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Winter Operations Meeting

October 8, 2024

Agenda

- Opening Comments – Josh Browning, VP Commercial – Eastern Interstates
- Transco Fundamentals – Angela Marinos, Market Intelligence Consultant
- Pipeline Control – John Casto, Director – Pipeline Control
- Maintenance Review – John Bell, Manager – Physical Optimization
- Scheduling & 1Line Updates– Julian Arias, Manager – Transportation Services
- Business Development Update – Clay Glockzin, Business Development Representatives



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Welcome

Josh Browning



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Transco Market Fundamentals

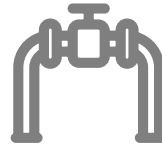
Angela Marinos

Growing demand and volatility across natural gas markets



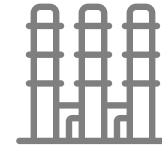
Resilient gas demand for power and robust LNG exports

- Strong growth in Gulf Coast, Southeast and South-Atlantic gas demand outlook on both annual average and peak-day basis
- Higher gas demand scenarios likely as utilities continue to increase energy growth projections
- LNG exports forecasted to more than double by 2035, creating gas-on-gas competition



Increasing daily and hourly variability of demand

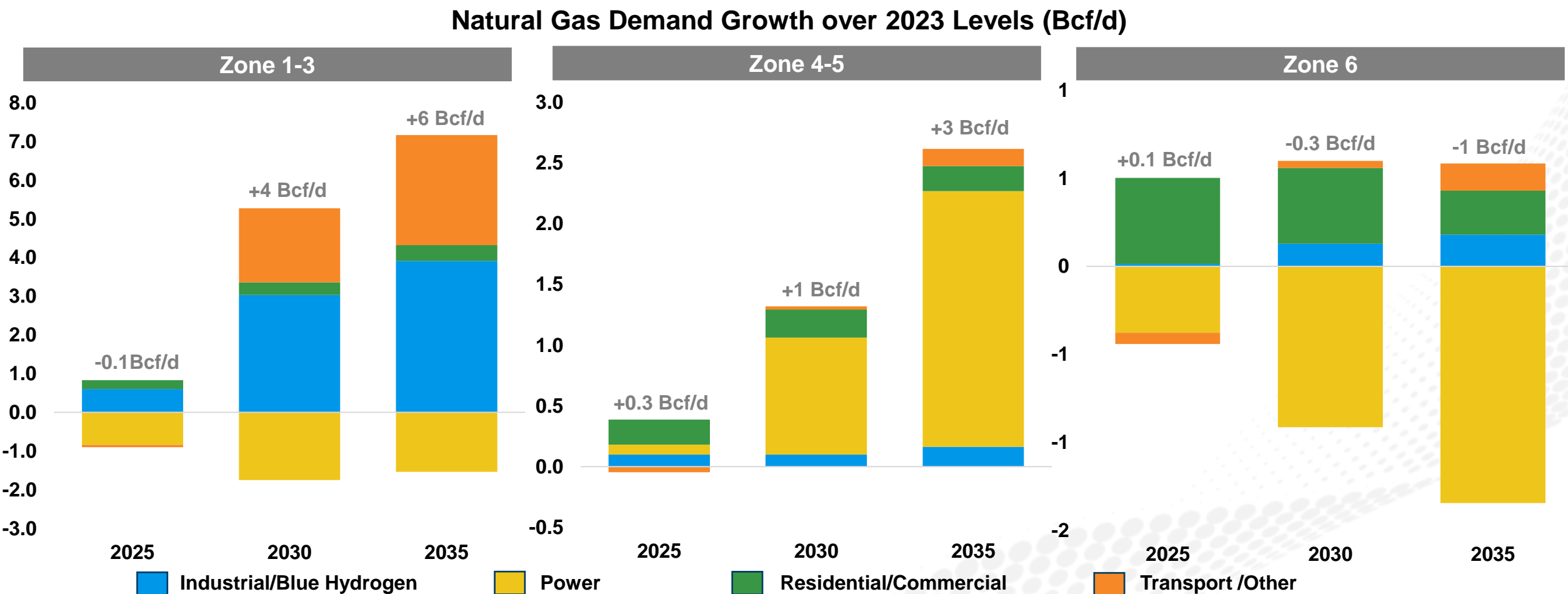
- Natural gas markets will experience volatility from variable demand in power generation and LNG seasonality
- This volatility will increase the need and value of natural gas storage and pipeline capacity



Transco system invaluable to meet demand and manage volatility

- Sufficient gas inventory to supply robust demand growth
- Incremental gas pipeline capacity and storage capacity is required, but meaningful permitting reform is needed

Domestic natural gas demand growing across Transco markets

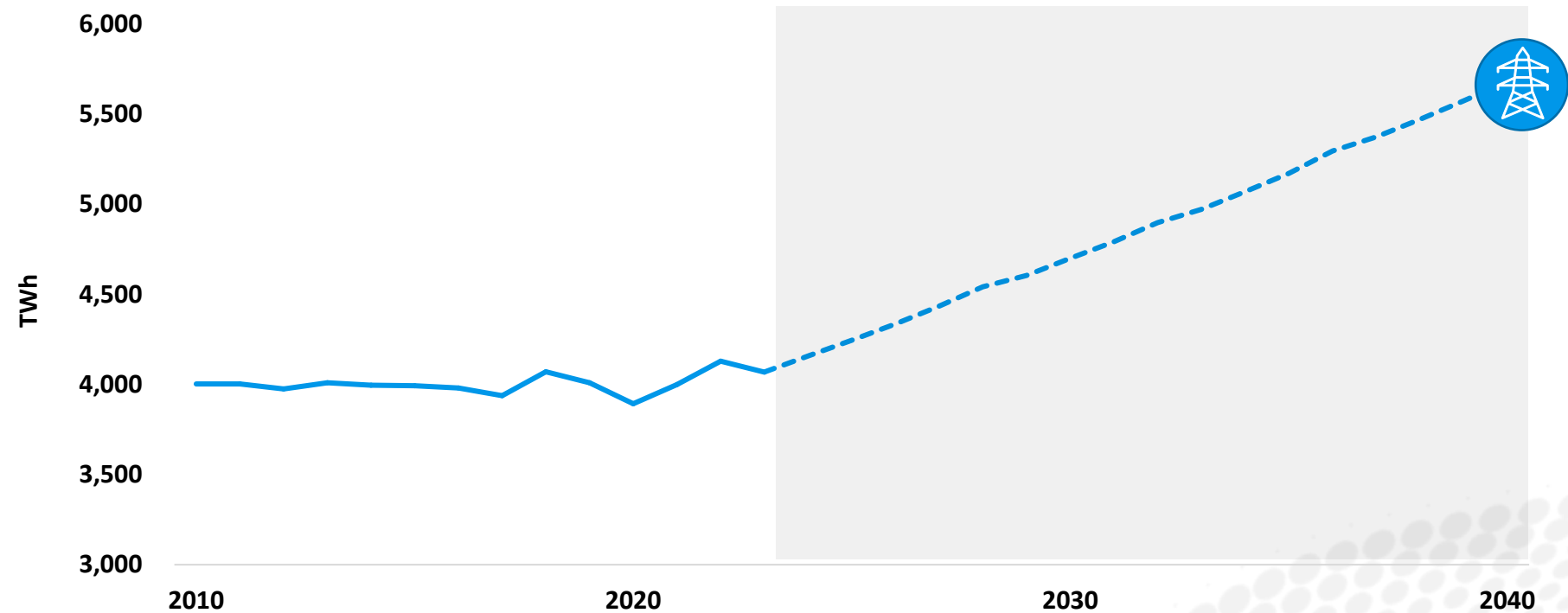


Source: Wood Mackenzie North America Gas Strategic Planning Outlook, April 2024. The data and information provided by Wood Mackenzie should not be interpreted as advice and you should not rely on it for any purpose. You may not copy or use this data and information except as expressly permitted by Wood Mackenzie in writing. To the fullest extent permitted by law, Wood Mackenzie accepts no responsibility for your use of this data and information.
Note: Zone 1-3 includes TX and LA; Zone 4-5 includes MS, AL, GA, FL, SC, NC and VA; Zone 6 includes DE, MD, NJ, NY and PA. Transport/Other includes pipeline as plant fuel losses and natural gas used in natural gas-fueled vehicles
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Electricity demand will stress power grid and require natural gas to backup intermittent renewables

Electrification of heating and transport, data centers and AI-driven future will create growth in power demand not seen in past two decades

U.S. Net On-Grid Power Demand



Electricity demand experiencing

10x

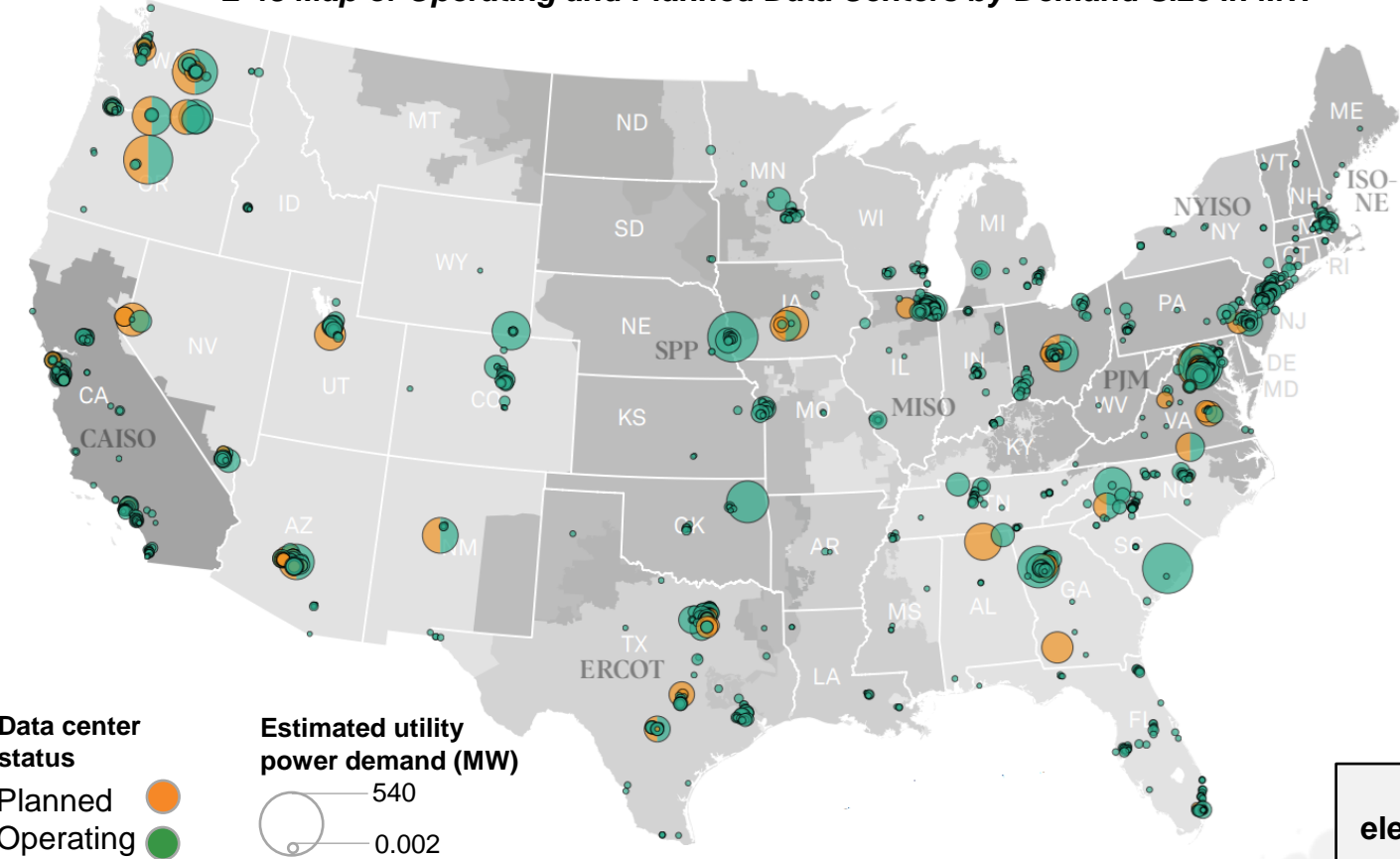
faster growth per year

this decade vs. prior decade driven by emergence of large load data centers and EV growth

Datacenters pose challenge in forecasting electricity and natural gas demand

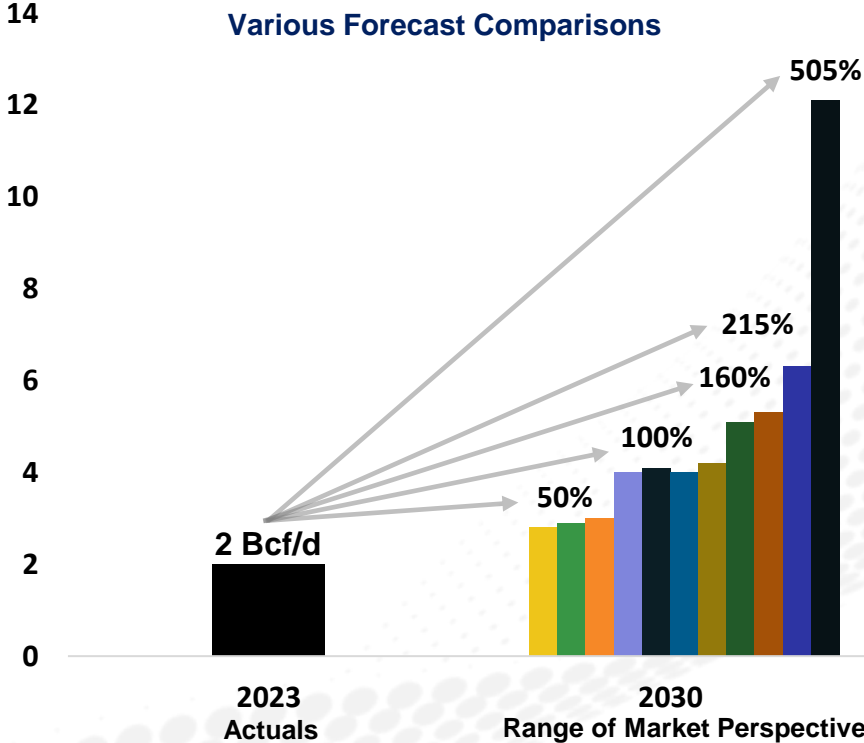
Transco well-positioned to capture strong regional growth in baseload and peak power demand expected from data centers

