U.S. LNG in high demand

LONDON (Bloomberg) – U.S. gas companies at the LNG2019 conference in Shanghai this week have announced deals to sell a combined 4.5 million tons of LNG a year from proposed multi-billion dollar projects. Nearly all of that was sold without a link to the U.S. Henry Hub benchmark, the most- widely traded gas price in the world.

The novel price links for U.S. gas included:

Japan-Korea Marker: Tellurian Inc. agreed to sell Total 1.5 million tons a year from its Driftwood LNG venture in Louisiana linked to Asian spot LNG marker, which has traded as much as $9 above Henry Hub in the past year. Brent oil: NextDecade Corp. will supply Royal Dutch Shell with 1.5 million tons annually, for 20 years, linked to the global crude benchmark, which U.S. exporters in the past argued has no connection with gas fundamentals.

LNG has traditionally been priced against oil, since the gas market lacked a liquid, global benchmark. The rise of U.S. exports, and the ease of pricing against Henry Hub, was a way to break the link with oil, but left costs dominated by factors unique to North America.

Not Willing

“Nobody wants Henry Hub” pricing in Europe, Mark Gyetvay, CEO for Russian LNG developer Novatek, told reporters on the sidelines of the conference. “Most of these people are not willing to take Henry Hub because they can’t hedge it” against European benchmarks.

No global marker has been established amid the robust growth in spot LNG demand and trading, reflecting a desire by buyers and sellers to secure a diversity of pricing options. Trading of JKM futures on the Intercontinental Exchange Inc. grew 10-fold between January 2017 and December 2018, while trading of Dutch Title Transfer Facility futures has grown nearly five times faster than U.S. trading in the past two years.

Europe has long had domestic gas markets that set prices LNG producers are willing to sell against. But that hasn’t been the case in Asia, where gas markets are typically disconnected and regulated by governments.

That’s started to change in the past two years as spot LNG trading in the region increased, bolstering confidence in the JKM price, assessed by S&P Global Platts. Nearly two-thirds of the world’s LNG was bought by Japan, China, South Korea or Taiwan last year, according to the International Group of LNG Importers.

Asian Index

“We don’t believe LNG should continue to trade on an index to something else. It should be buying and selling on an LNG index,” said Meg Gentle, Tellurian’s chief executive officer. “Today JKM is really the market clearing index. Over time there will be additional LNG price points.”

The pricing mechanism that raised eyebrows this week in Shanghai was NextDecade’s Brent-linked deal with Shell. NextDecade CEO Matt Schatzman said he wanted to sell against

Brent because his Rio Grande LNG venture will rely on gas that's a byproduct of oil drilling in the Permian Basin, where output will likely increase along with oil prices.

Total CEO Patrick Pouyanne said he didn't understand that logic.

"Continuing to price gas linked to oil is somewhat the old world," Pouyanne said on Wednesday. "I was most surprised to see new contracts linked to Brent, especially from the U.S. Someone will have to explain this to me."

LNG exports finally taking off in Egypt – Oilprice

What a difference just a few years can make. After more than a decade of uncertainty for Egypt's natural gas sector, leading even to importing LNG for years, Cairo is heading to a much

brighter gas future. Two weeks ago, Egypt re-joined the ranks of global LNG exporters when its state gas company EGAS tendered to sell four cargoes of LNG for loading in April from the Idku liquefaction plant on the Mediterranean coast. Bloomberg said the tender marked a revitalizing of its gas industry, where sagging domestic production forced it to halt most exports of LNG in 2014. Around the same time period, LNG producers, especially Qatar and Australia, looked to Egypt to help soak up extra production as well as cargoes not linked to off-take agreements. Moreover, Egypt was seen as a bright new spot for LNG producers to sign new supply deals as the ongoing LNG supply overhang gathered momentum.

Mid-year goals

Cairo recently said the Idku facility would be operating at full capacity by mid-year on the back of an ongoing surge in local gas production. However, Egypt's second LNG plant remains offline, pending resolution of a financial dispute with the operators relating to the earlier breach of the government's gas supply commitments.

In addition to the four cargoes commissioned by EGAS for April, another four and three cargoes are being marketed for May and June respectively. The offer is the largest since the country's two liquefaction plants at Idku and Damietta were gradually taken offline in the early years of the decade. February exports were around 390 mcm, with Turkey emerging as the main buyer. These initial tenders are viewed as a means for EGAS to test the market before embarking on term contracts.

Egypt began importing LNG in 2015 and received its last cargo in September 2018. In the last quarter of 2018, the country regained its position of self-sufficiency, according to several reports. This rapid turnaround was made possible due to the discovery and rapid exploitation of the offshore Zohr field. First discovered in August 2015, the field began

producing in December 2017. Production reached 12.2 bcm in 2018 and, as of late January, was running at around 56.6 mcm per day. It is expected to reach 76 mcm per day by the end of 2019.

