A FERC View on Natural Gas Infrastructure

OFC Natural Gas Public Forum

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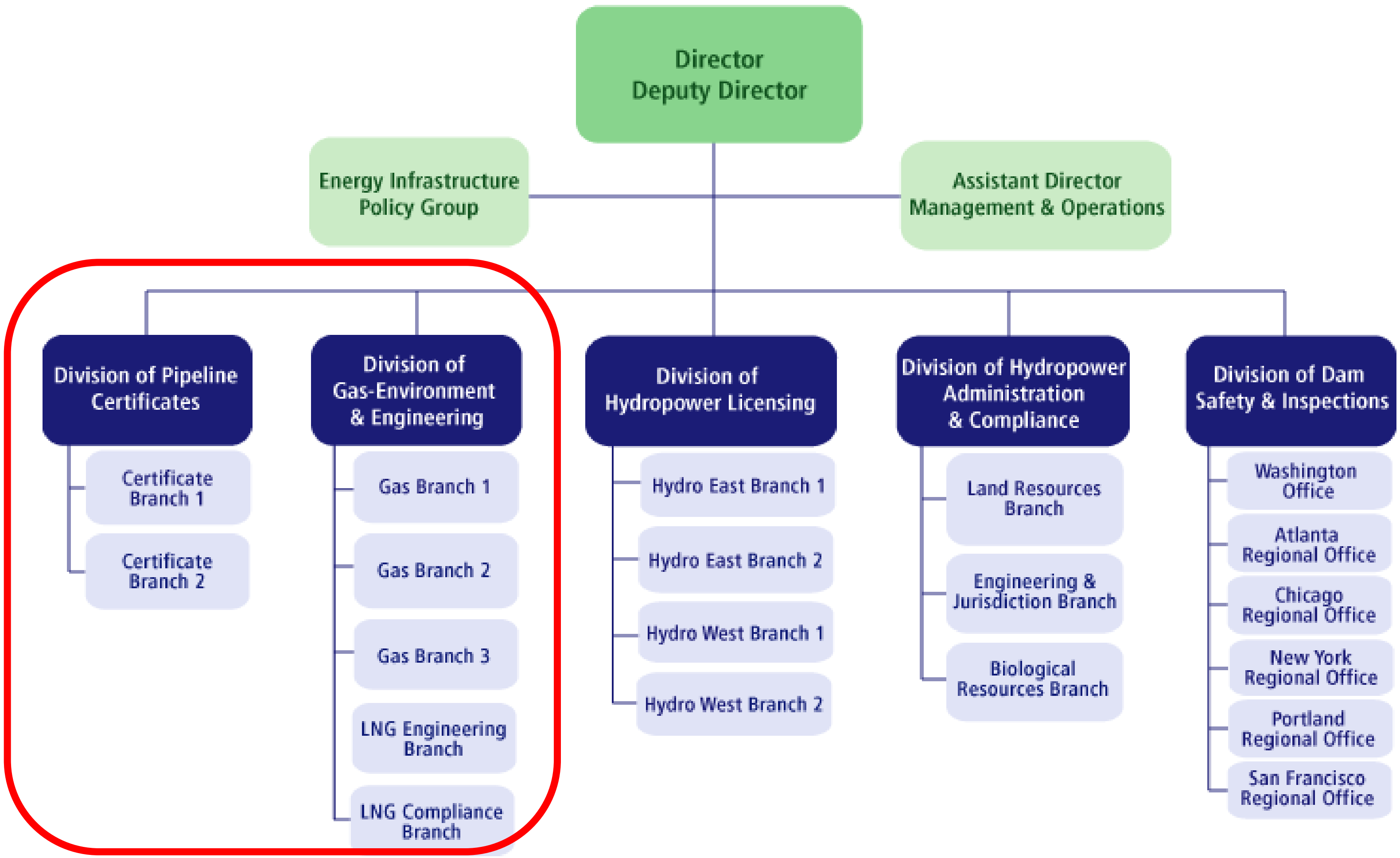
Office of Energy Projects

