



Supply Chain Speed & Scale

Steve Martz, Vice President – Integrated Planning, Xcel Energy

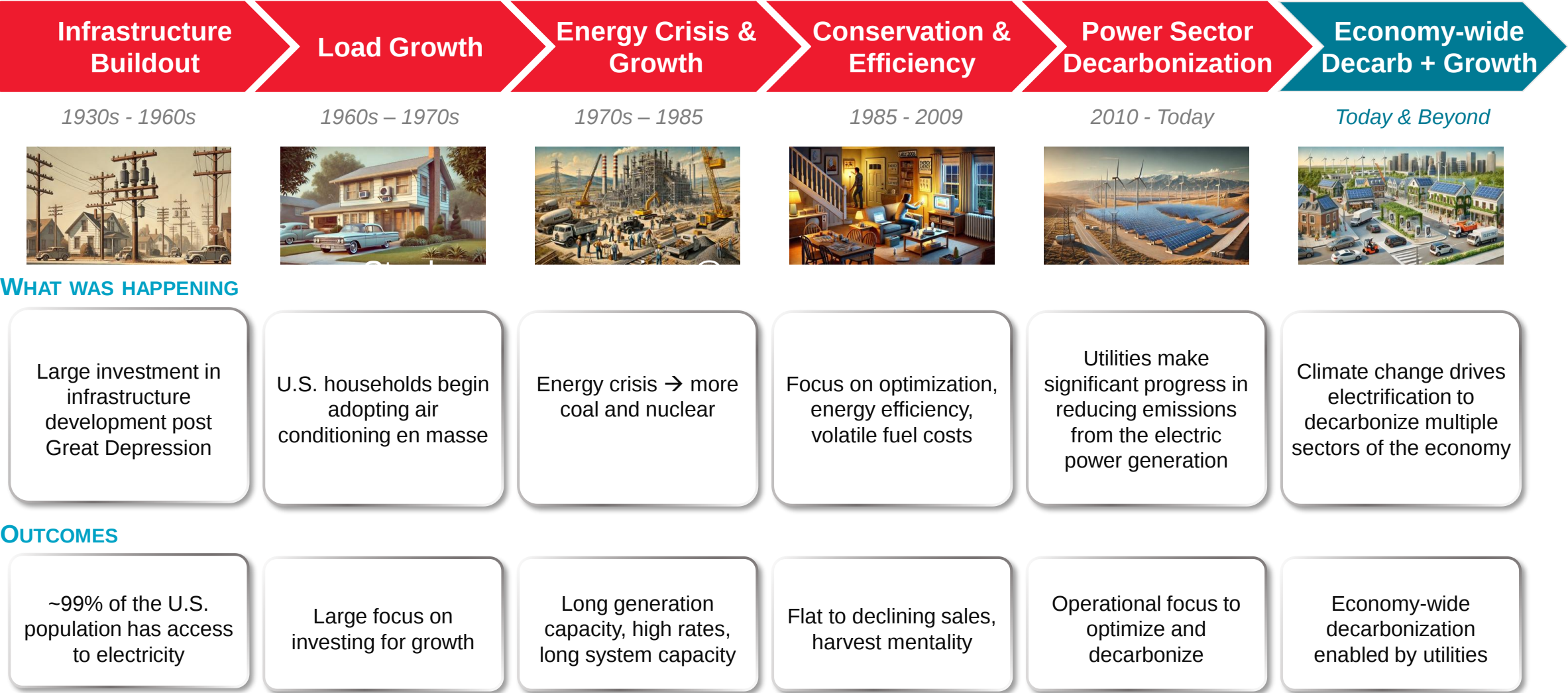
March 18, 2025

Panel Introduction & Agenda

Topic	Presenter
Panel Introduction	Steve Martz – VP Integrated Planning, Xcel Energy
Supply Chain Setup	Steve Martz
Panel Presentations	
	Kevin Jacobs, Director – Supply Chain Consulting, Wood Mackenzie
	Damir Novosel, President, Quanta Technology
	John Francis, Partner, ScottMadden
Audience Q&A	All
Lightning Round – Q&A	Steve Martz & Panelists

