

KEY MESSAGES

1. Only with strong policy drivers will it be possible to achieve the desired target of doubling the share of natural gas in China's energy supply mix within the next ten years. The challenge is in the downstream sector. In most parts of China, gas will find it hard to compete against coal in power generation. In local gas distribution, much needs to be done to convert from manufactured gas and expand the gas distribution network, to improve the financial health of local distribution companies, and to introduce commercial marketing and management.
2. Reform of natural gas pricing and taxation policy is the best start. In a country like China where domestic gas reserves are limited and expensive, a good gas pricing policy has to be based on the consumers' willingness to pay. Government should leave market participants to agree on gas prices, and focus on effectively using taxation policies to encourage both the penetration of gas in end-uses and investment into the gas chain.
3. As the main purpose of developing the gas market is to reduce local air pollution mainly caused by scattered, low-altitude emission sources (e.g. residential heating and industrial boilers), the premium market for gas is with the replacement of fuels producing these emissions. To realise this premium, administrative measures like emission standards and restriction of fuel choice may be needed at the beginning, but it is only with the application of economic instruments like taxation, which favour gas over more polluting fuels, that gas demand increase can be sustained over the long term.
4. There are a number of benefits to developing decentralised power generation in urban areas through the deployment of a large number of medium-size ($\leq 50\text{MW}$) gas-fired generation units. Such a system would anchor the demand for gas, help to build a distribution network, provide the possibility of valorising the waste heat, and reduce urban pollution. The long-term future lies in even smaller units for combined heat and power or combined cooling, heating and power. But this would require changes in the energy supply of the cities concerned.
5. The development of a modern gas industry requires a number of indispensable elements including technical norms, standards for health, safety and environment, training of technical and commercial gas professionals and gas technology research and development ability. China should make sure that none of these indispensable elements constitutes a bottleneck. In particular, it should acquire domestic manufacturing and construction capacity of advanced end-use gas appliances and equipment.
6. In building long-distance gas pipelines and LNG terminals, a strong focus should be on developing end-use markets in correspondence with construction schedules

and the contracted arrival of natural gas. The alignments of interests and the allocation of risks/rewards across the value chain in a stable and transparent way are critical to the long-term success of these projects.

7. To raise the necessary funds to finance gas infrastructure building, China needs to enlarge the sources of financing, especially domestic ones. At the same time, it should minimise financing costs by reducing risks from the policy and regulatory sphere. Foreign investment and management skills are indispensable for swiftly developing a sizeable and modern gas industry, especially so in the crucial sector of local gas distribution. A coherent investment framework for private and foreign investment will be required.
8. A legal framework for the gas industry is indispensable. At this stage, China's legal and regulatory framework should focus on enabling investment rather than restricting it, while paying appropriate attention to a possible introduction of a third-party access regime at a future time.
9. The Chinese government should also go beyond the "project by project" approach by developing a coherent gas policy, to reflect the importance it attaches to natural gas and to address all issues related to the development of a gas industry. This could be achieved e.g. in the form of a "White Paper".
10. The challenges of developing a gas market in China are not confined to the gas sector. They concern a much larger number of actors and require policies that affect the national energy economy as a whole. The Chinese government should therefore integrate its gas policy into a national energy policy. A specialist energy department within the central administration is desirable, given the need for a co-ordinated energy policy in China.