# NGPL Spring Customer Meeting

April 26, 2022

# Agenda

- Welcome
- Legal Cautionary Statement
- Pipeline Operations Update
- Outage Management
- Break
- Regulatory Update
- Energy Transition
- Fundamentals Update
- Business Development Update
- Afternoon/Evening Schedule
- Closing Remarks

# Natural Gas Pipeline Company of America LLC

# Cautionary Statement

Maria Pavlou Vice President - Legal

# **Legal Cautionary Statement**

Please keep in mind that sharing your company's forecasts, predictions, pricing plans, production plans or purchasing plans with competitors is illegal. Please do not discuss current or future prices, price trends, production, demand or other sensitive information with persons who are your competitors. Please do not use this meeting as a forum to share information that is proprietary or confidential. I'm sure that each of your employers has an antitrust policy in place. I ask that you keep that policy and the antitrust laws in mind during today's formal and informal activities.

# Natural Gas Pipeline Company of America LLC

# Pipeline Operations Review

Brian Merchant
Director – NGPL Gas Control

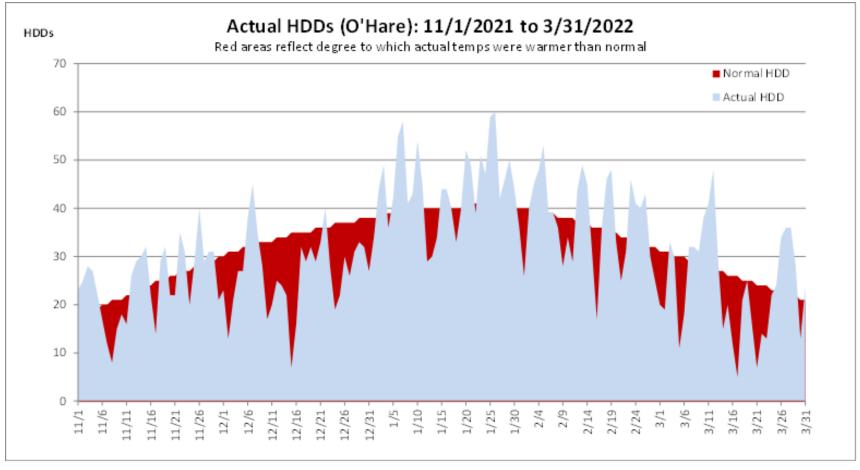
# Pipeline Operations Review

- Winter 2021-22 Recap
  - Weather
  - System Deliveries
  - Storage Update
- Summer 2022 Preview

## Winter 2021-22 Recap

- Winter season slightly warmer than normal in the Midwest Market Area
- During periods of extended colder than normal weather, the system functioned as designed
  - No pressure issues in the Market Delivery Zone
  - Compressor stations staffed 24x7, as needed
- Winter season demand picked up substantially in January after relatively mild end to 2021
  - Winter 21/22 total throughput up 6% compared to Winter 20/21 driven by strong LNG deliveries
    - Winter 21/22 LNG deliveries were up 37% compared to previous winter
    - New LNG daily delivery record 1.8 MMDth/d (11/27/2021)
- Storage assets were heavily utilized
  - New daily storage withdrawal record
  - New monthly storage withdrawal record
- OFOs were issued in accordance with Natural's Tariff to protect system integrity and primary firm services, including firm no-notice services

## Winter Weather 2021-22

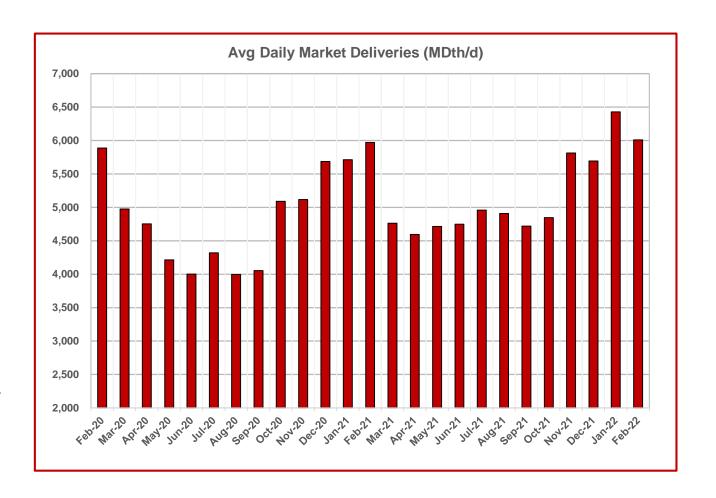


HDDs - 2021/2022	Nov	Dec	Jan	Feb	Mar
Actual	736	831	1370	1047	747
New Normal (1991-2020)	713	1071	1234	1016	808
(warmer)/colder	23	(240)	136	31	(61)
% of normal	103%	78%	111%	103%	92%

Total				
4731				
4842				
(111)				
97.7%				

# Winter System Deliveries

	2022 Nov - Mar	2021 Nov - Mar	% Change	
LDC	2,732	2,582	6%	
LNG	1,553	1,133	37%	
Interconnects	928	1,091	-15%	
Power	493	453	9%	
Industrial	58	54	7%	
Mexico	17	128	-86%	
Total Market	5,782	5,442	6%	
Storage Injections	219	223	-1%	



# NGPL Gas Storage Inventory Update

#### 2021-22 Winter Season Lookback

- Strong market and field reservoir performance throughout season
- Record high January
- Sayre/North Lansing February well improvement
- February market reinjections beneficial

#### 2022 Summer Preview

- Market fields projected to achieve target inventory level
- Field Inventory projected to be near full on October 31<sup>st</sup>, dependent on customer utilization

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## Summer/Fall 2022 Preview

- Demand to remain strong across the system
- Focus on storage injections and reservoir maintenance
  - Meet October 31<sup>st</sup> Storage Inventory Targets
- Expect active maintenance season
  - Outages Posted on EBB (updated weekly)
  - Annual Safety Device Inspections
  - Routine Engine Maintenance
  - Pipeline Integrity Program
    - Smart Tool Runs; Remediation; Pipe Replacement
- Capital Improvement Projects
  - Automation Upgrades
  - Make Piggable Projects

# Natural Gas Pipeline Company of America LLC

# Outage Management Process

David Weeks
Director – Account Services

## **Project Planning Process**

- Involves input from numerous areas from inception to completion in order to coordinate outages in the most efficient manner
  - Field Operations
  - Project Management
  - Engineering
  - Gas Control
  - Scheduling
  - Commercial
  - Legal and Regulatory
- Weekly internal update meetings to discuss project timing and impact
- Outage Impact Report for Customer communication
- Detailed project-specific postings

# Outage Impact Report

Updated 4/14/2022

Natural Gas Pipeline 2022 Pipeline Outage and Maintenance Summary

This is a summary of the current status of all NGPL 2022 Pipeline Outages and Maintenance Projects. This document is subject to change as the season progresses to reflect the updated status of all outages and maintenance projects including, but not limited to, project delays, cancellations and additions. Additionally, anticipated impact and restrictions are subject to change.

