Gas Pipeline Regulation

National Conference of State Legislatures
Natural Gas Policy Institute
Pittsburgh, Pennsylvania
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Division of Pipeline Certificates
Office of Energy Projects
Federal Energy Regulatory Commission
Natural Gas Transmission
So, You Hear Rumor of a Pipeline?
What is FERC?

- An Independent Regulatory Agency in the USA Federal Government
- Created by the Department of Energy Organization Act (1977)
- Federal Power Commission was the predecessor of FERC – FPC dates to 1920 establish for water power.
How is FERC organized?

• There are 5 Commissioners’ positions
  – Nominated by the President, confirmed by the Senate, President designates Chairman
  – Each commissioner has a 5-year fixed term, staggered, with one term expiring each year

• The Chairman sets the monthly Commission agenda
  – Orders voted out by majority rule
FERC Organization Chart
FERC is an independent Federal regulatory agency

- **Political Party**
  - No more than 3 commissioners from one political party
- **President and Congress**
  - No review of FERC’s decisions by President, Department of Energy or other agencies
- **Industry Participants**
  - No private discussions of open cases
  - Restrictions on FERC employees: stock, gifts, future employment
FERC Program Offices

Office of Energy Projects
- Natural Gas Pipeline Construction and Abandonment
- Hydroelectric Projects (licensing, safety, compliance)
- Environmental Reviews for Natural Gas and Hydro Projects
- Electric Transmission Construction (not active)

Office of Energy Market Regulation
- Natural Gas, Electric, and Oil Rates and Terms/Conditions of Service

Office of Energy Policy & Innovation - May ‘09
- Policy reforms to address emerging energy issues
FERC Program Offices

Office of Enforcement
Market Monitoring and Enforcement

Office of Electric Reliability – Sept ‘07
Electric System Reliability & Compliance

Office of Energy Infrastructure Security – Sept ’12

Office of Administrative Law Judges and Dispute Resolution
Includes a Landowner Helpline

Office of Administrative Litigation - FERC Trial Staff
What does FERC regulate?

• **Natural Gas Industry**
  – Interstate transportation rates and services
  – Interstate gas pipeline and liquefied natural gas terminal construction and oversee related environmental matters

• **Electric Power Industry**
  – Interstate transmission rates and services
  – Wholesale energy rates and services
  – Corporate transactions, mergers, securities issued by public utilities
What does FERC regulate? (con’t)

• *Oil Pipeline Industry*
  – Interstate transportation rates and services of crude oil and petroleum products

• *Hydroelectric Industry*
  – Licensing of nonfederal hydroelectric projects
  – Oversee related environmental matters
  – Inspect nonfederal hydropower projects for safety issues
There are approximately 195,902 miles of interstate natural gas transmission pipeline.

Source: Based on data from Ventyx Global LLC, Velocity Suite, June 2014, and Oil and Gas Journal, September 1, 2014 for Pipeline Mileage
Historic North American Gas Delivery Paths

1. Southwest to Southeast
2. Southwest to Northeast
3. Southwest to Midwest
4. Southwest to Panhandle to Midwest
5. Southwest to Western
6. Canada to Western
7. Canada to Midwest
8. Canada to Northeast
9. Eastern Offshore Canada to Northeast
10. Rocky Mountains to Western
11. Rocky Mountains to Midwest

Legend
- Interstate Pipelines
- Intrastate Pipelines

Source: Energy Information Administration, Office of Oil and Gas, Natural Gas Division, GasTran Gas Transportation Information System.
U.S. natural gas supply basins relative to major natural gas pipeline transportation paths

Source: Energy Information Administration, Office of Oil and Gas, Natural Gas Division, GasTran Gas Transportation Information System.
Changes in Supply and Demand will continue to change pipeline flows in the long term

- Marcellus and Utica gas production has grown so rapidly that the Northeast now produces more gas than it consumes.
- Along the Gulf Coast, the picture is reversed – gas demand (including LNG exports) is growing faster than supply.
- These shifts in regional gas balances have prompted pipeline reversals and new pipeline construction out of the Marcellus/Utica area.

