Economic Impact Analysis (EIA): City of Chester LNG Project
Executive Summary
August, 2016
Disclaimer

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Table of Contents

1. Study Overview
2. Results Overview
3. Appendix
1. Study Overview
Study Background

— KPMG was commissioned by Penn America Energy (PAE) to conduct an independent economic impact assessment of PAE’s City of Chester based energy project.

   — **Project:** Proposed LNG facility and Philadelphia Lateral and Chester Connector pipeline construction

   — **Economic regions analysed:** Commonwealth of Pennsylvania, Delaware County, City of Chester

   — **Measurement period:** Three phases:
     - Development: October 2016 – November 2019
     - Build: December 2019 – October 2023
     - Operations: November 2023 – December 2043

— KPMG’s work included determining the following traditional measures of economic impacts specific to Pennsylvania, Delaware County, and City of Chester:

   - Employment
   - Labor Income
   - Economic Output
   - State & Local Taxes
## Chester LNG Project - Background

<table>
<thead>
<tr>
<th>Key Point</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summary</strong></td>
<td>Multi-billion dollar proposed LNG plant and associated facilities under consideration in the City of Chester, Pennsylvania.</td>
</tr>
<tr>
<td><strong>Project Scope</strong></td>
<td>- Construction of liquefaction plant and associated facilities&lt;br&gt;- Utilities and pipeline construction&lt;br&gt;- Natural gas extraction and related activities&lt;br&gt;- Employment and compensation</td>
</tr>
<tr>
<td><strong>Impact Potential</strong></td>
<td>- Potential to generate additional economic value to community by enabling natural gas conversion to LNG in Pennsylvania, 2nd largest natural gas producing-state in the U.S.&lt;br&gt;- Direct effects of PAE expenditure as well as indirect effects of spending by third parties and induced effects of spending by employees of PAE and third parties.&lt;br&gt;- Direct and indirect economic impacts associated with pipeline construction</td>
</tr>
<tr>
<td><strong>Market</strong></td>
<td>- Natural gas will be sourced primarily from Pennsylvania given the proximity to the Utica and Marcellus shale fields.&lt;br&gt;- Natural gas liquefied by PAE will ship to markets in Europe, Asia or Latin America.&lt;br&gt;- Export demand driven by price differential in domestic and world natural gas markets, a function of technological advances in US production.&lt;br&gt;- PAE expects price differential to persist for the life of the project.</td>
</tr>
<tr>
<td><strong>Additional Benefits</strong></td>
<td>- LNG is used in a variety of industrial and domestic purposes&lt;br&gt;- Provides a sustainable source of clean energy.</td>
</tr>
</tbody>
</table>
## Chester LNG Project - Phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Timeline</th>
<th>Detail</th>
</tr>
</thead>
</table>
| Development         | October 2016 – November 2019  | — The Development (Pre-Construction) Phase covers activities prior to commencement of construction of LNG plant and other facilities.  
                        |                               | — This phase includes pre-final investment decision (FID) engineering work, regulatory filings and advisory services. |
| Construction        | December 2019 – October 2023  | — The Build Phase covers the construction of the LNG plant and associated facilities.  
                        |                               | — Investment in initial site improvements and infrastructure occur in this phase. |
| Operations          | November 2023 – December 2043 | — PAE will operate the plant under a tolling business model. In this model, PAE does not take ownership of the natural gas or assume commodity price risk. Rather, LNG off-takers enter into separate purchase agreements with gas producers and tolling agreements with PAE to convert the gas into liquid form. This will generate production activity in Pennsylvania.  
                        |                               | — The LNG plant’s Operation Phase is expected to span 20+ years. |
| Pipeline Construction | 2022 – 2023                  | — Construction of two pipeline projects: a 3-Mile Connector Pipeline from Chester Junction to the PAE LNG facility and a 22.8 upgrade of the Philadelphia Lateral Pipeline from Eagle CS to Chester Junction |
2. Results Overview
Annual Average Economic Impacts for Pennsylvania by Project Phase

**Development**
October 2016 – November 2019
- **358 jobs**
- **$21 M** In additional wages being paid.
- **$91 M** In additional total output.
- **$3 M** In state & local taxes.

**Build**
December 2019 – October 2023
- **7,911 jobs**
- **$646 M** In additional wages being paid.
- **$1,884 M** In additional total output.
- **$34 M** In state & local taxes.

**Operations**
November 2023 – December 2043
- **2,736 jobs**
- **$217 M** In additional wages being paid.
- **$1,062 M** In additional total output.
- **$47 M** In state & local taxes.

[1] State & Local Tax Impacts include the pilot taxes paid by PAE. Chester Pict taxes include tax payment to the local school district [2] PA Impacts in the Operations Phase are from the “Low Gas Price” extraction scenario.
High-Level Results: Pennsylvania

Annual Impacts for each Project Phase

Pennsylvania Employment: Average Annual Additional Jobs

- Development Phase: Oct 2016 – Nov 2019
- Build Phase: Dec 2019 – Oct 2023

[1] Operations phase impacts presented as a range to account for a range of gas prices.
[2] Build phase results include pipeline construction related impacts
High-Level Results: Pennsylvania

Annual Impacts for each Project Phase

Pennsylvania Labor Income:
Average Annual Additional Wages

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Wages ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Phase</td>
<td>$21</td>
</tr>
<tr>
<td>Build Phase</td>
<td>$646</td>
</tr>
<tr>
<td>Operations Phase</td>
<td>Low: $217, High: $255</td>
</tr>
</tbody>
</table>

[1] Operations phase impacts presented as a range to account for a range of gas prices.
[2] Build phase results include pipeline construction related impacts.
High-Level Results: Pennsylvania

Annual Impacts for each Project Phase

Pennsylvania Output:
Average Annual Additional Output

- **Development Phase**
  - Oct 2016 – Nov 2019
  - **$91**

- **Build Phase**
  - Dec 2019 – Oct 2023
  - **$1,884**

- **Operations Phase**
  - Low
    - Dec 2019 – Oct 2023
    - **$1,062**
  - High
    - Dec 2019 – Oct 2023
    - **$1,280**

[1] Operations phase impacts presented as a range to account for a range of gas prices.
[2] Build phase results include pipeline construction related impacts

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12
High-Level Results: Pennsylvania

Annual Impacts for each Project Phase

Pennsylvania State & Local Taxes:
Average Annual Additional Tax Revenue

Average Annual Tax Revenue
($ millions)

High                            Low
Dec 2019 – Oct 2023

Development Phase
Oct 2016 – Nov 2019

Build Phase
Dec 2019 – Oct 2023

Operations Phase

$3

$34

$47

$59

[1] Operations phase impacts presented as a range to account for a range of gas prices.
[2] Build phase results include pipeline construction related impacts
Average Annual Economic Impacts for Delaware County by Project Phase

**Development**
October 2016 – November 2019

- **274 jobs**
- **$16 M** in additional wages being paid.
- **$68 M** in additional total output.
- **$2 M** in state & local taxes.

