Oregon Department of **ENERGY**

Data Centers and Energy, Overview and Trends

Governor's Data Center Advisory Committee

Edith Bayer
5/29/2026

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Leading Oregon to a safe, equitable, clean, and sustainable energy future.

Our Mission

The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.

What We Do

On behalf of Oregonians across the state, the Oregon Department of Energy achieves its mission by providing:

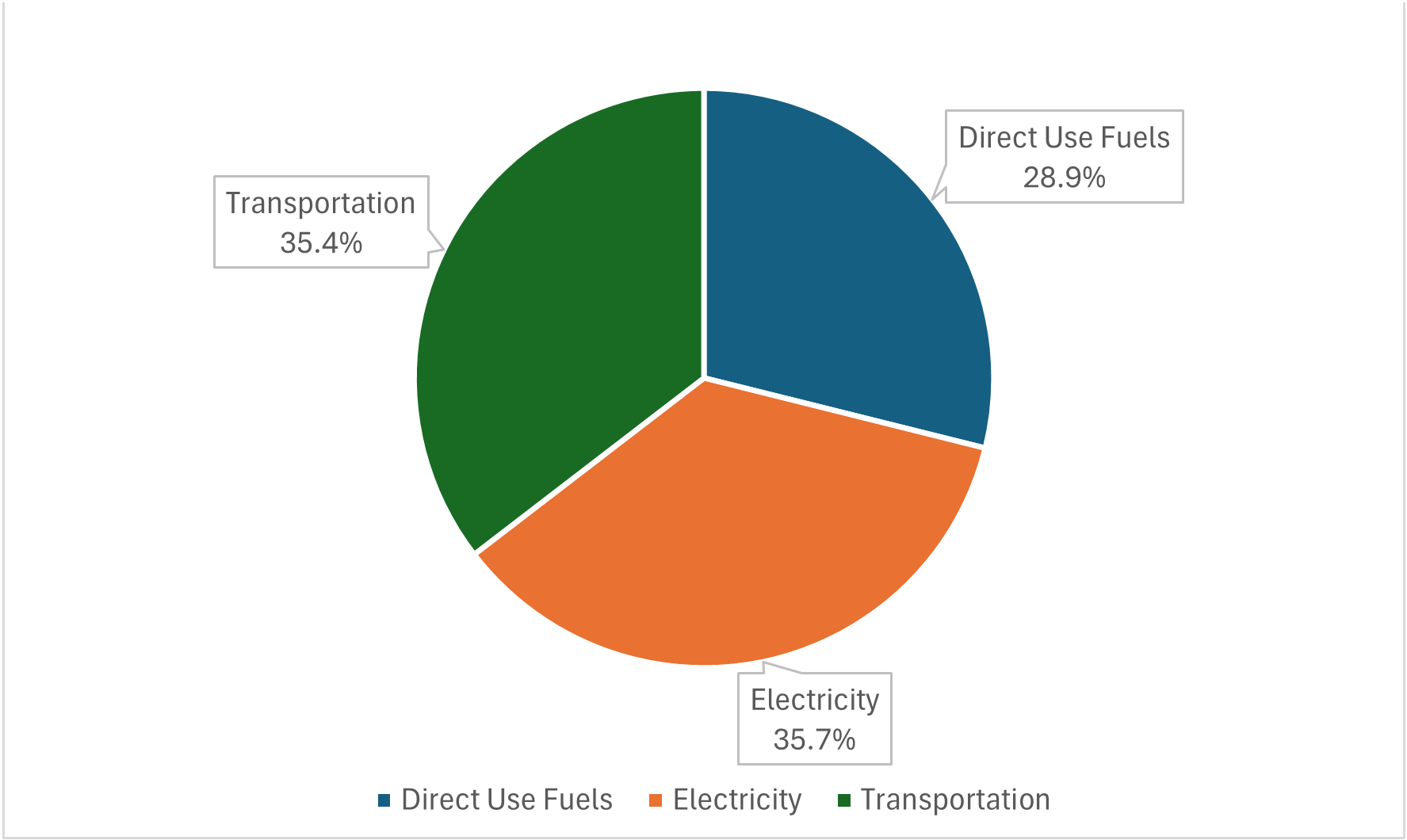
- A Central Repository of Energy Data, Information, and Analysis
- A Venue for Problem-Solving Oregon's Energy Challenges
- Energy Education and Technical Assistance
- Regulation and Oversight
- Energy Programs and Activities

Overview

- Oregon energy demand
  Where are we today?
- Load growth projections
  Where are we going?
- Policies and greenhouse gas emissions
  What is the effect of data center growth on GHG emissions, and what role is state policy playing?
- Resource and transmission needs
  What needs are we seeing, and what guidance does the Oregon Energy Strategy provide?
- Other Developments
  What responses are we seeing to data center development?

Oregon Energy Demand

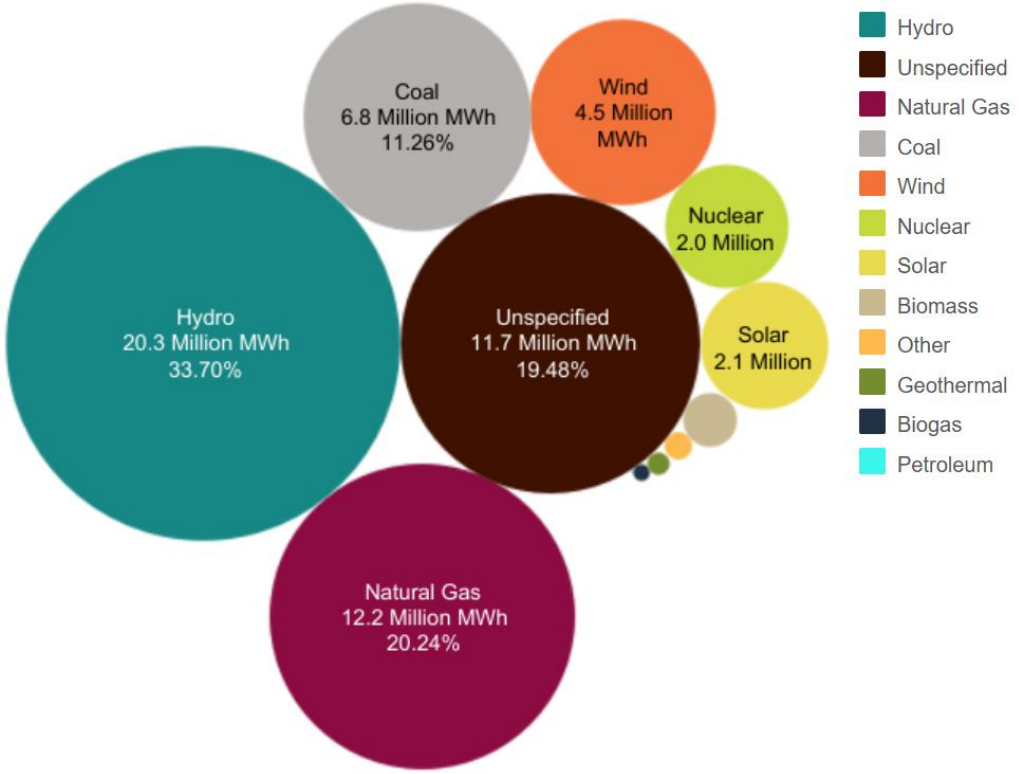
Oregon Energy Consumption (2023)



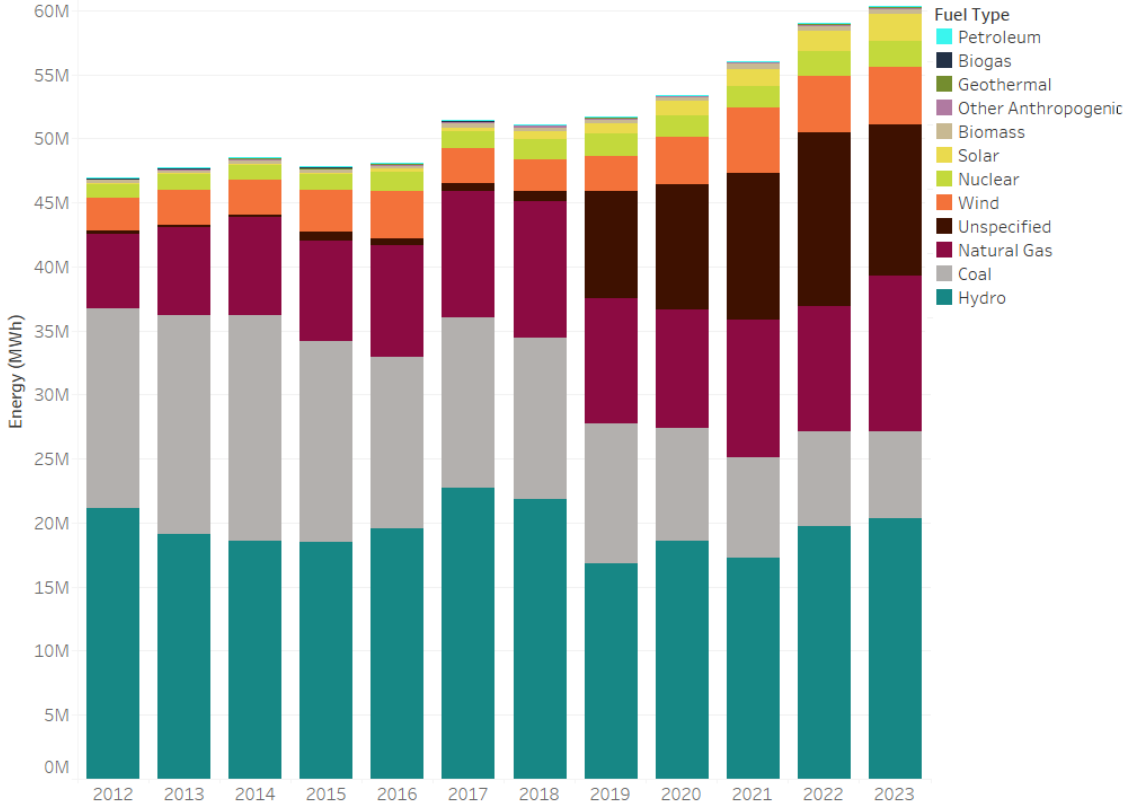
Source: Oregon Department of Energy

Sources of Electricity Oregonians Use

Resources Used to Generate Oregon's Electricity (2023)

