



# U.S. Natural Gas West customer meeting

THE BOULDERS RESORT  
CAREFREE, ARIZONA

NOVEMBER 4, 2021



# WELCOME & SAFETY MOMENT

**Kyle Bundy**  
Manager, Marketing West



SAFETY MOMENT



# Heat safety & sun exposure

Causes of heat exhaustion include exposure to high temperatures, particularly when combined with high humidity, and strenuous physical activity. Without prompt treatment, heat exhaustion can lead to heatstroke, a life-threatening condition. Fortunately, heat exhaustion is preventable.

*Source: Mayo Clinic*

## SYMPTOMS

- Cool, moist skin with goose bumps when in the heat
- Heavy sweating
- Faintness
- Dizziness
- Fatigue
- Weak, rapid pulse
- Low blood pressure upon standing
- Muscle cramps
- Nausea
- Headache

## SUN SAFETY

- In general, the FDA recommends that you use broad spectrum sunscreen with an SPF of 15 or higher, even on cloudy days.
- Apply sunscreen liberally to all uncovered skin, especially your nose, ears, neck, hands, feet, and lips.
- Reapply at least every two hours. Apply more often if you're swimming or sweating.
- If you don't have much hair, apply sunscreen to the top of your head or wear a hat.
- No sunscreen completely blocks UV radiation. So other protections are needed, such as protective clothing, sunglasses, and staying in the shade.
- No sunscreen is waterproof.

Source: FDA.gov

2021 WEST CUSTOMER MEETING

## SAFETY MOMENT

# Heat safety & sun exposure



2021 WEST CUSTOMER MEETING

# TC ENERGY UPDATE

James Eckert  
VP, Marketing & Optimization

NOVEMBER 4, 2021



# Forward-looking information

This presentation includes certain forward-looking information, including future -- oriented financial information or financial outlook, which is intended to help current and potential investors understand management's assessment of our future plans and financial outlook, and our future prospects overall. Statements that are forward-looking are based on certain assumptions and on what we know and expect today and generally include words like anticipate, expect, believe, may, will, should, estimate or other similar words.

Forward-looking statements do not guarantee future performance. Actual events and results could be significantly different because of assumptions, risks or uncertainties related to our business or events that happen after the date of this presentation. Our forward-looking information in this presentation includes statements related to future dividend growth and the future growth of our core businesses.

Our forward-looking information is based on certain key assumptions and is subject to risks and uncertainties, including but not limited to: Our ability to successfully implement our strategic priorities and whether they will yield the expected benefits; the operating performance of our pipeline and energy assets; amount of capacity sold and rates achieved in our pipeline businesses; the availability and price of energy commodities; the amount of capacity payments and revenues from our energy business; regulatory decisions and outcomes, including those related to recent FERC policy changes, outcomes of legal proceedings, including arbitration and insurance claims; performance and credit risk of our counterparties; changes in market commodity prices; changes in the regulatory environment; changes in the political environment; changes in environmental and other laws and regulations; competitive factors in the pipeline and energy sectors; construction and completion of capital projects; costs for labour, equipment and materials; access to capital markets, including the economic benefit of asset drop downs to TC PipeLines, LP; interest, tax and

foreign exchange rates, including the impact of U.S. Tax Reform; weather cyber security; technological developments; and economic conditions in North America as well as globally. You can read more about these risks and others in our April 26, 2018 Quarterly Report to Shareholders and 2017 Annual Report filed with Canadian securities regulators and the SEC and available at [TCEnergy.com](https://www.tcenergy.com).

As actual results could vary significantly from the forward-looking information, you should not put undue reliance on forward-looking information and should not use future-oriented information or financial outlooks for anything other than their intended purpose. We do not update our forward-looking statements due to new information or future events, unless we are required to by law.

This presentation contains reference to certain financial measures (non-GAAP measures) that do not have any standardized meaning as prescribed by U.S. generally accepted accounting principles (GAAP) and therefore may not be comparable to similar measures presented by other entities. These non-GAAP measures may include Comparable Earnings, Comparable Earnings per Common Share, Comparable Earnings Before Interest, Taxes, Depreciation and Amortization (Comparable EBITDA), Funds Generated from Operations, Comparable Funds Generated from Operations, Comparable Distributable Cash Flow (DCF) and Comparable DCF per Common Share. Reconciliations to the most closely related GAAP measures are included in this presentation and in our April 26, 2018, Quarterly Report to Shareholders filed with Canadian securities regulators and the SEC and available at [TCEnergy.com](https://www.tcenergy.com).

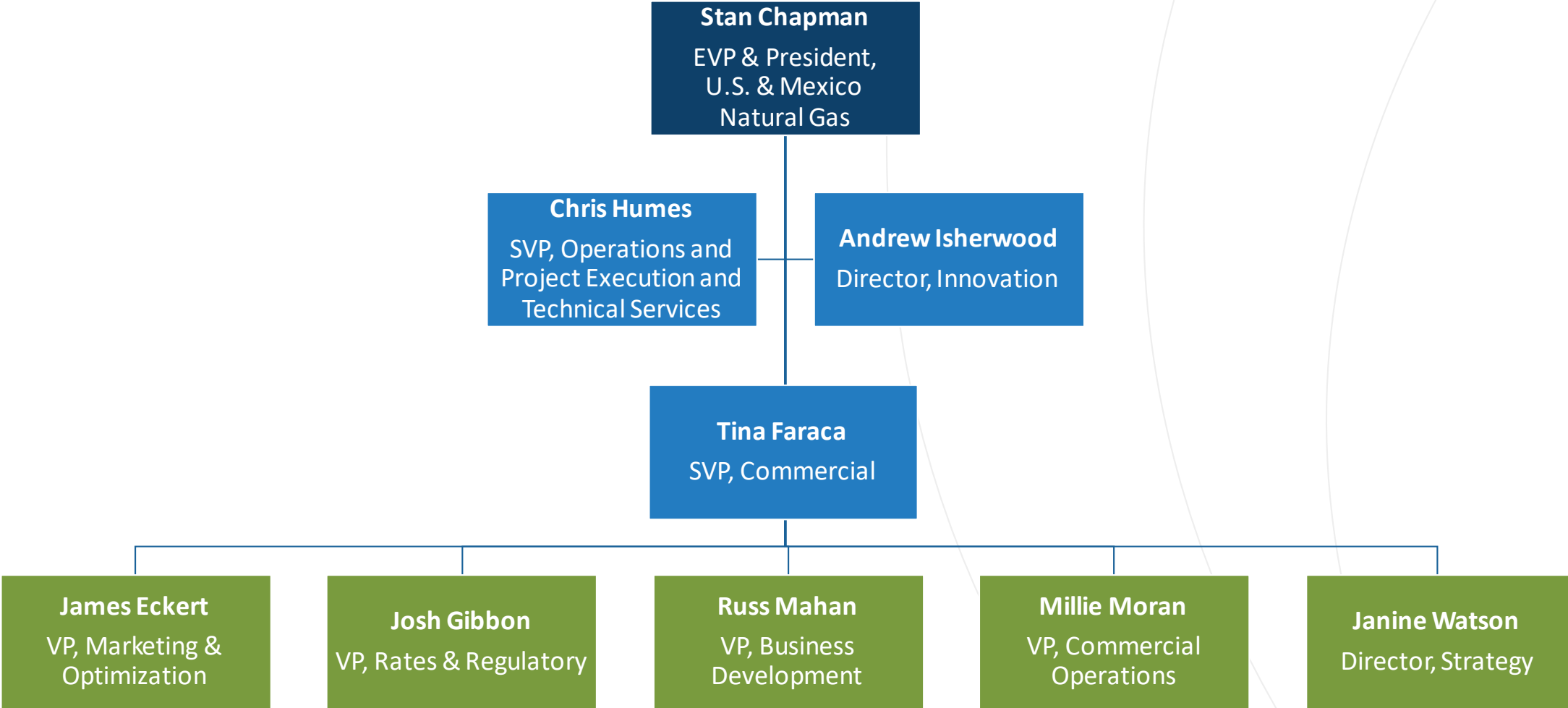


# Morning agenda

1. TC Energy update
2. Innovation and sustainability at TC Energy
3. Operations update
4. Regulatory update
5. Business Development update
6. Commercial fundamentals
7. Q&A
8. Afternoon & evening activities



# TC Energy – USNG Leadership Team





# Energy transition will create opportunities

We recognize the headwinds facing our industry, but we know that fundamentals and reliability still matter, and regulatory change can bring opportunity

- 
- Utilization/throughput on our pipelines continues to set records year-over-year and quarter-over-quarter

Value of “pipe in the ground” has never been higher, as greenfield projects have fallen out of favor and US natural gas remains an important part of the global fuel mix, now and in the future

- 
- We will leverage our footprint to serve growing demand primarily through in-corridor projects
  - Opportunities to pursue bolt-on acquisitions may accelerate, as we explore new ways to optimize our footprint

Our approach to energy transition will be measured and targeted – a lower-carbon world will take time and require reliable, affordable natural gas

- 
- We believe that the future will be Gas AND Renewables
  - Energy transition should present opportunities
  - Well-positioned to generate economically viable ESG projects

2021 WEST CUSTOMER MEETING

# INNOVATION AND SUSTAINABILITY AT TC ENERGY

ENERGY FOR OUR FUTURE

Andrew Isherwood  
Director, Innovation

NOVEMBER 4, 2021



# Adding innovation to our values



“

Failure is an important part of innovation. It's what allows us to learn, and from it, we iterate, adapt and generate new ideas. Success is equally important, and while it can lead to change which may be scary, our success is what will drive us forward, enabling us to deliver the energy of the future

”

FRANCOIS POIRIER, PRESIDENT AND CEO



# Innovation in action to serve our customers

## DELIVERING MORE VALUE TO OUR CUSTOMERS

- Finding more pipeline capacity through machine learning
- Machine learning for records to reduce maintenance costs
- Relationship management tools to streamline customer experience



## REDUCING OUTAGES AND INCREASING RELIABILITY

- Predictive maintenance
- Leveraging advanced analytics
- Using pipe crawlers to perform ILLs on unpiggable lines



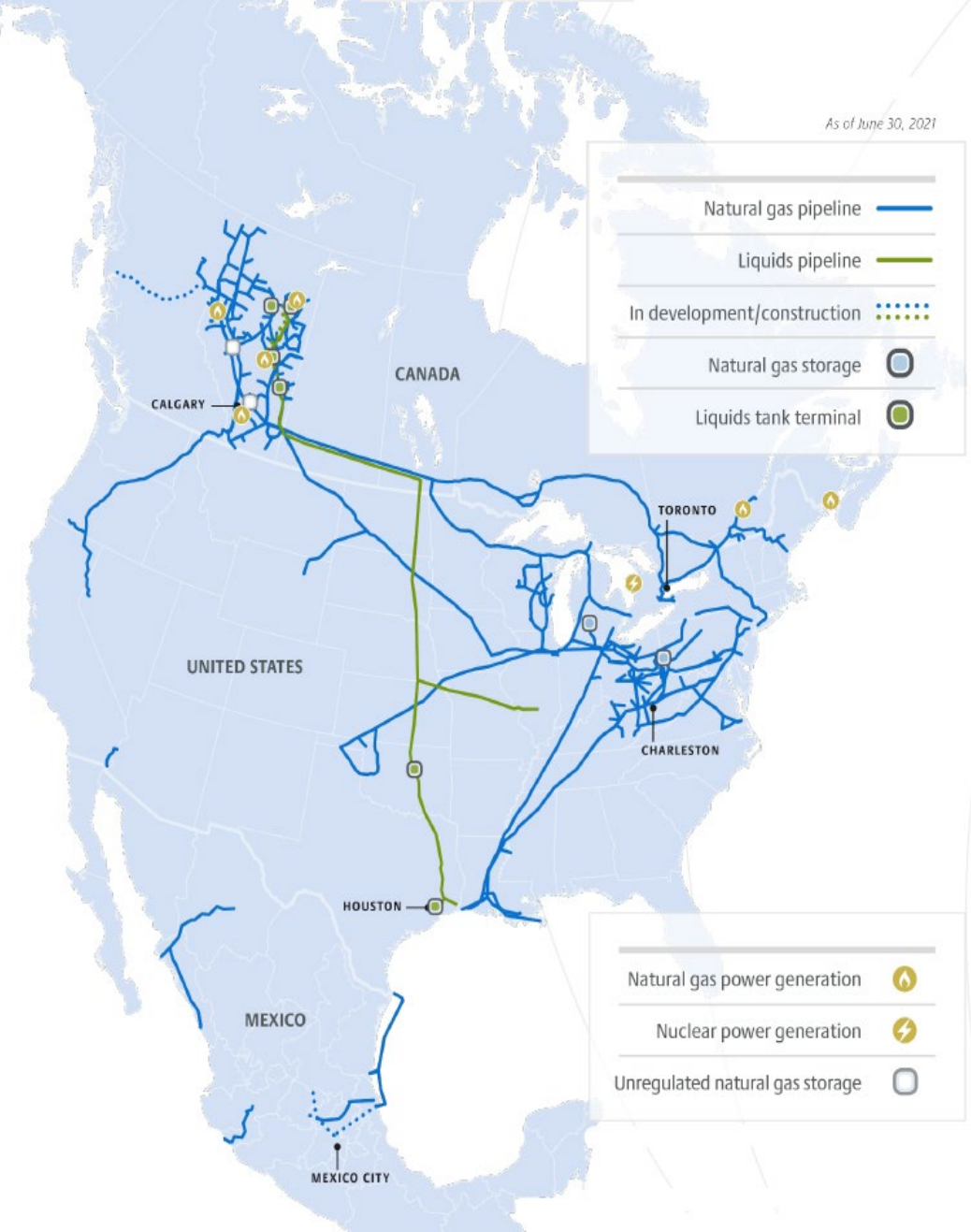
# Our vision

To be the premier energy infrastructure company in North America, now and in the future.



This vision is an explicit acknowledgment that we are in an energy transition. My belief is this will present significant new opportunities for our company.

-- François Poirier



# Our goals



## 30% by 2030

Reduce GHG emissions intensity from our operations 30% by 2030.

Emission intensity is calculated, in aggregate, as tons of CO<sub>2</sub> equivalent emissions per unit of energy that we transport or produce for our customers annually. Progress is measured relative to a 2019 baseline year (adjusted for material changes in our asset portfolio).



## Net Zero by 2050

Position to achieve zero emissions from our operations, on a net basis, by 2050.

Net zero means achieving an overall balance where our operations have eliminated Scope 1 and 2 GHG emissions on a net basis by 2050. This means we have removed or offset emissions through abatement activities and/or the use of carbon credits.



# Our roadmap to 2050 FIVE FOCUS AREAS



## 1. Modernize our existing systems and assets

Reduce fugitive methane emissions, leaks, venting and flaring associated with regular operations and maintenance, and improve overall operational efficiency.



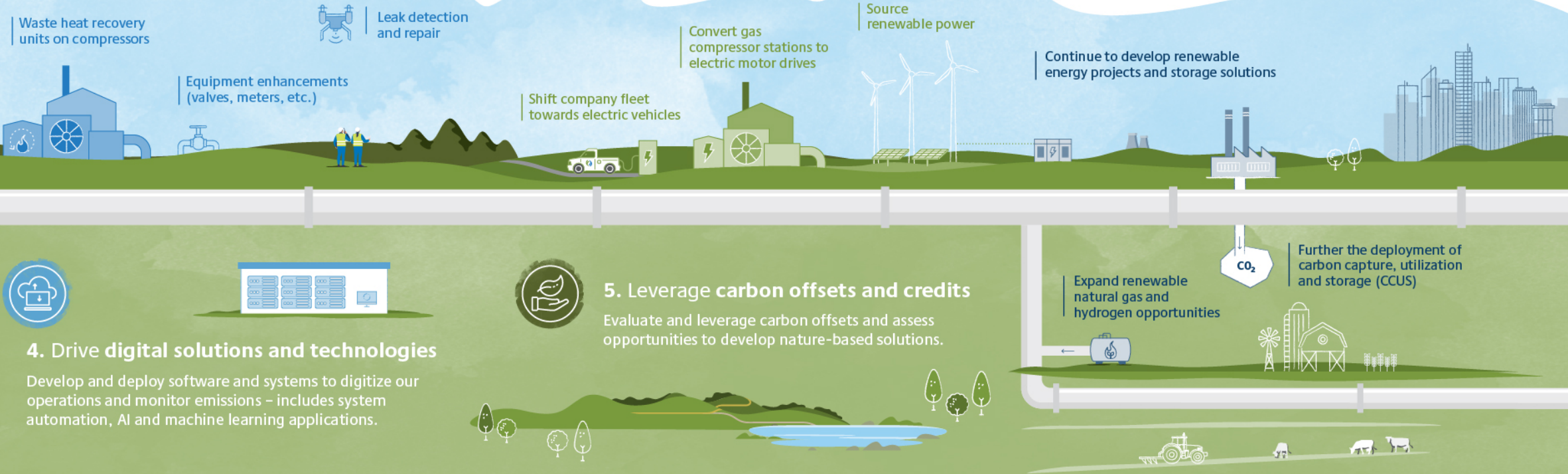
## 2. Decarbonize our energy consumption

Seek low carbon energy sources to support our operations.



