

U.S. Department of Energy's Regulatory and Statutory Role in Natural Gas and LNG Trade

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NARUC Annual Meeting and Conference

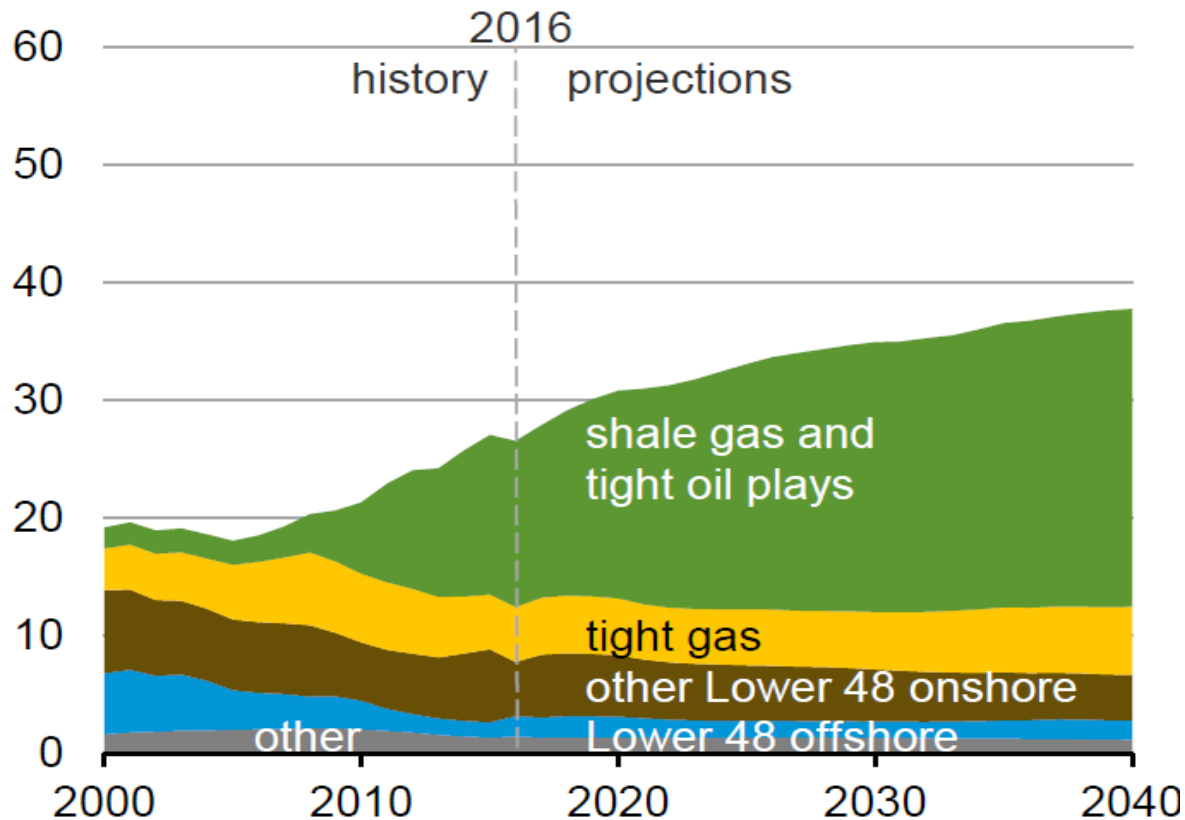
November 12, 2017



MULTIPLE TYPES OF U.S. NATURAL GAS RESOURCES – GROWING SUPPLY

U.S. Dry Natural Gas Production in AEO 2017 Reference Case

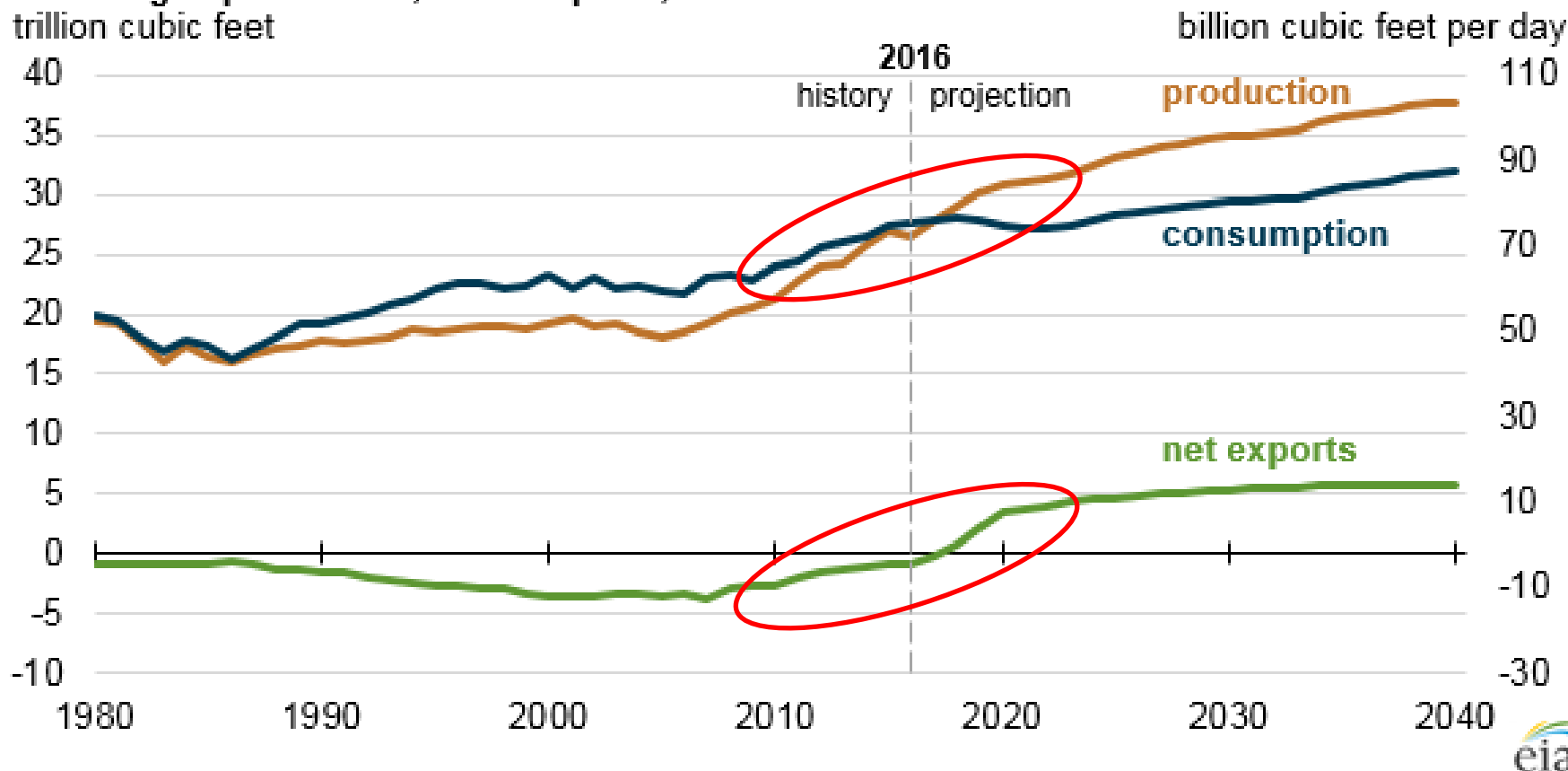
U.S. natural gas production by type
trillion cubic feet



Source: EIA, Annual Energy Outlook 2017

THE UNITED STATES IS CURRENTLY TRANSITIONING FROM AN IMPORTER TO AN EXPORTER OF NATURAL GAS

Natural gas production, consumption, and trade in the AEO2017 Reference case



Source: U.S. Energy Information Administration, [Annual Energy Outlook 2017 Interactive Table Viewer](#)

FEDERAL AGENCIES WITH AUTHORITY OVER NATURAL GAS EXPORTS

Department of Energy



- Authority over the trade of the natural gas as a commodity
- Cooperating agency on environmental reviews of facilities

