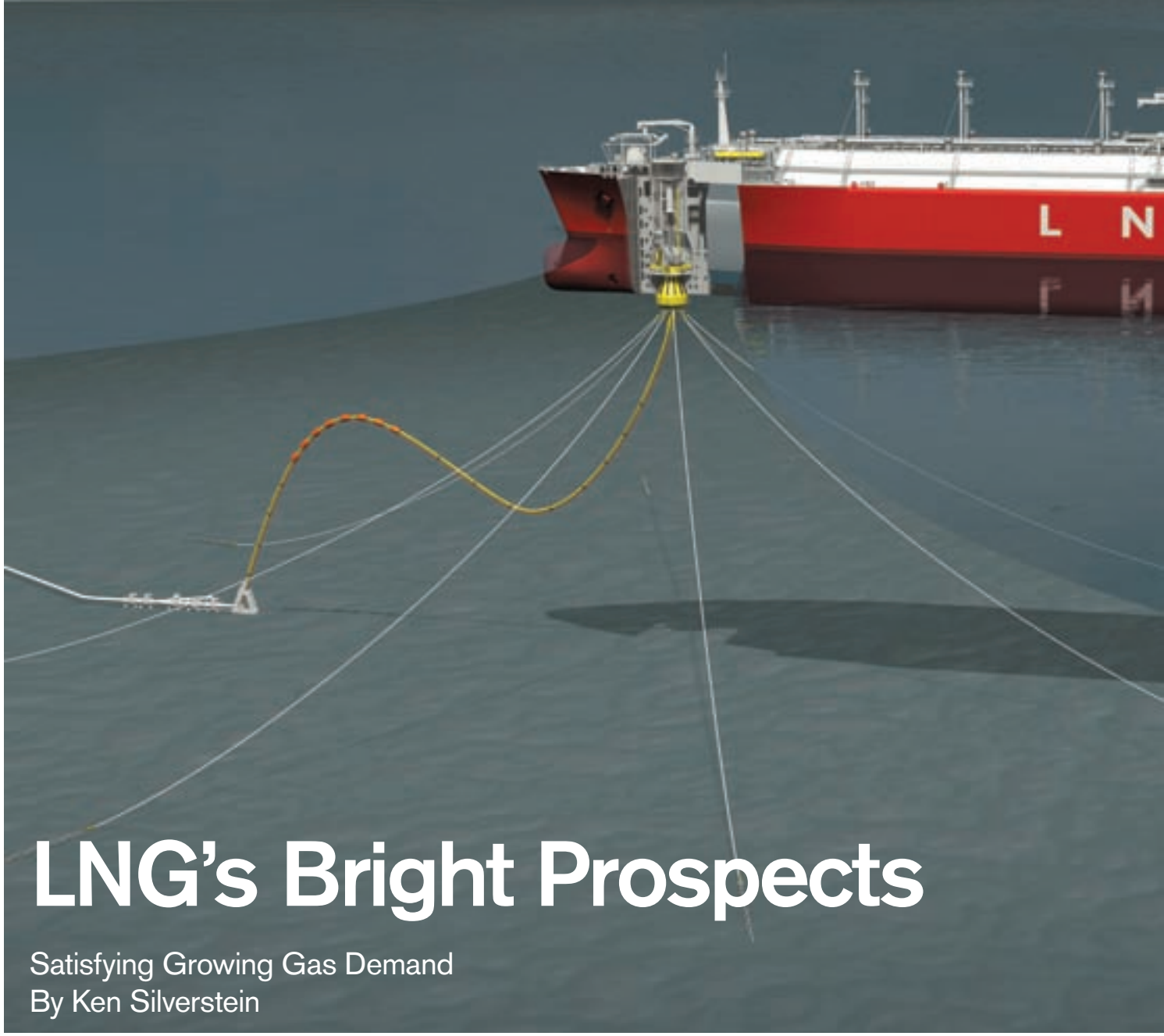


LNG's Bright Prospects

Satisfying Growing Gas Demand

By Ken Silverstein

LNG has a grand future. The demand for natural gas exceeds the available supplies and the shortfalls must be recouped. Toward that end, a lot of liquefied natural gas import terminals are on the drawing board. And while only a handful will actually get built, the additional infrastructure allows the United States to expand and diversify its natural gas supply.