Source: ICF International Compass Report October 2014
FERC
helping markets work
The regulatory process as a balancing act
Natural Gas Act (1938)

Natural Gas Act

- Section 7(c) Interstate
  - Case Specific
  - Blanket Authority
    - Automatic
    - Prior Notice
- Section 3 Import/Export
  - Case Specific
Natural Gas Act

• Blanket Certificate
  • Automatic Authorization
    • Cost of facilities is less than $11.4 million
    • Facilities are “eligible” facilities
    • 45-day landowner notification / waived
  • Prior Notice
    • Cost is between $11.4 and $32.4 million
    • 60-day notice period prior to construction
    • Facilities are “eligible” facilities
Natural Gas Act

• Case Specific Section 7(c) Certificate
  • Conduct a full review of proposal including engineering, rate, accounting, and market analysis
  • Conduct an environmental review by preparing an Environmental Assessment or an Environmental Impact Statement
Imports / Exports

• Any entity that proposes to site, construct and operate or modify facilities used to import or export gas must file an application pursuant to Section 3 of the NGA and file for the issuance of a Presidential Permit.

• In order to grant a Presidential Permit for international border crossing facilities, the Commission must "consult" with the Secretaries of State and Defense prior to its issuance.
• The owner of the gas must apply to the Office of Fossil Energy, Department of Energy (DOE/FE) for Section 3 authority as well.

• Jurisdictional pipelines that filed for Section 3 authorization to site, construct, and operate border facilities most likely will not be the same party that applies for Section 3 authority from DOE/FE.
Major Pipeline Construction Projects
Project Evaluation

How Does FERC evaluate all of these major projects?

What criteria are used in this evaluation?
Evidence to find for a Certificate of Public Convenience and Necessity

• The reliance on percentage of capacity under long-term contracts to show demand; became mostly contracts with marketing affiliates.

• The pricing of new facilities; cost burden to existing customers.
• Clarification issued on July 26, 2000.
• Policy applied to facts of each case.
Goals

• Foster Competition
• Consider Captive Customers
• Avoid Unnecessary Physical Impacts
• Achieve Optimal Amount of Facilities
• Encourage Complete Record
• Expedite Review Time
• Apply Threshold Cost Test
  – Subsidization = Incremental Rates
  – No Subsidization = Rolled-in Treatment
  – System improvements for existing customers = Rolled-in Treatment
• Develop Record
  – Adverse Impacts on
    • Existing Customers and Pipelines
    • Landowners
    • Communities
  – Specific Benefits
  – Need and Market
  – Condemnation Impact
  – Initial Rate Derivation and Tariff Sheets
• Balance Benefits and Impacts
• Complete Traditional Environmental Process
## Balancing Interests

<table>
<thead>
<tr>
<th>People Like...</th>
<th>But they also want...</th>
</tr>
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<tbody>
<tr>
<td>due process</td>
<td>expedited process</td>
</tr>
<tr>
<td>smaller government</td>
<td>effective government</td>
</tr>
<tr>
<td>less regulation</td>
<td>assurance of fair markets</td>
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<tr>
<td>market-dictated outcomes</td>
<td>Protection from market dysfunctions, unexpected risk, and unjust rates</td>
</tr>
<tr>
<td>protection for the environment and property interests</td>
<td>ample supplies of low-cost energy</td>
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</tbody>
</table>
Certificate Process Overview

Non-Environmental Review and Analysis
- Engineering – GQI, storage, hydraulic flow
- Tariff – rates, terms & conditions of service
- Policy – precedents, rules, regulations
- Accounting

Parallel Processing Paths

Environmental Review and Analysis
- Biological – fish, wildlife, vegetation
- Cultural – historic preservation
- Land use – recreation, aesthetics
- Soils and geologic
- Air and noise – quality, loudness
- Socioeconomic impacts
- System alternatives

Application Filed

Order Issued
FERC’s Environmental Review Process makes a special effort to be accessible to all affected parties, especially for landowners.
Opportunities for public involvement

The FERC Process:
• Issue Notice of the Application
• Project Sponsor Sends Landowner Notification Package
• Issue Notice of Intent to Prepare the NEPA Document (i.e., scoping)
• Hold Scoping Meetings

Public Input:
• File an Intervention; register for e-subscription
• Contact the project sponsor w/questions, concerns; contact FERC
• Send letters expressing concerns about environmental impact
• Attend scoping meetings
The FERC Process:
• Issue Notice of Availability of the DEIS
• Hold Public Meetings on DEIS
• Issue a Commission Order