Federal Energy Regulatory Commission



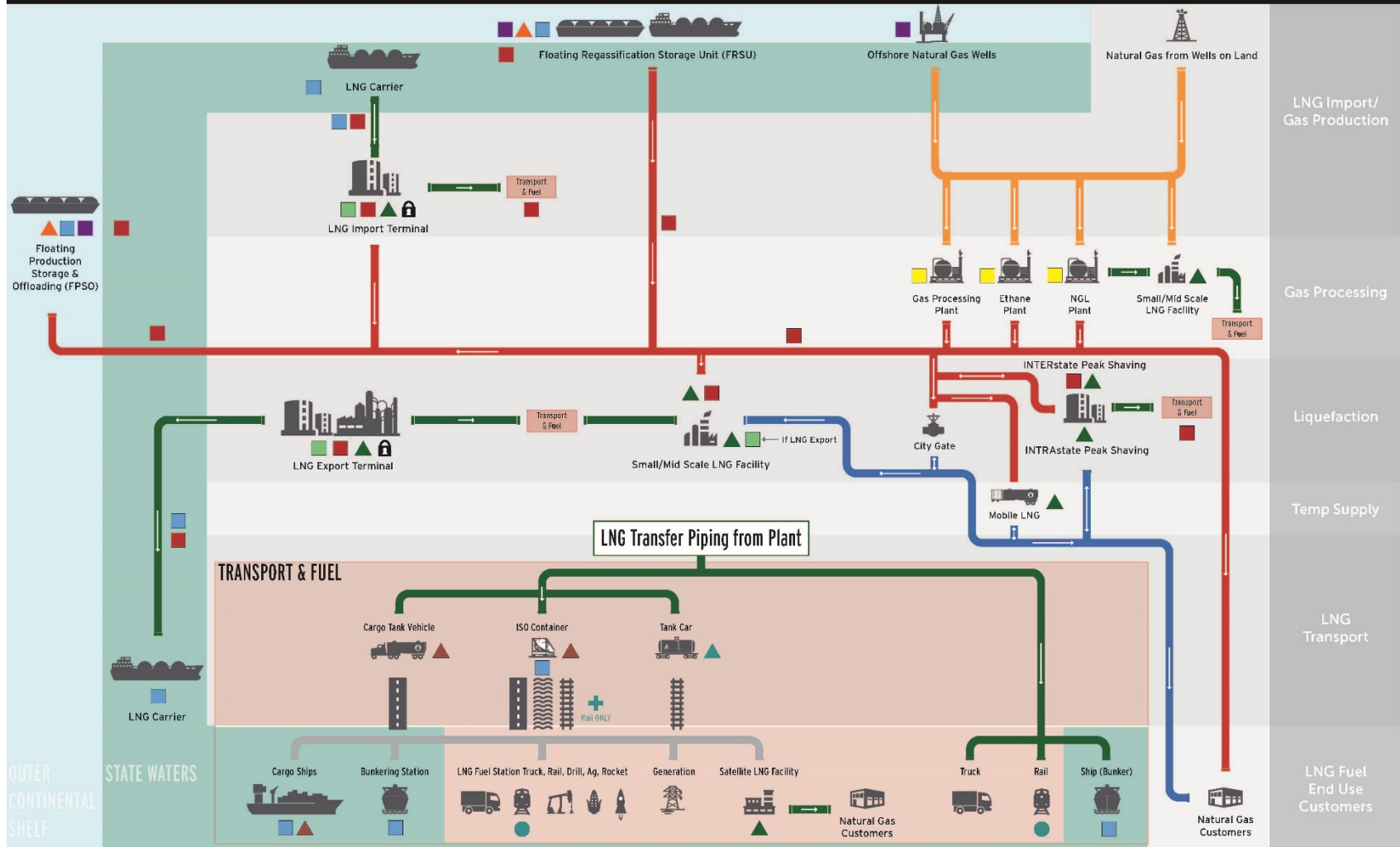
- Authority over the siting, construction, and operation of onshore LNG terminals
- Lead agency on environmental reviews of onshore facilities

Maritime Administration



- Authority over the siting, construction, and operation of deepwater offshore LNG terminals
- Co-lead agency on environmental reviews of onshore facilities with U.S. Coast Guard

FEDERAL OVERSIGHT OF LIQUEFIED NATURAL GAS (LNG) VALUE CHAIN



LEGEND

CFR 49 Part 192

Interstate Piping

Intrastate Piping

Gathering Piping

CFR 49 Part 193

Transfer Piping

PHMSA

HAZMAT

MARAD

FRA

FRA Approval

FRA Concurrence

USCG

USCG Security

DOE

FERC

OSHA/EPA

BSEE

This schematic is intended to provide general information. Certain aspects may be regulated differently than shown and other federal agencies may also regulate LNG through the value chain.