A presentation from Eni two weeks ago said the field should ramp up to 580,000 boepd (92.8 mcm per day). Progress at Zohr has been backed up by other gas fields as well. British oil major BP commissioned the second phase of the company's West Nile Delta (WND) project in February, raising output by around 19.8 mcm per day.

The Idku plant, owned through a joint venture between Shell, Malaysia's Petronas, France's Total, and several Egyptian owned firms, has 7.2 million tons per annum (mtpa) of liquefaction capacity and is located about 50 km east of Alexandria. Speaking in an interview in mid-March, Egyptian Petroleum Minister Tarek el-Molla said Idku's backers aimed to reach full throughput capacity of 32 mcm per day by the end of June, from around 22.7 mcm per day at present. Moreover, the supply outlook for Egypt continues to improve.

New gas synergies

Yesterday, Bloomberg reported that the companies, Delek Drilling, Noble Energy, and Ratio Oil Exploration, developing Israel's largest natural gas field are in discussions to increase the amount of supply to Egypt beyond the $15 billion deal inked last year. "The potential in the Egyptian market is endless," Chief Executive Officer Yossi Abu said. "We're going to clear up a lot of question marks in the coming months, once we start flowing gas through the EMG pipeline," which will transport gas to Egypt, he added.

Aramco’s Accounts Show $2 Trillion Valuation Remains a Challenge

Saudi Aramco may be the world’s most profitable company, but that likely still won’t be enough to persuade investors the energy behemoth is worth $2 trillion.

New financial details, disclosed today by Moody’s Investors Service, show a company that paid $58.2 billion in dividends to the Saudi government last year. Working back from that, the valuation would be closer to $1.2 trillion if investors judge Aramco by the same metrics as other giant oil companies.

Saudi Arabia has stuck to its original $2 trillion aspiration, even after some investors made it clear in the early stages of the mooted initial public offering that they didn’t share that view. Aramco instead pushed back the timeline for its IPO to 2021, from 2018, and embarked on the acquisition of a majority stake in petro-chemical group Sabic worth about $69 billion.

It’s in the context of that purchase that Aramco’s financials are being released to prospective bondholders funding the acquisition. They may look for comparisons with other energy companies such as Exxon Mobil Corp., Royal Dutch Shell Plc, Chevron Corp., Total SA, and BP Plc, who on average offer a

dividend yield of 4.9 percent. Applied to Aramco's dividend payout last year, that implies a valuation of about $1.2 trillion.

Potential Bondholders

If however investors demand a higher yield to compensate them for the risks involved with the government continuing to control a majority stake, then they might set the valuation even lower. For example, if they were to seek a similar yield to that of Shell, 6 percent, the valuation would drop to just short of $1 trillion.

It will all depend on what metrics investors choose to focus on. Those favoring price to earnings or enterprise value to underlying earnings, for instance, might well value Aramco higher. But right now in an era of vanishing yields, dividends are king, particularly in the hydrocarbons sector where worries about stranded assets are multiplying, even if they aren't shared by Aramco's management.

Aramco declined to comment via a spokesperson.

While Moody's gave a dividend figure of $58.2 billion, Aramco itself in a presentation to potential bondholders said its "ordinary dividend" was $52 billion last year. There wasn't an immediate explanation for the discrepancy.

Saudi Arabia has a few options to boost the valuation before resuming efforts on the IPO. One way would be to cut the amount of tax the company pays, something the government already did in 2017. Aramco paid $102 billion in income tax last year, almost double the dividend amount, according to the presentation to potential bondholders. A further cut would reduce tax revenue at a time when the state is already struggling to cover its budget.

Aramco's acquisition of a stake in Sabic and the subsequent IPO are cornerstones of Crown Prince Mohammed bin Salman's

economic agenda to move the nation away from its dependence on hydrocarbons.

A ‘magic bullet’ to capture carbon dioxide?

CO2 is a powerful warming gas but there’s not a lot of it in the atmosphere – for every million particles of air, there are 410 of CO2.

The gas is helping to drive temperatures up around the world, but the comparatively low concentration means it is difficult to design efficient machines to remove it.

But a Canadian company, Carbon Engineering, believes it has found a solution.

Air is exposed to a chemical solution that concentrates the CO2. Further refinements mean the gas can be purified into a

form that can be stored or utilised as a liquid fuel.

Valeura Energy chases big prize in Turkey as West seeks gas alternatives

A C$60mln fund raise last year to help develop the field was heavily backed by UK institutions.

Energy security is a sensitive topic in Europe. Too much dependence on Russian imports has made Western politicians twitchy.

That makes Valeura Energy Inc’s (TSX:VLE) plan to develop a potentially huge new deep gas field in Turkey looks very well-timed.

