TC Energy

West Pipeline Customer Meeting

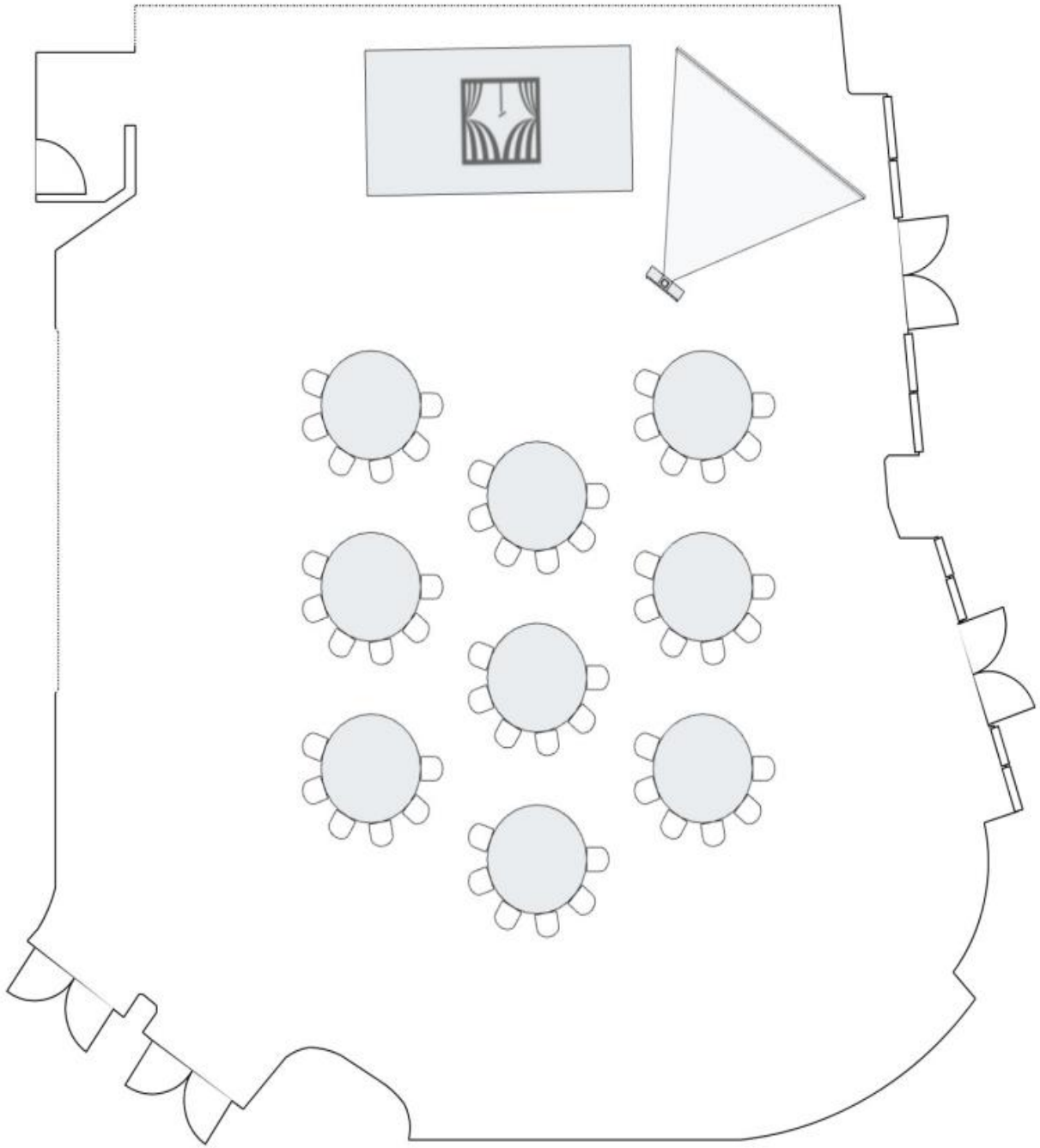
MAY 16, 2024

Agenda

Mitch Meyer	Welcome/Safety Moment
Eric Miller	Opening Remarks/TC Energy Update/Regulatory Rate case Update
Frank Hildenbrand	Operations Update
Tyler Marks	BD Update
Brandon Stewart	Commercial Fundamentals/Weather/US
Cameron Hercus	Carbon Capture & Sequestration
Colin Strom	Questions/Closing Remarks
Tammie	Event Logistics

Emergency procedures

- Exit doors on either side of room
- Left doors lead to hallway and out to patio
  - Follow outdoor stairs down to lawn
- Right doors lead to service hallway
  - Follow exit from service hallway to front entrance



Water Safety

1. Never swim alone or without a water watcher.
2. Supervise your children whenever they're in or near water.
3. Wear a life jacket.
4. Don't jump in the water to save a friend who is struggling in deep water.
5. Teach your child to swim.

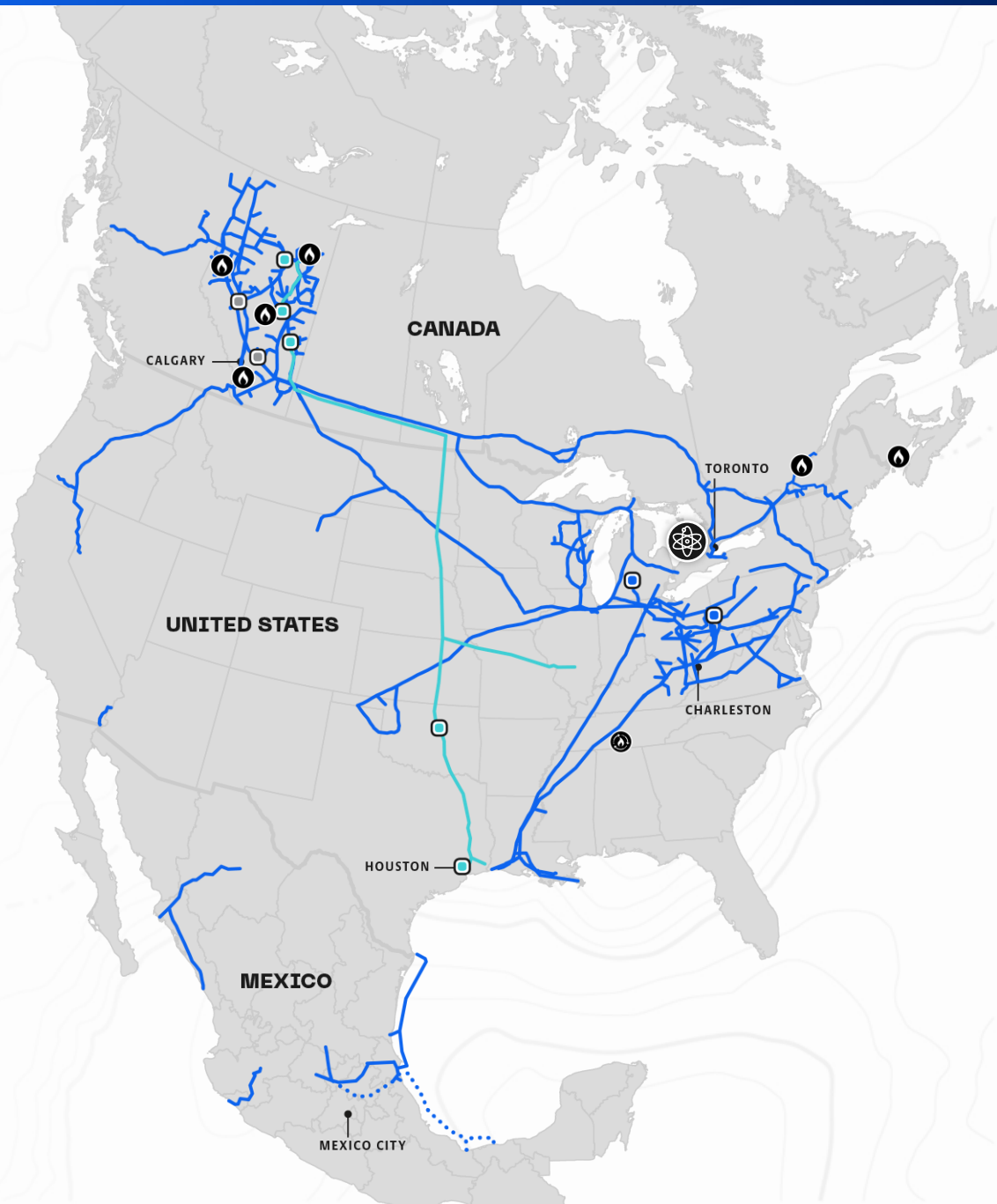
TC Energy Update & Regulatory Statement

Eric Miller
Director, Marketing West
U.S. Pipelines

5 market leadership positions

OUR COMPETITIVE ADVANTAGE

1. Exporting **Canada**'s natural gas supply
2. Exporting **U.S.** natural gas supply
3. Importing natural gas to meet **Mexico's** demand
4. Generating **nuclear** power
5. Exporting Canadian **crude oil** supply



5 **leading businesses in key markets**

2024 strategic priorities

PROJECT EXECUTION ON-TIME AND ON-BUDGET

- Elevated **focus** and governance on Southeast Gateway
- Place **~$7 billion**[1] of assets into service
- Deliver 2024E comparable EBITDA[2] growth of **5% to 7%** relative to 2023E

ENHANCING BALANCE SHEET STRENGTH AND FLEXIBILITY

- Achieve below **4.75x debt-to-EBITDA**[3] target by year end 2024
- Execute **~$3 billion** in asset divestitures
- Progress Focus Project **cost-savings and efficiency** initiative

MAXIMIZING THE VALUE OF OUR **ASSETS** THROUGH **SAFETY** AND **OPERATIONAL EXCELLENCE**

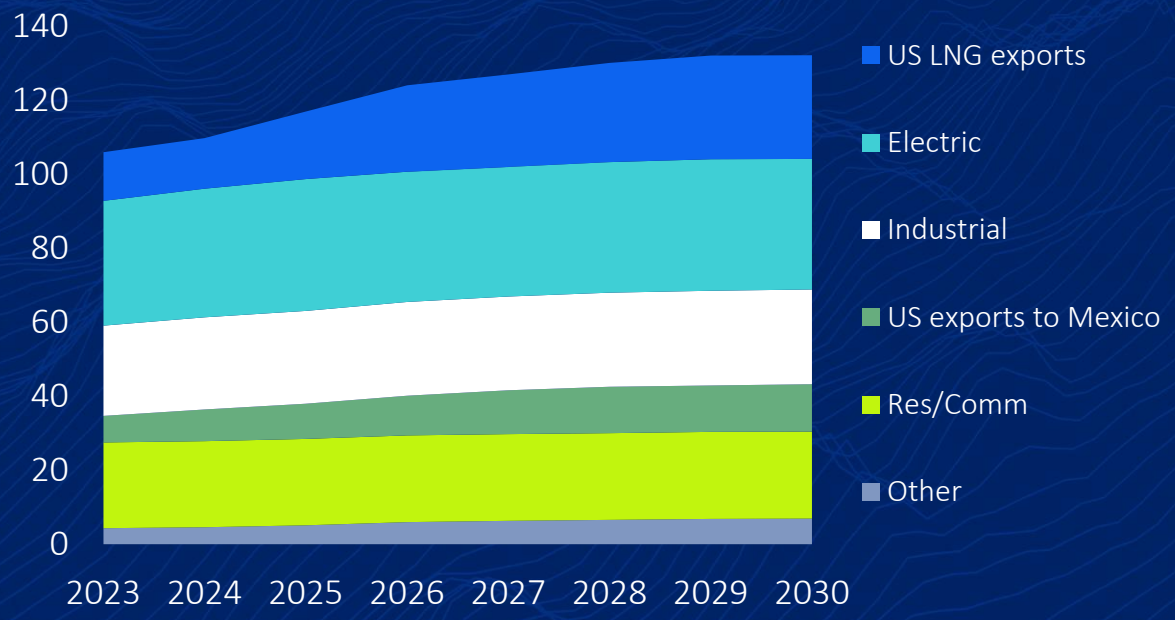
- **Safely, reliably** and **affordably** deliver energy
- **Execute** spinoff of South Bow business
- Continue advancement of integrated natural gas business to **capture synergies**

U.S. natural gas outlook

Demand growth expected across most sectors

U.S. natural gas demand growth
Bcf/d

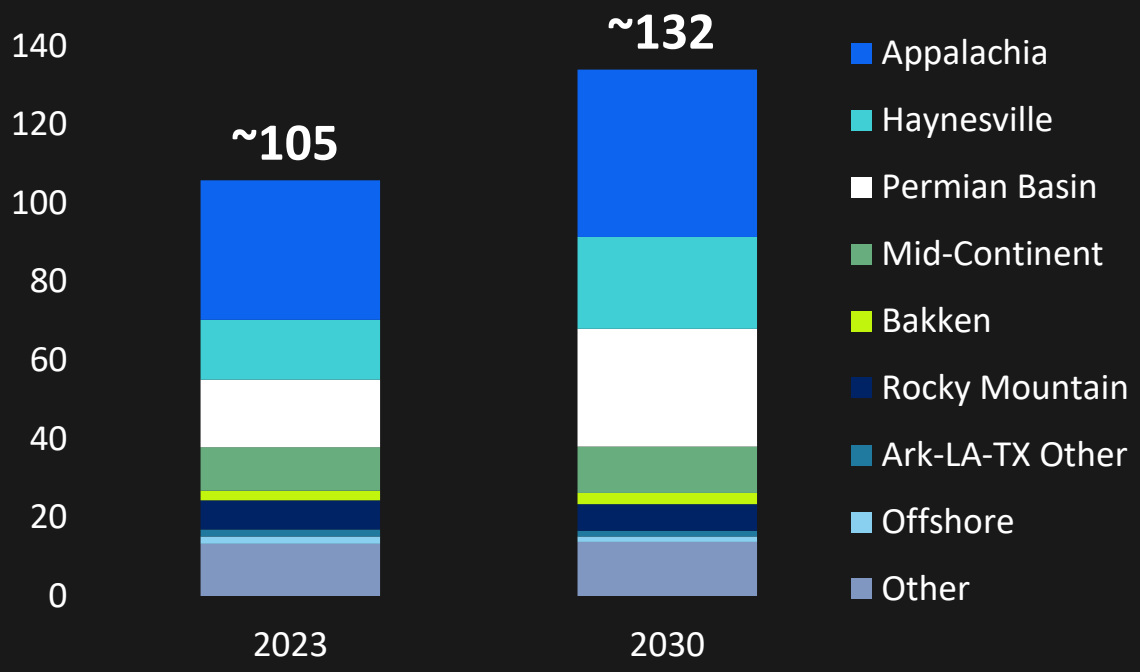
+25%
US demand growth (2023 – 2030)



