

European gas demand dropped 4% in 2020
 European gas demand expected to gradually recover during 2021



- After an unprecedented drop in gas demand 1H 2020 due to weather and Covid measures, 2020 closed with a rapid recovery in gas prices, very much supported by cold weather and supply outages globally.
- The global gas market experienced the largest recorded drop in consumption in 2020 of 2.5% y-o-y (about 100 bcm).
- European gas demand dropped with 4% in 2020. Gas to power (g2p) was the most affected sector, experiencing a reduction of around 5% vs 2019. Europe also saw some reduction in the industrial sector due to slowdown of economic activity worldwide. The weather impact was mostly evident in the residential sector.
- Going forward we foresee a gradual rebound in gas demand for 2021, but not a return to pre-covid levels before 2022. Our 2021 forecast builds on a return to average heating demand through the winter season and a gradual recovery of industrial and commercial activity. Especially gas-intensive manufacturing sectors have proven to be rather resilient when it comes to gas consumption.
- G2p: In addition to Covid measures, REN generation grew with 10% during 2020 compared to 2019, which in turn impacted thermal generation negatively. The increase in REN generation was mostly the result of a windy H1 supported by a sunny and warm Q2. High hydro levels, both in the Alps and in Nordpool, also added to this.
- Less favourable competitive position for gas vs coal in 2021 is likely to result in some reversal of the coal to gas switching. In addition, more nuclear availability is expected in 2021 vs 2020.

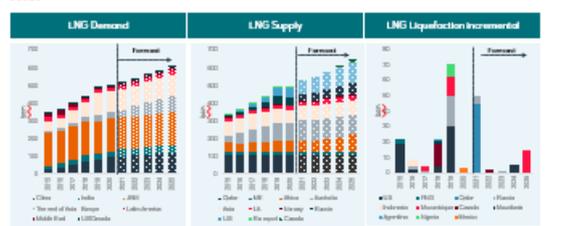


- Europe is very dependent on gas imports. However, in 2020 the overall gas import reduction was close to 10% (more than 32-33 bcm). Both LNG and pipeline imports were impacted, although displaying very different dynamics over the year.
- Pipeline imports to Europe decreased with 13%, primary due to less flows from Russia and North Africa. Pipeline flows fell 22% y-o-y in the first 5-months of 2020, at a time when flexible LNG was increasingly diverted to Europe as a result of

depressed demand in Asia. Europe absorbed 2/3 of incremental LNG supply. This highlights the crucial balancing role of Europe in the global gas market.

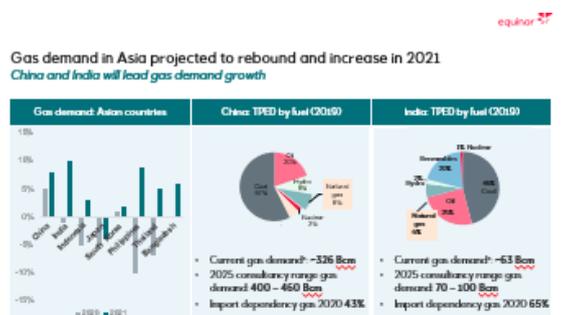
- LNG imports to Europe dropped from June responding to the price collapse in Europe. Global LNG supply also showed its flexibility in the face of market oversupply by reducing supply. This period was followed by improved demand and a gradual recovery of the regional price spreads between Asian spot LNG and TTF combined with unplanned LNG outages. Consequently, LNG imports to Europe fell 20% y-o-y in the second half of 2020.
- Traditional pipeline gas suppliers benefited from lower LNG imports in 2nd part of 2020 and increased supply y-o-y.
- European storages played a significant role to help balance the gas market in 2020 and absorbed surplus gas. In addition, Ukraine also offered its storage capacity for the European market participants.
- European gas storages started 4Q20 94% full, around 5 % above the 2019 level and significant above the 5-year average. Currently European inventories incl. Ukraine are 2.6 bcm above average levels and around 21 bcm below 2020 levels. 4Q20 and Jan 2021 registered higher than average withdrawals on the back of colder weather and low LNG arrivals.
- We expect that Europe will experience a significantly lower storage level coming out of this winter compared to 2020 and below the 5-year average level. This will provide some support for Summer 21 prices as storages need to be refilled. However, it would be less room in the Ukraine storages vs last year.
- **European balance:** European indigenous production fell with 10% in 2020, primarily related to the rapidly declining production from the Groningen field (reduced with 25% y-o-y). Groningen is expected to close entirely in 2022. UK production is expected to stay rather resilient, and is only estimated to fall with 1 % in 2021.
- Reduced indigenous production in combination with demand recovery increase the need for gas import. Pipeline supply to Europe in 2021 is expected to grow y-o-y basis as demand recovers, supported by stronger European prices.

