IEA Webinar on E-methane - Agenda

09h00 (CET)	**Opening remarks** *Keisuke SADAMORI, Director, Energy Markets and Security, IEA*
09h05-9h20	**E-methane: a new gas for a net-zero future?** *Gergely MOLNAR, Gas Analyst, IEA*
9h20-10h30	**Emerging value chains: challenges and opportunities** *Moderated by Gergely MOLNAR, Gas Analyst, IEA* **Developing e-methane value chain for carbon neutral city gas supply in Japan** *Ryota KUZUKI, Ph.D.* *Division Head, Int'l Certification & Standards Harmonization, The Japan Gas Association* **eNG's role for net-zero future** *Yves VERCAMMEN, Chief Corporate Officer, TES-H2* **E-methane market prospects in Northern Europe** *Saara KUJALA, Chief Executive Officer, Nordic Ren-Gas* ***Q&A***

International Energy Agency

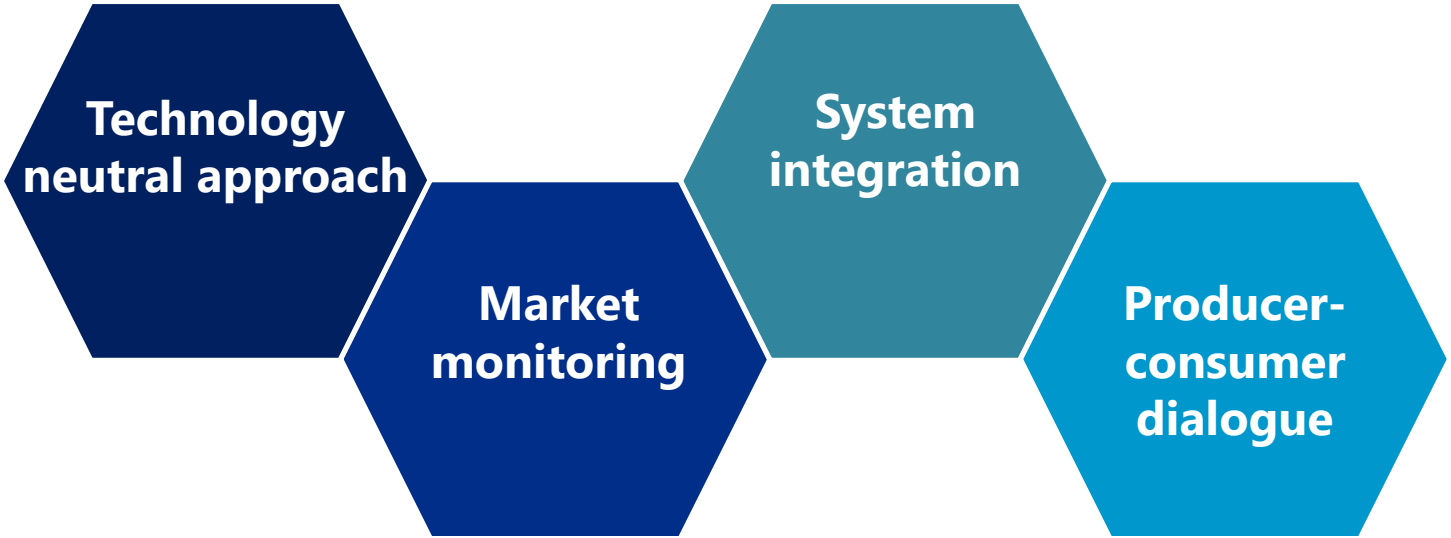
E-methane: a new gas for a net-zero future?

