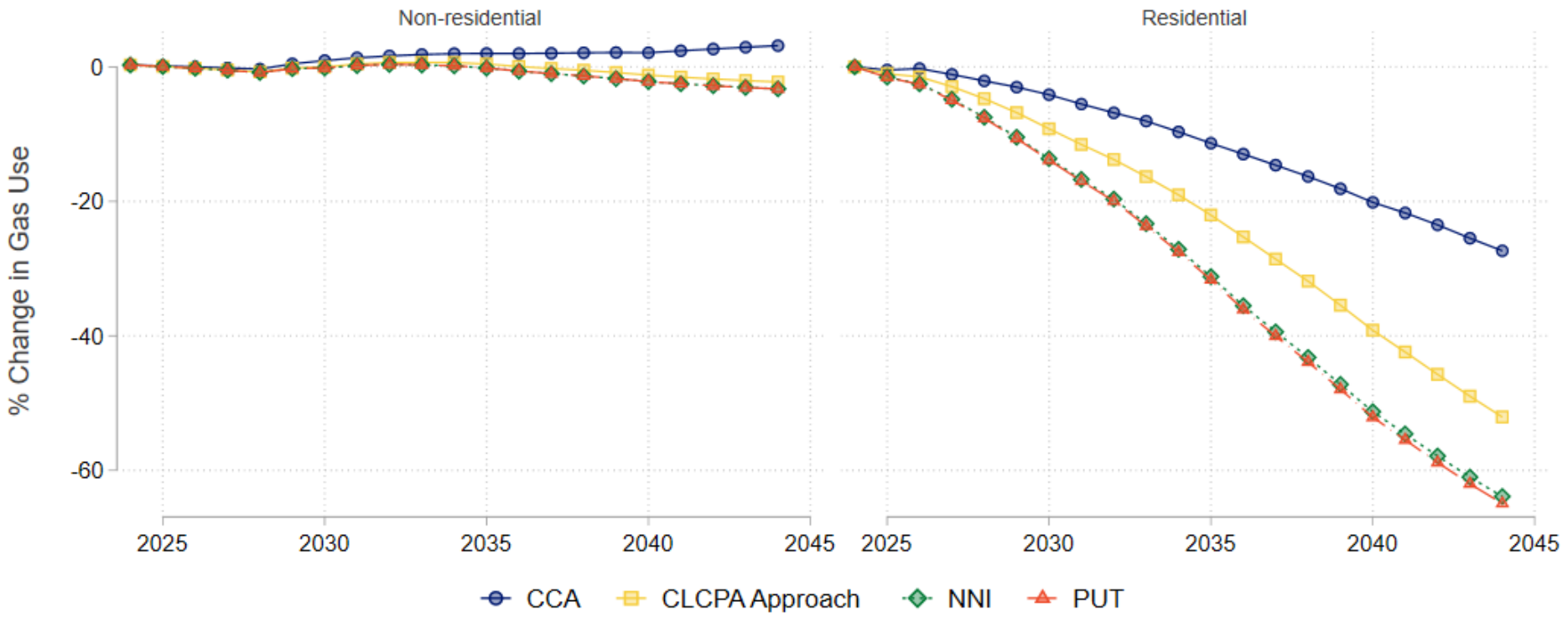
Average customer changes in gas usage



- The average customer includes home that electrified heating and major uses, and homes that did not electrify
- In practice the usage and bill impacts will vary based on the amount of electrification at the site

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Gas bill impacts for average customer

Rate class	Scenario	Typical Customer Annual Usage (CCf)			Typical Customer Annual Gas Bill		
		2024	2030	2043	2024	2030	2043
Residential	Reference	751	750	752	$1,525	$1,535	$1,568
	BAU	751	720	560	$1,525	$1,408	$1,307
	CLCPA	751	682	384	$1,525	$1,361	$1,210
	No New Pipes	751	648	293	$1,525	$1,301	$1,089
	Pipe Transformation	751	647	286	$1,525	$1,303	$1,092
Non-residential	Reference	5,963	5,825	5,724	$6,393	$6,410	$6,611
	BAU	5,981	5,880	5,891	$6,412	$6,440	$6,797
	CLCPA	5,981	5,825	5,608	$6,412	$6,405	$6,732
	No New Pipes	5,981	5,816	5,550	$6,412	$6,414	$6,677
	Pipe Transformation	5,981	5,817	5,549	$6,412	$6,452	$6,753