**Build**
December 2019 – October 2023

- **5,242 jobs**
- **$462 M** in additional wages being paid.
- **$1,270 M** in additional total output.
- **$25 M** in state & local taxes.

**Operations**
November 2023 – December 2043

- **645 jobs**
- **$52 M** in additional wages being paid.
- **$148 M** in additional total output.
- **$6 M** in state & local taxes.

[1] State & Local Tax Impacts include the pilot taxes paid by PAE. Cluster Pilot taxes include tax payment to the local school district.
High-Level Results: Delaware County

Annual Impacts for each Project Phase

Delaware County Employment: Average Annual Additional Jobs

- Development: Oct 2016 to Nov 2019
  - 274 jobs

- Build: Dec 2019 to Oct 2023
  - 5,242 jobs

- Operations: Nov 2023 to Dec 2043
  - 645 jobs

[1] Build phase results include pipeline construction related impacts
High-Level Results: Delaware County

Annual Impacts for each Project Phase

Delaware County Labor Income:
Average Annual Additional Wages

[1] Build phase results include pipeline construction related impacts

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High-Level Results: Delaware County

Annual Impacts for each Project Phase

Delaware County Output: Average Annual Additional Output

Average Annual Output ($ millions)

Phase
- Development: Oct 2016 to Nov 2019
  - $68
- Build: Dec 2019 to Oct 2023
  - $1,270
- Operations: Nov 2023 to Dec 2043
  - $146

[1] Build phase results include pipeline construction related impacts
High-Level Results: Delaware County

Annual Impacts for each Project Phase

Delaware County State & Local Taxes:
Average Annual Additional Tax Revenue

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Tax Revenue ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Oct 2016 to Nov 2019</td>
<td>$2</td>
</tr>
<tr>
<td>Build Dec 2019 to Oct 2023</td>
<td>$25</td>
</tr>
<tr>
<td>Operations Nov 2023 to Dec 2043</td>
<td>$6</td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
[2] Results include Pilot payments made by PAE to Delaware County

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Average Annual Economic Impacts for City of Chester by Project Phase

**Development**
October 2016 – November 2019
- 37 jobs
- $3 M In additional wages being paid.
- $12 M In additional total output.
- $1 M In state & local taxes.

**Build**
December 2019 – October 2023
- 862 jobs
- $169 M In additional wages being paid.
- $195 M In additional total output.
- $3 M In state & local taxes.

**Operations**
November 2023 – December 2043
- 349 jobs
- $34 M In additional wages being paid.
- $51 M In additional total output.
- $13 M In state & local taxes.

[1] State & Local Tax Impacts include the pilot taxes paid by PAF. Chester Pilot taxes include tax payment to the local school district.

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High-Level Results: Chester

Annual Impacts for each Project Phase

Chester Employment: Average Annual Additional Jobs

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development (Oct 2016 to Nov 2019)</td>
<td>37</td>
</tr>
<tr>
<td>Build (Dec 2019 to Oct 2023)</td>
<td>862</td>
</tr>
<tr>
<td>Operations (Nov 2023 to Dec 2043)</td>
<td>349</td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
High-Level Results: Chester

Annual Impacts for each Project Phase

Chester Labor Income:
Average Annual Additional Wages

- **Build Phase (Dec 2019 to Oct 2023):** $169 million
- **Development (Oct 2016 to Nov 2019):** $3 million
- **Operations (Nov 2023 to Dec 2043):** $34 million

[1] Build phase results include pipeline construction related impacts

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High-Level Results: Chester

Annual Impacts for each Project Phase

Chester Output:
Average Annual Additional Output

Average Annual Output
($ millions)

Phase
Development
Oct 2016 to Nov 2019
Build
Dec 2019 to Oct 2023
Operations
Nov 2023 to Dec 2043

$12
$195
$51

[1] Build phase results include pipeline construction related impacts
High-Level Results: Chester

Annual Impacts for each Project Phase

Chester State & Local Taxes: Average Annual Additional Tax Revenue

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Tax Revenue ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Oct 2016 to Nov 2019</td>
<td>$1</td>
</tr>
<tr>
<td>Build Dec 2019 to Oct 2023</td>
<td>$3</td>
</tr>
<tr>
<td>Operations Nov 2023 to Dec 2043</td>
<td>$13</td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
[2] Results include Pilot payments made by PAE to Chester and the local school district
## High-Level Results: Pilot Taxes

<table>
<thead>
<tr>
<th>Phase</th>
<th>Time Period</th>
<th>Chester and Local School District</th>
<th>Delaware County</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>October 2016 - November 2019</td>
<td>$2</td>
<td>$0</td>
<td>$2</td>
</tr>
<tr>
<td>Build</td>
<td>December 2019 - October 2023</td>
<td>$7</td>
<td>$2</td>
<td>$8</td>
</tr>
<tr>
<td>Operations</td>
<td>November 2023 - December 2033</td>
<td>$17</td>
<td>$4</td>
<td>$22</td>
</tr>
<tr>
<td>Operations</td>
<td>January 2034 - December 2043</td>
<td>$240</td>
<td>$60</td>
<td>$300</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$265</td>
<td>$67</td>
<td>$332</td>
</tr>
</tbody>
</table>