Federal Energy Regulatory Commission

Anchorage, Alaska **January 22, 2011**

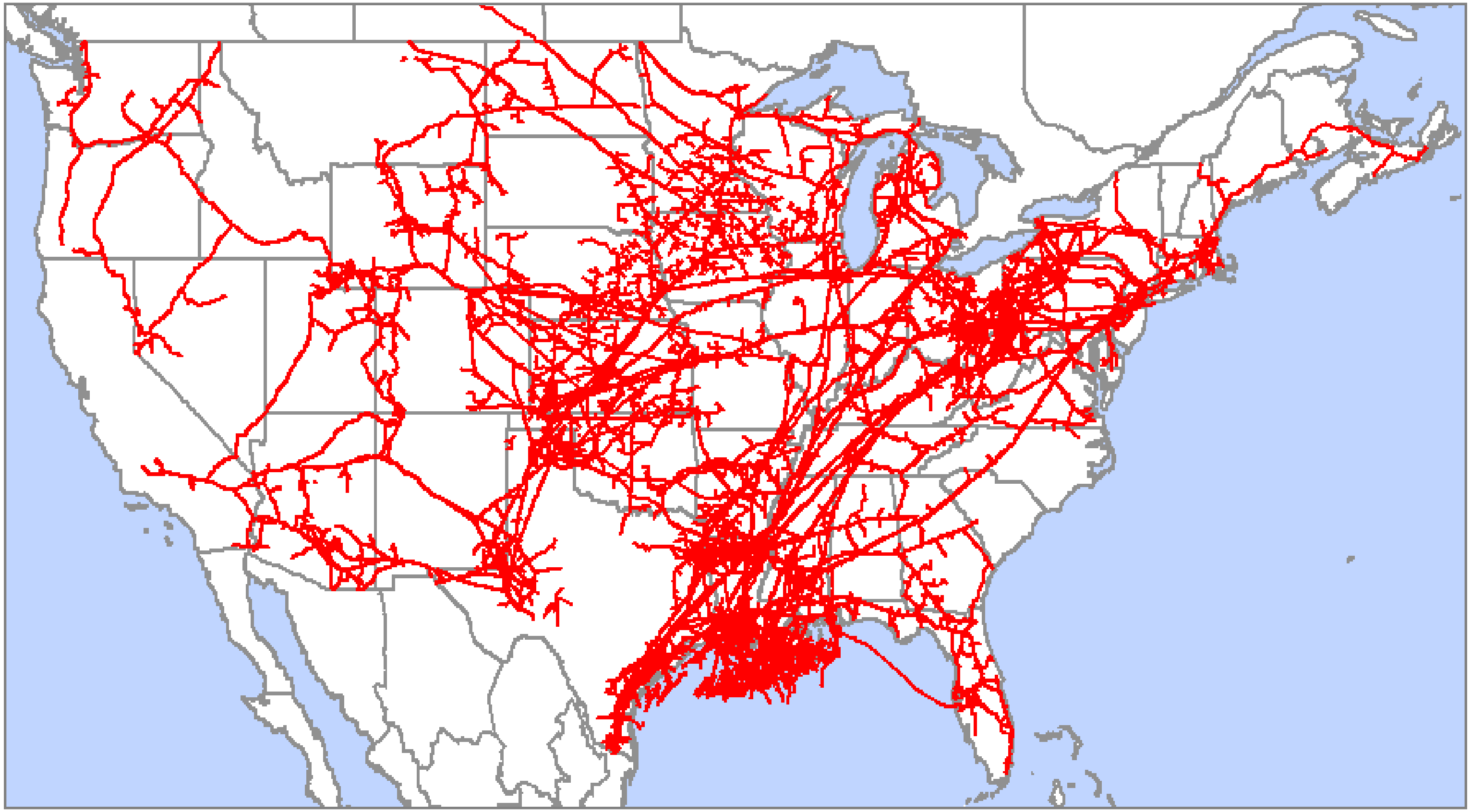
Office of Energy Projects



Gas Pipeline Program

- Evaluate applications to construct and operate
  - Conduct environmental reviews
  - Address non-environmental topics
- Approve abandonment of facilities
- Implement the “Pre-Filing” process

Interstate Natural Gas Pipeline System



Source: Based on data from Ventyx Global Energy Decisions, Inc., Velocity Suite, January 2010, and EIA's Natural Gas Pipelines.

Natural Gas Development

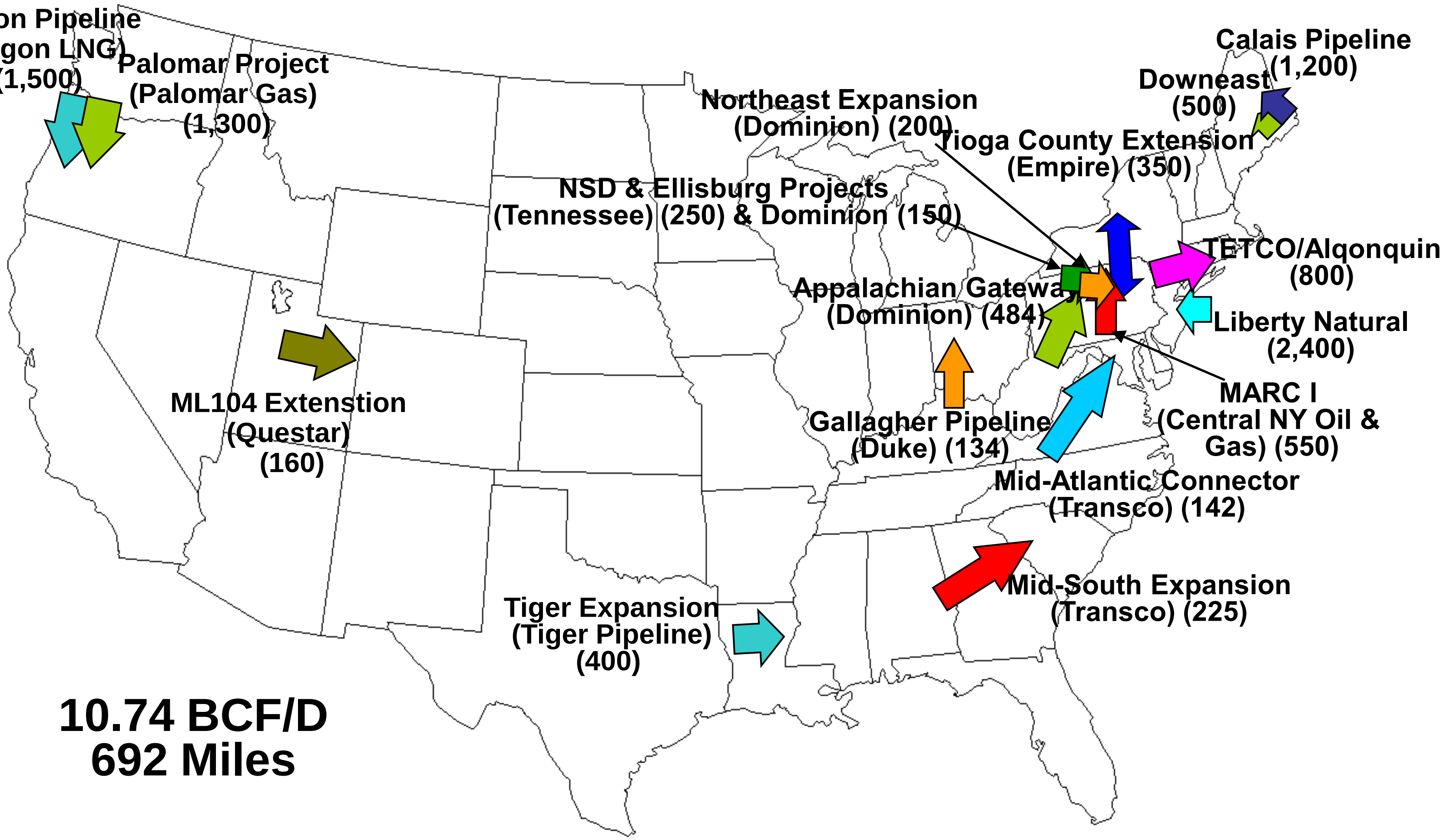
- Additional sources of supply must be developed for three main reasons:
  - Traditional sources of supply have either been depleted or are in decline.
  - Necessary for integration of renewables.
  - Increased energy independence.