L-48 Map of Operating and Planned Data Centers by Demand Size in MW



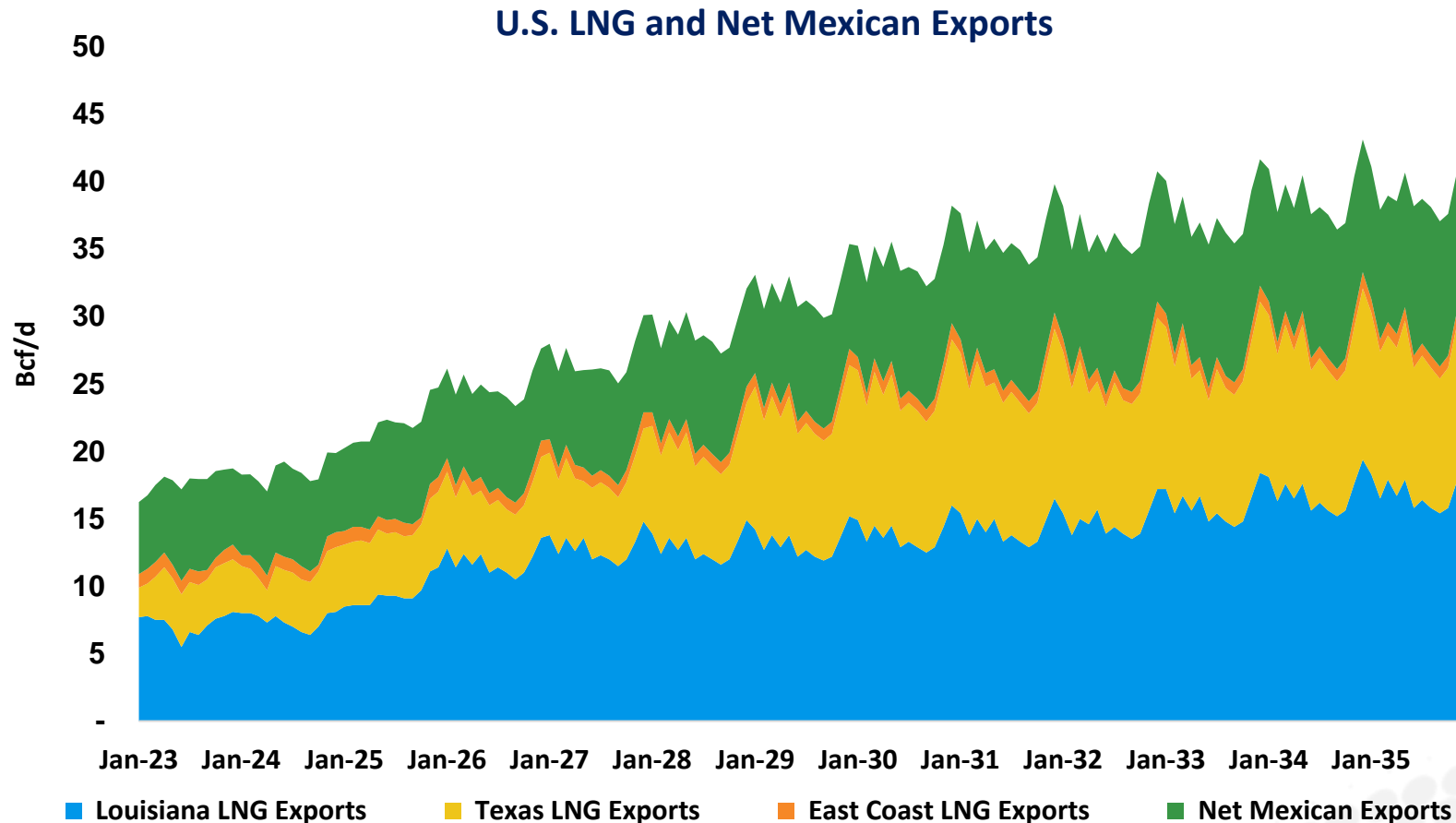
Sources: S&P Global Commodity Insights, ©2024 by S&P Global Inc.; various reports on data centers
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U.S. Gas Demand for Data Centers
Various Forecast Comparisons



If combined-cycle gas-fired generation provided 100% of the electricity behind these forecasts, it could translate into incremental U.S. gas demand for power ranging from ~1.7 to ~12 Bcf/d

Gulf Coast LNG export demand more than doubles to 28 Bcf/d by 2035 increasing competition for natural gas in Southeast

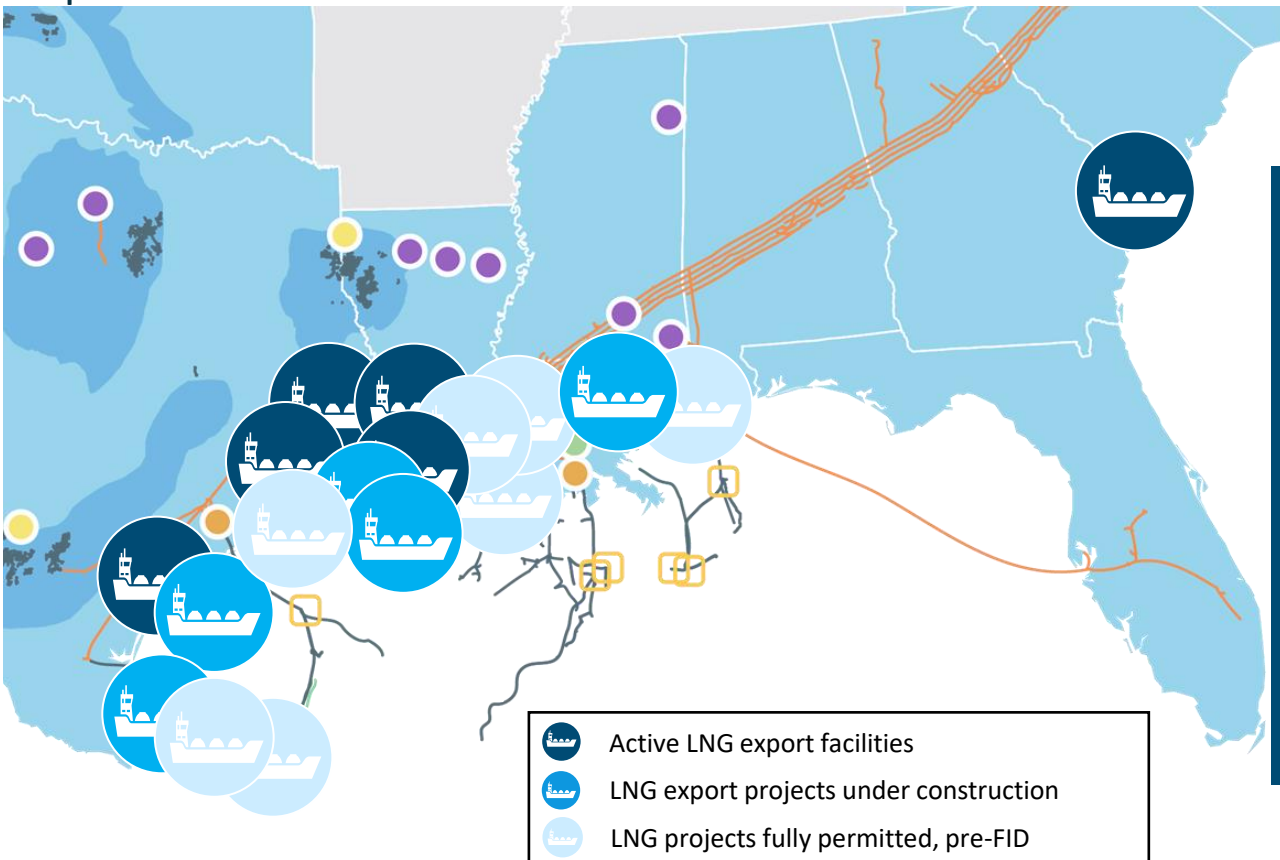


- U.S. exports 29 Bcf/d of LNG annually by 2035
- U.S. Gulf Coast LNG exports more than double from 11 to 28 Bcf/d by 2035
- In addition, pipeline exports to Mexico exceeding 10 Bcf/d by 2035 to fuel growth in power sector and their LNG export ambitions
- As the export capacity buildout matures, seasonal peaks in January can surpass annual averages by ~2 Bcf/d

Source: Wood Mackenzie North America Gas Strategic Planning Outlook, April 2024. The data and information provided by Wood Mackenzie should not be interpreted as advice and you should not rely on it for any purpose. You may not copy or use this data and information except as expressly permitted by Wood Mackenzie in writing. To the fullest extent permitted by law, Wood Mackenzie accepts no responsibility for your use of this data and information.

Transco resides along active and growing US LNG corridor

Williams' Asset Map in U.S. Gulf Coast¹ + U.S. L-48 Large Scale Approved and Potential Liquefaction Facilities Per EIA²



14.3
Bcf/d²

LNG projects already operational within Transco footprint



11.6
Bcf/d²

LNG export projects currently under construction within Transco footprint



11.9
Bcf/d³

LNG export projects awaiting FID within Transco footprint

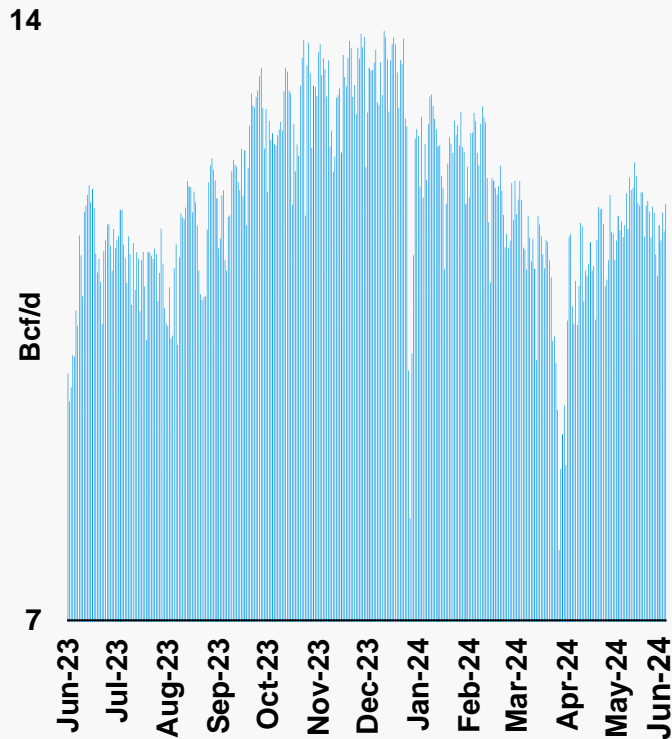


Source: U.S. Energy Information Administration (EIA) as of 6/27/2024.

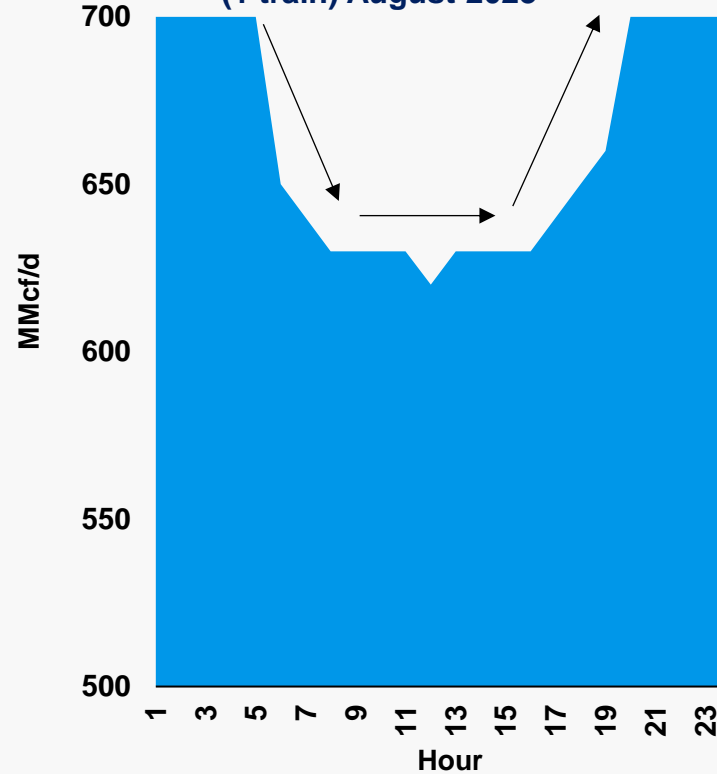
¹As of February 2024. ²Projects need to receive two major sets of regulatory approvals from U.S. DOE & FERC/MARAD. ³LNG export terminal capacity is the U.S. DOE-authorized maximum export quantity to non-FTA countries.

Growing daily and hourly variability in LNG exports and power demand will continue to stress natural gas pipeline systems

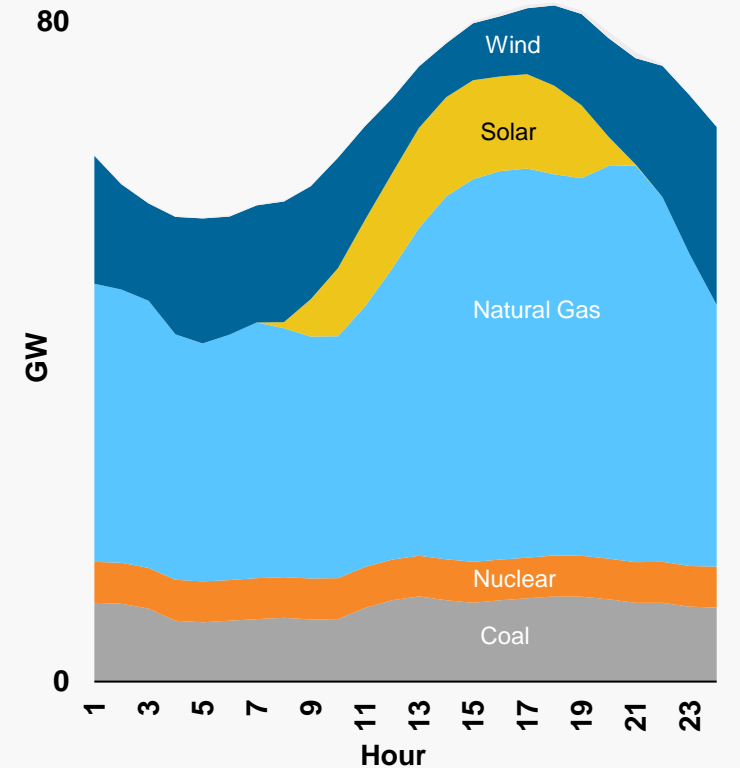
Daily US Gulf Coast LNG feed gas in 2024 demonstrates seasonal fluctuations



Hourly US Gulf Coast Cameron LNG feed gas data show intraday fluctuations (1 train) August 2023



ERCOT Hourly electricity generation mix shows intraday variability in demand¹



Source: U.S. Energy Information Administration (EIA)

1. Data shown for a typical summer day in 2023, specifically 8-8-2023

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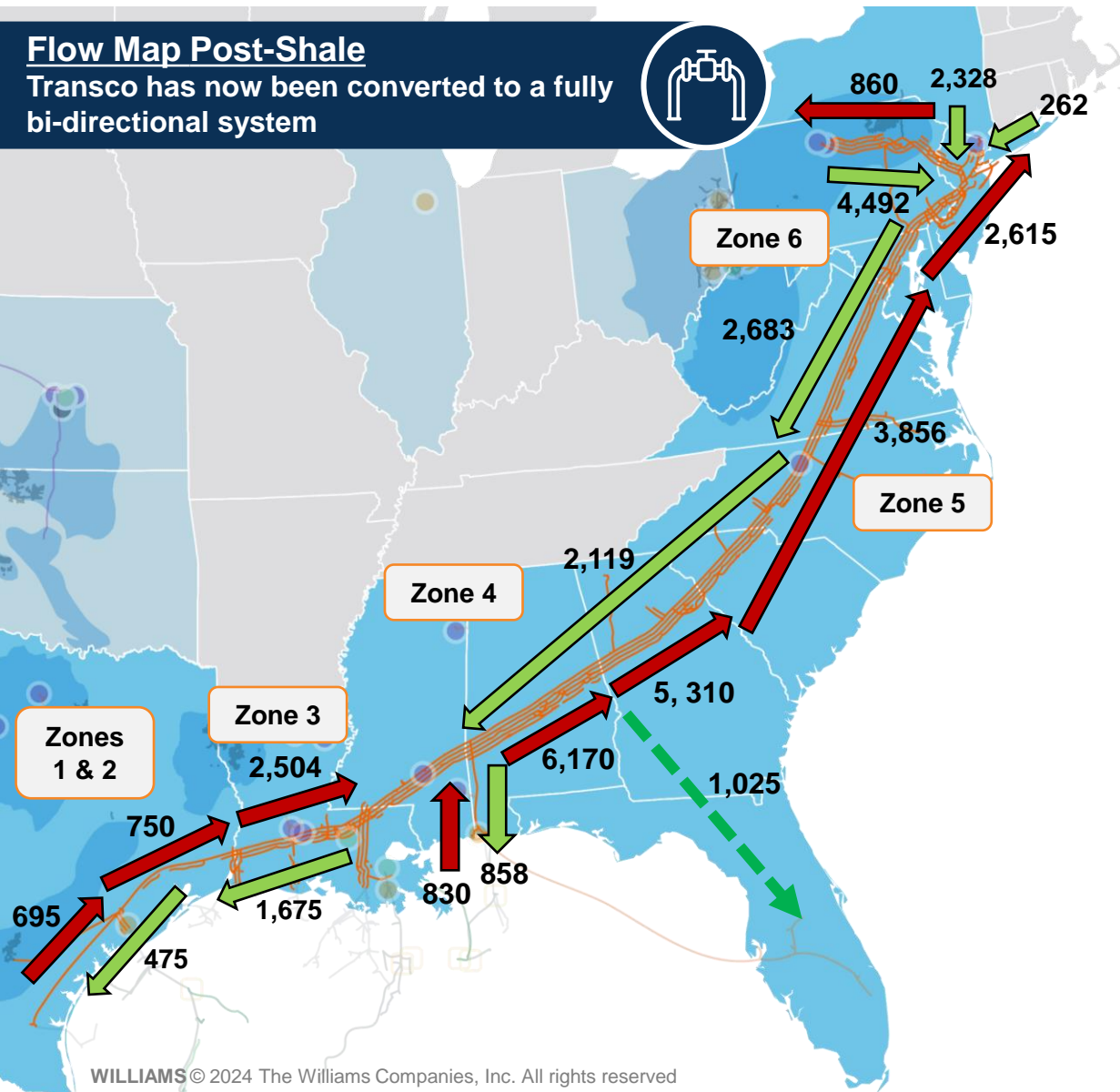