A 21 percent gap is projected between the demand for natural gas and the supply by the year 2030. Enter LNG, which cools natural gas to a temperature of minus 260 degrees Fahrenheit until it becomes liquid and occupies 1/600 of its gaseous volume. Right now, LNG provides about 2.8 percent of this nation's natural gas, a figure that the U.S. Department of Energy is predicting to increase to 16 percent by 2030. That equates to 7 to 9 additional LNG re-gasification terminals by 2025, according to a 2003 report by the National Petroleum Council.

"LNG allows the United States to meet the growing demand for natural gas in an environmentally sound and safe way," says Bill Cooper, executive director of the Center for LNG in Washington. "We currently produce 83 percent of our natural gas domestically. We import between 12 percent and 14 percent from Canada, whose contributions will only fall. Demand will only rise and we have to fill the gap."

At present, five LNG import facilities exist in the United States and one in Puerto Rico. More will be necessary if LNG is to play a bigger role. Roughly 40 new re-gasification plants have been approved by federal regulators, although no more than a dozen will be built. A few will be ready in the coming months and years.

While the Gulf State region along with New England and California are all prospects for new development, it is the South that is the most welcoming. It is already home to two facilities located in Elba Island, Ga. and Lake Charles, La. Moreover, the additional plants planned for the region would be strategically placed near the Gulf of Mexico as well as key pipelines.

Sempra LNG, for instance, embarked on its first LNG endeavor in late 2000 in Baja California, Mexico. Two more will be up-and-running next year in Louisiana and Texas. As the steward of shareholder money, it says that each project is carefully evaluated.

"Sempra's success is the result of understanding early market conditions and then correctly analyzing them," says Darcel Hulse, CEO of San Diego-based Sempra LNG. "We have selected sites that can get permitted and that are as near to the market as we get.

Excelerate Energy CEO
Rob Bryngelson

Excelerate Energy, a liquefied natural gas importer and marketer, in December plans to begin operating a deepwater LNG facility, in the diagram to the left, that will receive shipments from vessels that convert the shipments to natural gas that is then piped 13 miles to the mainland. The company believes such a system, the first of its kind on the East Coast, will allow it to supply gas-hungry consumers without raising community concerns about the safety of large onshore LNG receiving terminals.

IMAGE AND PHOTOS COURTESY OF EXCELERATE ENERGY

We also have a solid approach to risk management. We do not go forward until we have the supply agreements in place."

Plentiful Risks

The risks are plentiful and notable in that expensive assets might not operate at capacity. But, ChevronTexaco, ExxonMobil and Shell have invested billions all over the world in liquefaction plants, ships and re-gasification facilities. With the global demand for natural gas anticipated to be in the 2.6 percent range until 2030, those companies are expecting their LNG ventures to pay off in a big way.

