

# Energy Transition: Gas' Role Varies By Sector And Region Amid Security Of Supply Concerns

July 20, 2022

Editor's Note: This report is one in a five-part series providing insights on developments in the energy transition.

## S&P Global Commodity Insights Contributor:

- Roman Kramarchuk, Head of Future Energy Analytics, roman.kramarchuk@spglobal.com

## Key Takeaways

- Demand for gas should keep rising through 2030--fueled by Asia, with demand growth stable in the U.S. and still highly uncertain in Europe--but seems set to drop according to S&P Global Commodity Insights (Platts).
- Security of supply, and gas' comparative price disadvantage versus coal and nuclear power generation in China, mean that, although its use is increasing, gas will represent only 9% of China's primary energy mix by 2030, compared with 30% for the U.S.
- Russia's invasion of Ukraine and subsequent concerns regarding gas supply and interruption risk are accelerating Europe's shift to renewables and greener gases, which could account for 20% of European gas demand by 2030 if the EU achieves its REPowerEU goals.

In light of surging global gas prices, security of supply concerns, and a weakening economic outlook, prospects for gas demand growth are more uncertain but supported by strong demand in Asia-Pacific. Natural gas to meet incremental power generation needs may be the area where demand softens most. By contrast, the use of gas as a raw material in chemical production will be difficult to substitute. The industrial sector represents almost 40% of gas demand globally, with the power sector accounting for 36% of global gas use. Gas use in different sectors can vary widely by geography. For instance, in Europe, about 40% of gas supplied has historically been used for residential/commercial heating, almost double the global average.

## PRIMARY CREDIT ANALYSTS

### Emmanuel Dubois-Pelerin

Paris  
+ 33 14 420 6673  
emmanuel.dubois-pelerin@spglobal.com

### Aneesh Prabhu, CFA, FRM

New York  
+ 1 (212) 438 1285  
aneesh.prabhu@spglobal.com

### Laura C Li, CFA

Hong Kong  
+ 852 2533 3583  
laura.li@spglobal.com

## SECONDARY CONTACTS

### Karl Nietvelt

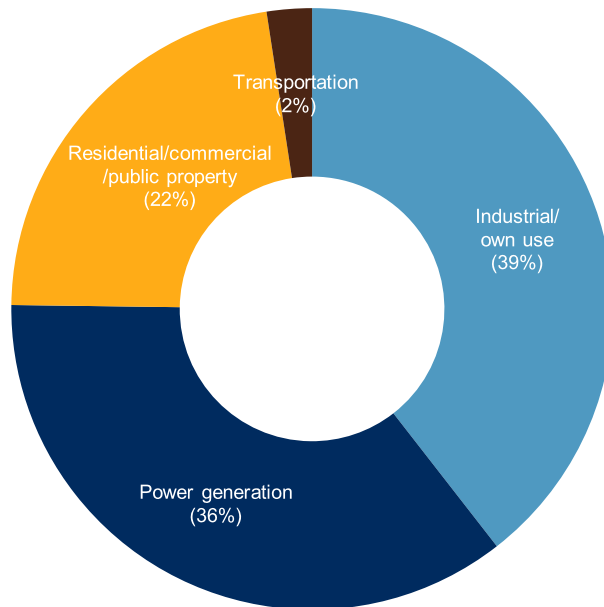
Paris  
+ 33 14 420 6751  
karl.nietvelt@spglobal.com

### Massimo Schiavo

Paris  
+ 33 14 420 6718  
Massimo.Schiavo@spglobal.com

Chart 1

### Global Gas Demand By End Sector



Source: S&P Global Commodity Insights (Platts)  
Copyright © 2022 by Standard & Poor's Financial Services LLC. All rights reserved.