Source: TC Gas Outlook 2023

Supply growth supported by multiple basins

U.S. production forecast
Bcf/d



- In 2023, USNG realized 390,000 MT CO2e GHG emissions reductions primarily by capturing vented gas with pump down compression
- Reducing emissions through dual drive technology on VEP, VRP, and WRP
- From 2019-2022 we've increased our throughput by 11% while decreasing our absolute methane emissions by 14%

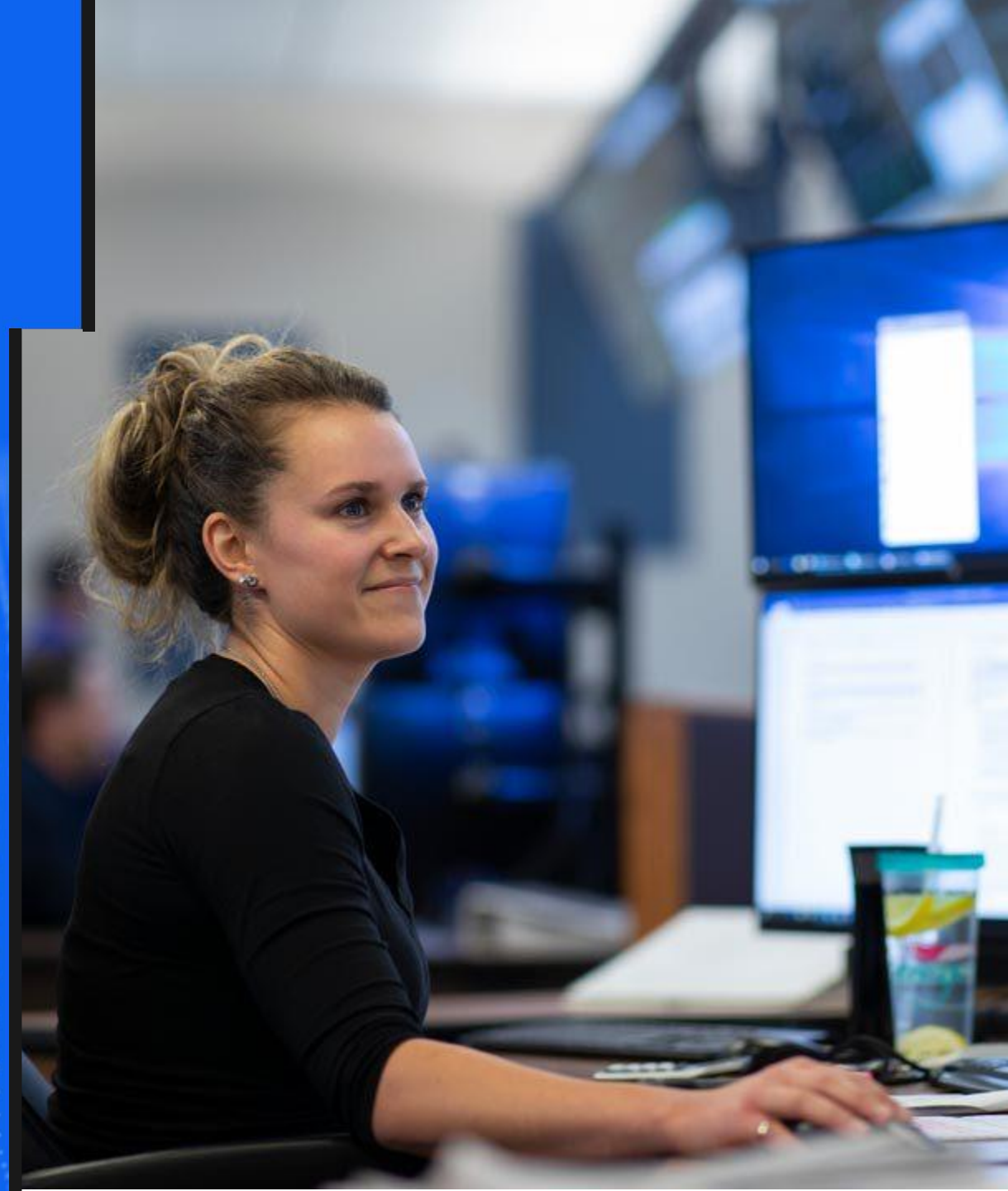
Regulatory Update

Gas Transmission Northwest LLC, submitted a General Section 4 Rate Case Filing to the Federal Energy Regulatory Commission (FERC) in Docket No. RP23-1099-000.

- GTN is working through discovery to provide information that will facilitate settlement discussions.
- Rates subject to refund and associated tariff changes were made effective April 1, 2024.

Operations Update

Frank Hildenbrand
Manager, U.S. Gas Control West



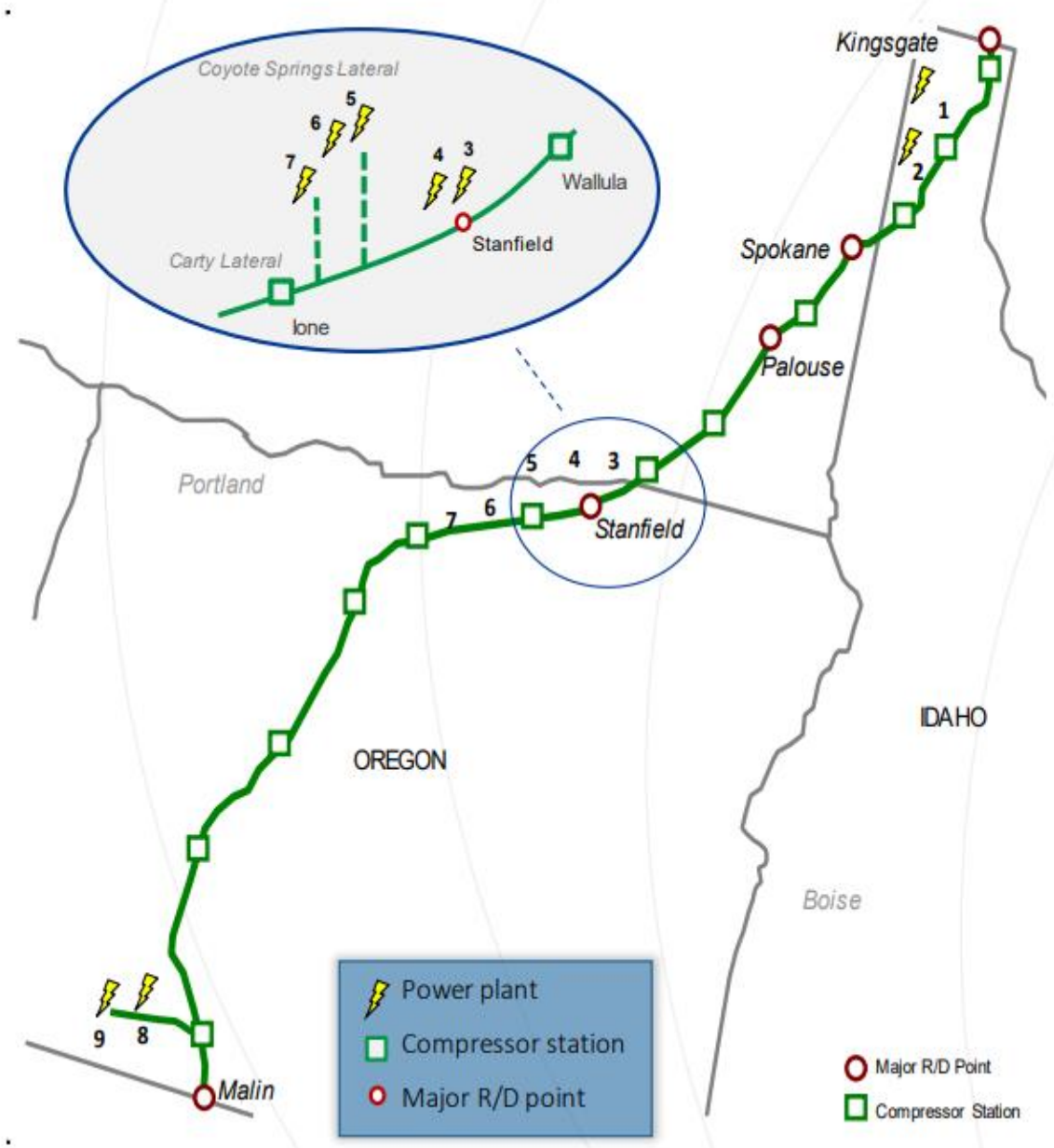
GTN Transmission System

2024 Operational Update:

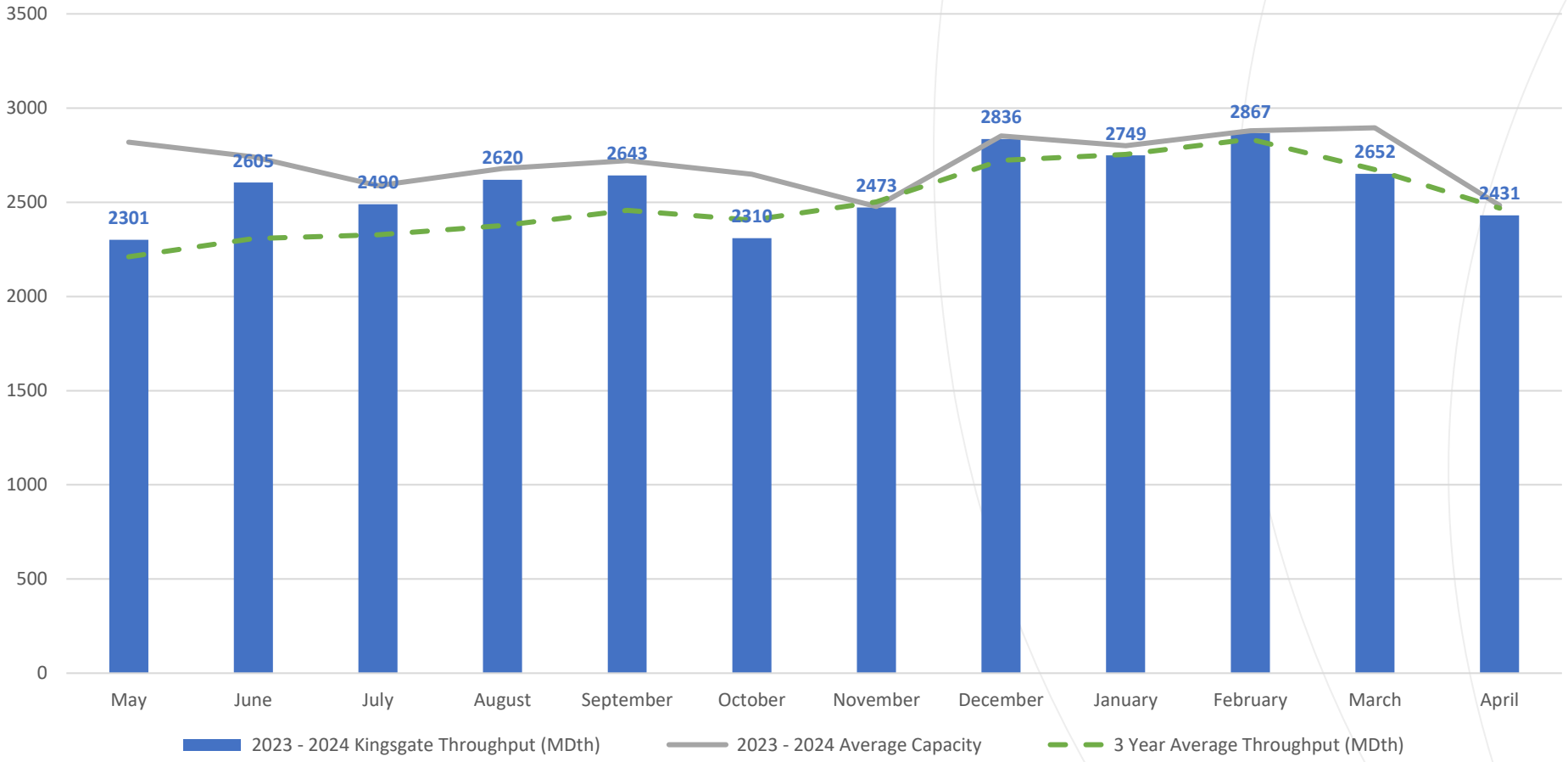
- Peak Day: February 8, 2024
- Physical Deliveries: 2,912 MDth