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Pipeline Control/System Dynamics

John Casto

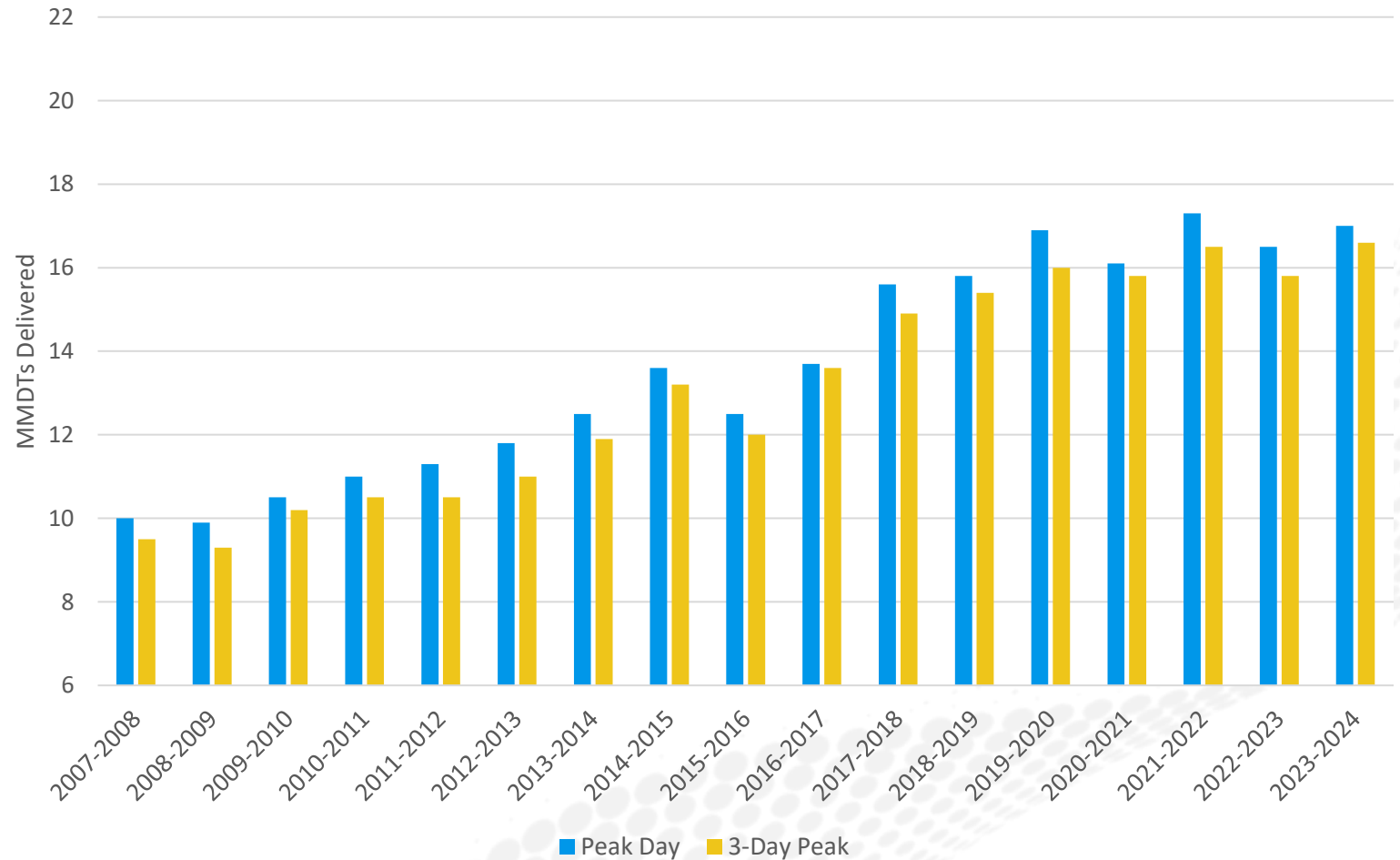
Transco Flows and Capacity (2023)



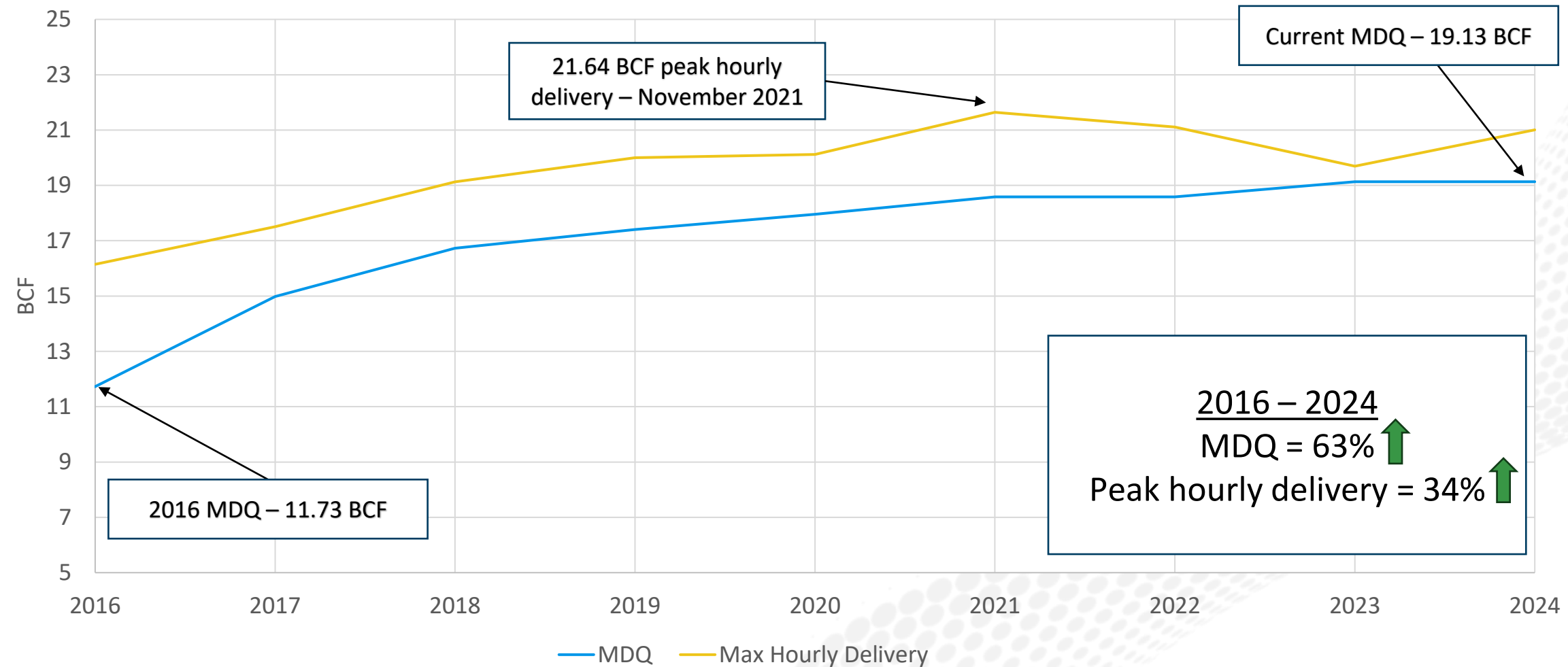
- Transco is a long-haul transmission pipeline consisting of over **10,000 miles of pipe**, **63 compressor stations** and **5 storage facilities**
- Transco provides **50% of the gas consumed in New York City** and **90% of the gas in the Carolinas**
- **Traditional Operation** – South to North, West to East moving **Gulf Coast supply** to markets in the mid-Atlantic and Northeast
- **Bi-directional Operation** – **Shale gas supply** and **LNG exports** drive bi-directional flow patterns system wide

Transco – Peak Day History

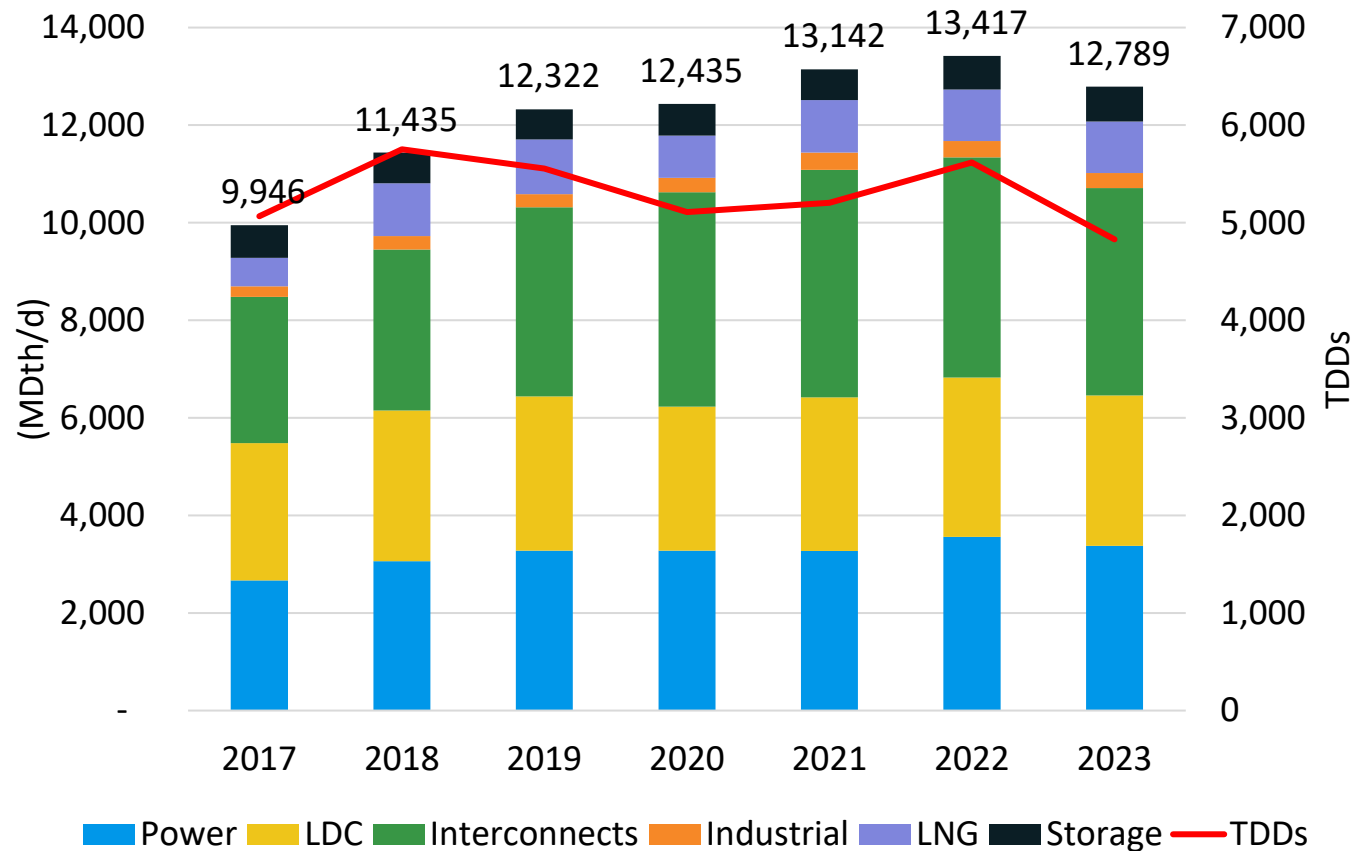
- Since 2008
 - Peak Day has grown 73%
 - 3-Day Peak has grown 75%
- Transco Peak Day is still 17.3 BCF on January 29, 2022
- New 3-Day Peak was set in January 2024



Transco Maximum Daily Quantity (MDQ) and Peak Deliveries



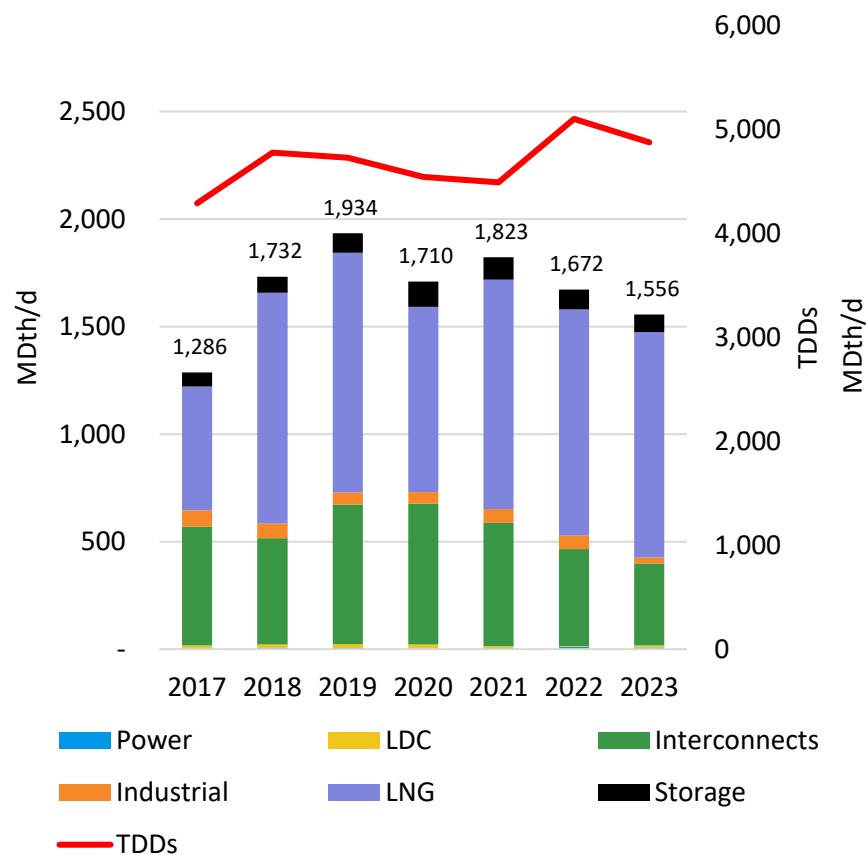
Transco Average Daily Deliveries



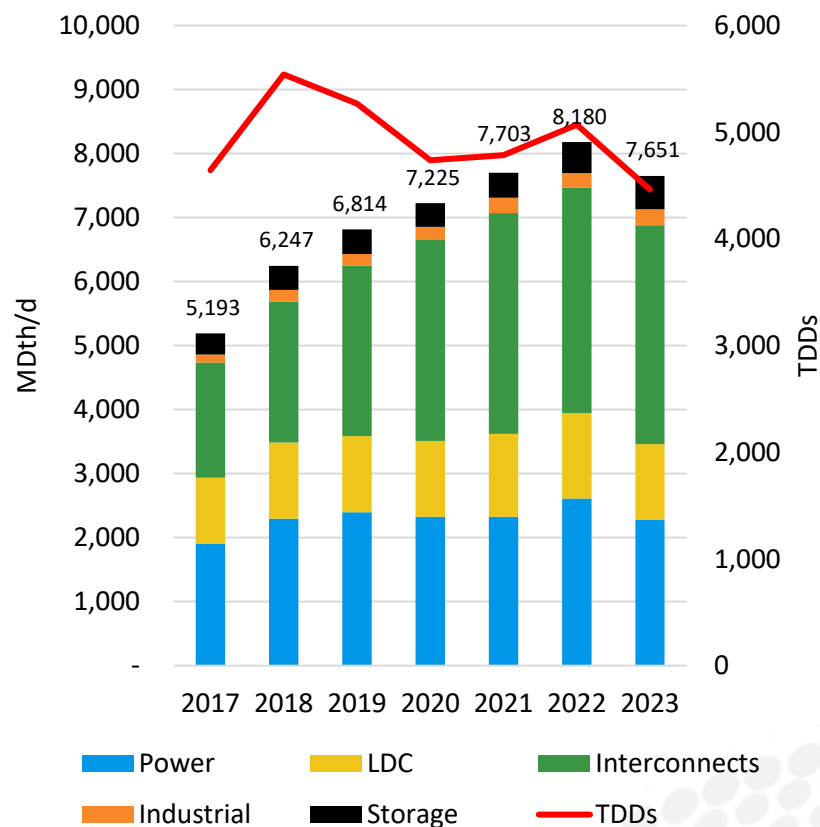
- Power demand on the Transco system has grown from 2,670 MDth/d in 2017 to ~3,471 MDth/d when compared to the 2022/23 average
- Growth in power demand systemwide from 2017 levels amounts to 30%, reflecting both rising power demand and natural gas's share in power generation along the Transco footprint
- Power demand in Zone 4-5 has grown by 29% from 2017 levels, while Zone 6 power demand has grown by 32% in the same period

