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## **2. Policy Background**

## Policy Background

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In recent years, the U.S. natural gas industry has shown considerable interest in importing liquefied natural gas (LNG) to supplement the decline in domestic production. However, the lengthy and often confusing project approval process has made the importation of LNG difficult, if not impossible. Consequently, only four LNG import projects have been approved.

The Department of Energy (DOE) has only begun to clarify the regulatory review process and

formulate the Carter administration's import policy. Critics of DOE argue that because of the lack of a clear policy, projects have been delayed, resulting in an increase in the cost of LNG and loss of potential supplies to other buyers. To assist in the overall understanding of LNG use in the United States, this chapter describes both past and present LNG policy and the roles of participating Federal agencies in its formulation.

### Administration import policy

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President Ford proposed the first explicit administration LNG import policy during his energy message of February 1976. Out of a concern for our growing dependence on foreign energy supplies, Ford initially proposed to hold LNG imports to a maximum aggregate of 1 trillion cubic feet (Tcf) per year and directed the Energy Resources Council (ERC), which had been created to coordinate energy policy among Federal agencies, to develop a more refined national LNG import policy. At that time, Government agencies involved in the importation of LNG included the Federal Power Commission (FPC), the Maritime Administration (MarAd), the Export-Import Bank, and the Department of Transportation (DOT). Prior to the President's message, several Federal agencies had expressed reservations regarding Government financial assistance to LNG projects and advocated developing our domestic energy sources instead. A Federal Energy Administration issue paper, dated February 20, 1975, clearly discouraged Government financial assistance for LNG ventures, an attitude also shared by the State and Treasury Departments. However, MarAd viewed **LNG** as a useful addition to U.S. energy supplies and supported LNG shipbuilding programs. According to MarAd, any Government action to discourage LNG imports could result in unemployment and the loss of invested tax dollars.

In response to President Ford's request, ERC created an LNG task force to recommend a new LNG import policy. The task force analyzed such issues as the level of LNG imports, pricing provisions, Government financial assistance, contingency plans, and siting and safety. Public hearings were also conducted in Washington, D. C., and Los Angeles to obtain the views of interested parties. While some witnesses expressed considerable concern regarding the siting and safety problems associated with LNG facilities, others supported the importation of LNG to supplement our own declining natural gas production.

The results of the task force analysis were announced on April 5, 1976:

- LNG is needed to supplement our natural gas supplies, but it must be limited for supply security reasons. ERC recommended a limit for LNG imports from a single country of 0.8 to 1 Tcf/yr and a total acceptable import level from all countries of 2 Tcf/yr. The limitation was not intended to be a strict quota but rather a means by which to limit U.S. dependency on foreign energy supplies, and ERC avoided explicitly mentioning Algeria as the one nation likely to

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<sup>1</sup>"Federal Energy News," Federal Energy Office News Release 107, Aug 5, 1976.

exceed 1 Tcf. ERC categorized LNG-exporting countries as either relatively secure or insecure, based on the country's political and economic interests. The relatively secure supply sources were Indonesia and, ironically in retrospect, Iran. The relatively insecure sources were Algeria, Nigeria, and the U.S.S.R. At the time of ERC'S recommendation, pending and approved Algeria projects could supply 1.1 Tcf/yr, which was above the recommended import level. Consequently, pending LNG applications would have to be evaluated carefully, and only those projects that provided the most desirable pricing provisions and assured uninterrupted supplies would be considered.

- The higher price of LNG should be passed directly through to low-priority and new users, and averaged with the lower cost of domestic sources for high-priority users. This principle would assure reasonably priced gas for residential customers and reinforce full energy resource costing for industry. Implementation of pricing provisions would be left up to FPC and State and local authorities, but pricing provisions would be reviewed by ERC continually.
- ERC recommended that contingency plans be submitted with each application to deal with supply interruptions. The plans should include underground storage, inter-pipeline transfers and exchange agreements, and curtailments of lower priority users.
- No changes were recommended regarding Government financing. ERC believed that if U.S. subsidies were not available, tankers would be available elsewhere. Therefore, MarAd financial assistance for LNG tankers was not considered essential to LNG projects.
- No recommendations were made regarding siting and safety issues. The task force expressed a willingness to cooperate with FPC and State and local authorities to resolve these issues.

On completion of its initial recommendations, ERC identified several issues that required additional analysis and directed the LNG task force to conduct the analysis. These issues included LNG safety and siting, development and implementation of contingency plans, the identification of State and local concerns, and mechanisms for implementing policy recommendations. While this analysis was being conducted President Carter introduced the National Energy Plan (NEP) and the Energy Organization Act to Congress.