[1] Figures through December 2033 based on KOZ analysis
3. Appendix
EIA Analytical Framework

Development
- Pre-FID expenses

Construction
- LNG liquefaction plant and related expenditures

Operations
- Operational expenditures

Pipeline
- Construction of pipeline connecting to PAE’s facilities

Regional Economic Multipliers from Input-Output Modeling System

Direct, Indirect and Induced Impacts

- Economic Output
- Jobs
- Wages
- Taxes
Data Sources

KPMG reviewed and relied upon data and assumptions from the following sources:

- PAE’s Expected Pre-Construction, Construction and Operations Expenditures
- Cost Expectations from Existing Vendors
- Cost Allocations from Literature Review
- Informational Interviews with Public Officials
- Publicly Available: Industry-Level Employer Counts
- Commuting Patterns
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Penn LNG Liquefaction and Export Terminal

Monetizing Marcellus Gas in the Global Market

February 2021
Recruited, hired and onboarded experienced LNG project execution team

Bechtel feasibility study commenced -- completion expected March 2021

Commercial plan transitioned to FOB model

Negotiated agreement with creditworthy energy services provider
Project Leadership

Franc James: Chairman and CEO
- Founder of Penn America Energy Holdings and the Penn LNG Project
- 25+ years of successful international energy and commodity business development
- Co-founder, CEO United Group Holding (Far East) Pte Ltd., (Iron ore mining, marketing and export); Co-founder and Managing Partner NACuMEX S.A. de C.V. (North American copper mining and processing operation)

Howard Candelet: Chief Development Officer
- COO Live Oak LNG and Mississippi LNG (JV with Cheniere and Parallax ), President Driftwood LNG (Tellurian), VP Operation Atlantic LNG Trinidad, Head of Global LNG Shipping with BG
- SIGGTO board member, GPC member and chaired numerous LNG events, Senior Lecturer: ABS and Cork Maritime College Ireland
- 40+ Years of LNG industry experience

Katrina Kaufman: Chief Commercial Officer
- General Manager - Atlantic for Anadarko Mozambique LNG Marketing & Shipping
- Chevron Director - Business Development
- Led numerous LNG Value Chain transactions (global LNG and natural gas: contract negotiation, term purchases, sales, trading, project/business development, new entity development, and acquisitions)
- LNG Commercial Subject Matter Expert 20+ Years

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Project Leadership

Christian Petersen: Chief Legal Officer

- Former Managing Senior Counsel for LNG Marketing and Shipping & Project Finance, Mozambique LNG at Anadarko, from 2012 to 2019. Legal support for 11 MTPA of LNG sales and $18 billion of lender commitments
- Joined TOTAL in 2019 as part of TOTAL’s acquisition of the Mozambique project
- 15+ years of energy development, LNG, and finance experience in private practice with international law firms, with rotations in Washington DC, Hong Kong and Tokyo

Pat Outtrim: Executive Vice President, Government & Regulatory Affairs

- Senior Vice President Government & Regulatory Affairs at Tellurian
- Vice President, Government Affairs & Regulatory Affairs at Cheniere
- Multiple Successful FERC LNG import & export project filings (Driftwood, Sabine Pass, Corpus Christi, Freeport, Cove Point, Creole Trail LNG)
Optimal Site Using Proven Technology

Project Overview

- ~7 mtpea plant capacity
- Site footprint: 100-acre Brownfield with deepwater access
- Bechtel & Air Products: Fully wrapped LSTK and proven track records
- Competitive CAPEX: $575/tpa to $650/tpa
- Minimal pipeline interconnect requirements
- 2027/2028 Target start-up

Working with industry-leading providers to develop a world class LNG facility
Penn LNG: Offering Price Index Optionality

Opportunity for global commodity exposure for PA gas producers

US Gas Indexes

- Leidy Hub
- Tetco M2

International Gas Indexes

- TTF
- JKM
- NBP

Oil Indexes

- Brent
- Other Oil
Penn LNG Business Model

Gas Supply Purchases
- On international index
- From gas producer or aggregator
- 3-4 suppliers to minimize credit risk
- Delivery to Eagle Compressor Station

Pipeline
- Contract with Enbridge to build “last mile”
- FT for delivery from Eagle Compressor Station to plant

LNG Sales
- FOB = delivered onto LNG ship
- On international index that matches gas supply purchases
- 3+ credit worthy buyers

Penn LNG investment recovery between gas purchases and LNG sales
Covers pipeline and liquefaction capex + opex
Optimizing Existing Pipelines

Access to existing gas pipelines with sufficient upgradeable capacity

Penn LNG offers access to new markets for M2 Market Area and Leidy Trading Zone
Supporting Pennsylvania

- Promote Pennsylvania globally
- Create thousands of jobs in Pennsylvania
  - 4,000+ jobs during construction
  - Permanent skilled jobs during operations:
    - Plant support
    - Marine operations
    - Upstream infrastructure and gas production
    - LNG production
- Increase tax revenues for City of Chester and Pennsylvania
  - Project design to be optimized for improvements and enhancements around facility location
- Quantify and minimize GHG emissions in the LNG value chain

Bringing economic value to Pennsylvania with environmental accountability
Offtaker Considerations
Europe needs more gas from Russia and US LNG in the long-term

**Gas Demand Upside**
- Nuclear reductions
- Decreasing dependency on coal
- Underperformance of renewables

**LNG Supply Upside**
- Delays to Nordstream 2
- Concerns with Russia gas overdependence
- North Africa competing domestic gas demand

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Source: Wood Mackenzie and Penn LNG Analytics

*Includes flow from Norway, Algeria, Azerbaijan, Iran and Libya
Proximity to Europe & Suez Canal Enhances LNG Competitiveness

Round-trip Advantage

<table>
<thead>
<tr>
<th></th>
<th>Time savings</th>
<th>Cost savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate LNG</td>
<td>6.7 days</td>
<td>$0.22/mmbtu</td>
</tr>
<tr>
<td>Barcelona</td>
<td>6.1 days</td>
<td>$0.21/mmbtu</td>
</tr>
</tbody>
</table>