Indeed, a C$60mln fund raise last year to help develop the field was heavily backed by UK institutions says chief executive Sean Guest.

In view of that perhaps it’s not surprising that Valeura intends to list in London in a few months.

That should coincide with the results of a second development well, Devepinar-1, at its Thrace basin acreage known as BCGA.

Valeura already has producing assets in the basin, but Guest says the company’s attention is focused on the three deep-well programme at Thrace.

Devepinar-1 is 20Km from the programme’s first well, Inanli-1, which hit a huge 1,600m gas column and demonstrated overpressured gas down to 4,900 metres,

The main partner in the deep resources assets at Thrace is Equinor, the former Statoil, which has a 50% stake compared to the Canadian company’s 31.5% and Pinnacle’s 18.5%.

Valeura is operator, however, and importantly owns the infrastructure in the region so rather being flared off, any gas that flows up during the drilling can be sent by pipe to be sold.

Vast gas column

Estimates currently are that there might be as much as 10trn cubic feet of gas in place in the deep Thrace Basin or enough for up to 40 years production.

Fracking tests are now underway at the first hole, Inanli-1, to demonstrate the gas discovered there is commercial.

Costs for this testing will be carried by Equinor with thier completion to fulfill the earning obligations under the (Banarli) farm-in agreement.

Devepinar-1 and the third well will test the lateral extent of the BCGA play to the western side of the basin.

Guest says that drilling has gone well and it will sit down shortly with Equinor to decide where the final well goes.

Gas shortage

Turkey is very short of gas, he adds, so netbacks (income after costs, transportation, royalties) from any hydrocarbons produced are good.

Valeura already has some producing assets in the country, which were running at the equivalent of 777 barrels per day at the end of 2018.

Received gas prices were C$9 per mcf (million cubic feet) in its latest quarter or the equivalent of C$32.48 per barrel, a 37% rise on the previous year, while for the whole year the netback was C$25.79.

Due to the high lvel of imports, the regional price of gas is what you get in Turkey, he says.

Valeura will have to pay its share of the US$25mln costs of Devepinar-1 and the next well on a pro-rata basis, but it had nearly all of its C$60mln fund raise available at the year end.

Guest adds that the first well in a programme is usually the most expensive as that’s when a lot of different techniques are tested during the coring.

Well-funded

More vertical wells are possible to determine the full extent of the BCGA but he sees Valeura as well-funded until 2020, when the consortium partners will decide on the next phase of development.

That might see an early development phase to genrate cashflow from the most accessible and commercial opportunities.

The Toronto-listed shares spiked higher when Valeura released estimates of the potential of BCGA early tn 2018, but have eased back as the development drilling has got underway.

Now at C$2.62 per share, Valuera is worth about C$227mln (£132mln), which looks way short of the underlying value if even a modest amount of the gas in place is proved to be commercial.

Valeura will keep its Toronto listing, but the focus will be Europe and given the pressing need for an alternative to Russian gas both in Turkey and elsewhere having a quote in London should do no harm when the results of the next development drill come through.

Vatican Invites Big Oil Back for Climate Change Talks

The Vatican has invited Big Oil bosses for the second time in a year as part of Pope Francis's campaign to counter climate change, according to people familiar with the plan.

Top executives from BP Plc and Eni SpA are among those invited to attend a two-day meeting from June 13, the people said, asking not to be identified before a formal announcement. The officials could meet the Pope on the second day, they said.

Chief executive officers of Exxon Mobil Corp., Eni and BP, along with asset manager BlackRock Inc.'s Larry Fink, attended a similar meeting last year, in which they agreed the world needed to transition to lower-carbon fuels while ensuring adequate supply. Since then, little progress has been made on some of the key points agreed at that meeting, such as carbon pricing.

The Pope's spokesman declined to comment when asked about this year's meeting.

The interest of Pope Francis, who has made climate change a cornerstone of his papacy, adds to the pressure companies are already facing on emissions. Royal Dutch Shell Plc gave in to demands from investors last year to set short-term climate targets, while BP has said it will disclose more information about the alignment of its business model with the Paris accord. Exxon Mobil has successfully blocked a measure from investors on climate change.

In its strategy update last month, Eni said it will plant 20 million acres of forest in Africa to help offset all carbon dioxide emissions from its oil and gas exploration and production operations by the end of the next decade.