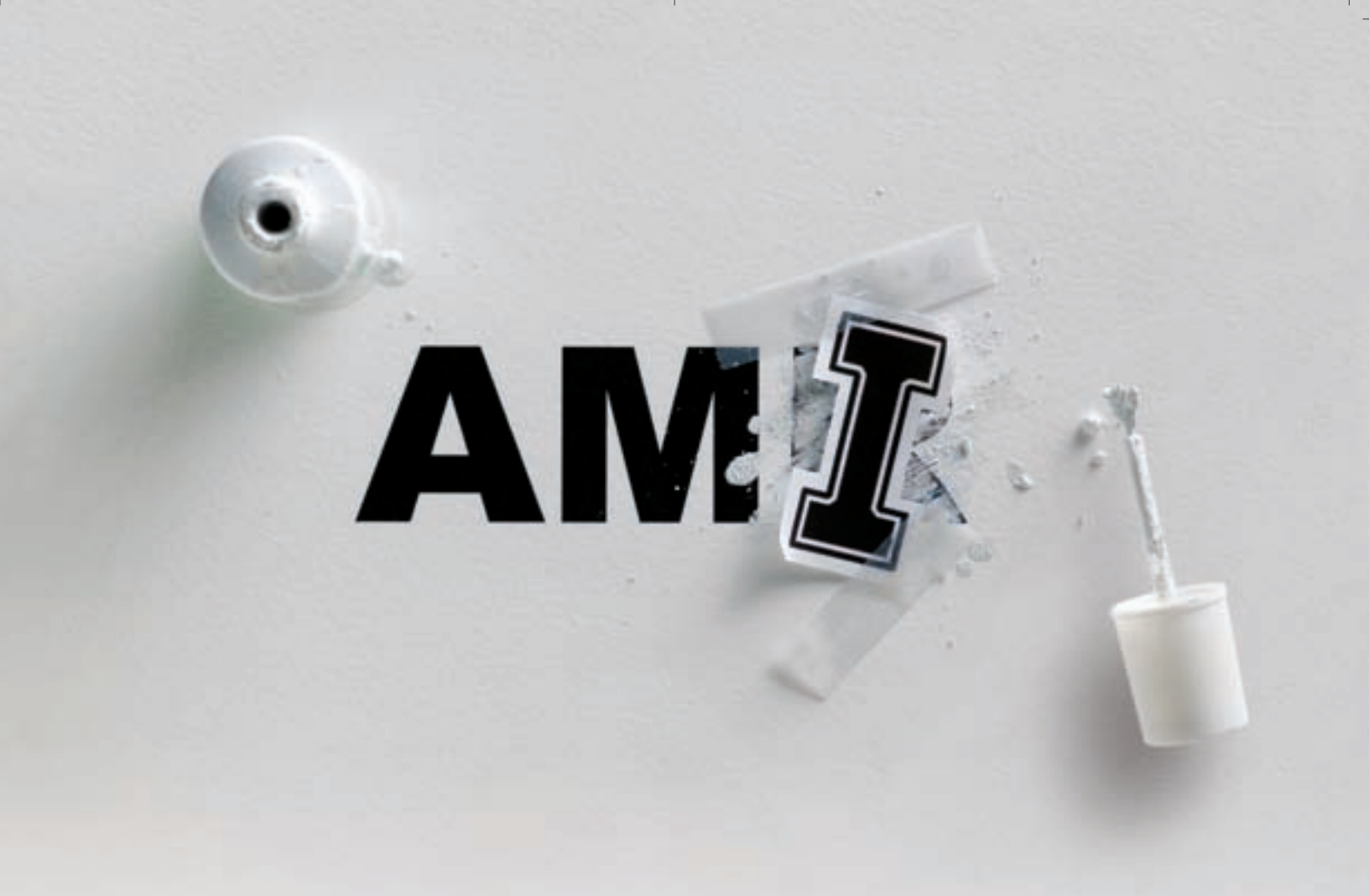
Despite the call for more LNG terminals, they have been a tough sell. Neighborhood groups worry about explosions. Environmentalists are also concerned, noting that the pipelines connecting to the terminals would be placed in ecologically sensitive areas. At the same time, the United States will be competing with others nations for limited LNG resources while it would be relying on potential unstable nations such as Libya and Algeria for supplies.

Those fears have derailed some projects, particularly off the coast of California. Calpine backed out of building a plant in Eureka, Calif., because the local community and its leaders were adamantly opposed. The power company said that it values community relations and didn't want to operate under such conditions.

The permitting process is rigorous and requires more than 40 approvals from state and federal agencies. At the federal level, lawmakers have determined that more LNG projects are a must and have directed the Federal Energy Regulatory Commission to streamline siting protocol. Delays may be in the offing. But, FERC says that any interruptions are not because of it, pointing out that it has shaved six months off its permitting procedures.

In any event, federal regulators advise would-be participants to meet early on with all the stakeholders to resolve differences and before they file any papers. Regulators will want to know if projects are economically feasible and whether expected capacity levels are contracted in part or in whole before construction. But, they are more concerned with the effect that any import terminals would have on sea life, air emissions and the security of the general public.

"On the siting side, the NIMBY issues are so difficult," says Catherine Little, partner in the international law firm of Hunton & Williams in Atlanta. "We have increasing tensions in this area. I see these things as getting more and more heightened. To work out these issues, it will have to be done out on a site-by-site basis."



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New Quick Technology

Consider the Northeast Gateway off the shores of Boston, which is expected to be operational by winter: Tankers serve to deliver and re-gasify the LNG, with no part of the process actually done on shore. The gas is then transported using a buoy system that is hooked into flexible pipes. Those lines will run under the ocean floor and across the Massachusetts Bay before they connect directly to the New England Grid.