Gergely MOLNAR, Gas Analyst

IEA Low-emissions Gases Work Programme, 5 September 2024

IEA Low-emissions Gases Work Programme

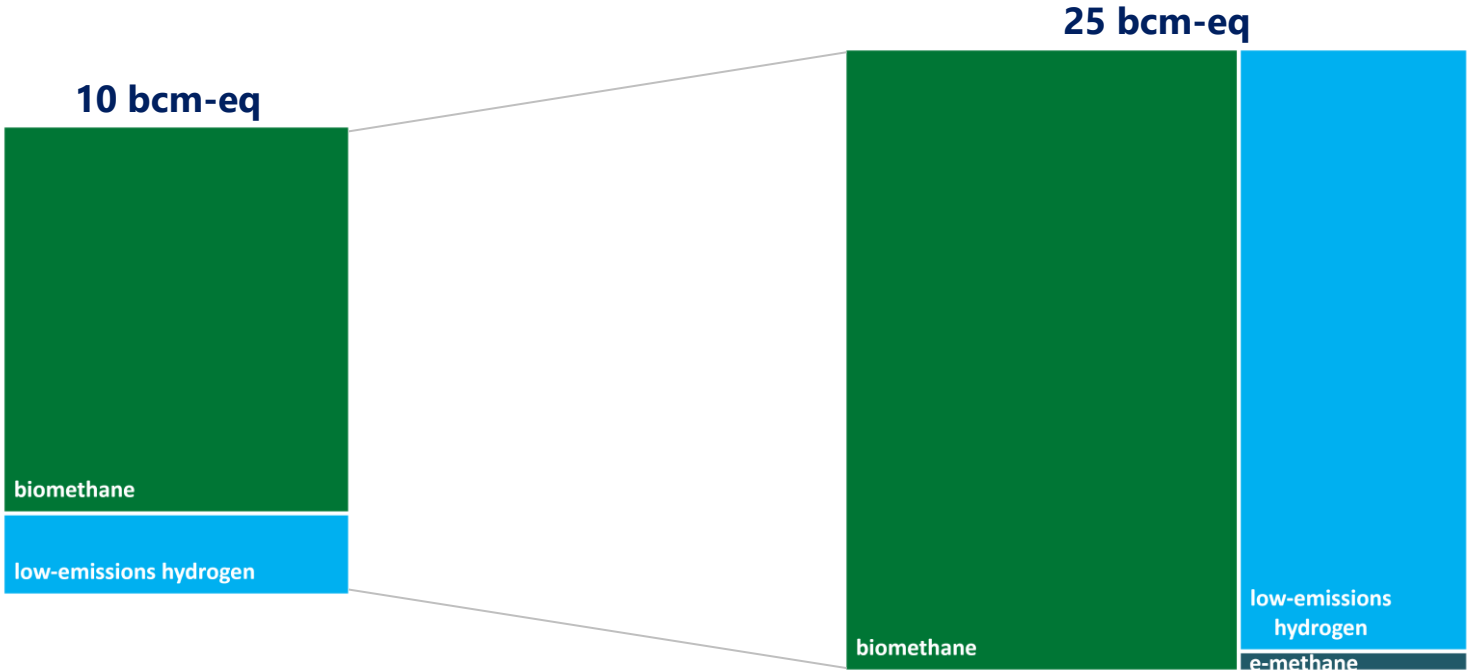
Key pillars of the IEA Low-emissions Gases Work Programme