Introduced in April 1977, NEP included LNG import policy guidelines that replaced those established by ERC in 1976. NEP places no upper limits on LNG imports, which is the major difference from ERC policies. It provides for a case-by-case review of each LNG import application, with emphasis on security of supply, vulnerability to interruptions, safety and siting, and pricing. In addition, NEP calls for the "equitable" distribution of supplies and the development of contingency plans for use in the event of a supply disruption. It also proposes siting criteria that would foreclose the construction of LNG facilities in densely populated areas.

The LNG task force was reestablished\* under the leadership of DOE to develop a more comprehensive, detailed LNG import policy, based on guidelines set forth in NEP. DOE staff prepared reports on LNG import policy issues with recommendations to then Energy Secretary Schlesinger. Dr. Schlesinger did not formally endorse the staff findings and recommendations, preferring to establish LNG import policy by building case-by-case precedents. To date, Energy Secretary Duncan has not formulated a new LNG policy. The major findings and recommendations made by DOE staff included:<sup>2</sup>

- LNG is a low-priority gas source and as such should generally be discouraged. The mechanisms by which to discourage LNG imports except where economically justi-

\*The LNG task force was **abolished** with the creation of DOE but continued to advise on LNG matters as an *ad hoc* group.

<sup>2</sup>*Inside DOE*, May 8, 1978, pp. 8-9; Aug. 7, 1978, p. 3; and Aug. 28, 1978; personal communication with DOE official, June 20, 1979.

fied include stringent regulatory requirements, such as requiring importers to contract directly with local distribution companies before the project would be approved, and encouraging States to require incremental pricing. However, if need is sufficiently demonstrated from a national standpoint, LNG projects should be approved.

- Price escalation provisions in supply contracts should be based on broader economic indicators than world oil prices.
- LNG imports do not add to foreign dependency but displace imported oil by serving as an alternative fuel.
- Although LNG viewed in isolation would appear to have a slight negative balance-of-payments impact, the net payments effect would likely be positive, a result of cost structure differences between LNG and foreign oil.
- OPEC influence on LNG prices would be limited because of the relatively small amount of LNG in world energy markets and the limited number of purchasers.
- LNG would have a less adverse impact on the environment than other energy sources, such as coal, oil, and nuclear power. LNG accidents are unlikely, but additional safety analysis and reporting are needed.

DOE staff did not address pricing issues, because natural gas pricing legislation was being considered by Congress at the time.

On August 4, 1977, President Carter signed into law the Energy Organization Act (Public Law 95-91) which created DOE. This law abolished the Energy Research and Development Administration, the Federal Energy Administration, and FPC and transferred their functions to the new Department. The Economic Regulatory Administration (ERA) and the Federal Energy Regulatory Commission (FERC) were created within DOE to perform regulatory functions, including the approval of LNG imports. ERA, pursuant to section 3 of the Natural Gas Act (NGA), is responsible for ruling on whether natural gas

import projects are in the public interest. FERC has certain statutory functions regarding LNG terminal facility certification as well as the price and other terms under which regasified LNG is sold in interstate commerce, pursuant to NGA, sections 4 through 7.

As mentioned earlier, DOE has not formally adopted an explicit LNG import policy. Each case is resolved individually on its own merits, and approval is based on whether or not the project is consistent with '(national energy policy. " The national energy policy, as defined by the present administration, is to provide secure, adequate energy at reasonable prices while reducing U.S. dependency on foreign supplies. The extent to which an LNG project is perceived to conform with this policy determines its acceptability, and the precedents established in import policy decisions illustrate the prevailing DOE attitude toward imported LNG.

While DOE recognizes the need for imported and unconventional energy like LNG to supplement our own supplies, the Department prefers that our natural gas comes first from conventional sources within the United States. Therefore, each LNG application is viewed cautiously in light of DOE's order of preference for new natural gas supplies as outlined in ERA's Tapco decision:<sup>31</sup> '(proximate, " "intramarginal," and '(marginal. " Ranking criteria include generalized cost and proximity of the supply to U.S. markets, but not size or timing of development relative to demand. DOE also considers whether the import project has the potential to discourage the development of future domestic gas sources, such as Alaskan gas or synthetic gas from coal. As a result, DOE considers preferred proximate sources to be those within the contiguous United States, including the Continental Shelf, which are within reach of conventional drilling technology and located near established pipelines. Intramarginal sources include gas from Alaska; various supplies from advanced technology applied to domestic resources, such as coal gas, gas from unconventional sources, and enhanced recovery; and over land supplies from neighboring sovereign countries, i.e., Mex-

<sup>31</sup> OE/ERA opinion 1%0, 2, Pac# Indonesian LNGCo and Western LNG Terminal Associates, Rehearing, Sept. 29, 1978

ico and Canada. The least preferred marginal supplies include synthetic natural gas from petroleum and LNG from overseas.