ONGOING RESEARCH WITH SANDIA NATIONAL LAB IN PARTNERSHIP WITH DEPARTMENT OF TRANSPORTATION/PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION (PHMSA)

- DOE has partnered with PHMSA to fund research at Sandia to help validate the Fire Dynamics Simulator (FDS) Model
- Validation of FDS will allow LNG project applicants additional options to perform their vapor dispersion and thermal radiation modeling required to meet PHMSA and FERC's requirements



U.S. LAW: THE NATURAL GAS ACT

“...no person shall export any natural gas from the United States to a foreign country... without first having secured an order of the [Secretary of Energy] authorizing it to do so.” - 15 U.S.C. § 717b(a)

Section 3(a)

Exports to non-Free Trade Agreement Countries

Authorization must be granted unless after opportunity for hearing, proposed export found to not be consistent with the public interest

Section 3(c)

Exports to Free Trade Agreement (FTA) Countries

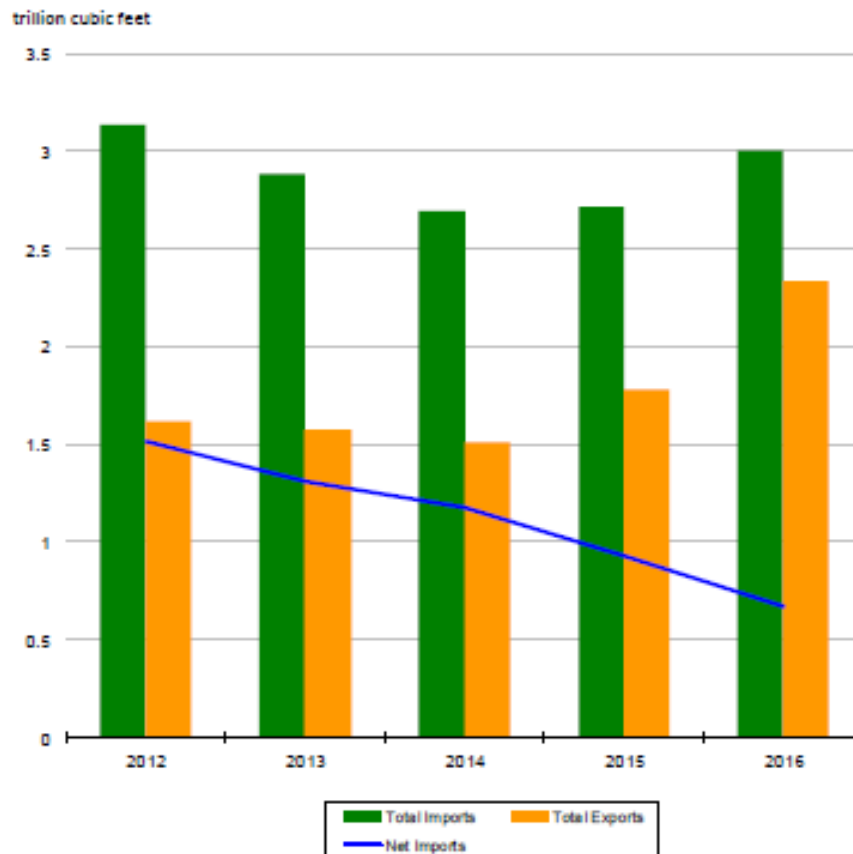
By law, deemed to be consistent with the public interest

Authorization must be granted without modification or delay

18 FTA countries: primarily in the Americas, plus Korea, Singapore, Australia, Bahrain, Jordan, Morocco and Oman

THE MAJORITY OF THE ORDERS ISSUED BY THE OFFICE OF OIL AND GAS ARE NGA SECTION 3(C) FTA ORDERS FOR TRADE WITH CANADA AND MEXICO

- *DOE issues around 150 FTA authorizations each year, mostly for trade with Canada and Mexico.*
- *Decreased pipeline imports from Canada and increased pipeline exports to Mexico are the largest part of the U.S. becoming a net exporter as the LNG trade picks up.*