## 3. Invest in low-carbon energy and infrastructure

Develop a broad range of new low-carbon energy solutions for today and for the future.



## 4. Drive digital solutions and technologies

Develop and deploy software and systems to digitize our operations and monitor emissions – includes system automation, AI and machine learning applications.



## 5. Leverage carbon offsets and credits

Evaluate and leverage carbon offsets and assess opportunities to develop nature-based solutions.

Expand renewable natural gas and hydrogen opportunities

Further the deployment of carbon capture, utilization and storage (CCUS)



# Our background

BUILDING ON A FOUNDATION OF SUCCESS

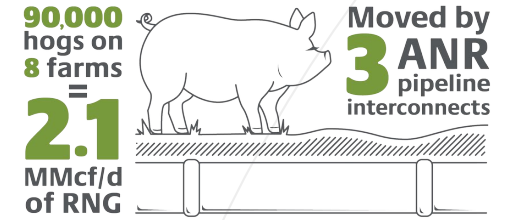
15+ YEARS EXPERIENCE WITH RENEWABLES

Including wind, solar, hydro and nuclear power generation

## PARTNERING WITH BIOFUEL PRODUCERS SINCE 2014

Today, we transport renewable natural gas from 12 interconnects across our footprint. In 2021 we doubled the RNG in our U.S. Gas pipeline system, from 2Bcf to 4Bcf per year, with a goal to increase this to 30Bcf.

### TC Energy's Missouri renewable natural gas operations by the numbers



## ELECTRIFICATION OF OUR NATURAL GAS PIPELINES

10% of our Canadian compressors and 5% of our U.S. Compressors have electric motor drives.

The Virginia Electrification Project (VEP) will reduce greenhouse gas emissions by **27,237** tonnes/year (tpy), which is comparable to:

EPA: Greenhouse Gas Equivalencies Calculator.



## ACTIVE MEMBER OF SEVERAL KEY CLIMATE INITIATIVES







# Recent developments across our footprint



## RENEWABLE POWER DEVELOPMENT

*“TC Energy announces issuance of renewable energy RFI”*



## CLEAN ENERGY TECHNOLOGY

*“Developing a proposed world-class pumped storage project”*



## CORPORATE PARTNERSHIPS

*“Nikola and TC Energy Sign Joint Development Agreement for Large-Scale Clean Hydrogen Hubs”*



## CARBON CAPTURE AND SEQUESTRATION

*“Creating a world-scale carbon transportation and sequestration solution: the Alberta Carbon Grid”*