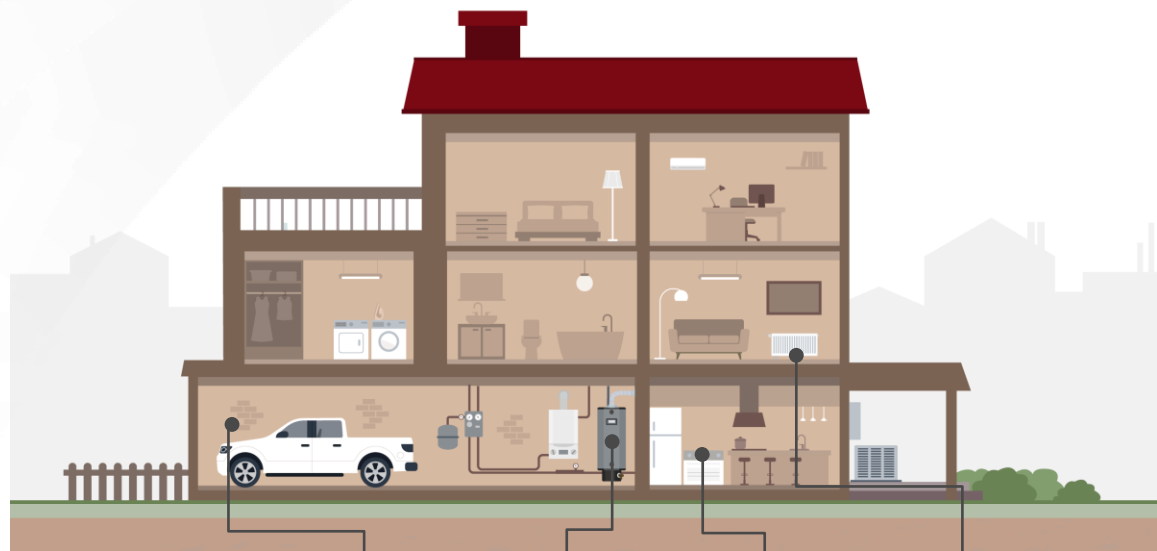
A Brief History: System Transitions

The electric system has been built out over the last century in tranches in response to various drivers



Electricity usage for ‘home of the future’ could jump ~84% by 2040

Residential customer today³



Typical characteristics



ICE Vehicle



Gas Water Heater



Gas Stovetop



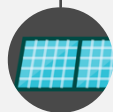
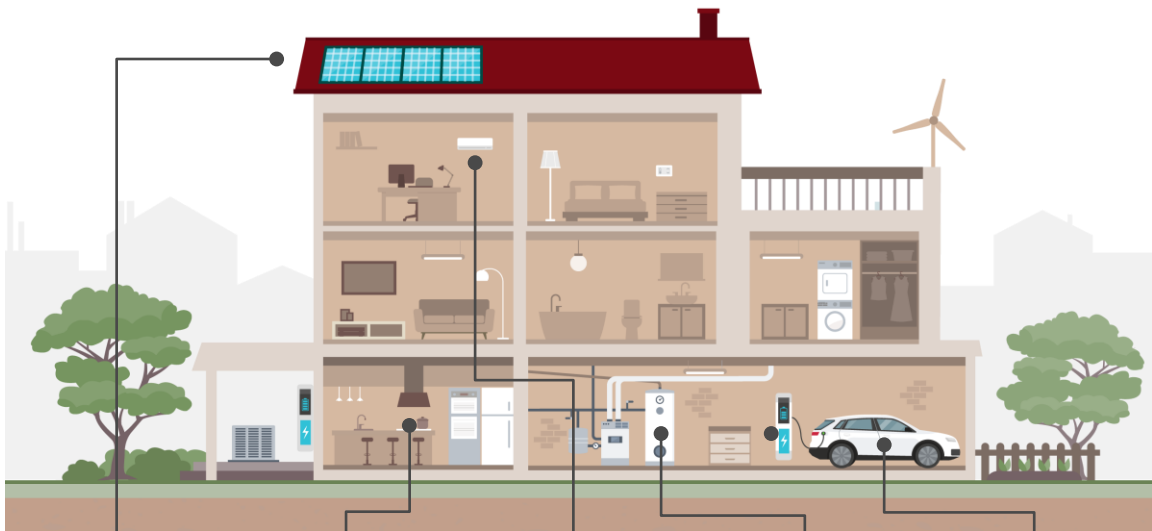
Gas Furnace