Sources: sea-distances.org for voyage distances
Notes: Nearby Marcus Hook used as a proxy for Port of Chester, Pennsylvania; routes shown are illustrative only and do not reflect actual voyages
Assumptions: Charter rate $85k/day, speed 18.5 knots, BOG cost $5/mmbtu. HFO $400/ton

Reduced shipping costs to Europe, Middle East, and other key global LNG markets
Environmentally Responsible LNG Value Chain

Appalachian basin has the lowest methane / carbon emissions intensity in the US
- Pennsylvania is a leader in reducing methane emissions
- Marcellus accounts for 16% of energy produced but only 4% of total US onshore emissions
- Top 10 Appalachian gas producers have lowest CO2 emission intensity in the US
- Largest producer scores 56 on Bloomberg ESG disclosure indicating excellent transparency

Key regional pipelines committed to environmental improvements
- Enbridge has invested $4 billion in the past 3 years for pipeline integrity
  - Investing in low carbon innovation with RNG, CNG, hydrogen and solar projects
- Williams announced goal of 56% absolute reduction in emissions from 2005 levels by 2030 and net zero carbon emissions target by 2050
  - Taking steps to develop solar energy installations at certain facilities to provide electricity to our existing natural gas transmission and processing operations

Liquefaction project focused on carbon reduction / neutrality
- LNG plant powered by PJM grid with available nuclear and renewable energy sources

Responsible Return on Equity
Producer Benefits
Penn LNG - a “Pipeline” to Global Markets

*Northeast gas production constrained by pipeline capacity*

**US Northeast Gas Supply Outlook**

- **Pipeline takeaway capacity**
- **Northeast gas production**
- **Penn LNG start**

**Benefits to Producers**

- Generates 1 BCFD demand for Marcellus and Utica production
- Global indices diversify US producer portfolio
- Reduce market transportation constraints 2027+
  - Long-haul pipelines to liquid markets becoming more difficult to construct

**Sources:** IHS Markit and Penn LNG Analytics

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Global Indices Forecast to Outperform Domestic

*Creating value between Leidy and European gas prices*

European Gas vs Cost of Penn LNG, Monthly Prices

- Europe NBP/TTF to Leidy* spread
- Shipping to Netherlands
- Penn LNG FOB costs

*Leidy estimated as 90% Henry Hub for forecast period
Notes: For the NBP/TTF series - NBP is used up to Sep 2015, TTF is used thereafter
Sources: FACTSET, Wood Mackenzie and Penn LNG Analytics
Creating value between Leidy and Brent based LNG contracts

10% Brent vs Cost of Penn LNG, Monthly Prices

*Leidy estimated as 90% Henry Hub for forecast period
Sources: FACTSET, Wood Mackenzie and Penn LNG Analytics
Penn LNG and EQT Partnership Benefits

Pre-FID equity
- Facilitates full transparency during project development
- Allows EQT participation in multiple areas of the value chain
- Development equity creates long-term optionality
  - Upside at FID
  - Creates opportunity to participate in FID equity

Secondee opportunities
- Commercial Team: Exposure to deals with LNG offtakers
- Finance Team: Assist project financing efforts
- Operations Team: Assist construction development and timeline
- Permitting/ESG: Partner to create “green” brand for PA gas

Investment recovery opportunity
- Project to reimburse EQT for secondee time
- Initial investment effectively recovered through G&A payments

Working together to create value and opportunity for Pennsylvania and beyond
Timeline
Penn LNG Path to FID

- **2021**
  - H1: 1st Round Pre-FID Funding
  - Q2: FERC Pre-file

- **2022**
  - H2: FERC Application Submission

- **2023**
  - H1: Financial Launch for Post-FID Funding

- **2024**
  - H1: FERC Approval

Targeting First Cargoes 2027/2028
Pre-FID Budget (in millions)

Expenditures

<table>
<thead>
<tr>
<th>Year</th>
<th>Early Works</th>
<th>Permitting, Pre-Feed &amp; Engineering</th>
<th>Land Acquisition</th>
<th>SG&amp;A</th>
<th>3rd Party Cost</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>$42</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2022</td>
<td>$72</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>2023</td>
<td>$126</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2024</td>
<td>$200</td>
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</tbody>
</table>

Cumulative

- Early Works
- Permitting, Pre-Feed & Engineering
- Land Acquisition
- SG&A
- 3rd Party Cost
- Other

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The Opportunity
LNG Outlook is Robust

~325 MTPA of new LNG supply needed by 2040

LNG Long-term Outlook (delivered volumes)

Source: Wood Mackenzie and Penn LNG Analytics

New Supply Required ~325 mtpa
Northeast US LNG Export Location

Serving Global LNG Markets with Pipeline Constrained Appalachian Gas

Creating a market for 1 BCFD of Appalachian Gas
2021 Targets

- Bechtel to conclude project feasibility study end Q1 2021 – determine plant design
- Close first round of equity funding for $80 million end Q2 2021
- Execute agreement with creditworthy energy services provider
- Sign HOAs with 3-4 gas producers H1 2021
- Draft and negotiate Pipeline Coordination Agreement with Enbridge
- Pre-file with FERC end Q3 2021 – begin discussions with new LNG buyers
Penn LNG: Strategic Opportunity

- Experienced LNG leadership team with recent execution success
- Competitive construction costs with a proven world class EPC LNG contractor
- Optimal LNG export location for Marcellus gas supply
- Solves Marcellus takeaway constraints AND 2027/2028 timeline fits global LNG market demand
- Shorter shipping distances to key global LNG markets
- Broad stakeholder support at local and state level
Questions

For further information:

Franc James, Chairman and CEO
Franc.James@PennLNG.com

Katrina Kaufman, Chief Commercial Officer
Katrina.Kaufman@PennLNG.com
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Table of Contents

1. Study Overview
2. Results Overview
3. Appendix
1. Study Overview
Study Background

— KPMG was commissioned by Penn America Energy (PAE) to conduct an independent economic impact assessment of PAE’s City of Chester based energy project.

