Introduction

The petroleum renaissance in the United States (US) has been brought about by a substantial expansion of natural gas production driven by technological advances that give access to previously unrecoverable resources. Because of this, the US has been the world's largest producer of natural gas since 2009. Natural gas production in continental US increased from less than 50 billion cubic feet a day (bcf/d) in 2005 to an estimated 73 bcf/d in 2017. A sound regulatory programme that permits continued exploration and development of petroleum resources, widespread private ownership of property rights, combined with adequate expansion of US natural gas infrastructure, supports expectations that US natural gas output is likely to reach 84 bcf/d by 2020.

The expansion of the US natural gas resource base offers considerable potential to further develop both liquefied natural gas (LNG) and pipeline exports and contribute to higher economic growth in the national economy. Traditional Asian LNG consuming countries such as Japan, the Republic of Korea (henceforth, Korea), and Taiwan, other countries in Southeast Asia (Indonesia, Malaysia, Singapore, Philippines, amongst others) and South Asia (India, Bangladesh, Pakistan) as well as China offer new markets or expansions to existing markets for natural gas. Natural gas is a fuel source that can contribute to improved air quality and lower emissions of carbon dioxide and reduce long-term climate risks. China, which has been a modest importer of LNG to date, also represents a potential new market for substantially higher volumes.

Considerable expansion of LNG demand is possible over the long term in Asia. On 28 September 2017, at the Association of Southeast Asian Nations Plus 3 (ASEAN＋3) and East Asia Summit (EAS) Energy Ministers Meeting, energy ministers welcomed the ongoing study of the Economic Research Institute for ASEAN and East Asia (ERIA), which indicated that natural gas demand in the EAS region could grow 2.5 times between now and 2030, and will require about $80 billion in LNG supply chain investments to meet this demand. However, the development of long-term demand in Asia will require supportive government policies and solutions to address important cost challenges and regulatory constraints. A central objective in this collaborative effort is to identify the critical obstacles that constrain natural gas use in Asia, and how these obstacles can