Low-emissions gases are set for a rapid growth

Estimated supply of low-emissions gases by type in 2023

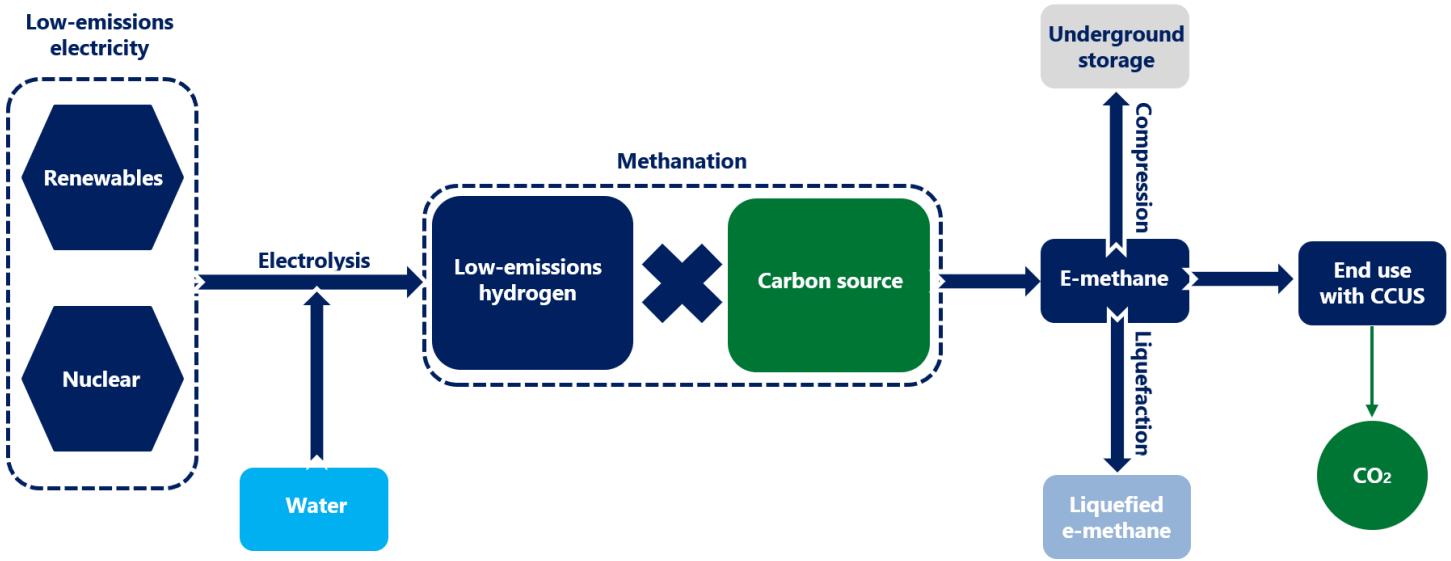
Forecasted supply of low-emissions gases by type in 2027



Low-emissions gases are expected to more than double in the medium-term. Nevertheless, further efforts are required to reach the ambitious targets set by governments.

E-methane is produced through a two-step process…

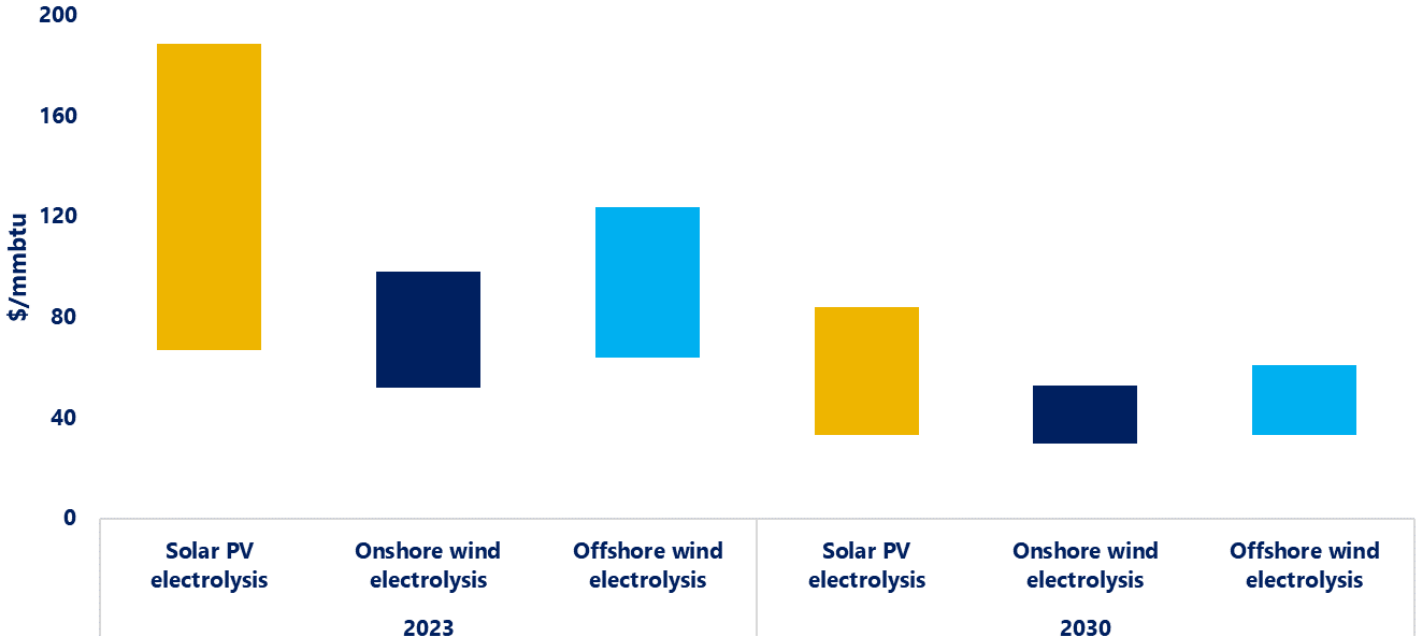
Simplified scheme showing e-methane production