FERC Activity Since 2000

- Pipeline
- Storage
- LNG

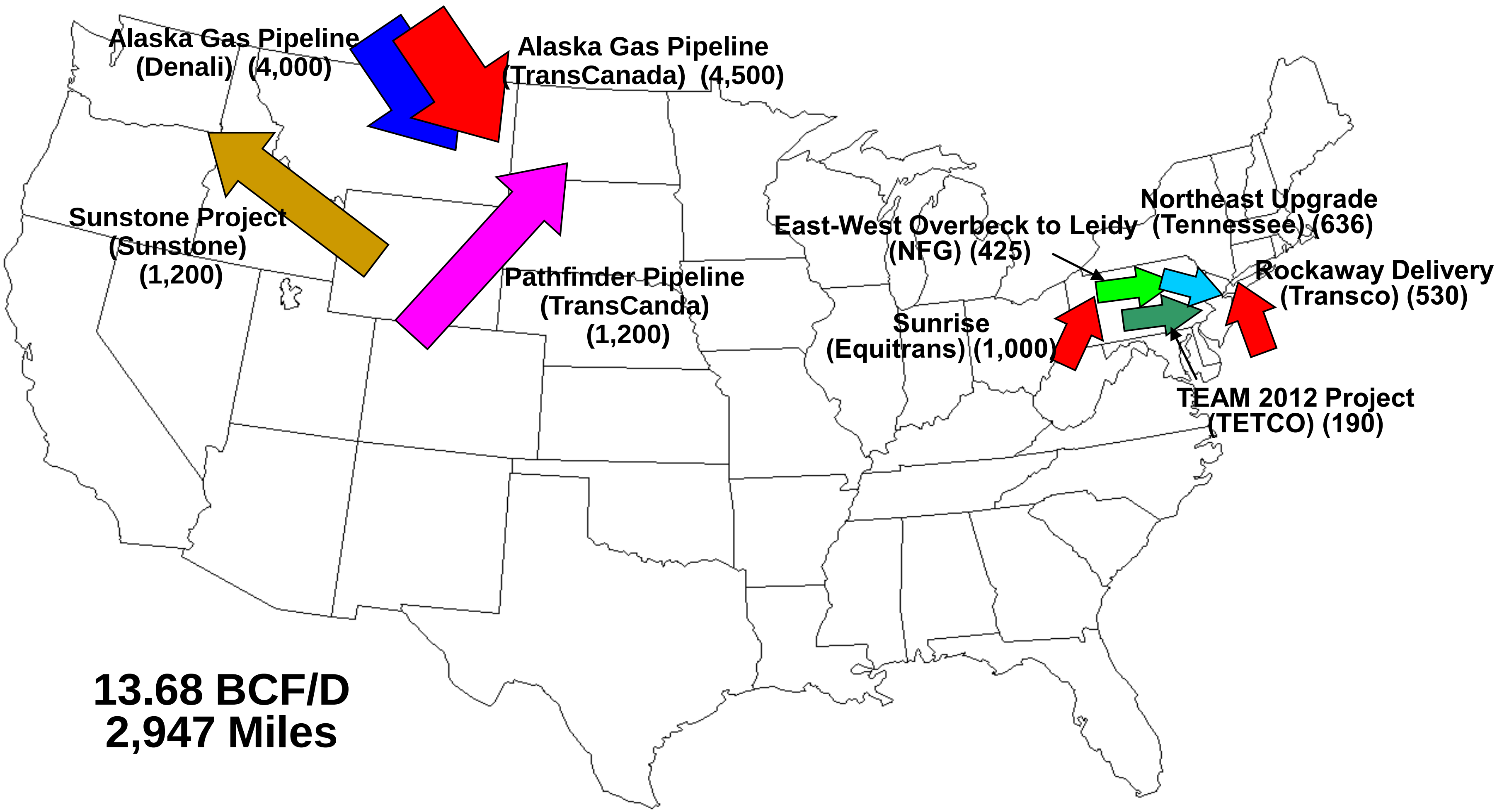
- 16,000+ miles
  5 million +HP
  114 Bcf/d of capacity
- 980 Bcf of storage capacity
- 18 new terminal sites – 29.2Bcf/d of sendout capacity; 7 expansions – 7.8 Bcf/d of sendout capacity

Major Pipeline Projects Pending (MMcf/d)