# OPERATIONS UPDATE

Paul Oliver  
Manager, Gas Control West

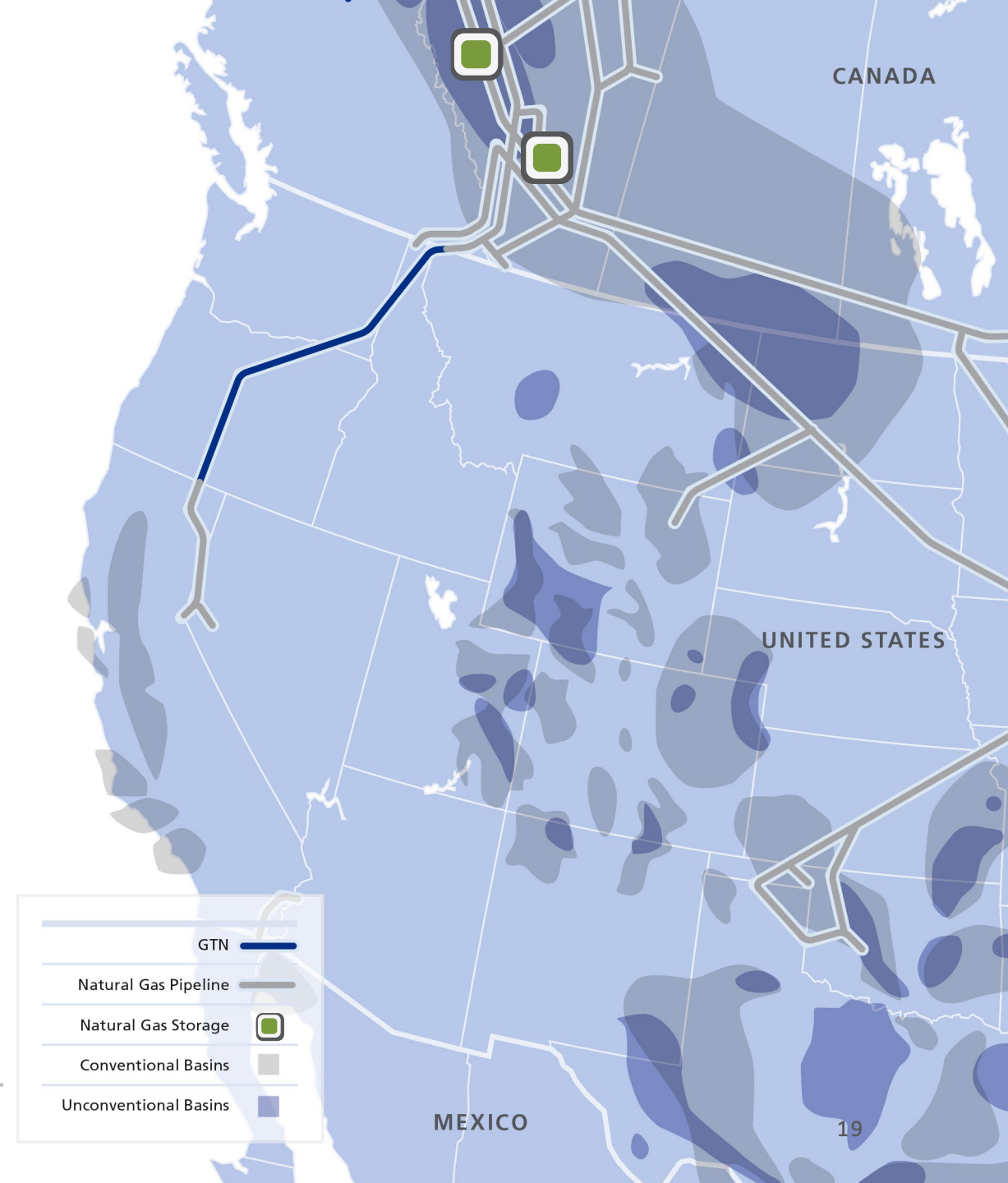


# Gas Transmission Northwest

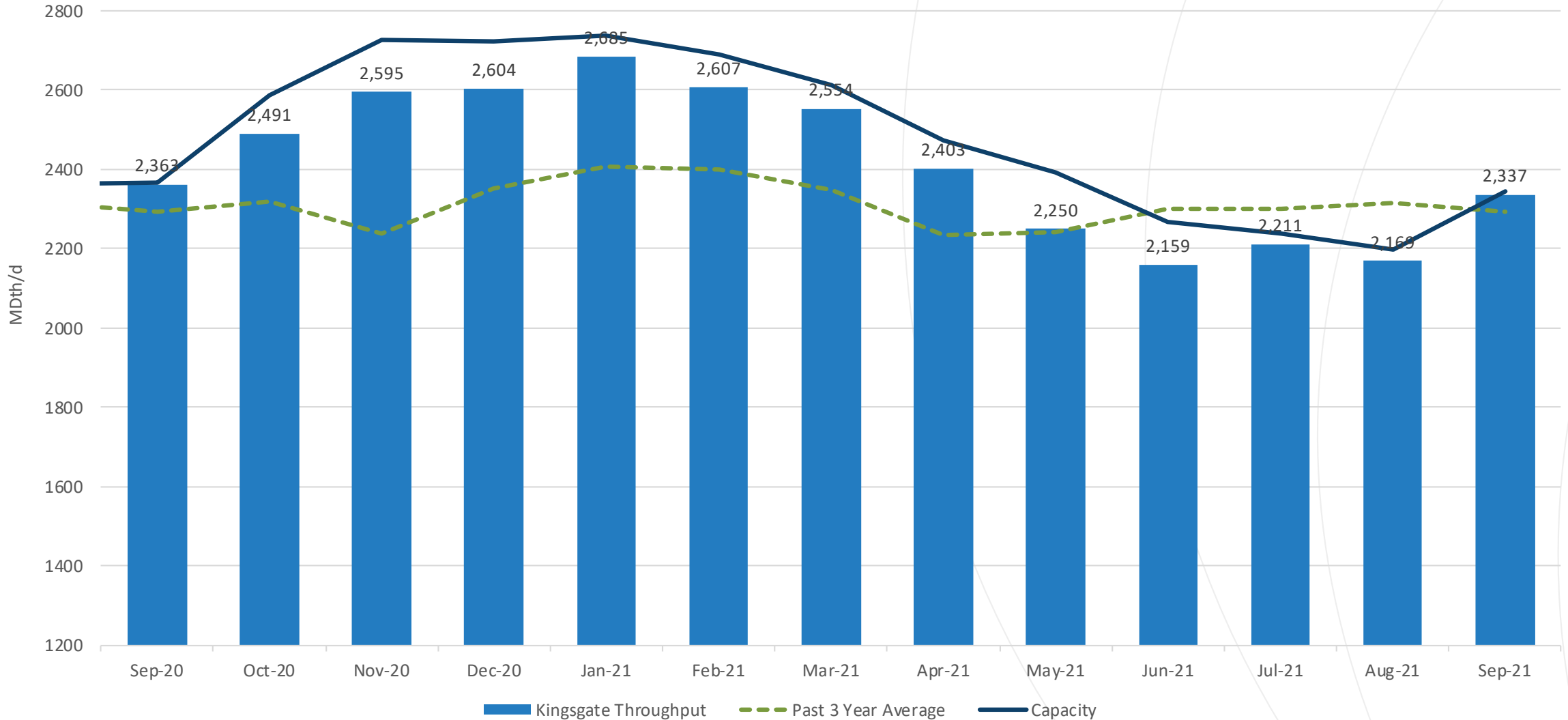
## 2021 Operational update

Peak day: Jan. 19, 2021

Physical deliveries: 2.77 MMDth

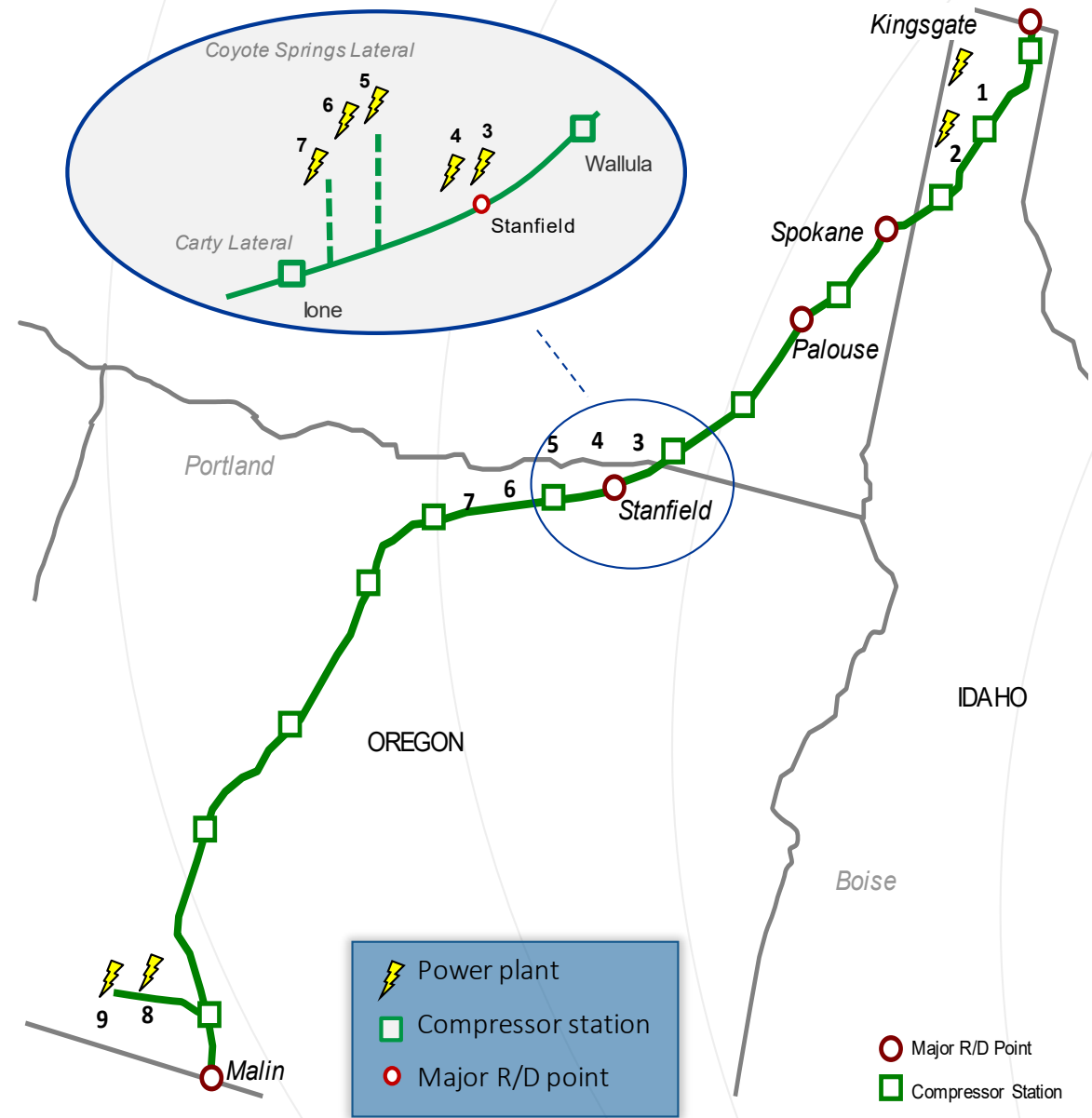


# GTN Average Day System Throughput

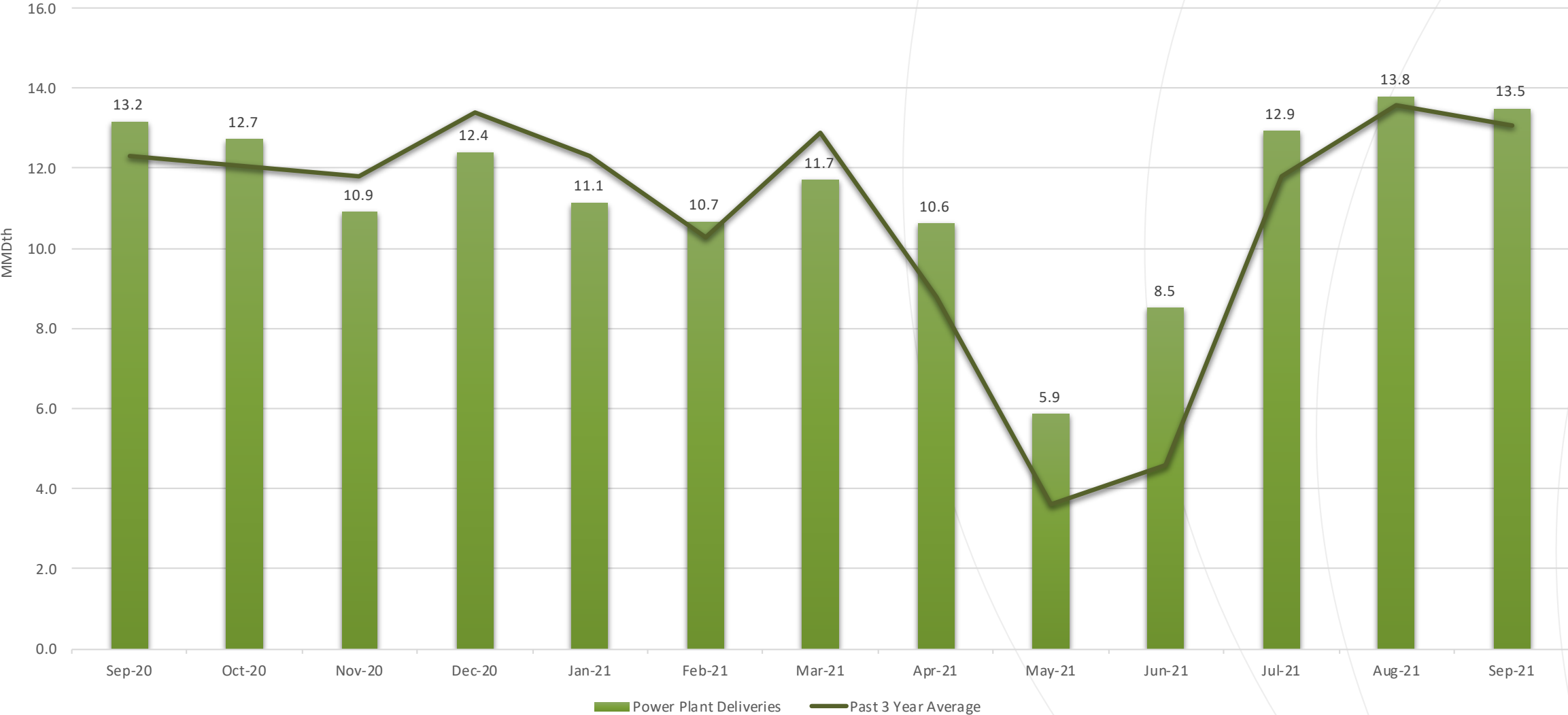


# GTN System Power Plants

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



# GTN Monthly Power Loads



# 2021 Highlights

GTN had a robust reliability program during 2021

- Malin B-line meter replacement
- Unit suction piping replacement at Station 9
- B-line make piggable project
  - Stations 3 and 4
- Automation upgrade and series to parallel piping mods
  - Stations 3, 5, 7 and 14
- Fuel control replacement
  - Stations 5 and 7
- Control system upgrade
  - Stations 3, 4, 5, 6, 7, 10, 12 and 14
- Reliability work to Avon - removals and new unit installations
  - Stations 5, 7 and 10

# 2021 – 22 Upcoming maintenance

Station name	Project name/unit No.	Outage type	Outage dates	Capacity Kingsgate (MMcf/d)	Capacity Station 14 (MMcf)
<b>Bend #12</b>	Bend Station 12 Controls and MCC	Station	November/December 2021	2,633	1,705
<b>Eastport #3</b>	Automation and Fuel Valve Upgrades	Station	November 2021	2,415	1,705
<b>A-line</b>	Malin A-Line Meter Replacement	Meter	February – April 2022	2,633	1,855
<b>A-line</b>	Station 3-4 A-line Hydrotest to restore MAOP	Pipeline	April – June 2022	2,117	1,900





# Tuscarora Transmission System

## 2021 Operational update

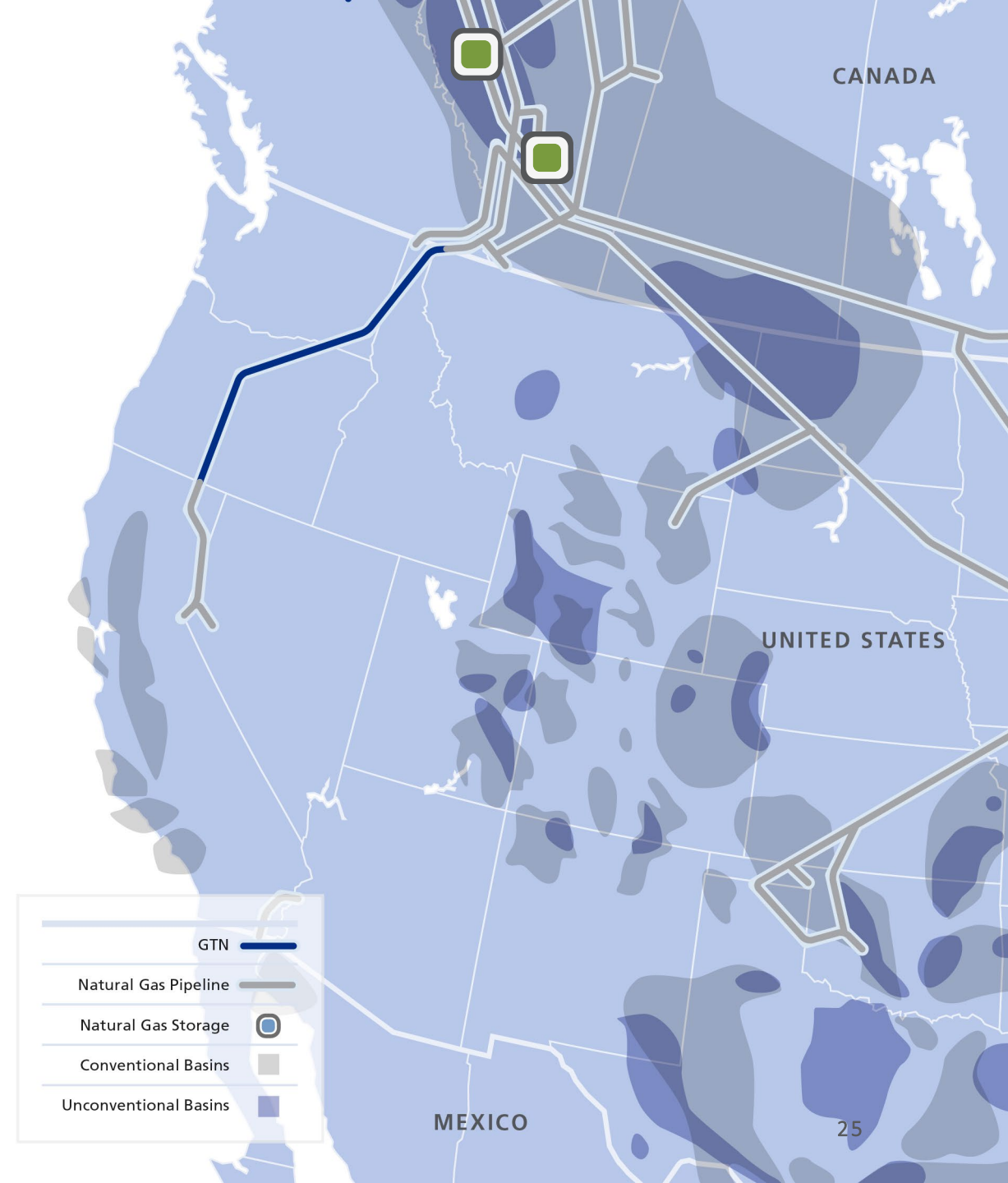
Peak day: Feb. 17, 2021

Physical deliveries: 248 MDth

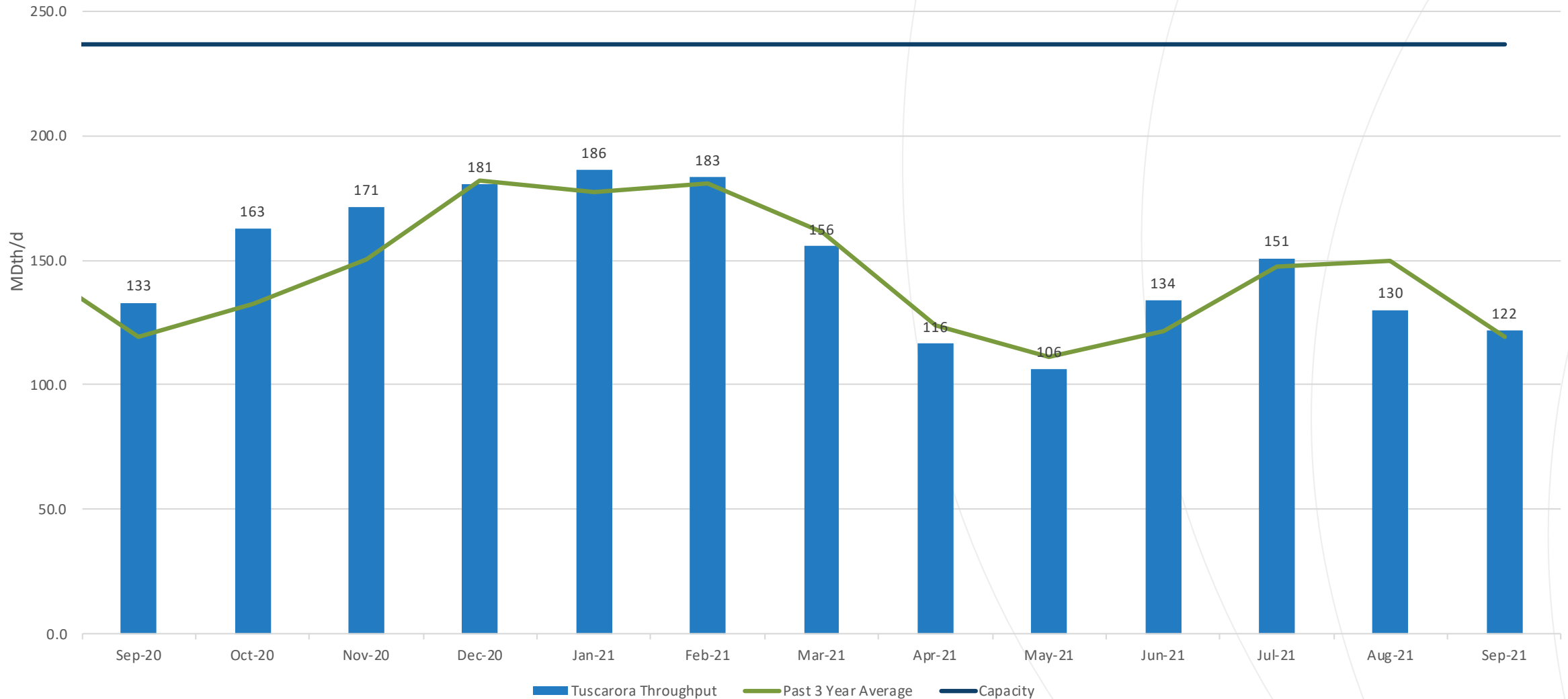
## 2021 Maintenance

Completed: ILLI pig runs Malin to MLV 6

Ongoing: Tuscarora XPress Wadsworth  
Unit Replacement to be completed in November