Public Input:
• Comments on the adequacy of DEIS
• Attend public meetings to give comments on DEIS
• Intervene / request for Rehearing
Contacts at FERC

State Officials:
State-Federal Relations
Local: 202-502-6088
Toll-free: 1-866-208-3372
fercstaterelations@ferc.gov

Landowners:
Landowner Helpline
Local: 202-502-6651
Toll-free: 1-877-337-2237
LandownerHelp@ferc.gov

**Keep in mind that any discussion with FERC staff on pending cases has to be filed on the public record**
Traditional vs. Pre-Filing Process

**Announce Open Season**

- Traditional - Applicant: Conduct Scoping
- Pre-Filing - Applicant: Conduct Scoping

**Develop Study Corridor**

- Traditional - Applicant: Prepare Resource Reports & Prepare DEIS
- Pre-Filing - Applicant: Review Draft Resource Reports & Prepare DEIS

**Prepare Resource Reports & Prepare DEIS**

- Traditional - Applicant: File at FERC
- Pre-Filing - Applicant: File at FERC

**File at FERC**

- Traditional - Applicant: Issue Draft EIS
- Pre-Filing - Applicant: Issue Draft EIS

**Issue Draft EIS**

- Traditional - Applicant: Issue Order Final EIS
- Pre-Filing - Applicant: Issue Order Final EIS

**Issue Order Final EIS**

- Traditional - FERC: Issue Issue Final Order EIS
- Pre-Filing - FERC: Issue Issue Final Order EIS

(months)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Timeline for Pre-Filing Process

**Applicant’s Activities**
- Submit PF letter
- Prepare Draft Resource Reports
- File At FERC
- Review Draft Resource Reports & Prepare Prelim. DEIS
- Determine Application Complete
- Issue Draft EIS
- Issue Final EIS
- Issue Order

**FERC’s Activities**
- Start PF Review
- Prepare Draft Resource Reports
- File At FERC
- Determine Application Complete
- Issue Draft EIS
- Issue Final EIS
- Issue Order

(months)
Benefits of Pre-Filing

• More interactive NEPA process, no shortcuts
• Earlier, more direct involvement by FERC, other agencies, landowners
• Goal of “no surprises”
• Time savings realized only if we are working together with stakeholders
• FERC staff is an advocate of the Process, not the Project!
Common Environmental Issues

- Wetlands and Waterbodies
- Agricultural and Residential Areas
- Archeological and Historical Resources
- Endangered Species
- Landowner Concerns
- Safety
Construction Impacts

- Erosion and sedimentation
- Soil layer mixing
- Restrictions on and conflicts with property use
- Loss or change of habitat
- Increased or decreased accessibility
- Wildlife / habitat protection time windows
Right-of-way workspace and pipe string
Pipe bends and slopes
Side Booms – in the ditch
Protecting and recovering archeological resources
Construction in populated areas
Residential construction
Open-cut river crossing
Dry crossing of stream
Horizontal directional drill
Avoiding sensitive resources
Wetland construction
Preservation and restoration of stream banks
Construction within a transmission line corridor
Topsoil segregation
Erosion control - slope breakers
Slope stabilization
Compressor station
Major Pipeline Projects

• Certificated
• Currently Pending
• Pre-filing
• On the Horizon
Projects Certificated
Major Pipeline Projects Certificated (MMcf/d) January 2007 to June 2015

84.72 BCF/D Total
8,575 Miles
Differing purposes for Certificated Pipelines

• Typical long-line from new supply
• Replacement pipeline projects
• Short, high capacity pipelines to deliver regasified LNG to grid OR grid to LNG
• Short, high capacity pipelines to deliver underground storage to grid
Currently Pending Projects
Oregon LNG Export Project (Oregon Pipeline) (1,250)
Washington Expansion Project (Northwest) (750)
Kalama Lateral Project (Northwest) (320)
Oregon LNG Export Project (Oregon Pipeline) (1,250)
Pacific Connector Pipeline (Pacific Connector) (1,060)