2024 Highlights:

- GTN XPress targeted ISD before Winter

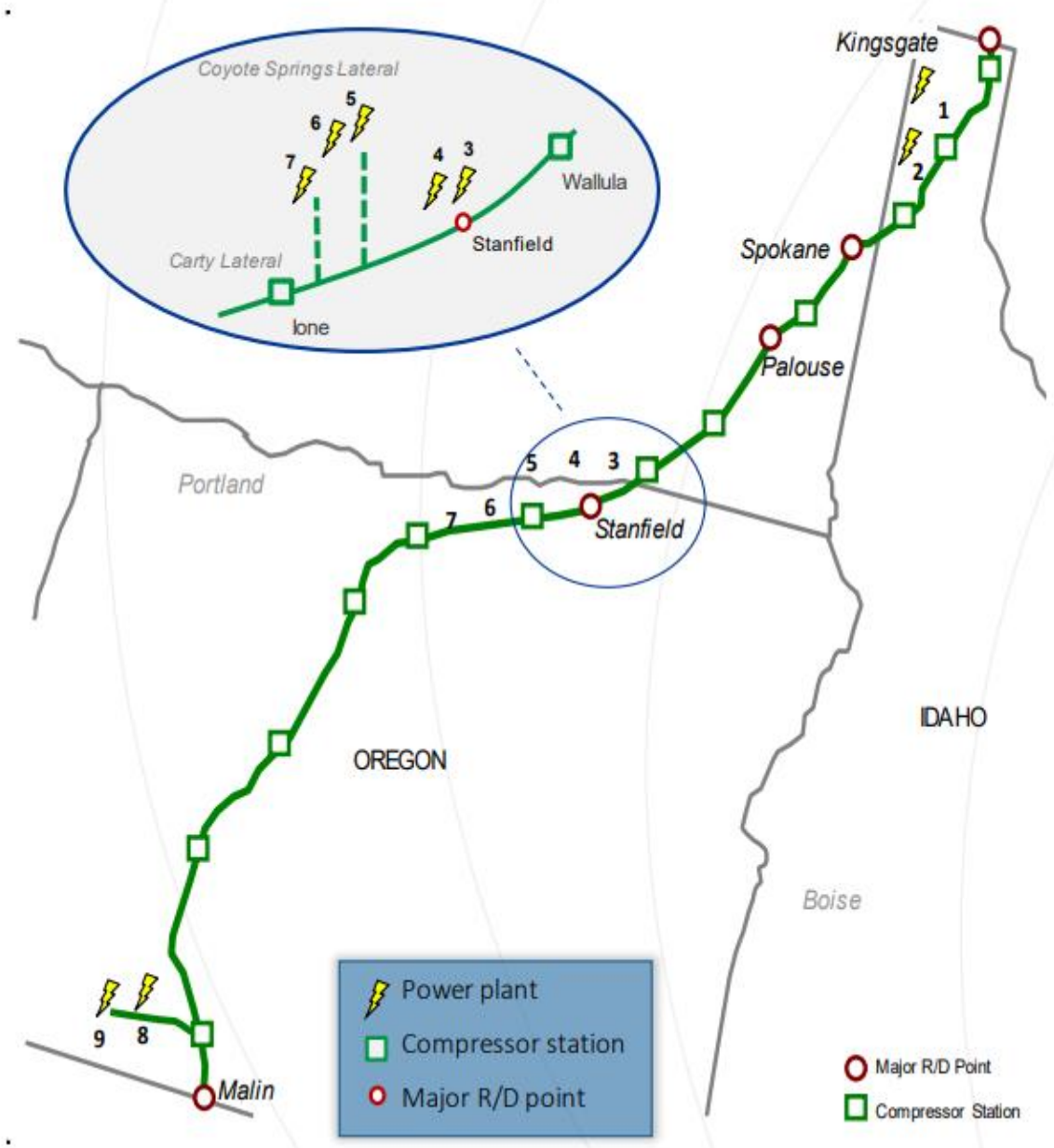


GTN Average Day System Throughput

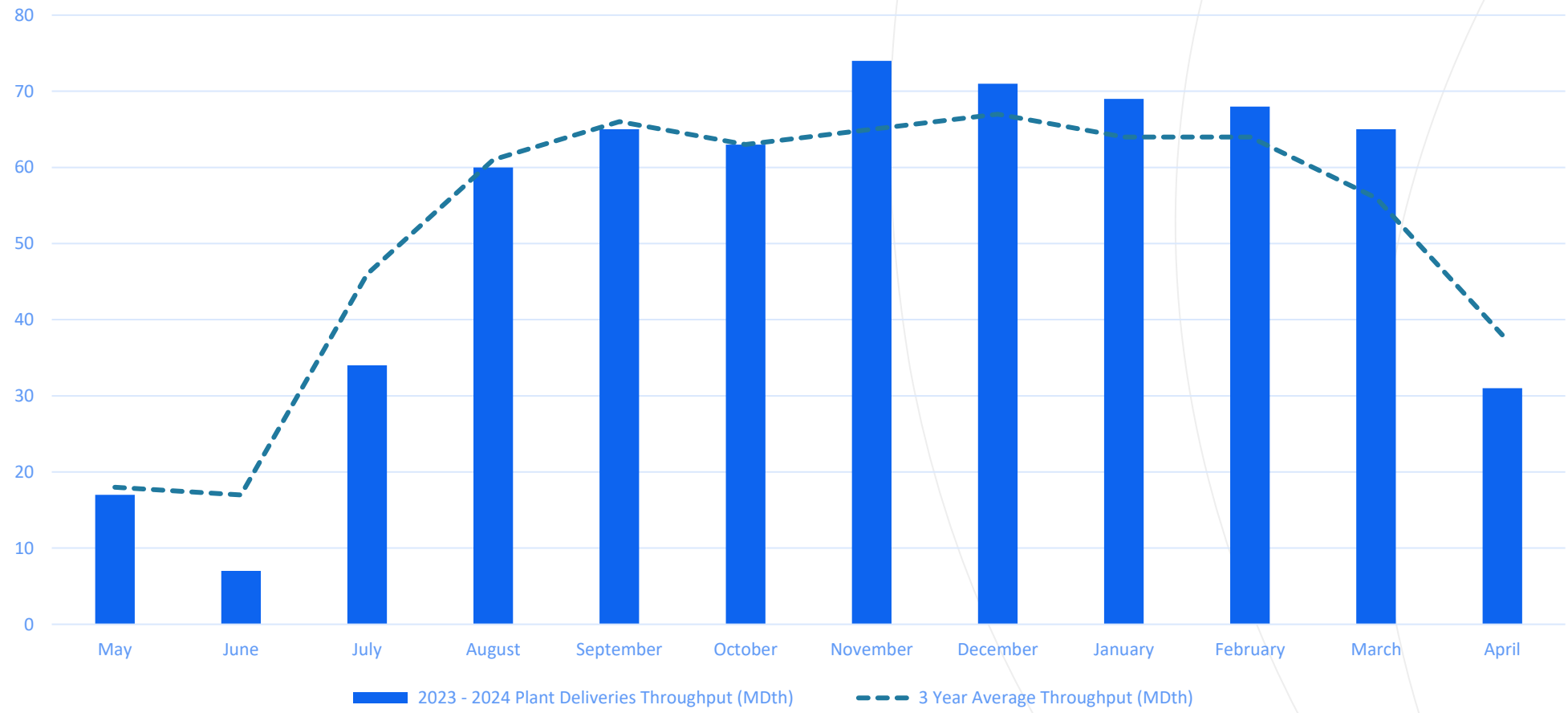


GTN System Power Plants

1. Lancaster LLC
2. Rathdrum CT
3. Calpine HPP
4. Hermiston Generating
5. Coyote Springs I
6. Coyote Springs II
7. Carty Generating
8. Klamath Cogen
9. Klamath Expansion



GTN Daily Power Loads



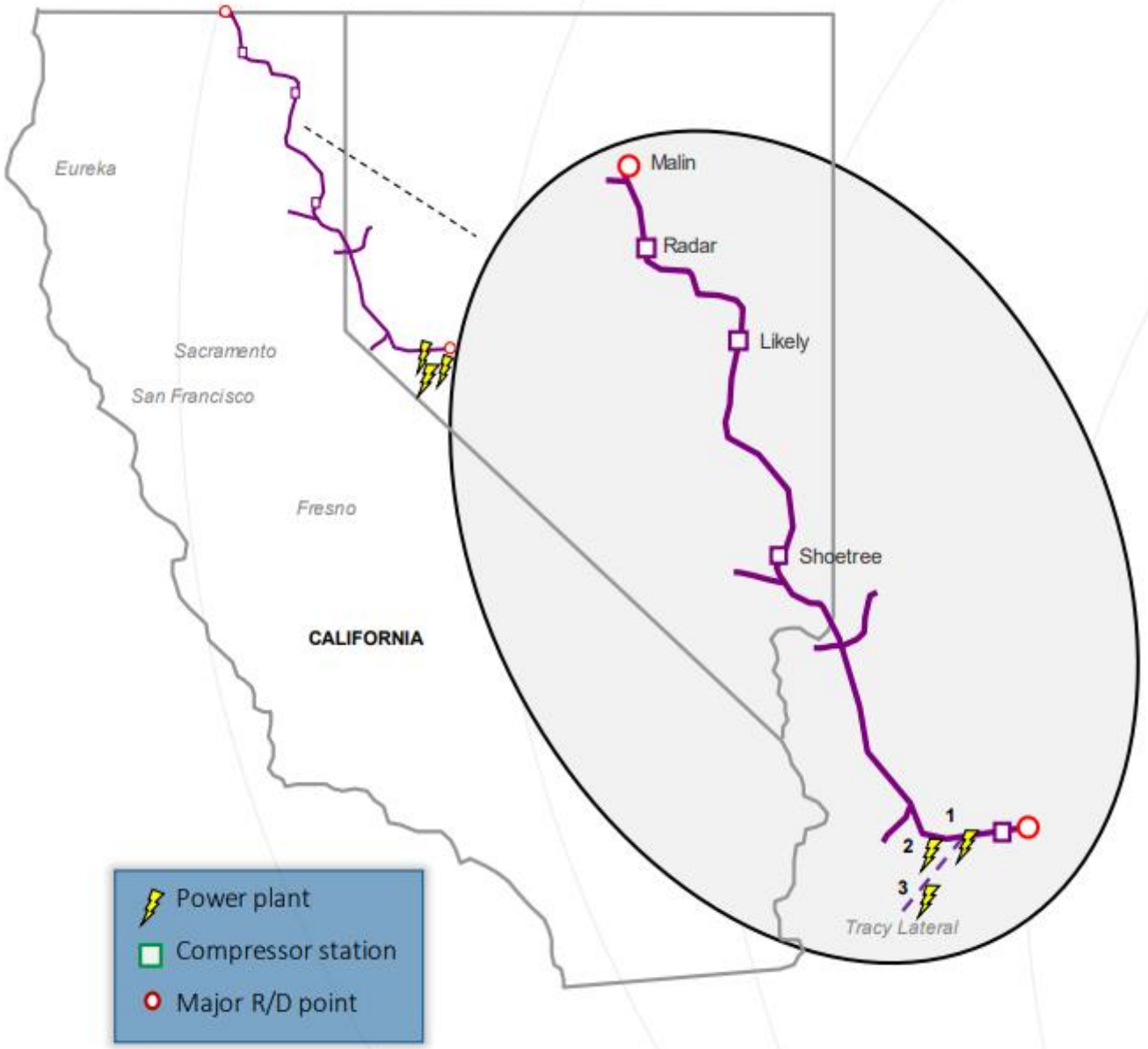
GTN 2024 Summer Maintenance

Dates	Area/Segment Location	Capacity (MMcf/d)		May				June				July				August				September				October			
		Impact	Available																								
Flow Past Kingsgate																											
5/13 - 14	Kingsgate to Rosalia ILI Runs	661	2005																								
5/20 - 23	Rosalia Spring Maintenance	266	2400																								
6/17 - 21	Starbuck C Unit Exchange	366	2300																								
7/8 - 12	Rosalia Unit C Valve Replacement	216	2450																								
7/13 - 22	Eastport Unit B Lube Oil Cooler	366	2300																								
7/13 - 22	Starbuck XP Unit E Intstall	366	2300																								
10/1 - 6	Sandpoint Unit A Engine Exchange	116	2550																								
Flow Past Station 14																											
7/8 - 12	Bonanza ESD and Spring Maintenance	390	1600																								
7/13 - 18	Kent Make Piggable Project	640	1350																								

Tuscarora Gas Transmission System

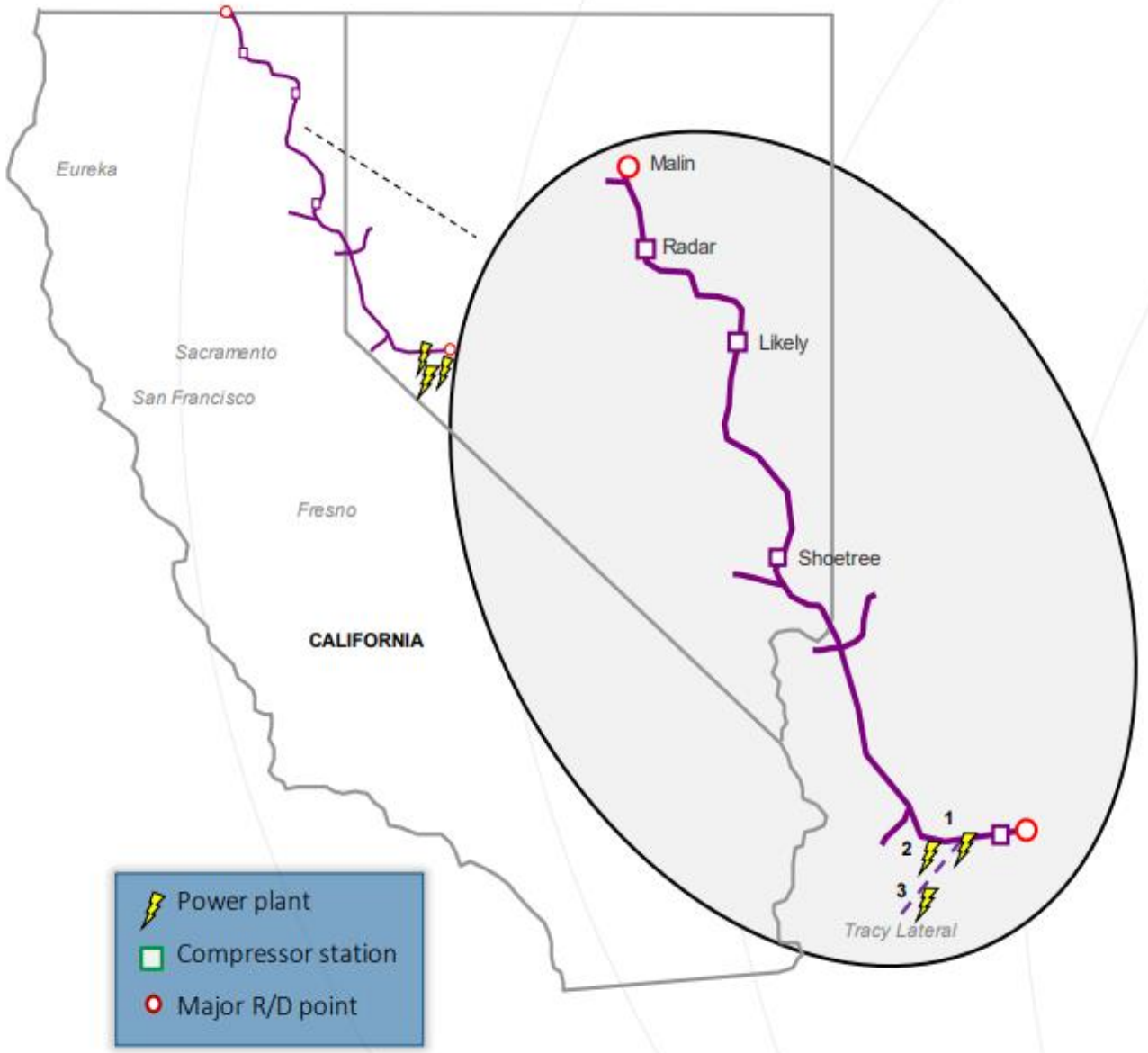
2023-24 Operational Update:

