



HOW LNG AFFECTS LOCAL MARKETS? LESSONS FOR ALASKA FROM WESTERN AUSTRALIA

JANUARY 2015

Contents

- 1 Point of departure
- 2 Lessons from Western Australia
- 4 Implications for Alaska
- 5 About us

POINT OF DEPARTURE

The Alaska liquefied natural gas (AK LNG) project will reshape Alaska's gas market. In a state that consumes ~250 million cubic feet a day (mmcf/d), AK LNG will produce 2.5 to 3 billion cubic feet a day (bcf/d) for export and local use. Experience shows that LNG projects impact local markets profoundly. Often, they supply large volumes to the domestic market, but more importantly, they create a connection between local and foreign markets, thus changing the incentives and expectations of the participants in the local market. Producers have a new outlet for their gas and weigh whether to sell it locally or abroad; consumers and sovereigns worry that exports might take priority over domestic markets, jeopardizing access to competitively priced gas for the local economy.

In assessing these impacts, Alaska can look at how LNG exports have affected or will affect other jurisdictions. Studies for the US Department of Energy have shown that LNG exports from the Lower 48 will raise prices, although the magnitude of those increases will depend on many factors. Elsewhere, the press has focused on Eastern Australia where three LNG projects are being built with a total capacity of ~25 million tons per annum (mmtpa), slightly more than AK LNG's 17-18 mmtpa. In E. Australia, prices have risen and gas buyers complain that they cannot sign long-term contracts for gas.

These experiences suggest that LNG exports could raise prices for Alaskans. Yet, these case studies are not the proper analogs for Alaska. First, in both areas, LNG is coming from the same resources that feed the local market—as such, there is a stronger link between them. (In the Lower 48, LNG exports are even priced based on local prices.) Second, E. Australia started LNG exports in late 2014 / early 2015, while LNG exports have yet to start from the Lower 48. Without the benefit of hindsight, we might see only part of the picture or rely too much on models rather than facts. And third, LNG sales from E. Australia outstripped the effort to find and produce gas (as evidence, the project with the most developed resource base is selling gas to the other two projects so they can meet their contractual obligations) —this, again, is unique.

LESSONS FROM WESTERN AUSTRALIA

Instead, we would suggest that Western Australia offers a more compelling analog. Western Australia (WA) has exported LNG since 1989 and has dealt with these issues for a longer time than most jurisdictions—first with bilateral agreements and then a firm policy requiring that LNG projects sell 15% of their gas to the local market. Here are the five lessons that Alaska could learn from WA:

1. There is no a priori relationship between export and domestic prices.

Intuition suggests that domestic and export prices will correlate and converge (allowing for a difference in investment costs); in practice, the link is complex, and there has been no consistent relationship between domestic and export prices since 1989. Export prices have risen over time, albeit irregularly, reflecting changes in the price of oil, in contract terms and in the exchange rate between the Australian and US dollars (which raised the value of US\$-denominated LNG when expressed in Australian dollars). By contrast, domestic prices were falling until about 2005.

The stronger correlation post 2005 is plausibly linked to an external factor that affected both domestic and external prices: the boom in commodities that pushed up oil and oil-linked LNG prices, led to a rise in gas production costs, and created additional demand for gas from Australia's mining sector. In this tighter market, even companies with no access to LNG exports, like Apache, secured higher gas prices for new fields. What matters is context—supply and demand, regulation and market structure.

2. Just because exports are possible does not mean that all producers will prefer exports to local markets.

The gas market in WA expanded based on gas from the North West Shelf (NWS) project (domestic gas started in 1984 and LNG exports in 1989). But the next tranche of gas has come largely from non-NWS sources, which supplied 50% of the market in 2013 (up from less than 5% in 1989). Some of these companies have LNG aspirations, but others not; for example, Apache, the second largest operator in WA after NWS, first participated and then sold its interests in an under construction LNG project. LNG has a capital demand and risk profile that many companies avoid. Just because exports are possible does not mean they are everyone's preferred option.