\*Unless otherwise noted, all listed meters will be physically shut-in for the duration of the project.

\*Unless otherwise noted, all scheduled dates represent gas days as defined in the Natural Gas Pipeline tariff to mean a period of twenty-four consecutive hours, beginning and ending at 9:00 a.m. (Central Clock Time).

\*Typical Timeline for ILI reporting is below.

Type of In-Line Inspection tool	# of weeks to determine a successful run	# of weeks to Preliminary Report	# of Weeks to Final Aligned Report		
MFL	1-2	3-4	8-13		
AFD	2-3	3-4	12-16		
EMAT	2-3	N/A	17-30		

\*\*\* Indicates revision

Outage #	Revised	Start Date	End Date	Reason Changed	Prev. Start Date	Prev. End Date	System	Line	Segment	Location	Scheduling Location	Maintenance Activity	Restriction Level	Pool Location	Meter(s) in Impacted Area
X21-1054837	***	03/14/22	04/13/22	Completed			GC	GC #3	28	311		ILI Tool Runs - Cleaning 3/14 thru 3/17, MFL 3/28 thru 4/30, EMAT 4/11 thru 4/13	This project has an impact to maximum capacity. However, in order to mitigate customer impact and based on current operating conditions, Natural does not anticipate limiting primary firm transport services, at this time. If conditions change Natural will post an update.		
X22-227084		03/14/22	07/07/22				AM	M&M	3	156/158		IL1 Tool Runs - Cleaning/Gauge 3/14, Cleaning 4/6, Cleaning 4/7, AFD 4/19, EMAT 4/21, MFL/Caliper 7/7	This project has an impact to maximum capacity.  However, in order to mitigate customer impact and based on current operating conditions, Natural does not anticipate limiting primary firm transport services, at this time. If conditions change Natural will post an update.		
X22-227092		03/16/22	07/11/22				AM	M&M	4	158/159		IL1 Tool Runs - Cleaning/Gauge 3/16, Cleaning 5/4, Cleaning 5/5, AFD 5/10, EMAT 5/12, MFL/Caliper 7/11	This project has an impact to maximum capacity. However, in order to mitigate customer impact and based on current operating conditions, Natural does not anticipate limiting primary firm transport services, at this time. If conditions change Natural will post an update.		
X22-227093		03/17/22	07/13/22				AM	M&M	4	159/103		ILI Tool Runs - Cleaning/Gauge 3/17, Cleaning 4/12, Cleaning 4/13, AFD 4/26, EMAT 4/28, MFL/Caliper 7/13	This project has an impact to maximum capacity.  However, in order to mitigate customer impact and based on current operating conditions, Natural does not anticipate limiting primary firm transport services, at this time. If conditions change Natural will post an update.		
X21-1091187	按按按	03/31/22	04/07/22	Completed			GC	GC #2	22	302/301	302	ILI Tool Runs - Cleaning 3/31, Cleaning/Gauge 4/2, AFD 4/5, EMAT 4/7	Natural will schedule Primary/SIP Firm transports only southbound through CS 302 into segment 22. AOR/ITS and Secondary out-of-path Firm transports are not available.	South TX: South of Constraint	
X21-1001909	***	03/31/22	04/08/22	Completed			MKT	GC #3	35	201/113		ILI Tool Runs - Cleaning/Gauge 3/31, MFL/Caliper 4/4, Hard Spot 4/8	No anticipated impact		

## Outage Impact Report

- Lists projects that have an impact to firm segment or point capacity
- Notices type of work, timing, duration, locations, and scheduling impacts
- Updated weekly to reflect changes/additions
- —Changes are highlighted week to week
- Provided in pdf format and Excel (which can be filtered)
- Specific postings are then developed as information becomes available
- —What other information is important to our customers?

# Types of Projects

- "Make-piggable" Projects
- —Scheduled cleaning pig runs
- —Pre-ILI cleaning pig runs
- ILI smart tool runs (MFL, AFD, EMAT, Caliper, Gauge, etc.)
  - Meeting regulatory compliance requirements
  - Prioritized and scheduled using KM Integrity Process
- Direct assessment digs
- —Remediation identified by ILI tools
- Scheduled pipeline maintenance
- Scheduled compressor maintenance

# Timing of ILI Results

Type of In-Line Inspection tool	# of weeks to determine a successful run	# of weeks to Preliminary Report	# of Weeks to Final Aligned Report	
MFL	1-2	3-4	8-13	
AFD	2-3	3-4	12-16	
EMAT	2-3	N/A	17-30	

- Cleaning is performed prior to ILI tool runs
- All timelines are based on the date of the ILI tool run
- Occasionally, an ILI tool run is not accepted due to:
  - Inadequate cleaning of the pipeline wall
  - Mechanical and electronic equipment failures
  - Obstructions that may cause mechanical failures
  - Pig speed outside of specification
  - Other problem
- Preliminary report identifies immediate remediation
- Final Report identifies all additional remediation

## PHMSA Mega-Rule

- PHMSA Mega-rule effect on NGPL
  - Eliminates grandfathering (demonstrated safe operation prior to 1971) that was allowed if historical construction records like hydrotests and steel composition not available
    - Review of NGPL records for tens of thousands of construction projects since 1929
    - Approximately 150 hydrotests over the next 10-12 years (07/03/34 deadline)
    - Hydrotests require shut-down of affected pipe segment and generally take 4+ weeks
  - Established additional requirements for moderate consequence pipeline segments (Onshore area that is within a potential impact circle containing either five or more buildings intended for human occupancy or any paved surface, including shoulders, of a designated interstate, freeway, or expressway, or principal roadway with four or more lanes)
    - Will require additional, periodic pigging in these segments

# **Impact Mitigation Efforts**

- Natural works diligently to avoid customer impacts
  - Majority of maintenance and integrity projects are completed with no impact to customers

### Planning steps

- Budget review generally complete in Jan/Feb and project list is developed
- Extensive hydraulic modeling to determine impact of planned outages based on firm obligations and expected utilization
- Project starts are scheduled throughout the spring, summer and fall based on contractor availability, engineering and project resources, best commercial window, etc. with goal of posting by the end of the preceding month

### Timing of Outages

- Advance notice and more detailed notice as information becomes available
- When possible, avoid impacting multiple months, weekends
- Project review to reduce outage duration
- Major outages may be coordinated with the downstream party

### — Timing of ILI tool runs

- Schedule tools so that results are not received in high-demand periods
- Schedules driven by tool and personnel availability

# Natural Gas Pipeline Company of America LLC

# Regulatory Update

David Dewey
Vice President – Regulatory Affairs

# The Federal Energy Regulatory Commission

### The Commissioners



Commissioner Christie



Commissioner Danly



Commissioner Phillips



Chairman Glick



Commissioner Clements

### **FERC Outreach**

- We invest significant time and effort with our regulators
- We focus on being solutions oriented
- Good regulatory relationships enable us to provide increased value to our customers

