

3 INSTITUTIONAL INVESTING IN INFRASTRUCTURE

DECEMBER 2021

The investor-focused global infrastructure investment publication



5 Supporting natural gas is key to a cleaner world

by Dave Noakes

14 Utilities in transition

Rates, price inflation, climate mitigation and adaptation

by Drew Campbell

21 Social infrastructure

Private investors are well positioned to fill the gap

by The Long-term Infrastructure Investors Association

26 Opportunities in infrastructure

Creating carbon offsets based on pending regulatory changes

by Spencer Robinson and George Sullivan

35 Staying in the driver's seat

Investors buckle up for the transport transition

by Kali Persall

COMMENTARY

1 > Market perspective

The view from *i3*'s virtual roundtables

by Drew Campbell

DEPARTMENTS

8 > Up front

10 > News

40 > Infrastructure 101

42 > Infrastructure indexes

44 > Listed infrastructure

46 > People

Supporting natural gas is key to a cleaner world

by Dave Noakes

Though renewables are seen by some as the only option for a sustainable future, investors need to recognize the realities of global energy demand and the long-term role natural gas assets will play in delivering on economic, societal and environmental goals.

The transformation to a more sustainable energy future continues to gain momentum as companies, individuals and governments from around the world come together to accelerate their collective efforts toward building a world of lower emissions. Renewable energy will be fundamental to this vision; however, the critical role of natural gas and its related assets, both in the short and long term, should not be overlooked.

The current “energy crisis” in Europe and Asia may spill over into a global gas shortage in the coming months amid rising concerns that supplies will not be able to meet demand this winter. We are witnessing that in our own portfolio, from our U.S. gas gathering business, where production is down due to capital discipline imposed on our customers, through to our city gas distribution business in South Korea, where the wholesale liquified natural gas price is forecast to rise double-digits between now and the end of the year. This exemplifies the danger in treating natural gas supply as a commodity that can be turned on or off with the flick of a switch, rather than an essential component of our energy mix. Underestimating the importance of natural gas even as we increasingly develop renewable sources could prove problematic for the global economy.

The fact is that a cleaner, prosperous future cannot be achieved by renewable energy alone, whether in the next 10, 20 or even 50 years, due to the simple fact that even the most optimistic projection of renewable growth will not meet the rapidly increasing demand for energy around the world. Furthermore, achieving net zero does not mean zero carbon; it means a balanced

position of carbon neutrality. In this way, natural gas infrastructure will continue to remain fundamental in ensuring energy security as we achieve and pass the net-zero milestone.

With these realities in mind, global investors and leaders within the industry must take a pragmatic approach to both avoid lasting energy shortages and successfully position the world for a more sustainable future.



NATURAL GAS INFRASTRUCTURE IS A LONG-TERM AND VITAL ASSET

While some question the role of natural gas given the rise of renewables, investors who have taken a closer look at what will be needed to meet rising energy demand understand that natural gas assets will remain critical and necessary for decades to come.

The EIA in its *International Energy Outlook 2020* projects that renewables will be the most consumed energy source by 2050, and the use of natural gas will continue to grow. This is principally due to the role of gas as a dependable, secure and accessible source of baseload energy that can easily meet spikes in demand or ensure supply if renewable means are unavailable.

Natural gas infrastructure will not only ensure long-term energy security but will be vital for the future use of renewables as new technology is developed. For example, while both gas and the pipelines that transport it are critical in future energy supply chains, these assets can also be future-proofed to serve as reliable storage and transportation for emerging energy sources such as hydrogen. Our South Korean city gas business is currently in talks with the government about conducting a pilot-test study to blend up to 20 percent hydrogen into the pipeline network, illustrating how effectively managed gas infrastructure can evolve to serve the future energy needs of local communities. With

hydrogen expected to supply 10 percent of global energy demand by 2040, the importance of future-proofing natural gas assets will continue to rise.

THE CRUCIAL ROLE OF NATURAL GAS IN ASIA

One needs only to look at Asia as an example to understand the important role gas will play in the future and why assets in the sector will be in high demand well beyond 2050. The Asian region will account for half of the world's energy consumption by 2050, with faster growth than any other region in the world driven by GDP growth, urbanization and electrification trends, according to the *U.S. Energy Information Administration, International Energy Outlook 2020*.