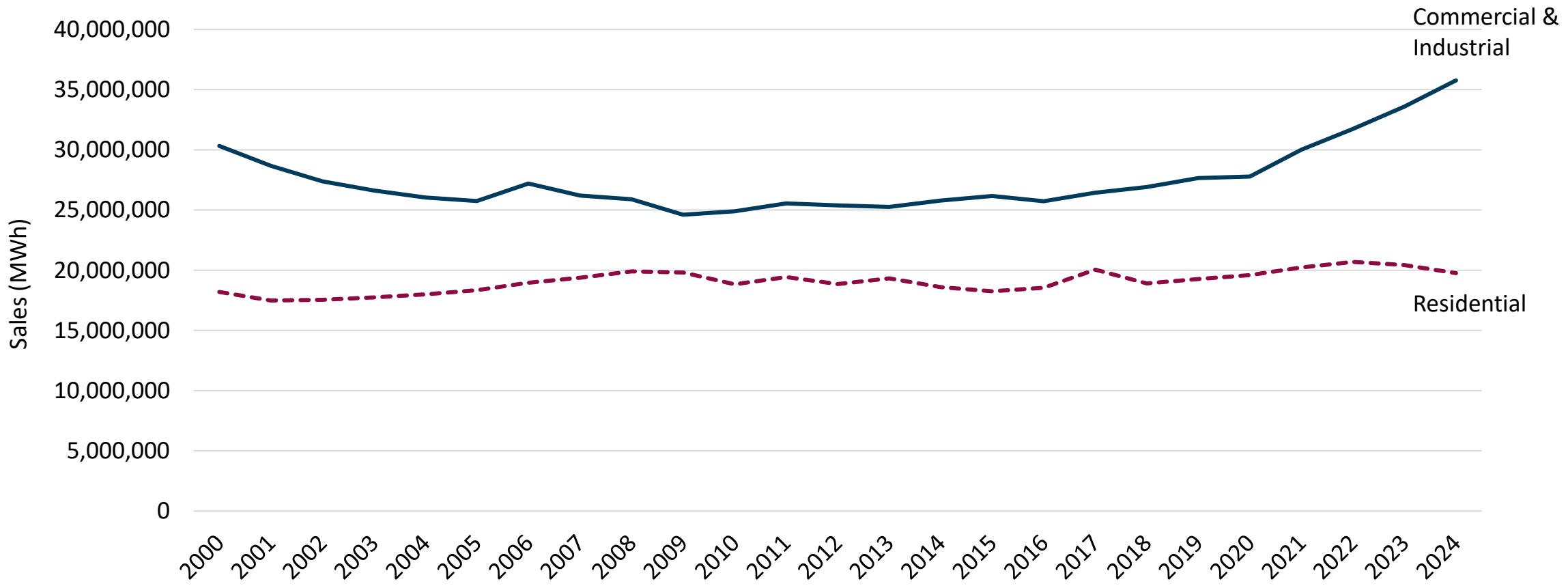


Resources Used to Generate Oregon's Electricity Over Time



Biennial Energy Report: Energy by the Numbers

Residential & Commercial/Industrial Electricity Sales 2000-2024



Data from OPUC's annual Oregon Utility Statistics books, all at https://www.oregon.gov/puc/forms/Pages/default.aspx

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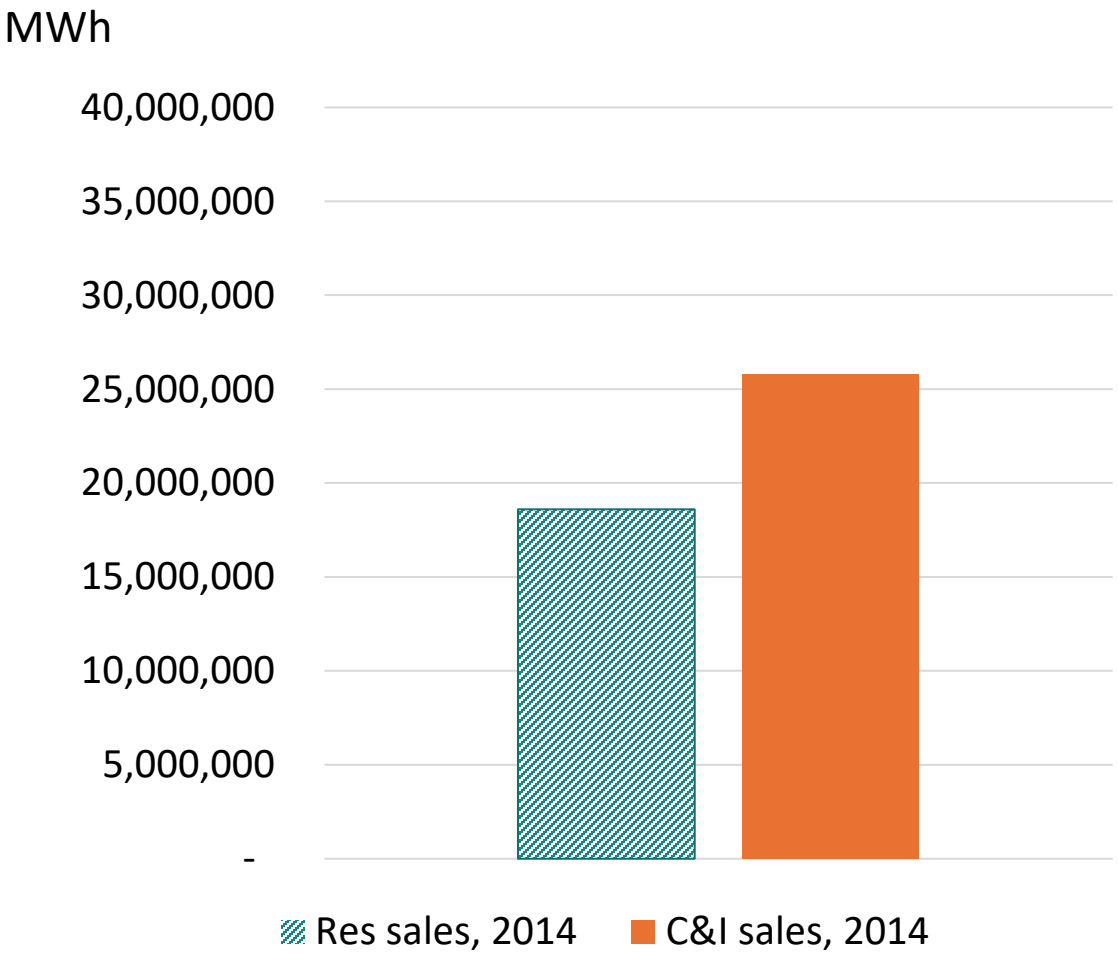
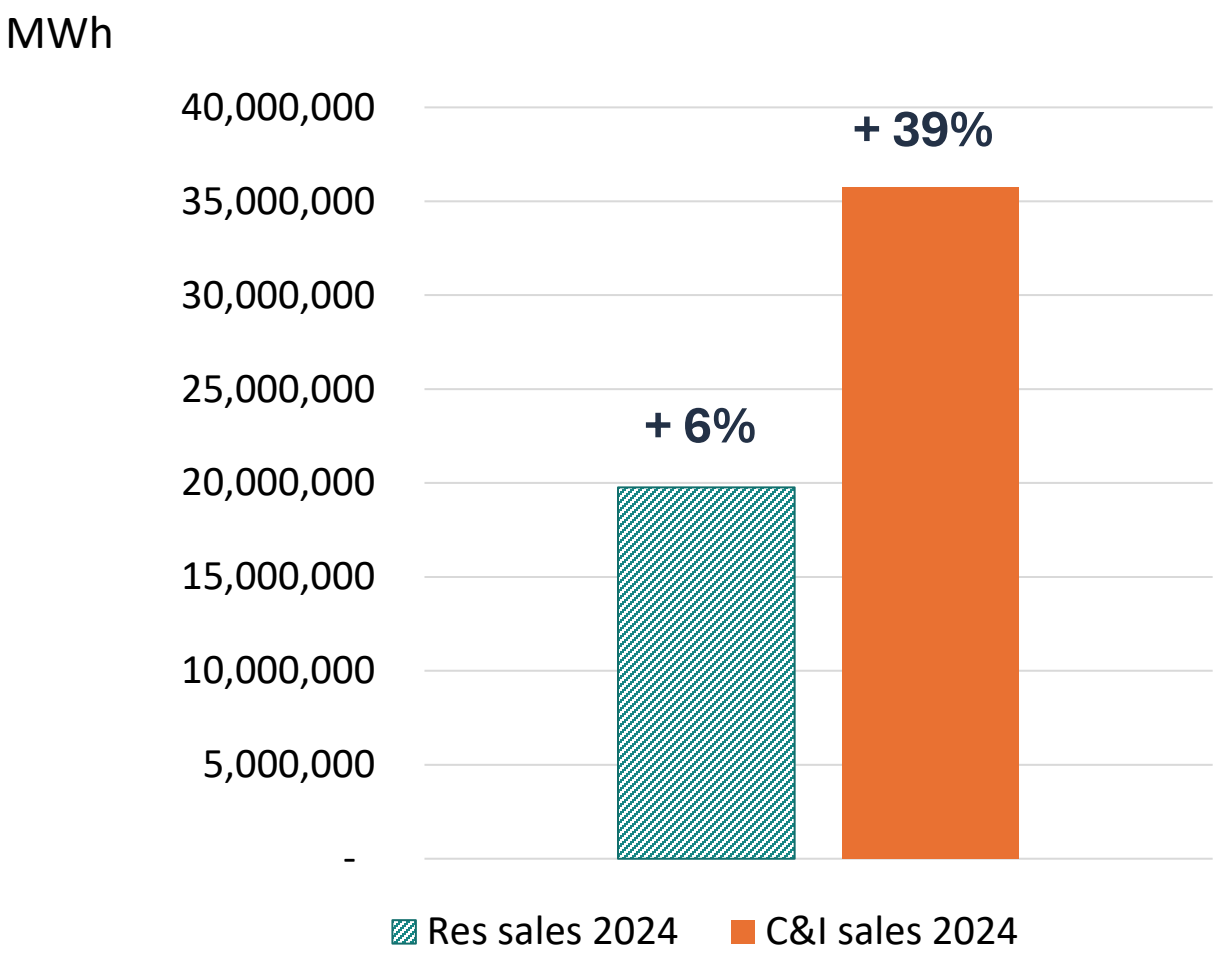
Growth in Residential vs. Commercial/Industrial Sales 2014 - 2024