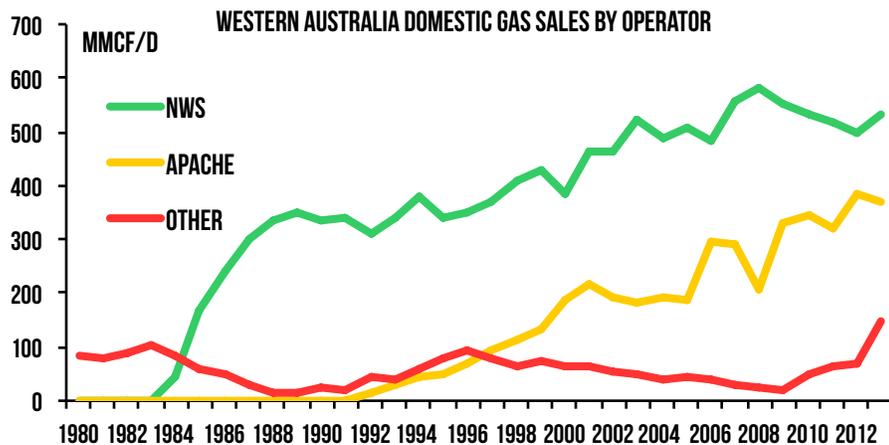
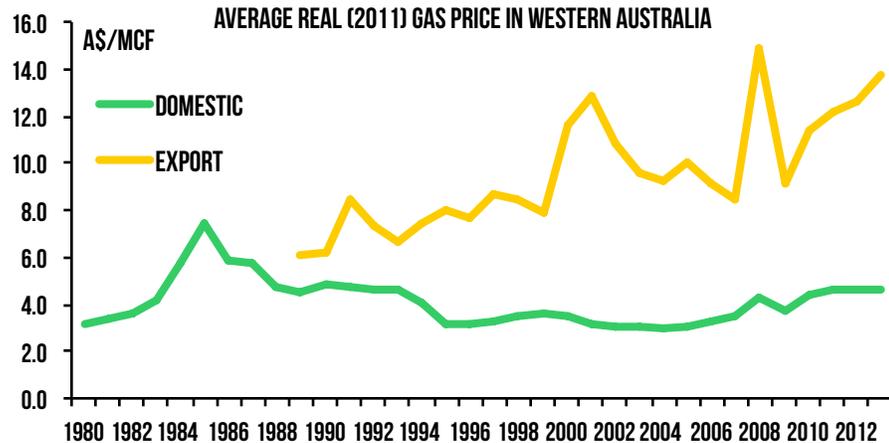
3. In the 1980s, WA's reservation policy created an overhang that depressed prices and stymied investment.

In an effort to secure enough gas for the local market, the state bought too much of it from NWS. The state agency that signed the contract had to pay millions in take-or-pay penalties, while the supply overhang led to a 34% drop in real prices from 1985 to 1990. Low prices stymied investment, and NWS ended up with a 96% market share in 1989 as other suppliers were squeezed from the market.

4. The domestic reservation policy is leading LNG projects to pay attention to the local market—but markets still matter.

The (under construction) Gorgon LNG project said that it was only planning to supply the local market because it had to; but Gorgon is staggering its sales contracts over time to avoid flooding the

market. Wheatstone LNG is building a processing plant for local gas but has not announced any sales deals. Pluto LNG will sell gas to the local market only if it is commercially viable—and it has a five-year grace period after LNG starts flowing to test commerciality (and to agree with the state on what “commerciality” actually means). In sum, the domestic reservation policy is leading project developers to pay attention to the local market—but domestic sales are still subject to market forces.



Sources: (1) Government of Western Australia, Department of Mines and Petroleum, Quantity and Value 2013; Australian Bureau of Statistics, Consumer Price Index; (2) Australian Petroleum Production & Exploration Association (APPEA), Annual production statistics 2013

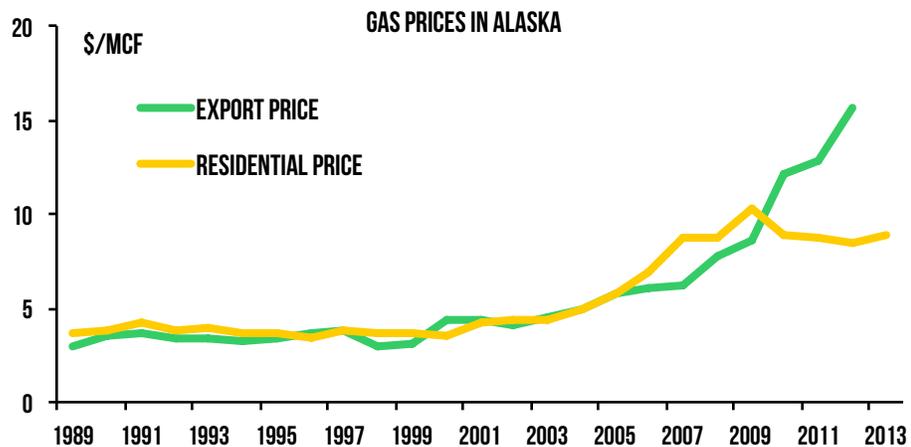
5. Policy and advance planning is no substitute for close oversight and diligent regulation. LNG creates unique regulatory challenges. Exports often require gas aggregated from many fields, creating a need for regulators to ensure a fair balance between aggregation and a company's lease terms obligations. Joint venture marketing—which happens often in LNG projects—can create too much seller concentration in the smaller, local market. A domestic reservation policy leads projects to focus on local markets, but it can also create tensions about whether sales are “commercially viable,” and it can dissuade competitors from investing to