## The Challenge

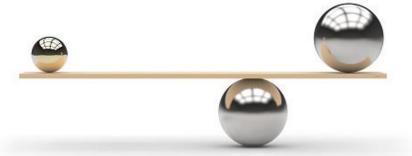
- This is not an easy job
  - Political pressures (national and international)
  - Polarizing issues
- There is a path forward

## **<u>Draft</u>** Pipeline Certificate Policy Statement

- New policy statement is essentially a balancing test with a heightened emphasis on (1) <u>need</u>, (2) <u>analyzing adverse effects</u>, and (3) <u>environmental</u> justice
- Project sponsors are responsible for avoiding direct and indirect impacts to the greatest extent possible
- Historically, the industry has been successful in persuading the Commission to grant its certificate applications using historical qualitative balancing tests

## **<u>Draft</u>** GHG Emissions Policy Statement

- Some troubling narrative on assessing significance and mitigation
- Rebuttable presumption of a "significant" environmental impact if emissions reach 100,000 metric tons per year
- <u>Full burn</u> assumption to determine if EIS is needed / <u>Actual utilization</u> used for offsets and mitigation
- FERC maintains authority to mitigate both upstream or downstream emissions, but prioritizes mitigation of direct emissions to the greatest extent possible
- Commission will evaluate proposed mitigation on a case-by-case basis and without a mandatory standard level of mitigation



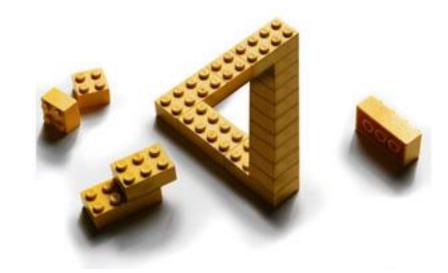
# Wait a minute ... can they do that???

### A Threshold Question

Can the FERC condition its certificate orders on environmental outcomes?

### Sabal Trail

- "Because FERC could deny a pipeline certificate on the ground that the pipeline would be too harmful to the environment..."
- Congress did not authorize FERC to reject a certificate for a facility that is otherwise found to be needed under the NGA solely because of its estimated potential impacts on global climate change.



The court assumed the answer rather than deciding it – and now considers the point decided.

## What were Congress' purposes in the NGA?

- The principal purpose is economic, but subsidiary purposes include environmental.
- GHG Mitigation If imposing mitigation for direct and indirect emissions discourages or forestalls pipeline development, the mitigation policy is directly contrary to the principal purpose of the Natural Gas Act.
- Congress delegated to EPA the decision whether and how to regulate carbon-dioxide emissions from stationary sources.

## **Next Steps**

- Initial comments due April 25<sup>th</sup>
- Reply comments due May 25th

### Tell Me What You Want

- Act Act on certificate applications within 120 days of issuance of an Environmental Impact Statement
- Contain Don't consider upstream and downstream impacts when assessing whether a project is in the public convenience and necessity
- Narrow Recognize that an Environmental Assessment often satisfies the FERC's obligation to assess environmental impacts
- Focus Don't require project applicants to remediate historic harms inflicted by third parties unaffiliated with the pipeline

## The Future of Energy in the U.S.

- Energy diversity is assured
- Cost, reliability and environmental impact tradeoffs are a real concern (economically and politically)

## The Future of Energy Globally

- Are we truly going to evaluate global impacts
- ...or is this just not in my country's back yard?



## In the meantime...

- 1999 Certificate Policy Statement remains in effect for now
- Draft Certificate Policy Statement and GHG Emissions Policy Statement will "be on hold" until the conclusion of the comment periods
- Certificate processing requires...
  - FERC Chairman to place applications on the agenda; and
  - Three votes
- Chairman Glick clearly believes that...
  - Environmental considerations must be central to the Public Convenience & Necessity Analysis; and
  - Downstream climate impacts must be considered
- Capitol Hill will stay focused on the policy outcome
- If finalized, litigation is likely

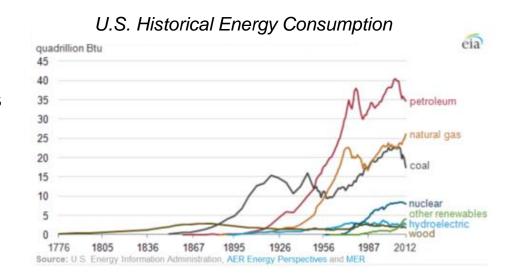
# Natural Gas Pipeline Company of America LLC

# **Energy Transition**

Ray Miller
Vice President – Commercial

# **Energy Transition Basics**

- Energy Transition
  - Shift from carbon based fossil fuels to renewable energy sources
- Methane (CH4)
  - Methane combustion: CH4 + 2O2 = CO2 + 2H2O + heat
  - Methane emissions: CO2e = CO2 x 28
- Hydrogen (H2)
  - Hydrogen combustion: H2 + 2O2 = 2H2O + heat
  - Hydrogen emissions: CO2e = CO2 x 0
  - Proportionality lowers carbon intensity of NG when blended
- Responsibly Sourced Gas (RSG)
  - Conventional natural gas that has been produced by companies whose operations have been independently verified as meeting certain environmental, social and governance (ESG) standards including primarily air emission reductions
- Renewable Natural Gas (RNG)
  - Pipeline compatible gaseous fuel derived from methane gathered from biogenic or other renewable sources (dairy farms, wastewater treatment plants and landfills)



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## **Energy Transition**

- Energy Transition Evolution
  - Cultural change
  - Innovation
  - Technology
  - Investment
  - Compliance
  - Transparency
  - Coordination
  - Rebranding
- Net Zero By 2050?
  - Reduction of CO2 from combustion
  - Reduction of methane emissions
  - H2 blending
  - Reduction of NG carbon intensity



Compressor Station next to a Wind Farm

# **Energy Transition**

#### **Status Quo**

- CO2 from combustion
  - 1950-80 vintage compression
  - Meet permitting requirements
- Methane emissions
  - Blowdown vs DCC
  - Meet industry standards
- NG carbon intensity
  - Study hydrogen options
  - 3<sup>rd</sup> party RSG options
  - Connect RNG
  - Current NG specs
  - Efficiency per tariff
  - Green compliance
  - One Future participation



- CO2 from combustion
  - Improve efficiency
  - Add technology and renewables
- Methane emissions
  - Recover and flare
  - Rigorous maintenance
- NG carbon intensity
  - Develop hydrogen options
  - Require RSG options
  - Develop/encourage RNG
  - Flexible NG specs
  - Invest, HP replacement

