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## Asian LNG Demand: Key Drivers and Outlook

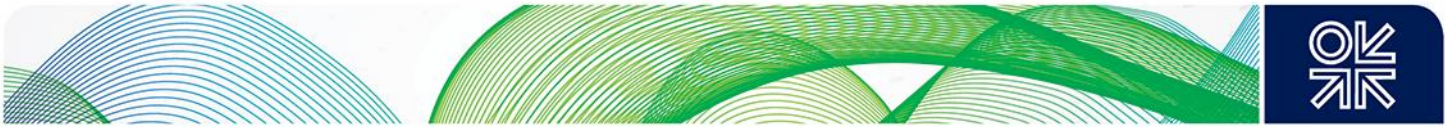
*Executive Summary*  
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The LNG Industry has long regarded the Asian markets of Japan, South Korea, Taiwan, China and India as high growth importing markets, willing to sign long term contracts with price terms linked to crude oil prices. The rebound in Asian LNG demand in 2010, following the post-financial crisis year of 2009, re-affirmed this paradigm with LNG markets further tightening following the Fukushima tragedy. The signal for new LNG supply projects could not have been clearer in 2010 and 2011.

While the LNG supply projects triggered by such high demand growth and price signals were being constructed however, Asian demand for LNG began to wane. This appeared to be partly a consequence of mild winters but also LNG import prices and a general regional economic slowdown, perhaps led by China, also contributed. This paper seeks to provide a 'ground level' understanding of the existing, emerging and potential Asian LNG markets and highlights data sources from in-country government departments, often overlooked from a European or North American perspective.

In both the low and high cases considered in the paper, the dominant markets, in terms of absolute volumes, are Japan, South Korea, China and India. By 2030 the total LNG import volumes from all countries considered ranges from 385 to 530 bcm/y, compared with the 2015 total of 238 bcm/y. The annual average aggregate growth in LNG demand is 3.3% (low case) and 5.5% (high case). In terms of variances between 'low' and 'high' cases China and Japan dominate the picture between 2015 and the early 2020s. In the case of China, the uncertainties relate to gas demand growth in the economic 'new normal' where government policy will be crucial in establishing a more material role for gas in the power sector (for CO<sub>2</sub> and particulate pollution abatement reasons) and in providing access infrastructure to enable growth in the residential and industrial sector. The future LNG requirement is also however subject to uncertainties in the gas supply mix; including conventional and unconventional domestic gas production, the scale of future pipeline imports from Turkmenistan and Central Asian and Russian pipeline gas from East and West Siberia. With Japan the main uncertainty is the pace and extent of the start-up of nuclear power plant, reducing the requirement for LNG imports and achieving long term energy efficiency goals.

In the case of Taiwan and South Korea, the scale of future LNG imports depends on uncertain economic growth prospects and energy mix policy. India poses a specific problem. The lack of a clearly defined role for gas in national energy policy, a 'muddled' regulated pricing policy and no clear plans for transmission system development make it difficult to project demand for gas and LNG in this potentially large market. With Thailand, Indonesia, Malaysia and Vietnam a major uncertainty is the future decline of domestic production as exploration prospectivity declines due to province maturity, often exacerbated by low regulated domestic pricing policies. While the future scope of LNG imports is difficult to ascertain this is likely to be an increasingly widespread dynamic and an important source of new global LNG demand in markets where natural gas already has a strong presence. The same issue applies to Pakistan and Bangladesh but with the added complication of delays to building import infrastructure due to poor investment frameworks, governance or end user credit-worthiness. This



highlights an opportunity for future LNG supply projects, but it requires a markedly more pro-active marketing stance and credit-risk management capability than has traditionally been the case in the LNG business. The use of floating LNG regas units however is an added incentive to ensure that LNG supplied is paid for.

The picture presented in this paper is one of LNG having to shed its mantle of a premium fuel whose import price is linked to that of oil and 're-market' itself as fuel which can contribute to a lower carbon future, by displacing coal in national energy mixes, and equally importantly reducing particulate emissions. This however calls for a radical renaissance in marketing by upstream LNG producers and strenuous efforts in cost reduction through competition in the liquefaction equipment sector.

It is hoped that the paper provides insight and at least a framework for analysing and monitoring these markets which, if not currently deemed to offer the high levels of future LNG demand anticipated from the standpoint of the early 2010s, will nevertheless constitute a key element of the global LNG balance for the foreseeable future. As such they will significantly impact the fundamentals and pricing dynamics of the increasingly 'connected' global regional gas markets.