The capital intensiveness, long-term contract commitments, vulnerability to interruption, and relatively high price make LNG a marginal supply in DOE's view. In addition, long leadtimes needed to construct terminal facilities and tankers as well as potential cost overruns on shipping and liquefaction make it difficult to determine whether LNG will be competitive with other energy sources. In early 1979, the administration began encouraging imports from Latin America, because transportation costs are lower and energy supplies from this region are considered politically more reliable. These short-haul imports are categorized somewhere between "intramarginal" and "marginal" energy supplies. In addition, DOE expects the Natural Gas Policy Act of 1978 (NGPA) and the Power Plant and Industrial Fuel Use Act of 1978 (FUA) to make more gas available to high-priority markets by establishing incentives for exploration and production and by promoting long-term conversion of oil- and gas-burning facilities to coal. (Although FUA generally prohibits the use of gas for electric generation after 1990, LNG is excepted and may be burned in new powerplants after that time for air quality reasons.) Furthermore, the import reduction program introduced by president Carter in July 1979 provides new incentives for the development of synthetic fuels, unconventional gas, heavy oil resources, and oil shale and establishes an oil import quota of 8.5 million barrels per day (MMbbl/d) for 1980 and a goal of 4 to 5 MMbbl/d in 1990. LNG was not included explicitly under the import quota, so if the import quota cannot be met, the administration may look more favorably on the importation of LNG. If, on the other hand, the administration chooses to include LNG in the quota, expanded imports may be impossible.

Each LNG project application is jointly submitted to ERA and FERC. While ERA conducts an analysis to reach DOE's initial decision, FERC begins preparation of the environmental impact statement (EIS) but does not otherwise act on the application during this initial phase. ERA reviews each application in light of such issues as

the security of supply, national and regional needs, cost, the effect on the U.S. balance of payments, and the project's consistency with DOE's natural gas import policy.

Supply security implications are carefully weighed by ERA. ERA will consider the adequacy of the exporting country's reserves to fulfill the sales contract and the degree of susceptibility to natural, political, or technical disruption within the country, along shipping routes, or at the receiving terminals. Because uninterrupted delivery of LNG supplies cannot be guaranteed, ERA requires that contingency plans be submitted with the application. Before approval, ERA must be satisfied that the contingency plan is adequate to compensate for long-term supply interruptions. For example, one of the reasons the El Paso Algeria project application was denied was that ERA felt the contingency plan relied too heavily on voluntary conservation measures.

In determining need, ERA looks to the end-user market, rather than to the interstate pipeline company's contractual obligation to deliver. According to ERA, contractual obligations do not always reflect the real need of a particular area, and a good test for regional need is the degree to which gas distribution utilities will contract directly for preferred gas.<sup>4</sup> It is the applicant's responsibility to provide ERA with an analysis of the region's particular requirements and to assess whether these requirements can be satisfied by an alternate energy source within a reasonable time. Only those projects are approved in which the need for gas cannot be met by more conventional sources.

Pricing has often overshadowed other issues in the application approval process. To be advantageous to the Nation, the cost of LNG should be competitive with alternative fuels or conservation measures over the lifetime of a project. The fact that a gas wholesaler could market LNG under past pricing policies has not necessarily meant that LNG was the least costly alternative. The reason was that the cost of LNG or other relatively expensive sources was aver-

<sup>4</sup> X) E/ F; RA opinion No. 3. Opinion and Order on Importation of LNG from Algeria by Tenneco Atlantic Pipeline Co. and "Tenneco Gas Pipeline Co., a Division of Tenneco, Inc., Dec. 18, 1978,

aged or rolled-in” with the less expensive flowing gas from old domestic sources. Therefore, the price to the consumer was less than the actual cost of the LNG. The arguments against “rolled-in” pricing were that it masked the true cost of some forms of new energy and provided fewer incentives to conserve or to convert to other less costly fuels. Rolled-in pricing also served to expand the use of gas, thereby improving the utilization of the gas transmission and distribution system, and spreading the associated fixed costs over a larger number of customers. Because rolled-in pricing encouraged the sale of LNG, investors have felt that it was both appropriate and necessary to secure financing. On the other hand, the Council on Wage and Price Stability and others have argued that the projects should fail if the gas cannot be sold when potential buyers must pay the full cost.