Major Pipeline Projects Pending (MMcf/d) July 2015

41.01 BCF/D Total
2,775 Miles
Pipeline Projects
Pre-Filing (MMcf/d)
July 2015

29.91 BCF/D Total
3,051 Miles
On the Horizon
Major Pipeline Projects On the Horizon (MMcf/d)
January 2010 to June 2015

Northwest North Dakota (WBI) (47)
East Pipeline (ANR) (2,000)
Rayne Xpress, & Mountaineer Xpress (Columbia) (1,000) (2,700)
Gulf Coast Expansion (Natural) (750)
Bakken Header Supply Lateral (Northern Border) (295)
Prairie State Pipeline (Tallgrass Development) (1,500)
Northeast-to-Gulf Expansion (ANR) (646)
Vector Pipeline (1,300)

Access Northeast (Sectra) (1,000)
MARC II Pipeline (Central New York) (1,000)
SoNo Project (Portland & Iroquois) (300)
Continent to Coast (Portland Natural) (132)
Diamond East (Transco) (1,000)
Greater Philadelphia Expansion (TETCO) (475)
Marcellus to Market Project (TETCO) (200)

Gulf Coast Market Expansion (Natural) (750)
South Louisiana Market Project (Transco) (190)
Sooner Trails (Southern Star) (650)
Western Marcellus Pipeline (Transco) (2,000)
Lone Star Expansion (Tennessee) (300)
South System Flexibility (Tennessee) (500)
Spectra Carolina (Spectra) (1,100)
Duke/Piedmont Pipeline (900)
Southeast Mainline System (ANR) (600)
Stratton Ridge Pipeline (TETCO) (500)
Gulf Xpress (Columbia Gulf) (860)

22.70 BCF/D Total
1,230 Miles
Storage
A Look at Liquefied Natural Gas (LNG)
Shale gas takes the place of Imports

Source: EIA Annual Energy Outlook 2015 (April 2015) and EIA spreadsheets.
Imports

What is LNG?

• LNG is natural gas cooled to its liquid at 259°F Fahrenheit and 1/600 of its gaseous volume.
• LNG is commonly stored and shipped at slightly above atmospheric pressure – overseas by ship and locally by truck.
• LNG is odorless, colorless; it neither explodes nor burns as a liquid.
Imports
What is LNG?

• LNG vapors are flammable only in concentrations of 5% to 15% with air and will not explode in an unconfined environment - the ignition temperature is more than 500° Fahrenheit higher than gasoline.

• In the past 40 years there have been more than 33,000 LNG ship voyages without a significant accident or cargo spillage.
North American LNG Import
Existing Terminals

As of July 13, 2015

**U.S.**
A. Everett, MA: 1.035 Bcf/d (GDF SUEZ - DOMAC)
B. Cove Point, MD: 1.8 Bcf/d (Dominion - Cove Point LNG)
C. Elba Island, GA: 1.6 Bcf/d (El Paso - Southern LNG)
D. Lake Charles, LA: 2.1 Bcf/d (Southern Union - Trunkline LNG)
E. Offshore Boston: 0.8 Bcf/d, (Excelerate Energy – Northeast Gateway)
F. Freeport, TX: 1.5 Bcf/d, (Cheniere/Freeport LNG Dev.)★
G. Sabine, LA: 4.0 Bcf/d (Cheniere/Sabine Pass LNG)★
H. Hackberry, LA: 1.8 Bcf/d (Sempra - Cameron LNG)★
I. Offshore Boston, MA: 0.4 Bcf/d (GDF SUEZ – Neptune LNG)
J. Sabine Pass, TX: 2.0 Bcf/d (ExxonMobil – Golden Pass) (Phase I & II)
K. Pascagoula, MS: 1.5 Bcf/d (El Paso/Crest/Sonangol - Gulf LNG Energy LLC)

**Canada**
L. Saint John, NB: 1.0 Bcf/d, (Repsol/Fort Reliance - Canaport LNG)

**Mexico**
M. Altamira, Tamulipas: 0.7 Bcf/d, (Shell/Total/Mitsui – Altamira LNG)
N. Baja California, MX: 1.0 Bcf/d, (Sempra – Energia Costa Azul)
O. Manzanillo, MX: 0.5 Bcf/d (KMS GNL de Manzanillo)

★ Authorized to re-export delivered LNG

Note: The existing import terminal in Peñuelas, Puerto Rico does not appear on this map since it cannot serve or affect deliveries in the Lower 48 U.S. states.
North American LNG Import/Export Terminals