- Peak Day: November 30, 2023
- Physical Deliveries: 245 MDth

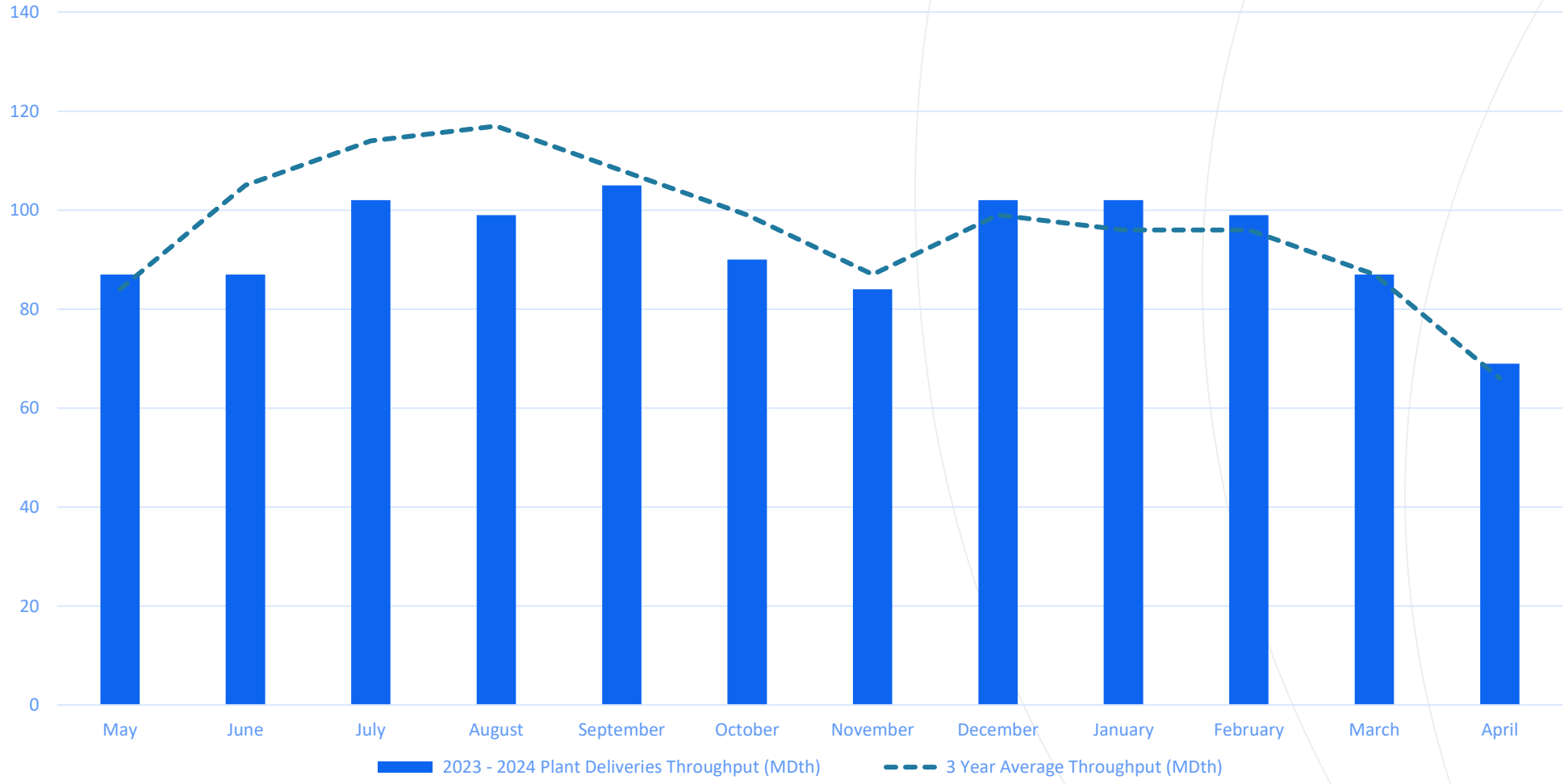


Tuscarora Gas Transmission Power Plants

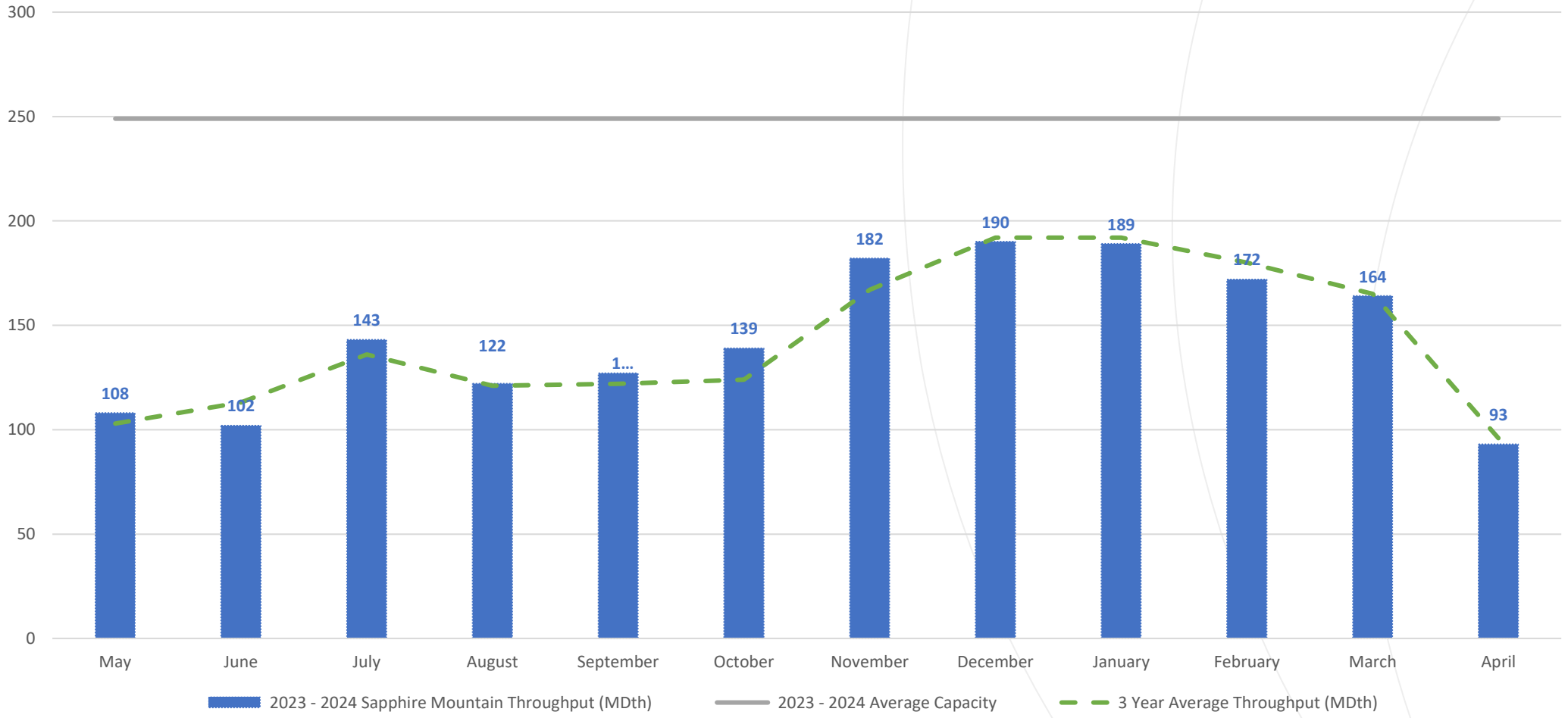
1. Tracy Station I
2. Tracy Station II
3. Western 102 Generation Facility



Tuscarora Daily Power Loads



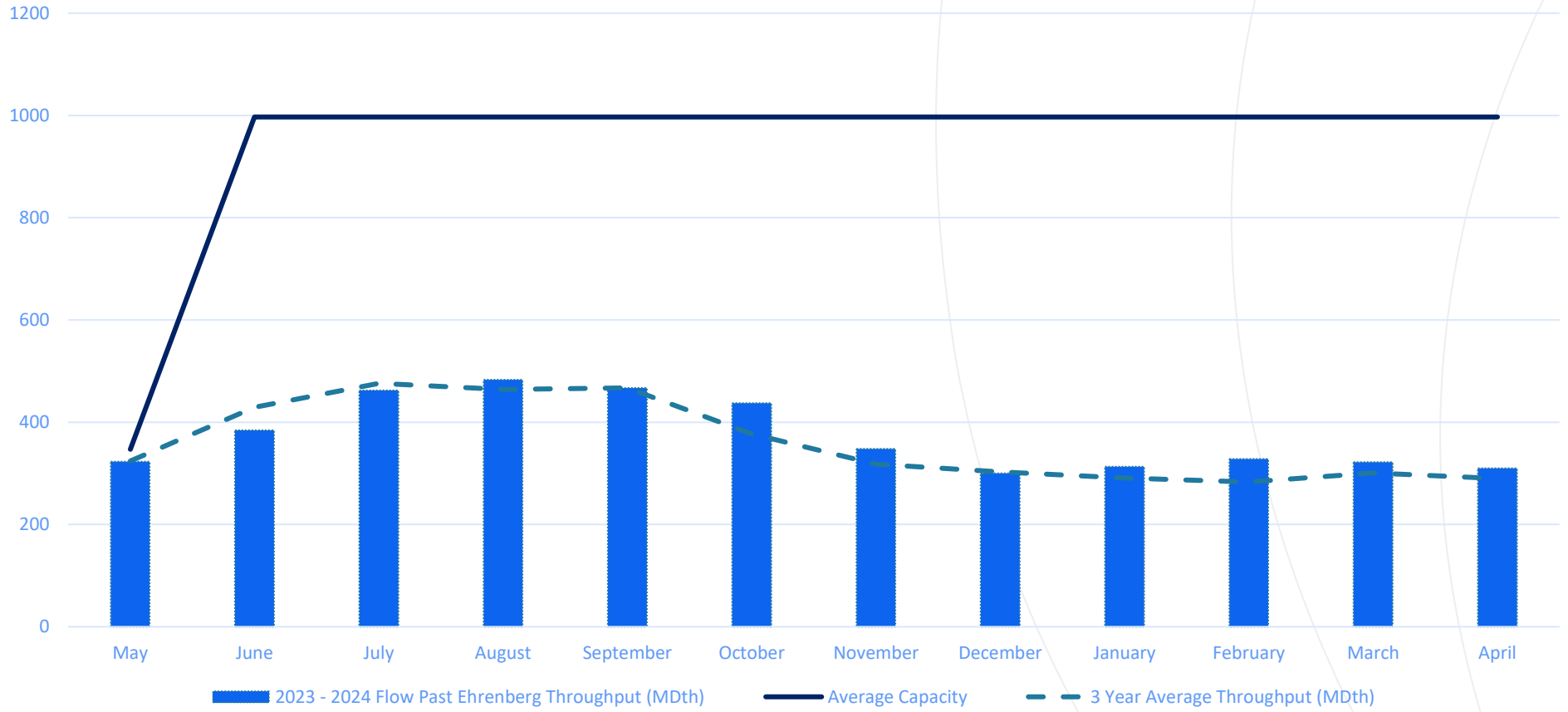
Tuscarora Average Day System Throughput



Tuscarora Gas Transmission
2024 Summer Maintenance

- None expected

North Baja Average Day System Throughput



North Baja 2024 Highlights

- North Baja XPress work is complete
- Capable of moving 997 MDth/d

North Baja 2024 Maintenance

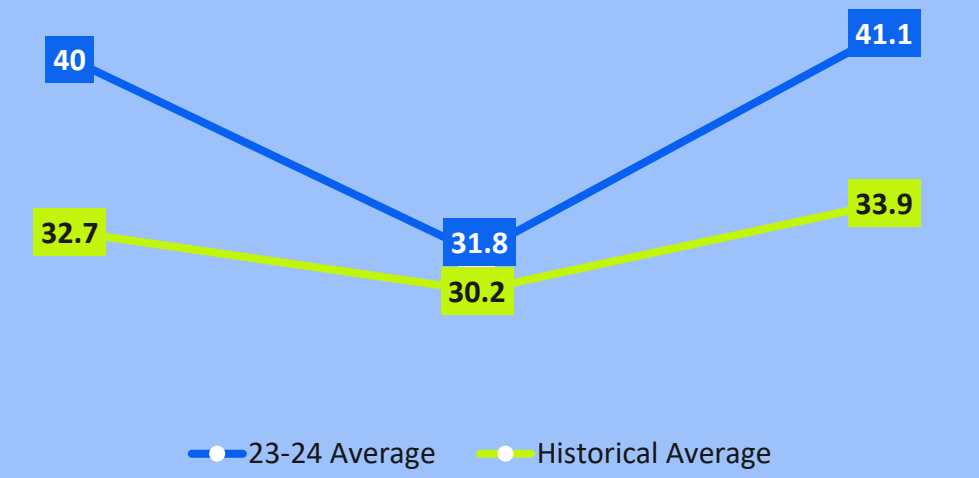
- None expected

2023 – 2024 WINTER REVIEW

This winter was the warmest on record.*

(In 130 Years as recorded by NOAA)

