Chapter 4

Policy Recommendations

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Compared to coal and oil, natural gas has various advantages, including an environmental benefit. However, natural gas is weak in some aspects such as in infrastructure availability and competitiveness in fuel price. Therefore, to realize the potential demand for natural gas, it is necessary to have a powerful political support.

The policy recommendations here are meant to help realize the potential demand for natural gas. Also, specific tasks by sectors are summarized at the end of this chapter.

1) Have clear policies on the promotion of natural gas use.

- **Set energy/electricity mix target.** It is necessary for the government to first clearly position natural gas in the medium- to long-term primary energy supply or power generation mix. Without these guidelines on how to expand the uses of natural gas in the medium to long term, companies will hesitate to make any investment, as this involves risks.
- **Formulate climate and environmental regulations** (i.e. promotion of lower carbon energy). To make use of the advantages of natural gas over other fossil fuels, environmental regulations ought to be strengthened. For instance, regulations that encourage the growth of low-carbon energy sources can promote the use of natural gas.

2) Enhance economical competitiveness of natural gas.

- **Eliminate energy subsidies.** Price is an important factor in the selection of an energy source, particularly in the industry sector. In many final consumption categories, natural gas competes with oil products. If subsidies were adopted for oil products, the price-competitiveness of natural gas would be eroded. Subsidies would also distort market mechanisms. Therefore, all subsidies for energy prices must be removed by phases. Eliminating these subsidies will help achieve the potential demand for natural gas as well as reduce the government's financial deficits.
- **Set mechanisms to institutionalize the environmental value of natural gas.** Although natural gas is superior to other fossil energy sources from the environmental viewpoint, many countries have not appropriately reflected this in prices. Adopting a mechanism that reflects the difference in environmental performance in prices will raise the competitiveness of and demand for natural gas.

3) Support the development of supply infrastructure (LNG receiving terminal, pipeline, etc.).

- **Help elicit residential and commercial demand.** The natural gas supply infrastructure requires an enormous investment. Therefore, it is difficult for investors to decide on an investment unless a certain level of demand for natural gas is secured. In this sense, one of the ideas is to implement the conversion to natural gas in the residential and commercial sector under the leadership of the current administration.
- **Dialogue with stakeholders to gain acceptance.** Any construction of an LNG receiving terminal or a pipeline may face opposition from residents around the terminal or along the pipeline because of safety concerns. To cope with such a movement, it is necessary to engage in dialogues with the affected people.
- **Present a clear regulatory framework.** Before building a natural gas supply chain such as an LNG receiving terminal and a pipeline, it is necessary to clarify the regulations on their construction and operation beforehand. Those planning to set up city gas businesses or sell natural gas to households would also need to be aware of and abide by existing regulations.

- **Consider financial support** (e.g. low interest rate loan, tax benefit). Building a natural gas supply infrastructure and setting up a city gas business will require enormous investments. Therefore, realizing the potential demand for natural gas poses huge financial challenges. This may require operators to solicit financial support such as in terms of low-interest loans from a domestic or overseas public financial institution or a preferential tax benefit for the construction of an LNG receiving terminal or a pipeline.

4) Build human capacity.

- **Bring in competent regulators.** In the supply of natural gas, governments must create ordinances that can regulate and manage businesses, set technical standards for safety, and monitor the market, including prices. Therefore, it is essential to have competent experts and market regulators whose scope includes:
    - ❖ Development of laws and regulations.
    - ❖ Development of safety (technical) standards.
    - ❖ Control and monitoring of market (i.e. enforcement of regulations, change of price)
    - ❖ Gas business operation (commercial and technical operations)
    - ❖ Gas utilization technology.

Table 4.1. Factors Affecting the Increase in Natural Gas Demand

Sector	Political factor	Economical factor	Social factor	Technological factor
Cross sectoral	• Insufficient policy to promote natural gas use (e.g. energy mix policy, air/GHG emission regulation) • Insufficient regulatory framework for commercial and technical operation of gas business • Insufficient human capability to develop necessary policies and	• Competition with other forms of energy • Existing energy price subsidies – Hidden true cost of energy – Uneven competition • No mechanism to internalize • Large upfront cost of supply infrastructure	• Insufficient knowledge for natural gas • Local acceptance for natural gas-related infrastructure (including land acquisition, landscape, problems of fournd	• Lack of technologies, know-how, engineers • No technical/safety standard for natural gas use
Power generation	• Contradiction with policy to protect domestic coal industry • Contradiction with policies for other power sources	• Price competitiveness against coal • Price competitiveness against cost-reducing renewable energy	-	• Lack of technology and industry for O&M of GPP
Industry	• Less incentive for replacing old equipment due to lax EE&C policy	• Secure critical minimum demand to make gas business feasible • Too far from primary supply location to be economically feasible • Less capability of small & medium size eneterprises and people for investment • Competition with electricity	• Low awarness of benefits of natural gas use	• Lack of technologies, know-how, engineers for city gas business • Lack of supply of natural gas utilization equipment
Residential & commercial	• Insufficient regulatory framework for city gas business		• Low awarness of benefits of natural gas use • Concern for gas safety	
Road transportation	• Absence of promotion policy • Absence of regulation	• Small number of natural gas fueling station • Competition with EV, biofuel	• Low awarness of benefits of natural gas use among freight operators	• Insufficient supply of natural gas/LNG driven fleet • Absence of technical standards
Marine transportation		• Small number of bunkering port • Competition with low sulfur oil		

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