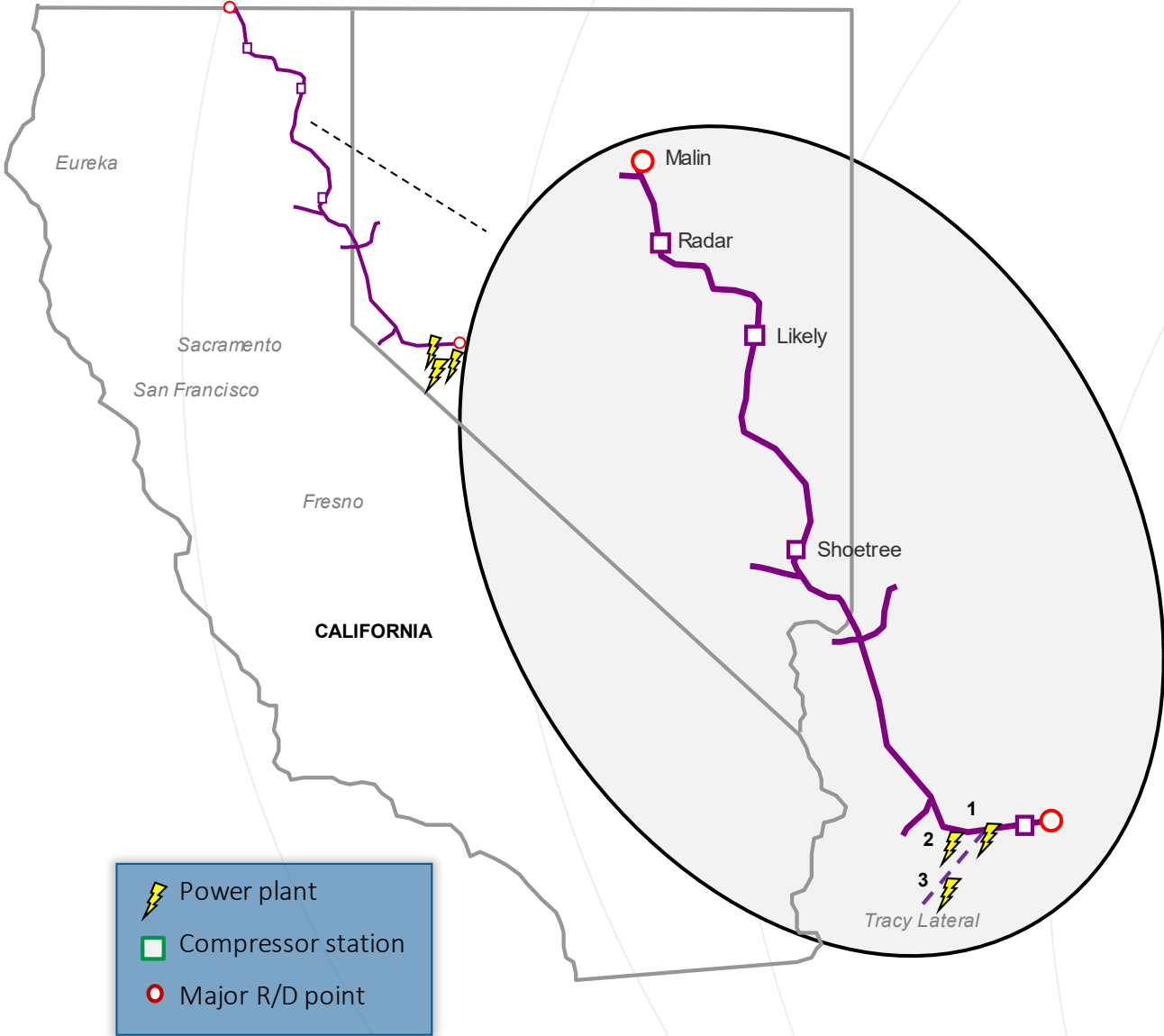


# Tuscarora average day system throughput

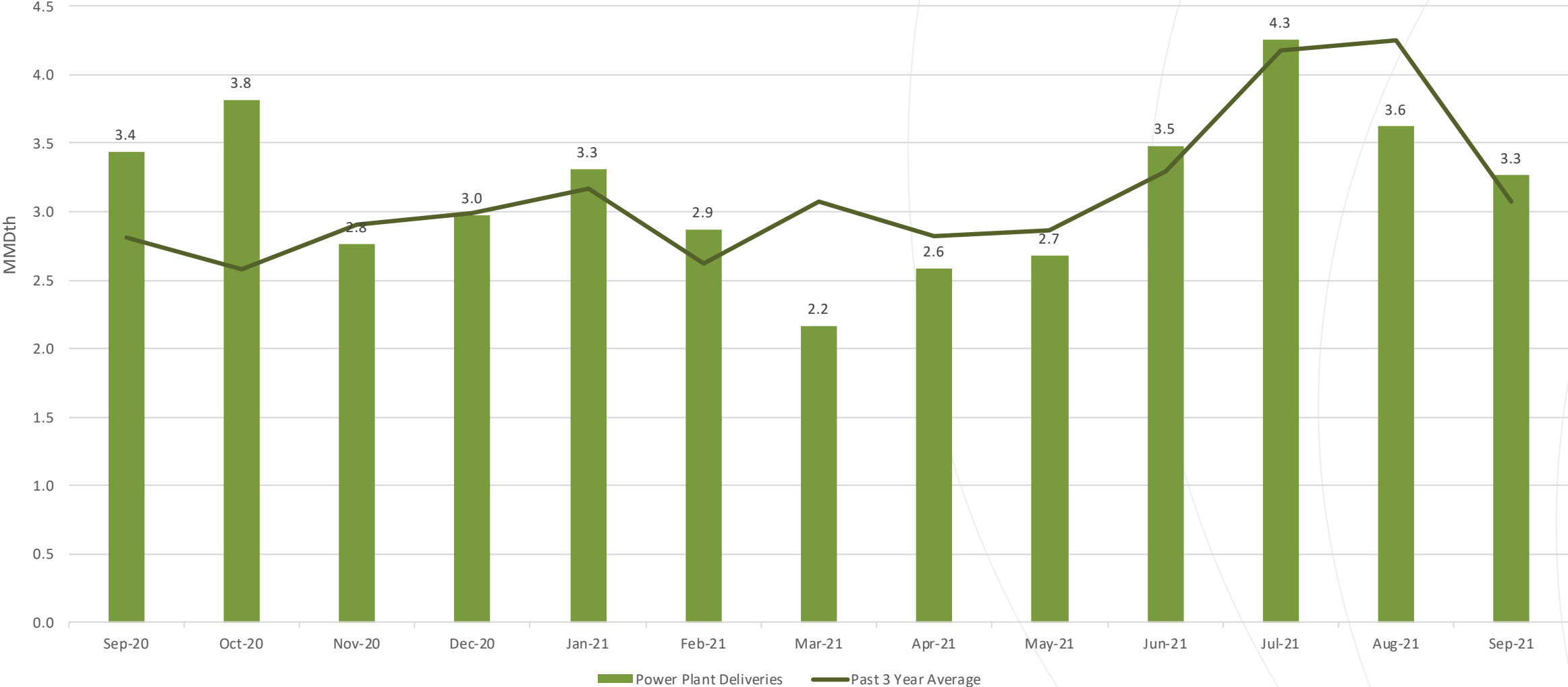


# Tuscarora System power plants

- 1. Tracy Station I
- 2. Tracy Station II
- 3. Western 102 generation facility



# Tuscarora monthly power loads



# North Baja pipeline system

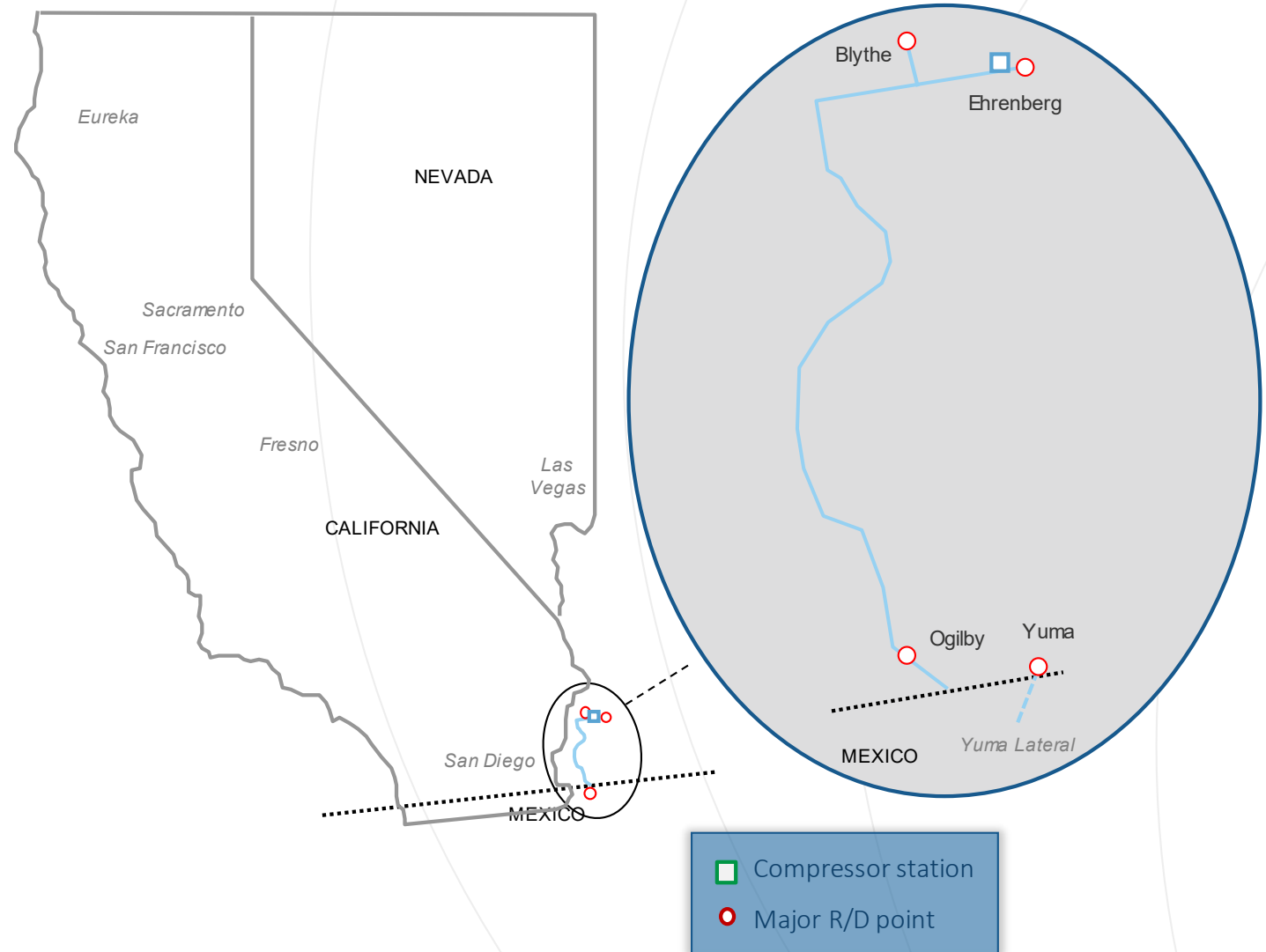
## 2021 Operational update

Peak day: July 26, 2021

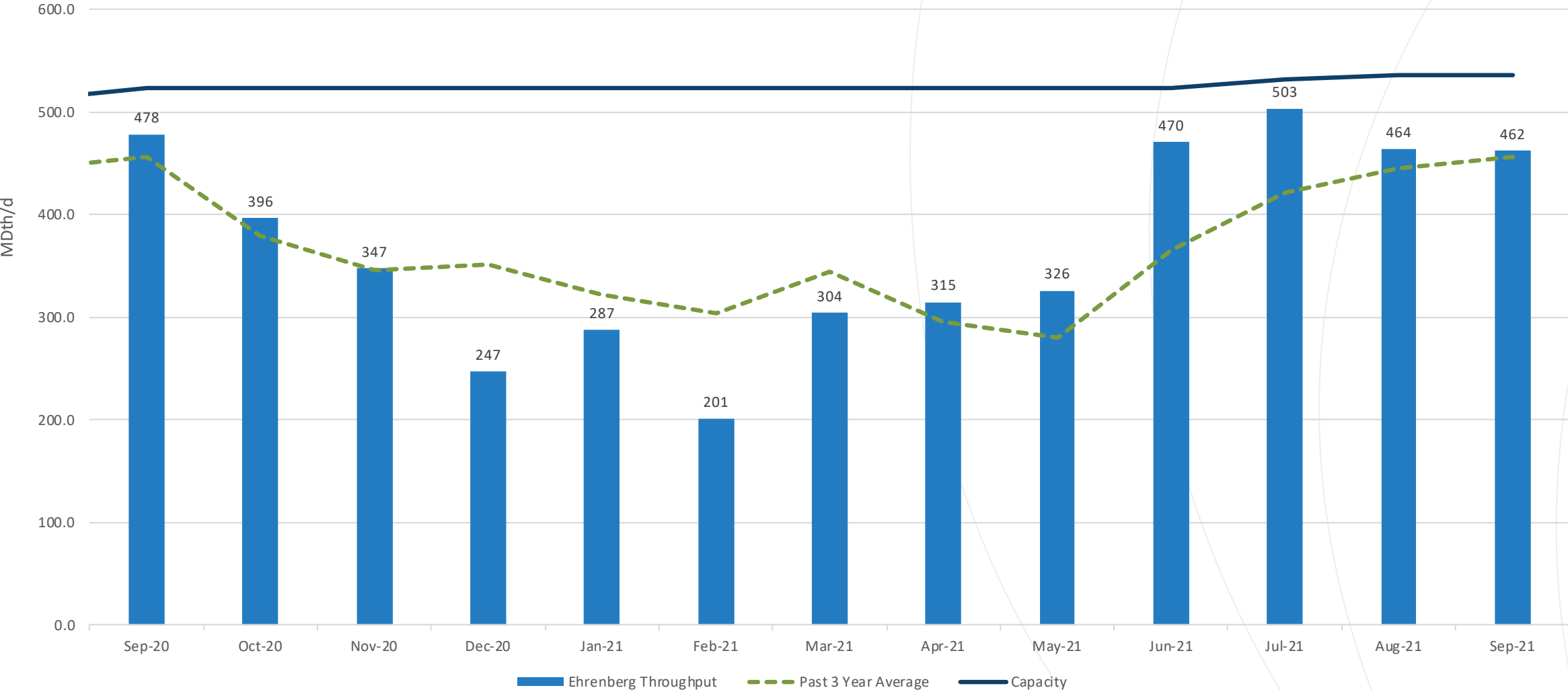
Physical deliveries: 560 MDth

## 2021 Maintenance

December: Ehrenburg Unit D  
Major Overhaul



# North Baja average day system throughput



# REGULATORY UPDATE

Sorana Linder  
Director, Rates, Tariffs &  
Modernization



# GTN Rate Case settlement

- On September 30, 2021, GTN filed an uncontested settlement with FERC (currently waiting on FERC approval)
- Settlement effective January 1, 2022:
  - Moratorium from January 1, 2022 – December 31, 2023
  - Preserves rates listed in 2015 settlement
  - Establishes a regulatory asset related to any carbon/greenhouse gas-related taxes in Washington and Oregon
- New rates to be effective no later than April 1, 2024
- Thank you to the GTN customers for the continued work and collaboration in achieving a mutually agreeable path forward via pre-settlement!





## Tuscarora

Tuscarora's last rate case was settled in 2016 (Docket RP16-29) and subsequently again through the 501-G process (Docket RP19-416 and RP19-419)

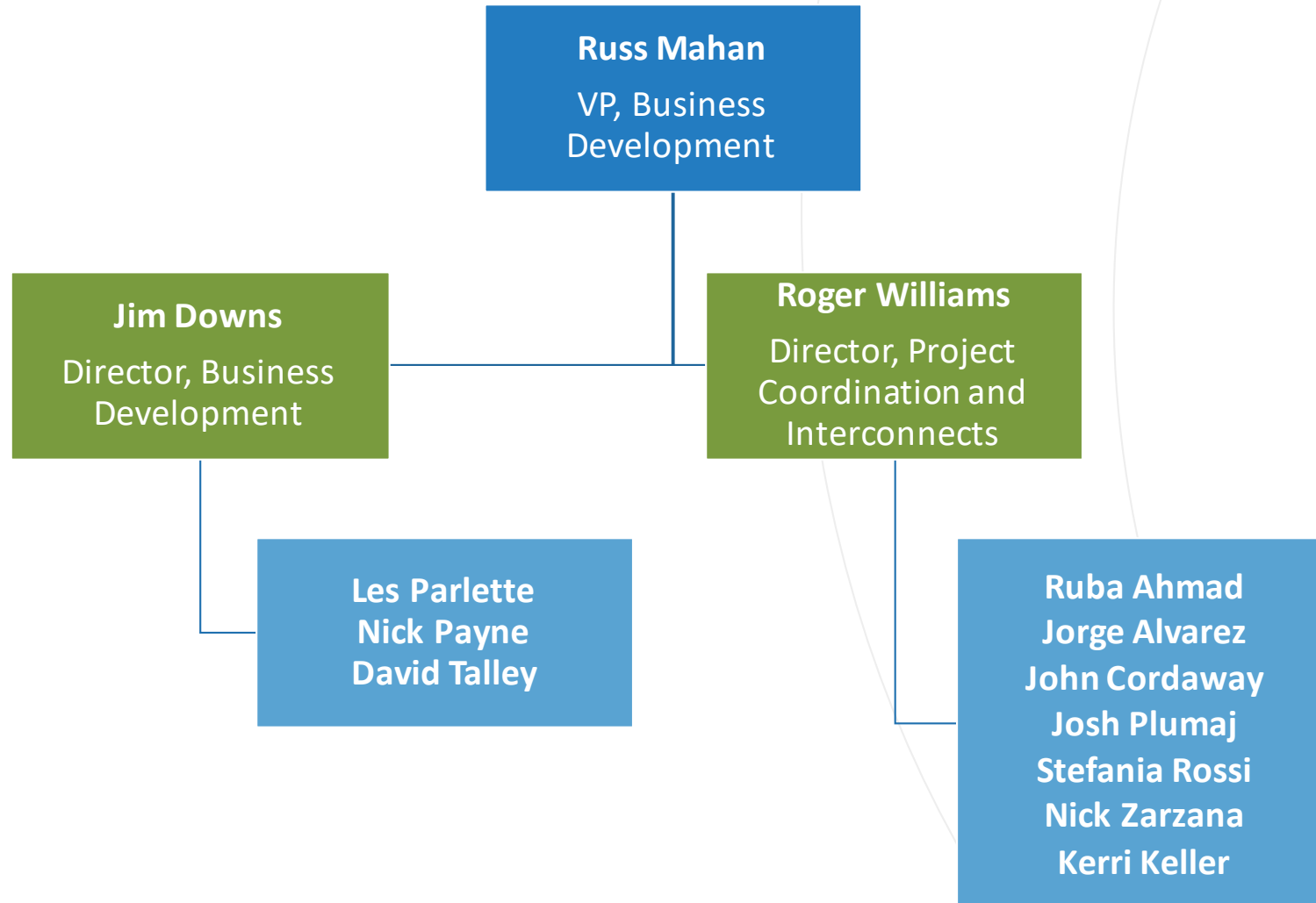
- Rate case filing required by July 31, 2022
- New rates would be effective February 1, 2023