— **Project:** Proposed LNG facility and Philadelphia Lateral and Chester Connector pipeline construction

— **Economic regions analysed:** Commonwealth of Pennsylvania, Delaware County, City of Chester

— **Measurement period:** Three phases:
  — Development: October 2016 – November 2019
  — Build: December 2019 – October 2023
  — Operations: November 2023 – December 2043

— KPMG’s work included determining the following traditional measures of economic impacts specific to Pennsylvania, Delaware County, and City of Chester:

  — Employment
  — Labor Income
  — Economic Output
  — State & Local Taxes
# Chester LNG Project - Background

<table>
<thead>
<tr>
<th>Key Point</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>Multi-billion dollar proposed LNG plant and associated facilities under consideration in the City of Chester, Pennsylvania.</td>
</tr>
</tbody>
</table>
| Project Scope      | - Construction of liquefaction plant and associated facilities  
- Utilities and pipeline construction  
- Natural gas extraction and related activities  
- Employment and compensation |
| Impact Potential   | - Potential to generate additional economic value to community by enabling natural gas conversion to LNG in Pennsylvania, 2nd largest natural gas producing-state in the U.S.  
- Direct effects of PAE expenditure as well as indirect effects of spending by third parties and induced effects of spending by employees of PAE and third parties.  
- Direct and indirect economic impacts associated with pipeline construction |
| Market             | - Natural gas will be sourced primarily from Pennsylvania given the proximity to the Utica and Marcellus shale fields.  
- Natural gas liquefied by PAE will ship to markets in Europe, Asia or Latin America.  
- Export demand driven by price differential in domestic and world natural gas markets, a function of technological advances in US production.  
- PAE expects price differential to persist for the life of the project. |
| Additional Benefits| - LNG is used in a variety of industrial and domestic purposes  
- Provides a sustainable source of clean energy. |
## Chester LNG Project - Phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Timeline</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>October 2016 – November 2019</td>
<td>— The Development (Pre-Construction) Phase covers activities prior to commencement of construction of LNG plant and other facilities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>— This phase includes pre-final investment decision (FID) engineering work, regulatory filings and advisory services.</td>
</tr>
<tr>
<td>Construction</td>
<td>December 2019 – October 2023</td>
<td>— The Build Phase covers the construction of the LNG plant and associated facilities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>— Investment in initial site improvements and infrastructure occur in this phase.</td>
</tr>
<tr>
<td>Operations</td>
<td>November 2023 – December 2043</td>
<td>— PAE will operate the plant under a tolling business model. In this model, PAE does not take ownership of the natural gas or assume commodity price risk. Rather, LNG off-takers enter into separate purchase agreements with gas producers and tolling agreements with PAE to convert the gas into liquid form. This will generate production activity in Pennsylvania.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>— The LNG plant’s Operation Phase is expected to span 20+ years.</td>
</tr>
<tr>
<td>Pipeline Construction</td>
<td>2022 – 2023</td>
<td>— Construction of two pipeline projects: a 3-Mile Connector Pipeline from Chester Junction to the PAE LNG facility and a 22.8 upgrade of the Philadelphia Lateral Pipeline from Eagle CS to Chester Junction</td>
</tr>
</tbody>
</table>
2. Results Overview
Annual Average Economic Impacts for Pennsylvania by Project Phase

**Development**
October 2016 – November 2019

- 358 jobs
- $21 M In additional wages being paid.
- $91 M In additional total output.
- $3 M In state & local taxes.

**Build**
December 2019 – October 2023

- 7,911 jobs
- $646 M In additional wages being paid.
- $1,884 M In additional total output.
- $34 M In state & local taxes.

**Operations**
November 2023 – December 2043

- 2,736 jobs
- $217 M In additional wages being paid.
- $1,062 M In additional total output.
- $47 M In state & local taxes.

[1] State & Local Tax Impacts include the pilot taxes paid by PAE. Chester Pict taxes include tax payment to the local school district [2] PA Impacts in the Operations Phase are from the “Low Gas Price” extraction scenario.
High-Level Results: Pennsylvania

Annual Impacts for each Project Phase

Pennsylvania Employment: Average Annual Additional Jobs

<table>
<thead>
<tr>
<th>Phase</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Phase</td>
<td>358</td>
<td>-</td>
</tr>
<tr>
<td>Build Phase</td>
<td>2,736</td>
<td>3,196</td>
</tr>
<tr>
<td>Operations Phase Low</td>
<td>-</td>
<td>2,736</td>
</tr>
<tr>
<td>Operations Phase High</td>
<td>-</td>
<td>3,196</td>
</tr>
</tbody>
</table>

[1] Operations phase impacts presented as a range to account for a range of gas prices.
[2] Build phase results include pipeline construction related impacts
High-Level Results: Pennsylvania

Annual Impacts for each Project Phase

Pennsylvania Labor Income:
Average Annual Additional Wages

Average Annual Wages
($ millions)

Development Phase
Oct 2016 – Nov 2019

Build Phase
Dec 2019 – Oct 2023

Operations Phase
Low
Dec 2019 – Oct 2023

High
Dec 2019 – Oct 2023

$21

$646

$217

$255

[1] Operations phase impacts presented as a range to account for a range of gas prices.
[2] Build phase results include pipeline construction related impacts

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High-Level Results: Pennsylvania

Annual Impacts for each Project Phase

Pennsylvania Output: Average Annual Additional Output

- Development Phase: Oct 2016 – Nov 2019
  - Average Annual Output: $91

- Build Phase: Dec 2019 – Oct 2023
  - Average Annual Output: $1,884

- Operations Phase Low: Dec 2019 – Oct 2023
  - Average Annual Output: $1,062

- Operations Phase High: Dec 2019 – Oct 2023
  - Average Annual Output: $1,280

[1] Operations phase impacts presented as a range to account for a range of gas prices.
[2] Build phase results include pipeline construction related impacts.
High-Level Results: Pennsylvania

Annual Impacts for each Project Phase

Pennsylvania State & Local Taxes:
Average Annual Additional Tax Revenue

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Tax Revenue ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Phase</td>
<td>$3</td>
</tr>
<tr>
<td>Build Phase</td>
<td>$34</td>
</tr>
<tr>
<td>Operations Phase</td>
<td>Low: $47</td>
</tr>
<tr>
<td></td>
<td>High: $59</td>
</tr>
</tbody>
</table>

[1] Operations phase impacts presented as a range to account for a range of gas prices.
[2] Build phase results include pipeline construction related impacts.
### Average Annual Economic Impacts for Delaware County by Project Phase

#### Development
- **October 2016 – November 2019**
  - **274 jobs**
  - **$16 M** in additional wages being paid.
  - **$68 M** in additional total output.
  - **$2 M** in state & local taxes.