2014

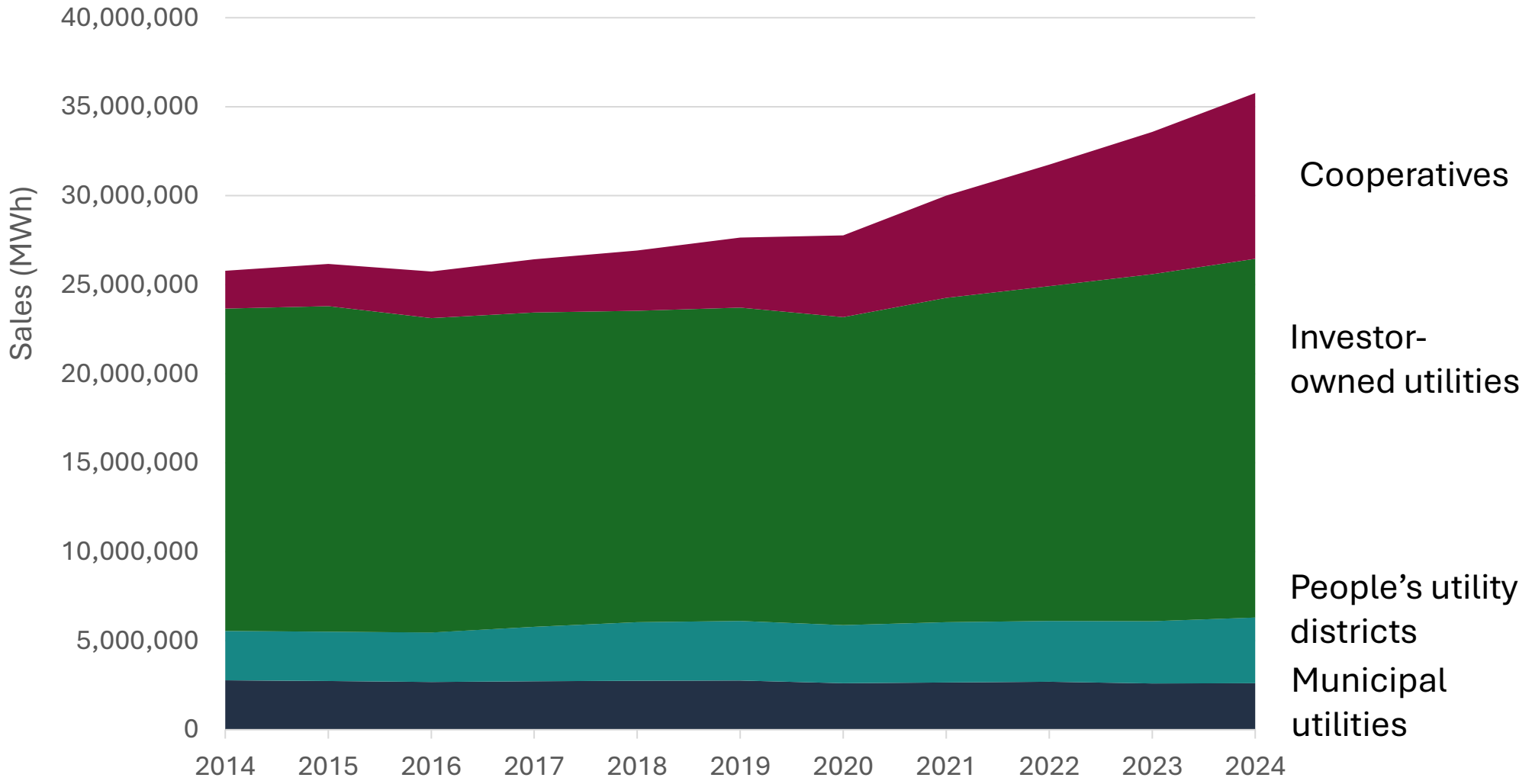


2024



Source: Oregon Utility Statistics Book, 2014 and 2024

Commercial & Industrial Sales by Utility Type 2014-2024



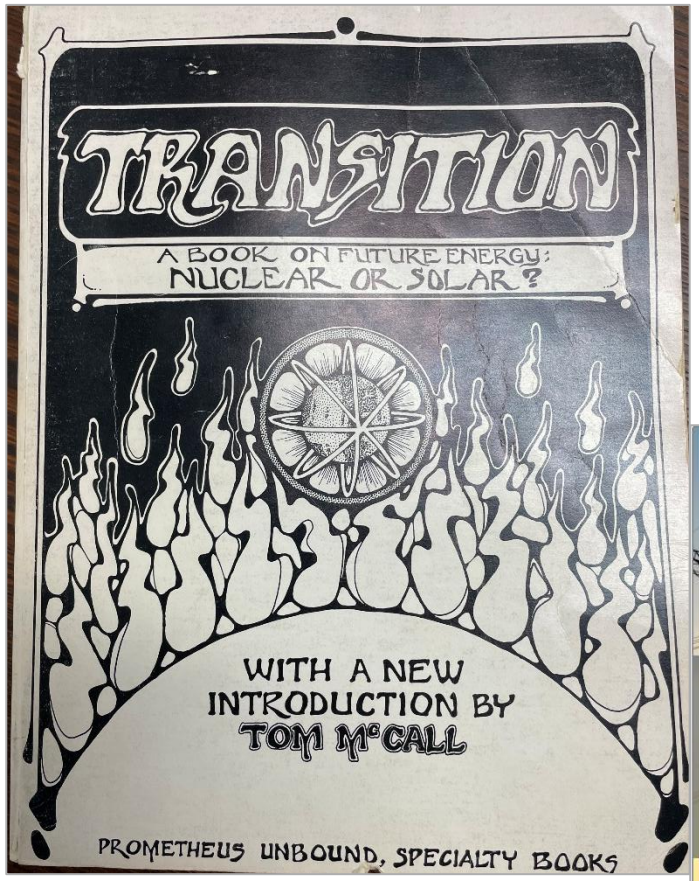
Data from OPUC's annual Oregon Utility Statistics books, all at https://www.oregon.gov/puc/forms/Pages/default.aspx

Load growth projections

"All models are wrong, but some are useful."

Quote widely attributed to British statistician George E.P. Box

This is not our first rodeo…



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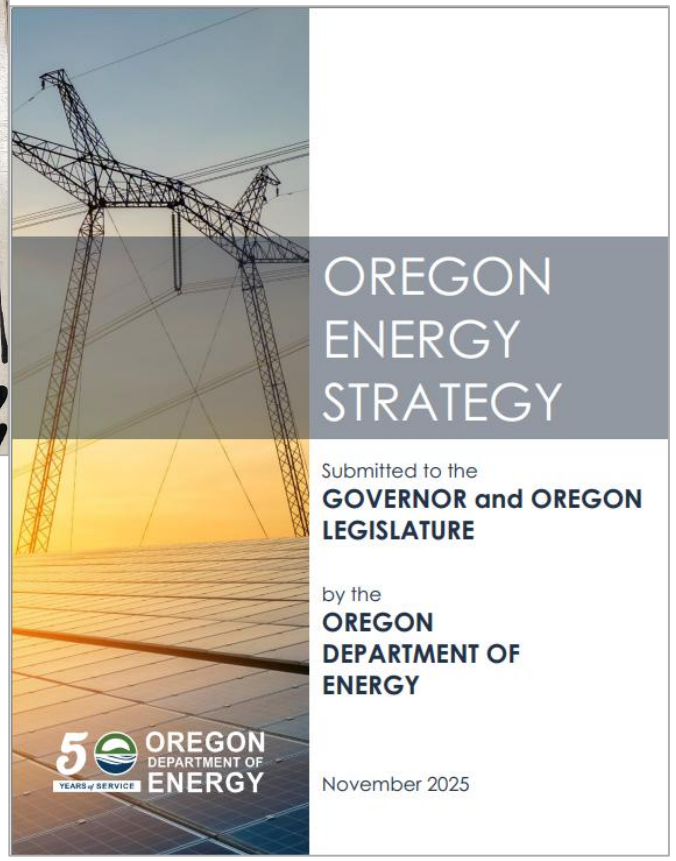

2025

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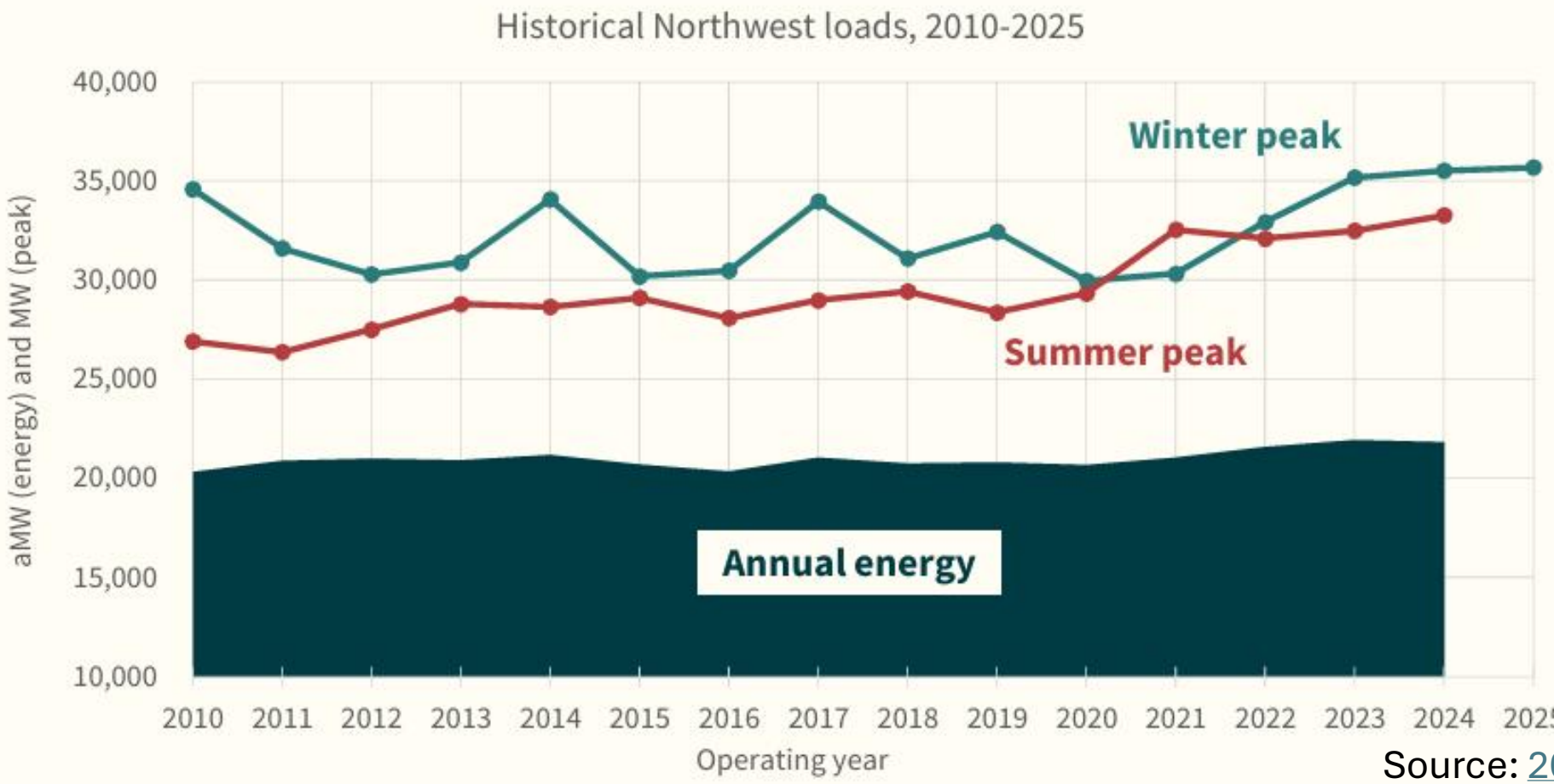
Years are operating years (Oct – Sep) to keep winter months together
Data from EIA Form 930, FERC Form 714, and BPA SCADA
Year 2025 data are preliminary