Transco Average Daily Deliveries by Zone

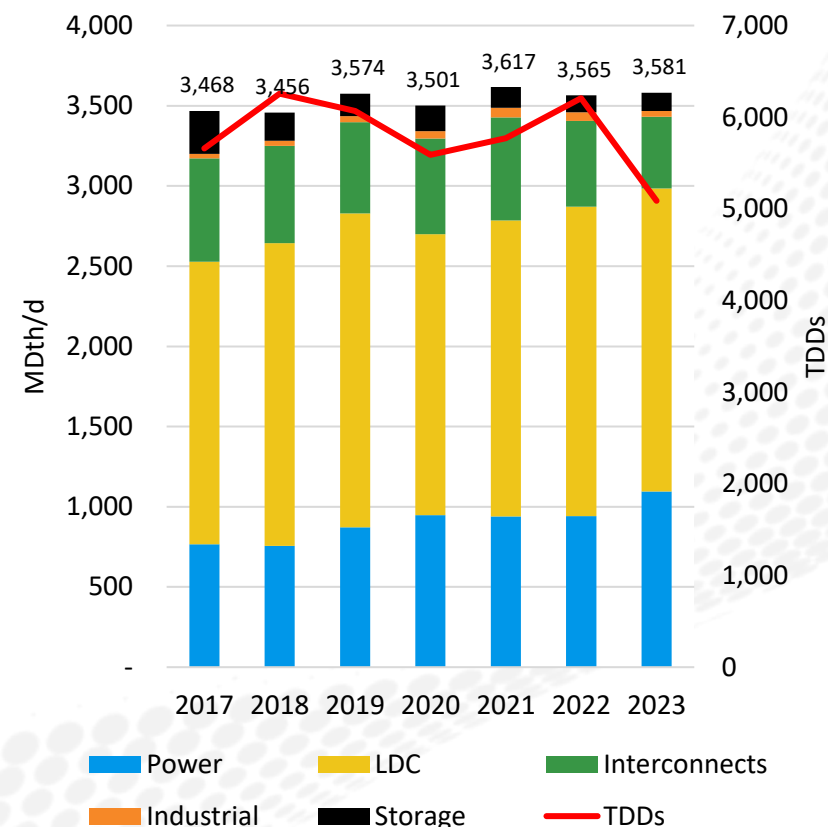
Zone 1-3 Average Daily Deliveries



Zone 4-5 Average Daily Deliveries



Zone 6 Average Daily Deliveries



Seasonal Operations Overview

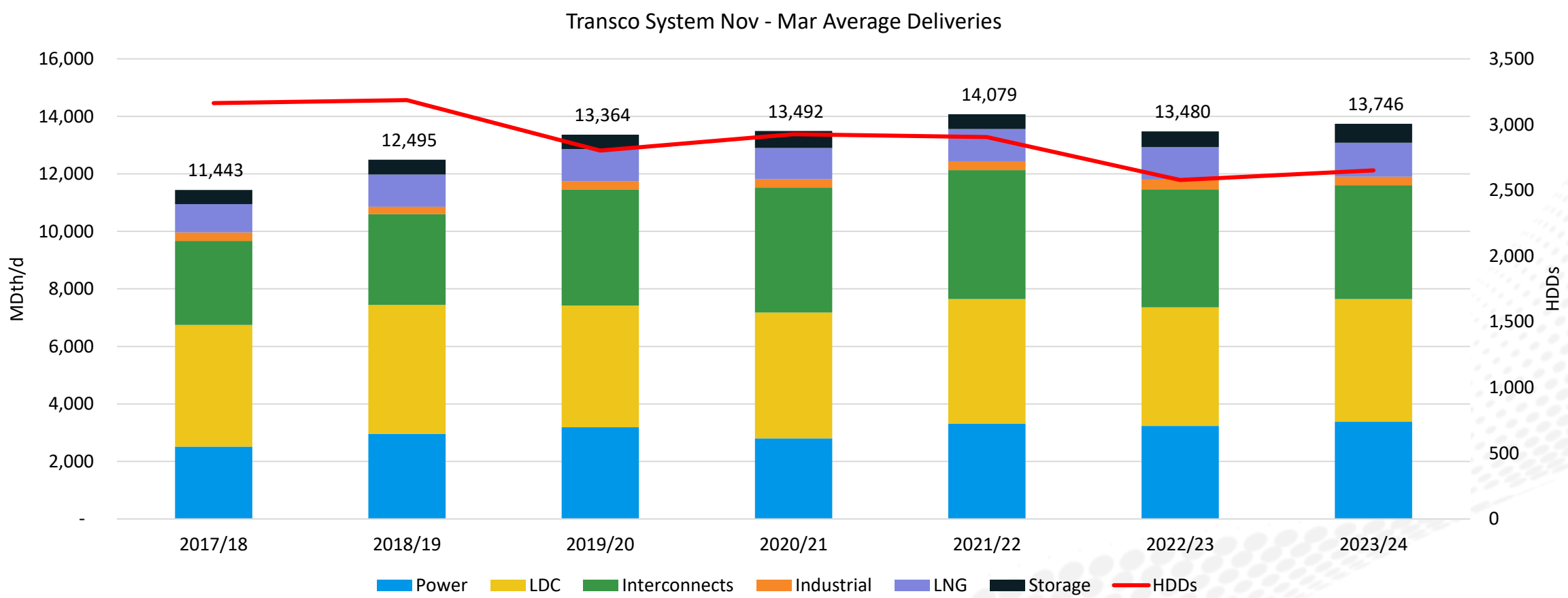
2023-2024 Winter Operations

- Winter was relatively mild
- Transco's system performed well
- Activated Weather Resiliency Plan for Winter Storm Gerri/Heather
- Restricted retro scheduling activity
- January 19-21, 2024 - New 3 Day Peak of 49,908,303 Dts
- January 20, 2024 – Seasonal Peak Day of 17,014,465 Dts
 - All-time Peak Day – 17,321,132 Dts, January 29, 2022

2024 Summer Operations

- Maintenance and construction activity
- Second highest all-time summer peak delivery on August 28, 2024, of 14,687,244 Dts
- All-time summer peak – 14,818,300 Dts, July 7, 2022.

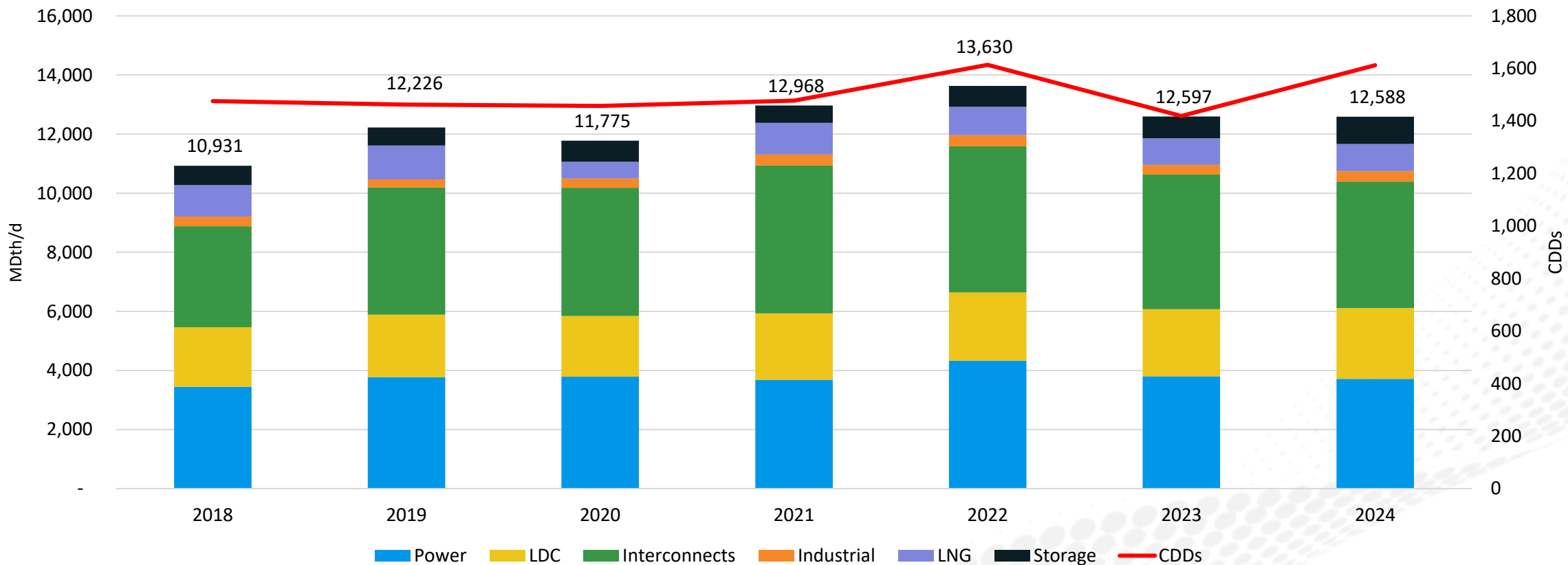
Transco Winter Review



Source: Transco System includes entire footprint of pipeline utilizing population weighted HDDs from major demand centers

Transco Summer Review

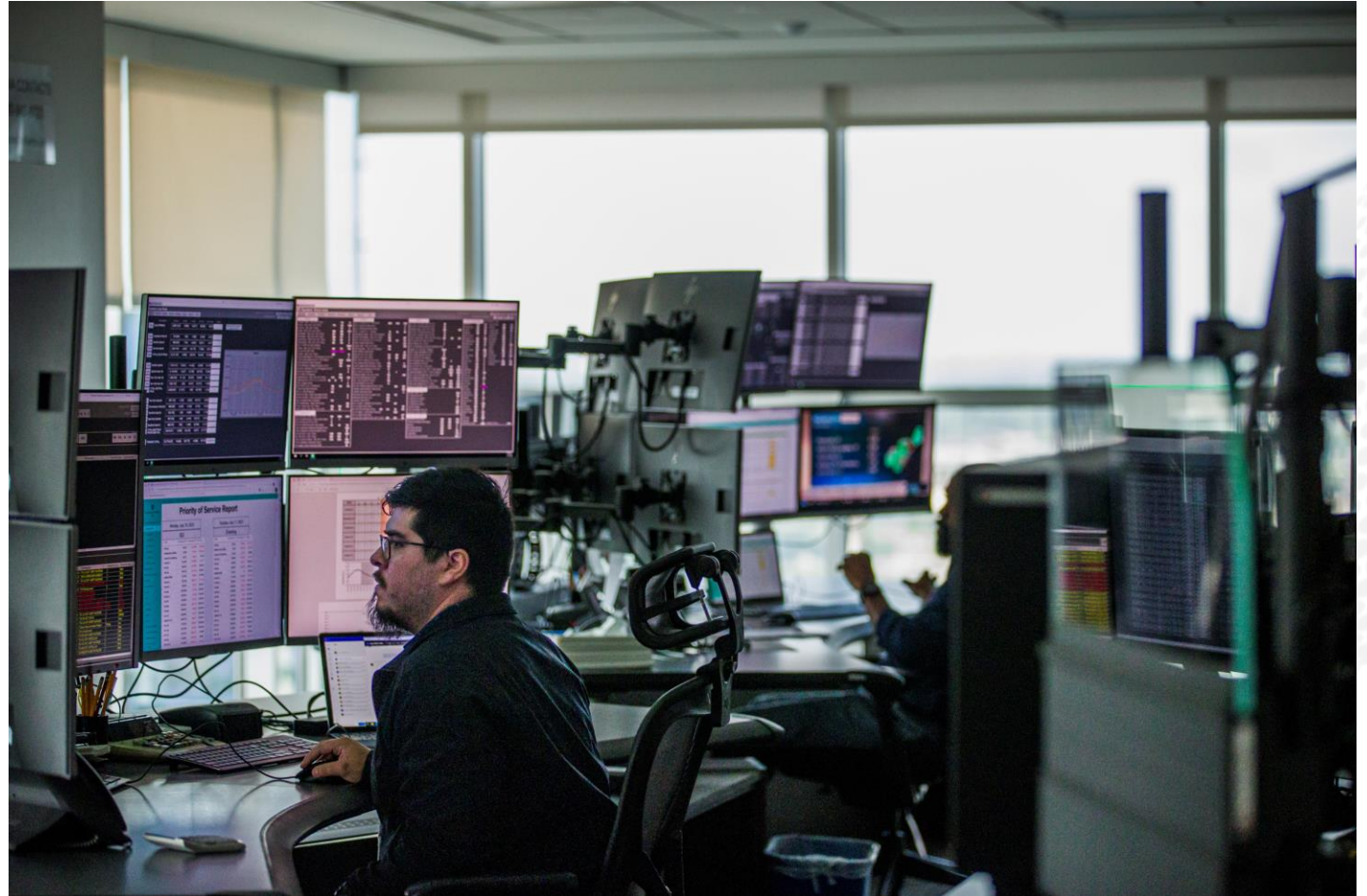
Transco System May - Aug Average Deliveries



Source: Transco System includes entire footprint of pipeline utilizing population weighted CDDs from major demand centers

Pipeline Control Summary

- Changing dynamics
- Increasing hourly swings
- Coordination with Eastern Interstates Commercial teams
- Maintenance growth and impacts