However, Asia's energy system is not prepared for this future, and its energy production consumption gap, the shortfall difference between a country's energy demand and generation, is expected to grow from 10 percent to 20 percent between 2020-2050 (EIA, 2017). Furthermore, the energy that is currently being used is inefficient and environmentally detrimental. Without further development of natural gas infrastructure, countries across Asia, though committed to a clean energy future, will ultimately have to settle for more environmentally harmful energy sources such as coal to keep up with their growing populations and economic output.

Against this backdrop, natural gas is the only, and most reliable, energy substitute to displace coal as a less harmful, more cost-effective and long-term solution that will continue to deliver a secure energy supply and complement renewables well beyond reaching carbon neutrality. We are already seeing this idea in action, with governments in the region clamoring for solutions and adapting their approach to energy usage by planning, in part, to increase natural gas consumption. As a result, forward-looking investors are developing a number of natural gas-related infrastructure projects across Asia to meet these long-term objectives.

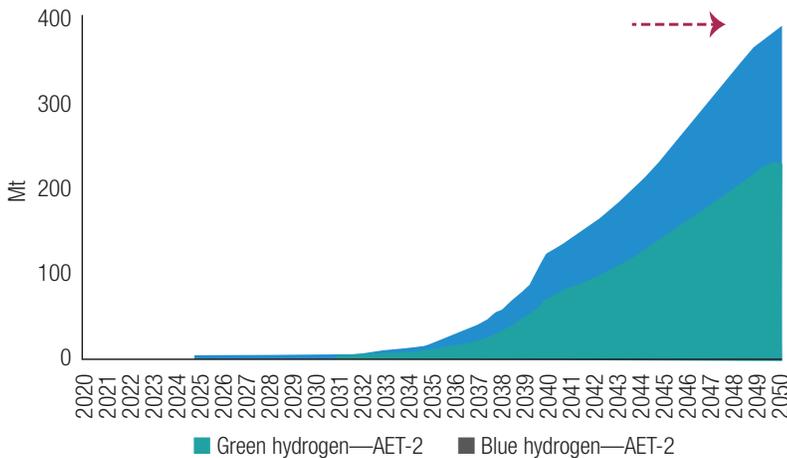
A LONG-TERM SOLUTION

The simple fact is the world will not be able to fully rely on renewables, even when we reach net zero/carbon neutrality. While some may have the philosophical belief there is no place for traditional fuel sources and their assets moving forward, they do not take into account the fundamentals of energy supply and demand, nor of the long-term necessity of the related assets.

At a time when nations are grappling with the dual mandate of meeting rising energy demand and lowering carbon emissions, investors and leaders in the energy space need to be a guiding force on how best to meet these future goals. A deeper understanding of the realities of the region and clear indications from governments of their long-term plans with natural gas clearly indicate that infrastructure investments are beneficial and will continue to be necessary for decades to come. ♦

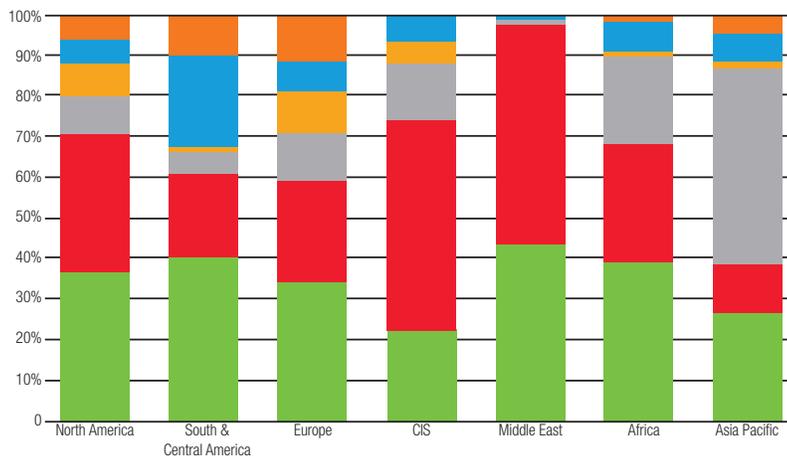
Dave Noakes is senior managing director at **Prostar Capital**.

Hydrogen displaces ~1,400 one million tons of oil equivalent by 2040 — 10 percent global energy demand



Source: KMPG

Regional consumption pattern 2020



Source: BP Statistical Review of World Energy 2021