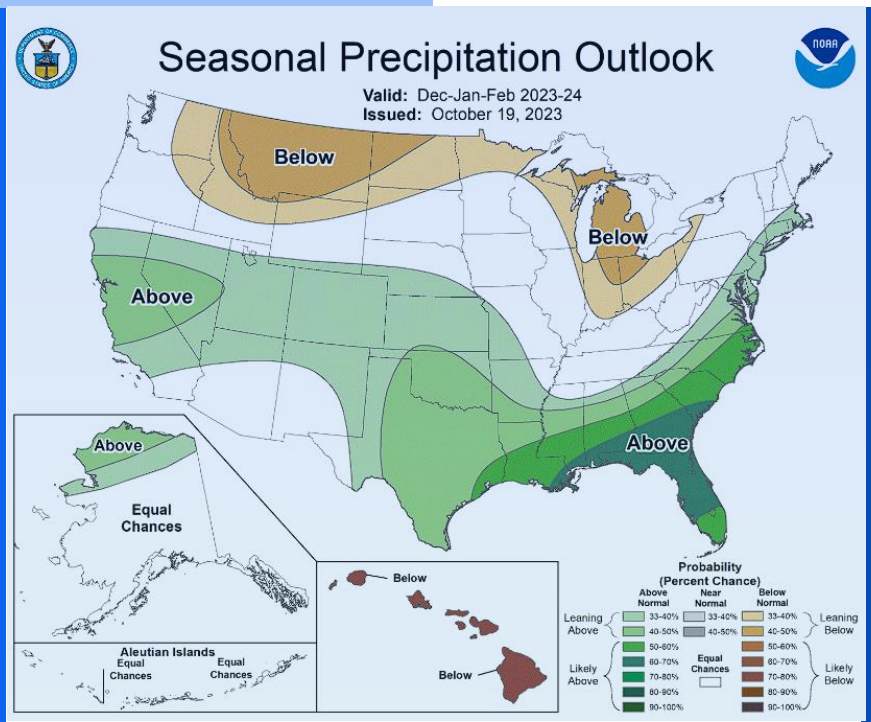
NORTH AMERICAN AVERAGE TEMPERATURES



Average Temperature Increase

↑5.4°

***Per NOAA, from December 2023 through February 2024.



PRECIPITATION

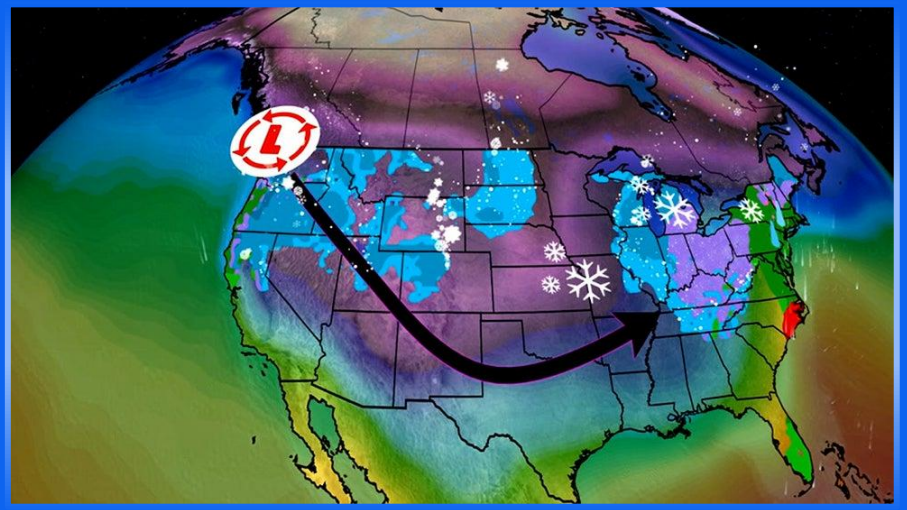
7.71”

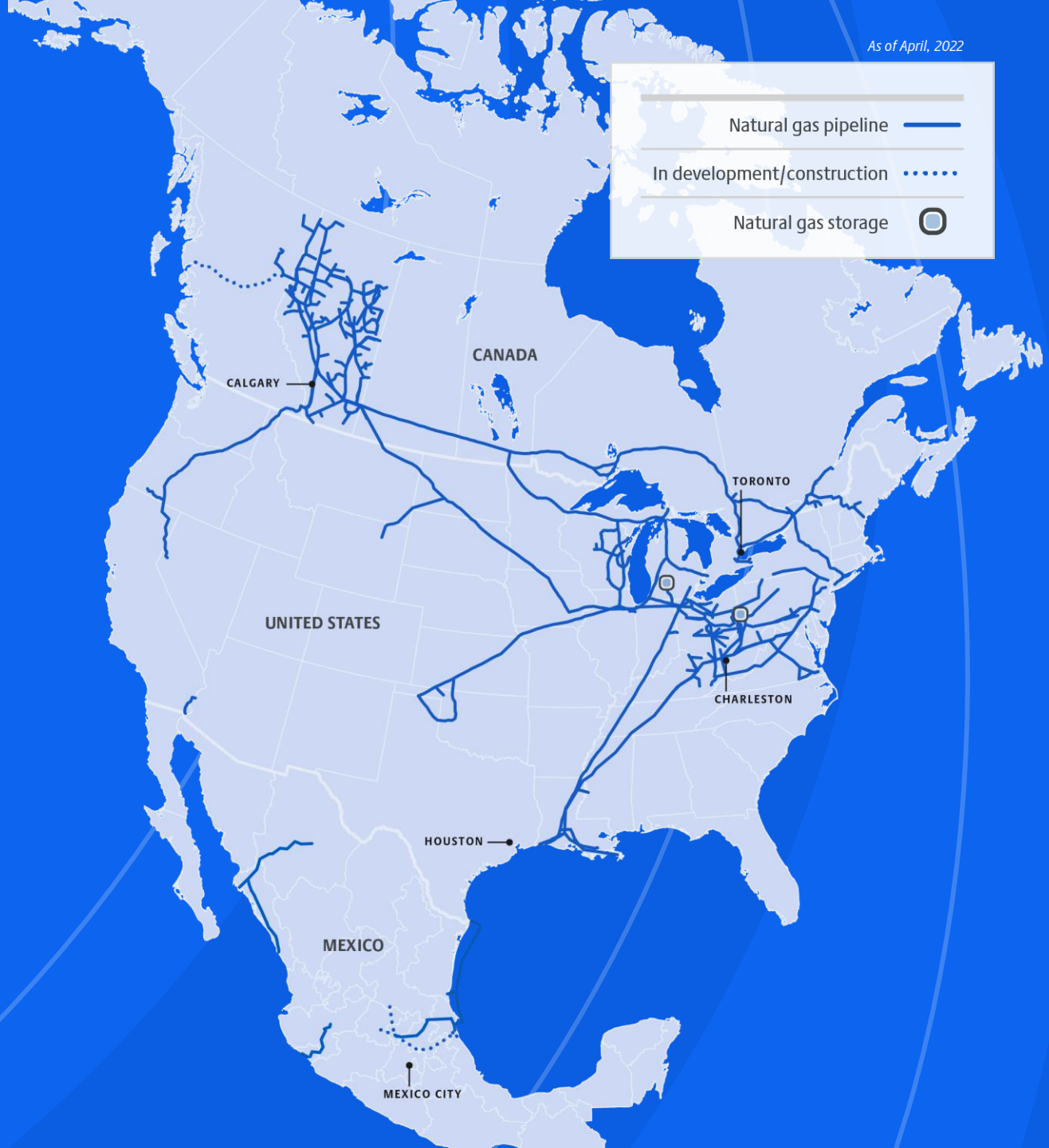
0.92” ↑

***Over historical averages.

Winter Storm Gerri

The bomb cyclone, which immediately followed Winter Storm Finn, brought drastic temperature reductions, disruptions to transportation, and historical demands across our operation and market areas for the first time in 2024.





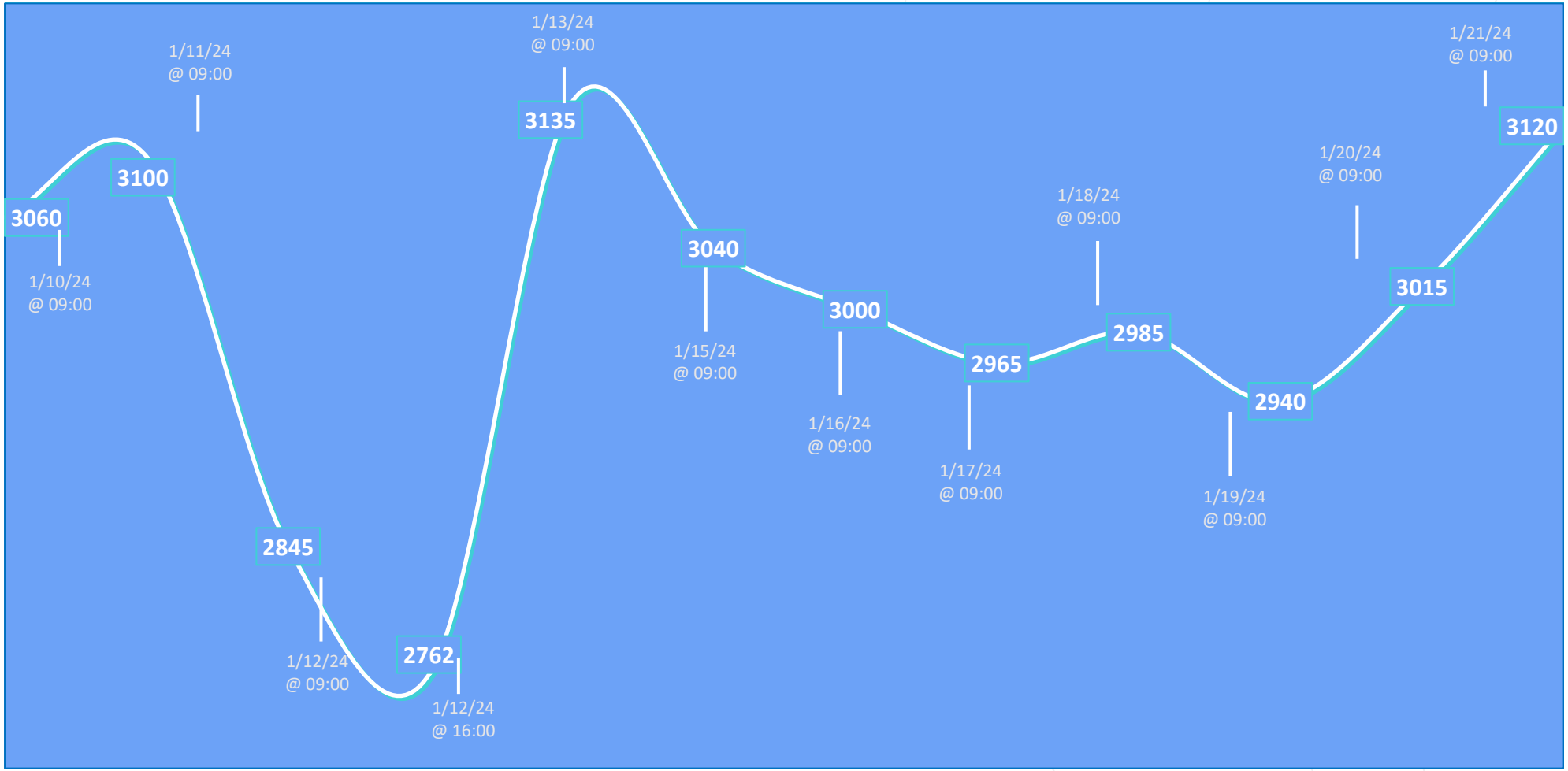
Gas Control & Field Operations Preparation

WEATHER MONITORING

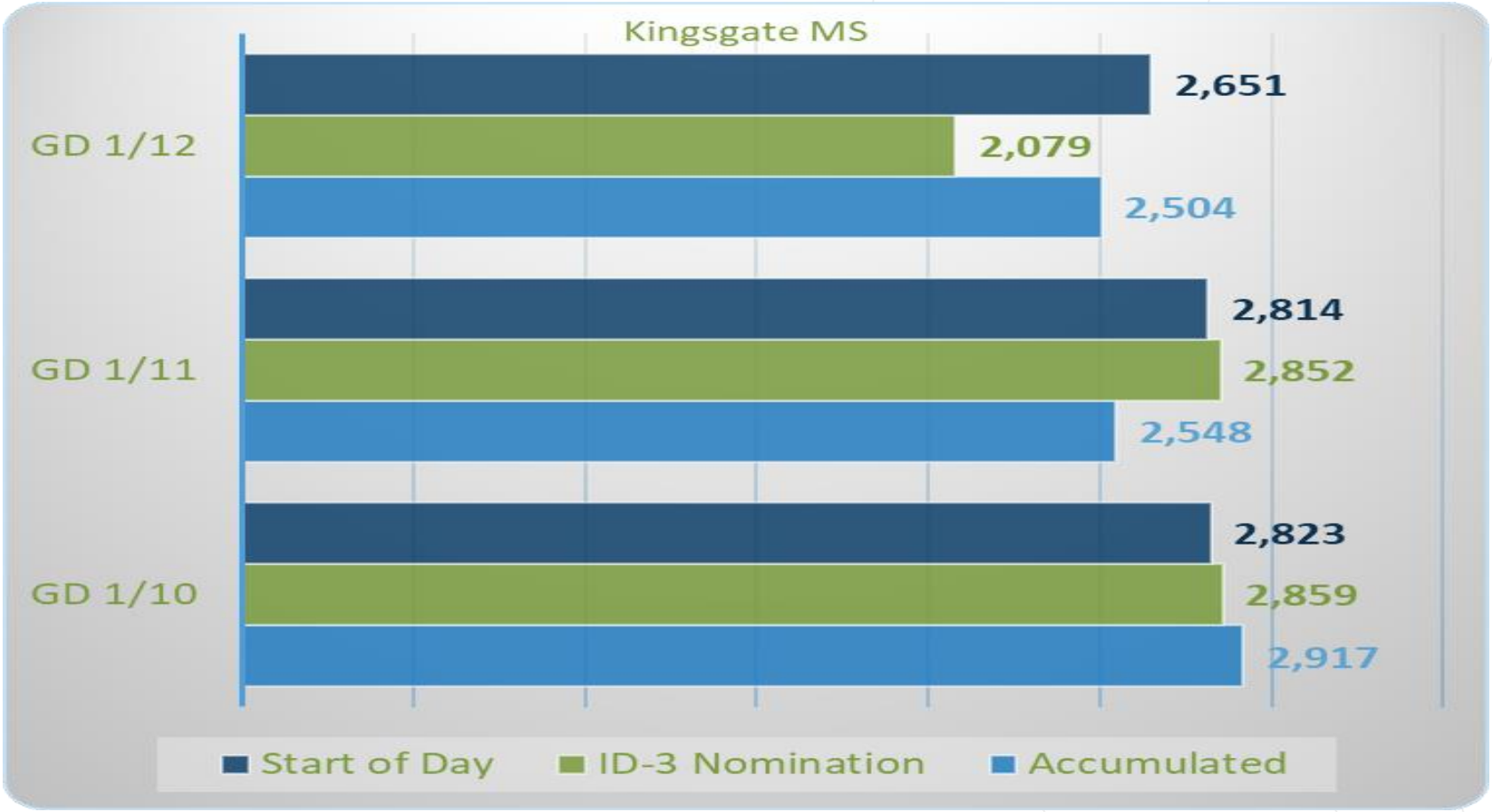
COLD WEATHER CALLS

STAFFING & LOCAL SUPPORT

GTN Linepack



GTN Meter Flows vs. Nominations



Business Development

Tyler Marks
Director, Interconnects
U.S. Natural Gas

An Irreplaceable North American Network

- **Energy demand** will continue to **increase** over time
- **Value of pipe in the ground** is increasing, supported by strong fundamentals, driving an opportunity-rich environment
- **Incumbent advantage** – access to abundant, cost-competitive supply
- **Connectivity to key demand markets** - reliably delivering **~25%** of U.S. average daily demand and **~27%** of U.S. LNG feed gas transported by USNG
- **Energy transformation** will take time and is one of natural gas **AND** renewables