Implement green projects, sequestration

Broad industry participation



## **CO2 From Combustion**

### \_ 1920s

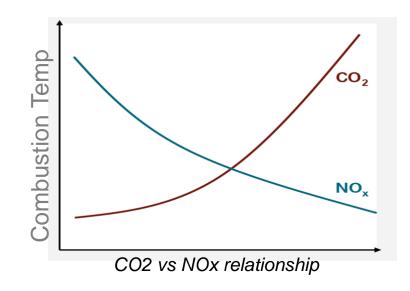
- Fuel rate ~14 scf/hp-hr
- High NOx, high unburned HCs
- High CO2 emissions

### \_ 1970s

- Fuel rate ~11 scf/hp-hr
- Clean burn, lower NOx, lower unburned HCs
- Efficiency improvement

### 2020s

- Fuel rate ~8 scf/hp-hr
- Ultra low NOx turbines, SCR, EGR
- More efficiency improvement
- 2050s (carbon neutral)
  - Fuel rate ~5 scf/hp-hr equivalent
  - Electric with renewable options for power
  - Offsets, carbon sequestration, new technology





50 MW Solar Farm (~3 20,000 HP Compressor Stations)

# **Compressor Technology**



1928 Cooper Horizontal



2020 Solar Titan 130



1972 Worthington ML



2022 Cat CN Electric

### **Methane Emissions**

#### \_ 1920s

- Designed venting of NG (regulators, etc.)
- Many blowdowns, NG was cheap
- Dresser coupled pipe, leakage accepted

#### \_ 1970s

- Low bleed regulators minimized venting
- Fewer blowdowns, noise, odor, NG was more expensive
- Welded pipe joints, emphasis on reducing leaks

#### \_ 2020s

- Digital control of regulators, no venting
- Emphasis to burn, capture or flare blowdown NG
- Energy Transition discussions, One Future
- 2050s (carbon neutral)
  - Centralized leak detection systems
  - Nearly all blowdowns captured or flared
  - Rigorous monitoring, regulation and compliance



24" Dresser Coupling



Blowdown Flare



Reserve Equipment Portable Compression

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# Hydrogen Blending

- Hydrogen Basics
  - Combustible
  - No carbon
  - Can be manufactured from H2O or NG
- Considerations
  - Is currently used to make fertilizers and methanol
  - Can generate electricity without combustion in a fuel cell
  - Compatible with natural gas and easily blended
  - Could utilize existing infrastructure
- How does hydrogen contribute to net-zero
  - Provides proportional decrease in carbon intensity
  - Can be manufactured with renewable power
- Types of hydrogen
  - Green hydrogen: from H2O, by electrochemical reaction, using green energy, zero CO2 emitted
  - Blue hydrogen: from NG, by steam reforming, using green energy, CO2, carbon capture (CCS), minimal CO2 emitted
  - Grey hydrogen: from NG, by steam reforming, traditional energy, no CCS, CO2 emitted



Wind Powered Green H2 Plant

# NG Carbon Intensity

#### 1920s

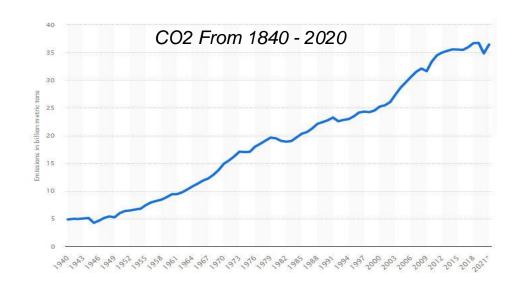
- NG displaced Coke Gas (~50% H2)
- Little consideration for CO2 or methane emissions
- NG collected from oil well flares, little processing

#### 1970s

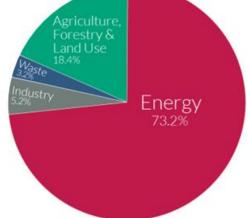
- NG specs designed for specific markets
- Developing focus on emissions
- Landfill RNG was generally out of spec

#### 2020s

- NG specs designed for interchangeability
- Broad regulation of NOx, other emissions, GHG discussion
- RNG being connected, RSG being encouraged, H2 development
- 2050s (carbon neutral)
  - NG specs designed to minimize emissions
  - Cultural and regulatory requirements for emissions including GHG
  - Additional RNG development, robust RSG, increased H2 use







## **RSG**

### RSG Basics

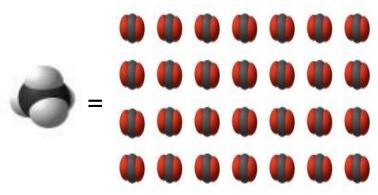
- Lowered carbon footprint from production to burner tip
- Emissions mitigated at several steps
- Minimized environmental and social impact

#### Considerations

- Reduced GHG emissions, benefit needs to be tracked
- Social impact to community development
- Indigenous rights, land mitigation and restoration
- Minimized and tracked fresh water use
- Needs to be tracked, benefits attributed users
- How does RSG contribute to net-zero
  - Reduced methane emissions provides x28 benefit
  - Methane in the atmosphere is short lived, less cumulative effect than CO2

#### RSG certification

- Rating issued by 3<sup>rd</sup> party such as Project Canary or MiQ
- There is a fixed cost of certification, but little variable cost



Methane CO2e = 28

## **RNG**

#### RNG Basics

- Landfills, feedlots and sewage plants emit methane
- RNG is captured from these already occurring sources
- Captured emitted methane then used for combustion

#### Considerations

- RNG can be collected directly from landfills
- RNG is processed and collected from sewage plants and dairy farms
- Costs less per ton of GHG mitigation than other strategies including electrification
- Gas quality needs to be managed
- How does RNG contribute to net-zero
  - Conversion of emitted methane to combustion NG provides x28 benefit
  - May also provide future carbon credits

#### Kinetrex

- Kinder Morgan owned company that provides RNG solutions
- Provides proven solutions for RNG to be compressed into a NG pipeline
- Or RNG can also be liquefied in small batches to create a virtual pipeline



RNG Dairy Farm



Kinetrex Landfill RNG Facility

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## One Future Coalition

- Voluntarily reducing methane emissions
- Stated original goal of <1% methane loss across NG value chain</li>
- Stated goal of .31% methane loss across pipeline sector.
- 2020 actual was .33% methane loss across pipeline sector
- 52 participating companies





































































































Western Midstream







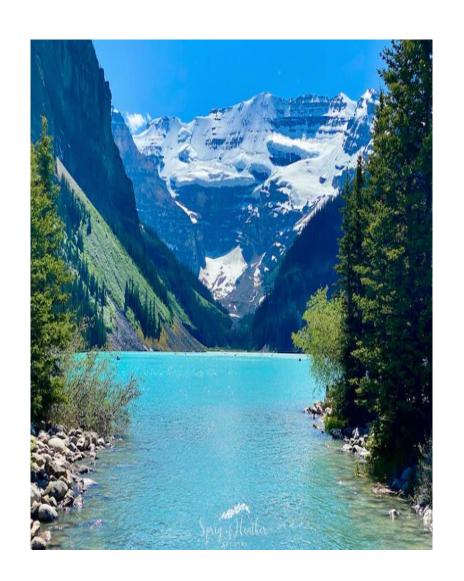
## Net Zero by 2050?