Historically, elements of FPC and DOE staff have favored “incremental” pricing, at least in theory, and industry has opposed it. Under this pricing mechanism, gas from each category is sold at a price that reflects its specific cost. The main argument against incremental pricing is that there is no perfect mechanism for deciding which customers may buy the less expensive gas and which must pay the incremental cost of supplemental supplies. Another argument is that incremental pricing would be difficult to administer during a shortage. Under NPGA, interstate pipelines and distribution companies may contract for gas from any producer, intra-state pipeline, or distribution company to meet high-priority user requirements during a shortage. However, if the shortage is not alleviated through purchase authority, Government allocation of gas supplies will result, and some seriously doubt that a purchaser of LNG at its incremental price would continue to receive the gas under these conditions. Consequently, LNG purchasers may find themselves questioning the value received for the price paid.

The pricing issue has been resolved at least for the present by NPGA which stipulates that LNG from projects planned after May 1, 1978, and gas from other unconventional sources be priced incrementally and paid for by certain

large industrial customers, whether or not they benefit from or receive the incremental gas supplies. However, if the price paid by these purchasers reaches the price of the equivalent amount of oil, the higher cost of unconventional gas is shared by other users. Thus, NPGA shields residential consumers from the higher cost of new resources as long as industrial gas prices do not reach a level that would induce industry to switch to foreign oil.

Of utmost importance to ERA is the protection of consumers from unwarranted costs and risks. The project must show an equitable distribution of risk between project sponsors and consumers regarding unexpected shipping costs, project failure, f.o.b. cost escalation, and long-term future prices of alternatives.<sup>5</sup> Because the characteristics of LNG import projects make them more risky than conventional energy sources, ERA expects the applicants to bear some of the risk of supply interruptions. Therefore, extraordinary circumstances must prevail for ERA to entertain recovery of equity on non-delivered supplies under minimum bill provisions in supply contracts. In general, ERA finds it inconsistent with public interest for consumers automatically to bear the risk of supply interruptions, although the consumer does in effect guarantee through tariff provisions some of the debt portion of the financing and possible return of equity if the applicants can show good and just cause.

Energy imports involve at least some outflow of dollars from the United States. Therefore, ERA also requires a detailed analysis of the project direct impacts on the balance of trade.

If ERA determines that the application or components of the application are not consistent with the public interest, a rehearing and judicial review may be scheduled under section 19 of NGA. If ERA decides favorably, FERC then begins proceedings to decide on the remaining issues: safety, siting, construction, and operation of port facilities, and prices charged for the resale of the gas in interstate markets. FERC can reject the entire application if it determines that ERA's decision is inconsistent with FERC's pol-

<sup>5</sup>Ibid

icy, but it cannot reject components of the decision.

Although DOT is responsible for formulating minimum safety standards, FERC has the authority to impose more stringent ones if necessary and to require that LNG facilities be located away from densely populated areas. The siting issues in the El Paso H and Tenneco projects were decided by ERA, because the division of responsibility between ERA and FERC had not been formalized until the project approval process was well underway. Siting decisions in the Pac Indonesia project are shared by ERA and FERC. ERA has expressed a willingness to cooperate with States in deciding siting issues and recommended the use of independent technical experts to judge the quality of design and construction of terminal facilities to assure project safety further.<sup>6</sup>

<sup>6</sup>DOE/ERA opinion No. 6. Opinion on Rehearing—Issues Related to Treatment of Costs, Safety, and Siting, Pac Indonesia LNG Company and Western LNG Terminal Associates, Apr. 24, 1979.

## Maritime Administration

MarAd is part of the Department of Commerce. Its primary purpose is to promote the development of the U.S. shipbuilding industry and U.S. shipping capabilities through various financial assistance programs: construction and operating subsidies, mortgage guarantees, and tax deferral via the capital construction fund. Of these four programs, mortgage guarantees (title XI) for U.S. owned and operated LNG tankers are the most significant. By mid-1979, MarAd had guaranteed mortgages amounting to \$1.24 billion for 16 LNG tankers under title XI; the interest rate for such mortgages was then 9.35 percent. MarAd had also provided \$270.5 million for 11 LNG tankers in construction differential subsidies under title V.<sup>8</sup> However, MarAd does not provide operating subsidies for LNG tankers because the operating expense differential between U.S. owned and operated and foreign-flag vessels is insignificant.