Avg. annual consumption (MWh)¹

6.9

Base load⁴

Residential customer of the future



Rooftop Solar

~7kW



Electric Stovetop

~1.5kW



Elec. Space Heating

~8kW



Elec. Water Heating

~5kW



2 x EVs
(with 2 x L2
chargers)

~12kW

-4.7

Solar²

6.9

Base load

5.7

Electric Vehicles

4.8

Beneficial Electrification

12.7

Total

Average power consumption can increase by ~84% if a premise has solar but can go up to ~150% without solar

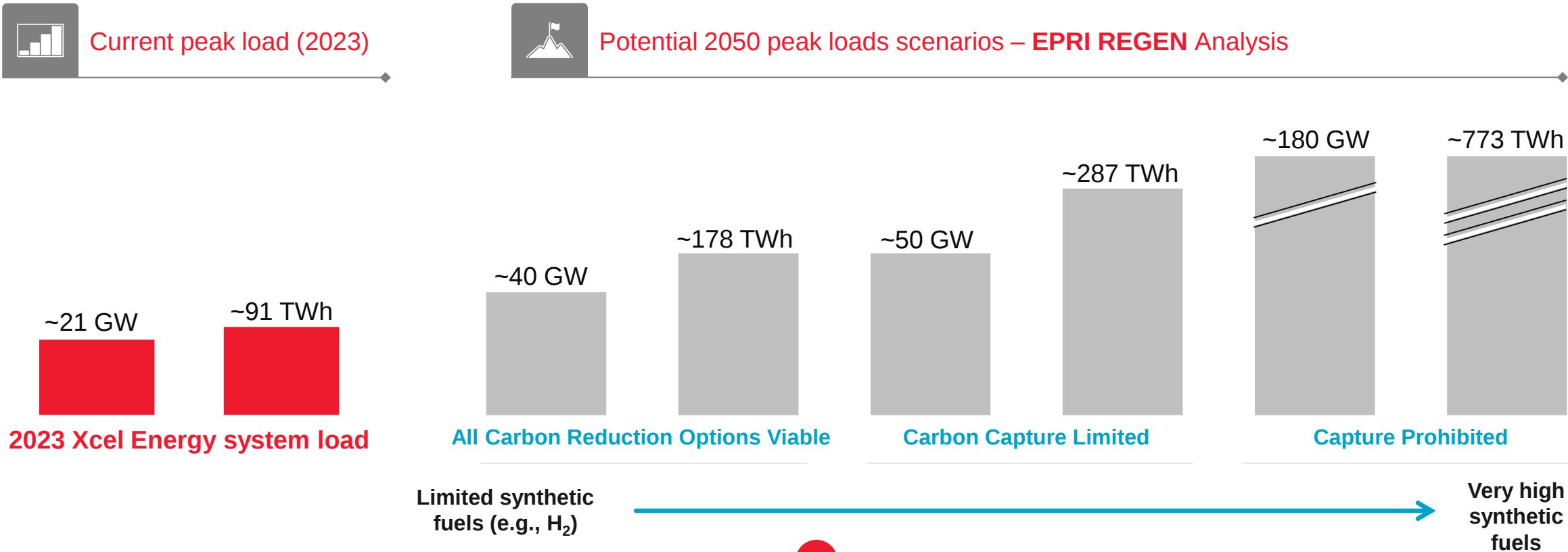
1. Based on average 2023 residential customer consumption by household; Load Research; 2. Self-consumption only; 3. 2,171 sq. ft.; 4. Base load includes all appliances installed in the house (e.g., fridge, etc.)