### Existing

- Compressor technology improvements
- Green power for electric compression
- Eliminating methane loss
- RNG development and resulting credits
- RSG minimizing gas lost and other industry problems
- Hydrogen blending
- Carbon offsets, carbon sequestration

## Brainstorming

- Producer, pipeline, utility acreage used for green power development
- Hydrogen fuel cells
- Energy capture (from pressure reduction, etc.)
- Utilization of existing infrastructure for lowering carbon intensity



# Natural Gas Pipeline Company of America LLC

## Fundamentals Outlook

Tom Mikucki Director – Market Services

- Current Gas production has been increasingly strong. Full year '22 forecasted at 96.9 Bcfd, 5.5 Bcfd higher than full year '21.
  - 1Q 2022 Supply averaged 93.4 Bcfd and an average of 98 Bcfd is needed for the balance of 2022 to meet our forecast.
  - Gas production has experienced strong growth with some reductions at times due to freeze-offs, growth primarily in the Permian, Haynesville, Northeast and the Bakken, other basins are still below pre-pandemic levels. Production has been supported by completing DUCs and improved drilling productivity, growth remains somewhat restrained though public producers continuing to emphasize capital discipline. The market is still tight, production is forecasted to increase throughout '22 balancing the market later in the year.
  - Haynesville, Northeast already above the full year forecasted rig count, DJ and Eagle Ford near or just below, Permian and Bakken are below but on pace to eclipse it by 3Q 2022
  - End of injection season '22 storage balance expected to be ~3.6 Tcf, near the 5-year avg, due to the tight market reducing injections
- Full year '22 Gas demand forecasted at 102.6 Bcfd, 5.9 Bcfd greater than full year '21
  - Current LNG feedgas deliveries have been at 12.7 Bcfd or 89% of capacity due to Calcasieu Pass start up and intermittent pipeline and terminal maintenance. Strong outlook for world LNG demand; threats of EU pipe supply cutoff due to Russia-Ukraine conflict, storage refill demand in EU, and economic activity in Asia, primarily China. Full year '22 net LNG exports forecasted at 12.8 Bcfd, 2.4 Bcfd higher than full year '21.
  - Current deliveries to Mexico at 5.9 Bcfd, in line with the forecast for Q1. Full year '22 forecasted at 6.3 Bcfd, 0.5 Bcfd greater than full year '21.
  - Current Industrial demand is slightly below the forecast for Q1, full year '22 forecast at 22.9 Bcfd, 0.6 Bcfd greater than '21
  - Power demand forecast for '22 is 31.4 Bcfd, 1.3 Bcfd higher than full year '21 despite higher gas prices due to less Coal-to-Gas switching availability with prior retirements. Power demand is becoming more price inelastic
- Forward Average Natural gas price for the remainder of '22 recently increased, currently above \$6.00/Dth
  - '22 supply demand balance is tight; strong winter demand resulted in lower storage inventories, sluggish supply, LNG exports at full capacity, gas fired generation higher than normal due to inelastic gas to coal switching (lower coal stack inventories and potentially higher coal exports with EU Russian coal ban) steady economic activity and the influence of high JKM / TTF are keeping U.S. prices higher

## Natural Gas Macro Comparisons

	KM (2022)						
	Q1	Q2	Q3	Q4			
Production	94.3	96.5	97.9	99.1			
Net Canadian Imports	4.9	3.9	5.3	5.4			
Supply	99.2	100.4	103.2	104.4			
Res. & Comm.	40.8	14.1	8.8	27.8			
Industrial	25.9	21.4	20.6	24.0			
Power	25.1	29.1	40.9	30.2			
Net Exports to Mexico	5.7	6.4	6.8	6.2			
Net LNG Exports	11.7	12.5	13.3	13.7			
Other (Lease and Plant							
Fuel, Pipeline Fuel)	6.1	6.1	6.3	6.4			
Demand	115.3	89.7	96.6	108.3			
Imbalance	(16.1)	10.7	6.6	(3.9)			
Henry Hub (Nominal)	\$4.95	\$4.72	\$4.82	\$4.93			
WTI (Nominal)	\$82.49	\$98.81	\$92.02	\$87.13			

KM (2023)						
Q1	Q2	Q3	Q4			
99.9	100.5	101.4	102.7			
5.1	4.1	5.5	5.3			
105.0	104.5	106.9	108.0			
41.6	14.3	8.7	28.0			
24.6	20.5	21.1	23.5			
29.1	29.5	41.6	30.3			
5.8	6.5	6.9	6.3			
13.8	13.6	13.8	14.5			
6.8	6.6	6.8	6.9			
121.7	91.1	99.0	109.5			
(16.8)	13.5	8.0	(1.5)			
\$4.88	\$3.55	\$3.60	\$3.80			
\$83.98	\$81.52	\$79.49	\$77.97			

KM (Annual)						
2021	2022	2023	2024			
91.4	96.9	101.1	106.3			
5.5	4.9	5.0	5.4			
96.9	101.8	106.1	111.7			
22.0	22.8	23.0	23.3			
22.3	22.9	22.4	22.6			
30.1	31.4	32.7	34.9			
5.8	6.3	6.4	6.5			
10.4	12.8	13.9	15.8			
6.1	6.5	6.8	7.2			
96.7	102.6	105.3	110.2			
0.2	(0.9)	0.9	1.5			
\$3.84	\$4.86	\$3.96	\$3.34			
\$65.15	\$90.11	\$80.74	\$69.87			

	WM (STO	Mar 2022)
	2022	2023
3	95.6	98.6
4	5.6	5.9
4 7	102.0	105.3
١		
3	23.0	23.1
6	23.6	24.5
9	30.5	29.4
5	6.1	6.6
8	12.0	13.1
١		
2	7.8	8.1
2 2 5	103.1	104.7
5	(1.0)	0.6
4	\$4.58	\$3.60
7	\$95.04	\$81.27

Crude oil price recovery increases associated gas supplies

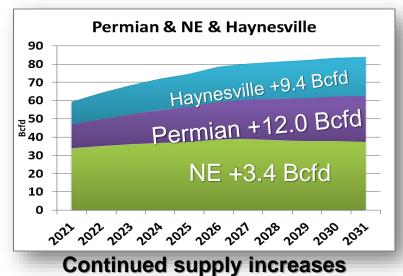


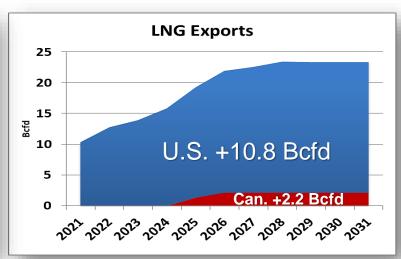
LNG feedgas demand remains robust in 2022 but stabilizes in 2023 as supply catches up and prices decrease