bring new gas into a market that could be flooded with LNG-linked domestic gas. And a domestic reservation policy does little to address problems such as high concentration of buyers and sellers, lack of transparency and liquidity, insufficient investment in infrastructure, and so on.

These challenges call for smart and continuous regulation. As such, rather than rely on a crude policy tool—a domestic reservation policy—WA is strengthening other options: better market instruments, more competition, separate rather than joint marketing of gas, and so on. Rather than ask “how do we balance local and export markets,” WA is asking “how do we develop a better market given that LNG exports exist and are possible.”

IMPLICATIONS FOR ALASKA

Alaska’s experience confirms these lessons. First, Alaskan prices have sometimes correlated with exports, and other times they have not, depending on whether market participants and the Regulatory Commission of Alaska (RCA) have agreed that prices should be linked to the Henry Hub marker in the Lower 48. Second, prices in the Cook Inlet in recent years have been driven by local market forces, not export prices. And third, the entry of smaller players like Hilcorp underscores that even export-oriented areas can attract players who are chiefly focused on the local market—and that the activity of such players is a key determinant for local prices.



Source: US Department of Energy, Energy Information Administration

WA should also act as a caution, however. It is tempting for Alaska to make sure that local demand is met before LNG exports; but there is always a risk that in doing so, the local market could be flooded to the point that new entrants could be dissuaded from exploring for and producing gas. This is exactly what happened in WA, and it was the unintended consequence of a policy with a strong domestic-market bias. As such, the final lesson from WA is the most important: Alaska should be thinking about a broad policy toolkit to encourage functioning markets rather than focus on the narrow question of how AK LNG will affect local prices.

ABOUT US



Janak Mayer. Before co-founding enalytica, Janak led the Upstream Analytics team at PFC Energy, focusing on fiscal terms analysis and project economic and financial evaluation, data management and data visualization.

Janak has modeled upstream fiscal terms in all of the world's major hydrocarbon regions, and has built economic and financial models to value prospective acquisition targets and develop strategic portfolio options for a wide range of international and national oil company clients. He has advised Alaska State Legislature for multiple years on reform of oil and gas taxation, providing many hours of expert testimony to Alaska's Senate and House Finance and Resources Committees.

Prior to his work as an energy consultant, Janak advised major minerals industry clients on a range of controversial environmental and social risk issues, from uranium mining through to human rights and climate change. He has advised bankers at Citigroup and policy-makers at the US Treasury Department on the management and mitigation of environmental and social impacts in major projects around the world, and has undertaken macroeconomic research with senior development economists at the World Bank and the Peterson Institute for International Economics.

Janak holds a BA with first-class honors from the University of Adelaide, Australia and an MA with distinction in international relations and economics from the Johns Hopkins School of Advanced International Studies (SAIS).



Nikos Tsafos. Nikos Tsafos has a diverse background in the private, public and non-profit sectors. He is currently a founding partner at enalytica. He previously spent 7 ½ years at PFC Energy, where he advised the world's largest oil and gas companies on some of their most complex and challenging projects; he also played a pivotal role in turning the firm into one of the top natural gas consultancies in the world, with responsibilities that included product design, business development, consulting oversight and research direction.

Prior to PFC Energy, Nikos was at the Center for Strategic and International Studies (CSIS) in Washington, DC where he covered political, economic, and military issues in the Gulf, focused on oil wealth, regime stability and foreign affairs. Before CSIS, he was in the Greek Air Force, and prior to his military service, Nikos worked on channeling investment from Greek ship-owners to Chinese shipyards.

Nikos has also written extensively on the domestic and international dimensions of the Greek debt crisis. His blog (Greek Default Watch) was listed as one of "Europe's Top Economic Blogs" by the Social Europe Journal, and his book "Beyond Debt: The Greek Crisis in Context" was published in March 2013.

Nikos holds a BA with distinction in international relations and economics from Boston University and an MA with distinction in international relations from the Johns Hopkins School of Advanced International Studies (SAIS).

*en*alytica