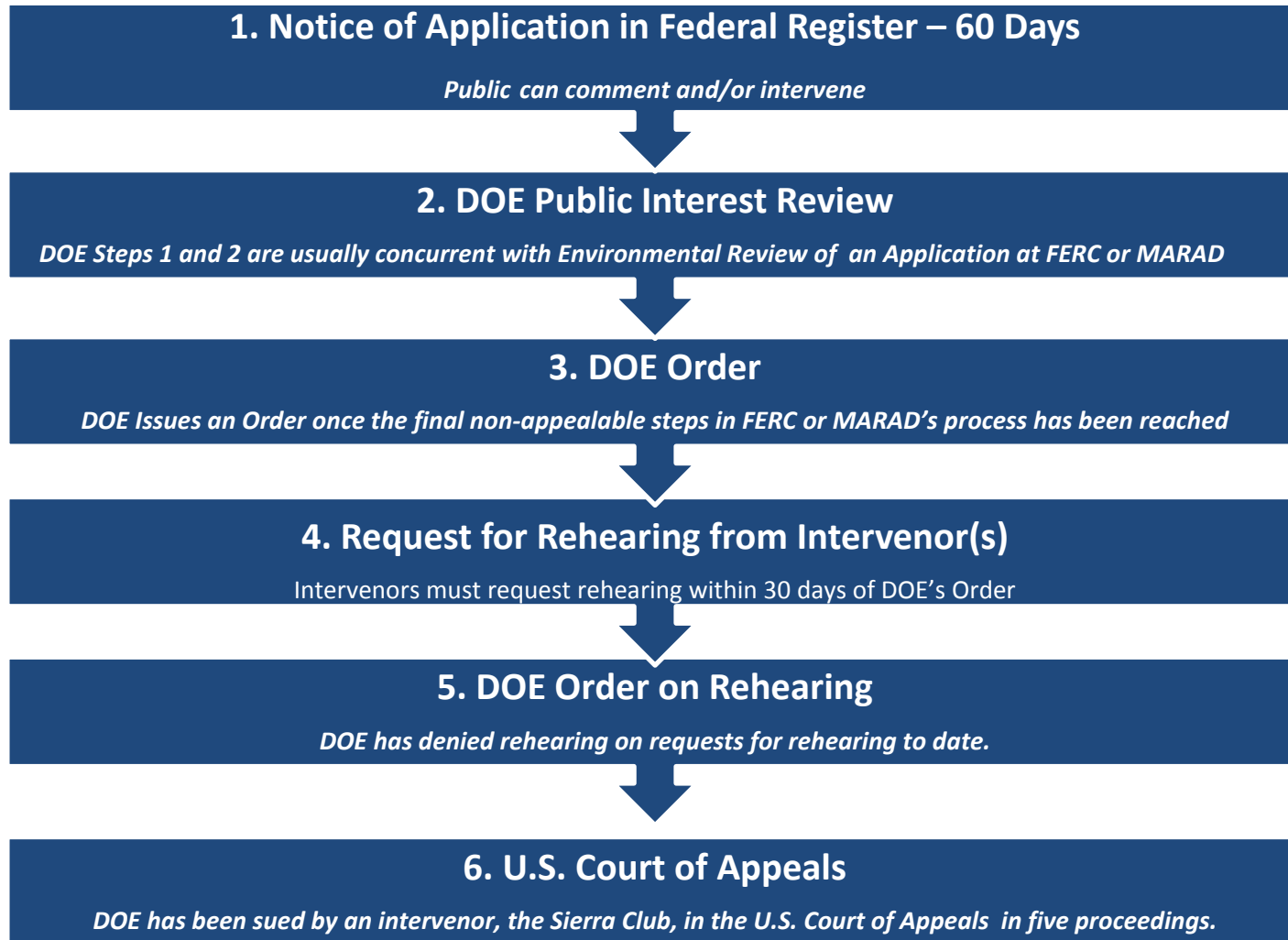


PUBLIC INTEREST DETERMINATION EVALUATION CRITERIA FOR EXPORTS TO NON-FREE TRADE AGREEMENT COUNTRIES

Criteria for Evaluating the Public Interest

- Domestic need for the natural gas proposed for export
- Adequacy of domestic natural gas supply
- U.S. energy security
- Impact on U.S. economy
- Other Considerations:
 - International considerations
 - Environmental considerations
 - Other issues raised by commenters and interveners deemed relevant

DOE REVIEW OF NON-FTA LNG EXPORT APPLICATIONS ARE PUBLIC PROCEEDINGS THAT CAN END IN LITIGATION



ANALYSIS SUPPORTING NON-FTA EXPORT DECISIONS

Macroeconomic

2012

- **Studies by NERA and EIA looking at the effects of exports between 6 and 12 billion cubic feet per day**

2015

- **Studies by Oxford Economics and Rice University as well as EIA looking at the effects of exports from 12 to 20 billion cubic feet per day**

Environmental

2014

- **Addendum to Environmental Review Documents Concerning Exports of Natural Gas from the United States**