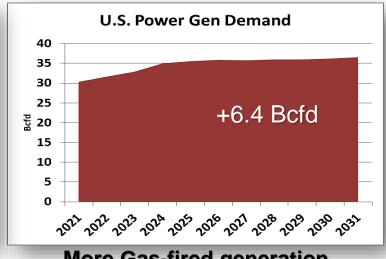


In spite of new LNG capacity coming in-service in the end of 2024, growing supplies push prices lower

## **Key Trends**

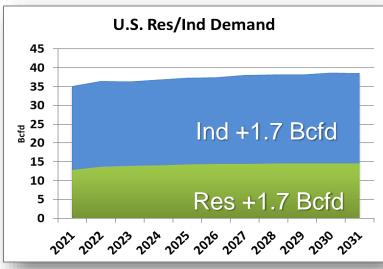


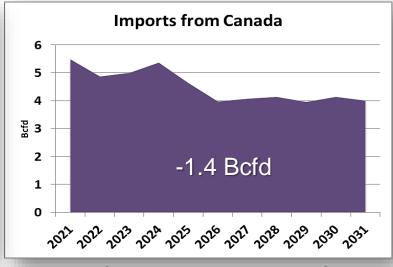


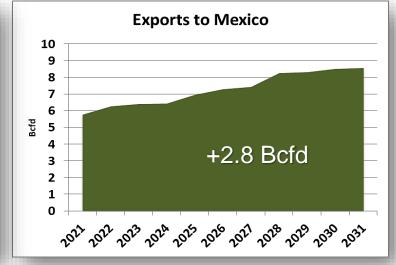


North America is a net exporter

More Gas-fired generation







**Residential & Industrial growth** 

Flat Canadian Exports to U.S.

More U.S. Exports to Mexico

## Long-Term Macro Projections

Supply continues to grow throughout the forecast, led by Permian and Haynesville, with oil economics propelling associated gas, while dry gas plays provide further base and swing supply based on demand/price signals

Demand also increases in all sectors led by LNG, Power, then Mexico

Power demand becomes more price inelastic as coal retires and less switching can occur

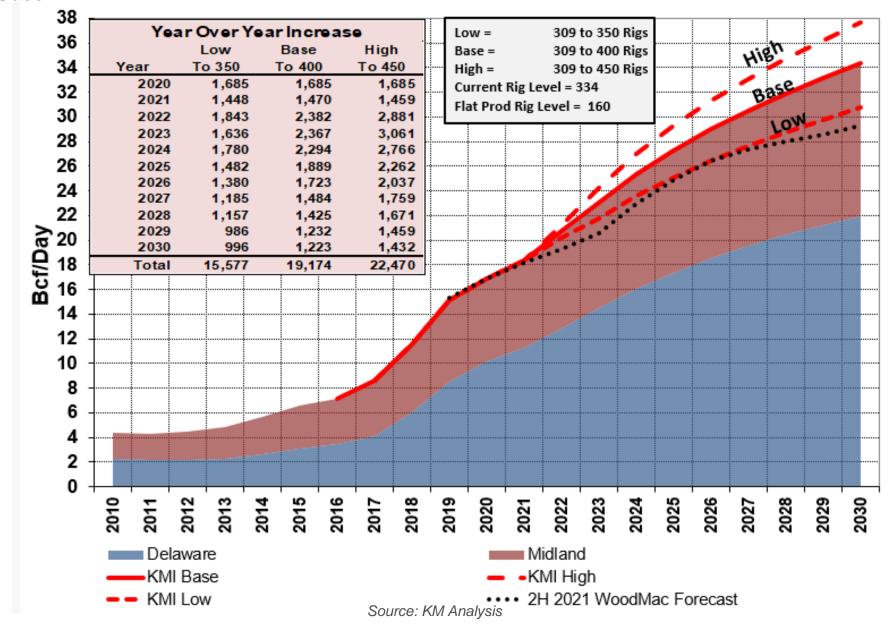
	KM Q1, 2022 Macro							
	2021	2022	2023	2024	2025	2026	2027	2031
Permian	13.2	14.7	16.3	18.0	19.3	20.6	21.6	25.2
Haynesville	12.1	14.4	15.9	17.2	18.1	19.2	19.8	21.6
Eagle Ford	4.6	4.8	5.1	5.4	5.6	5.8	5.8	5.7
DJ/Powder	3.4	3.0	3.2	3.5	3.8	4.1	4.3	4.8
Bakken	1.9	2.3	2.5	2.7	2.8	3.0	3.1	3.4
APP NE	33.9	35.0	36.0	36.9	37.7	38.9	38.9	37.3
Other	22.3	22.5	22.2	22.6	22.4	23.0	22.7	20.3
Total Production	91.4	96.9	101.1	106.3	109.8	114.5	116.2	118.1
Net Canadian Imports	5.5	4.9	5.0	5.4	4.7	4.2	4.3	4.1
Supply	96.9	101.8	106.1	111.7	114.4	118.7	120.5	122.2
Res. & Comm.	22.0	22.8	23.0	23.3	23.5	23.6	23.6	23.7
Industrial	22.3	22.9	22.4	22.6	23.1	23.0	23.7	24.0
Power	30.1	31.4	32.7	34.9	35.7	35.9	36.0	36.5
Net Exports to Mexico	5.8	6.3	6.4	6.5	7.0	7.3	7.4	8.6
Net LNG Exports	10.4	12.8	13.9	15.8	17.9	19.7	20.4	21.2
Other (Lease and Plant Fuel,								
Pipeline Fuel)	6.1	6.5	6.8	7.2	7.4	7.7	7.8	8.0
Demand	96.7	102.6	105.3	110.2	114.6	117.2	119.0	121.9
Imbalance	0.2	(0.9)	0.9	1.5	(0.1)	1.4	1.5	0.3
Henry Hub (Nominal)	\$3.84	\$4.86	\$3.96	\$3.34	\$4.93	\$4.01	\$3.27	\$3.45
WTI (Nominal)	\$65.15	\$90.11	\$80.74	\$69.87	\$68.46	\$68.44	\$69.48	\$79.29

#### Natural Gas Pipeline Company of America LLC Gas Demand Western 2021-2031 Volumes in Bcf/d North American Demand 142.5 **Including Exports** Canada U.S. Exports to Mexico +8.6 10.1 Ind + Power: +1.7 1.6 Eastern Mexico LNG Exports -0.9 3.2 Power: +0.4 Plant: +0.3 12.1 1.8 +0.3 Canada Res: 3.9 Mexico Demand -10.0 1.9% Canada Demand -16.0 0.8% 2.1% Canada LNG Exports -2.2 12.6 Res/Comm/Ind: +0.2 13.0 U.S. Demand (2031) 121.9 0.3% 5.9 Power: +2.3 13.1 Power: -0.5 Res: +0.9 7.5 16.7 Res/Comm/Ind: +0.9 +0.4 Ind: 5.8 5.3 2.4% 5.7 2.5% 5.8 -0.3% Power: +1.2 0.9% Ind & Plant: +0.4 Power: -0.4 Power: +0.5 17.8 Power: +2.6 Res/Comm/Ind: +0.3 Res: +0.3 20.4 Ind: -0.3 1.4% LNG Exports North America Total Mexico Plant: +1.0 18.4 10.5 +10.6 Gulf: 8.8 Power: +0.6 +0.7 114.1 Ind: 2021 +2.2 24.4 Canada: 21.1 +0.6 Ind: 10.0 Pipe: +0.4 East: +0.2 2031 142.5 Power: +0.6 8.8% Mexico: +0.9 1.4% 1.3% 2021-2031 CAGR 2.3% 44

Source: KM Analysis and ICF Intl.