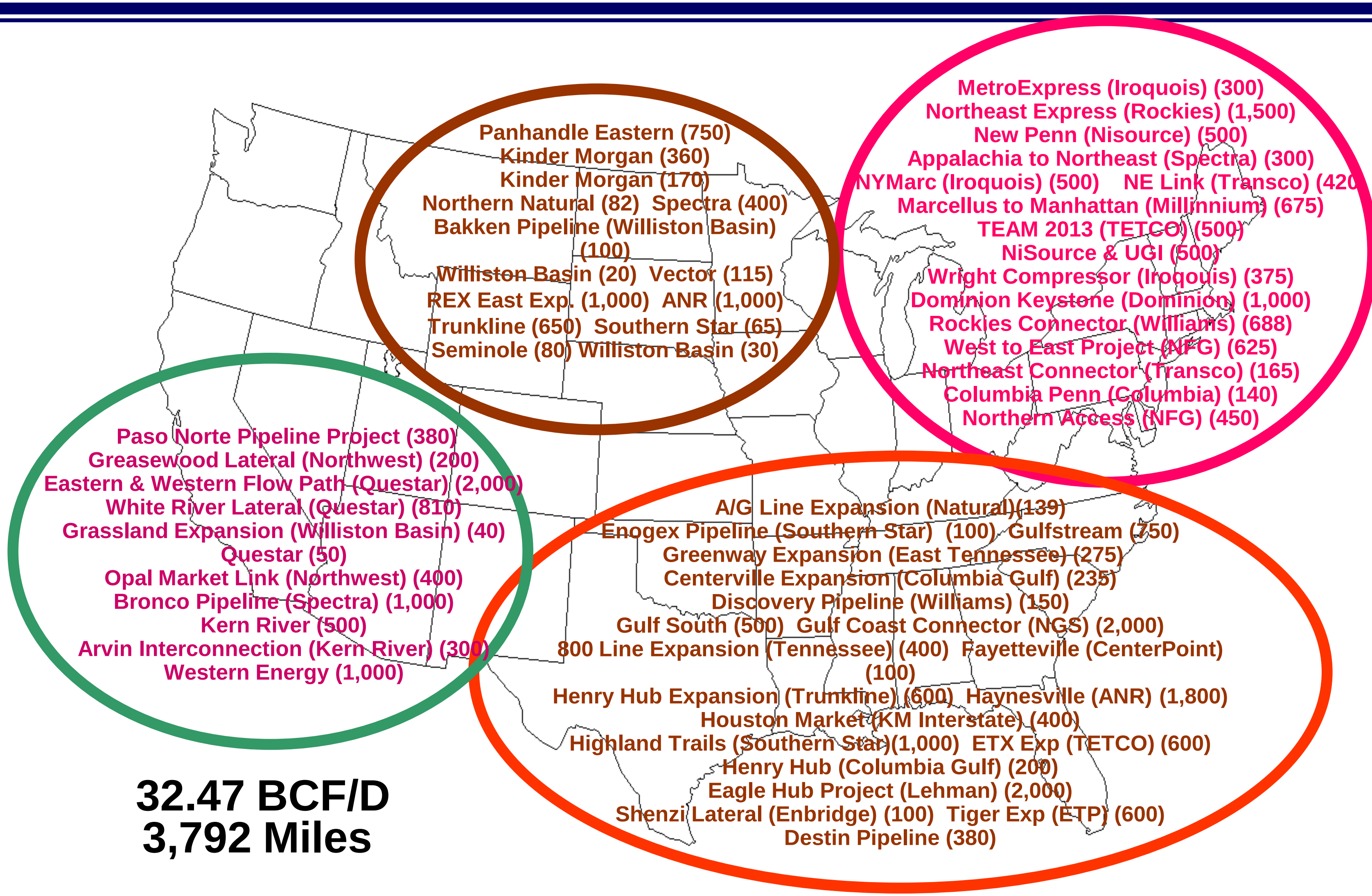
10.74 BCF/D
692 Miles

Major Pipeline Projects in Pre-Filing (MMcf/d)



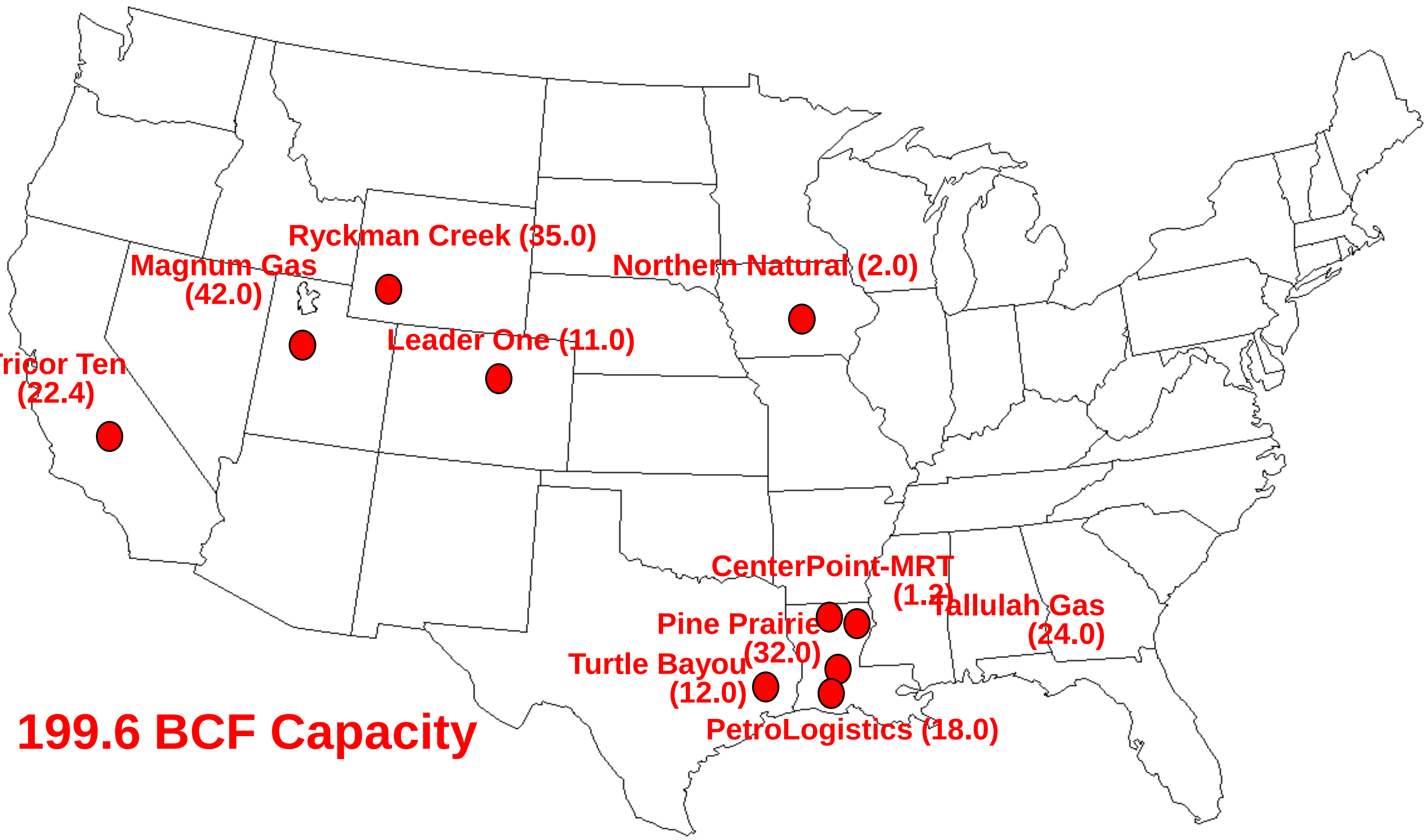
13.68 BCF/D
2,947 Miles

Major Pipeline Projects On The Horizon (MMcf/d)