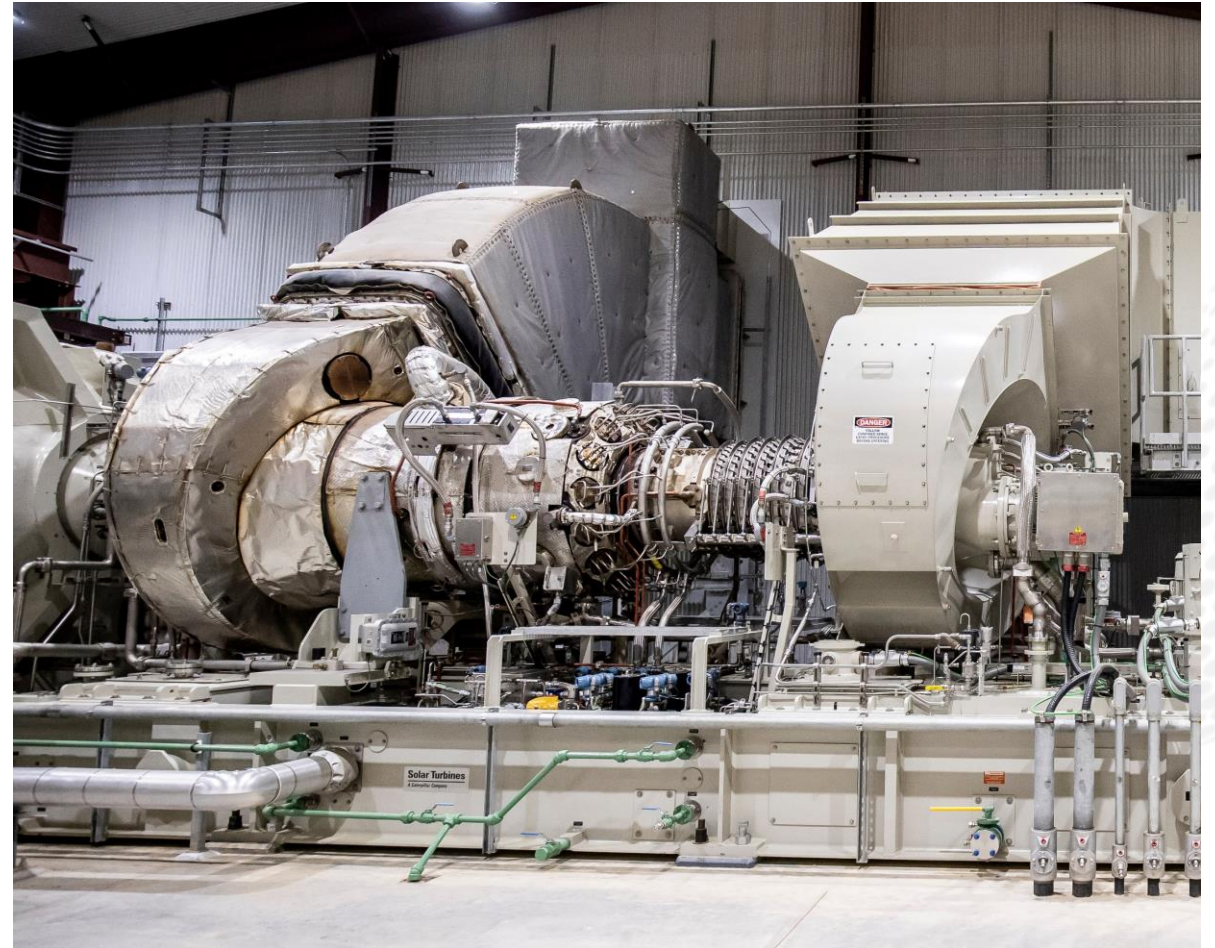
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Maintenance Discussion

John Bell

Maintenance


- Challenges
 - 2024 has been a significant year with a lot of maintenance performed along the system
 - Customer impacts
 - Recompression vs. blowdowns
 - Windows to perform maintenance are shrinking
 - Permitting delays
 - Increasing regulations
- Continuous improvement efforts
 - Increased staffing
 - Improved postings
 - Alternative strategies to minimize impacts
 - Maintenance scheduling workshops




2024 Maintenance Review

- Major Projects
 - Compliance and Integrity projects are the number one driver of maintenance across the system
 - DOT pipe replacements and hydro tests
 - ILI assessments, anomaly digs, repairs
 - Valve replacements to accommodate more advanced ILI tools
 - Hard Spot program efficiencies
- Combined projects
 - Considerations of station outages vs. mainline outages (anomaly investigation, pipeline inspections, pipe replacements)

>800 Outage Requests



Job Category	Number of Major Projects
Compliance/Integrity	25
Operations	10
Capital Expansion	10
Combined Projects	5
Hard Spot	4
Grand Total	54

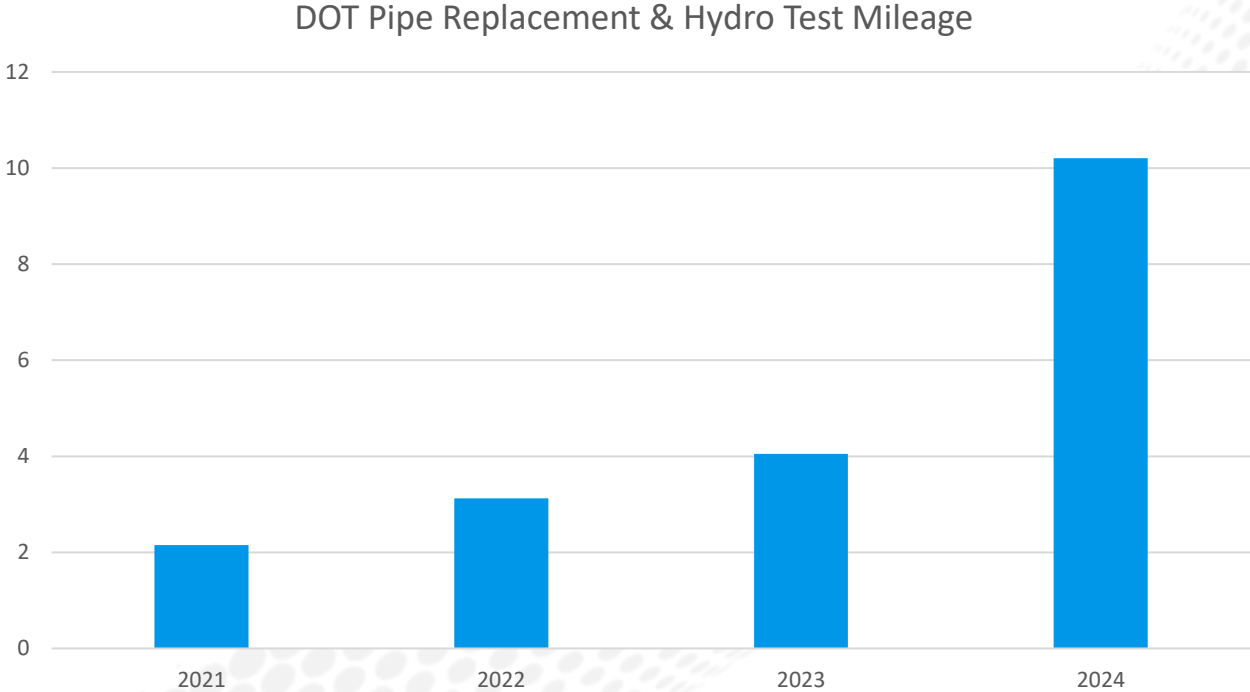


Breakdown of Combined Projects	
Job Category	Number of Major Projects
Compliance/Integrity	-
Capital Expansion	3
Operations	3
Hard Spot	4
Total	10

Historical Maintenance Review

- Evolving posting strategy
- Significant housing growth across the country has led to increased DOT Class Location changes year over year
- New and changing regulations resulting in increasing number of compliance and integrity projects
- Growing natural gas demand and new projects
- Increased system demand is minimizing ability to absorb maintenance impacts

Year	Major Projects
2021	32
2022	31
2023	39
2024	54



2025 Expected Maintenance

- Increasing regulations and Class growth are expected to continue to drive outages in 2025
- Fewer capital expansion and ERP projects are planned for next year
- Hard Spot impacts are expected to be similar to 2024, but efficiencies are still being found and alternatives are still being considered to minimize the overall impacts

Job Category	2024 Major Projects	2025 Expected Projects
Compliance/Integrity	25	(Increased)
Operations	10	Similar
Capital Expansion	10	(Decreased)
Hard Spot	4	Similar/Less

Maintenance Postings

- Customer feedback
 - Not enough notice
 - Limited information on work that is occurring
 - No direct understanding of how it will impact volumes
- Previous Posting Example
 - Transco has provided notice of planned maintenance activity associated with Job #162874 on its 2024 Planned Outage and Maintenance Summary. This activity requires a compressor station outage that will impact the availability of primary-firm transportation services moving south to north through Compressor Station 130. The current schedule is April 1, 2024 through May 18, 2024.

TSB Name - Location	Location ID	Flow Direction	Total Primary-Firm Qty Available (Mdt/d)
MAINLINE MP 1125 TSB	9012804	South to North	2,000

Improved Maintenance Postings

- Updated Posting Example

Subject: Station 175 (Job 557156) 2024 Planned Outage and Maintenance Summary
Transco will be performing necessary work associated with Job #551756 on its 2024 Planned Outage and Maintenance Summary. This work will require a pipeline segment outage on Mainline B from MP 1499.37 to MP 1540.37 to allow for a pipe replacement project as required by regulation due to recent DOT Class Location changes in this area. This maintenance activity could impact the availability of primary firm transportation services. The current schedule for this maintenance is July 18, 2024 through August 27, 2024.

Additional detail on work that is occurring

More information on location and pipelines impacted by work

TSB Name - Location	Location ID	Flow Direction	Design Capacity (Mdt/d)	Total Primary-Firm Qty Available (Mdt/d)	% Cuts - Design	% Cuts (Primary)– Potential Shipper Impact (Based on Historical Utilization)*
Mainline MP 1500 TSB	9011520	North to South	2,599	1,800	31%	25 – 30%

Design Capacity information, currently available in 1Line but makes it easier to reference

Potential expected cuts will be provided as an estimate off of expected volumes

Maintenance Summary

- Continuing to find ways to minimize maintenance impacts
- Changing system dynamics have altered the usual maintenance windows
- Adapting to changing regulations and new methods to complete maintenance
- Clearer communication when impacts do occur





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Scheduling & 1Line Updates

Julian Arias

Scheduling Updates

- Weather Resiliency Plan implementation
- Changing customer mix dynamics
- Reviewing and implementing new business processes to maintain reliability
- New Interconnects In Service
 - West Bernard (Kinder Morgan Tejas) – March 2024
 - Cherrystone (Mountain Valley Pipeline) – July 2024
 - Spuds RNG (Gaston AG Energy) – September 2024
 - Clarks Branch (Matterhorn Express Pipeline) – October 2024
 - Pecan Verde (Pecan Pipeline Company) – Estimated Year End 2024

Delivering Reliable Services

Winter Storm Elliott prompted an evaluation of business processes currently in place, and as a result we have made improvements to reinforce the integrity of our system. During winter storm Heather, we implemented those process changes. The Weather Resiliency Plan was initiated beginning on Wednesday, January 10th. Three major changes included:

Enhancing resiliency
through extreme
weather



Enhanced Communications

Lesson learned from Elliott:

Customers valued formal touchpoints in a group setting in addition to individualized conversations

Changes implemented:

- Held formalized zonal shipper meetings prior to, during and after the event with large stakeholders
- Continued to reach out personally to commercial counterparts

Active Confirmations

Lesson learned from Elliott:

Transco needed to improve response time to underperformance at supply points.

Changes implemented:

- Utilized newly developed tools to view imbalances and pressure commitments in real time
- Enhanced confirmation process by monitoring locations in real time and confirming down locations that were underperforming thus improving response time

Disallowing Retroactive Activity

Lesson learned from Elliott: Allowing retroactive transactions gave shippers the ability to incur an OFO penalty and later modify the transaction and reverse the penalties. This set up did not incentivize the intended shipper behavior during a critical period.

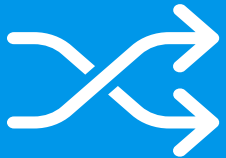
Changes implemented:

- Transco disallowed retros, for the first time, for 5 days during the storm

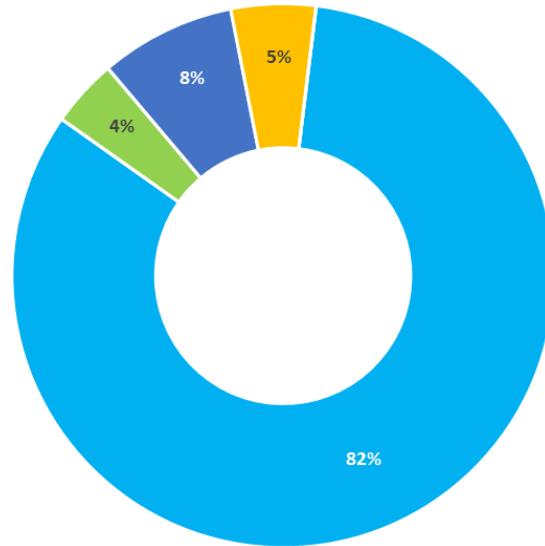
Delivering Reliable Services

Changing Customer Mix

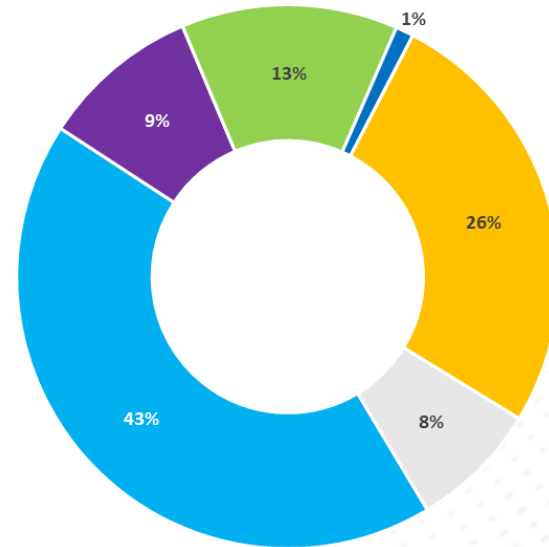
Managing changing
pipeline dynamics



Customer Distribution in 2010



Customer Distribution in 2027

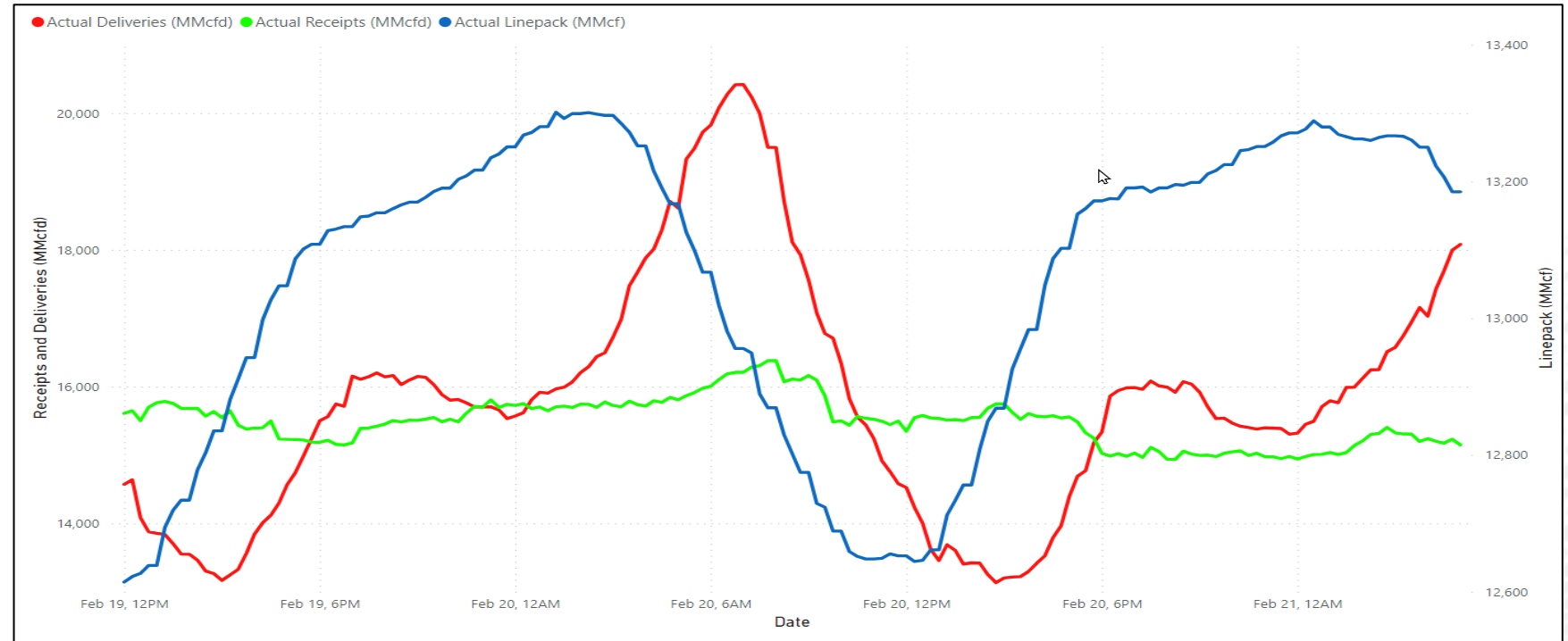
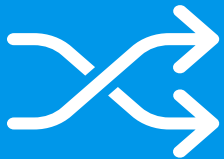