Excelerate Energy, which owns the "midstream" project, has committed to using new technologies and procedures on its vessels that will minimize air emissions and improve water quality. As such, it was able to win relatively quickly federal and state permits.

"We have a technology we can apply quickly and to other natural gas markets that other LNG providers may not be able to serve," says Excelerate Energy CEO Rob Bryngelson. "We are offshore. Through our dockside technology, we can build a gas port in about a third of the time and at substantially less cost than a traditional facility. Each ship is a floating re-gasification terminal with the flexibility to move cargo around the world."

Besides Boston, it also has a facility in Northern England, South America and the Middle East. The goal is to build a global portfolio of LNG facilities and to have as many pricing points as possible. If any one location starts seeing high natural gas prices, Byrngelson says that the company is agile and well positioned to take advantage of it.

The United States, in fact, will be bidding for limited resources with other nations. Currently, Korea and Japan are the top importers of LNG with this country in third. France and Spain are next in line. And with the economies of China and India expected to blossom, they will require ever-increasing amounts of LNG in the future.

Bearish analysts warn that those who need the LNG the most will pay more. In essence, those with the LNG supplies will direct their ships to head where they can get the highest price. More than likely, that will be to regions such as Asia where the price of LNG is tied to oil indexes, and not where it is tied to natural gas indexes, as it is in the United States.

While the future prices of those two commodities will often move in unison, oil is now comparatively more expensive. The implication is that producers will earn greater profits by selling to Japan, China and India. By extension, terminals in this country would be underutilized and underperforming.

"If a particular market has a real need for it and it is willing to pay a higher price, then it will draw supply away from the United States," says Jay Kelly, partner with Vinson & Elkins' energy practice in Houston. "The LNG industry is not a 'field of dreams' whereby if you build it, they will come."

Suppliers Challenged by Demand

The LNG industry has doubled in size since the middle of the 1990s while the number of exporting countries during that time frame has increased from 8 to 13, according to the energy consultancy of Wood McKenzie. Oman, Nigeria, Qatar and Trinidad emerged as new suppliers in the mid-to-late 1990s and Egypt joined the fold in 2005. And with several projects under construction, LNG supply will continue to increase in scale and diversity. By 2010 four more countries – Equatorial Guinea, Norway, Russia and Yemen – are expected to become LNG exporters.

But, John Meagher, head of LNG research for Wood McKenzie in Edinburgh, Scotland, questions just how quickly future supplies can be developed. The expansion of LNG is influenced by many factors such as gas exploration success, LNG marketing success, government policy, fiscal regimes, corporate positions and geopolitics – all of which are uncertain and subject to change, he says.

The buoy, above, is used to help anchor the LNG vessel and its network of pipelines to the mainland.

Sempra LNG says that it can appreciate all of the concerns but that each impediment can be overcome. It says that before it would build any receiving terminal, it makes sure that it has the underlying contracts in place to fill the facility to capacity. Its Baja plant in Mexico, for example, is taken up in full by Shell and BP of Indonesia, all under long-term contracts. After those oil companies deliver the LNG to the terminal, Sempra then sells it into the market.

Sempra also acknowledges the "short-term" incongruities between prices in the United States and Asia. But, it insists that as nations become more reliant on LNG, those differences will evaporate – just as they do with every other commodity. As the transition from a regional marketplace to a global one takes place, a universal price will emerge.

"Some people say the United States is the market of last resort because it won't pay as much," says Sempa's Hulse. "They are also saying the United States will not be able to compete. But, LNG will act as other commodities do and adjust to the laws of supply and demand. As the infrastructure is developed and as more production occurs, it will become a global commodity without distinctions by regions."

Clearly, the demand for energy will only increase, particularly as many underdeveloped countries grow their economies. The long run may hold out hope for fuel alternatives that include more green energy or clean coal opportunities. In the coming years, though, the United States and others around the world must address the natural gas supply imbalance.

That necessitates more investment all along the LNG supply chain, from production to transportation to re-gasification, experts say. The response is attracting billions into the LNG arena. The risks involved, to this point, appear to be well considered.

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