- **Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States**

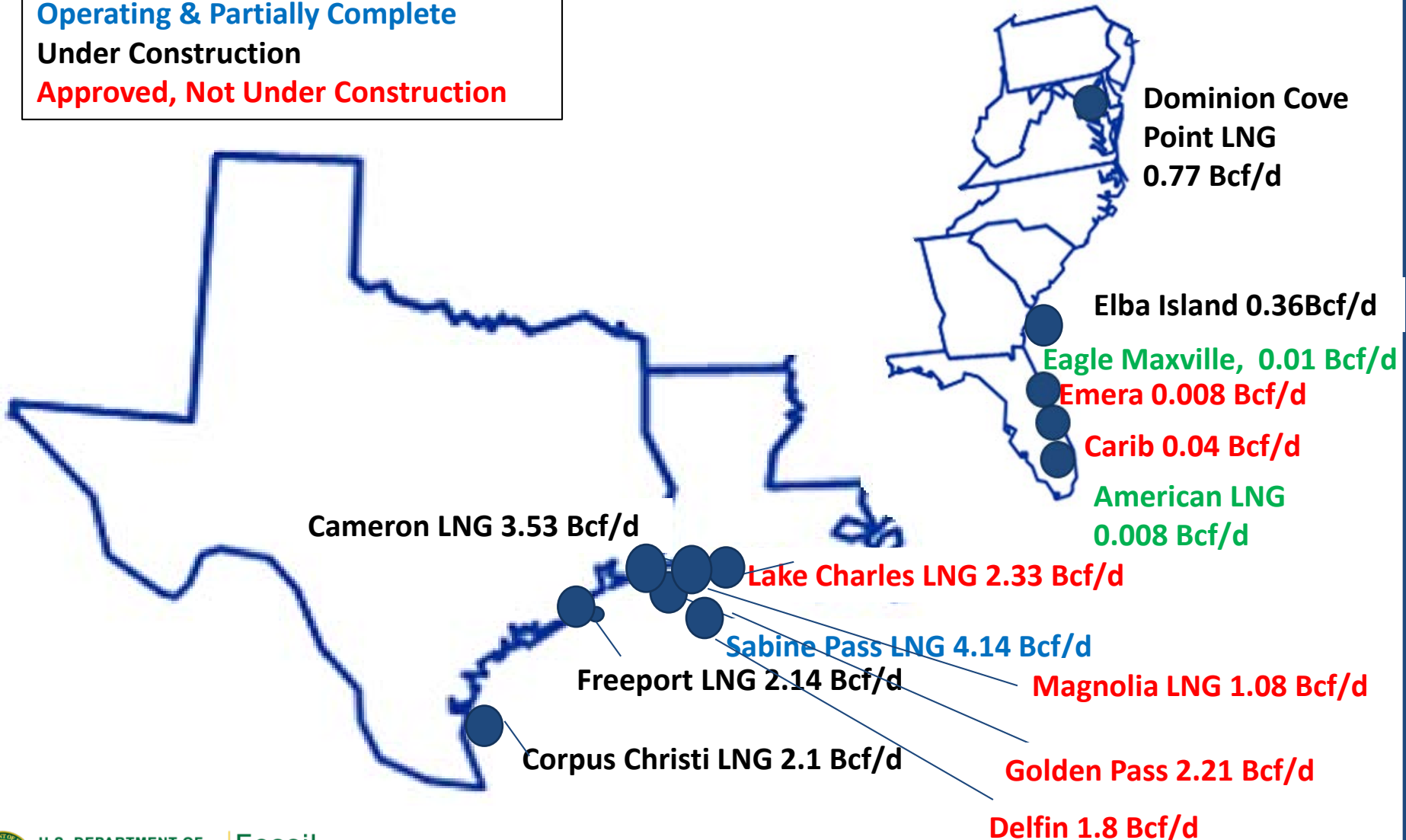
PROPOSED RULE FOR SMALL-SCALE EXPORTS

- **In September 2017, the Department of Energy announced a proposed rule that will provide for faster approval of small-scale exports from U.S. export facilities that:**
 - **Propose to export up to 0.14 billion cubic feet per day or 51.75 billion cubic feet per year**
 - **Qualify for a Categorical Exclusion under NEPA**
- **DOE is reviewing public comments and expects to announce a final decision in the coming months.**

U.S. LOWER 48 LNG EXPORT FACILITIES

Operating – Completed Construction
Operating & Partially Complete
Under Construction
Approved, Not Under Construction

Map of facilities with final DOE non-FTA export approval of Lower-48 LNG export facilities as of October 12, 2017