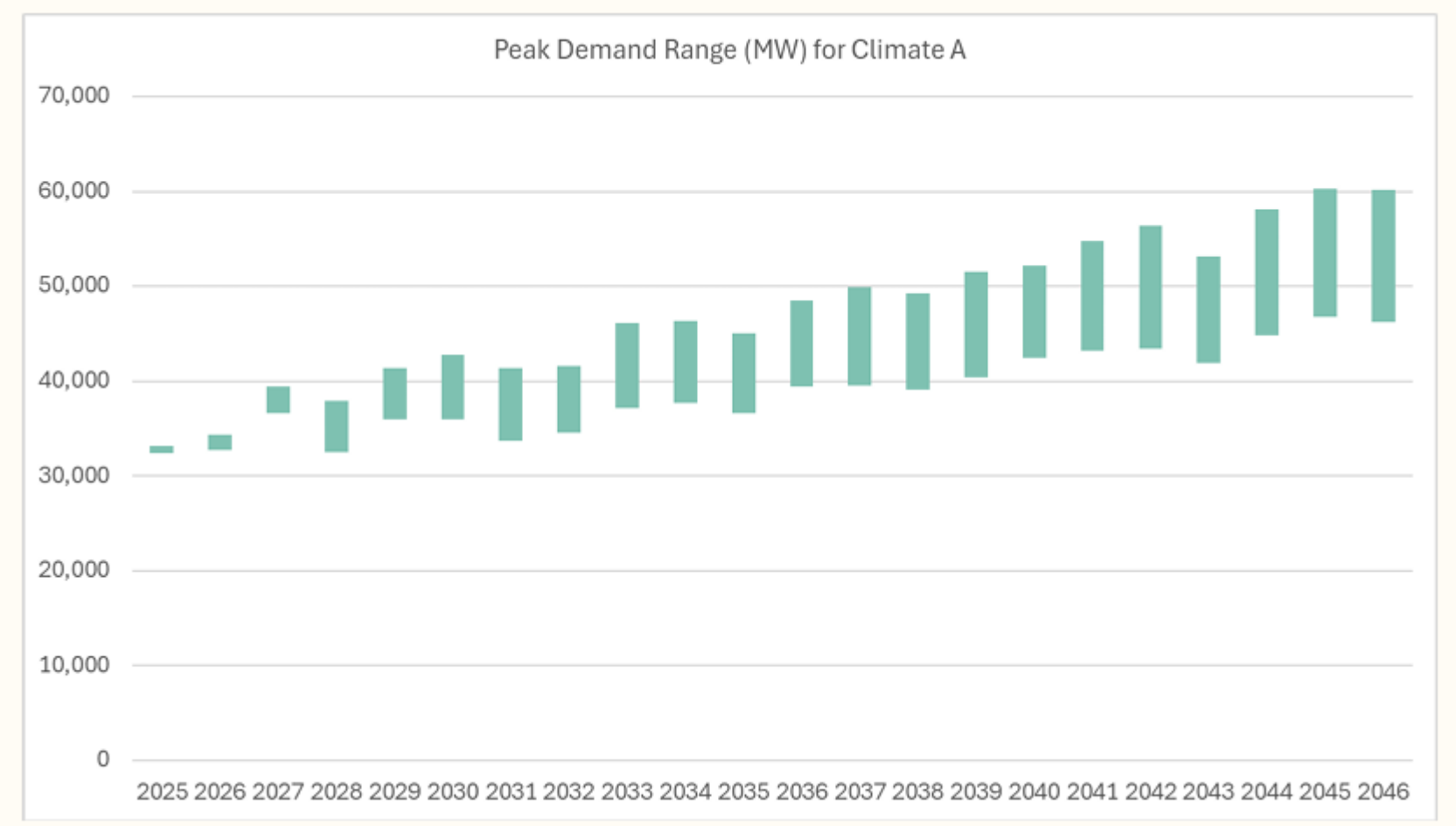
Historical Northwest loads



Source: 2025_03_03.pdf

NWPCC peak load growth projections

"Average annual growth rates across all futures range from 1.9% to 3.0%."



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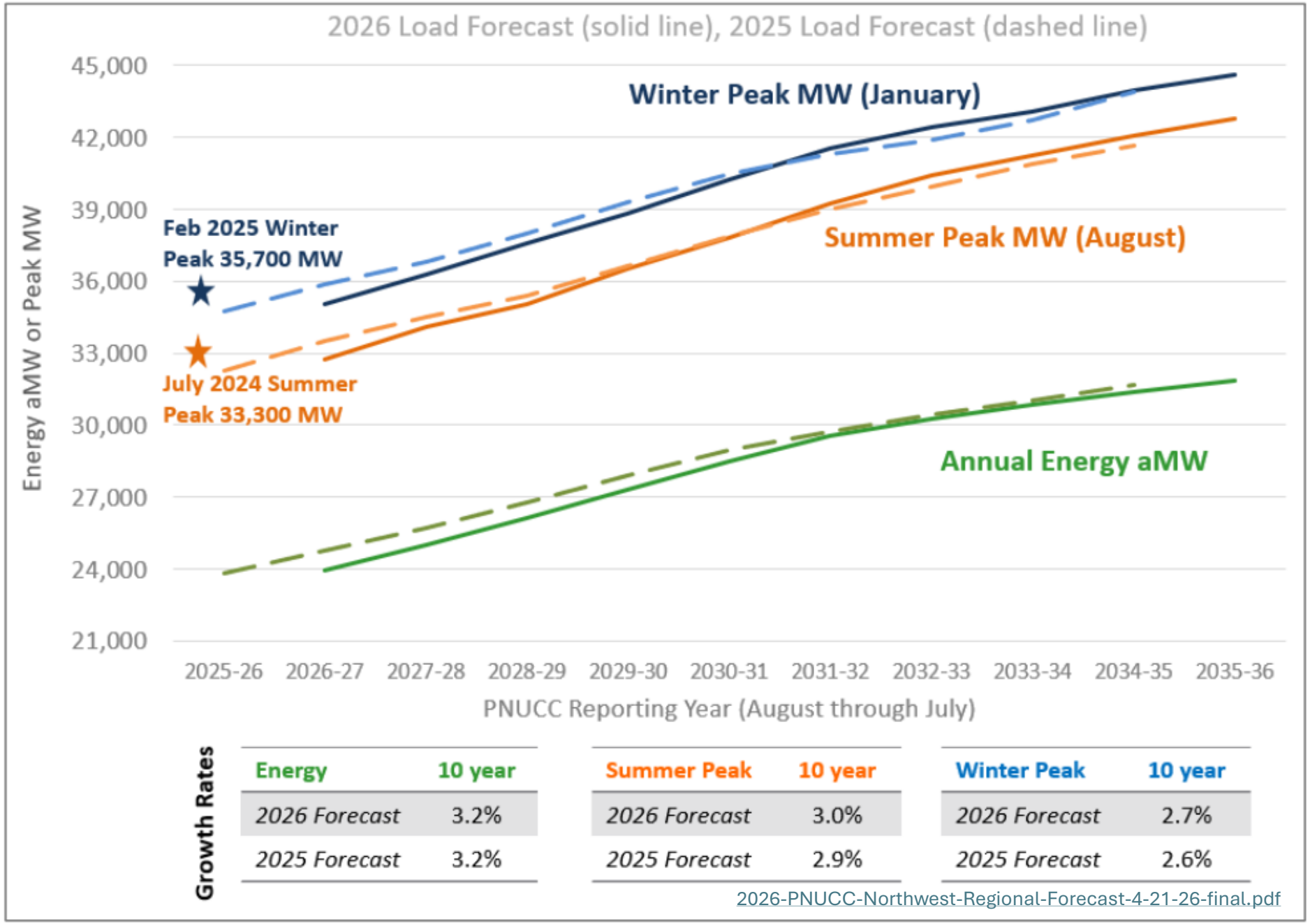
Source: Northwest Power and Conservation Council, 2025_0429_2.pdf

Figure 1: 2026 Load Forecast Compared to 2025 Load Forecast



Growth Rates

Energy	10 year
2026 Forecast	3.2%
2025 Forecast	3.2%

Summer Peak	10 year
2026 Forecast	3.0%
2025 Forecast	2.9%

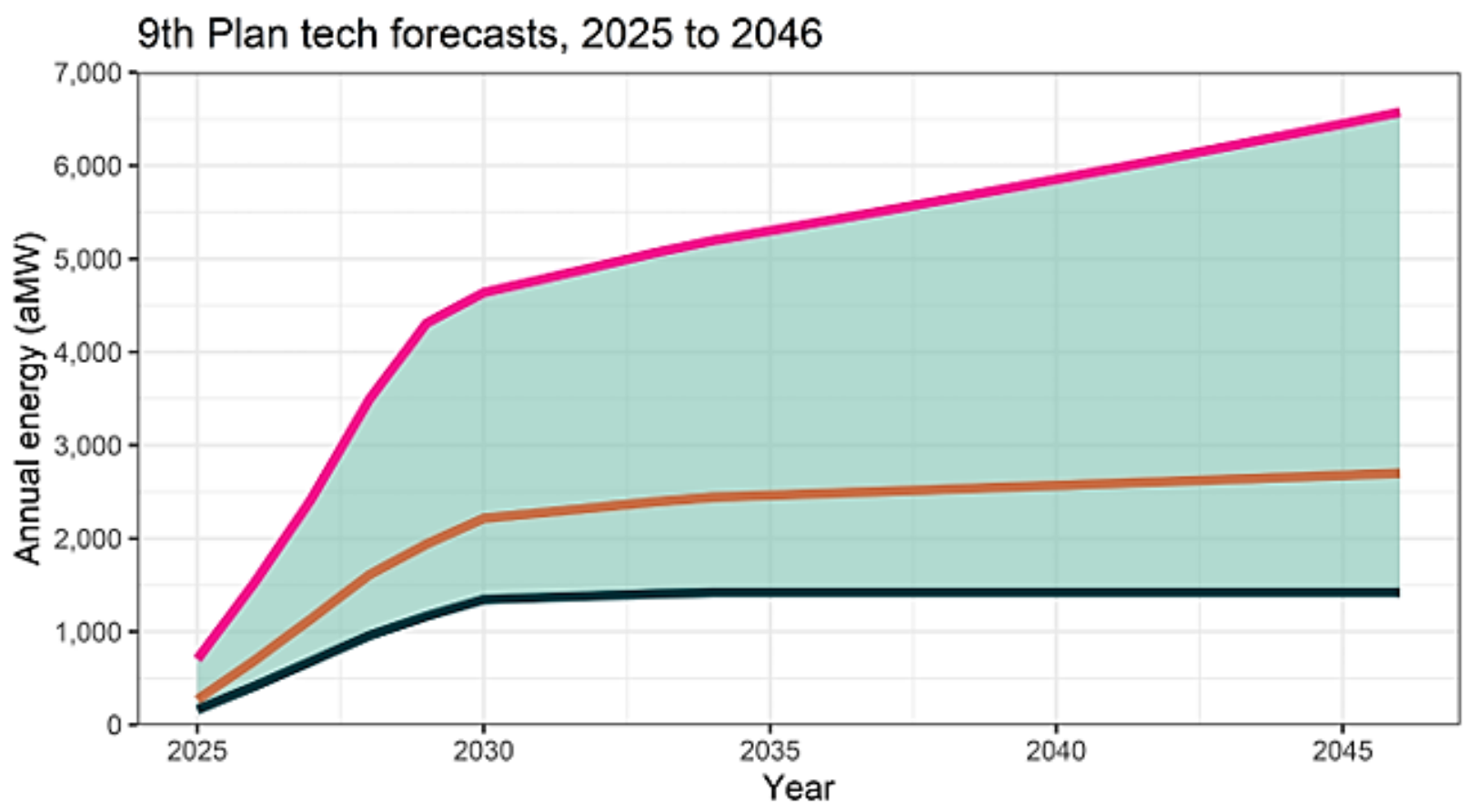
Winter Peak	10 year
2026 Forecast	2.7%
2025 Forecast	2.6%

2026-PNUCC-Northwest-Regional-Forecast-4-21-26-final.pdf

PNUCC 2026 Regional Forecast

- 2026 (solid lines) compared to 2025 (dashed lines)
- “Rising demands are pushing the power system towards its limits, heightening the risk of both energy and capacity shortfalls, particularly during periods of high demand and low hydro conditions.”