Low-emission electricity is first converted to hydrogen by electrolysis and the resulting is converted via electrolysis into hydrogen, which is then reacted with a carbon source to obtain e-methane.

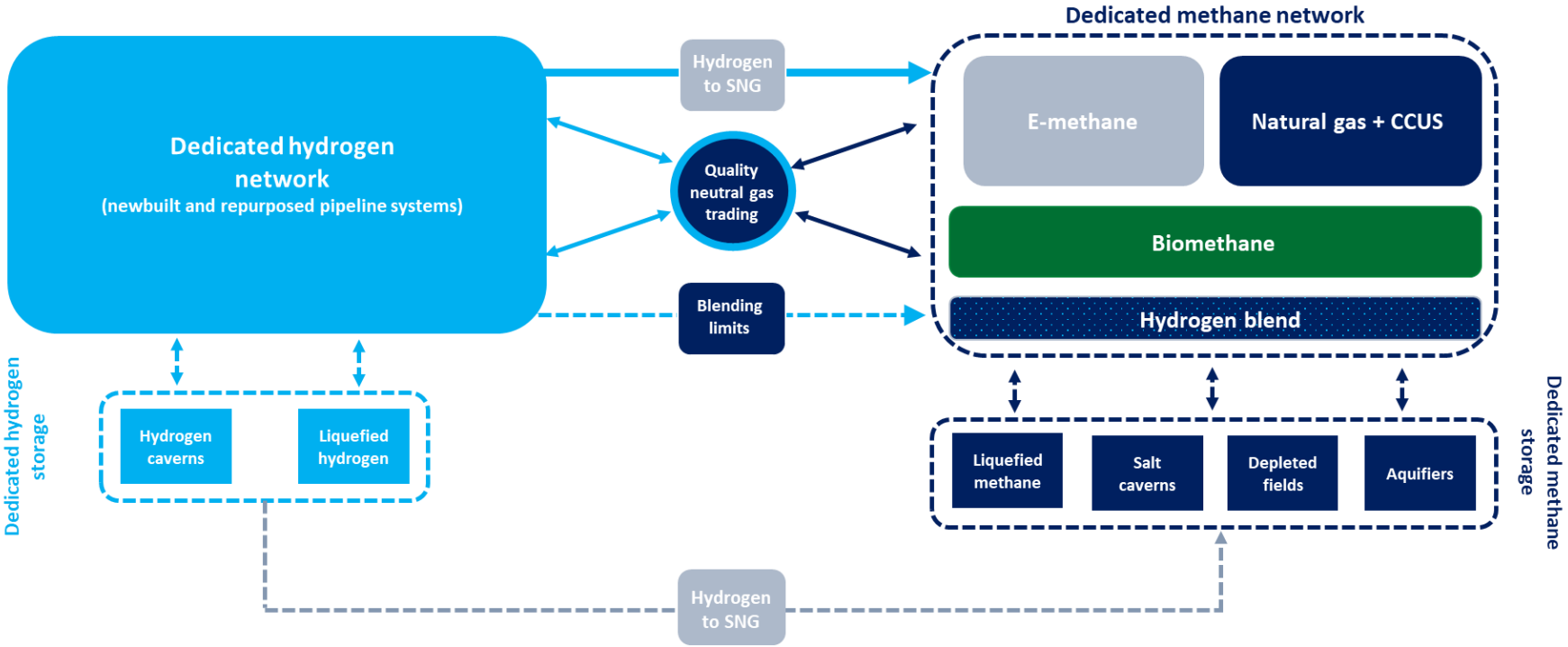
… and is facing relatively high production costs