#### Build
- **December 2019 – October 2023**
  - **5,242 jobs**
  - **$462 M** in additional wages being paid.
  - **$1,270 M** in additional total output.
  - **$25 M** in state & local taxes.

#### Operations
- **November 2023 – December 2043**
  - **645 jobs**
  - **$52 M** in additional wages being paid.
  - **$148 M** in additional total output.
  - **$6 M** in state & local taxes.

[1] State & Local Tax Impacts include the pilot taxes paid by PAE. Cluster Pilot taxes include tax payment to the local school district.
High-Level Results: Delaware County

Annual Impacts for each Project Phase

Delaware County Employment: Average Annual Additional Jobs

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Oct 2016 to Nov 2019</td>
<td>274</td>
</tr>
<tr>
<td>Build Dec 2019 to Oct 2023</td>
<td>5,242</td>
</tr>
<tr>
<td>Operations Nov 2023 to Dec 2043</td>
<td>645</td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
High-Level Results: Delaware County

Annual Impacts for each Project Phase

Delaware County Labor Income: Average Annual Additional Wages

- Development: Oct 2016 to Nov 2019
  - Average Annual Wages: $16

- Build: Dec 2019 to Oct 2023
  - Average Annual Wages: $462

- Operations: Nov 2023 to Dec 2043
  - Average Annual Wages: $52

[1] Build phase results include pipeline construction related impacts
High-Level Results: Delaware County

Annual Impacts for each Project Phase

Delaware County Output: Average Annual Additional Output

Phase

Average Annual Output ($ millions)

- Development: Oct 2016 to Nov 2019
  - $68
- Build: Dec 2019 to Oct 2023
  - $1,270
- Operations: Nov 2023 to Dec 2043
  - $146

[1] Build phase results include pipeline construction related impacts
High-Level Results: Delaware County

Annual Impacts for each Project Phase

Delaware County State & Local Taxes:
Average Annual Additional Tax Revenue

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Tax Revenue ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Oct 2016 to Nov 2019</td>
<td>$2</td>
</tr>
<tr>
<td>Build Dec 2019 to Oct 2023</td>
<td>$25</td>
</tr>
<tr>
<td>Operations Nov 2023 to Dec 2043</td>
<td>$6</td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
[2] Results include Pilot payments made by PAE to Delaware County
Average Annual Economic Impacts for City of Chester by Project Phase

**Development**
October 2016 – November 2019
- 37 jobs
- $3 M in additional wages being paid.
- $12 M in additional total output.
- $1 M in state & local taxes.

**Build**
December 2019 – October 2023
- 862 jobs
- $169 M in additional wages being paid.
- $195 M in additional total output.
- $3 M in state & local taxes.

**Operations**
November 2023 – December 2043
- 349 jobs
- $34 M in additional wages being paid.
- $51 M in additional total output.
- $13 M in state & local taxes.

[1] State & Local Tax Impacts include the property taxes paid by PAF. Chester Pilot taxes include tax payment to the local school district.
High-Level Results: Chester

Annual Impacts for each Project Phase

Chester Employment: Average Annual Additional Jobs

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Oct 2016 to Nov 2019</td>
<td>37</td>
</tr>
<tr>
<td>Build Dec 2019 to Oct 2023</td>
<td>862</td>
</tr>
<tr>
<td>Operations Nov 2023 to Dec 2043</td>
<td>349</td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
High-Level Results: Chester

Annual Impacts for each Project Phase

Chester Labor Income:
Average Annual Additional Wages

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Wages (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>$3</td>
</tr>
<tr>
<td>Build</td>
<td>$169</td>
</tr>
<tr>
<td>Operations</td>
<td>$34</td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
High-Level Results: Chester

Annual Impacts for each Project Phase

<table>
<thead>
<tr>
<th>Phase</th>
<th>Average Annual Output ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>$12</td>
</tr>
<tr>
<td>Oct 2016 to Nov 2019</td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>$195</td>
</tr>
<tr>
<td>Dec 2019 to Oct 2023</td>
<td></td>
</tr>
<tr>
<td>Operations</td>
<td>$51</td>
</tr>
<tr>
<td>Nov 2023 to Dec 2043</td>
<td></td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
High-Level Results: Chester

Annual Impacts for each Project Phase

Chester State & Local Taxes:
Average Annual Additional Tax Revenue

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Annual Tax Revenue ($ millions)</td>
<td>$1</td>
<td>$3</td>
<td>$13</td>
</tr>
</tbody>
</table>

[1] Build phase results include pipeline construction related impacts
[2] Results include Pilot payments made by PAE to Chester and the local school district
# High-Level Results: Pilot Taxes

## Total Tax Amount ($ amount in millions)

<table>
<thead>
<tr>
<th>Phase</th>
<th>Time Period</th>
<th>Chester and Local School District</th>
<th>Delaware County</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>October 2016 - November 2019</td>
<td>$2</td>
<td>$0</td>
<td>$2</td>
</tr>
<tr>
<td>Build</td>
<td>December 2019 - October 2023</td>
<td>$7</td>
<td>$2</td>
<td>$8</td>
</tr>
<tr>
<td>Operations</td>
<td>November 2023 - December 2033</td>
<td>$17</td>
<td>$4</td>
<td>$22</td>
</tr>
<tr>
<td>Operations</td>
<td>January 2034 - December 2043</td>
<td>$240</td>
<td>$60</td>
<td>$300</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$265</td>
<td>$67</td>
<td>$332</td>
</tr>
</tbody>
</table>

[1] Figures through December 2033 based on KOZ analysis
3. Appendix
EIA Analytical Framework