Tech load forecast (data centers & fabs)



The **high forecast** through 2030 reflects utility and BPA growth expectations

The **mid forecast** through 2030 is a continuation of recent trends

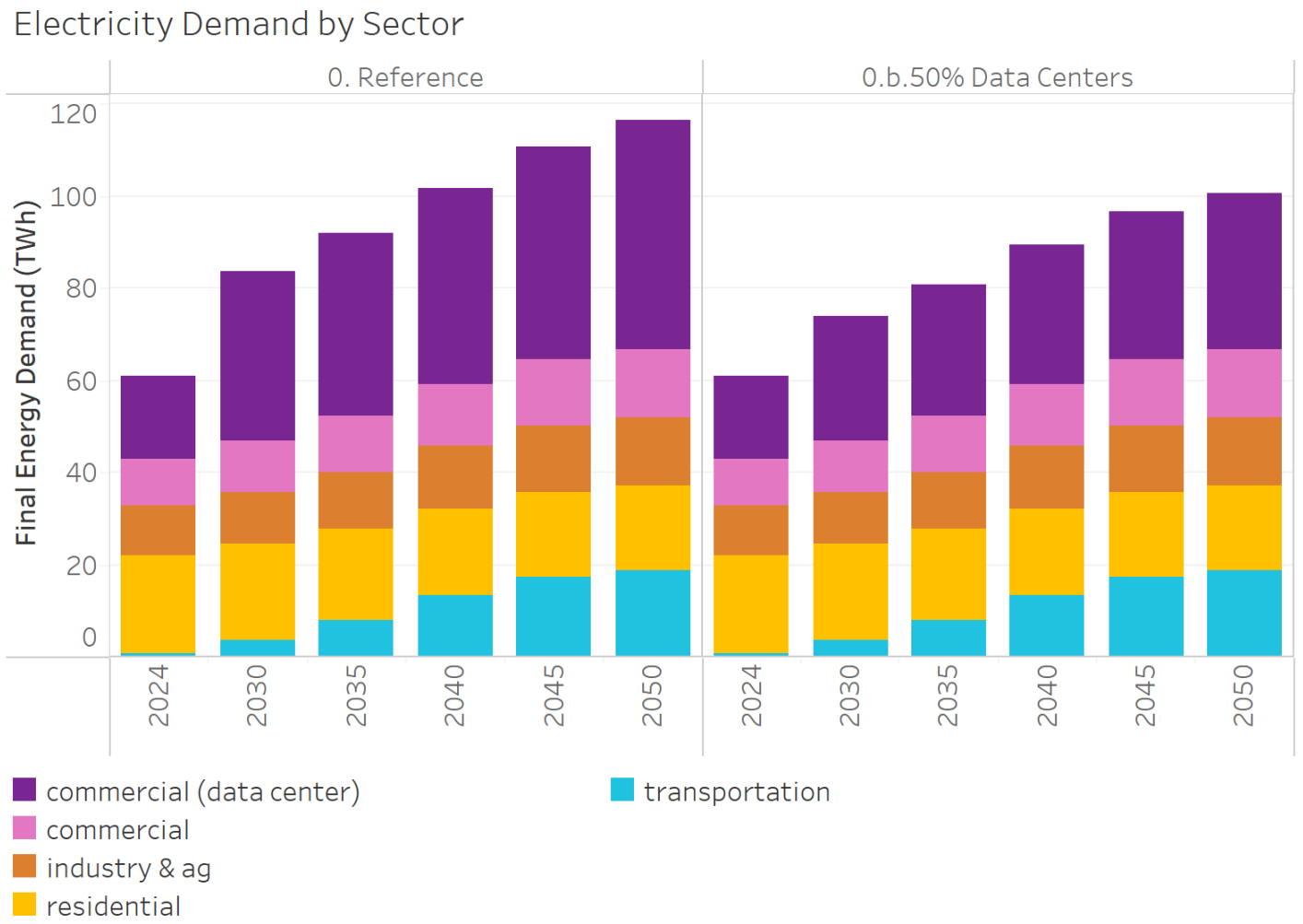
The **low forecast** through 2030 has a slowing of recent trends

Post 2030 growth at a fixed rate depending on forecast

Source: 2025_0429_2.pdf

Oregon Energy Strategy Modeled Higher and Lower Tech Load Scenarios

- Tech load growth is uncertain. If 50% lower than Reference Scenario:
  - Electricity demand growth, including from tech loads, still increases overall load by over 25% by 2030
  - Electric loads are 11% lower by 2030 and 13% by 2050 compared to the Reference



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Source: Oregon Energy Strategy Technical Report; oregon.gov/energy/data-and-reports/Documents/2025-OES-Technical-Report.pdf

Policy and GHG emissions

HB 2021, Clean Electricity Targets

- Fully decarbonized retail electricity sales for PGE, PAC, and Electricity Service Suppliers by 2040
  - 80% below baseline emissions by 2030
  - 90% below baseline emissions by 2035
  - 100% below baseline emissions by 2040
- No site certificate for new generating facilities 25 MW or greater (i.e., within EFSC jurisdiction), unless non-emitting.

HB2021

Department of Environmental Quality : Oregon Clean Energy Targets : Action on Climate Change : State of Oregon

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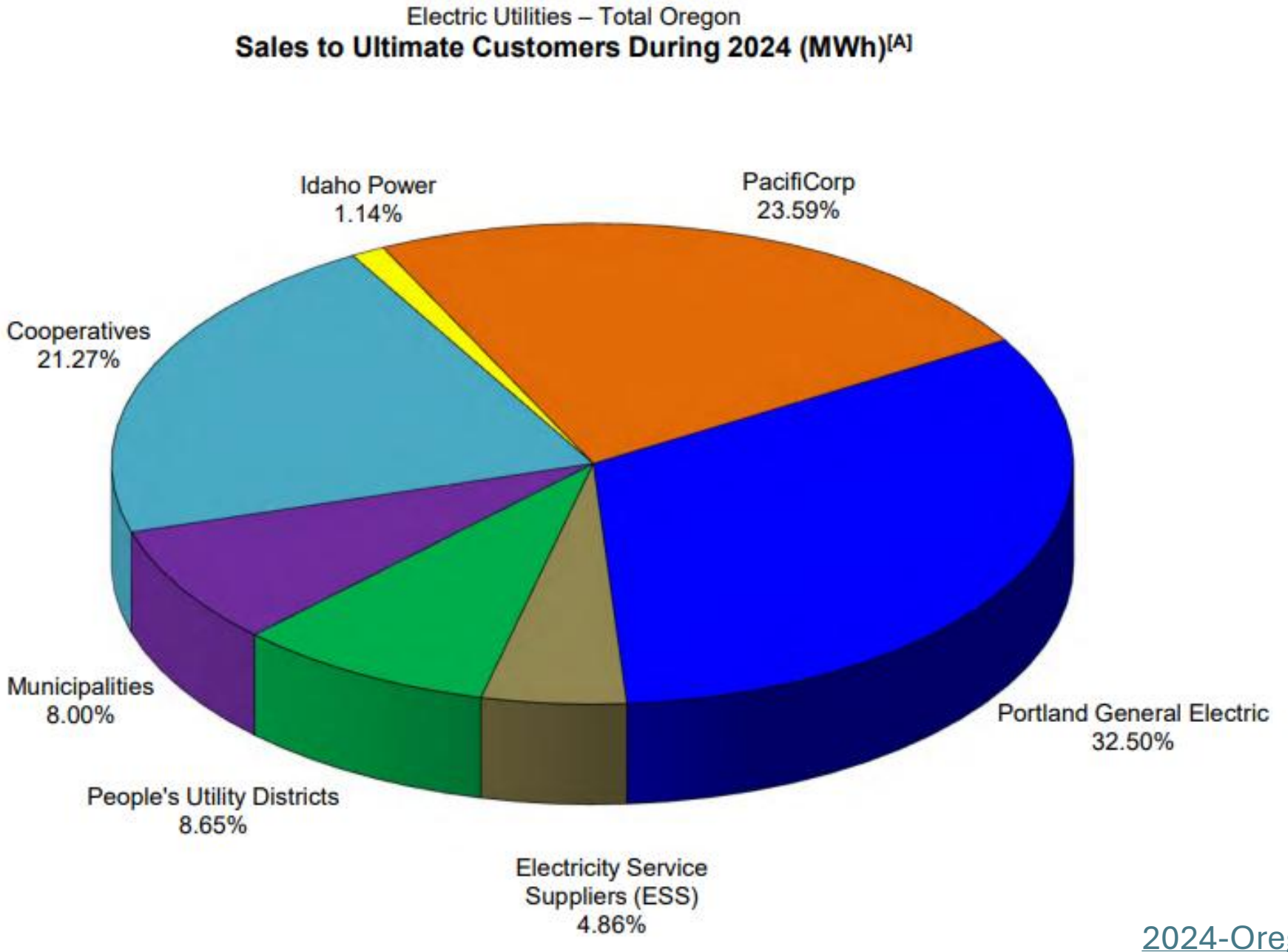
HB 2021 Applicability



- HB 2021 – 61%
- Other – 39%

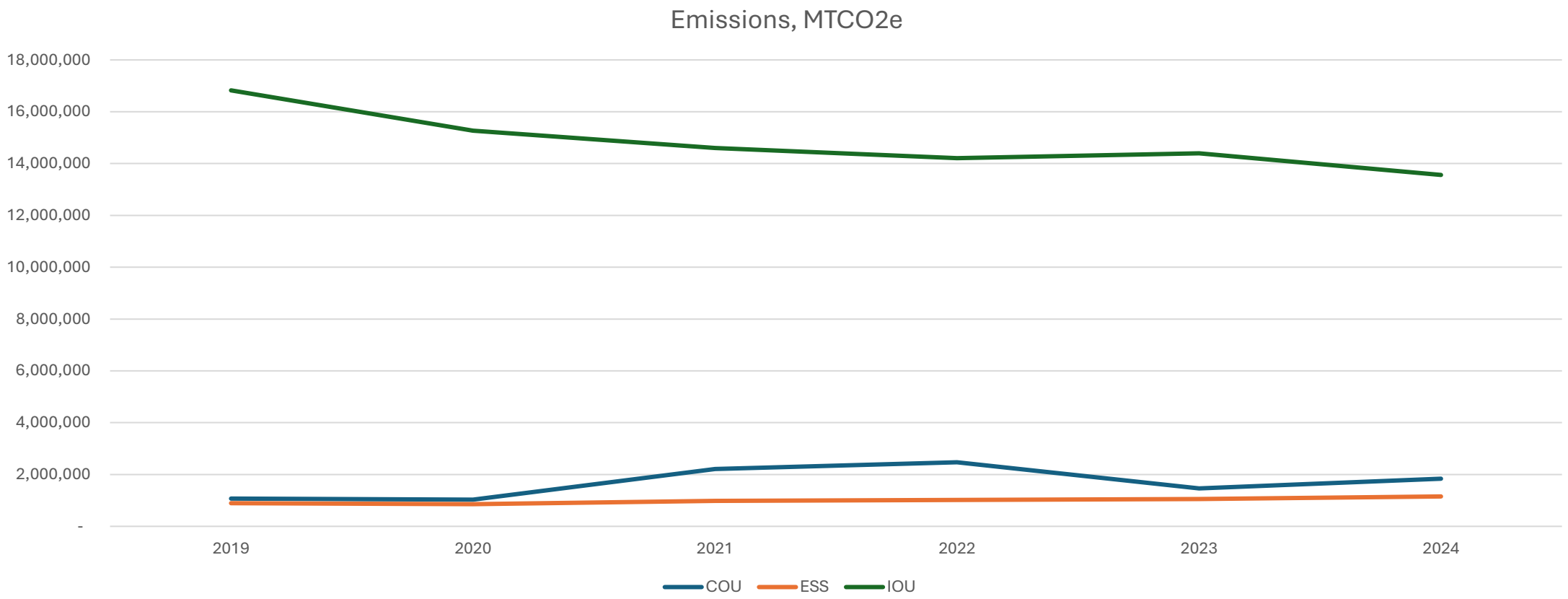
2024-Oregon-Utility-Statistics-Book.pdf

Renewable Portfolio Standard

- Obligation depends on utility type and size
- All utilities had an obligation in 2025 to obtain between 5% and 27% of electricity from qualifying renewable resources**
- Obligations by 2040 vary from 5% to 50%