Approved

Import Terminal

U.S.
UNDER CONSTRUCTION - FERC
1. Corpus Christi, TX: 0.4 Bcf/d (Cheniere – Corpus Christi LNG) (CP12-507)

APPROVED - NOT UNDER CONSTRUCTION - MARAD/Coast Guard
2. Gulf of Mexico: 1.0 Bcf/d (Main Pass McMoRan Exp.)
3. Offshore Florida: 1.2 Bcf/d (Hoëgh LNG – Port Dolphin Energy)
4. Gulf of Mexico: 1.4 Bcf/d (TORP Technology-Bienville LNG)

Export Terminal

U.S.
APPROVED - UNDER CONSTRUCTION - FERC
5. Sabine, LA: 2.76 Bcf/d (Cheniere/Sabine Pass LNG) (CP11-72 & CP14-12)
6. Hackberry, LA: 1.7 Bcf/d (Sempra–Cameron LNG) (CP13-25)
7. Freeport, TX: 1.8 Bcf/d (Freeport LNG Dev/Freeport LNG Expansion/FLNG Liquefaction) (CP12-509)
8. Cove Point, MD: 0.82 Bcf/d ( Dominion–Cove Point LNG) (CP13-113)
9. Corpus Christi, TX: 2.14 Bcf/d (Cheniere – Corpus Christi LNG) (CP12-507)

APPROVED – NOT UNDER CONSTRUCTION - FERC
10. Sabine Pass, LA: 1.40 Bcf/d (Sabine Pass Liquefaction) (CP13-552)

Canada
APPROVED – NOT UNDER CONSTRUCTION
11. Port Hawkesbury, NS: 0.5 Bcf/d (Bear Head LNG)
12. Kitimat, BC: 3.23 Bcf/d (LNG Canada)
PROPOSED TO FERC
1. Robbinston, ME: 0.5 Bcfd (Kestrel Energy - Downeast LNG) (CP07-52, PF14-19)
2. Astoria, OR: 0.5 Bcfd (Oregon LNG) (CP09-6)

POTENTIAL U.S. SITES IDENTIFIED BY PROJECT SPONSORS
3. Offshore, New York: 0.4 Bcfd (Liberty Natural – Port Ambrose)

As of July 13, 2015
Reverse Engines – Export LNG

- DOE – Policy decision to export gas
  - Free Trade Nations / non-Free Trade Nations
  - How much allow / really sold / price impact
  - World energy future (politics & economics)
- FERC – New or modified facilities
- Re-export imported LNG (brief trend)
- Newest process, FERC completes NEPA, then DOE rules on non-Free Trade Nations.
PROPOSED TO FERC
1. Coos Bay, OR: 0.9 Bcfd (Jordan Cove Energy Project) (CP13-483)
2. Lake Charles, LA: 2.2 Bcfd (Southern Union – Lake Charles LNG) (CP14-120)
3. Astoria, OR: 1.25 Bcfd (Oregon LNG) (CP09-6)
4. Lavaca Bay, TX: 1.38 Bcfd (Excellerate Liquefaction) (CP14-71 & 72)
5. Elba Island, GA: 0.35 Bcfd (Southern LNG Company) (CP14-103)
6. Lake Charles, LA: 1.07 Bcfd (Magnolia LNG) (CP14-347)
7. Plaquemines Parish, LA: 1.07 Bcfd (CE FLNG) (PF13-11)
8. Sabine Pass, TX: 2.1 Bcfd (ExxonMobil – Golden Pass) (CP14-517)
9. Pascagoula, MS: 1.5 Bcfd (Gulf LNG Liquefaction) (CP15-521)
10. Plaquemines Parish, LA: 0.30 Bcfd (Louisiana LNG) (PF14-17)
11. Robbinston, ME: 0.45 Bcfd (Kestrel Energy – Downeast LNG) (PF14-19)
12. Cameron Parish, LA: 1.34 Bcfd (Venture Global LNG) (PF15-2)
13. Jacksonville, FL: 0.075 Bcf/d (Eagle LNG Partners) (PF15-7)
14. Hackberry, LA: 1.4 Bcfd (Sempra – Cameron LNG) (PF15-13)
15. Brownsville, TX: 0.54 Bcfd (Texas LNG Brownsville) (PF15-14)
16. Brownsville, TX: 0.94 Bcfd (Annova LNG Brownsville) (PF15-15)
17. Port Arthur, TX: 1.4 Bcfd (Port Arthur LNG) (PF15-18)
18. Brownsville, TX: 3.6 Bcfd (Rio Grande LNG – NextDecade) (PF15-20)
19. Freeport, TX: 0.72 Bcfd (Freeport LNG Dev) (PF15-25)
20. Corpus Christi, TX: 1.4 Bcfd (Cheniere – Corpus Christi LNG) (PF15-26)
21. Freeport, TX: 0.34 Bcfd (Freeport LNG Dev) (CP15-518)
22. Plaquemines Parish, LA: 2.80 Bcfd (Venture Global LNG) (PF15-27)