Source: Xcel Energy; EIA

Projections show a wide range of possible future loads though all increase significantly

Xcel Energy load growth potential (GW)

Xcel Energy current internal projection process vs EPRI REGEN forecast for a 2050 total decarbonized economy

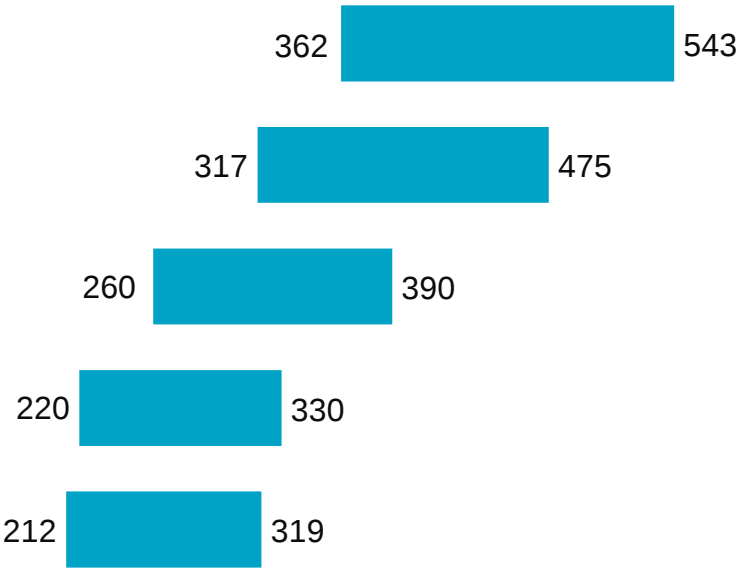


EPRI REGEN looks at three different scenarios where the path to a total decarbonized economy either welcomes or restricts carbon capture. This lever dramatically changes the total energy needs due to how much energy it takes to create synthetic fuels. Regardless, the REGEN model shows higher forecasted system needs than our current process.

Benchmarks show \$200-550B cumulative investment possible by 2050

Cumulative investment needed from 2024-2050 (\$2023 real scaled by population to Xcel Energy)

Benchmark Companies



Xcel Energy
Historical
Benchmark



"BAU" extrapolation, likely underestimate
Does not account for future electrification policies or previous curtailed spending

Estimates for capital for the energy transition, grid rebuild and meeting demand range but are increasing

~\$5-10+ trillion

1. Peer benchmarks do not account for all cost categories, average cost per person for the given category (averaged from other peer estimates) used to fill in cost categories that are not covered 2. Low bound: Continued rate of spend from current 5 year capital plan. High bound: Historical cost of capacity benchmarks multiplied by faster-than-current future peaks growth to find spend beyond current rate. 3. +/- 20% added to projections to indicate uncertainty

Xcel Energy – Colorado Only Estimates

		TODAY	2030	2050
Modernize and expand the grid for safety and resilience while meeting growing demand	 Strengthening And Enhancing Our Network	152 Substations	187 Substations	259 Substations
		278 Banks	386 Banks	509 Banks
		809 Feeders	1,115 Feeders	2,193 Feeders
To support new sources of electric demand and Colorado's growing economy	 Heat Pumps & Water Heating	5,000 Heat Pumps	300,000+ Heat Pumps	2,000,000 Heat Pumps
	 Electric Vehicles	100,000 Vehicles	400,000+ Vehicles	3,000,000 Vehicles
	 Commercial Demand	3,400 Megawatts	5,400 Megawatts	8,500 Megawatts
And integrate new sources of clean power	 Behind the Meter Solar	700 Megawatts	1,500 Megawatts	5,000 Megawatts
	 Community Solar Gardens	200 Megawatts	700 Megawatts	2,500 Megawatts



World War 2

\$4 trillion (real USD)

65 million tons of steel



US Grid Needs

\$10+ trillion (real USD)

163 million tons of steel