Represents cross-border connection point

Target Rich Environment Across Multiple Platforms

Strong alignment between fundamentals and asset footprint

Pipe in the ground will become more valuable over time

- **LDC energy security**
- **Next-wave LNG**
- **Supply access**
- **Power generation and coal retirements**
- **Low-carbon and decarbonization solutions**

Unlocking Customer Solutions

LNG Solutions

- East Lateral XPress Project | 2025
- Gillis Access Project | 2024
- North Baja XPress Project | 2023

LDC Solutions

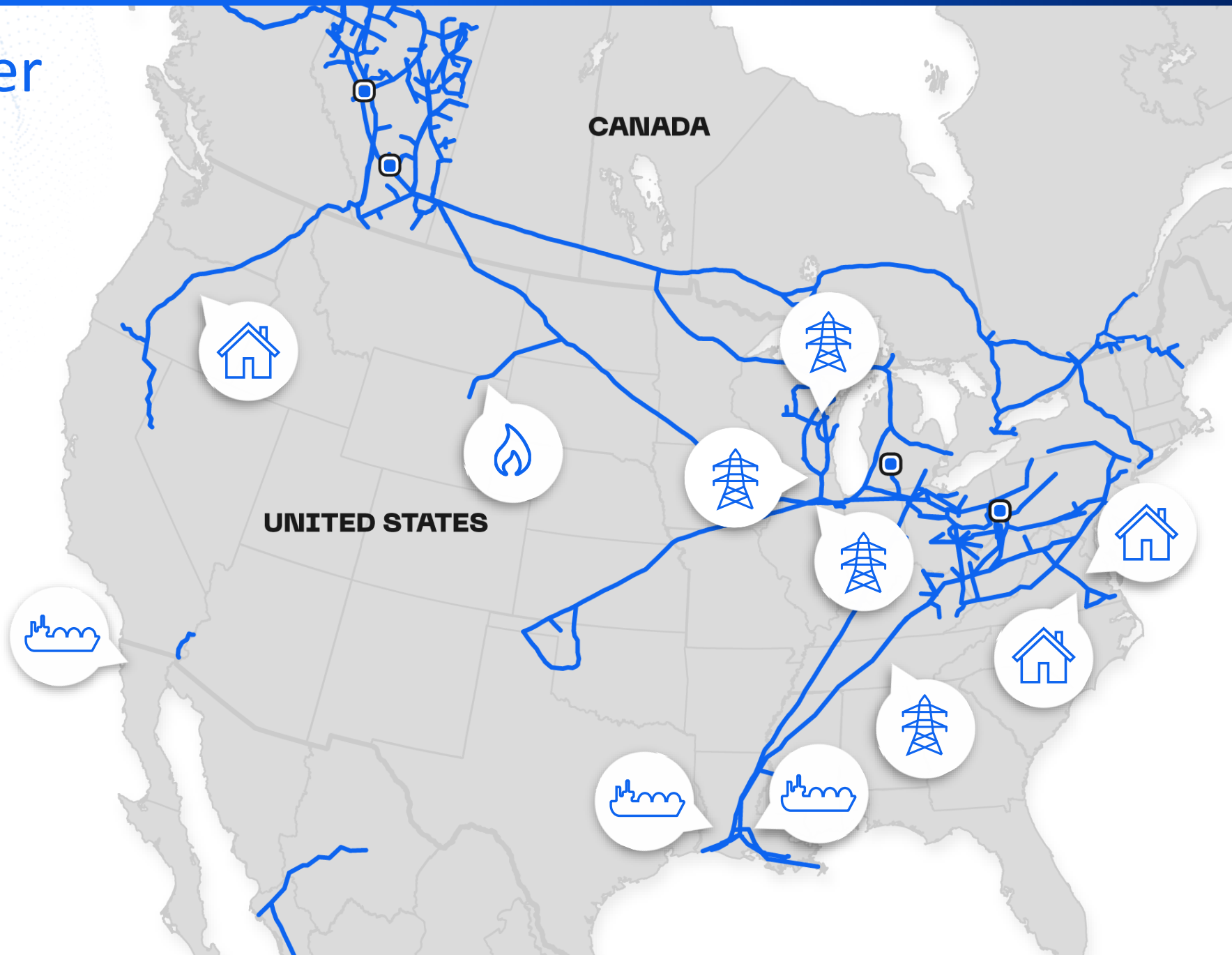
- GTN XPress Project | 2024
- Virginia Electrification Project | 2024
- Virginia Reliability Project | 2025

Power Generation Solutions

- Wisconsin Reliability Project | 2025
- Ventura XPress Project | 2025
- TVA Expansion Project | 2025
- Heartland Project | 2027

Supply Egress

- Bison XPress Project | 2026



Business Development Takeaways

- **Energy demand** will continue to increase
- **Security, reliability** and **affordability** underpin the longevity of natural gas in the energy mix
- **Natural gas** is the "**always on**" fuel, and **critical** to the buildout of renewables

- **Value of pipe in the ground** is increasing
- **Incumbent advantage** with access to **abundant, cost-competitive supply** and **connectivity** to key demand markets
- Superior transport values in comparison to direct competition.

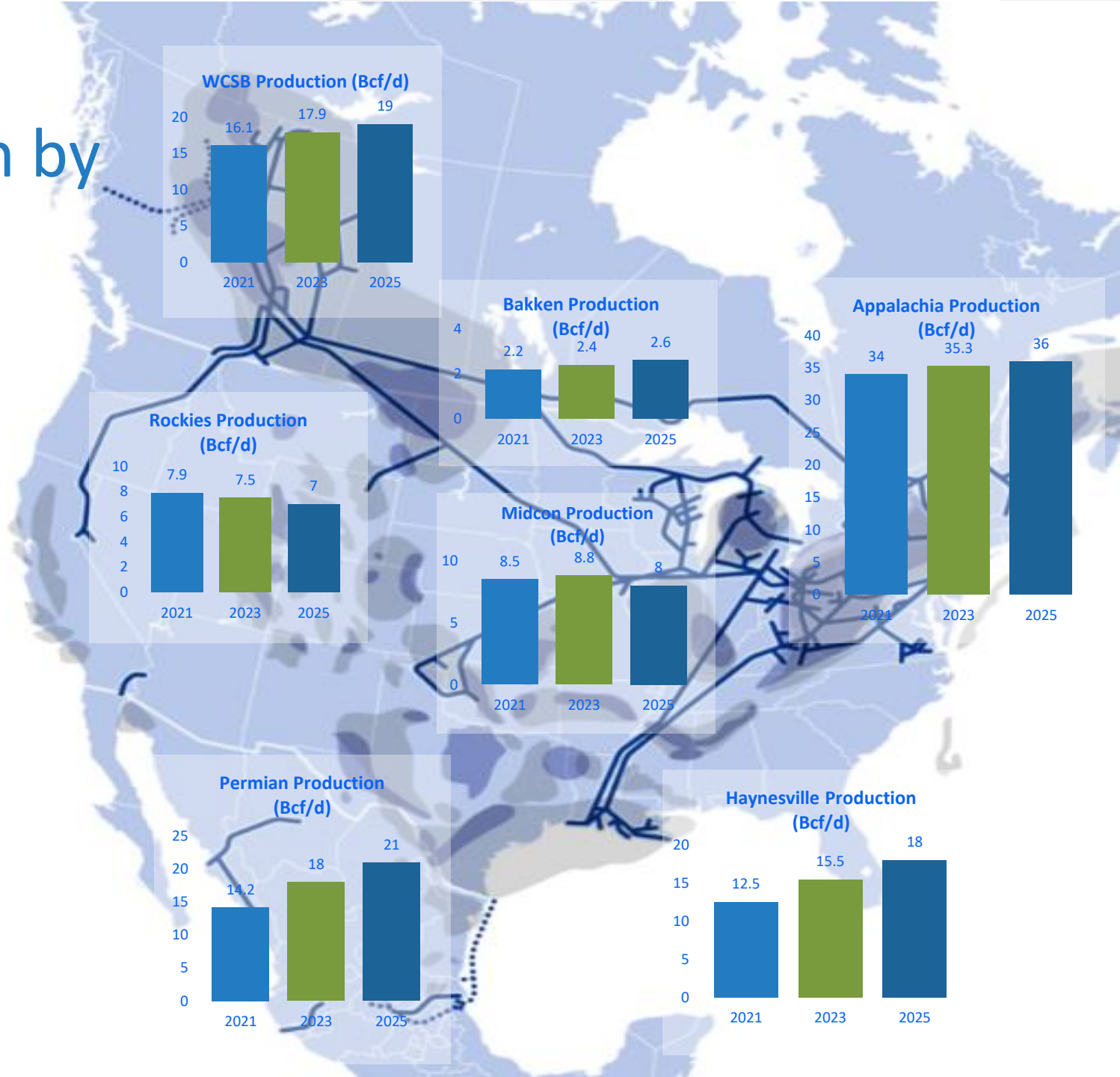
- **TC Energy assets** will continue to **safely** and **reliably deliver the energy people need every day**
- **TC Energy Problem Solvers**
- **We're here to help – Please** reach out to the team with questions or opportunities

Commercial Update

Brandon Stewart
Short Term Marketing
U.S. Natural Gas

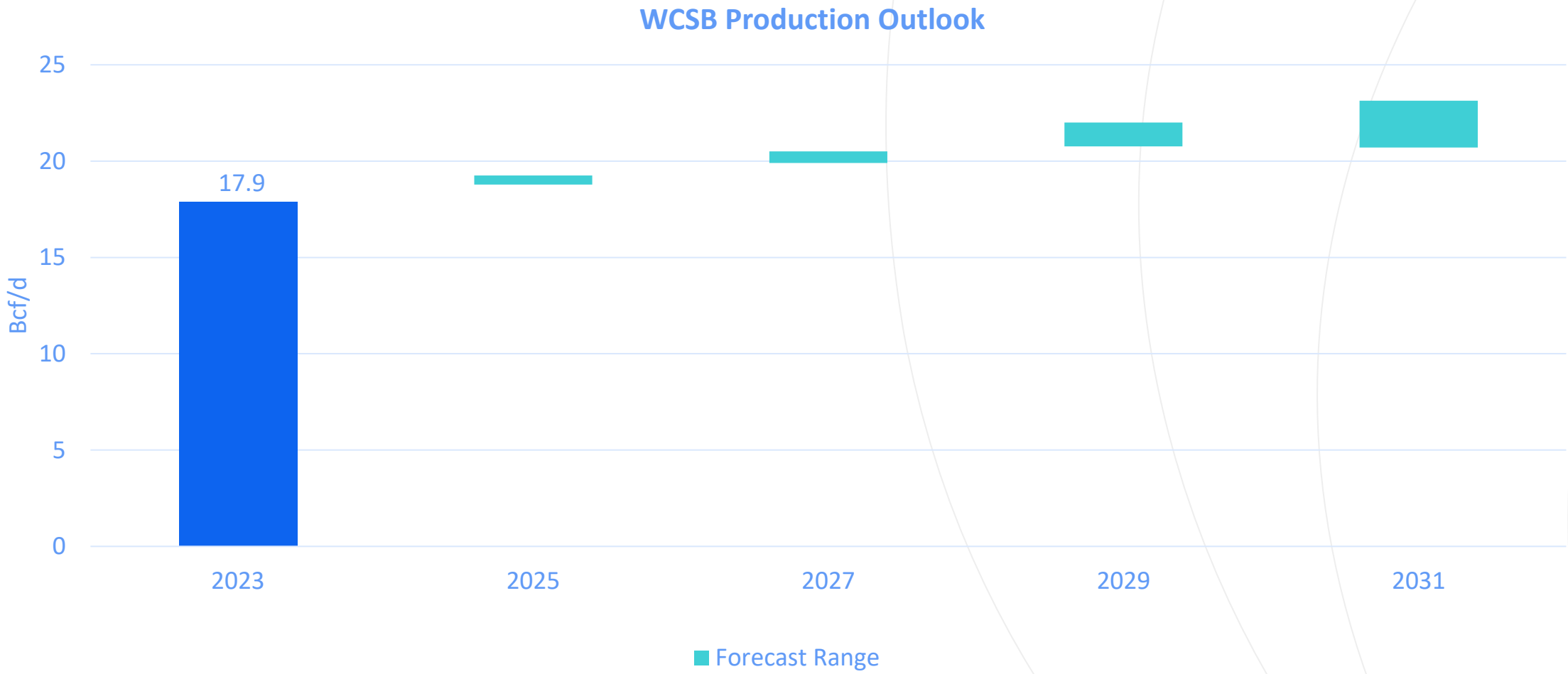
Natural Gas production by major basins

- Continued production growth expected for the WCSB
  - Transport values remain supportive of full utilization on GTN
- Slow declines in the Mid-Continent and Rockies continues to fall