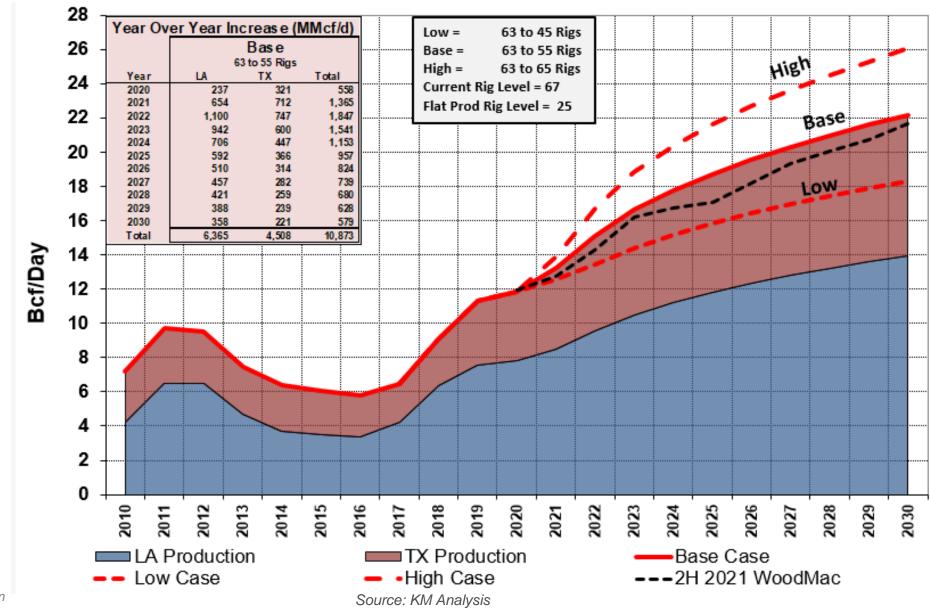
## Permian Basin Wellhead Forecast

Q1 2022 Base Case



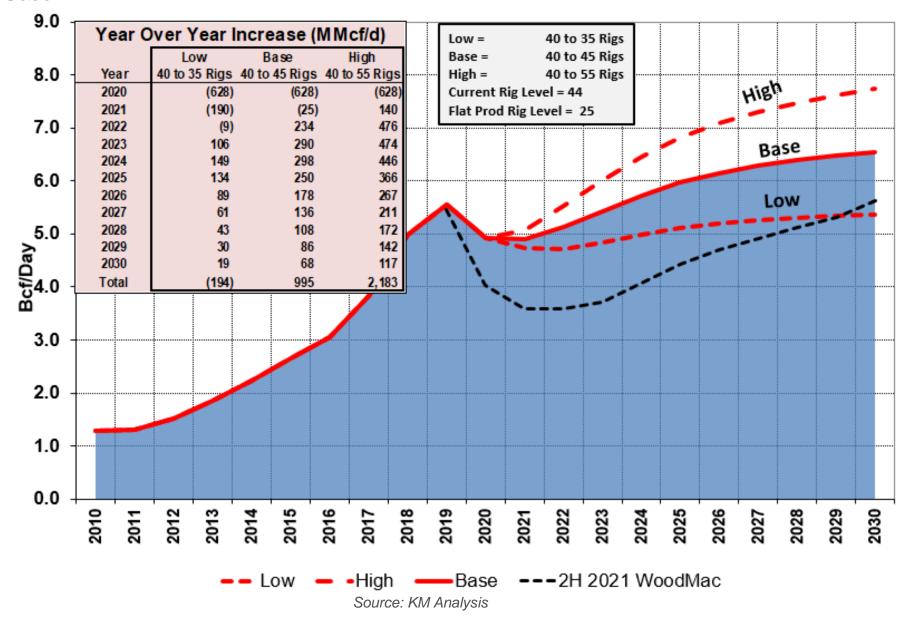
## Haynesville Wellhead Forecast

Q1 2022 Base Case



## SCOOP/STACK Wellhead Forecast

Q1 2022 Base Case



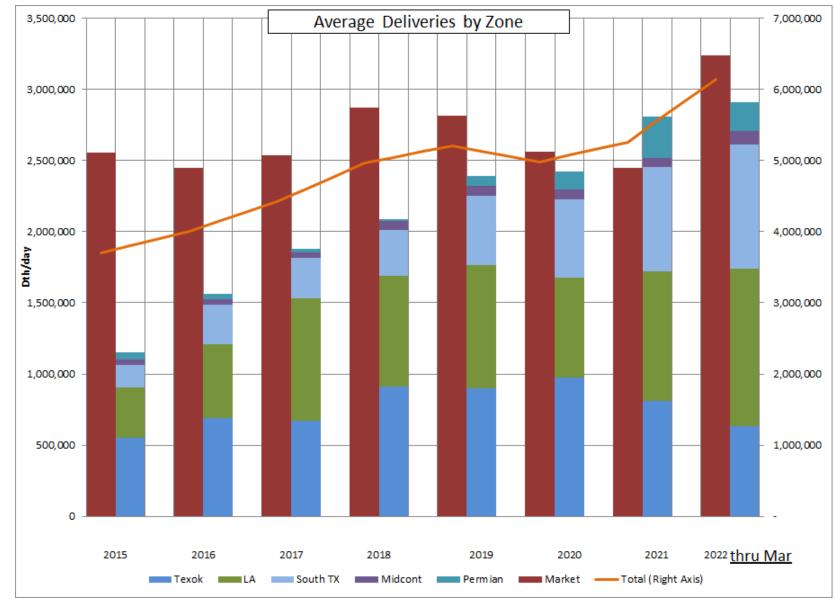
## **Current Landscape**

NGPL Supply

NGPL Receipts (MMDth/d)	1Q '22	1Q '21	Change	4Q '21	4Q '20	Change
REX Moultrie	0.87	0.90	(0.02)	0.81	0.87	(0.06)
East Texas	1.35	1.28	0.07	1.37	1.19	0.18
Midcontinent	0.54	0.51	0.03	0.58	0.52	0.06
Permian	0.37	0.39	(0.03)	0.41	0.40	0.01
SE-OK & NE-TX	0.35	0.27	0.08	0.36	0.24	0.11
South Texas	0.33	0.14	0.20	0.28	0.16	0.12
Northern Border & Alliance	0.24	0.28	(0.03)	0.18	0.21	(0.03)
Rockies (excl. REX Moultrie)	0.17	0.24	(0.08)	0.15	0.20	(0.06)
Arkansas	0.09	0.07	0.03	0.08	0.09	0.00
						_
Total	4.31	4.07	0.24	4.22	3.87	0.33