# BUSINESS DEVELOPMENT UPDATE

Nick Payne  
Manager, Business  
Development

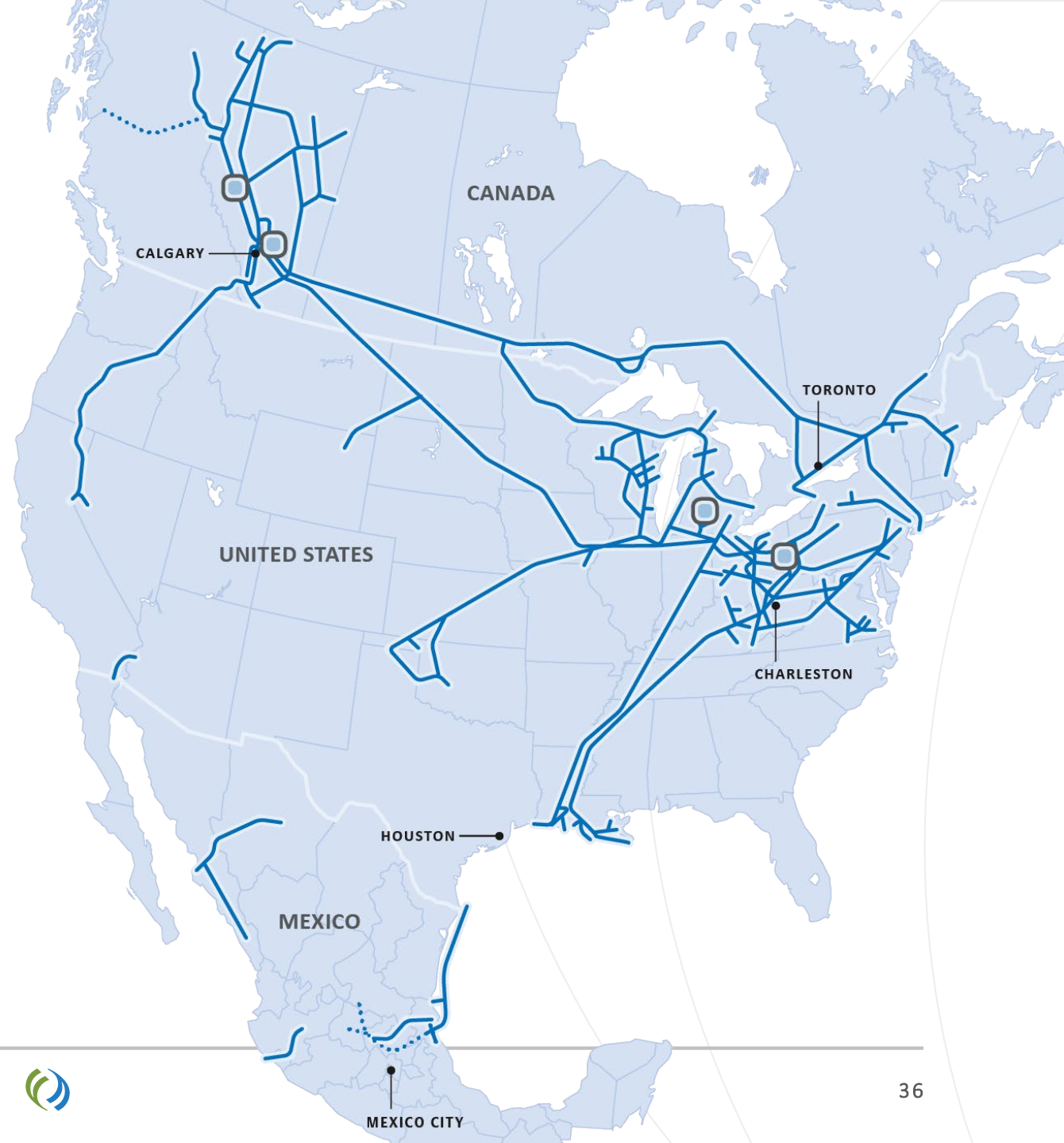


# USNG Business Development team



# Natural Gas pipelines

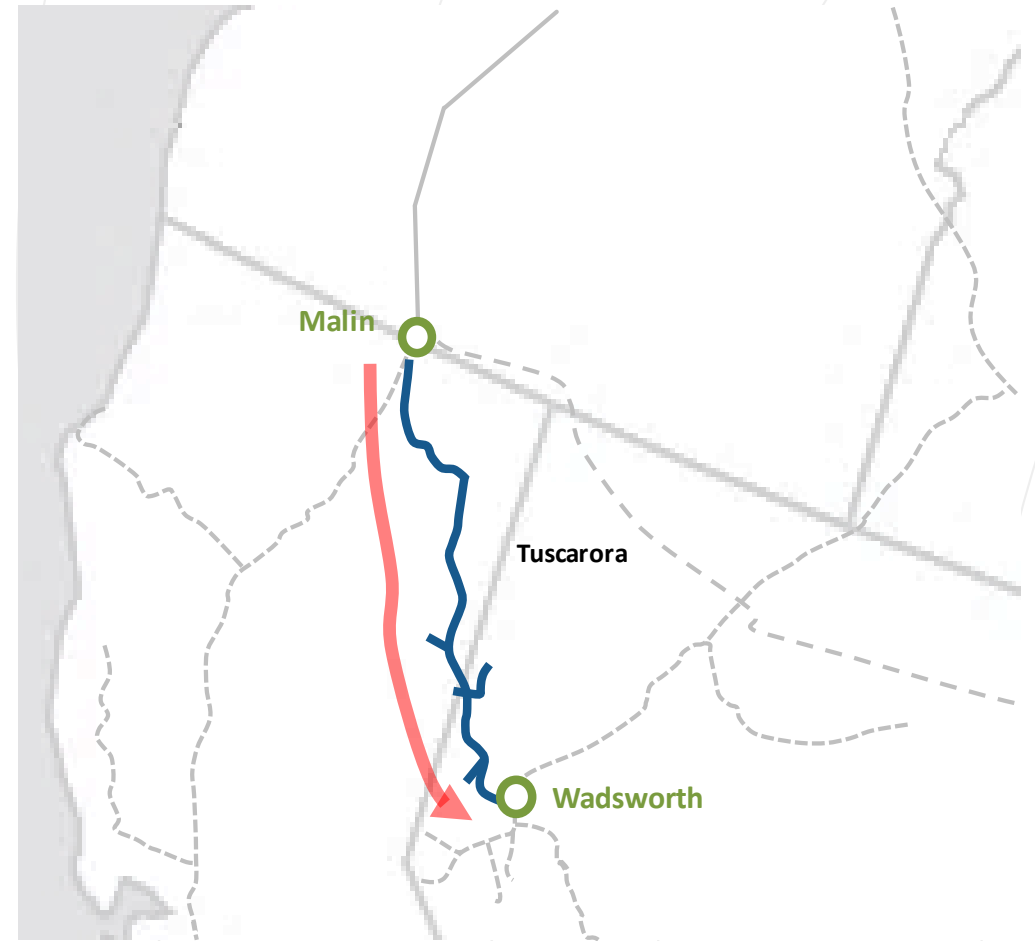
- TC Energy is one of North America's largest natural gas transmission businesses with 57,900 miles (93,300 km) of natural gas pipelines.
- Well-positioned with access to traditional and emerging basins
- Strategically connects growing supply to key markets in Canada, the U.S., Mexico, and globally via LNG exports
- More than 653 Bcf of working gas storage capacity



# Tuscarora: Tuscarora XPress Project (TXP)

## Project summary

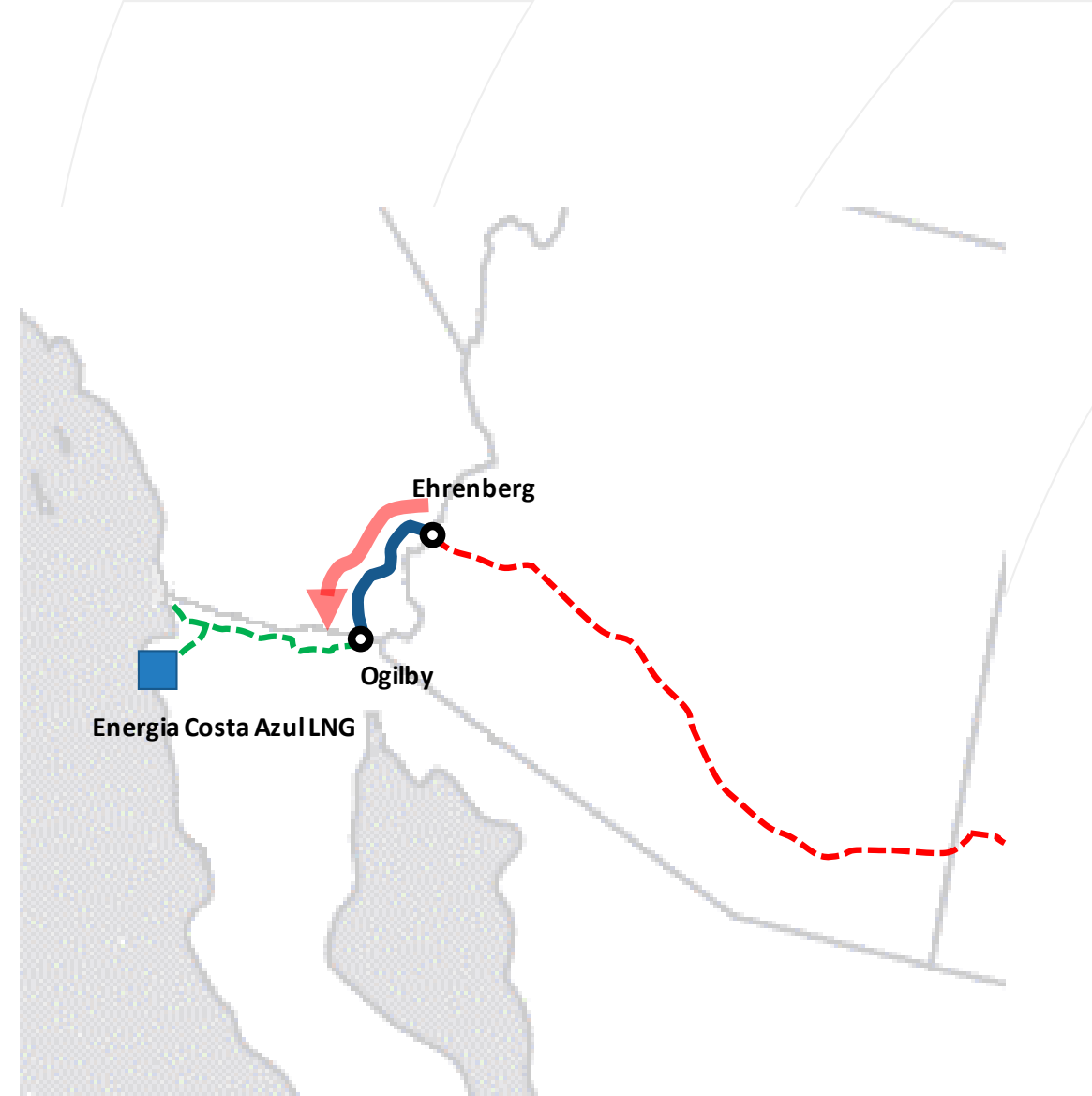
- FERC Docket No.: CP20-486
- Filed: June 24, 2020
- FERC Order approved: June 4, 2021
- Target in-service: November 2021
- Upsize HP installation and metering upgrades at Wadsworth compressor station
- Hydraulic modeling upgrades
- 15,000 Dth/day of incremental certificated capacity
- Full project path from Malin, Oregon, to Wadsworth CS in Washoe County, Nevada



# North Baja Pipeline: North Baja XPress Project (NBX)

## Project Summary

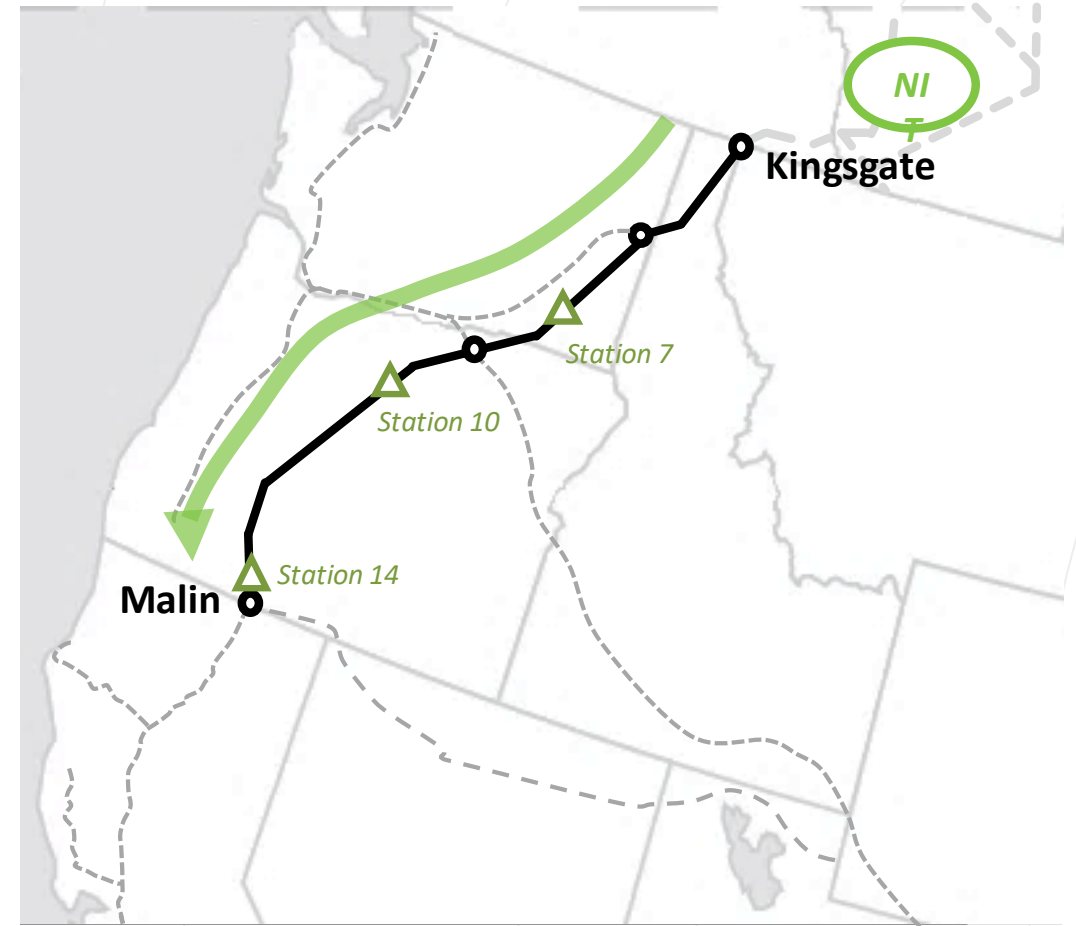
- FERC Docket No.: CP20-27
- Filed: December 16, 2019
- Target in-service: February 2023
- New HP at existing Ehrenberg CS
- Expansions of existing El Paso and Ogilby meter stations
- 495,000 Dth/day of incremental certificated capacity
- Full project path from El Paso MS in La Paz County, Arizona, to the Ogilby MS at the US/Mexico border in Imperial County, California



# GTN: GTN XPress Project (GTNX)

## Project Summary:

- GTN FERC Docket No.: CP22-2
- Filed: October 4, 2021
- Target in-service: November 2023
- Additional horsepower at Stations 7, 10, and 14
- 150,000 Dth/day of incremental certificated capacity
- Full project path from Kingsgate MS to Malin MS