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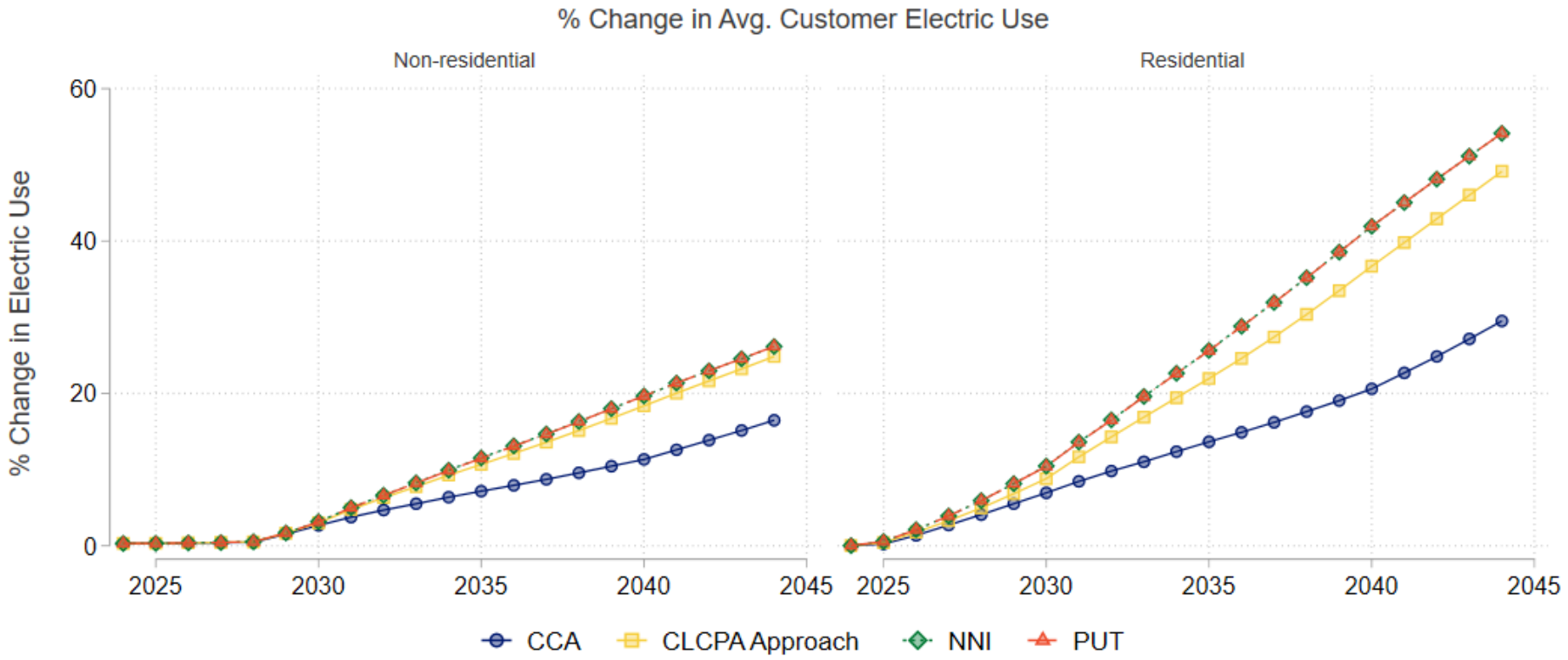
Average customer changes in electric usage
(Gas customers only)



- The average customer includes homes that electrified heating and major uses, and homes that did not electrify
- In practice the usage and bill impacts will vary based on the amount of electrification at the site
- The analysis does not include factors unrelated to natural gas that could impact rates (e.g., electric vehicles)

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Electric bill impacts for average customer

Rate class	Scenario	Typical Customer Annual Usage (kWh)			Typical Gas Customer Annual Electric Bill		
		2024	2030	2043	2024	2030	2043
Residential	Reference	7,352	7,316	7,306	$883	$862	$848
	BAU	7,352	7,825	9,290	$883	$914	$1,111
	CLCPA	7,353	7,960	10,669	$883	$927	$1,321
	No New Pipes	7,353	8,081	11,044	$883	$939	$1,399
	Pipe Transformation	7,353	8,079	11,044	$883	$939	$1,405
Non-residential	Reference	47,986	47,844	47,767	$2,848	$2,715	$2,624
	BAU	48,131	49,123	54,995	$2,857	$2,791	$3,144
	CLCPA	48,131	49,281	58,859	$2,857	$2,806	$3,602
	No New Pipes	48,131	49,351	59,492	$2,857	$2,813	$3,735
	Pipe Transformation	48,131	49,339	59,496	$2,857	$2,812	$3,746

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Total bill impacts for average customer (Gas + Electric)

		Typical Customer Annual Usage (MMBtu)			Typical Customer Annual Energy Bill (Electric + Gas)		
Rate class	**Scenario**	**2024**	**2030**	**2043**	**2024**	**2030**	**2043**
Residential	Reference	103	103	103	$2,408	$2,397	$2,416
	BAU	103	101	90	$2,408	$2,322	$2,418
	CLCPA	103	98	76	$2,408	$2,288	$2,531
	No New Pipes	103	95	68	$2,409	$2,240	$2,489
	Pipe Transformation	103	95	67	$2,409	$2,242	$2,497
Non-residential	Reference	783	768	757	$9,241	$9,125	$9,235
	BAU	785	778	799	$9,269	$9,231	$9,941
	CLCPA	785	773	783	$9,269	$9,211	$10,334
	No New Pipes	785	772	779	$9,269	$9,227	$10,412
	Pipe Transformation	785	772	779	$9,269	$9,263	$10,498

Key Takeaways

1. Decreases in usage for the average gas customer, leads to lower gas bills despite the higher gas rates

2. Electric usage increases substantially, leading to higher electric bills

3. Over the 20-year horizon, the net effect is a similar total bill (electric + gas) of the average customer, despite a decrease in overall energy use (electricity is more expensive than gas on a $/MMBtu basis)

4. Average customer bills mask very different outcomes for customers who do and do not electrify

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Planned updates for the final gas long term plan

Planned updates for the bill impacts section

BILL IMPACTS FOR CUSTOMERS WHO DO AND DO NOT ELECTRIFY

SHARE OF WALLET ANALYSIS

BILL IMPACTS FROM ELECTRIFYING DIFFERENT END USES

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Questions

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