<sup>8</sup>Personal communication with MarAd official, May 9, 1979. These figures do not include the required national defense features or engineering changes.

FERC also approves prices for the resale of interstate gas. Prior to NGPA, if FERC had ruled in favor of incremental pricing for interstate resales, it was up to the State regulatory commissions to decide whether or not costs should be rolled-in or incrementally priced to the ultimate consumer. If FERC ruled in favor of rolled-in pricing, direct users were not confronted with incremental prices. Recently, FERC has proposed procedures for interstate pipelines and distributors to pass through increased costs of unconventional natural gas, including LNG, to large industrial users as required by NGPA. This will reserve for high-priority users the benefits of access to less expensive gas sources, at least for the time being. FERC also established three incremental price ceilings, based on No. 2, and high- and low-sulfur No. 6 fuel oils, for each region of the country in an attempt to prevent customers from switching from gas to imported oil.<sup>7</sup>

<sup>7</sup>"Procedures Set to Pass on Incremental Gas Cost," *Oil and Gas Journal*, June 11, 1979, p. 47.

Like DOE, MarAd reviews financial assistance applications on a case-by-case basis. Before subsidies/guarantees are granted for LNG tankers, MarAd must be convinced that the LNG project is economically sound and be assured that, at the very least, the cost of the vessel will be repaid. MarAd will no longer finance LNG vessels on a "no guarantee required" basis as it did for the Algeria I project. This policy developed out of a concern that MarAd was concentrating too large a portion of its total funds in one area—LNG tankers. Title XI guarantees for LNG tankers represent 22 percent of total MarAd commitments. Concern over long delays in the LNG application approval process and lower estimates of the market for LNG tankers also contributed to the development of the debt assurance policy.<sup>9</sup> Because of the long delays, some tankers have been idle. Although section 905(a) of the Merchant Marine Act, amended, allows

<sup>9</sup>*Inside DOE*, May 15, 1978.

the use of LNG tankers for other purposes, alternative employment is not practical, except in

liquid petroleum gas trade, because the tankers are specially built for their unique cargo.

## Export-Import Bank

The Export-Import Bank aids in financing and facilitating export sales to foreign countries. This is accomplished through direct lending at favorable interest rates or issuance of loan guarantees and insurance to foreign purchasers of U.S. goods.

Export-Import Bank policy regarding LNG projects has been to consider loan applications for U.S.-made liquefaction equipment and port facilities only after the project has been approved by DOE/ERA and FERC. Each project is assessed in terms of the financial conditions of the foreign borrower, the viability of the project, and the economic and political situation of the country in which the project is located. Before approving a loan, the Bank must be satisfied that the project is economically, financially, and technically sound and be reasonably assured of repayment. The Bank requires security either in the form of a guarantee from the government, a bank, or a parent company or based on the financial strength of the borrower. Because Algerian LNG facilities are State-owned, the Export-Import Bank requires that the guarantees be from the government.<sup>10</sup>

Section 2(b)(3) of the Act (amended) requires that Congress be notified of any proposed loans or guarantees for \$100 million or more. Notification must generally be at least 25 days of continuous session prior to the date of final approval, with certain exceptions covering long adjournments. If either House is adjourned for a period of 10 days after notification, the Bank may approve the loan after 35 calendar days unless Congress dictates otherwise.

Under the Trade Act of 1974 and the Export-Import Bank Act Amendments, the Bank is pro-

hibited from extending credit to the U. S. S. R., a potential supplier of LNG, and other Communist countries unless the President determines the transaction to be in the national interest. Additional Presidential approval and congressional notification are required for loans of \$50 million or more. Furthermore, Congress must be notified of loans of \$25 million or more to the U.S.S.R. for goods or services involving the research, exploration, or production of fossil fuel energy resources. These limitations on trade and economic assistance to Communist countries are clearly linked to human rights and emigration policies. Given the present political climate, potential LNG ventures with the U.S.S.R. may not receive Export-Import Bank financing.