■ LDC ■ LNG ■ Marketer ■ Other ■ Power Gen ■ Producer

Delivering Reliable Services

Non-Ratable Takes – Increasing Volatility

Managing changing
pipeline dynamics



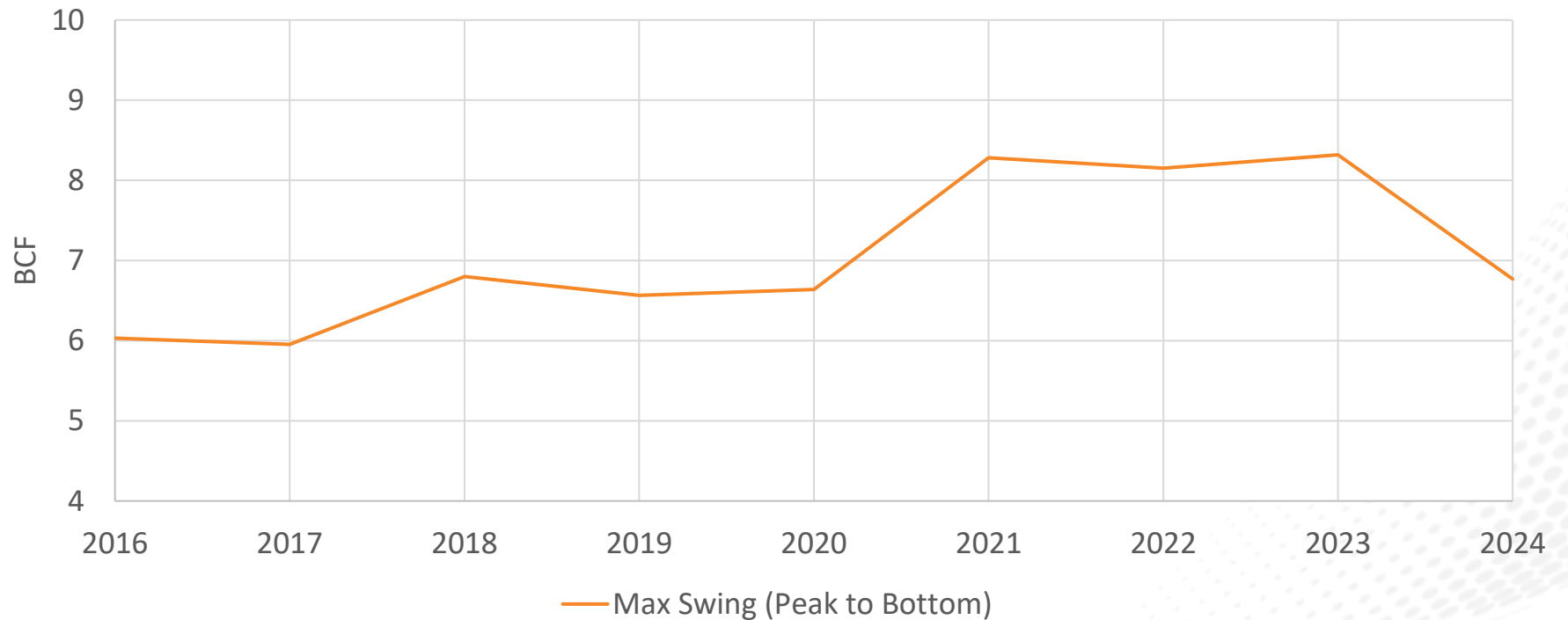
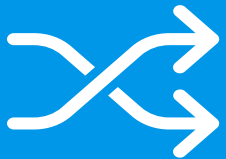
Hourly Load Example (Feb 19 – 21, 2024)

Timeframe represents a period of high loads (~16 MMDth/d), but not peak day loads (>17 MMDth/d)

- Total system load ramped up 5 MMDth/d from 15.8 MMDth/d at midnight to 20.8 MMDth/d at 7 am.
- Total system loads decreased from 20.8 MMDth/d rate at 7 am to 13.8 MMDth/d at 1pm (7 MMDth/d rate swing in 6 hours)
- Volatile hourly loads were managed with line pack and required increased start and stop cycles of horsepower and swinging of storage assets.

Transco Delivery Swings

Managing changing
pipeline dynamics



- With the changing flow dynamics on the system, we have seen an increase in the delivery hourly swings within the gas day.
- This is being driven by increased system demand, changing customer mix, and renewables.
- It makes it more challenging to manage the system on a daily basis.
- We continue to review our business processes to maintain reliability.

Transco Retro Changes

Current Process

- Transco currently offers 2 additional Nomination cycles in addition to the 5 approved NAESB cycles – Post and Retro.
- Retros are auto approved and flow through the system for validation up to 6 months.
- There are limited validations and customers can create storage options with retros.

Future Process

Phase I Process

- Create a validation for Pipeline Interconnects to reject any Post or Retro nominations when there is not enough gas flow and creates OBA imbalances.
- Continue to Disallow retros on certain OFO days during Winter 2024/2025.

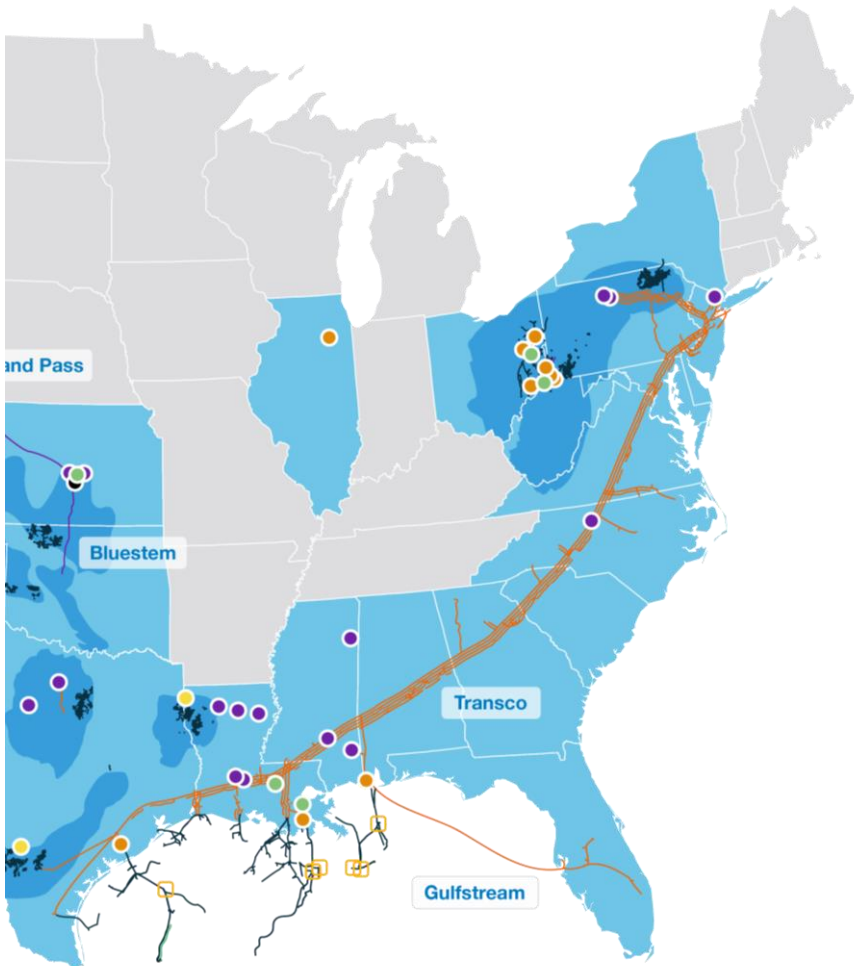
Phase II Process

- Create and Implement a Transco Retro Policy in 2025 that will use additional validations to the retro scheduling process

Benefits

- Facilitates the original intent of automating retros to be for errors
- Rewards shippers that adhere to the system OFO.
- Promotes real time scheduling adjustments
- Allows Pipeline Control to better manage the pipeline and maintain reliability.

1Line Enhancements



1Line Application now Cloud Hosted

- Improved site performance
- Improved scaling to manage increased traffic
- Streamlines the ability to add enhancements

Measurement Change Email

- Added additional detail to provide specific meter information in customer notifications

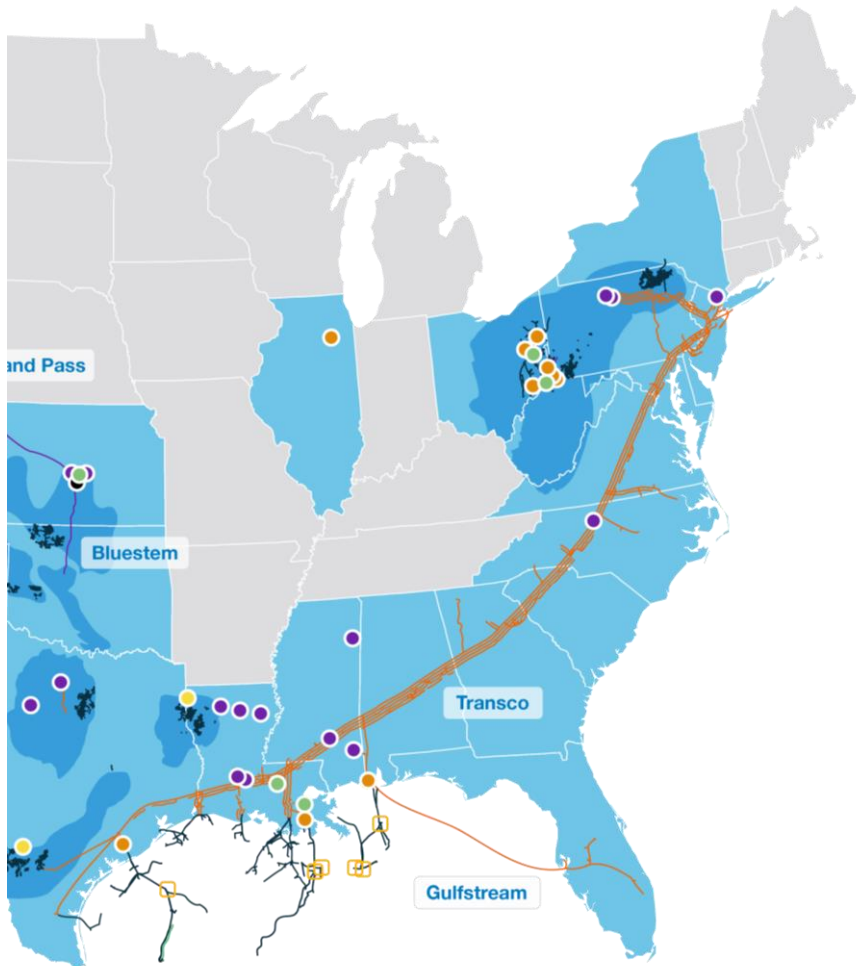
Customer Contact Information Easily Accessed

- 1Line Dashboard updated to provide customers easier access to their appropriate representative

OFO Alert on the EBB

- EBB will display red when there is an active OFO

1Line Enhancements



In Planning

1Line Enhancement

- Evolving architecture to enable future business needs

Capacity Release Efficiency

- Feedback to better understand customer needs and potential enhancements to 1Line

1Line Forum Survey

- Feedback to better understand customer needs and potential enhancements to 1Line

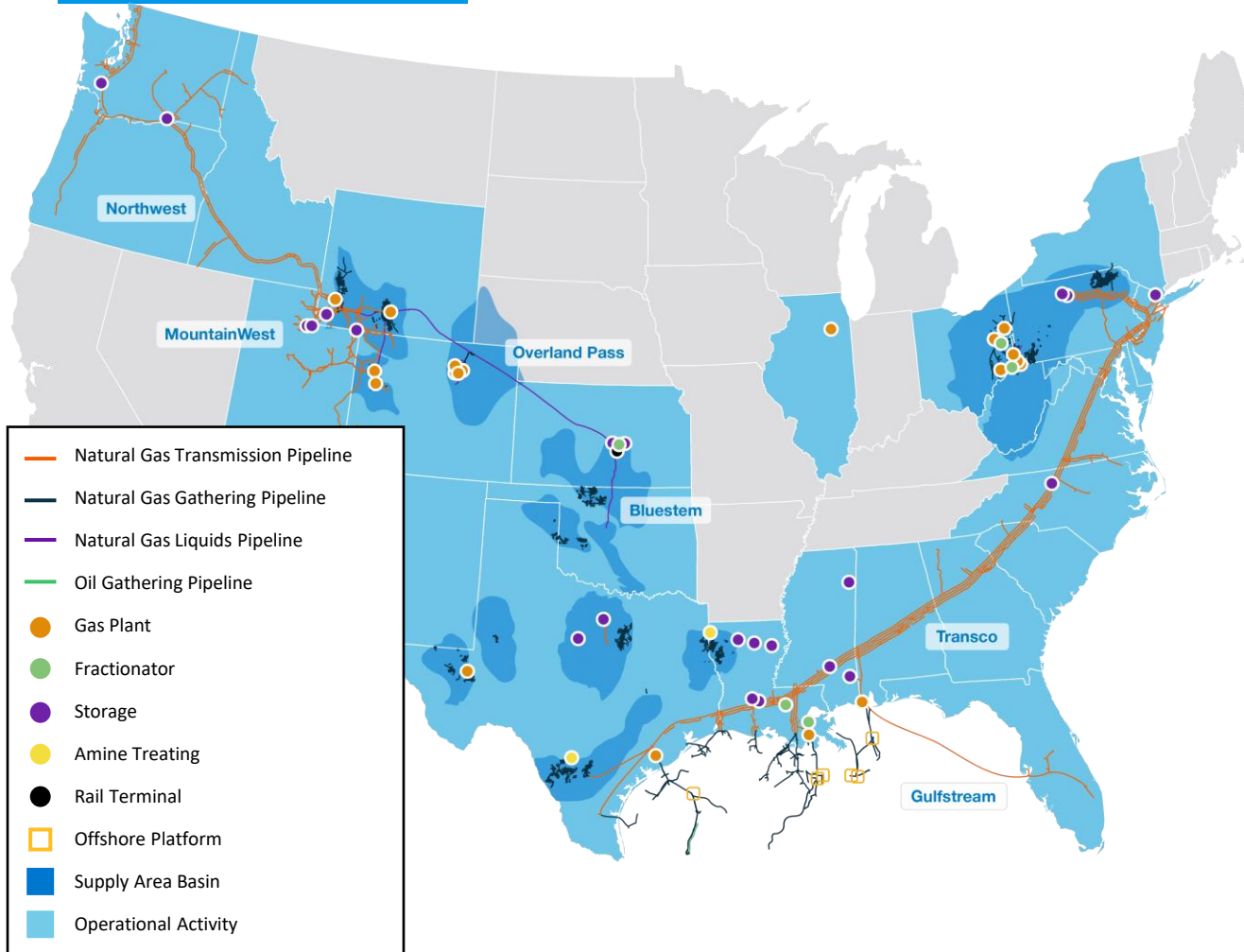


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Business Development Update

Clay Glockzin

Uniquely positioned to capture opportunities to serve energy needs

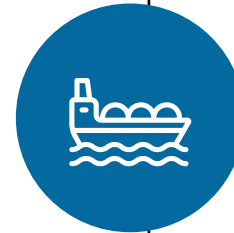


Note: Map as of February 2024. ¹S&P Global Commodity Insights © 2024.
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Power demand growth