- **Development**
  - Pre-FID expenses

- **Construction**
  - LNG liquefaction plant and related expenditures

- **Operations**
  - Operational expenditures

- **Pipeline**
  - Construction of pipeline connecting to PAE’s facilities

Regional Economic Multipliers from Input-Output Modeling System

- Direct, Indirect and Induced Impacts
  - Economic Output
  - Jobs
  - Wages
  - Taxes
KPMG reviewed and relied upon data and assumptions from the following sources:

- PAE’s Expected Pre-Construction, Construction and Operations Expenditures
- Cost Expectations from Existing Vendors
- Cost Allocations from Literature Review
- Informational Interviews with Public Officials
- Publicly Available: Industry-Level Employer Counts
- Commuting Patterns
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Penn LNG Liquefaction and Export Terminal
Monetizing Marcellus Gas in the Global Market

February 2021
2020 achievements

- Recruited, hired and onboarded experienced LNG project execution team
- Bechtel feasibility study commenced -- completion expected March 2021
- Commercial plan transitioned to FOB model
- Negotiated agreement with creditworthy energy services provider
Project Leadership

Franc James: Chairman and CEO
- Founder of Penn America Energy Holdings and the Penn LNG Project
- 25+ years of successful international energy and commodity business development
- Co-founder, CEO United Group Holding (Far East) Pte Ltd., (Iron ore mining, marketing and export); Co-founder and Managing Partner NACuMEX S.A. de C.V. (North American copper mining and processing operation)

Howard Candelet: Chief Development Officer
- COO Live Oak LNG and Mississippi LNG (JV with Cheniere and Parallax), President Driftwood LNG (Tellurian), VP Operation Atlantic LNG Trinidad, Head of Global LNG Shipping with BG
- SIGGTO board member, GPC member and chaired numerous LNG events, Senior Lecturer: ABS and Cork Maritime College Ireland
- 40+ Years of LNG industry experience

Katrina Kaufman: Chief Commercial Officer
- General Manager - Atlantic for Anadarko Mozambique LNG Marketing & Shipping
- Chevron Director - Business Development
- Led numerous LNG Value Chain transactions (global LNG and natural gas: contract negotiation, term purchases, sales, trading, project/business development, new entity development, and acquisitions)
- LNG Commercial Subject Matter Expert 20+ Years
Project Leadership

Christian Petersen: Chief Legal Officer
- Former Managing Senior Counsel for LNG Marketing and Shipping & Project Finance, Mozambique LNG at Anadarko, from 2012 to 2019. Legal support for 11 MTPA of LNG sales and $18 billion of lender commitments
- Joined TOTAL in 2019 as part of TOTAL’s acquisition of the Mozambique project
- 15+ years of energy development, LNG, and finance experience in private practice with international law firms, with rotations in Washington DC, Hong Kong and Tokyo

Pat Outtrim: Executive Vice President, Government & Regulatory Affairs
- Senior Vice President Government & Regulatory Affairs at Tellurian
- Vice President, Government Affairs & Regulatory Affairs at Cheniere
- Multiple Successful FERC LNG import & export project filings (Driftwood, Sabine Pass, Corpus Christi, Freeport, Cove Point, Creole Trail LNG)
Cross-Functional Leadership

Franc James
Chairman and CEO

Christian Petersen
Chief Legal Officer

Howard Candelet
Chief Development Officer

Kostas Dimitropoulos
VP, Marine Ops

Candidate Identified
VP, Engineering & Construction

Chad Bellah
VP, Controller

Roger Ayton
VP, Corporate Development & Special Projects

Leke Agiri
VP, Finance

Patricia Outtrim
EVP, Government & Regulatory Affairs

Katrina Kaufman
Chief Commercial Officer

Jenny Solomon
VP, Strategy & Analytics

David Taylor
Commercial Manager
Project Overview

- ~7 mtpa plant capacity
- Site footprint: 100-acre Brownfield with deepwater access
- Bechtel & Air Products: Fully wrapped LSTK and proven track records
- Competitive CAPEX: $575/tpa to $650/tpa
- Minimal pipeline interconnect requirements
- 2027/2028 Target start-up
Opportunity for global commodity exposure for PA gas producers

US Gas Indexes
- Leidy Hub
- Tetco M2

International Gas Indexes
- TTF
- JKM
- NBP
- LNG

Oil Indexes
- Brent
- Other Oil
Penn LNG Business Model

Gas Supply Purchases
- On international index
- From gas producer or aggregator
- 3-4 suppliers to minimize credit risk
- Delivery to Eagle Compressor Station

Pipeline
- Contract with Enbridge to build “last mile”
- FT for delivery from Eagle Compressor Station to plant

LNG Sales
- FOB = delivered onto LNG ship
- On international index that matches gas supply purchases
- 3+ credit worthy buyers

Penn LNG investment recovery between gas purchases and LNG sales
Covers pipeline and liquefaction capex + opex
Access to existing gas pipelines with sufficient upgradeable capacity

Penn LNG offers access to new markets for M2 Market Area and Leidy Trading Zone
Supporting Pennsylvania

• Promote Pennsylvania globally
• Create thousands of jobs in Pennsylvania
  – 4,000+ jobs during construction
  – Permanent skilled jobs during operations:
    ▪ Plant support
    ▪ Marine operations
    ▪ Upstream infrastructure and gas production
    ▪ LNG production
• Increase tax revenues for City of Chester and Pennsylvania
  – Project design to be optimized for improvements and enhancements around facility location
• Quantify and minimize GHG emissions in the LNG value chain

Bringing economic value to Pennsylvania with environmental accountability
Offtaker Considerations
Europe needs more gas from Russia and US LNG in the long-term

**Europe Gas Supply Outlook**

- **Russian pipe gas**
- **LNG**
- **Other pipe gas**
- **Indigenous production**

**Gas Demand Upside**
- Nuclear reductions
- Decreasing dependency on coal
- Underperformance of renewables

**LNG Supply Upside**
- Delays to Nordstream 2
- Concerns with Russia gas overdependence
- North Africa competing domestic gas demand