REPORTED DESTINATIONS FOR LOWER 48 EXPORTS

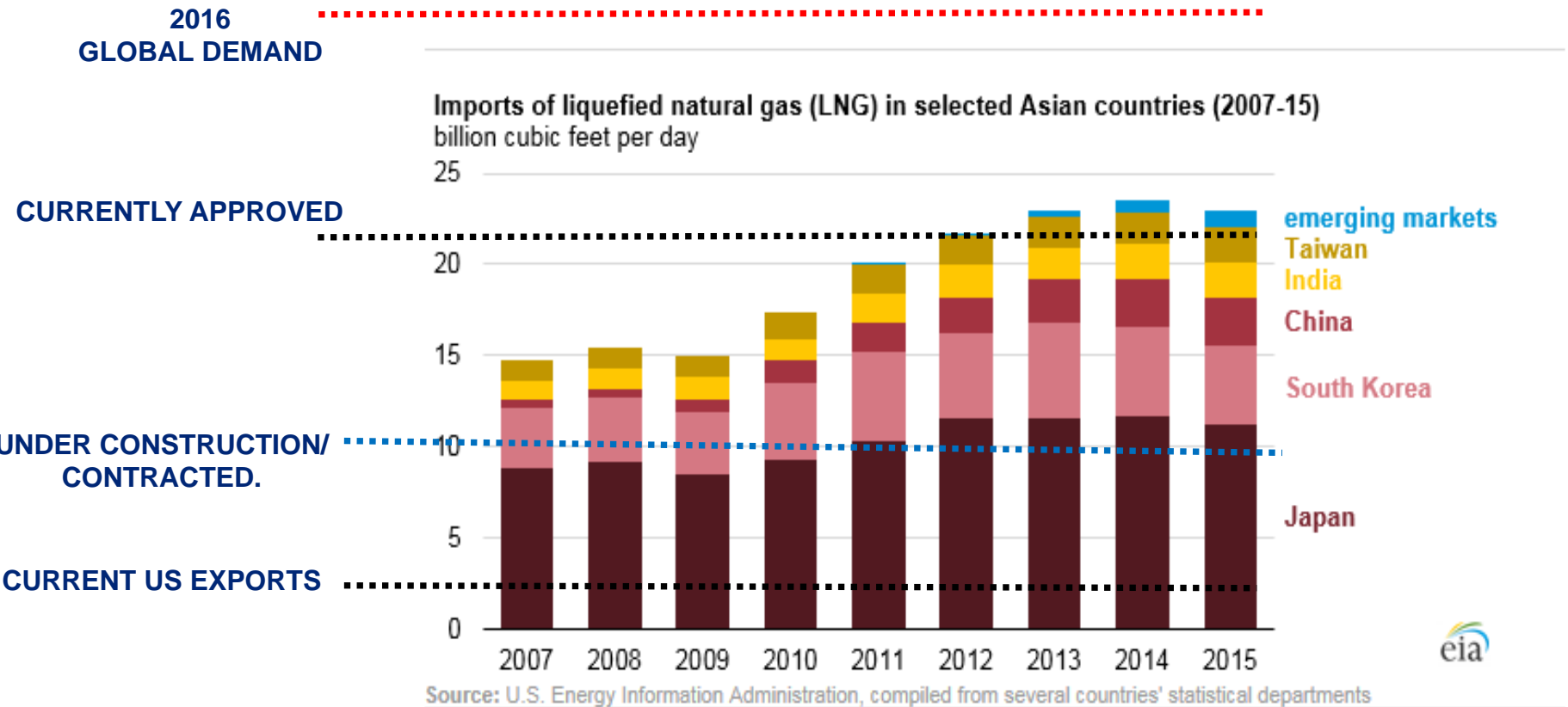
Vessel Exports		
<i>Country of Destination</i>	<i>Volume (Bcf) Thru 8/2017</i>	<i>Number of Cargos</i>
Argentina	33.5	12
Brazil	17.9	8
Chile	48.1	16
China	41.7	13
Dominican Republic	5.9	2
Egypt	10.4	3
India	27.9	9
Italy	9.8	3
Japan	43.8	12
Jordan	35.7	11
Kuwait	27.3	8
Lithuania	3.4	1
Malta	0.9	1
Mexico	136.4	41
Netherlands	3.0	1
Pakistan	3.2	1
Poland	3.4	1
Portugal	19.5	6
South Korea	59.3	18
Spain	18.6	7
Taiwan	1	3
Thailand	1	3.1
Turkey	19.7	6
U.A.E.	16.8	5
United Kingdom	3.4	1