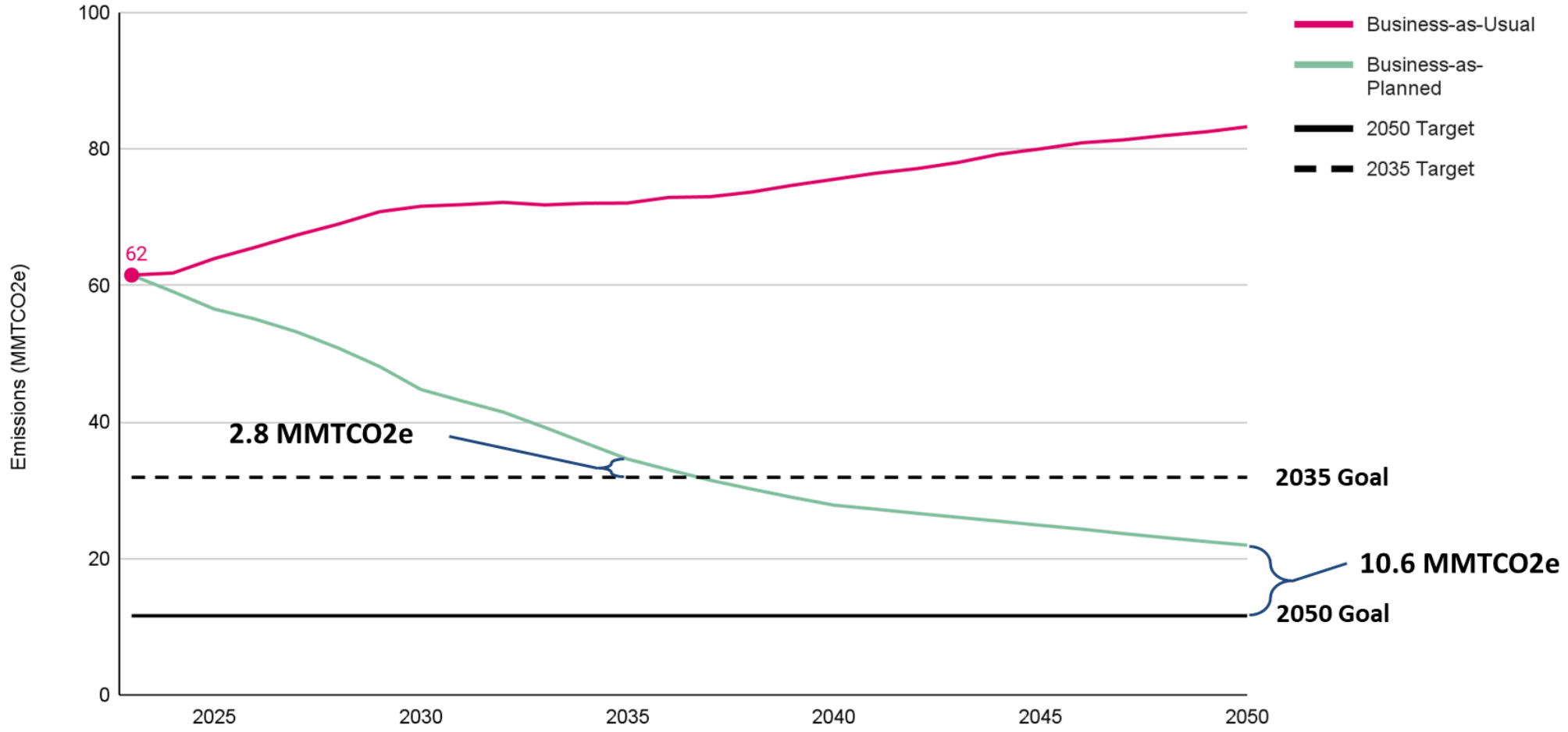
** Note: There are exemptions to avoid requiring utilities to buy new renewables instead of low-cost hydropower. For example, in most years, EWEB has reported zero RPS obligation after accounting for these exemptions.

GHG Emissions for IOUs, COUs, and Electricity Service Suppliers



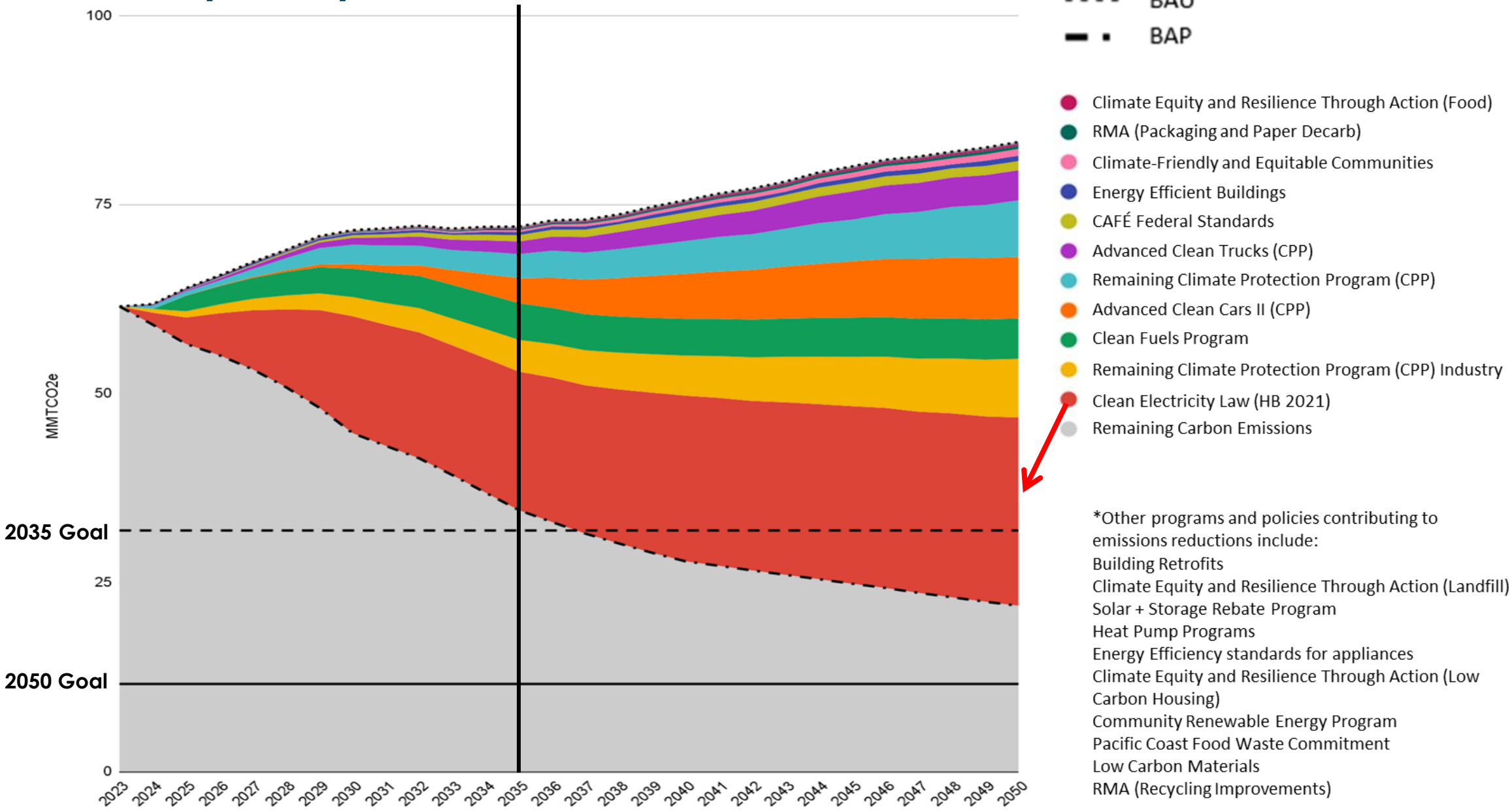
Source: Based on DEQ emission data

Emissions Overview, TIGHGER 2.0 (economy-wide)



Source: ODOE, TIGHGER 2.0 (under development)

Emissions by Policy



*Other programs and policies contributing to emissions reductions include:
Building Retrofits
Climate Equity and Resilience Through Action (Landfill)
Solar + Storage Rebate Program
Heat Pump Programs
Energy Efficiency standards for appliances
Climate Equity and Resilience Through Action (Low Carbon Housing)
Community Renewable Energy Program
Pacific Coast Food Waste Commitment
Low Carbon Materials
RMA (Recycling Improvements)

Source: ODOE, TIGHGER 2.0 (under development)

Building Performance Standard (OR BPS)

- Data centers are covered by OR BPS (if building size is at or above 35,000 SF)
- Due to unique energy use characteristics, DCs are identified as a “nontarget” building type without a specific Energy Use Intensity (EUI) target
- As nontarget buildings, OR BPS requires data centers (Tier 1) to:
  - Report monthly energy use and annual energy use intensity (kBtu/SF) by the compliance date (starting in 2028)
  - Conduct energy audits and implement cost-effective efficiency measures
  - Review and report on their Energy Management Plan and Operations and Maintenance Program

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Energy : Building Energy Performance Standards : Save Energy : State of Oregon

Resource and transmission needs

Oregon's Energy Strategy

1. Energy Efficiency. Advance energy efficiency across buildings, industry, and transportation sectors, including by expanding access to and appeal of multimodal transportation options, to deliver the benefits of a more efficient energy system.

2. Clean Electricity. Secure reliable, affordable, and clean electricity by expanding the electricity system and incorporating load flexibility.

3. Electrification. Increase electrification of end uses across transportation, buildings, and industry, while safeguarding reliability, promoting affordability, and maximizing opportunities to use load flexibility as a resource.

4. Low-Carbon Fuels. Advance the use of low-carbon fuels in the hardest-to-electrify end uses and to maintain a reliable electric grid.