Source: Wood Mackenzie and Penn LNG Analytics

*Includes flow from Norway, Algeria, Azerbaijan, Iran and Libya*
Proximity to Europe & Suez Canal Enhances LNG Competitiveness

Round-trip Advantage

<table>
<thead>
<tr>
<th></th>
<th>Time savings</th>
<th>Cost savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate LNG</td>
<td>6.7 days</td>
<td>$0.22/mmbtu</td>
</tr>
<tr>
<td>Barcelona</td>
<td>6.1 days</td>
<td>$0.21/mmbtu</td>
</tr>
</tbody>
</table>

Sources: sea-distances.org for voyage distances
Notes: Nearby Marcus Hook used as a proxy for Port of Chester, Pennsylvania; routes shown are illustrative only and do not reflect actual voyages
Assumptions: Charter rate $85k/day, speed 18.5 knots, BOG cost $5/mmbtu, HFO $400/ton

Reduced shipping costs to Europe, Middle East, and other key global LNG markets
Environmentally Responsible LNG Value Chain

Appalachian basin has the lowest methane / carbon emissions intensity in the US

• Pennsylvania is a leader in reducing methane emissions
• Marcellus accounts for 16% of energy produced but only 4% of total US onshore emissions
• Top 10 Appalachian gas producers have lowest CO2 emission intensity in the US
• Largest producer scores 56 on Bloomberg ESG disclosure indicating excellent transparency

Key regional pipelines committed to environmental improvements

• Enbridge has invested $4 billion in the past 3 years for pipeline integrity
  — Investing in low carbon innovation with RNG, CNG, hydrogen and solar projects
• Williams announced goal of 56% absolute reduction in emissions from 2005 levels by 2030 and net zero carbon emissions target by 2050
  — Taking steps to develop solar energy installations at certain facilities to provide electricity to our existing natural gas transmission and processing operations

Liquefaction project focused on carbon reduction / neutrality

• LNG plant powered by PJM grid with available nuclear and renewable energy sources

Responsible Return on Equity
Producer Benefits
Penn LNG - a “Pipeline” to Global Markets

Northeast gas production constrained by pipeline capacity

**US Northeast Gas Supply Outlook**

**Benefits to Producers**

- Generates 1 BCFD demand for Marcellus and Utica production
- Global indices diversify US producer portfolio
- Reduce market transportation constraints 2027+
  - Long-haul pipelines to liquid markets becoming more difficult to construct

Sources: IHS Markit and Penn LNG Analytics
Creating value between Leidy and European gas prices

European Gas vs Cost of Penn LNG, Monthly Prices

*Leidy estimated as 90% Henry Hub for forecast period
Notes: For the NBP/TTF series - NBP is used up to Sep 2015, TTF is used thereafter
Sources: FACTSET, Wood Mackenzie and Penn LNG Analytics
Global Indices Forecast to Outperform Domestic

Creating value between Leidy and Brent based LNG contracts

10% Brent vs Cost of Penn LNG, Monthly Prices

$/MMBTU

2014 2016 2018 2020 2022 2024 2026 2028 2030 2032 2034 2036 2038 2040

Penn LNG FOB costs

Shipping to Asia

10% Brent to Leidy* spread

*Leidy estimated as 90% Henry Hub for forecast period

Sources: FACTSET, Wood Mackenzie and Penn LNG Analytics
Penn LNG and EQT Partnership Benefits

Pre-FID equity
• Facilitates full transparency during project development
• Allows EQT participation in multiple areas of the value chain
• Development equity creates long-term optionality
  — Upside at FID
  — Creates opportunity to participate in FID equity

Secondee opportunities
• Commercial Team: Exposure to deals with LNG offtakers
• Finance Team: Assist project financing efforts
• Operations Team: Assist construction development and timeline
• Permitting/ESG: Partner to create “green” brand for PA gas

Investment recovery opportunity
• Project to reimburse EQT for secondee time
• Initial investment effectively recovered through G&A payments

Working together to create value and opportunity for Pennsylvania and beyond
Timeline
Penn LNG Path to FID

2021

H1
1st Round Pre-FID Funding

Q2
FERC Pre-file

2022

H2
FERC Application Submission

2023

H1
Financial Launch for Post-FID Funding

2024

H1
FERC Approval

FID

Targeting First Cargoes 2027/2028
Pre-FID Budget (in millions)

### Expenditures

- **2021**: $42
- **2022**: $72
- **2023**: $126
- **2024**: $200

**Annual**

- Early Works: $17
- Permitting, Pre-Feed & Engineering: $52
- Land Acquisition: $32
- SG&A: $32
- 3rd Party Cost: $40
- Other: $27

**Cumulative**

- $200

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The Opportunity
LNG Outlook is Robust

~325 MTPA of new LNG supply needed by 2040

LNG Long-term Outlook (delivered volumes)

Source: Wood Mackenzie and Penn LNG Analytics

New Supply Required ~325 mtpa

Penn LNG start

Penn LNG

Under construction

Existing supply

LNG trade forecast

~325 MTPA of new LNG supply needed by 2040
Northeast US LNG Export Location

Serving Global LNG Markets with Pipeline Constrained Appalachian Gas

Creating a market for 1 BCFD of Appalachian Gas
2021 Targets

- Bechtel to conclude project feasibility study end Q1 2021 – determine plant design
- Close first round of equity funding for $80 million end Q2 2021
- Execute agreement with creditworthy energy services provider
- Sign HOAs with 3-4 gas producers H1 2021
- Draft and negotiate Pipeline Coordination Agreement with Enbridge
- Pre-file with FERC end Q3 2021 – begin discussions with new LNG buyers
Penn LNG: Strategic Opportunity

- Experienced LNG leadership team with recent execution success
- Competitive construction costs with a proven world class EPC LNG contractor
- Optimal LNG export location for Marcellus gas supply
- Solves Marcellus takeaway constraints **AND** 2027/2028 timeline fits global LNG market demand
- Shorter shipping distances to key global LNG markets
- Broad stakeholder support at local and state level
Questions

For further information:

Franc James, Chairman and CEO
Franc.James@PennLNG.com

Katrina Kaufman, Chief Commercial Officer
Katrina.Kaufman@PennLNG.com