2021 WEST CUSTOMER MEETING

# COMMERCIAL FUNDAMENTALS

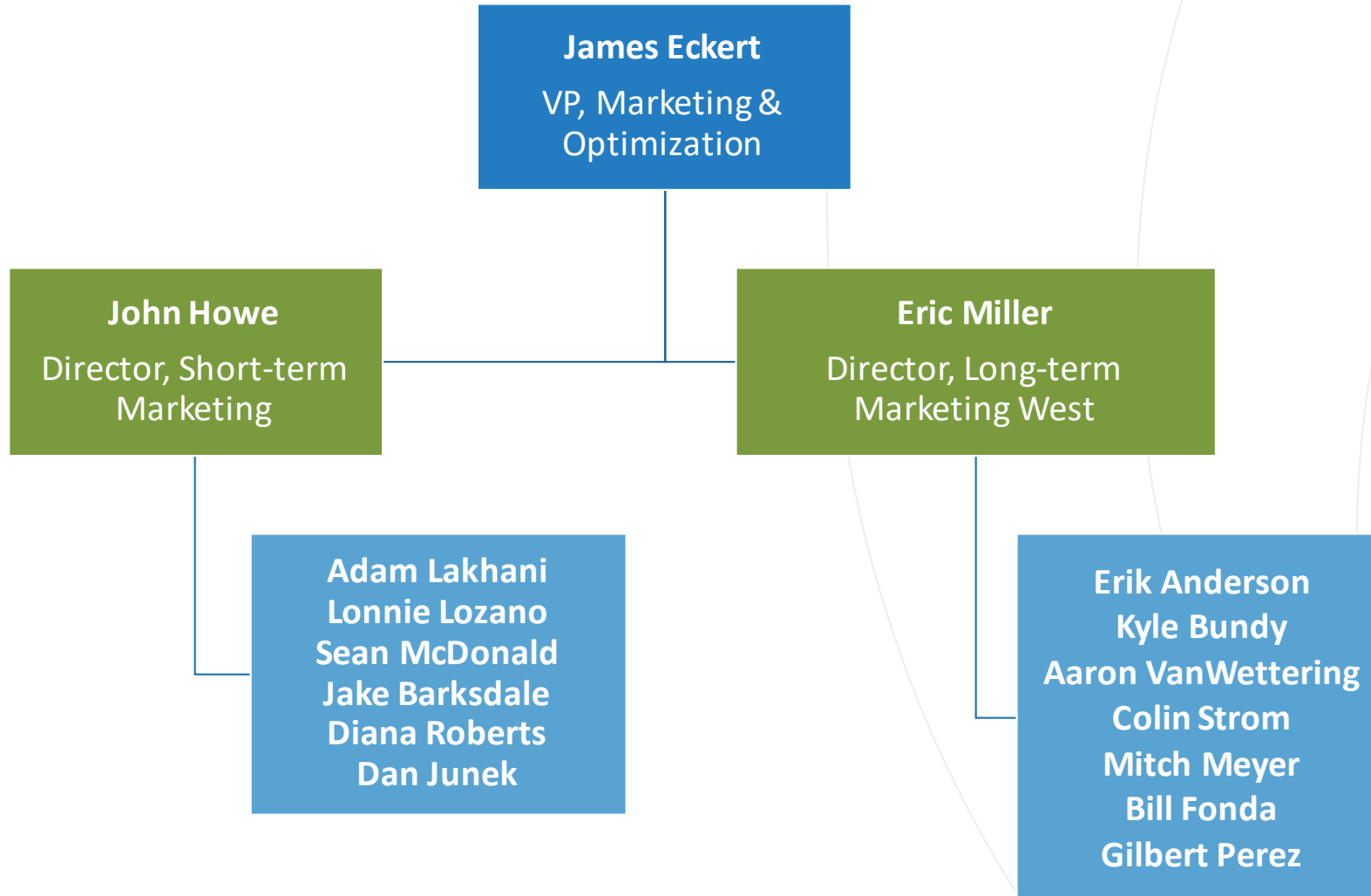
Sean McDonald  
Short-term Marketing

NOVEMBER 4, 2021



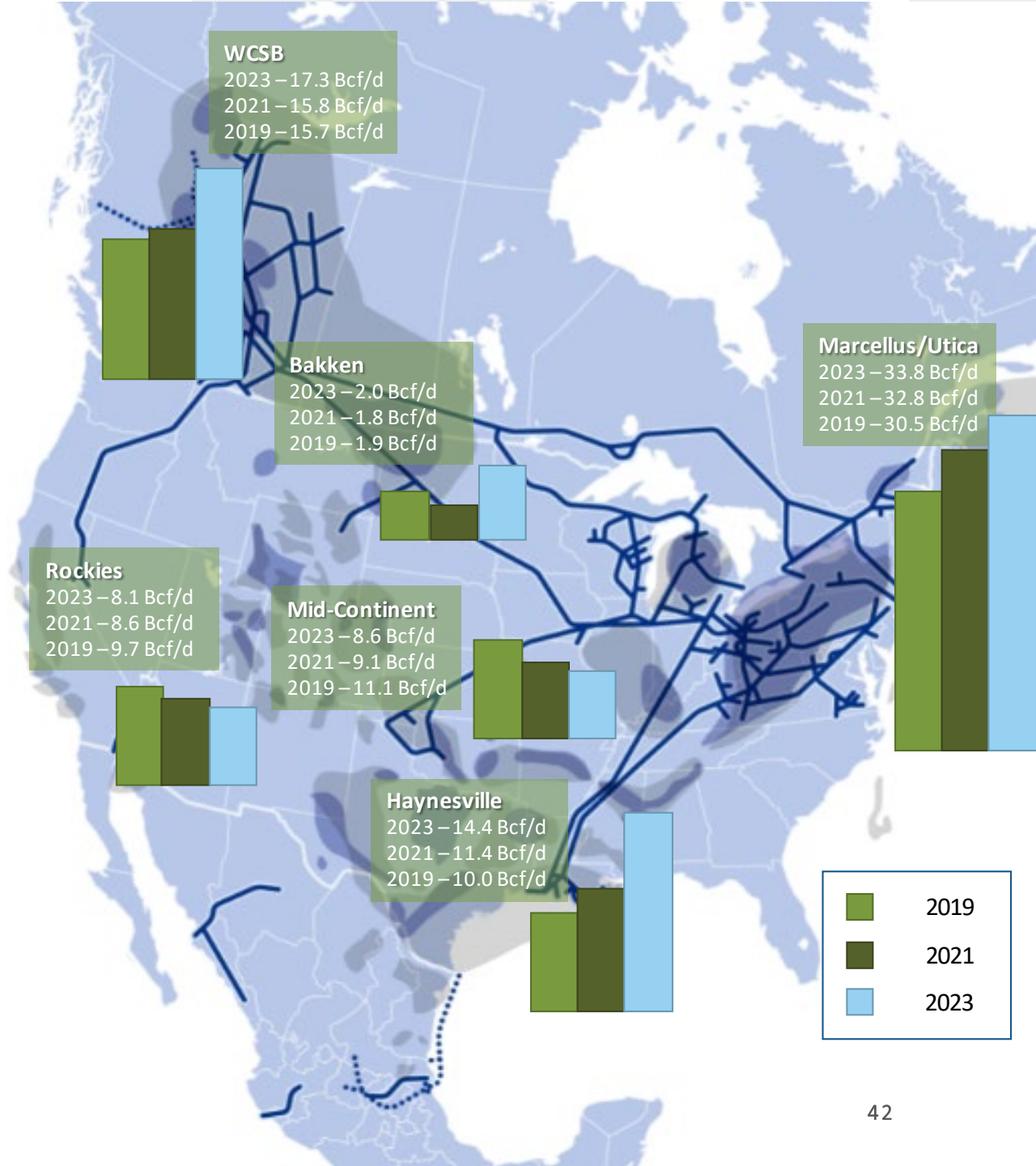


# USNG Marketing team (GTN, NBPL, GLGT, ANR)



# Natural Gas production by major basins

- Production growth expected to resume in AECO/Bakken
  - Supportive of higher utilization on GTN, NBPL, GLGT
- Slowing growth in Marcellus/Utica
  - However rapid growth in Haynesville
- Slow declines in the Mid-Continent and Rockies continue

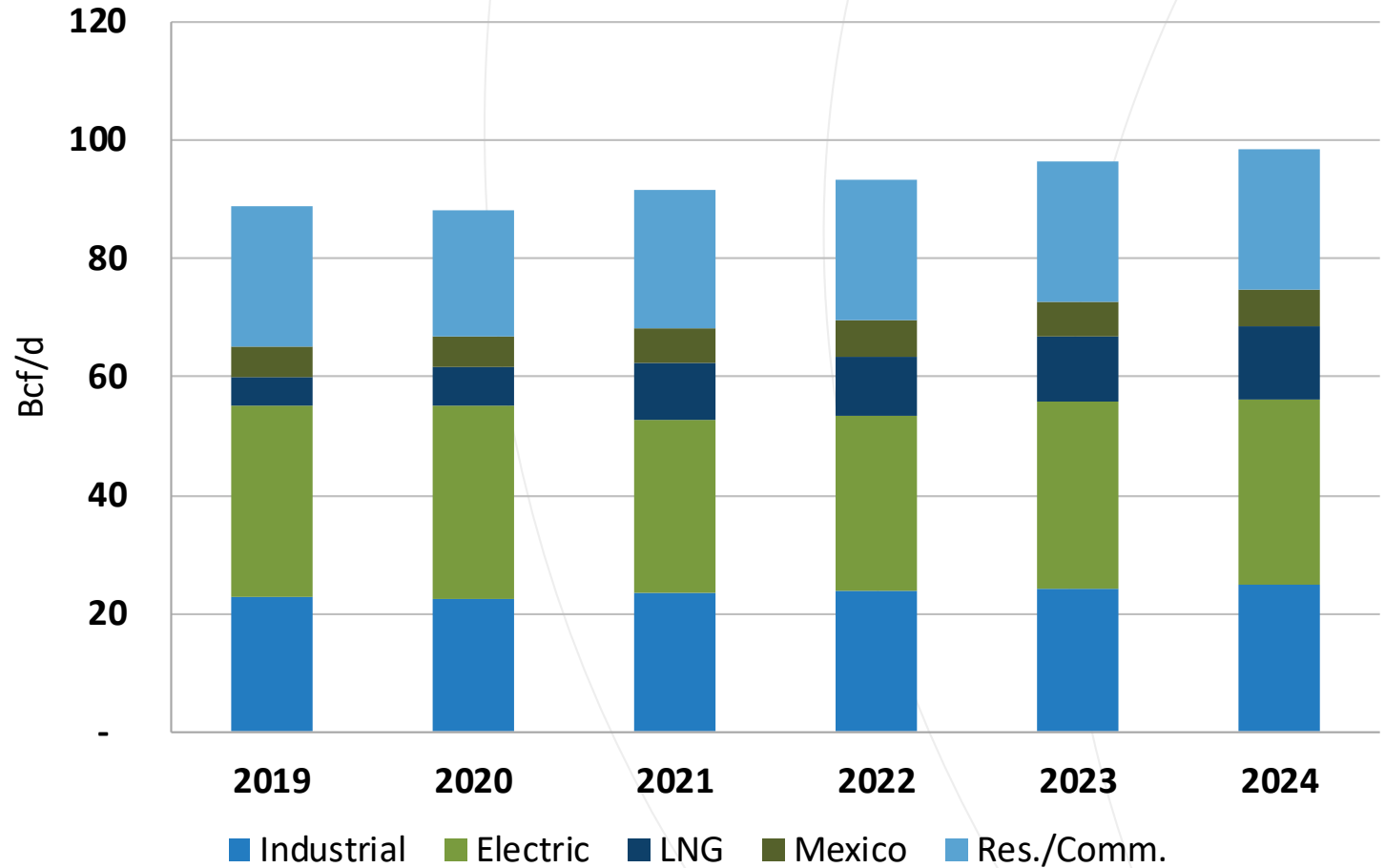


Source: Consensus View and TC Internal Forecast

# U.S. consumption by sector (Bcf/d)

- Steady demand growth next several years
- Largely driven by FID LNG projects

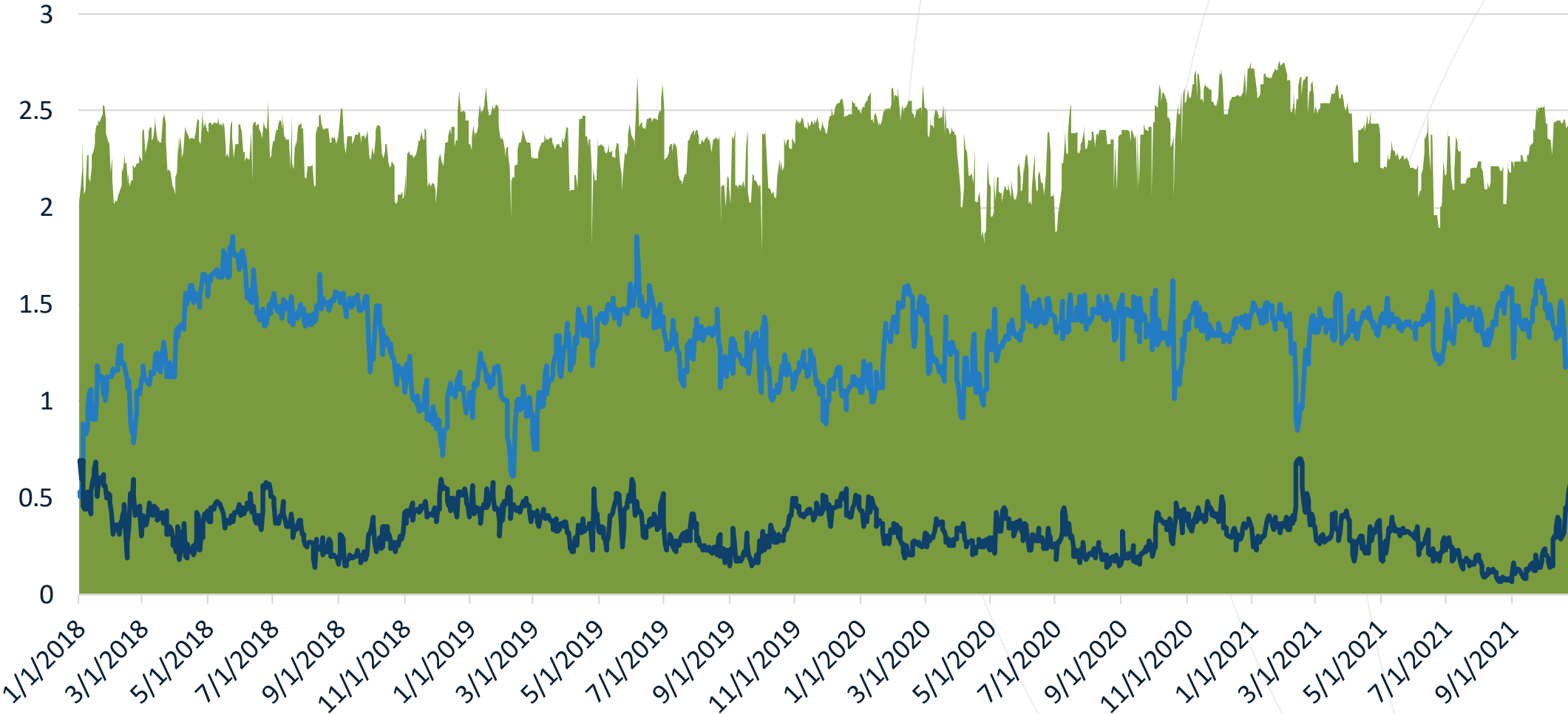
TCGO: US Demand by Sector



Source: TCGO Internal Forecast



# GTN flows

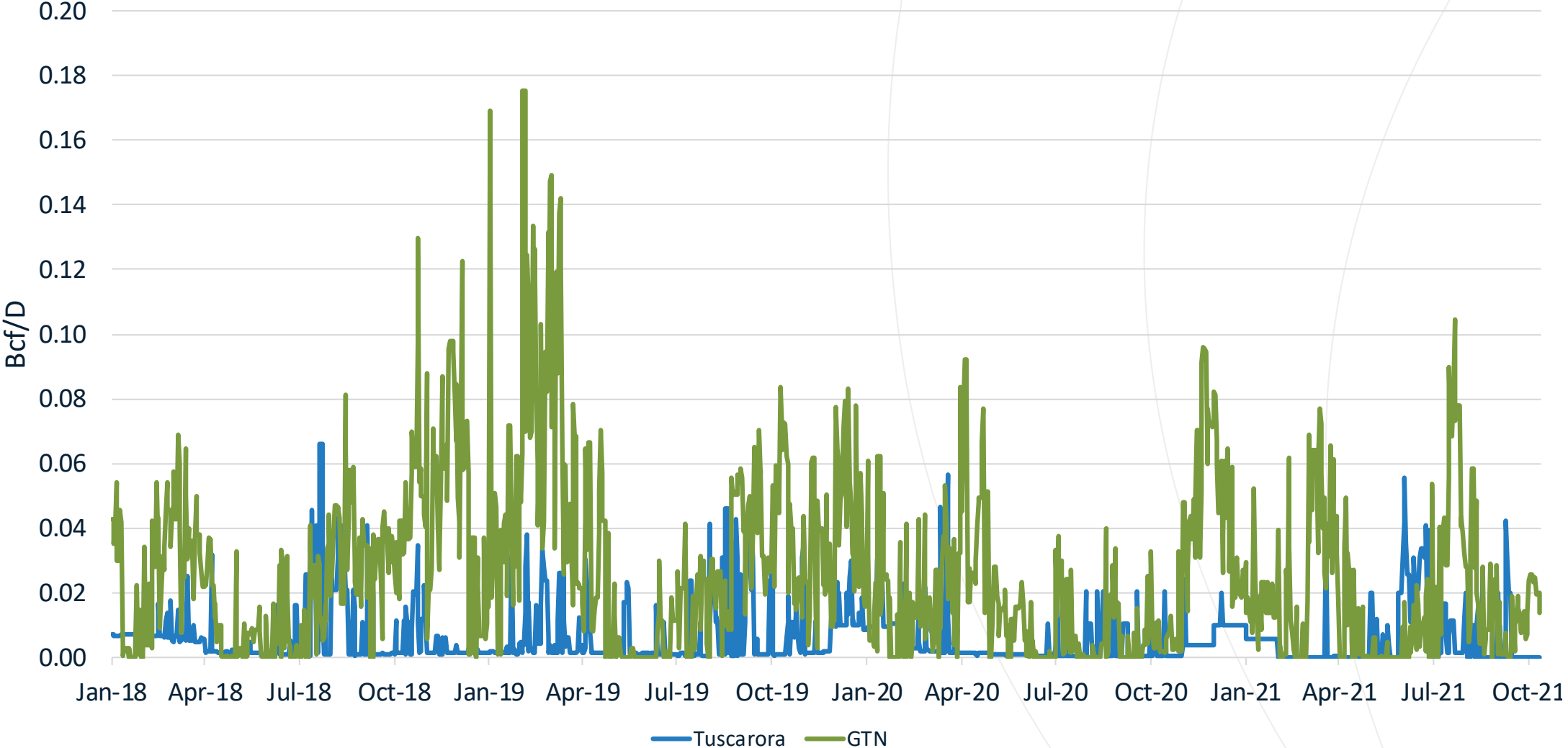


Source: TCE Internal Data

■ Kingsgate (R)    — Malin (D)    — Stanfield (D)



