

Emergence of small-scale LNG reloading markets in Europe: market failures, regulation, perspectives

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Overview

Small-scale LNG is a nascent market in Europe and in Asia, propelled by the growing environmental pressure to switch to alternative fuels for marine propulsion, including LNG, and by the growing order book of LNG-fuelled vessels. Small-scale LNG objectives can be divided into two main categories:

- Compensating the absence of a gas grid, which leads to substituting LNG transport by truck or by ship to transport through the grid when such a grid is not available. This includes LNG as a feedstock, LNG as a fuel for industry, and LNG-to-power,
- Responding to environmental concerns, especially with the increase in number and surface of Emissions Control Area, in which high-sulphur fuel oil use is banned. Substituting oil with LNG as a marine fuel reduces GHG emissions, but the main interest is the drastic reduction in pollutant emissions.

As a nascent market, it needs particular attention in designing a regulation and in setting tariffs that address potential market failures to which small-scale LNG market are prone, namely:

- Incomplete markets, i.e., the failure of markets to form or to function efficiently, due to high fixed costs or policy uncertainty. This can result in inefficient provision of goods, or of price information.
- Externalities unaccounted for, i.e., producing, or consuming goods that may impact third parties outside the transaction. This can be positive or negative, but not priced in transactions unless interventions are made.
- Excess market power, i.e., natural monopolies often formed by infrastructure providers which can have market power. This may lead to less goods consumed than socially optimal, and/or lead to excess profits.

We studied a large selection of European and Asian LNG terminals with their applicable regulatory regimes, risk-sharing mechanisms, and tariff-setting mechanisms, to evaluate if they correctly address potential market failures and successfully foster the emergence of a liquid small-scale LNG market in their respective catchment areas.

From this study, we derived guidelines on small-scale LNG regulation, facilitating the emergence of a market with sufficient liquidity.

Methods

FTI Consulting thoroughly investigated small-scale LNG regulation in Europe and in Asia, with regulatory research, interviews of LNG industry experts. We examined:

- Technical characteristics of LNG Terminals, which de facto can limit products offered by the LNG terminal,
- Regulatory frameworks for large scale LNG services and small-scale LNG reloading, including, among others, the reasons and effects of Third-Party Access exemptions, the cost-recovery mechanisms in place, cross-subsidization between activities, risk-sharing mechanisms, and regulatory incentives for operators,

- Commercial frameworks of these LNG terminals, including, among others, products offered apart from unloading and regasifying LNG, unbundling of products or not, terminal access rules and ease of access, allocation of primary and secondary reloading capacity, actual tariffs for standard small-scale vessels,

On this basis, we assessed whether, in their context, these frameworks were facilitating or hindering the emergence of a market for small-scale LNG reloading.

Results

The study is still ongoing. FTI Consulting has been able to categorize different approaches used to foster and maintain an LNG small-scale markets.

Our main findings are:

- Obligation to subscribe regasification capacity when unloading may not reflect the specificities of SSLNG ship reloading,
- Allocation mechanisms are heterogenous and specific SSLNG codes mainly absent, favouring bilateral discussions with experienced customers,
- There is no uniform approach to set tariffs, which account for differing views on the scope of revenues and market competition to be considered,
- There are varying views and approaches with regards to implicit cross-subsidisation between main LNG terminal and SSLNG services,
- Risk exposure and incentivization vary but reflect one country's regulatory approach towards potential market failures.

Conclusions

Careful market and regulation design is required when introducing a new activity. Small-scale LNG reloading activities can be introduced by various regulations. We conclude that maturity of the local demand should be thoroughly assessed to evaluate the need for a regulatory push towards an efficient market, like e.g., in Spain or in Singapore, or if minimal intervention is more adequate, like e.g., in the United-Kingdom, where Terminals are fully exempted for TPA.

FTI Consulting's work give an analytical view of global past experiences and economic tools to assess which regulation should be the more in line with the state of the market.

References

Sources: National Regulators official documents; National Legislative documents; Terminal Operators' access codes, User Agreements, Framework contracts; European Commission works; CEER research; FTI Consulting in-house knowledge from regulation designs; Industry experts' interviews.