Estimated levelised cost of synthetic methane production, 2023 vs 2030



Current e-methane production costs are in the range of $50-200/mmbtu, which would be four to fifteen times higher than current Asian spot LNG prices.

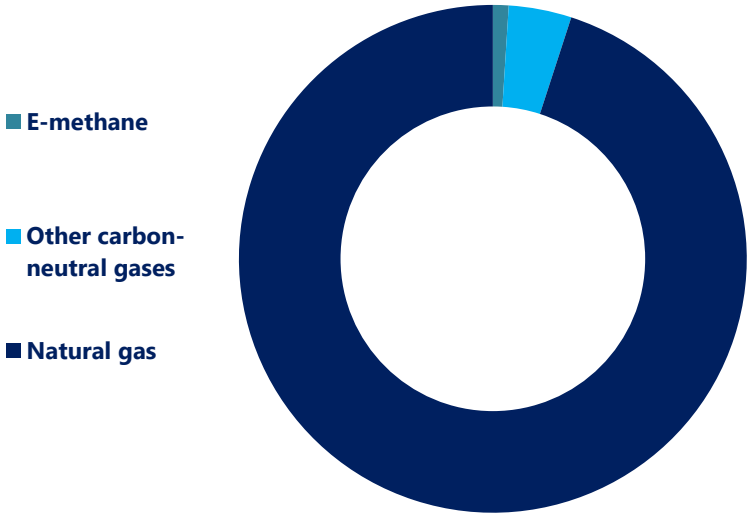
E-methane can support the system integration of low-emissions gases



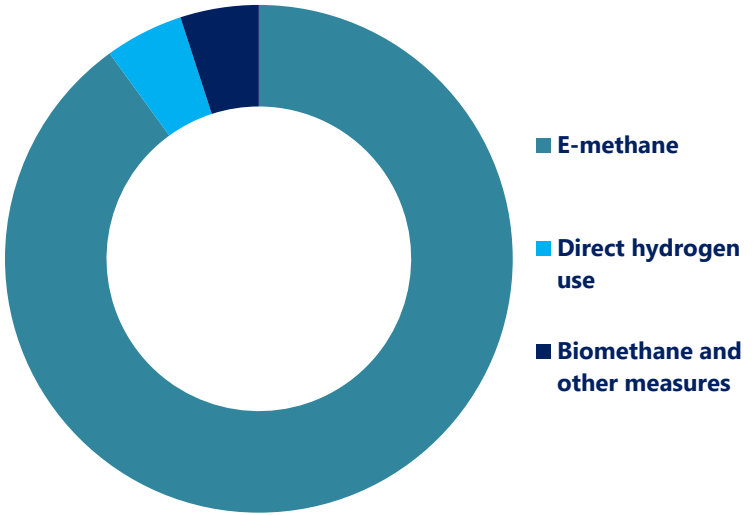
E-methane can play a crucial role in the coupling of future hydrogen and methane networks, facilitate trading and provide a solution to large-scale, seasonal storage in porous formations.