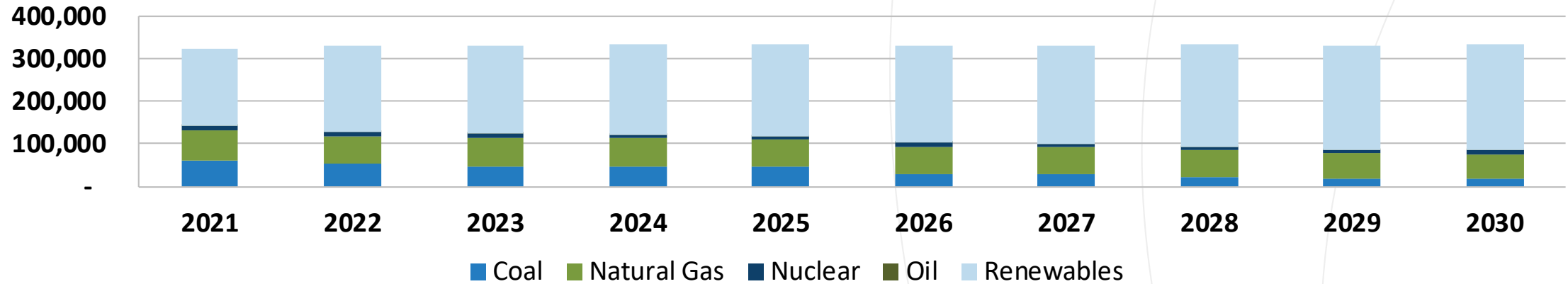
# Ruby deliveries



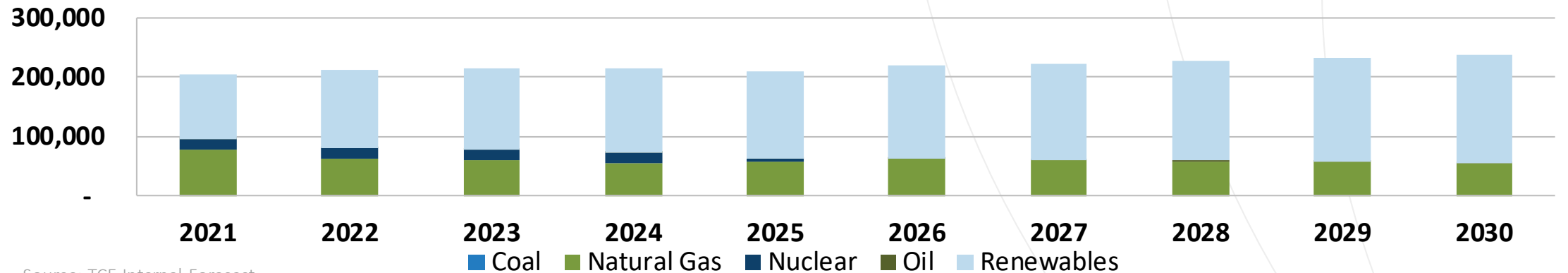
# Generation by fuel type

Pacific Northwest & California

### NWPP-US Power Generation by Fuel Type



### California Power Generation by Fuel Type



Source: TCE Internal Forecast



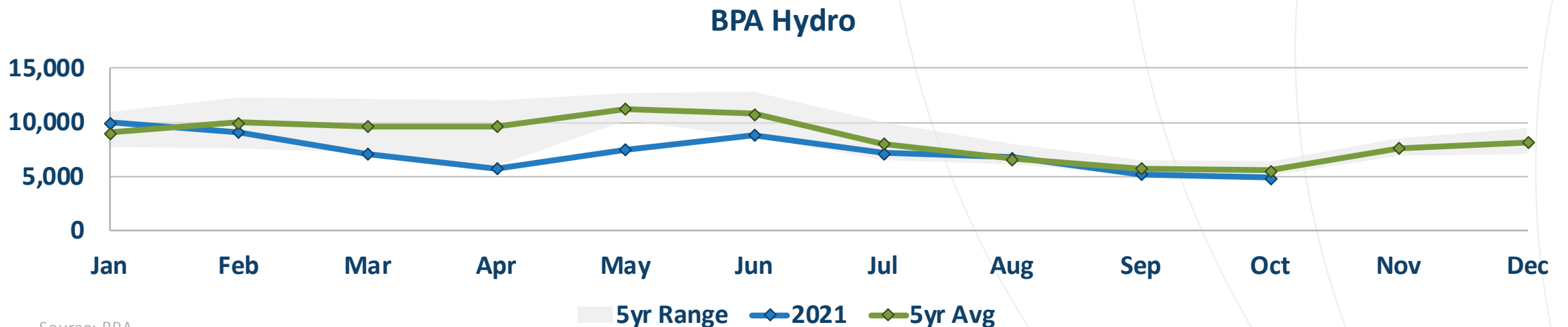
# Pacific NW and California: Hydro forecast

- This year – 2021 – has been a challenging year for BPA Hydro. New five-year lows set in four of the first 10 months.
- Postponed the retirement of natural gas power plants – a sign of a new power generation stack dynamic?

Date	2021*	5yr Avg*	5yr Max*	5yr Min*	5yr Range*
Jan	9,952	9,037	10,899	7,676	3,223
Feb	9,087	9,975	12,278	7,618	4,660
Mar	7,120	9,667	12,185	7,146	5,039
Apr	5,782	9,647	12,063	5,991	6,072
May	7,524	11,283	12,702	10,108	2,594
Jun	8,873	10,764	12,836	8,707	4,129
Jul	7,146	8,064	10,073	6,579	3,494
Aug	6,756	6,621	7,951	6,152	1,799
Sep	5,250	5,783	6,462	5,159	1,303
Oct	4,887	5,533	6,379	5,041	1,338
Nov		7,607	8,583	6,912	1,671
Dec		8,203	9,474	7,058	2,417