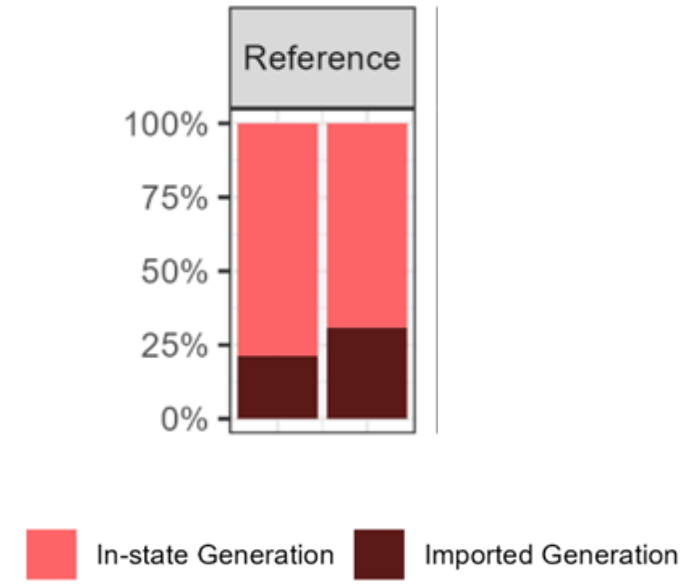
5. Resilience. Strengthen resilience across all levels of the energy system, including utilities, communities, and customers, enhancing Oregon's ability to adapt to climate change and mitigate other risks.

Implementation of each pathway must consider burdens and benefits to environmental justice communities and apply an equity lens to prevent further disproportionate impacts to historically and currently marginalized communities.

Role of imports

- Oregon imports a portion of electricity consumed in-state
- This is expected to continue
- Similar balance to imports/exports across modeled scenarios

Percent of Electricity Generated In-State v. Imported



Notes: In-state generation includes both generation consumed in-state and generation exported to other states.

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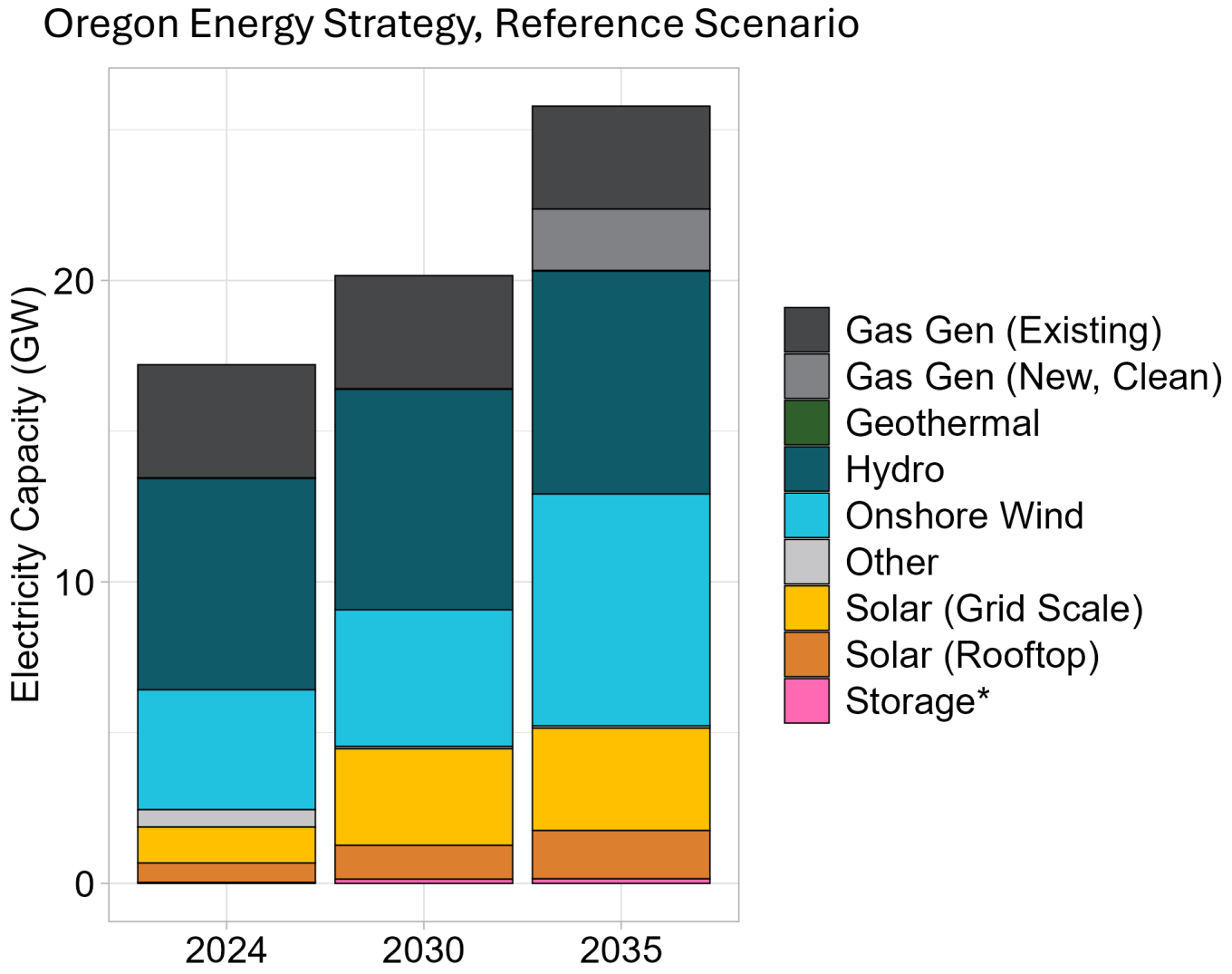
OES-Generation-Transmission-Key-Findings.pdf

Installed Capacity, 2024 – 2035



Source: Oregon Energy Strategy Technical Report; oregon.gov/energy/data-and-reports/Documents/2025-OES-Technical-Report.pdf

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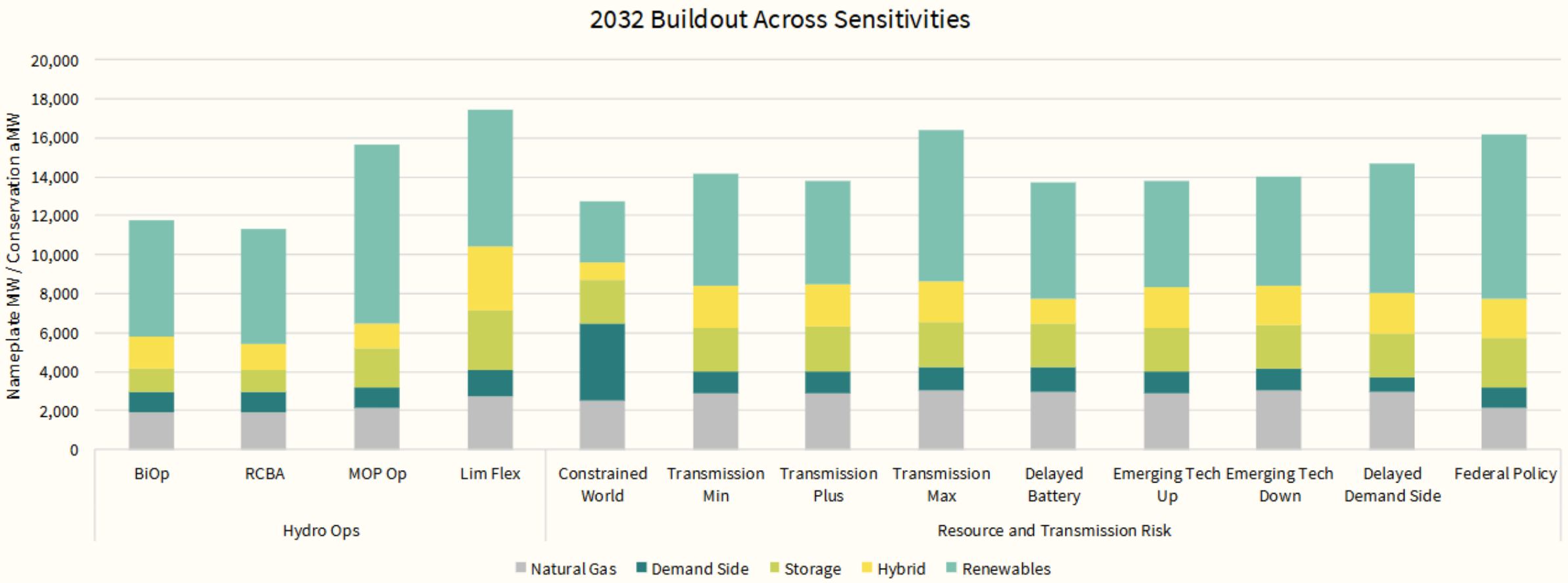
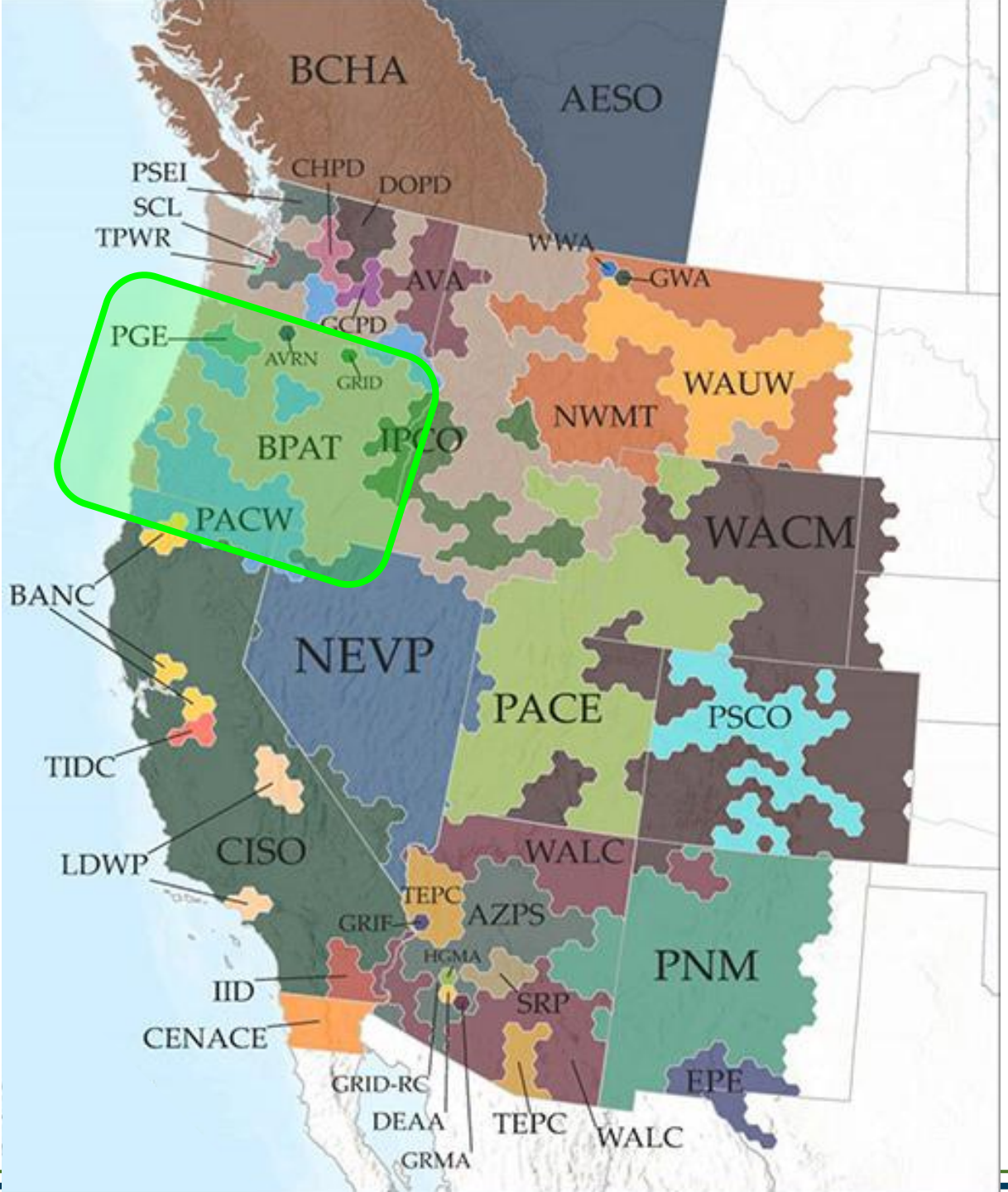
** Represents less than 1 GW*

Total Buildout in 2032

Conservation is in energy (aMW), while the rest are in terms of nameplate capacity (MW)



NWPCC, 05072026GRAC_ModelingResults.pptx | Powered by Box slide 14



Oregon's Four Primary Transmission Providers

- Bonneville Power Administration (BPAT)
- PacifiCorp (PACW)
- Portland General Electric (PGE)
- Idaho Power Company (IPCO)

Note: Tribally-owned, consumer-owned utilities, and private developers also own and/or operate some transmission, but are not reflected on this map.