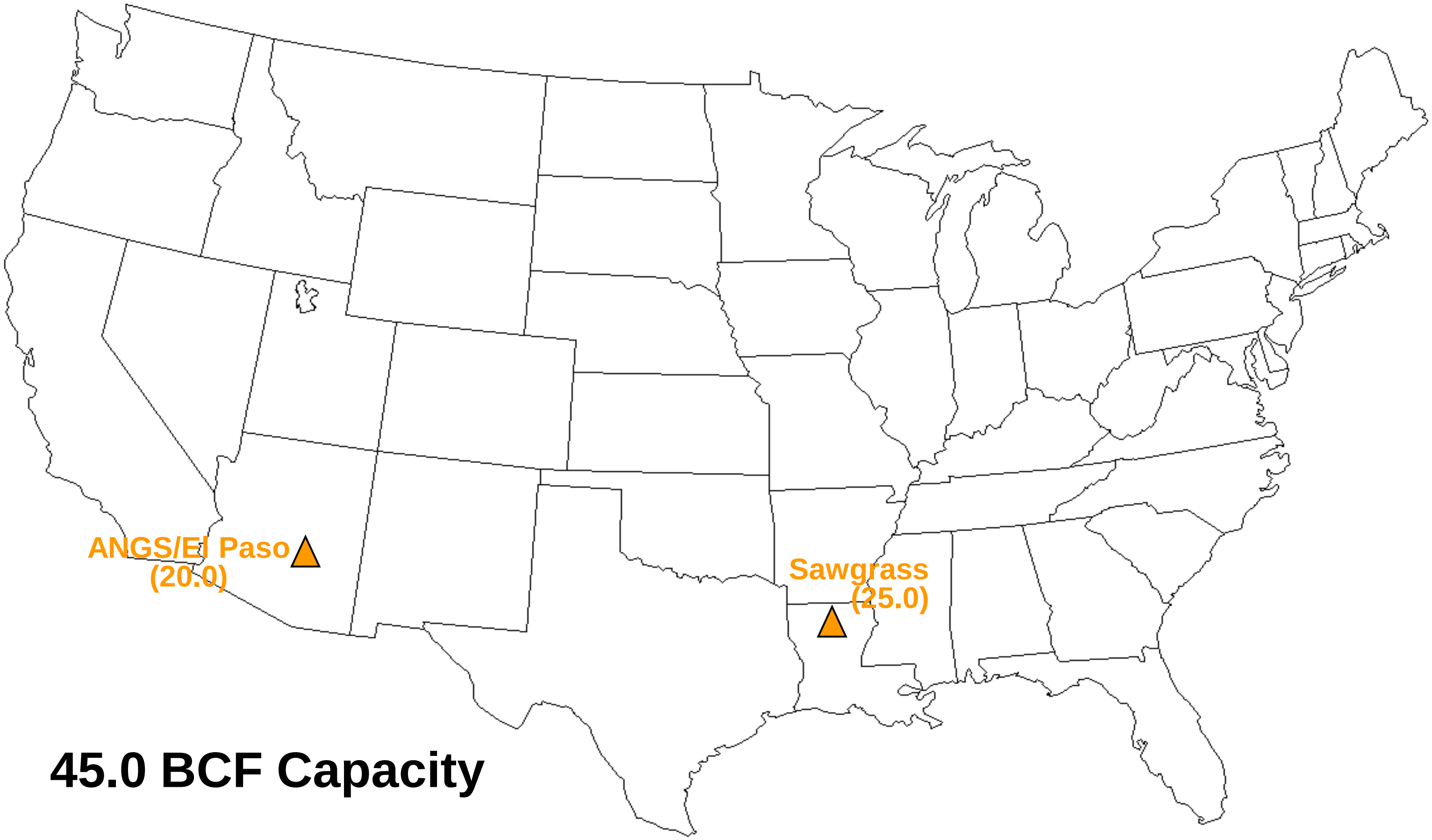


32.47 BCF/D
3,792 Miles

Storage Projects Pending (Capacity in Bcf)