Yellow denotes a new 5-year low

\*in MWs

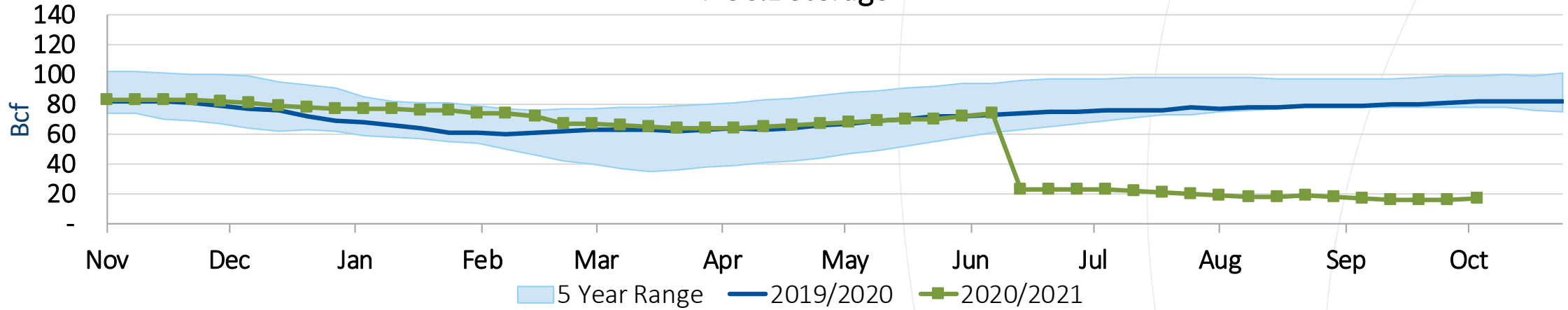


Source: BPA

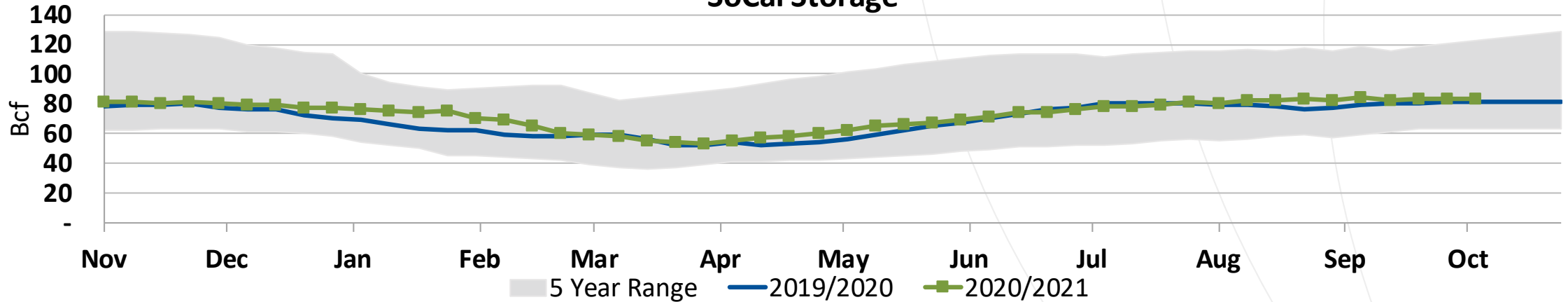


# California storage

### PG&E Storage



### SoCal Storage

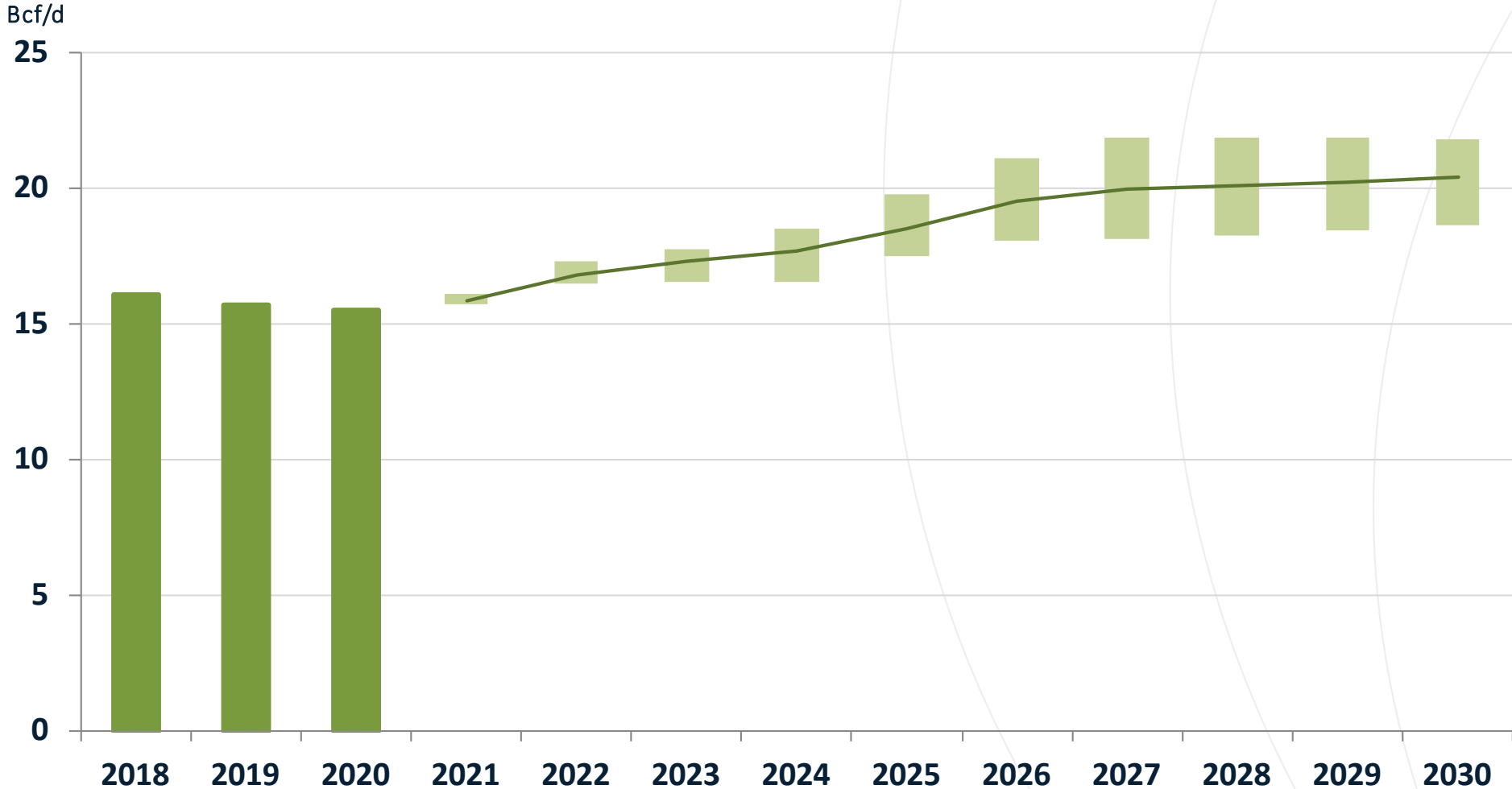


Source: EIA





# WCSB forecast (dry gas)

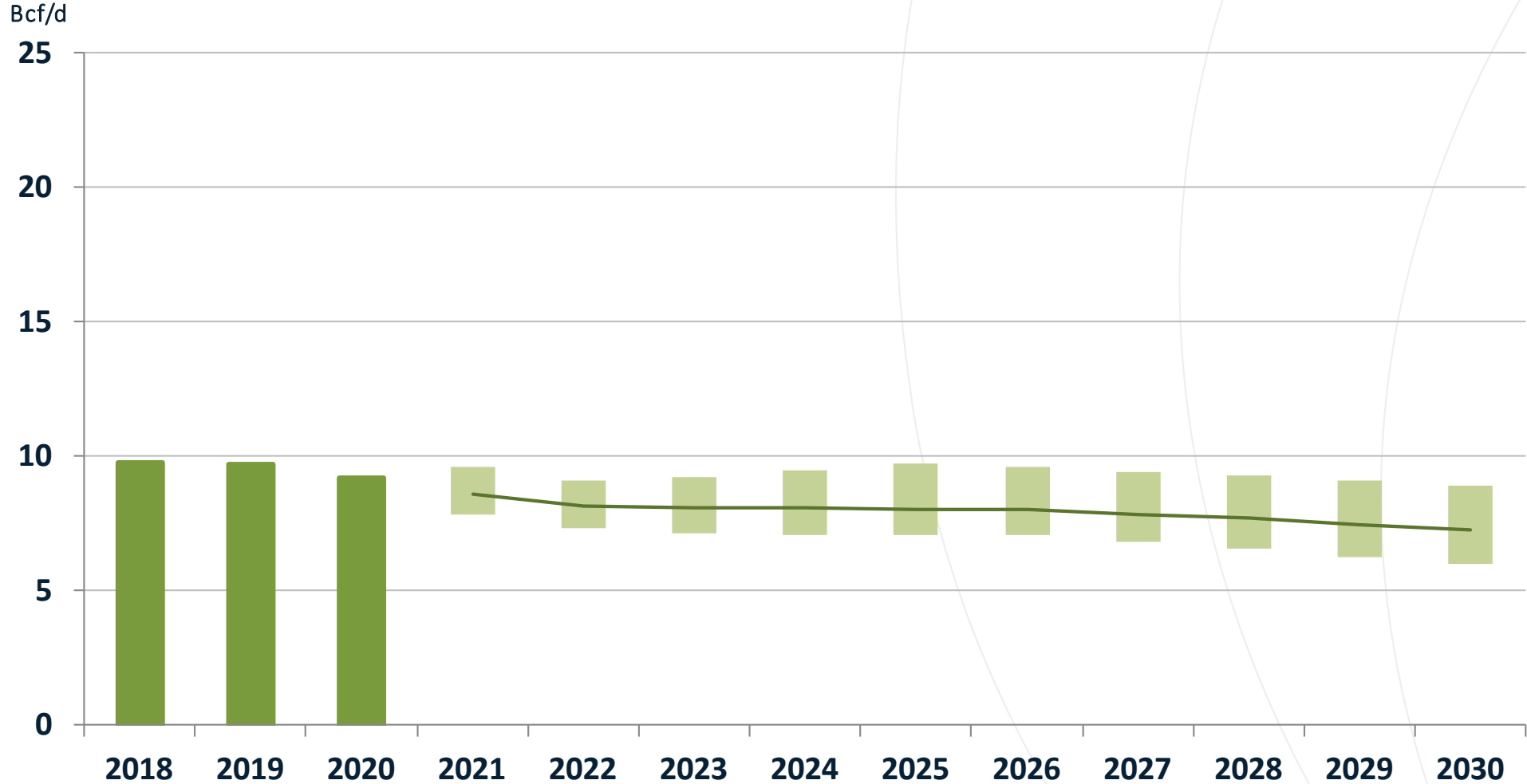


Source: Consensus View and TCE USNG Internal Forecast

Historical Forecast Range Average



# Rockies forecast (dry gas)

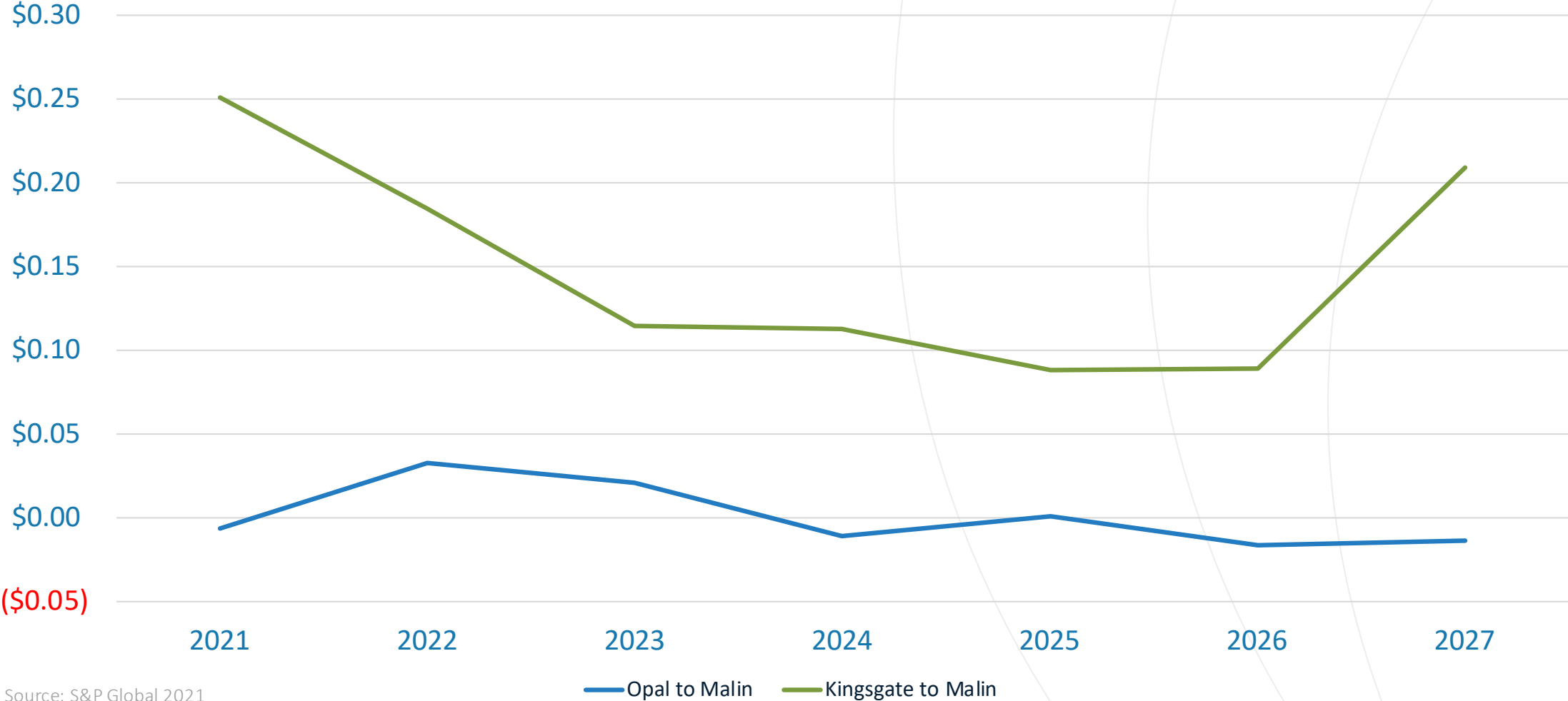


Source: Consensus View and TCE USNG Internal Forecast

Historical Forecast Range Average



# Forward pricing to Malin

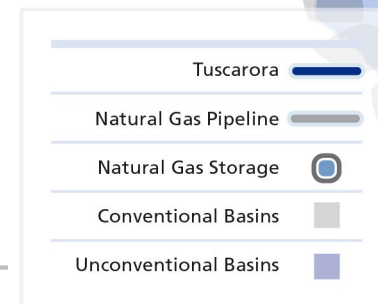


Source: S&P Global 2021

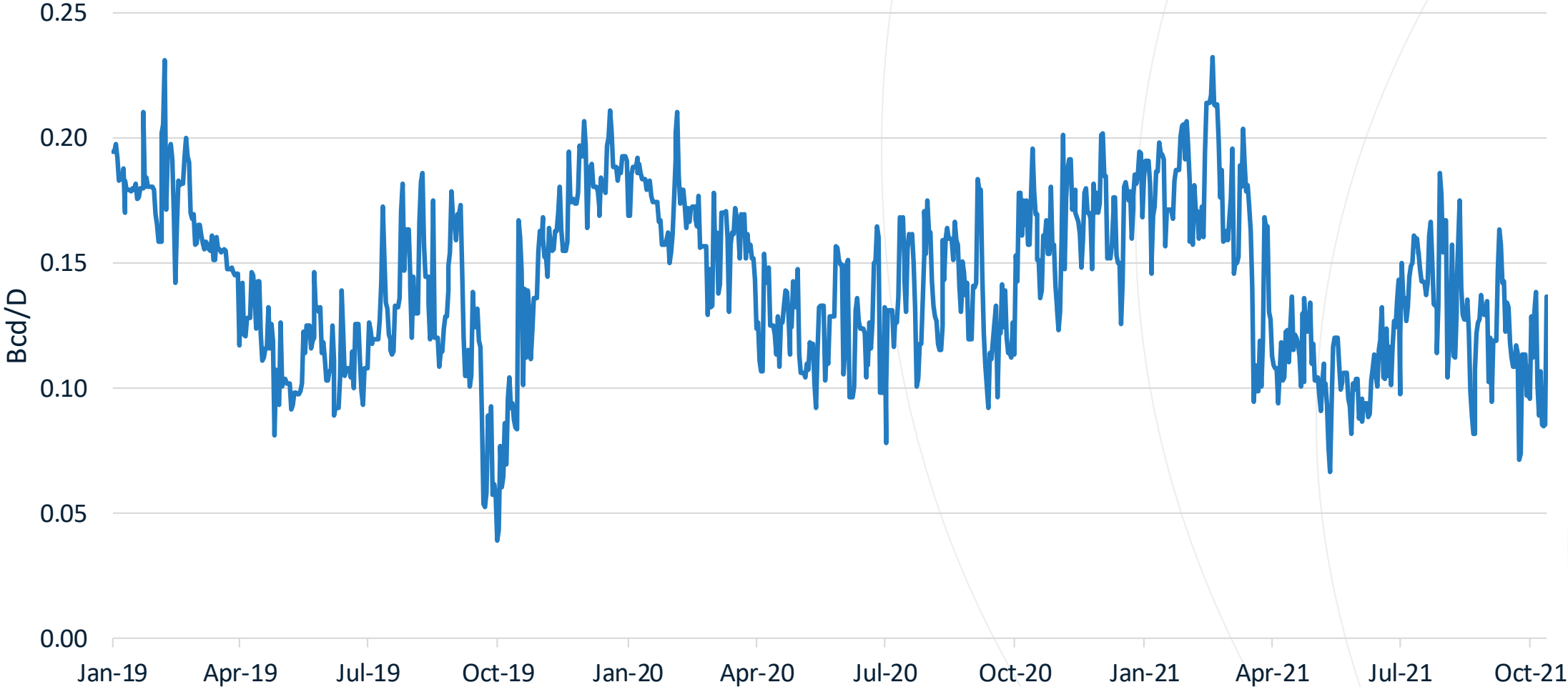


# Tuscarora

- Interstate pipeline that receives natural gas from its interconnection with the Gas Transmission Northwest
  - GTN is interconnected with Western Canadian Sedimentary Supply, as well as natural gas from the Rockies and other U.S. basins
- Approximately 305 miles (491 km) in length
- Has an average design capacity of 230 million cubic feet per day (MMcf/d)



# Tuscarora flows

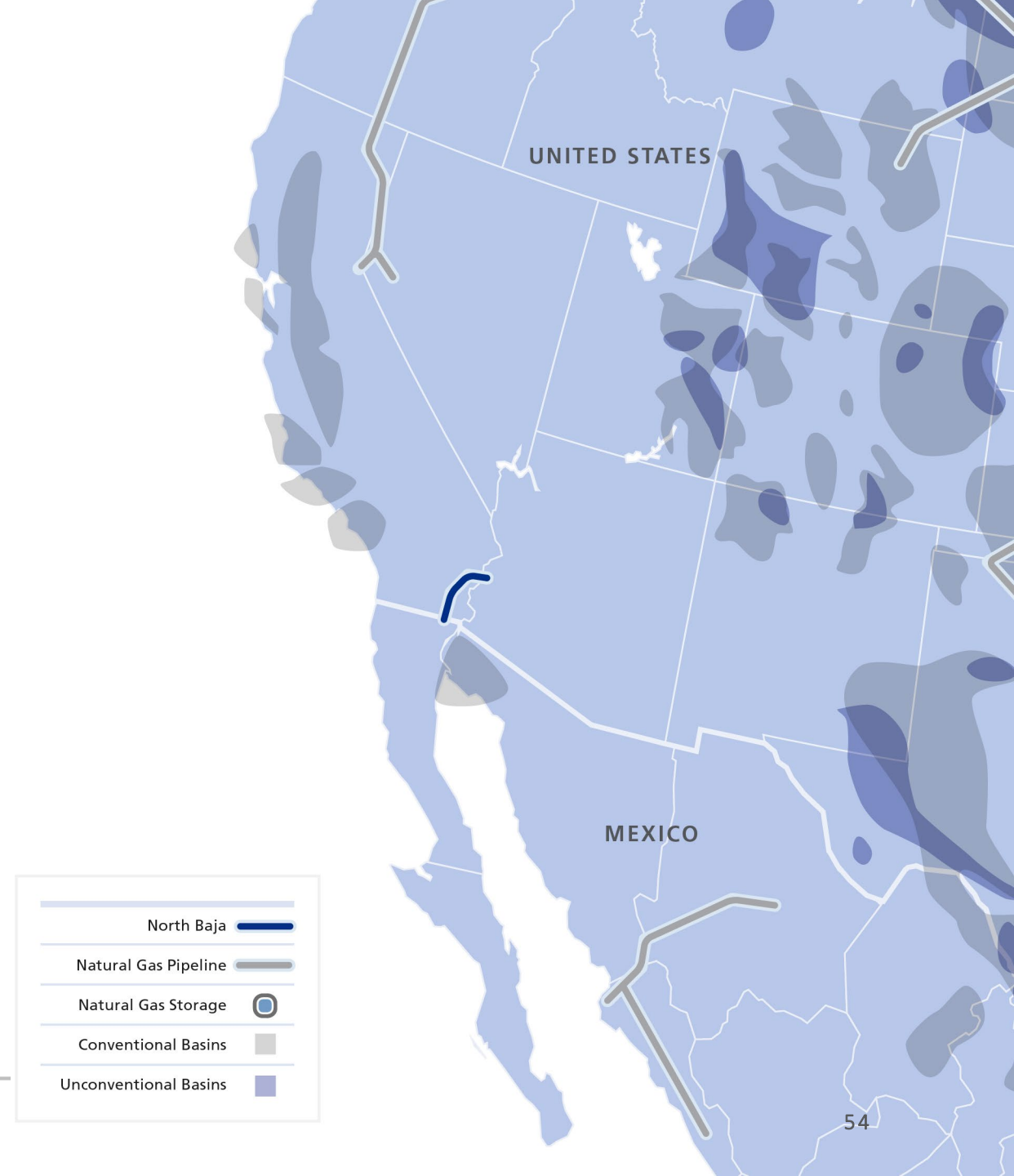


Source: TCE Internal Data

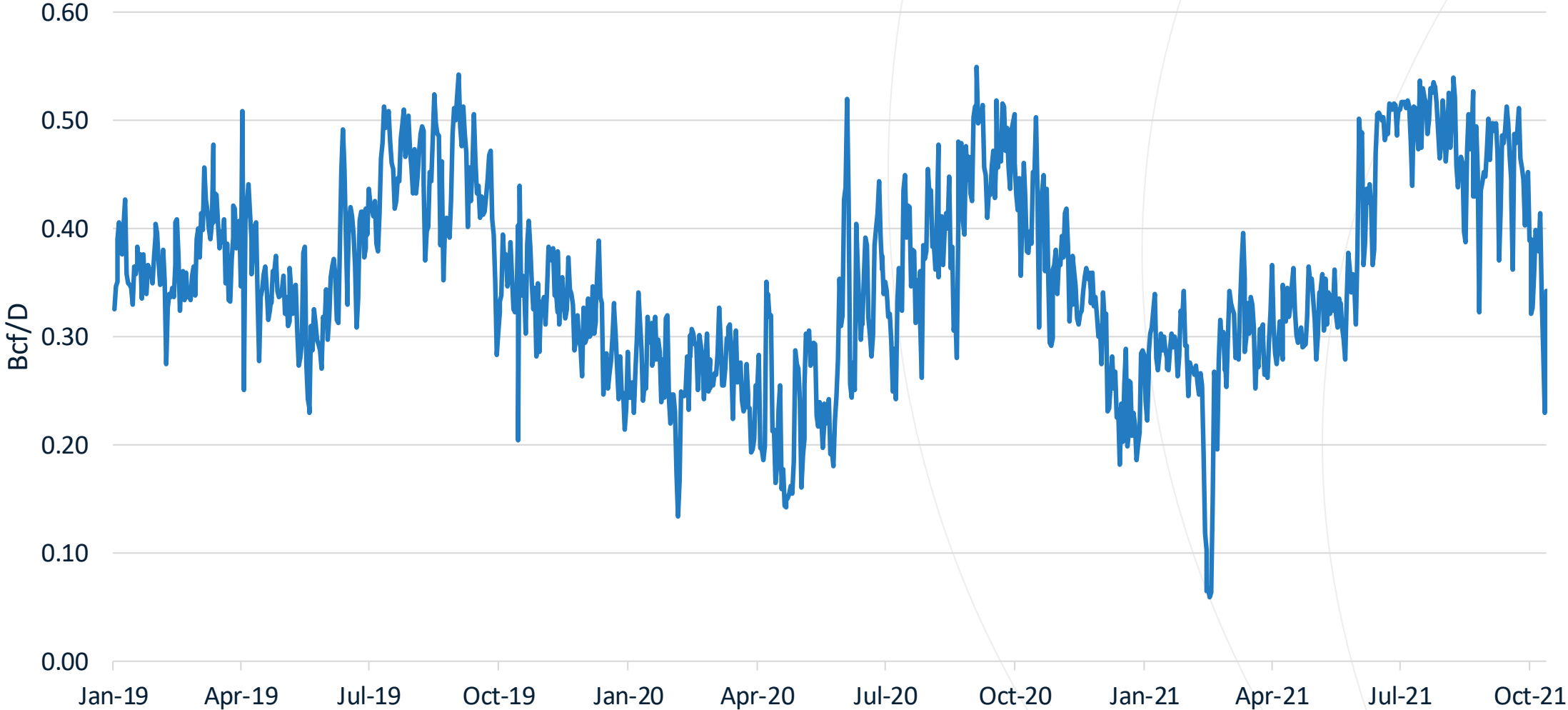


## North Baja

- Bi-directional natural gas pipeline
- Receives natural gas from an interconnection with the El Paso Natural Gas Company (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
- Has a design capacity of 500 million cubic feet per day (MMcf/d) for southbound transportation and 600 MMcf/d for northbound transportation



# North Baja flows



Source: TCE Internal Data



# Questions?

Contact:  
[mitch\\_meyer@tcenergy.com](mailto:mitch_meyer@tcenergy.com)