- Recent supply receipts 240 MDthd higher than 1Q '21
  - South Texas benefiting from recent Whistler receipts
- 4Q '21 330 MDthd higher than prior year

## Average Daily Deliveries by Zone



- 2021 vs 2020:
- LA and S. TX increases primarily LNG
- Permian primarily increased deliveries to Trans Pecos and Whitewater

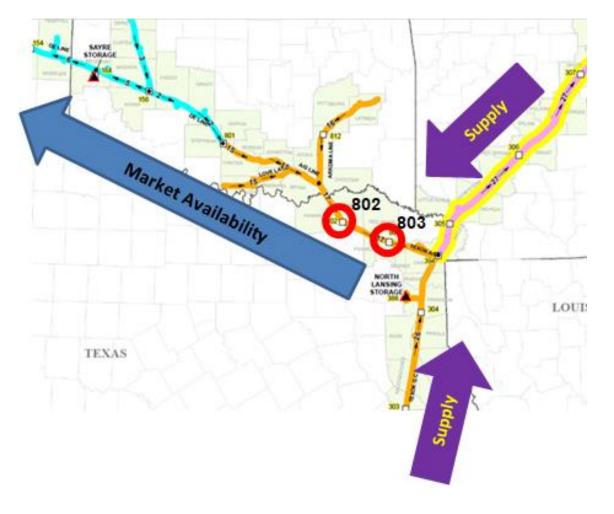
Proprietary Information Source: KM Analysis 49

# Natural Gas Pipeline Company of America LLC

# Business Development Update

Stuart Neck
Director – Business Development

## Red River West Project



#### **Project Scope:**

Expands NGPL's A/G Line to serve growing power and LDC loads Compression and station reversal project

#### **Description:**

Receipts: Segments 17, 25 and 26 of Texok Zone and Segment 27 of

Gulf Coast Mainline Zone

**Deliveries:** A/G Line Texok Zone or A/G Line Midcontinent Zone

Capacity: Up to 300,000 Dth/d

**In-service:** ~12 months after execution of definitive agreements

#### **Commercial Status/Next Steps:**

Working through the terms and conditions of the proposal with interested shipper(s)

### Texas – Louisiana



#### **Project Scope:**

- Leverages NGPL's Gulf Coast footprint to provide expanded access to LNG corridor
- Provides access to TexOk and/or Midwest supply
- Provides access to South Texas supply, Wharton and Katy Hub receipts
- Compression Project

#### **Description:**

Receipts: Gulf Coast Mainline or Texok (Segment 26), South

Texas Receipt Zone and Louisiana Line Receipt Zone

**Delivery:** Louisiana Delivery Zone

Capacity: 300,00 Dth/d

**In-Service:** Targeting 4Q 2025

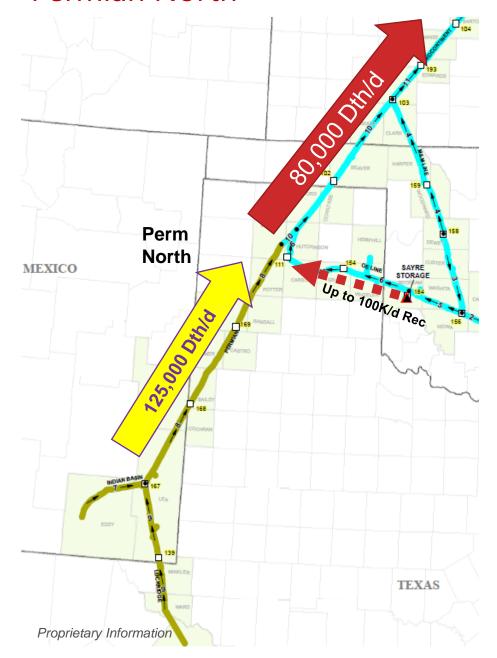
Indicative Reservation Rate: \$0.30 per Dth of MDQ per day,

depending on path and term bid

#### **Commercial Status/Next Steps:**

- Non Binding Solicitation Closed Friday April 22<sup>nd</sup>
- Evaluating Bid submissions
- Negotiate definitive agreements

## Permian North



#### **Project Scope:**

- Leverages NGPL's Permian footprint to provide take-away to liquid Midcontinent Pool and/or Chicago market area
- Compression Project

#### **Description:**

Receipts: Permian Receipt Zone, Lockridge Lateral

**Deliveries:** Station 154 (also Midcontinent Pool) and Market Delivery

Zone

**Project Capacity:** Up to 125,000 Dth/d to Midcontinent

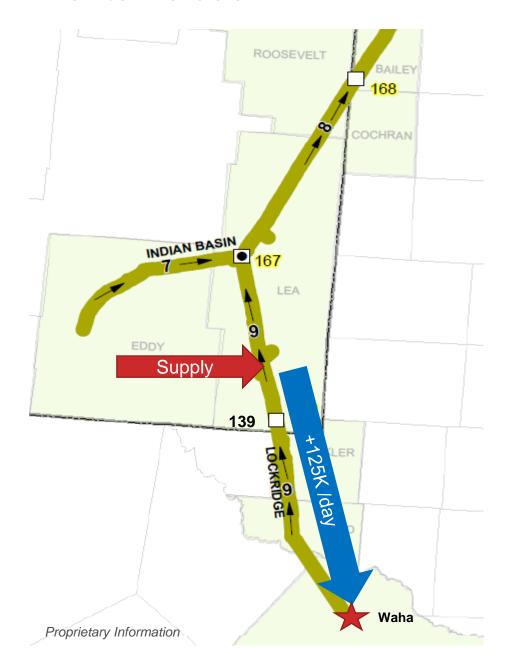
Up to 80,000 Dth/d to Chicago markets

**In-Service**: Targeting 1Q 2024

#### **Commercial Status/Next Steps:**

- Non Binding Solicitation closed April 18<sup>th</sup>
- Working with customers that submitted bids to advance the Project

## Torito Dorado



#### **Project Scope:**

- Leverages Natural's Lockridge Lateral by bringing supplies to Waha markets
- Contemplates tying into an existing or new crosshaul pipeline in Waha area
- Compression Project

#### **Description:**

Receipts: Permian Receipt Zone

**Deliveries:** Permian Delivery Zone

Capacity: 125,000 Dth/day

In-Service: Targeting 2Q 2024

#### **Commercial Status/Next Steps:**

Actively marketing project

# NGPL Spring Customer Meeting

April 26, 2022