- Electricity growing 3x faster this decade vs. prior decade driven by EV growth and emergence of large load data centers¹
- Ability to expand transmission system to serve peak demand and provide capacity to serve data center growth



LNG growth

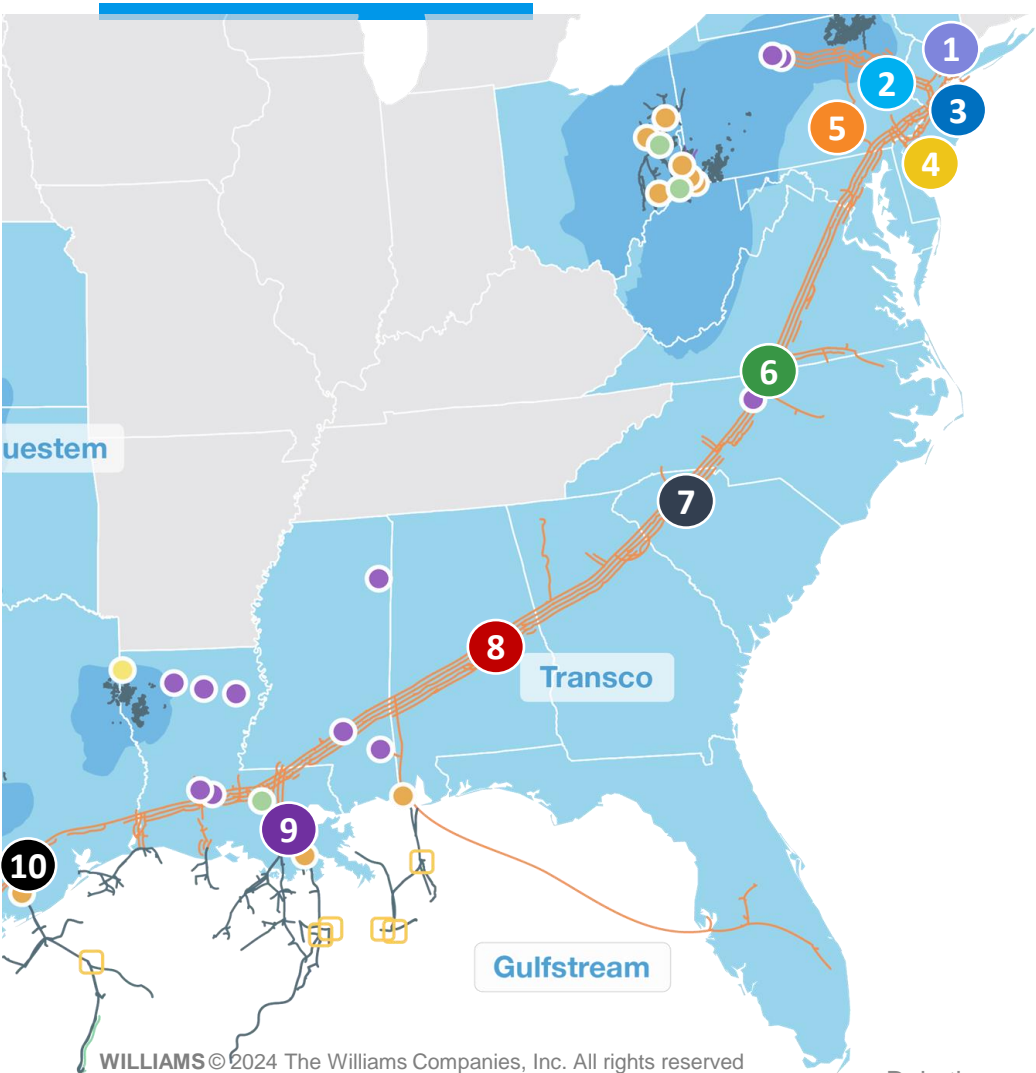
- Asset footprint offers unmatched opportunity
- Positioned to capitalize on a growing LNG market
- Largest natural gas storage operator in proximity to LNG demand



Coal retirements

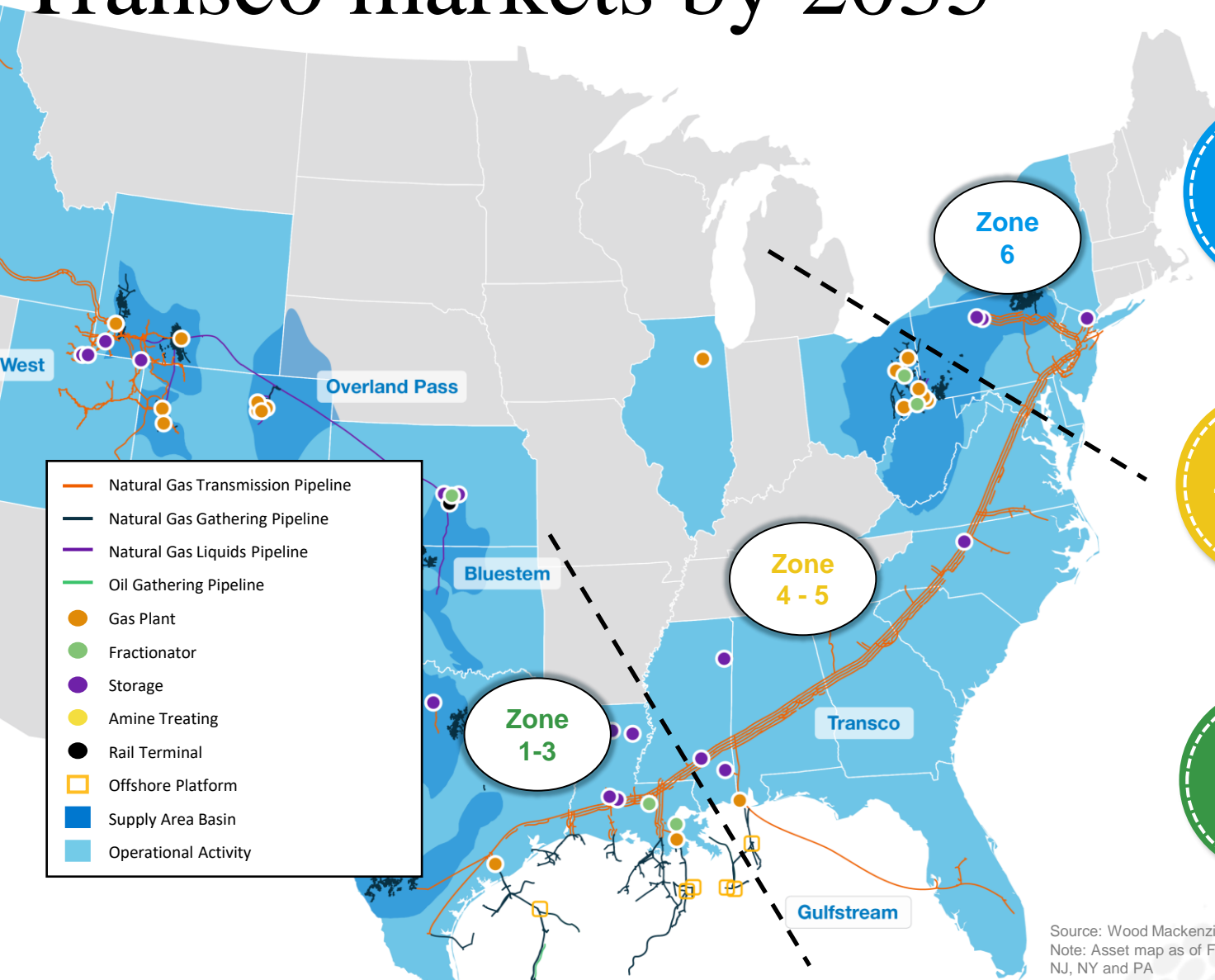
- Supporting power generation shift from coal to gas
- Continue to reduce emissions through gas fired generation vs. coal

Over 3.0 Bcf/d of added capacity since 2019

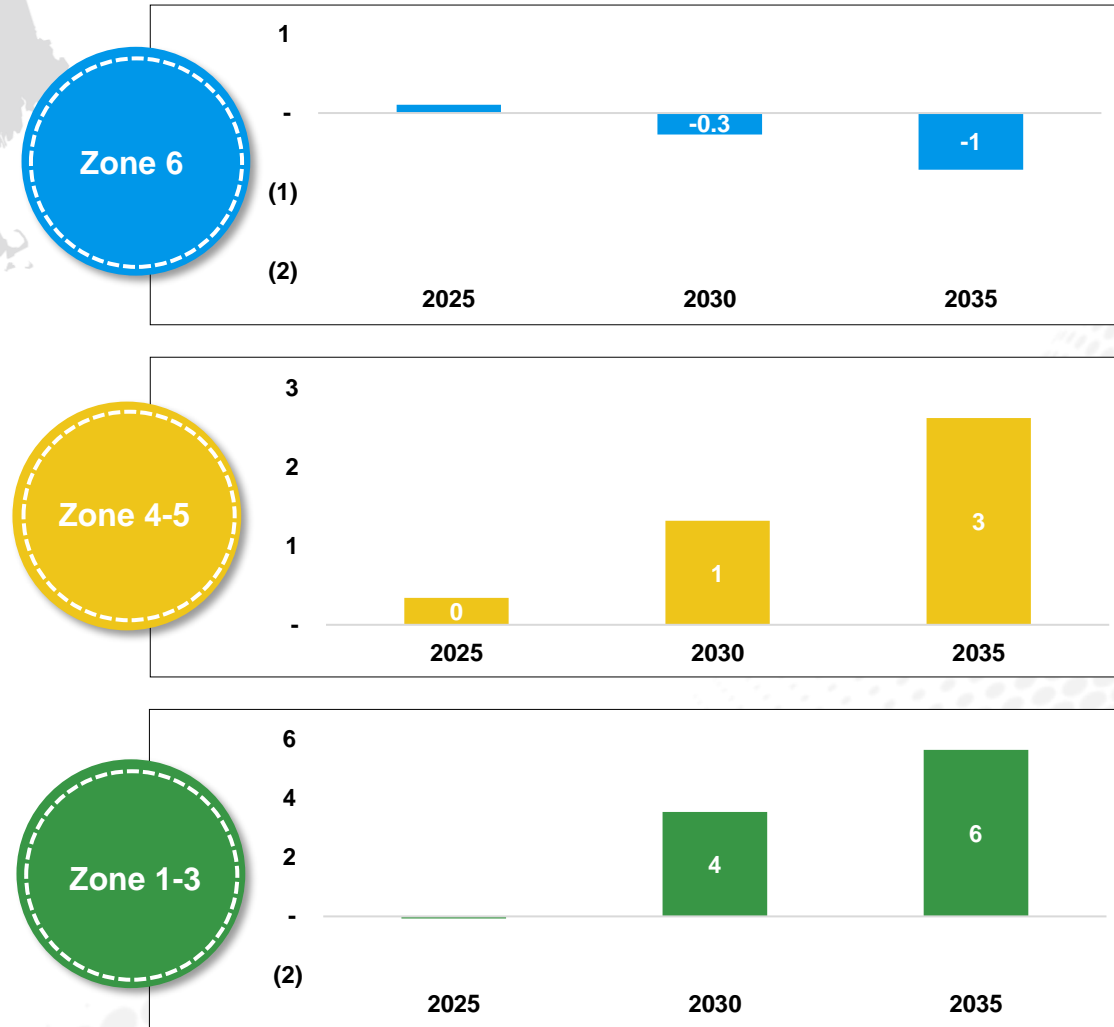


Project		In-Service	Project Capacity
Rivervale South	1	2019	190 MMcf/d
Regional Energy Access	2	2024	829 MMcf/d
Gateway	3	2020	65 MMcf/d
Chesterfield	4	2021	130 MMcf/d
Leidy South	5	2021	582.4 MMcf/d
Carolina Market Link	6	2024	78 MMcf/d
Southeastern Trail	7	2021	296.3 MMcf/d
Hillabee 2	8	2020	206.6 MMcf/d
St. James	9	2019	161.5 MMcf/d
Gulf Connector	10	2019	475 MMcf/d

Domestic natural gas demand growing 8 Bcf/d across Transco markets by 2035



Natural Gas Demand Growth Over 2023 Levels (Bcf/d)

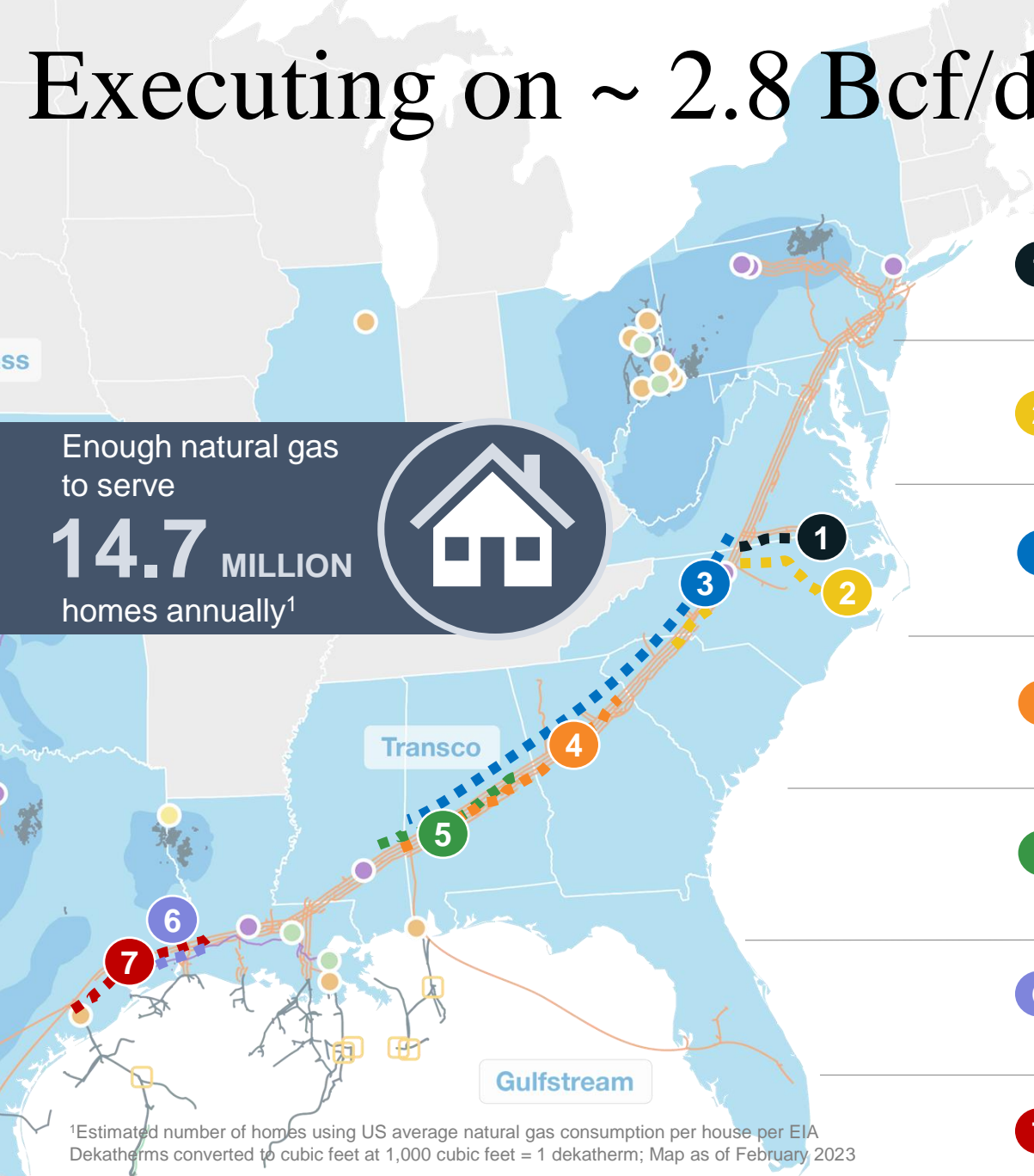


Source: Wood Mackenzie Strategic Planning Outlook, April 2024

Note: Asset map as of February 2024. Zone 1-3 includes TX and LA; Zone 4-5 includes MS, AL, GA, FL, SC, NC and VA; Zone 6 includes DE, MD, NJ, NY and PA