PROPOSED TO U.S.-MARAD/COAST GUARD
23. Gulf of Mexico: 1.8 Bcfd (Delfin LNG)

PROPOSED CANADIAN SITES IDENTIFIED BY PROJECT SPONSORS
24. Kitimat, BC: 1.28 Bcfd (Apache Canada Ltd.)
25. Douglas Island, BC: 0.23 Bcfd (BC LNG Export Cooperative)
26. Prince Rupert Island, BC: 2.74 Bcfd (Pacific Northwest LNG)
North American LNG Export Terminals
Potential

POTENTIAL U.S. SITES IDENTIFIED BY PROJECT SPONSORS
1. Brownsville, TX: 2.8 Bcf/d (Gulf Coast LNG Export)
2. Cameron Parish, LA: 0.16 Bcf/d (Waller LNG Services)
3. Ingleside, TX: 1.09 Bcf/d (Next Decade Partners)
4. Cameron Parish, LA: 0.20 Bcf/d (Gasfin Development)
5. Brownsville, TX: 3.2 Bcf/d (Eos LNG & Barca LNG)
6. Gulf of Mexico: 3.22 Bcf/d (Main Pass - Freeport-McMoRan)
7. Cameron Parish, LA: 1.6 Bcf/d (SCT&E LNG)
8. Port Arthur, TX: 0.2 Bcf/d (WesPac/Gulfgate Terminal)
9. Galveston, TX: 0.77 Bcf/d (NextDecade)
10. Calcasieu Parish, LA: 0.64 Bcf/d (Live Oak LNG–Parallax Energy)
11. Cameron Parish, LA: 1.84 Bcf/d (G2 LNG)

POTENTIAL CANADIAN SITES IDENTIFIED BY PROJECT SPONSORS
12. Goldboro, NS: 1.4 Bcf/d (Pieridae Energy Canada)
13. Prince Rupert Island, BC: 2.91 Bcf/d (BG Group)
14. Melford, NS: 1.8 Bcf/d (H-Energy)
15. Prince Rupert Island, BC: 4.0 Bcf/d (ExxonMobil – Imperial)
16. Squamish, BC: 0.29 Bcf/d (Woodfibre LNG Export)
17. Kitimat/Prince Rupert, BC: 0.32 Bcf/d (Triton LNG)
18. Prince Rupert, BC: 3.12 Bcf/d (Aurora LNG)
19. Kitsault, BC: 2.7 Bcf/d (Kitsault Energy)
20. Stewart, BC: 4.1 Bcf/d (Canada Stewart Energy Group)
21. Delta, BC: 0.4 Bcf/d (WesPac Midstream Vancouver)
22. Vancouver Island, BC: 0.11 Bcf/d (Steelhead LNG)
23. Prince Rupert Island, BC: 3.2 Bcf/d (Orca LNG)
24. Saguenay, Quebec: 1.6 Bcf/d (GNL Quebec)
25. Saint John, NB: 0.67 Bcf/d (Saint John LNG Development)
26. Kitimat/Douglas Channel, BC: 0.07 Bcf/d (Altagas Ltd)

As of July 13, 2015
Alaska LNG Export Terminals

Existing and Proposed

Existing LNG Terminal
Kenai, AK
0.2 Bcf/d (ConocoPhillips)

Proposed to FERC
Nikiski, AK
2.55 Bcf/d (ExxonMobil, ConocoPhillips, BP, TransCanada, and Alaska Gasline)
(PF14-21)

As of July 8, 2015
Good learning resource for gas pipelines and storage - Interactive or 76 page pdf version

Contact

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