ISO Container Exports		
<i>Country of Destination</i>	<i>Volume (MMcf)</i>	<i>Number of Cargos</i>
Barbados	228.8	68



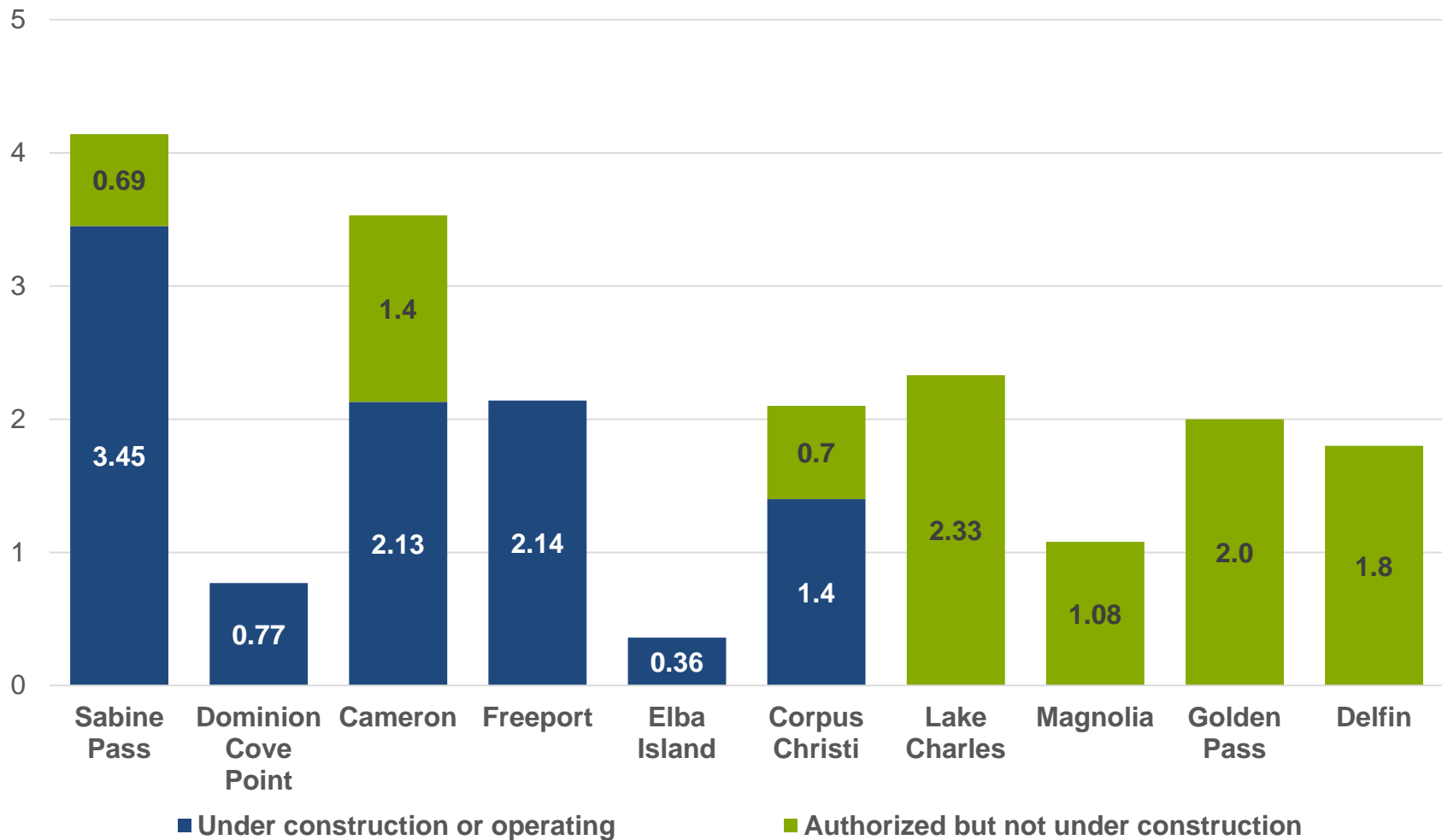
THE AMOUNT OF LNG APPROVED FOR EXPORT FROM THE US TO NON-FTA COUNTRIES IS OVER HALF OF CURRENT GLOBAL DEMAND



FULLY PERMITTED U.S. LOWER 48 LNG PROJECTS

Approved Capacity

Billion cubic feet per day



■ Under construction or operating

■ Authorized but not under construction

For further information please visit:

<https://www.energy.gov/fe/services/natural-gas-regulation>