The Bulk Power System | WECC SPDP

Need for more transmission – WestTEC 10-year study results

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WestTEC_10-year_Full_Report.pdf

Transmission Planning and Development in Oregon

- No centralized planning or permitting = no centralized tracking
- Two projects under review at EFSC – preliminary application for site certificate received
  - Cascade Renewable Transmission System (100 miles between The Dalles and Portland)
  - Umatilla-Morrow County Connect Project (14 miles between Umatilla and Morrow Counties)
- Boardman to Hemingway under construction
- Transmission needs identified by BPA, PGE, PAC, IPC, & COUs
  - Investments being made to modernize & expand Oregon's transmission infrastructure

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Other developments

NERC Activities

North American Electric Reliability Corporation (NERC) issued two notices in May.

- Level 3 alert in response to repeated events where large computational loads, including AI data centers, abruptly reduced or disconnected from the bulk power system in seconds. Grid stability risks. Outlines seven actions registered entities must implement to address immediate risks posed by computational loads interfacing with the bulk power system.
- **Reliability Guideline** "Risk Mitigation for Emerging Large Loads." Voluntary and non-binding. Detailed document that includes recommendation for large load facility owners, operators, and equipment manufacturers for large load facility equipment to participate in processes that ensure reliability.

POWER Act, HB 3546 (2025)

- “Large energy use facilities – 20 MW or more – primarily engaged in providing a service described as “Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services” (NAICS code 518210)
- Focuses on mitigating risks to ratepayers; ensuring compliance with HB 2021
- PUC issued first order, for PGE, in UM 2377 (5/07/2026)

Role of Bonneville Power Administration in Serving New Loads

- "New Large Single Loads" are not eligible for BPA's lowest rates
- New data centers will likely qualify as "New Large Single Loads"
- If requested, BPA will sell power to serve these loads at the New Resources Firm Power rate
- BPA's commercial acquisition strategy is evolving.

Commercial Acquisition Process and Planning, April 20, 2026 (Provider of Choice, Post 2028)

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Conclusions

- Electricity is critical to our state; we all rely on it.
- There is a continuing need to invest in our electricity system to ensure reliable service.
- Data centers are the largest source of electricity demand growth in Oregon.
- Significant uncertainty remains over how much data center demand will grow.
- There is a risk to both under- and over- investing.
- It is important to explore very near-term solutions while advancing strategies to meet energy needs over the longer-term.
- The Oregon Energy Strategy provides guidance on how to meet Oregon's objectives of reliable, clean, affordable energy.

Thank you

Edith Bayer

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NWPCC 2029 Resource Adequacy Assessment

- Oregon Energy Strategy adopted *Mid-Higher data center* forecast to 2030

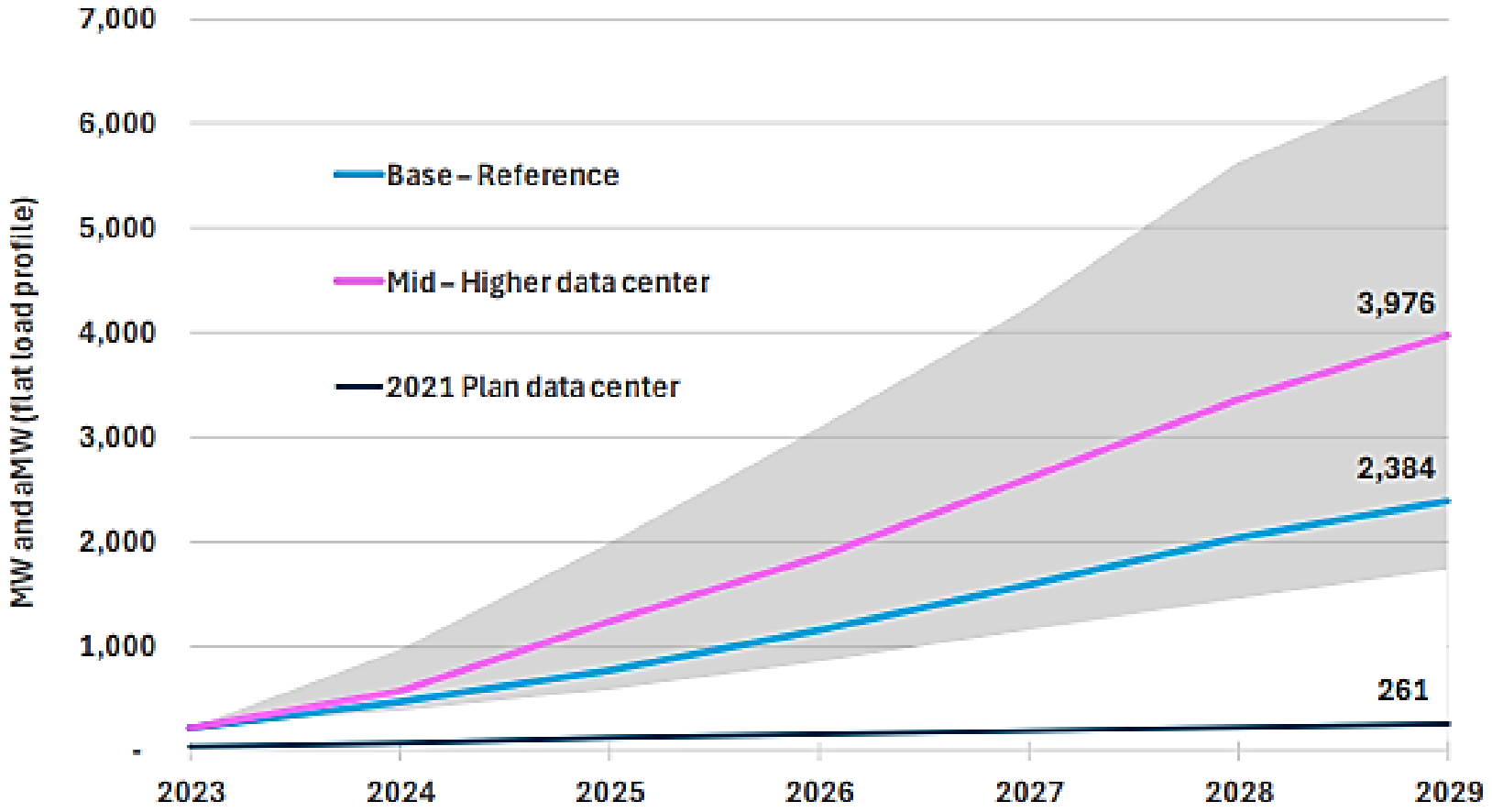
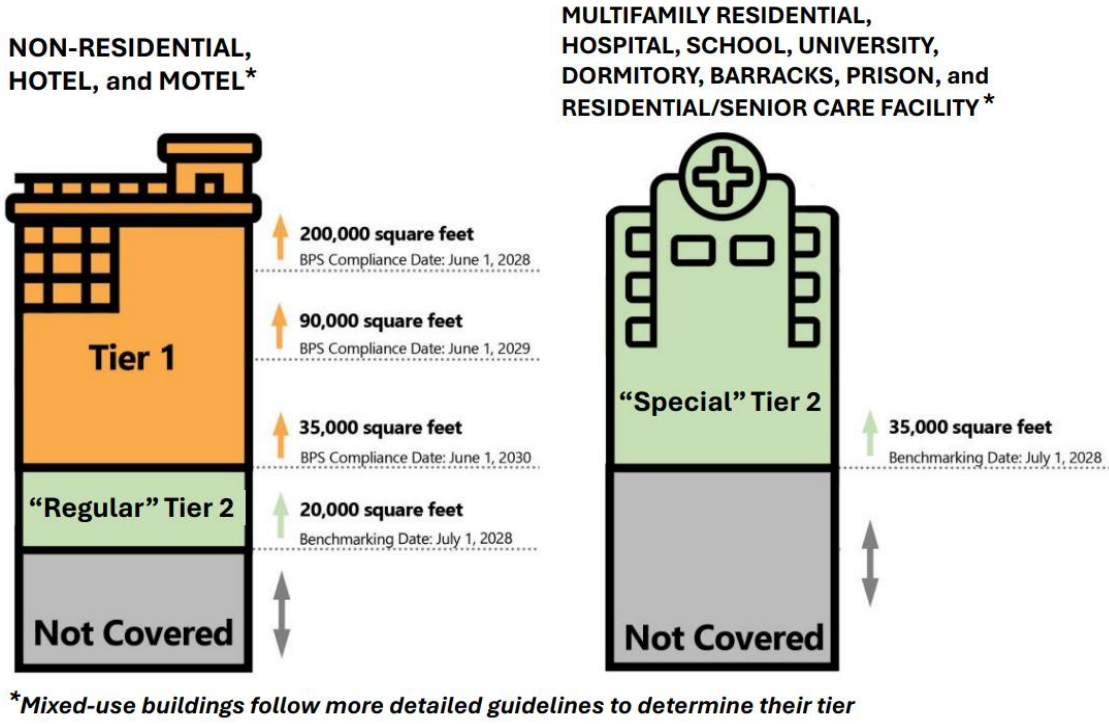


Figure 2. Incremental data center and fab growth forecast, 2023 to 2029

Chart from Northwest Power & Conservation Council's Pacific Northwest Power Supply Adequacy Assessment for 2029

Building Performance Standard (OR BPS)

- Established through HB 3409 (2023) and subsequent ODOE rulemaking
- OR BPS is a program that addresses energy consumption in existing buildings, focusing on non-residential and large multifamily buildings
- Covered Property Types
  - Tier 1: Non-Residential, Hotels, & Motels
    - Identify energy target and either meet target or take action for compliance (ex: energy audit and implementation of cost-effective measures)
    - Review Energy Management Plan and Operations and Maintenance Program
  - Tier 2: Multifamily Residential, Hospitals, Schools, Universities, Dormitories, Barracks, Prisons, & Residential/Senior Care
    - Determine energy target and report energy use
- Compliance Dates
  - Depends on Gross Floor Area
  - Begin in June 2028



Mixed-use buildings follow more detailed guidelines to determine their tier

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