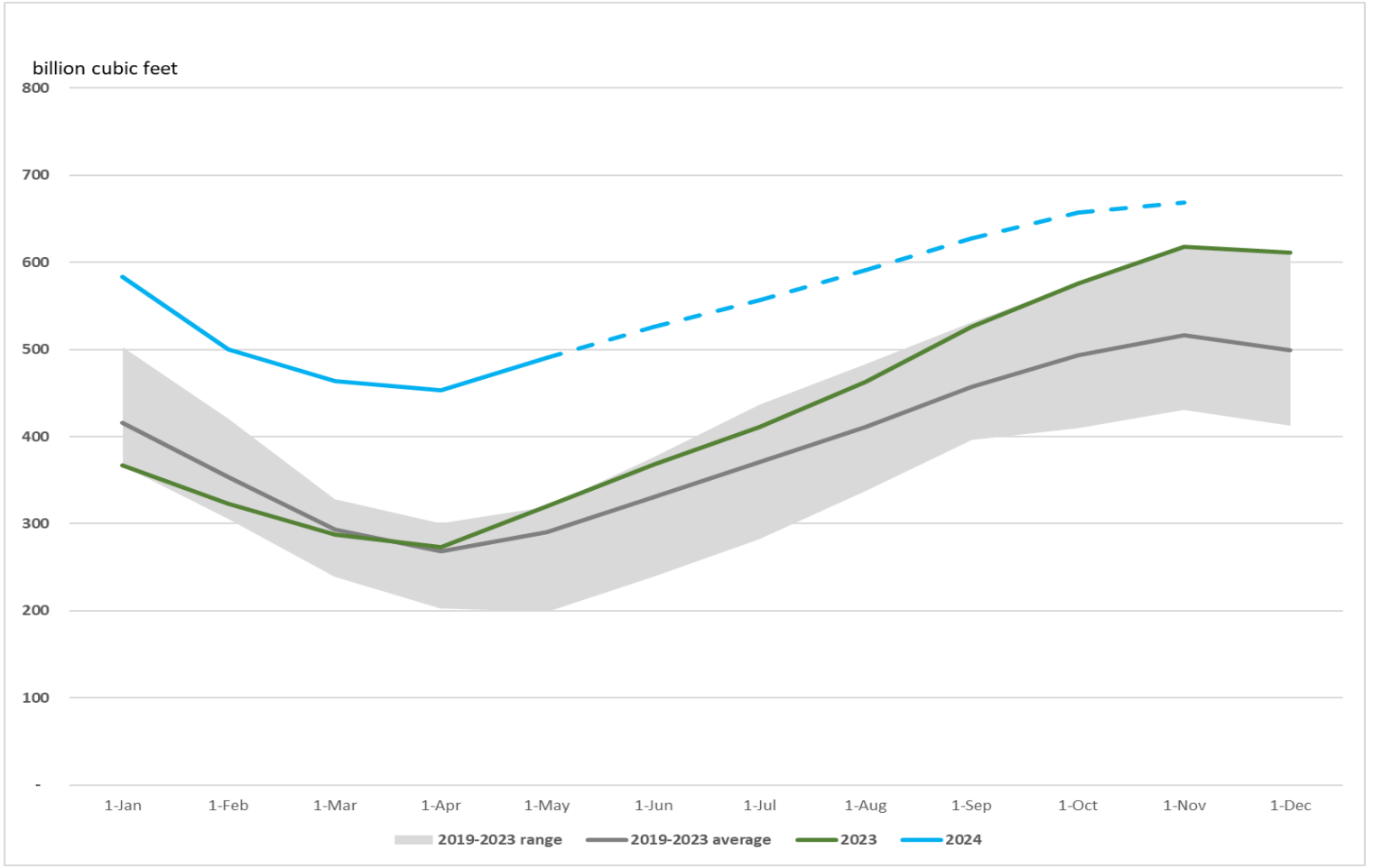
Source: Consensus View and TCGO Internal Forecast

WCSB Production Outlook

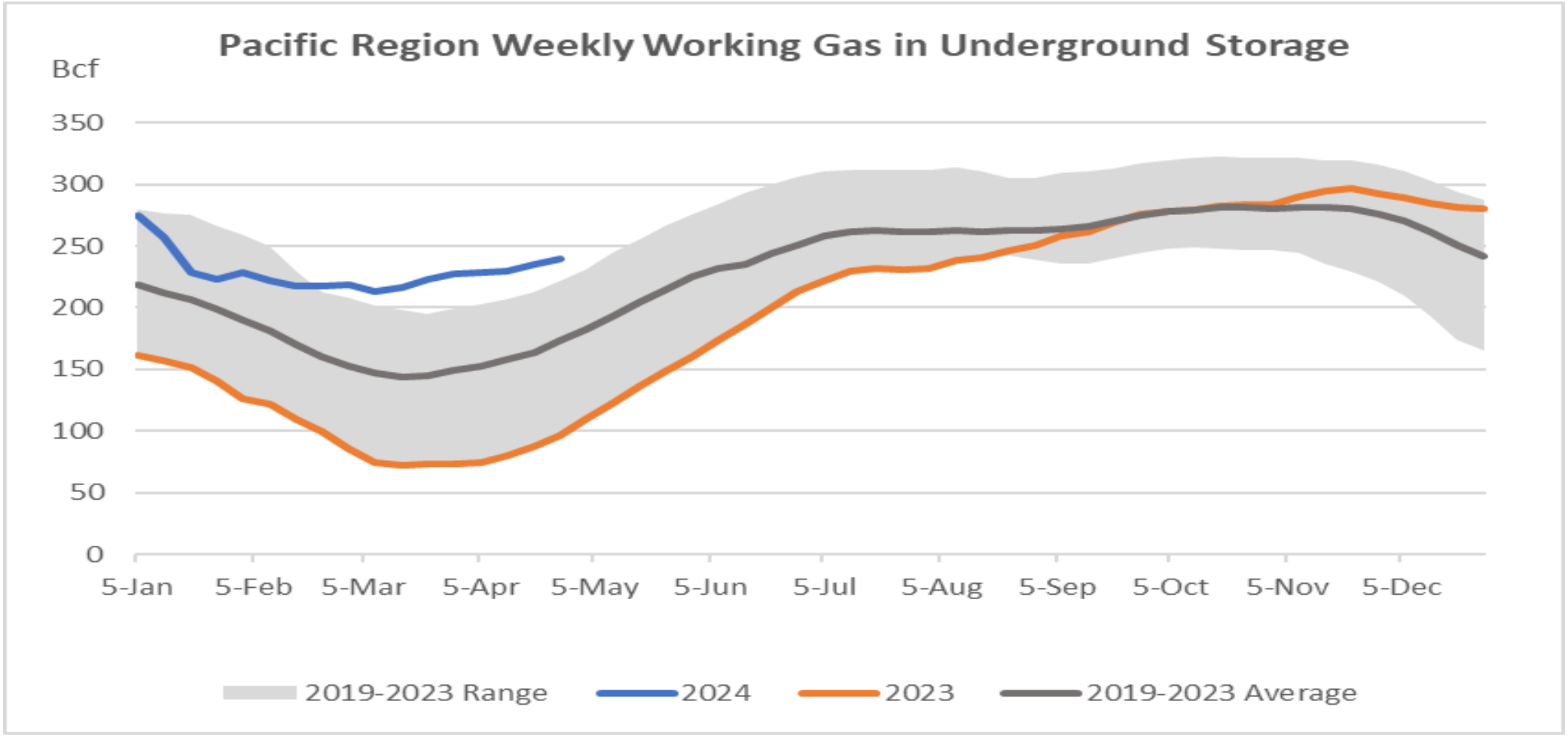


Source: Canada Energy Regulator, Consensus View and TCGO Internal Forecast

WCSB Storage Inventory



Pacific Storage as of May 7, 2024

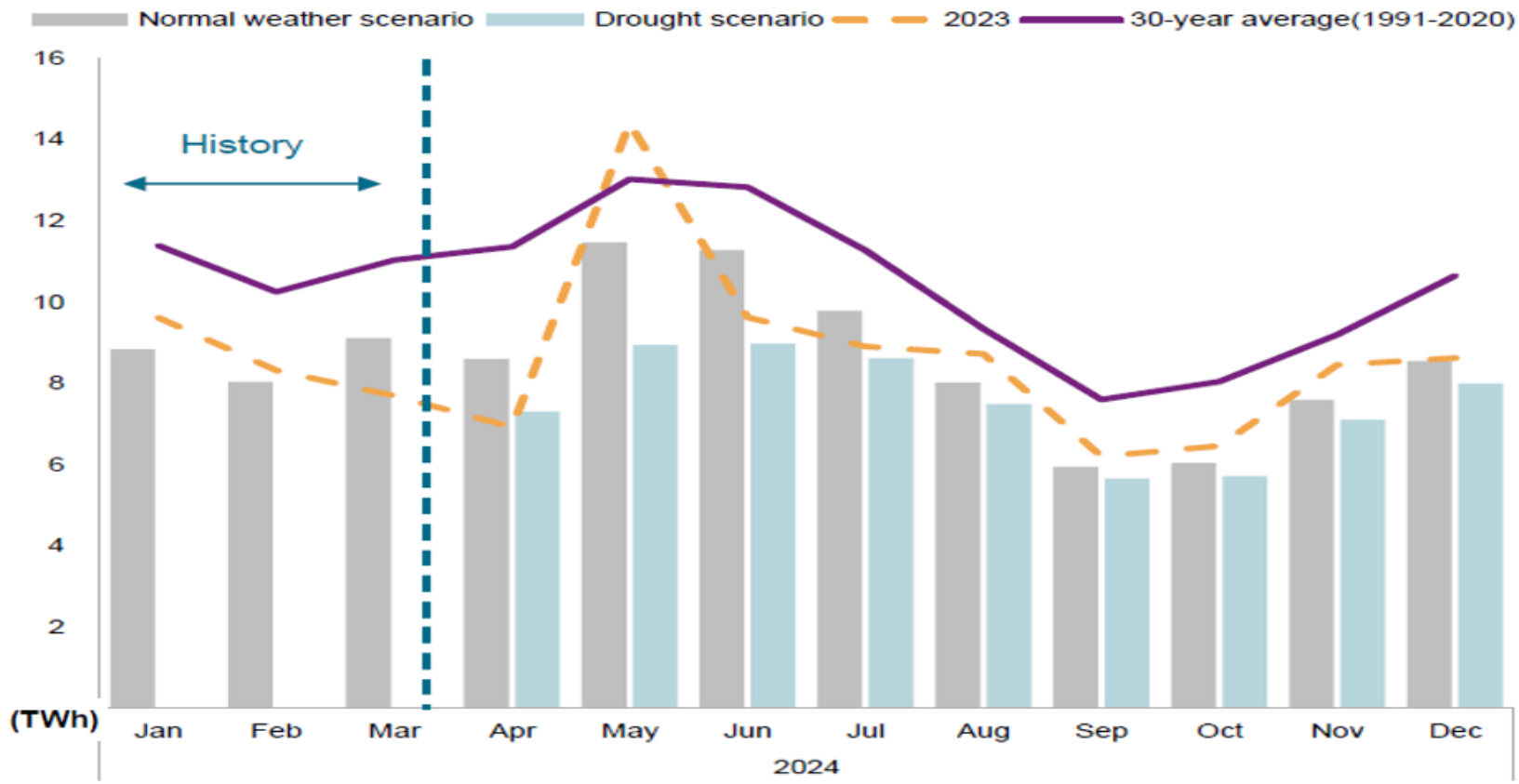


Forward Pricing to Malin

Note: Forward Curve as of 5/8/2024

Source: S&P Global Commodity Insights

Pacific Northwest Hydro Generation

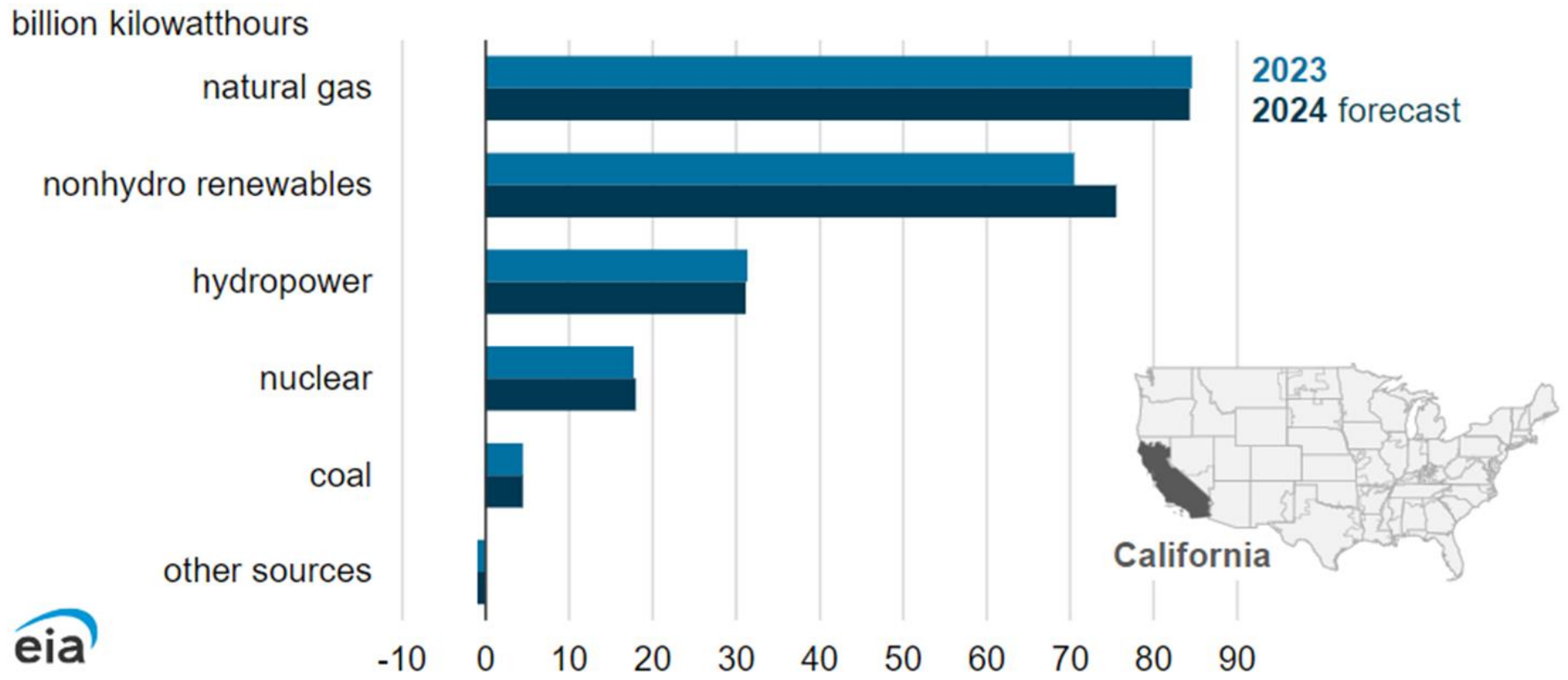


Data compiled April 30, 2024

Note: The Northwest hydropower generation outlook excludes Rockies

Source: S&P Global Commodity Insights

California Region Power Sector Electric Generation (2023-2024)



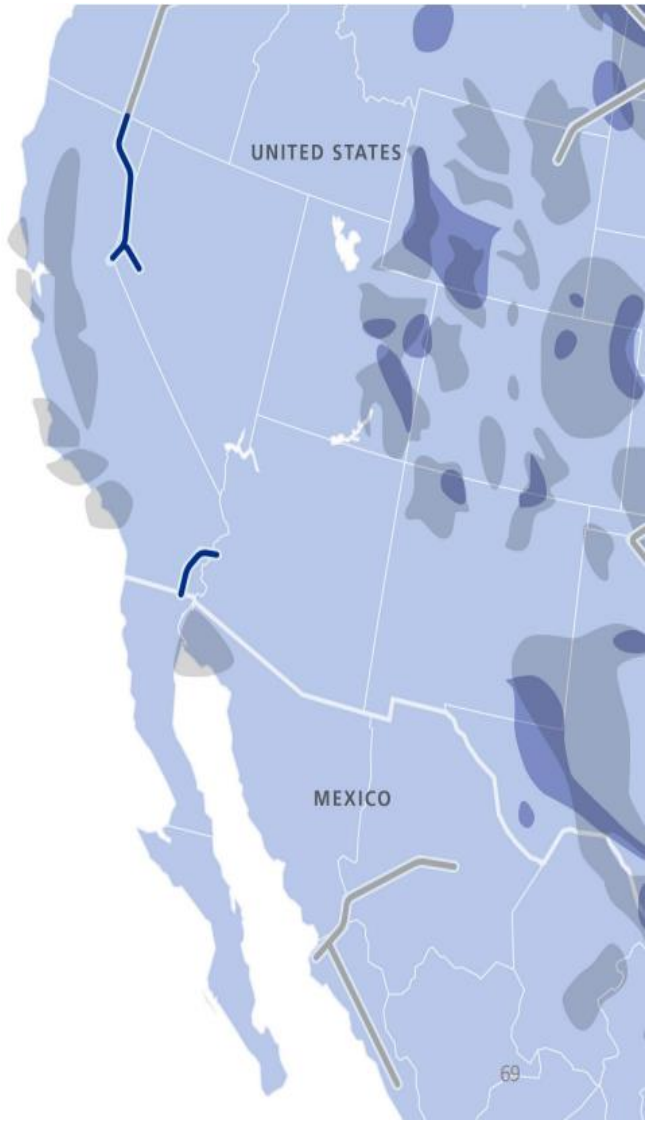
Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* (STEO), April 2024
Data values: U.S. Regional Electricity Generation, Electric Power Sector
Note: Calculations for regional electricity generation mix percentages exclude negative net electricity generation from other sources.