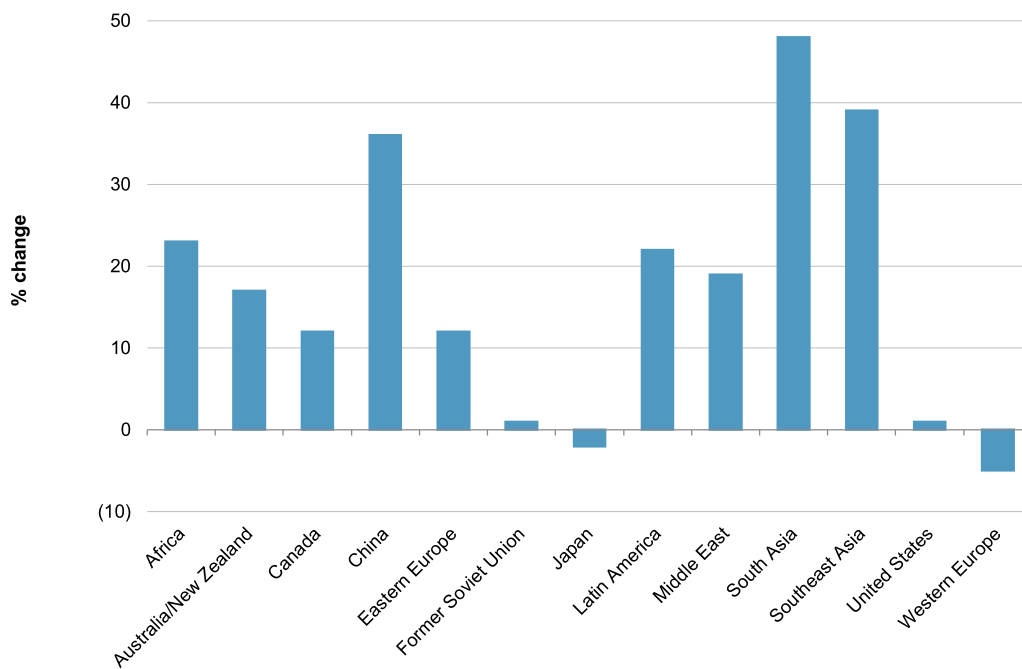
Natural gas, which emits roughly two times less carbon dioxide per unit of energy than coal when burnt, has long been seen as an alternative to coal-fired generation. In the future, renewables will increasingly help displace coal in Europe and the U.S. However, gas still has an important role to play in providing a diverse and reliable power mix, helping to backup intermittent power supply from renewables, and covering seasonal fluctuations in demand. Over time, battery and other storage solutions will also increasingly fill such gaps.

### Asia-Pacific Will Fuel Global Gas Demand In The Next Two Decades

In contrast to the turmoil in European gas markets and stable demand patterns in the U.S., demand for oil looks set to increase in China, the Middle East, and South and South-East Asia alongside ongoing economic growth, according to S&P Global Commodity Insights (Platts) (see chart 2). That said, Asian gas demand, met largely by liquefied natural gas (LNG) imports, is sensitive to both high prices and weather. Further investments in new gas import infrastructure in the region could become less appealing in the current high price environment. Moreover, in China, locally procured coal and locally built nuclear power plants have a competitive advantage over imported gas, since security of supply remains a priority, and gas is a more expensive fuel source.

Chart 2

Change In Gas Demand By Region In 2021-2030



CIS--Commonwealth of Independent States. Source: S&P Global Commodity Insights - Platts Analytics Global Integrated Energy Model; reference case May 2022  
 Copyright © 2022 by Standard & Poor's Financial Services LLC. All rights reserved.

**Impact of Russian gas crisis on gas prices in Europe and the U.S.**

**Europe's aim of moving away from Russian gas appears daunting, with gas prices set to stay at record highs for several years.** The European gas market is currently undergoing a disruptive shift amid Russia's invasion of Ukraine, with the need to reduce dependence on Russian gas becoming more urgent than the need to decarbonize. The European Commission's REPowerEU plan envisages eliminating Russian gas imports by 2027. Initially, this would mean relying on alternative gas sources, mainly LNG. Doing so will be challenging, bearing in mind that, last year, Russian gas imports accounted for 39% of EU imports and one-third of total European demand. Europe needs to secure sufficient LNG volumes and rapidly expand import infrastructure to replace 140 billion cubic meters (bcm) of piped Russian gas. The impact on gas prices is unprecedented.

**Over the past year, the U.S. natural gas price has become increasingly influenced by global natural gas dynamics.** It has soared to \$9 per million cubic feet (/mcf)--broadly comparable to \$9/mmBtu--from historical averages of \$2/mcf-\$3/mcf, as more feed gas is routed to liquefaction plants for export to Europe. However, the recent increase in natural gas prices is, in the first instance, because gas-to-coal switching is not happening in many regions. Historically, changing to coal-fired generation has helped ease natural gas prices. Now, however, coal prices have also escalated due to limited coal operations; inventories are low and we see no new coal-related investments. We ultimately expect to see U.S. gas exploration and production companies increase supply, but in a measured way.