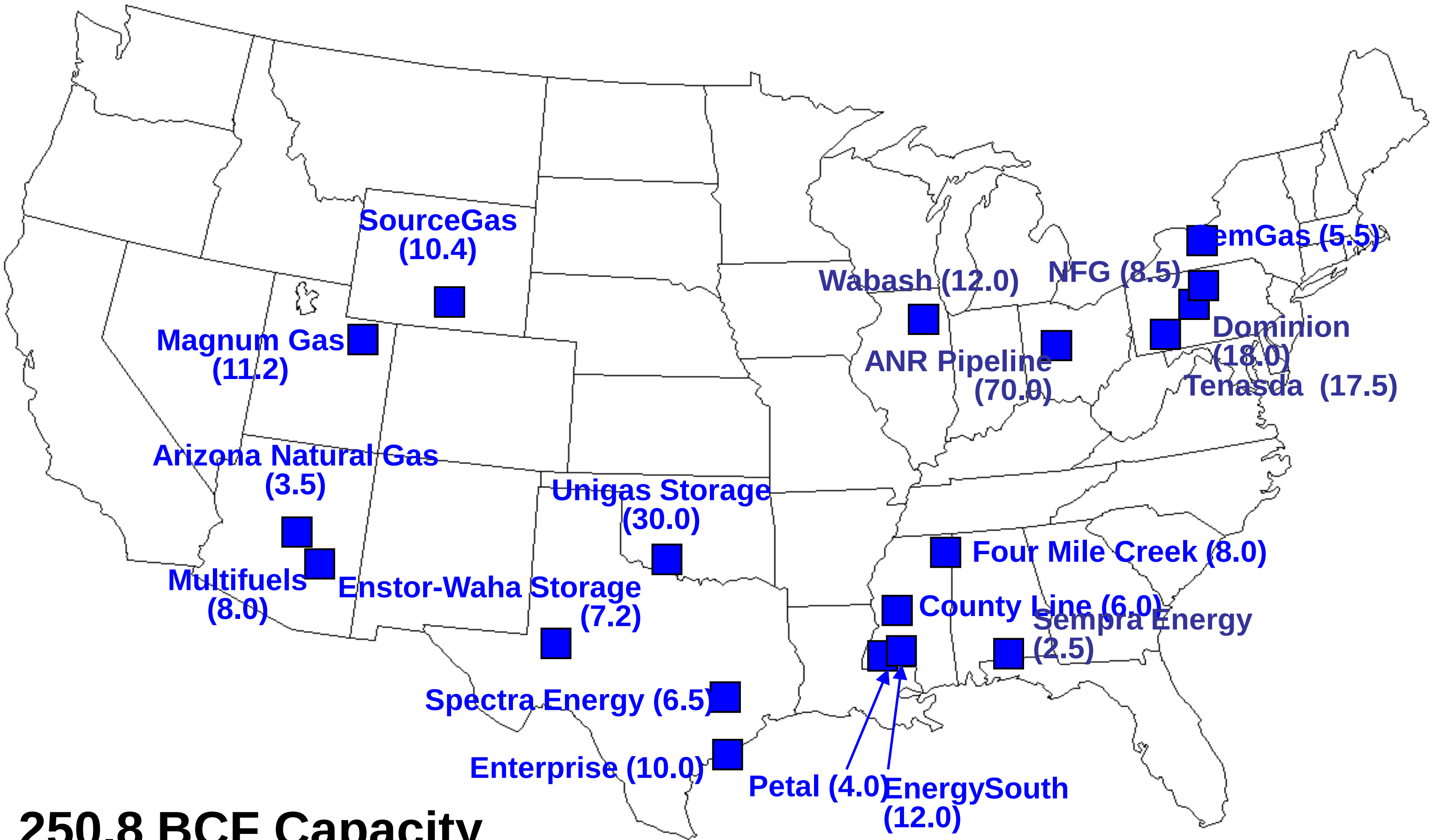


Storage Projects in Pre-Filing (Capacity in Bcf)

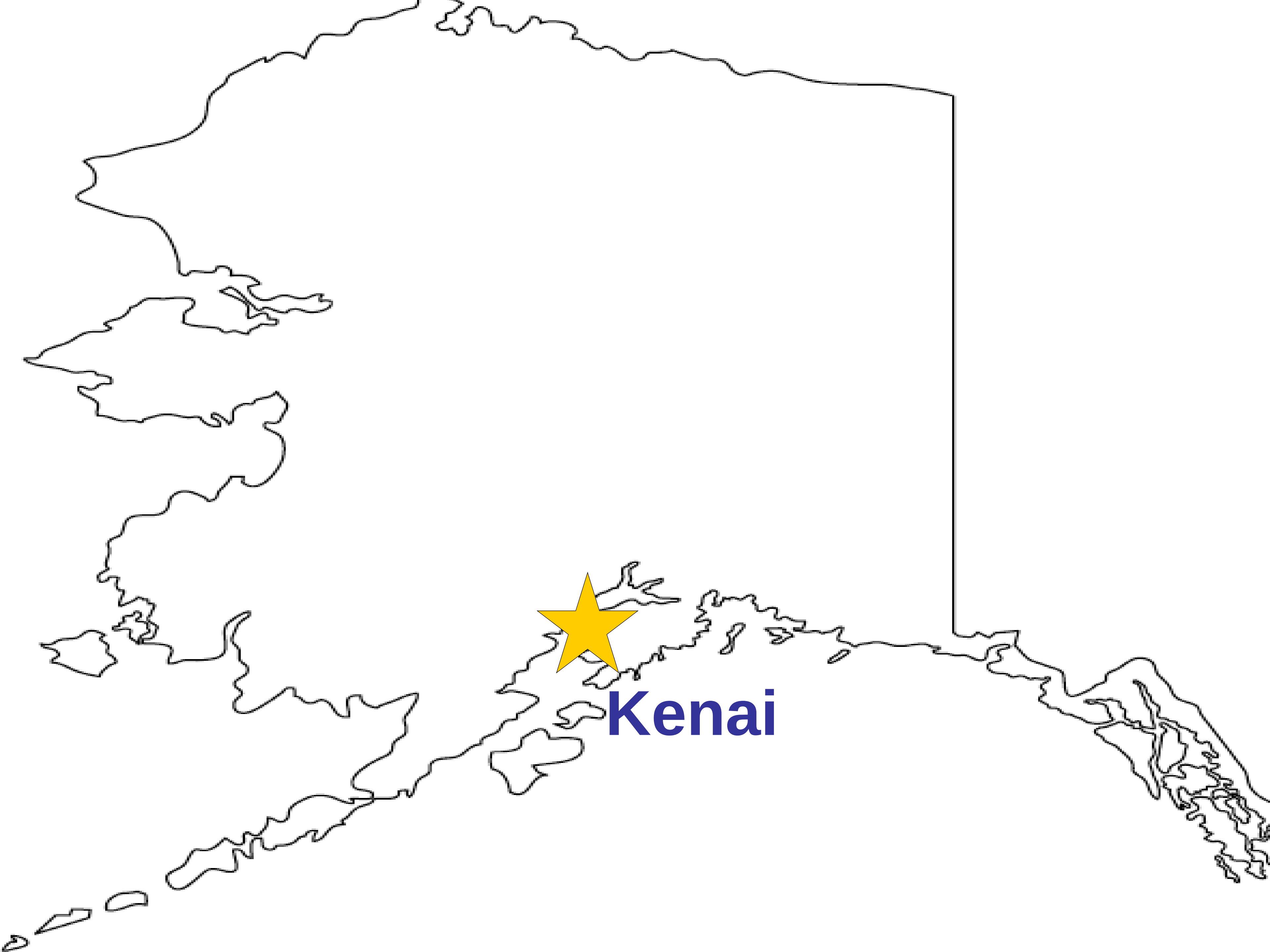


45.0 BCF Capacity

Storage Projects on the Horizon
(Capacity in Bcf)