Tuscarora Gas Transmission:

- Interstate pipeline that receives natural gas from its interconnection with Gas Transmission Northwest
- Approximately 305 miles (491 km) in length
- Has a design capacity of 249 million cubic feet per day (MMcf/d)

North Baja Pipeline:

- Bi-directional natural gas pipeline
- Receives natural gas from an interconnection with the El Paso Natural Gas (EPNG) pipeline at Ehrenberg, Arizona, that sources natural gas primarily from the West Texas and Southern Rocky Mountain supply regions
- Approximately 86 miles (138 km) in length
- Design capacity of 997 million cubic feet per day (MMcf/d)



Carbon Capture & Sequestration

Cameron Hercus
Director, Energy Transition, Pilots & Partnerships
Energy Transition

Overview

WHY

- Decarbonization of existing facilities and other industrial sources...
- US Department of Energy (DoE) grants/funding evaluating CCUS, specifically in areas lacking geological data (basalt)
- Federal incentives (45Q) plus Washington State newly introduced cap-and-trade program create economic pathway to decarbonize in the US

RISKS

- Little to no existing/offset data in the US, or worldwide
- November 2024 election ballot vote to repeal Washington State's cap-and-trade program would undermine project economics
- Cap of $9M maximum DoE grant award (80%)

NEXT STEPS:

- Submitted DoE funding application; continue to refine plan/costs and funding alternatives during pre-award phase
- Post successful award, negotiate work scope with DoE… prior to drilling the exploration/appraisal well
- Multiple off-ramps exist to manage cost exposure: HERO well results, in-ability to obtain a cost-share partner November election results and breakdown through DoE negotiation process

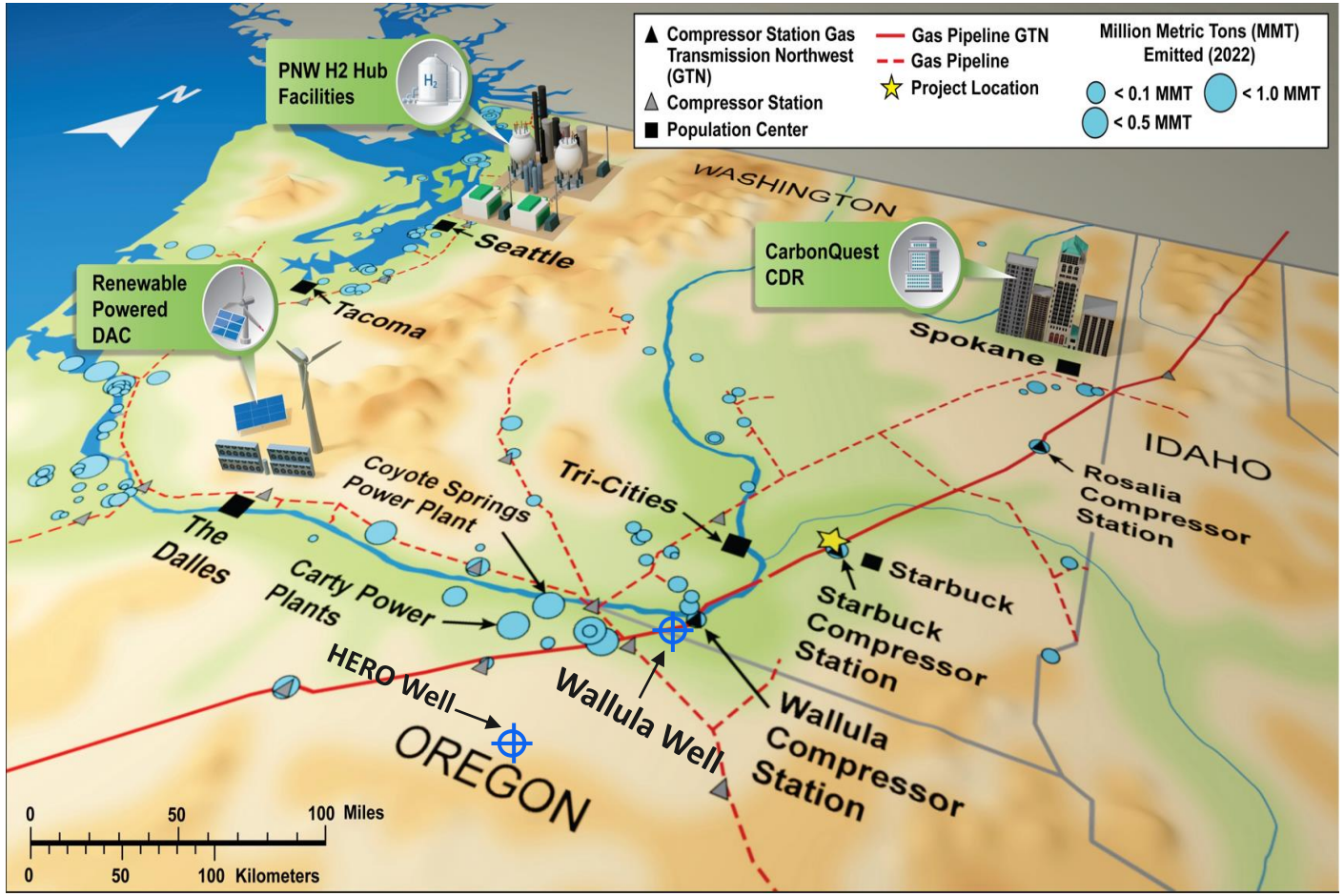
The Opportunity – Project SHINE

Current emissions profile

- Approx. 2.7 MPTA of nearby CO2 local emissions, may also be included for sequestration….
- GTN Compressor Stations located in Washington State: Rosalia, Starbuck, and Wallula

Potential additional emissions

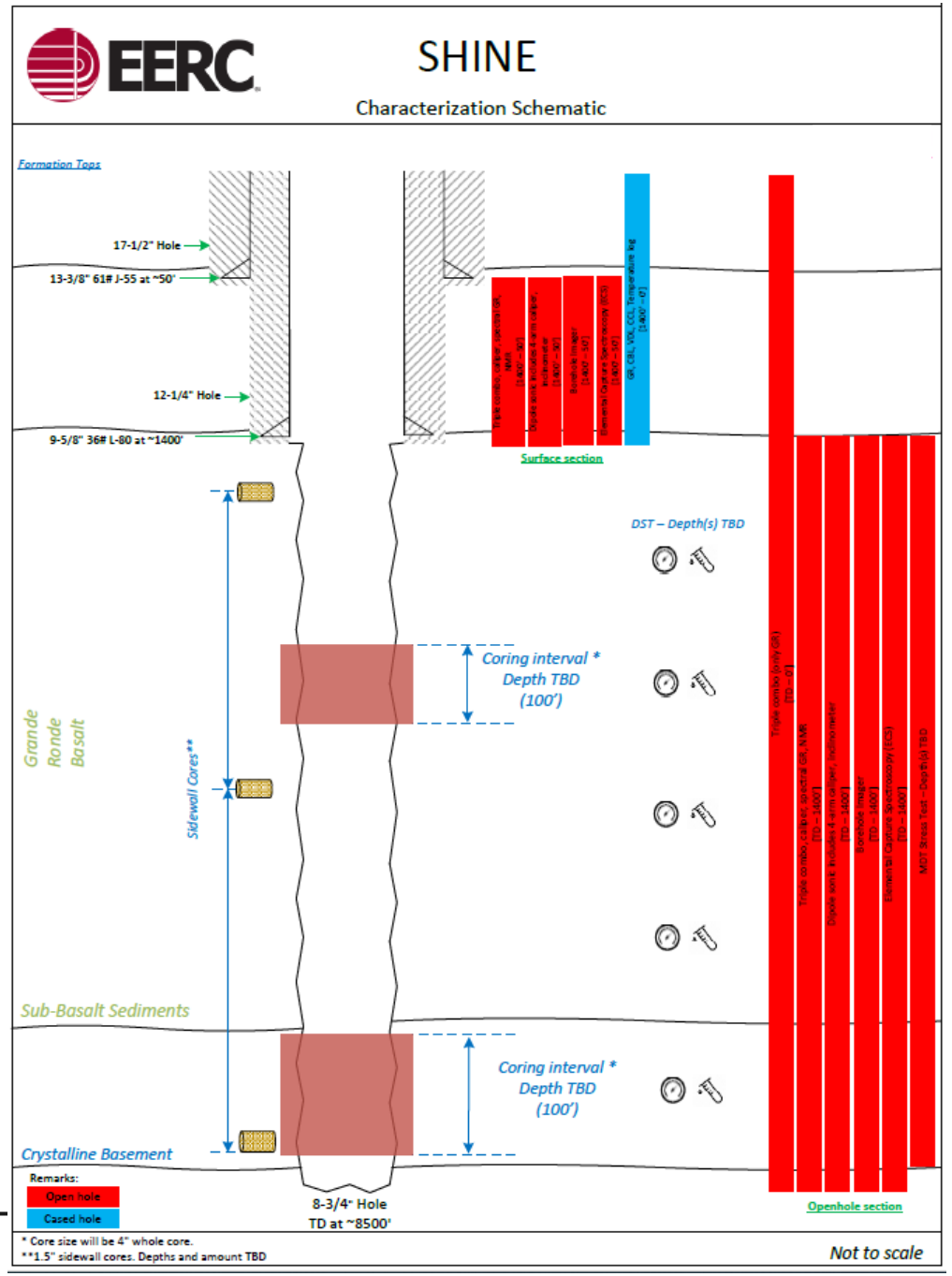
- Carbon Quest (CDR)
- Renewable Powered Direct Air Capture (DAC)



CO_2 emissions generated throughout the region

Technical Considerations…

- Little data available to prove viability of CO2 injection in basalt
  - Single CO2 injection well pilot, “Wallula”, drilled in Washington State
    - Small volume of CO2 injected (10,000 tonnes)
    - Hard rock drilling - minimal drilling progress (~2ft/day)
    - ‘Shallow’ well, ~4000ft
  - Proposed nearby “HERO” well in Oregon State could offer early insights before drilling our test well
    - Within the same basin as SHINE - Columbia River Basalt Group
    - Awarded Phase II proposal, currently in DoE negotiation
    - Pacific Northwest National Laboratory (PNNL) involved
- Proposed SHINE “Starbuck” well
  - Proposed ~8500ft below ground surface
  - Prove stacked storage (basalt flows and sedimentary layers)
  - Identify presence and integrity of sedimentary layer (~8000ft)
  - True exploration well



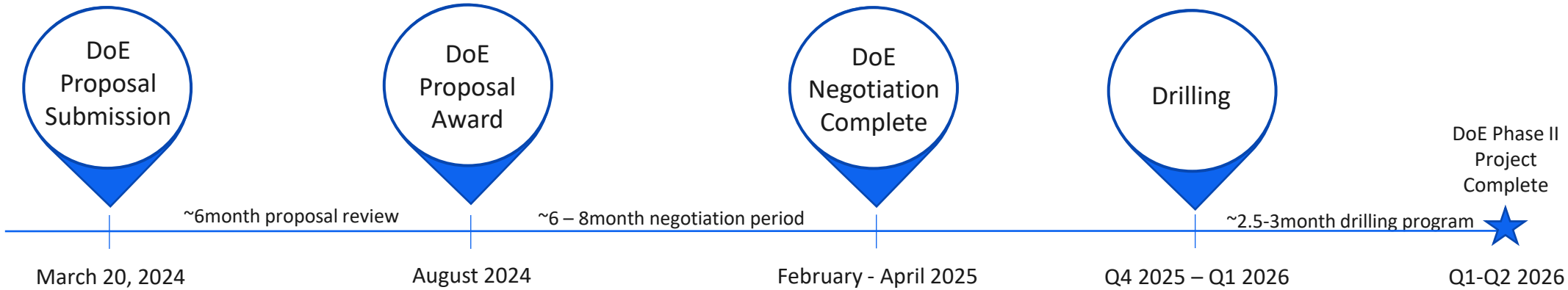
CarbonSAFE Phase II: Storage Complex Feasibility Grant

Feasibility assessments for sites within the US having commercial grade CO2 geological storage complexes in areas lacking previously supported geologic carbon storage projects

- Priority will be given to projects with substantial CO2 storage capacity and CO2 from multiple capture facilities
- 18-24 month project timeline
- Maximum $9M Federal Share (80%), Minimum 20% Cost-share
- Technical and economic feasibility of storing a minimum of 50 million metric tons of anthropogenically-sourced CO2 within 30 years
- Activities may include
  - Drilling
  - Geophysical logging & hydraulic testing
  - Passive and active seismic analysis or other geophysical surveying
  - Groundwater and formation Sampling
  - Modeling of CO2 injection into targeted geological reservoirs
  - Analysis of contractual and regulatory requirements
  - Monitoring requirements and risk assessment
  - Evaluation of community benefits

Timeline & Commitment

DoE Process



Potential Offramps

*binding

QUESTION & ANSWER