By mid-1979, the Export-Import Bank had provided \$715.7 million to Algeria and Brunei in overseas LNG-related loans and guarantees to promote American exports. (It should be noted that Export-Import Bank loans/guarantees are not necessarily tied to U.S. trade. For example, Algeria and Brunei export LNG to Europe and Japan.) Out of this total, \$674.3 million was still outstanding (all to Algeria). In addition, the Export-Import Bank has tentatively approved a \$313.5 million loan at an annual interest rate of 8.5 percent to Sonatrach for the construction of its third LNG terminal at Arzew. Because of the size of the loan, Congress must be notified before final approval. No loans have been made to Indonesia, because the project has only recently cleared all of the major regulatory hurdles.<sup>11</sup> The Export-Import Bank's commitments for LNG projects have increased due to contractor problems in Algeria. The Bank, thus far, has financed \$67 million out of \$167.5 million in cost overruns for Algeria's Arzew I project.

<sup>10</sup> "Export Financing and the Role of the Export-Import Bank of the U.S.," *Journal of International Law and Economics*, 101.2, No.1, 1976, p. 123.

<sup>11</sup> Personal communication with Export-Import Bank official, June 21, 1979.



## Department of Transportation

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DOT formulates the general minimum Federal safety standards for LNG facilities. In April 1979, DOT and FERC drafted an agreement that allows FERC to override and tighten DOT's safety regulations for LNG facilities if the situation warrants. The agreement will settle a dispute between FERC and DOT over LNG safety standards.<sup>12</sup>

The U.S. Coast Guard (USCG) is responsible for vessel traffic management. To ensure the safety of vessel movements the Coast Guard has authority to escort tankers to and from the terminal facilities and establish security zones around or near a vessel or facility. In addition to traffic control, USCG establishes regulations governing the design, construction, inspection, and operation of U.S. and foreign-flag LNG carriers. USCG also works with the Inter-Governmental Maritime Consultative Organization (IMCO) in developing uniform worldwide standards for the safe transport of liquefied gases. If U.S. or foreign-flag vessels do not appear to be in compliance with the IMCO standards and U.S. requirements, USCG has authority to review the vessel's technical plan to ensure such compliance. Furthermore, USCG has authority to examine vessels prior to authorizing the transport of liquid gases and at specified inter-

vals and to conduct safety boardings prior to entry into a U.S. port.<sup>13</sup>

USCG and the Materials Transportation Bureau (MTB) cooperate to ensure the safety of LNG facilities and participate in technical conferences with LNG import applicants. Within DOT, primary responsibility for establishing standards for siting LNG facilities rests with MTB unless otherwise stated. Under the terms of a memorandum of understanding dated February 7, 1978, MTB and USCG agreed to a division of regulatory responsibility with regard to waterfront LNG facilities. USCG is responsible for establishing regulations for facility site selection as it relates to vessel traffic management in and around a waterfront facility, fire prevention and protection methods used at waterfront facilities, and security of waterfront facilities.

On February 8, 1979, MTB proposed more stringent safety standards for the design and construction of LNG facilities, which include establishing a thermal exclusion zone around an LNG terminal to protect individuals and property from heat radiation caused by vapor ignition.<sup>14</sup> MTB also expected to propose new operation and maintenance standards for LNG facilities by the end of 1979.

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<sup>12</sup>Inside DOE, Apr. 23, 1979, p. 3

<sup>13</sup>1350 U.S.C.191.

<sup>14</sup>Federal Register, vol. 44, No. 28, Feb. 8, 1979, p. 8142.

## Department of Defense

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The Army Corps of Engineers reviews and issues permits for work performed in U.S. navigable waters. Any major obstruction that would interfere with navigation requires the approval of Congress as well. The Corps also issues (with the concurrence of the Environmental Protection Agency) permits for the disposal of dredge or fill material in U.S. waters. Other Corps activities may indirectly affect LNG projects. For example, the Corps has dredged a ship channel from the Gulf of Mexico to Lake Charles, La., where the Trunkline LNG terminal and many other industries, such as oil refineries, and pe-

trochemical, chemical, and fertilizer plants, are located. Trunkline along with the other industries will benefit from this project, which was authorized by Congress.<sup>15</sup> Based on a 1960 cost/benefit analysis, the Corps estimated that savings of \$0.28 per ton and \$590 per round trip (1960 dollars) would accrue to larger tankers using the channel.<sup>16</sup> This savings represents a very small fraction of the Trunkline project's ship-

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<sup>15</sup>Personal Communication with Army Corps of Engineer official, New Orleans District, June 19, 1979; Aug. 21, 1979.