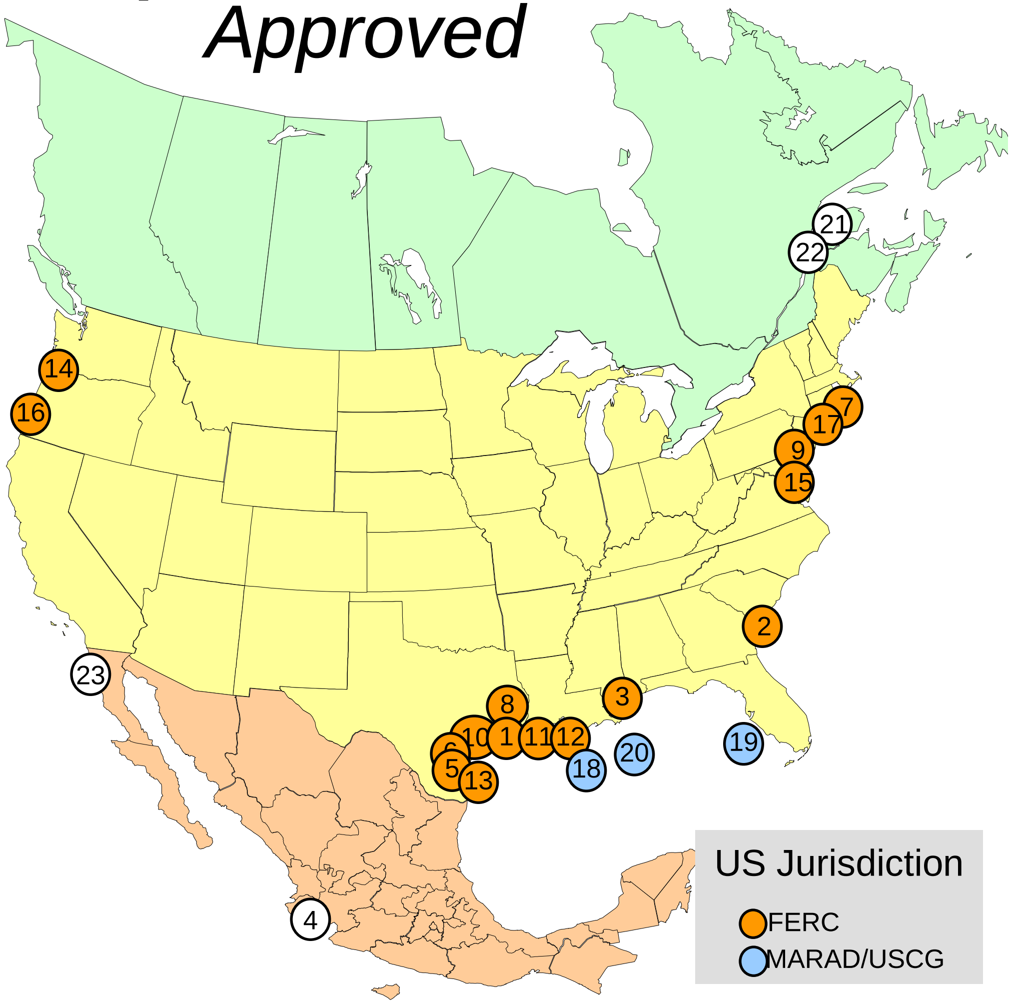


250.8 BCF Capacity


Kenai

North American LNG Import Terminals

Approved



As of January 20, 2011

* *Expansion of an existing facility*

<u>APPROVED - UNDER CONSTRUCTION</u>

<u>U.S.</u>

1. Sabine, TX: 2.0 Bcfd (ExxonMobil - Golden Pass)
2. Elba Island, GA: 0.5 Bcfd (El Paso - Southern LNG Expansion)*
3. Pascagoula, MS: 1.5 Bcfd (El Paso/Crest/Sonangol - Gulf LNG Energy LLC)

<u>APPROVED - UNDER CONSTRUCTION</u>

<u>Mexico</u>

4. Manzanillo, MX: 0.5 Bcfd (KMS GNL de Manzanillo)

<u>APPROVED - NOT UNDER CONSTRUCTION</u>

<u>U.S. - FERC</u>

5. Corpus Christi, TX: 1.0 Bcfd (Occidental Energy Ventures – Ingleside Energy)
6. Corpus Christi, TX: 2.6 Bcfd, (Cheniere – Corpus Christi LNG)
7. Fall River, MA : 0.8 Bcfd, (Hess LNG/Weaver's Cove Energy)
8. Port Arthur, TX: 3.0 Bcfd (Sempra)
9. Logan Township, NJ : 1.2 Bcfd (Hess LNG - Crown Landing LNG)
10. Cameron, LA: 3.3 Bcfd (Cheniere - Creole Trail LNG)
11. Freeport, TX: 2.5 Bcfd (Cheniere/Freeport LNG Dev. - Expansion)*
12. Hackberry, LA: 0.85 Bcfd (Sempra - Cameron LNG - Expansion)*
13. Port Lavaca, TX: 1.0 Bcfd (Gulf Coast LNG Partners – Calhoun LNG)
14. Bradwood, OR: 1.0 Bcfd (Northern Star Natural Gas LLC – Northern Star LNG)
15. Baltimore, MD: 1.5 Bcfd (AES Corporation – AES Sparrows Point)
16. Coos Bay, OR: 1.0 Bcfd (Jordan Cove Energy Project)
17. LI Sound, NY: 1.0 Bcfd (Broadwater Energy-TransCanada/Shell)