Executing on ~ 2.8 Bcf/d of Transco expansions

Enough natural gas
to serve
14.7 MILLION
homes annually¹



¹Estimated number of homes using US average natural gas consumption per house per EIA Dekatherms converted to cubic feet at 1,000 cubic feet = 1 dekatherm; Map as of February 2023

1 Commonwealth Energy Connector

- 105 MMcf/d serving Res/Com demand in Mid-Atlantic
- Received FERC Order and under construction with expected in service date 4Q'25

2 Southside Reliability Enhancement

- 423 MMcf/d serving Res/Com demand in Mid-Atlantic
- Received FERC Order and under construction with expected in service date 4Q'24

3 Southeast Supply Enhancement

- 1,587 MMcf/d serving Res/Com demand across the Southeast
- FERC Pre-filing application submitted February 2024 with expected in service date 4Q'27

4 Alabama Georgia Connector

- 63.8 MMcf/d serving power and residential demand in GA
- Received FERC Order with expected in service date 4Q'25

5 Southeast Energy Connector

- 150 MMcf/d serving power demand in AL
- Filed FERC Application and under construction with expected in service date 1Q'25

6 Gillis West

- 115 MMcf/d serving power demand in TX
- Expected in service date 4Q'25

7 Texas to Louisiana Energy Pathway

- 364 MMcf/d serving Gulf Coast LNG exports
- Commenced construction with expected in service date 1Q'25



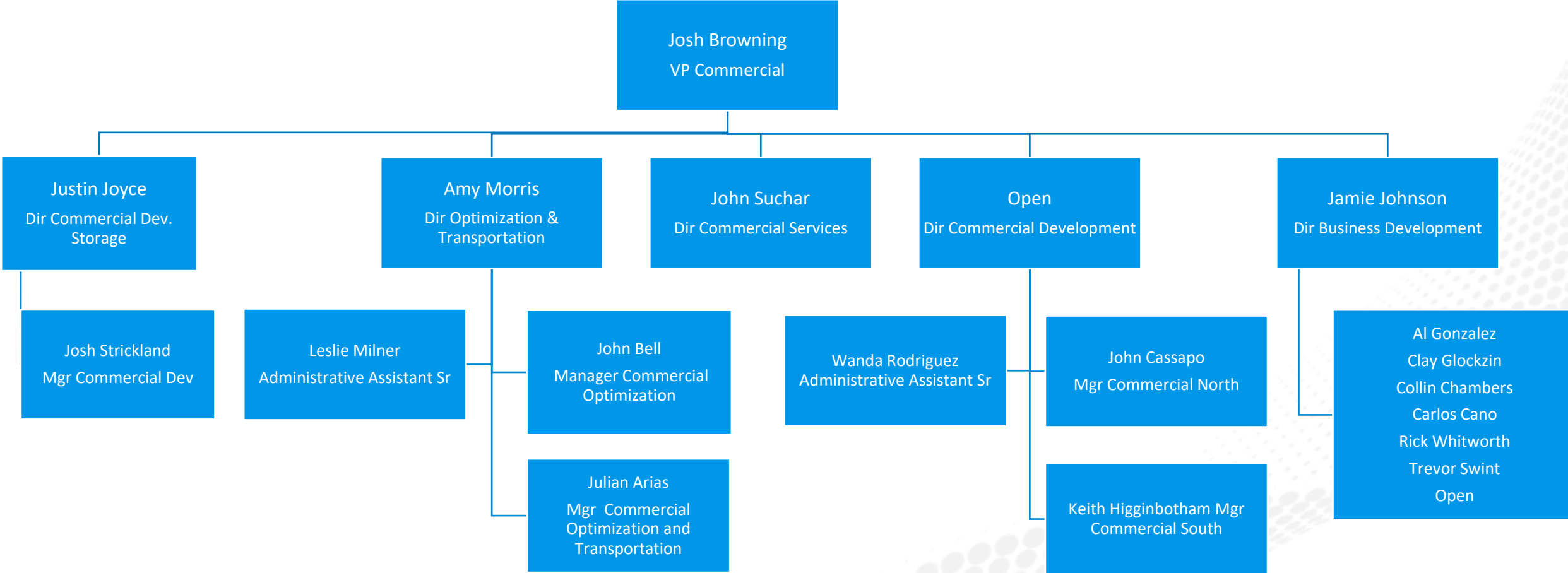
Closing Summary



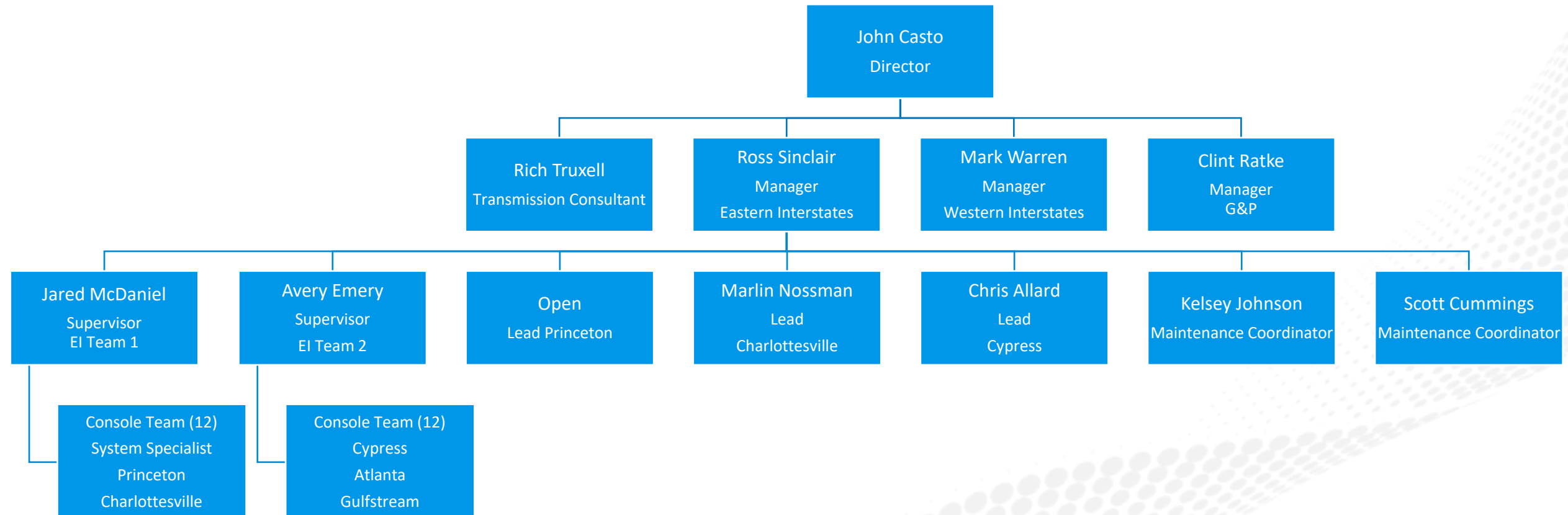
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Appendix

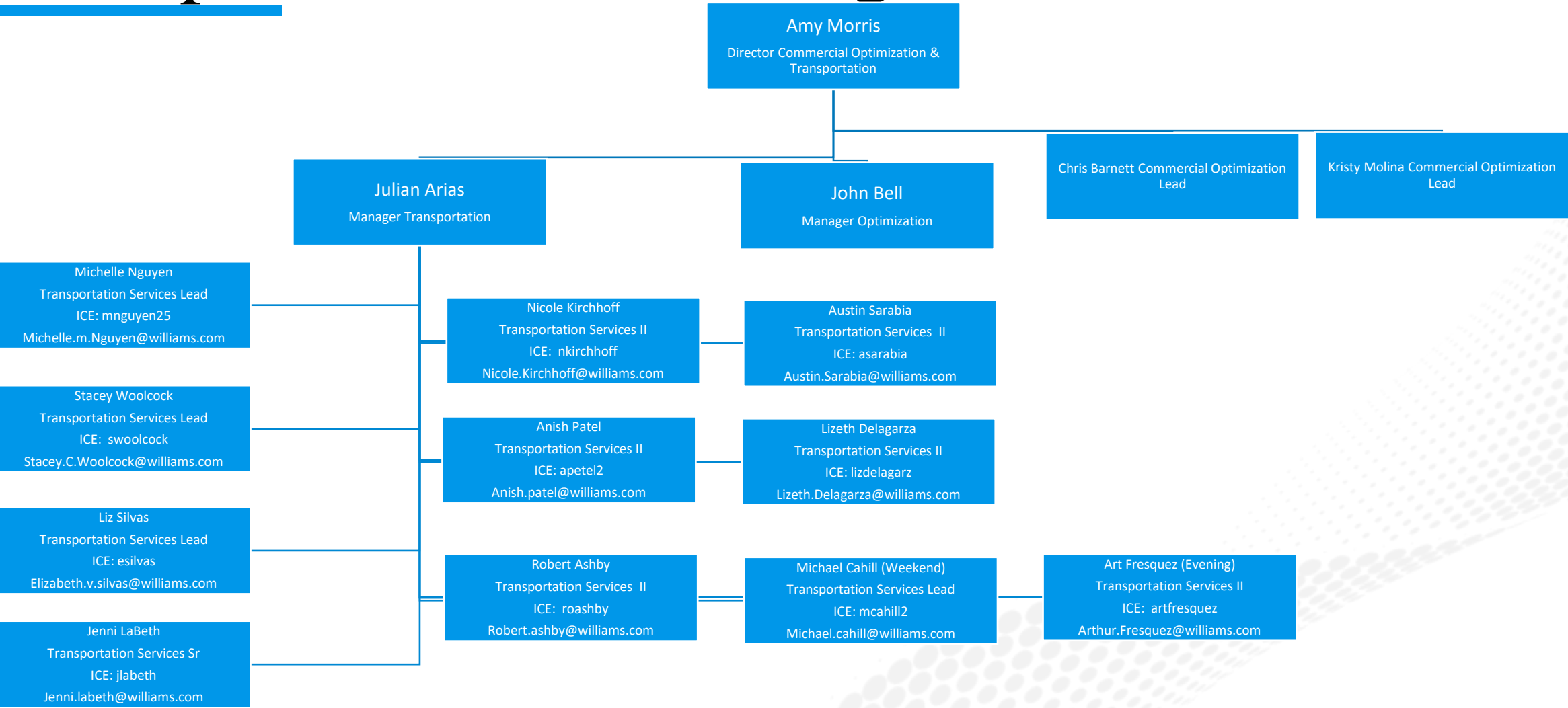
Eastern Interstates Commercial Org Structure



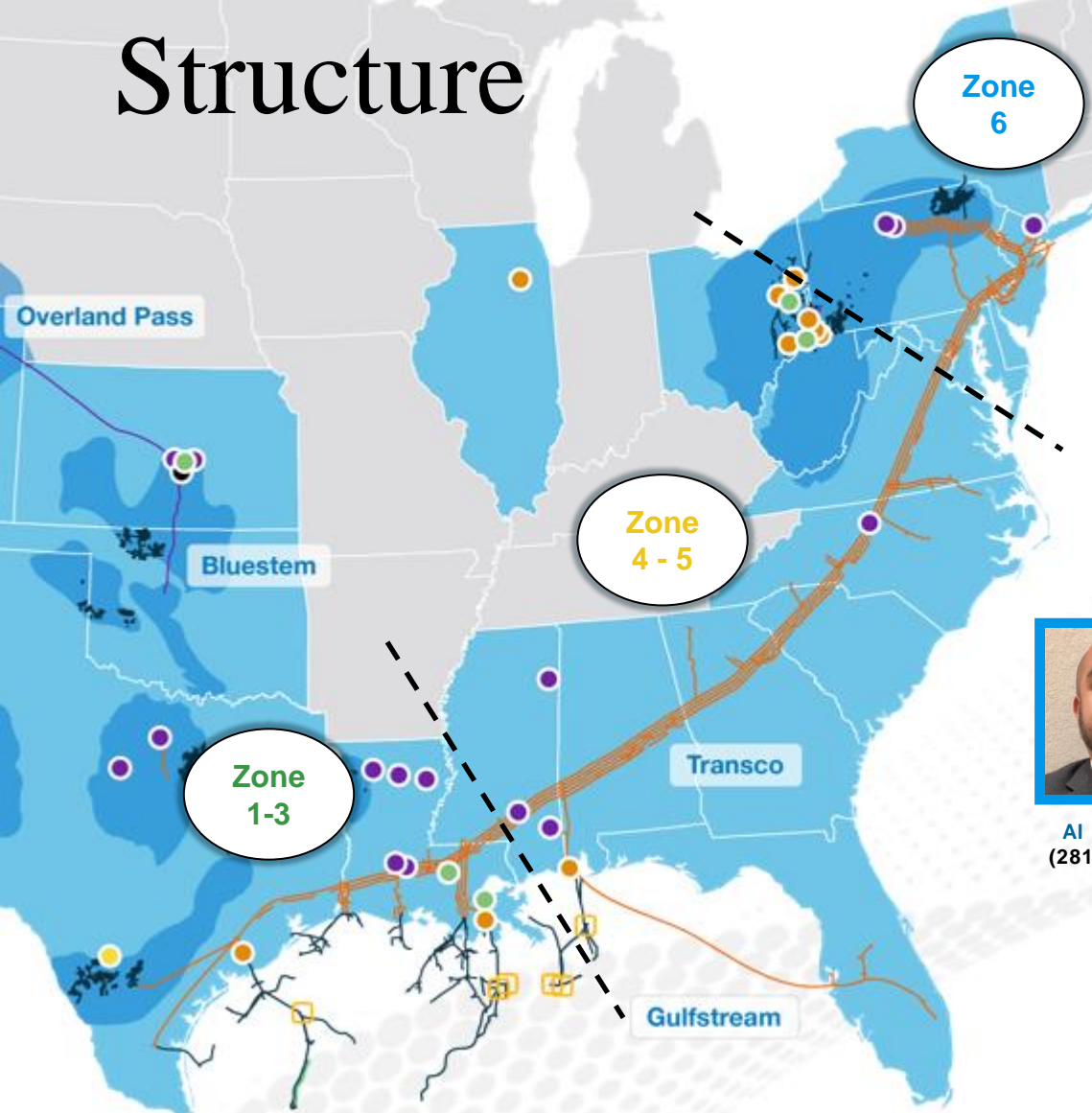
Pipeline Control Org Structure



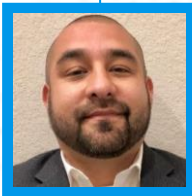
Transportation Services Org Structure



Eastern Interstates Business Development Org Structure



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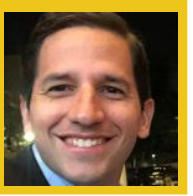
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Transco Commercial Functions