<sup>16</sup>House Document 86-436, Calcasieu River and Pass, La., 1960, p. 24.

ping costs. In 1978, Congress requested the Corps to conduct a cost/benefit analysis of further improving the channel. These proposed improvements include the construction of a passing lane and holding area which are desired by

local interests because of increasing oil tanker traffic and impending LNG tanker traffic.<sup>17</sup>

<sup>17</sup>U.S. Army Corps of Engineers, *Preliminary Report, Lake Charles Channel*.

## Congressional interest

Thus far, congressional interest in LNG has focused on the hazards of transporting LNG, siting and safety of LNG facilities, and the regulatory process. The 96th Congress is no exception. Five LNG-related bills have been introduced in the 96th Congress and fourteen in the 95th Congress.

Recently, substantial interest has emerged in establishing a liability and compensation fund for the repayment of claims arising out of an LNG accident and setting forth a liability limit for such an accident, unless caused through gross negligence or violation of safety, construction, or operation standards.

Brief summaries of bills before the 96th Congress are presented below:

### ***H.R. 51—Fuels Transportation Safety Amendments Act of 1979***

Introduced by Congressman Markey, January 15, 1979  
Referred to Subcommittees on Energy and Power, Surface Transportation  
Hearings held March 1 and June 8, 1979  
Passed House September 18, 1979  
S. 411, as amended, passed in lieu, September 18, 1979

1. Provides for the safe operation of pipelines that transport natural gas and liquefied petroleum gas.
2. Requires DOT to establish minimum siting, construction, and operation standards for new LNG facilities and to promulgate standards for existing LNG facilities.
3. Establishes civil and criminal penalties for the violation of safety and financial responsibility standards and the willful destruction of pipeline or gas facilities.

### ***H.R. 1414—Liquefied Gas Marine Transportation Safety Act of 1979***

Introduced by Congressman Biaggi, January 24, 1979  
Referred to Subcommittees on Energy and Power, Coast Guard and Navigation, Merchant Marine, and oceanography  
Joint hearings held on July 18-19, 1979.

1. Prohibits ownership, design, construction, and operation of an LNG facility without certificate of safety or license.
2. Directs DOT to prescribe siting, safety, environmental, and operation standards for both onshore and offshore LNG facilities.
3. Establishes a liquefied bulk gas incident liability and compensation fund in the Treasury and limits liability for an accident to \$50 million, except for accidents determined to be caused by gross negligence or violation of safety, construction, or operating standards.

### ***H.R. 3749—Coastal Area Liquefied Gas Facility Safety Act***

Introduced by Congressman Murphy, April 25, 1979  
Referred to Subcommittees on Energy and Power, Coast Guard and Navigation, Oceanography, and Merchant Marine  
Joint hearings held on July 18-19, 1979.

1. Establishes a coordinated Federal-State regulatory approach related to siting, construction, and operation of LNG facilities in or near the coastal zone.
2. Sets forth minimum siting, construction, and operation standards for LNG facilities.
3. Prohibits siting, construction, or operation of an LNG facility within or near coastal

zones unless the State has applied for or been granted exempt status.

4. Imposes civil and criminal penalties for violations of the Act.

**S. 411 — *Fuels Transportation Safety Amendments Act of 1979***

Introduced by Senator Cannon, February 9, 1979

Referred to Senate Committee on Commerce

Hearings held April 25-26, 1979

Passed Senate June 4, 1979

Passed House September 18, 1979 (in lieu of H.R. 51)

Became Public Law 96-129 November 30, 1979.

1. Provides for the safe operation of pipelines that transport natural gas and liquefied petroleum gas.
2. Requires DOT to conduct a cost/benefit analysis of increased fuels transportation safety regulations and study the risks associated with the production, transmission, and storage of LNG or liquefied petroleum gas.
3. Requires DOT to establish minimum siting, construction, and operation standards for new LNG facilities and to promulgate minimum standards for existing facilities.
4. Requires an LNG facility operator to submit a contingency plan in the event of an LNG accident prior to operation of the facility.
5. Established civil and criminal penalties for violation of safety or financial responsibility standards and willful destruction of interstate pipelines or LNG facilities.

**S. 666 — *Comprehensive Liquefied Energy Gas Siting, Safety, and Liability Act of 1979***

Introduced by Senator Durkin, March 14, 1979

Referred to Senate Commerce Committee

1. Prohibits construction of new LNG facilities without DOT's approval.

2. Provides standards for siting, construction, and operation of LNG facilities.

3. Establishes a comprehensive liability and compensation fund in the Treasury derived from tax on LNG sales and limits liability for an accident to \$100 million except for accidents caused by gross negligence or violation of safety, construction, or operating standards.

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To assist Congress in debating LNG-related legislation, several reports have been prepared by OTA, the General Accounting Office (GAO), and the Congressional Research Service (CRS). The OTA report, *Transportation of Liquefied Natural Gas*, reviews the major areas of concern in transporting LNG, such as tanker construction, operation, and safety, and the siting of LNG facilities. OTA staff also testified at oversight hearings on liquefied energy gases held by the Senate Committee on Commerce, Science, and Transportation during December 1978. These hearings focused on siting and safety issues, regulatory delays, jurisdictional conflicts, liability, and compensation. GAO<sup>18</sup> reviewed safety issues, LNG import policy, and the regulatory process under the Carter administration. In February 1978, CRS conducted a seminar entitled "Liquefied Natural Gas: Safety, Siting and Policy Concerns" which provided Congress with background information on public policy issues associated with the importation of LNG.

<sup>18</sup>GAO, *Liquefied Energy Gases Safety*, 3 volumes, July 31, 1978; *Need to Improve Regulatory Review Process for Liquefied Natural Gas Imports*, July 14, 1978; *The New National Liquefied Natural Gas Import Policy Requires Further Improvements*, Dec. 12, 1977.

## States

Because of the controversy surrounding the Pac Indonesia project proposed by Pacific Gas & Electric Company and Southern California Gas Company, attention has been focused on California's response to the LNG issue. To improve the site selection process, the California LNG Terminal Siting Act was signed into law in 1977. The keystone of this law is remote siting. Under the law, the California Public Utilities Commission (PUC) has exclusive authorization to issue permits to construct and operate an onshore LNG terminal and thus is the final arbiter of the site location. The law also requires the California Coastal Commission to evaluate and rank proposed terminal sites and report their findings to PUC, and it authorizes the California Energy Commission to study the natural gas supply and demand picture to determine whether or not LNG is needed.

The siting law was first applied in the Pac Indonesia LNG project. The major impact of the law was to eliminate Oxnard, which had already been approved by an FPC Federal administrative law judge, in favor of Point Conception as a terminal site. But before the judge's decision could be reviewed by the five-member FPC, it was stripped of its authority to rule on import matters and the case was transferred to the new ERA. ERA found Oxnard to be an acceptable site but expressed reluctance to approve Point Conception without new hearings. The Agency, however, was not opposed to the other site and expressed willingness to cooperate with State authorities in selecting the best location.

The applicant requested that Point Conception be considered as a terminal site, and the approval process began once again. FERC staff prepared an EIS on Point Conception and asserted that the site was unsuitable because of earthquake hazards. In addition, Native Americans opposed the Point Conception site because of its spiritual significance. FERC staff again recommended Oxnard and Rattlesnake Canyon as an alternate. Hearings were held on the EIS and on August 13, 1979, a FERC administrative law judge approved Point Conception as a suitable

terminal site. However, the judge's ruling was subject to final approval by both FERC and ERA. On September 26, 1979, ERA reaffirmed its approval of the importation of LNG and the price at the point of importation into either Oxnard or Point Conception. However, ERA made no determination as to the appropriateness of Point Conception as a site for LNG-receiving facilities. In October 1979, FERC was given authority to approve/disapprove applications for the construction of LNG facilities at Point Conception and ERA retained authority to approve the construction of facilities at Oxnard. The final decision by FERC in October 1979, was to approve the Point Conception site.

### *Other States*

Other States have established guidelines and/or councils to deal with the energy facility siting issue. For example, Massachusetts has established an energy facilities siting council. Its purpose is to establish guidelines for the siting and safety of LNG facilities. The Council proposed guidelines that would require a demonstration of facility need, a cost analysis, a comparison of alternative sites, and an EIS. In addition, the guidelines specify thermal radiation and vapor performance standards.<sup>19</sup>

The State of New York established an LNG program which is assigned to the Bureau of Mineral Resources in the State Department of Environmental Conservation. Also, the State of New Jersey has formally expressed positions on the siting and safety of LNG facilities. The State opposed the Tenneco project out of concern for the safety of its citizens and claimed that the project was contrary to sound energy policy. According to the State, LNG should be limited to peak-shaving and very low-priority baseload use.

<sup>19</sup>Commonwealth of Massachusetts Energy Facilities Siting Council, "Liquefied Natural Gas Siting Guidelines, An Explanation," attachment to testimony given by James Connelly, Deputy Director, Massachusetts Energy Office, before the Senate Committee on Commerce, Science, and Transportation, Dec. 12-13, 1978, p. 332.