Asia in the driver's seat when it comes to LNG import, US leads LNG export growth
Covid-related market uncertainty puts LNG supply investment on hold



- LNG import growth in 2020 was led by China, up 12% (10 bcm), and India, up 15% (4.5 bcm). LNG imports to the rest of Asia were largely flat, with declines in Japan (-3%), Indonesia (-31%) and Pakistan (-5%). However, this was largely offset by continued growth in Thailand (+18%), Bangladesh (+19%), Chinese Taipei (+8%)

- China and India remain the world's largest buyers of short-term and spot LNG, with respective market shares of 20 and 11%. The weather sensitivity of Chinese demand has grown substantially, given that millions of households have switched their boilers to gas from coal over the last few years. In addition, China still has limited gas storage capacity which represents only 6% of gas demand vs 30 % in Europe.
- Q4 20: LNG demand in northeast Asia increased 10 % y-o-y between mid-December 2020 and early January 2021 due to colder than average winter temperatures, exacerbated by lower nuclear availability in Japan and limits on coal-fired generation in Korea. The rise in LNG demand in Asia coincided with a number of LNG outages , which increased the call on more remote suppliers. Longer voyages and congestion at the Panama Canal spiked spot charter rates to historical highs. The price spike did not last beyond the short-term cold wave and Europe will get more and more LNG from mid Feb.
- LNG imports to Europe in 2021 is expected to be in line with last year, with possible upside but the main growth will come from Asia
- New capacity starting up this year is limited. Yamal LNG Train 4 will start in Q1, and Damietta LNG in Egypt will resume production and exports after having been mothballed since 2012. One large train, Corpus Christi LNG Train 3 will start commercial operations in May. For the next 5 years more than 100 bcm of new capacity would be added. US will lead the main increase in capacity, above 40 bcm of incremental capacity vs 2020, followed by Russia +20 bcm.
- Covid related market uncertainties put FIDs on hold in 2020. Only one FID was taken in Mexico for a small project. 2021 started with Qatar taking FID on 4 trains above 40 bcm. But still for the next 5 years there is limited amount of expected new FIDs.



- Gas demand in Asia saw a steep decline in the first-half of 2020. Demand rallied in the second-half with y-o-y growth in most Asian economies. Gas demand in 2021 is projected to see a strong rebound in most of the key growth markets in Asia.
- Gas demand in China has grown 5% in 2020. China was the first country to emerge from a Covid-19-induced gas demand drop in the early spring with a gradual recovery in Q2 which accelerated further in the second-half of 2020.
- IEA: Gas demand in China is projected to increase by more than 8% in 2021 on the back of strong economic recovery, supported by ongoing expansion of natural gas use by residential and commercial consumers and market reforms that will increase market competition and lower end-user prices.

- In the second-half of 2020 China's announced their net zero emission target by 2060, which support gas demand growth in the medium-term.
- Gas demand in India was reduced with 1% y-o-y.
- India's gas demand is projected to rebound sharply and increase by 10% in 2021 based on IEA (or 6% IHS), driven by strong economic recovery and new infrastructure projects. However, further project delays, lower than forecast GDP growth and a challenging outlook for domestic gas production present significant downside risks to the outlook for 2021.
- Currently more than half of the gas supply in India is LNG. As indigenous production declines the share of LNG will grow, which makes India very vulnerable to global gas market dynamics.



- US production declined with 19 Bcm (2%) y-o-y in 2020. In 2021, production is expected to experience another y-o-y decline as associated gas slips due to natural decline rates and limited incremental drilling. Dry gas will also fall as producers practice upstream discipline and non-premium dry gas plays see little activity.
- Production returns to growth in late 2021 as prices improve. The majority of growth is expected to come from the Permian (associated) and Haynesville (dry) basins.
- Gas Demand dropped in 2020 with 2% (21 bcm). Higher prices in 2021 will lead to increased gas-to-coal switching in the power sector and drive down the overall domestic demand for gas. Demand is expected to recover in 2022-23 From 2022-2025, we expect ~35 Bcm of new LNG capacity to come online in the US, up from ~100 Bcm to 135 Bcm. The majority of the expansions are additional trains on already existing terminals with Cheniere's Sabine Pass as the most significant one with ~10 Bcm. Other brownfield expansions are Cameron (~5 Bcm), Freeport (~3 Bcm), Corpus Christie (~2 Bcm) and Cove Point (~1 Bcm). All these terminals are on the US Gulf Coast expect Cove Point that's located on the East coast.
- 2021 LNG Exports: LNG exports are expected to continue running at near-full capacity for the remainder of the winter as forward curves show US exports to be in the money. However, given the expected y-o-y decline in production, US balances will become tight over the summer and preserve some gas for domestic purposes rather than for export.

Global Gas Prices in 2020: historical lows, steep recovery and high volatility...
 Gas prices expected to recover in 2021, but strong supply will continue to keep pressure on prices



- Looking back, I guess a mask will be the symbol of 2020. 2021 comes with the vaccination /injection /needle. With needles and vaccination comes a hope that a more normal existence is within reach...
- Global gas demand is expected to recover in 2021 and European demand will also increase
- European indigenous production is reducing so there will be an increased need for more gas import
- Limited amount of new additional LNG capacity will come on stream in 2021 and LNG demand is expected to grow, particularly in Asia
- Strong pipelines import to Europe is expected, and this will influence 2021 prices. However, summer prices are expected to be higher than experienced last summer.
- Winter 2021-22: supported by seasonal demand, might be volatile, depends a lot on storage levels
- Expectations for 2022 is that European demand recovers, and the storage levels rebalance. But we shall expect strong LNG as well as pipeline imports. This will keep a continued downward pressure on summer prices.