Demand creation will be crucial: the example of Japan

City gas consumption of gaseous fuels, 2030

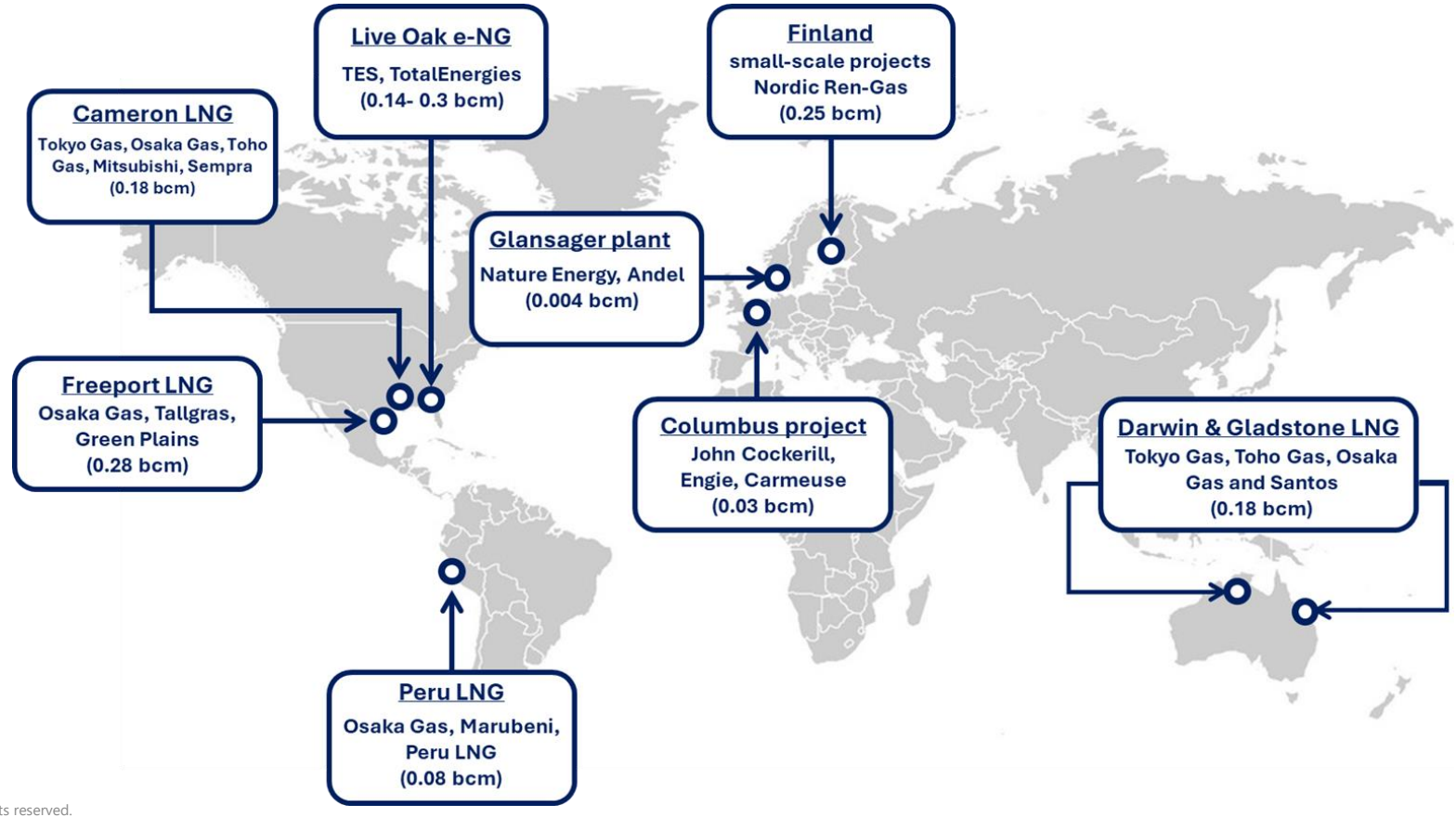


City gas consumption of gaseous fuels, 2050



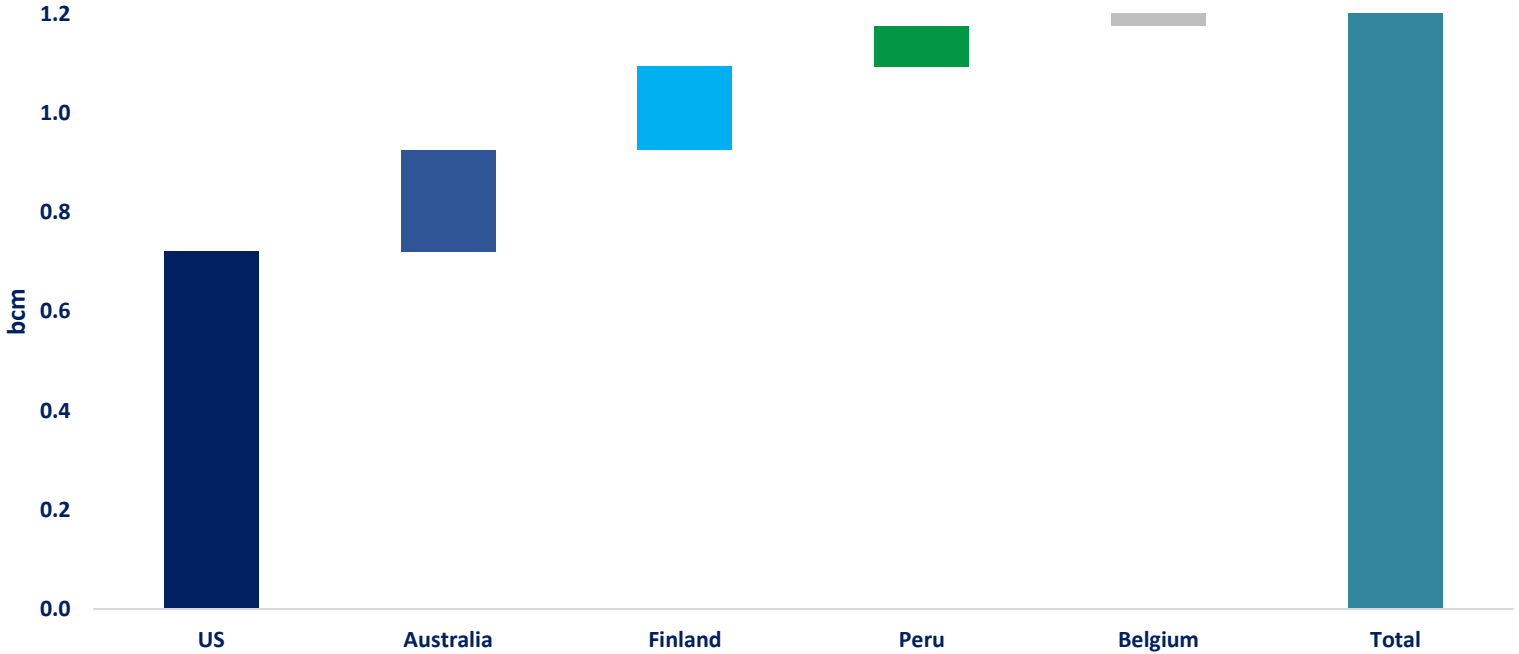
Japan set a target for e-methane to comprise 1% of the gas supply in existing networks by 2030, increasing to 90% by 2050.

International partnerships drive e-methane projects…



…potentially delivering over 1 bcm by 2030

Potential output volumes of e-methane projects by country by 2030



Global e-methane production could reach just over 1 bcm by 2030, albeit their development is pending on project partners successfully reaching final investment decisions in the coming years.

Key takeaways

- **Low-emissions gases** are expected to **more than double** in the medium-term. Nevertheless, **further efforts are required** to reach the ambitious targets set by governments.
- Being interchangeable with natural gas, **e-methane could play a significant role in decarbonising** existing gas networks **without the need for retrofitting**.
- The **complex value chain** underpinning the production of e-methane means that **both investment costs** and operational expenses are relatively high.
- E-methane can play a crucial role in the **system integration of low-emissions gases**, while enhancing the seasonal and short-term **flexibility** of the overall gas system.
- **Demand creation** will be critical to support **final investment decisions** in e-methane, with global production potentially reaching over 1 bcm by 2030.

International partnerships drive e-methane projects…