## **Europe's Green Gas Goals Can Strengthen Security Of Supply By 2030**

We see REPowerEU's 2030 green gas objectives, such as increasing the use of renewable natural gas/biomethane and low-carbon hydrogen, as key to reducing emissions and risks to supply security. Furthermore, these are low-carbon energy sources that, in contrast to renewable power, can be stored and help cover seasonal fluctuations. A key challenge will be how to bring costs down for biomethane and green hydrogen this decade. That said, Russia's invasion of Ukraine, the resulting spike in gas prices, and concerns about security of supply may have created a more viable route. If the EU can achieve its 2030 REPowerEU goals for green gases, it could cover 20% of European gas demand by 2030 in two ways.

- First, through a biogas target of 35 bcm by 2030, 10x today's level and equating to roughly 8% of European gas demand.
- Second, green hydrogen targets of 10 million tonnes of domestic production and 10 million tonnes of imports by 2030 to replace gas, coal, and oil in hard-to-abate sectors, with specific financing and carbon contracts for difference to support green hydrogen. Such a combined 20 million tonne target is quite ambitious but, if achieved, could equate to about 60 bcm of natural gas equivalent or about 14% of current European gas demand.

## **Economies Will Turn To LNG To Bolster Security Of Supply**

The gas market has been stretched since demand rebounded after the lifting of COVID-19-related lockdowns. The Russia-Ukraine conflict has further compounded supply issues, highlighting the importance of security of energy supply and diversification. Europe has shown itself to be particularly vulnerable to supply issues given its heavy reliance on Russian gas, and we expect it will increasingly use LNG to make up for the loss of gas volumes from Russia. It will likely rely significantly on the U.S. for its LNG supply, especially since other Atlantic and Mediterranean liquefaction resources are often strained. S&P Global Commodity Insights projects that U.S. global LNG volumes will rise to 170 million metric tonnes per annum (mtpa), equivalent to 240 bcm, by 2027-2030 from 100 mtpa today.

Meanwhile, in China, security of energy supply remains a top priority, especially after power supply shortages in late 2021, caused by high coal prices and environmental restrictions. Although China has increased its own gas production, it will inevitably rely on LNG imports while implementing its decarbonization initiatives. Its LNG imports are likely to pick up gradually in the remainder of 2022 with the roll out of LNG terminals and new long-term LNG contracts to be fulfilled, even though they declined by 9% year on year in the first five months of 2022 after COVID-19 and high prices hit domestic demand. At the same time, China has increased pipeline gas supplies from Russia this year.

## **The Risk Of Stranded Gas Assets Remains**

Investments in the gas value chain may have gained greater acceptance in the wake of Europe's energy crisis, with access and affordability considerations trumping climate considerations. In the long term, however, visibility on gas investments remains limited, given Europe's strong decarbonization objectives. By contrast, in the U.S., competitive domestic gas, despite being a fossil fuel, is likely to enjoy more prolonged support but also faces a decline as the share of renewables increases.

## Energy Transition: Gas' Role Varies By Sector And Region Amid Security Of Supply Concerns

Companies contracting new LNG volumes to address a potential abrupt loss of Russian gas need to simultaneously manage their exposure to long-term purchase commitments that affect their decarbonization goals, while taking steps to address the risk of stranded gas assets. They also need to consider that the consumption of natural gas in Europe could drop sharply in the longer term.

Consequently, we expect investments in gas to work as a means to provide options, such as power plants or pipes that can be repurposed for hydrogen supply and re-routed to other regions, or gas used for blue hydrogen when accompanied by carbon capture. Alternatively, given the risk of stranded assets, future investments may require short payback times--which high market prices may facilitate--or additional support through regulatory returns, such as capacity payments for gas-fired back-up power plants to improve grid reliability.

This report does not constitute a rating action.

Copyright © 2022 by Standard & Poor's Financial Services LLC. All rights reserved.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives. Rating-related publications may be published for a variety of reasons that are not necessarily dependent on action by rating committees, including, but not limited to, the publication of a periodic update on a credit rating and related analyses.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw or suspend such acknowledgment at any time and in its sole discretion. S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses. S&P's public ratings and analyses are made available on its Web sites, [www.standardandpoors.com](http://www.standardandpoors.com) (free of charge), and [www.ratingsdirect.com](http://www.ratingsdirect.com) (subscription), and may be distributed through other means, including via S&P publications and third-party redistributors. Additional information about our ratings fees is available at [www.standardandpoors.com/usratingsfees](http://www.standardandpoors.com/usratingsfees).

STANDARD & POOR'S, S&P and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC.