



# LNG Environmental Impact Statements and Assessments



- Preparation of Environmental Impact Assessment
- Preparation of Resource Reports 1, 11, and 13
- Technical Support to the Owner in Cryogenic Review
- Code Compliance
- Federal Energy Regulatory Commission (FERC) Application Support
- FERC Data Request Response Preparation
- Community and Government Relations

Liquefied natural gas (LNG) export and import projects often have a profound effect on the prudent use and retention of natural resources, affect the economies of participants, and have long-term implications for a country's future.

ICF International offers comprehensive design, evaluation, and implementation of environmental and technical services for LNG projects around the world. We have reviewed more than 200 environmental impact statements, environmental assessments, and related documents for federal, state, and local agencies and commercial companies.

Our multidisciplinary teams of seasoned professionals include engineers, economists, scientists, and policy analysts from industry and government. Thirty years of experience and commitment to our proprietary models enable ICF to help clients evaluate the complex dynamics of oil and gas markets and the impact of environmental policies on LNG businesses.

## Our Approach

ICF International offers a complete range of environmental services and the capability for physical and economic optimization consistent with environmental policies. Working on six continents, we have developed and refined strategies that address environmental, health, and safety challenges.

ICF has the unique capability to integrate the various, often competing, factors that influence environmental impact, facility performance, capital and operating costs, constructability, and safety. Our approach includes participation in the earliest phases of development and coordination of environmental, technical, and safety optimization. We have undertaken site identification, site comparison, and site selection by identifying critical issues and establishing guidelines for site development. Accurate characterization and presentation of environmental factors establish credibility and preempt data requests and delays. We also bring to a project an awareness of past and current issues associated with LNG facility permitting.

We work to establish a close relationship with the client to avoid difficulties prior to public review of environmental and safety documentation. Emphasis is placed on environmental benefits and assurance of acceptable risk.

Economic strategies include market-based incentives, public-private partnerships, and performance-based approaches. Project concepts and implementation emphasize operability, safety, and ease of the permitting process. Specialty services include design review, hazard definition, and risk assessments. As industry leaders in both environmental and LNG consulting, ICF creates a seamless interface between environmental and safety requirements and facility design and operation.

## Featured Solutions

**Comprehensive LNG Project Review: Financial, Design, Environmental, and Safety and Security Management.** ICF reviewed and managed three large-scale multinational LNG projects for the Government of The Bahamas. ICF conducted technical reviews of environmental impact assessments and developed and implemented environmental management plans, safety and security plans, and heads of agreement for LNG projects. We also evaluated the expected level of reliability for LNG project design alternatives in Puerto Rico. We framed and analyzed policy issues and options for consideration by government decision makers, reviewed LNG project proposals, and provided market assessments and fee appraisals related to LNG projects.

**LNG Import Facilities.** ICF has provided technical services for all of the existing LNG import facilities and more than two dozen of the proposed new LNG facilities. Our preliminary design work resulted in enhanced safety, performance, and cost savings. ICF prepared resource reports 1, 11, and 13 for the U.S. Federal Energy Regulatory (FERC) applications for several proposed LNG facilities. In addition, we have reviewed the environmental evaluation from the standpoint of facility design.

**Environmental Impact Study of Deep Water Ports.** ICF staff analyzed the onshore industrial, economic, and environmental impact of constructing and operating a deep water port in five locations: Machias (Maine), Sandy Hook (New Jersey), Delaware Bay (Southern New Jersey), the Mississippi Delta (La Fourche, Louisiana), and Freeport (Texas) on behalf of the Council on Environmental Quality.

**LNG Project Alternative Identification and Assessment.** ICF evaluated several LNG project alternatives for the Chevron-Texaco West African Pipeline Project. We conducted five separate environmental impact assessments for this multinational natural gas development project. The project may expand to include LNG infrastructure.

**LNG Peakshaving Facilities.** ICF provided consulting services for more than half of the peakshaving facilities in North America, including design, design review, code compliance, safety audits, security training, accident investigation, and litigation support.

**LNG Community Relations.** ICF has supported numerous projects with informational activities; including presentations, open houses, community forums, and regulatory hearings. ICF has played a significant role in code development and regulatory acceptances.

**LNG Issues.** ICF has been in the forefront of evaluation and technologies to prevent or mitigate problems that characterize or are unique to LNG activities. Vaporization of LNG requires heat (energy) to convert the cold liquid to warm vapor. “Free” heat from sea water or air appears to be an economic option but requires facilities that would have environmental impacts. Industrial waste heat is desirable but creates an interdependence that affects reliability. ICF has been deeply involved in the evaluation of existing technologies and innovations to reduce environmental impact while preserving free heat economics.

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## About ICF International

ICF International (NASDAQ: ICFI) partners with government and commercial clients to deliver consulting services and technology solutions in the energy, climate change, environment, transportation, social programs, health, defense, and emergency management markets. The firm combines passion for its work with industry expertise and innovative analytics to produce compelling results throughout the entire program life cycle, from analysis and design through implementation and improvement. Since 1969, ICF has been serving government at all levels, major corporations, and multilateral institutions. More than 2,500 employees serve these clients worldwide. ICF’s Web site is [www.icfi.com](http://www.icfi.com).

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