<u>U.S. - MARAD/Coast Guard</u>

18. Gulf of Mexico: 1.0 Bcfd (Main Pass McMoRan Exp.)
19. Offshore Florida: 1.2 Bcfd (Hoëgh LNG - Port Dolphin Energy)
20. Gulf of Mexico: 1.4 Bcfd (TORP Technology-Bienville LNG)

<u>Canada</u>

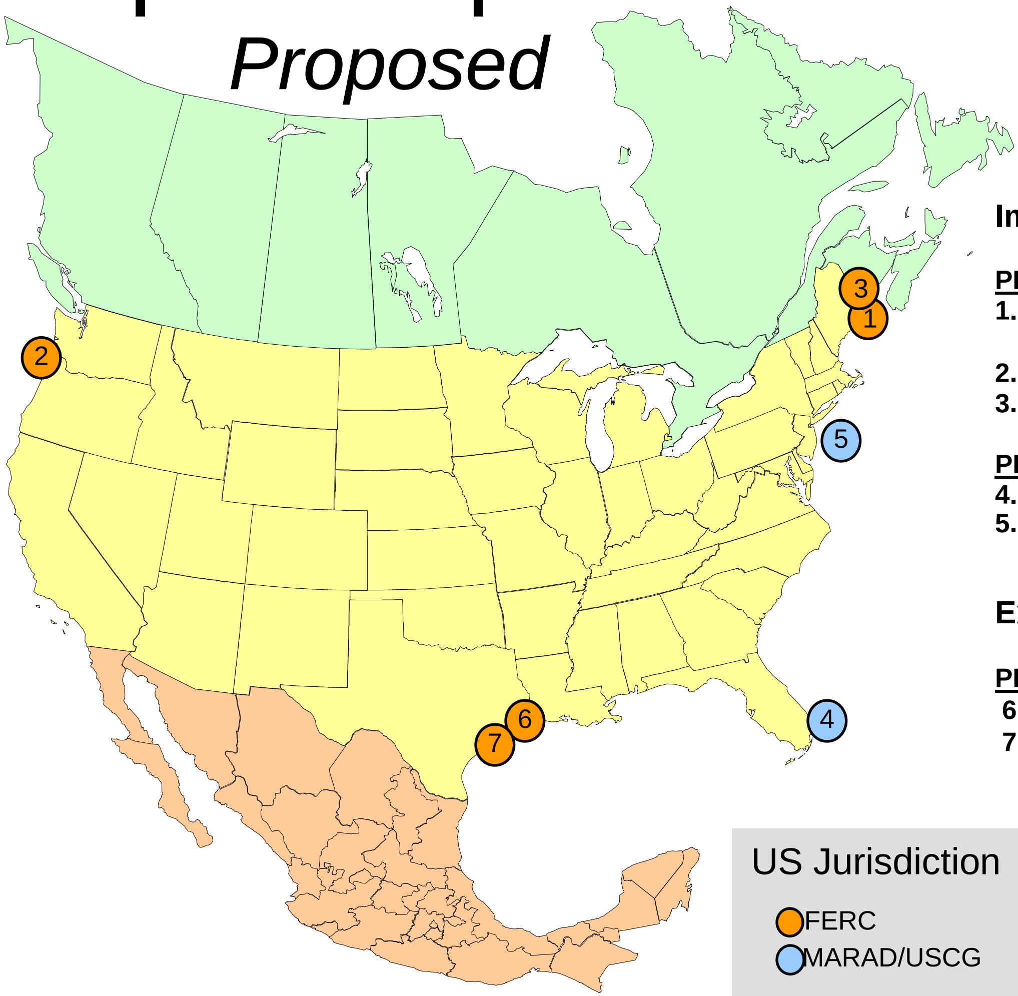
21. Rivière-du- Loup, QC: 0.5 Bcfd (Cacouna Energy - TransCanada/PetroCanada)
22. Quebec City, QC : 0.5 Bcfd (Project Rabaska - Enbridge/Gaz Met/Gaz de France)

<u>Mexico</u>

23. Baja California, MX : 1.5 Bcfd (Sempra - Energia Costa Azul - Expansion)

North American LNG Import/Export Terminals

Proposed



Import Terminal

PROPOSED TO FERC

1. Robbinston, ME: 0.5 Bcfd (Kestrel Energy - Downeast LNG)
2. Astoria, OR: 1.5 Bcfd (Oregon LNG)
3. Calais, ME: 1.2 Bcfd (BP Consulting LLC)

PROPOSED TO MARAD/COAST GUARD

4. Offshore Florida: 1.9 Bcfd (GDF SUEZ - Calypso LNG)
5. Offshore New Jersey: 2.4 Bcfd (Excalibur Energy – Liberty Natural)

Export Terminal

PROPOSED TO FERC

6. Sabine, LA: 2.6 Bcfd (Cheniere/Sabine Pass LNG)
7. Freeport, TX: 1.4 Bcfd (Freeport LNG Dev/Freeport LNG Expansion/FLNG Liquefaction)

US Jurisdiction

- FERC
- MARAD/USCG

As of January 20, 2011

Market Knows Best

- The Commission is not the market
- The Commission will present a "menu" of infrastructure solutions that are:
  - ⇨ In the public interest
  - ⇨ Will cause the least environmental impact
- The market is in the best position to select the infrastructure projects that get built

Conclusions

- The Commission process benefits all:
  - Diversity of supply
  - Increases reliability
  - Decreases price volatility
  - Assists in the integration of renewable energy
  - Assists in reduction in emissions
- More needs to be done:
  - Turn opposition into understanding
  - Continue to refine the siting process
- More gas infrastructure is coming:
  - Alaska
  - Pipes from non-traditional sources