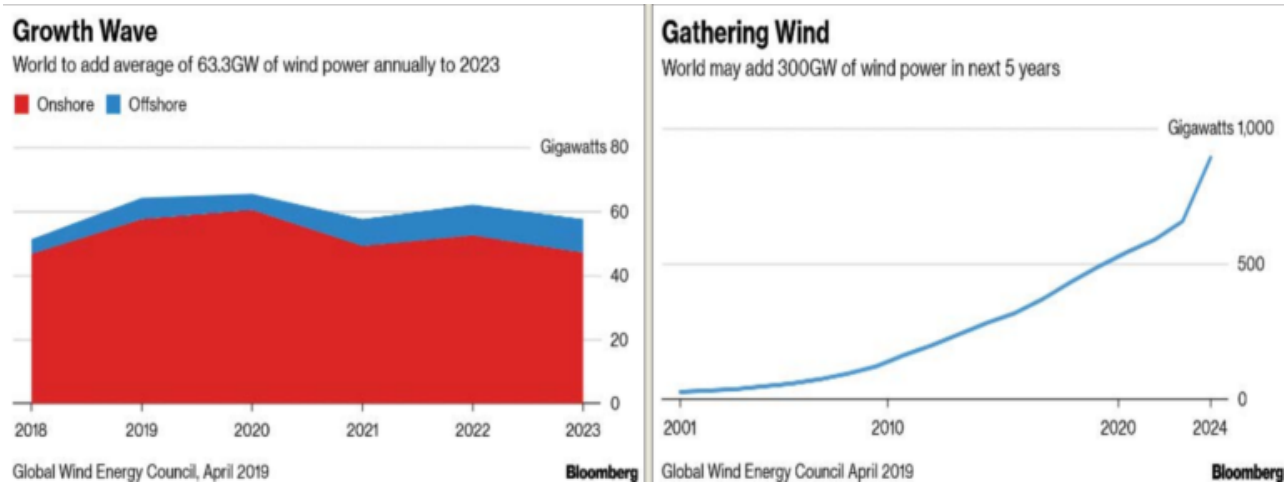
The Pope said in an encyclical letter in 2015 that the science around the topic is clear and that the Catholic Church should view it as a moral issue. The Vatican, which has diplomatic relations with over 180 countries and has permanent observer status at the United Nations, has also fervently backed the Paris climate agreement.

American gas is hot in Shanghai; American prices, not so much

The world wants US natural gas. American prices, though, it can do without. US gas companies at the LNG2019 conference in Shanghai this week have announced deals to sell a combined 4.5mn tonnes of liquefied natural gas a year from proposed multibillion dollar projects. Nearly all of that was sold without a link to the US Henry Hub benchmark, the most-widely traded gas price in the world. The novel price links for US gas included: Japan-Korea Marker: Tellurian Inc agreed to sell Total SA 1.5mn tonnes a year from its Driftwood LNG venture in Louisiana linked to Asian spot LNG marker, which has traded as much as $9 above Henry Hub in the past year. Brent oil: NextDecade Corp will supply Royal Dutch Shell Plc with 1.5mn tonnes annually, for 20 years, linked to the global crude benchmark, which US exporters in the past argued has no connection with gas fundamentals. LNG has traditionally been priced against oil, since the gas market lacked a liquid, global benchmark. The rise of US exports, and the ease of pricing against Henry Hub, was a way to break the link with oil, but left costs dominated by factors unique to North America. “Nobody wants Henry Hub” pricing in Europe, Mark Gyetvay, chief financial officer for Russian LNG developer

Novatek PJSC, told reporters on the sidelines of the conference. “Most of these people are not willing to take Henry Hub because they can’t hedge it” against European benchmarks. No global marker has been established amid the robust growth in spot LNG demand and trading, reflecting a desire by buyers and sellers to secure a diversity of pricing options. Trading of JKM futures on the Intercontinental Exchange Inc grew 10-fold between January 2017 and December 2018, while trading of Dutch Title Transfer Facility futures has grown nearly five times faster than US trading in the past two years. Europe has long had domestic gas markets that set prices LNG producers are willing to sell against. But that hasn’t been the case in Asia, where gas markets are typically disconnected and regulated by governments. That’s started to change in the past two years as spot LNG trading in the region increased, bolstering confidence in the JKM price, assessed by S&P Global Platts. Nearly twothirds of the world’s LNG was bought by Japan, China, South Korea or Taiwan last year, according to the International Group of LNG Importers. “We don’t believe LNG should continue to trade on an index to something else. It should be buying and selling on an LNG index,” said Meg Gentle, Tellurian’s chief executive officer. “Today JKM is really the market clearing index. Over time there will be additional LNG price points.” The pricing mechanism that raised eyebrows this week in Shanghai was NextDecade’s Brent-linked deal with Shell. NextDecade CEO Matt Schatzmansaid he wanted to sell against Brent because his Rio Grande LNG venture will rely on gas that’s a byproduct of oil drilling in the Permian Basin, where output will likely increase along with oil prices. Total CEO Patrick Pouyanne said he didn’t understand that logic. “Continuing to price gas linked to oil is somewhat the old world,” Pouyanne said yesterday. “I was most surprised to see new contracts linked to Brent, especially from the US Someone will have to explain this to me.

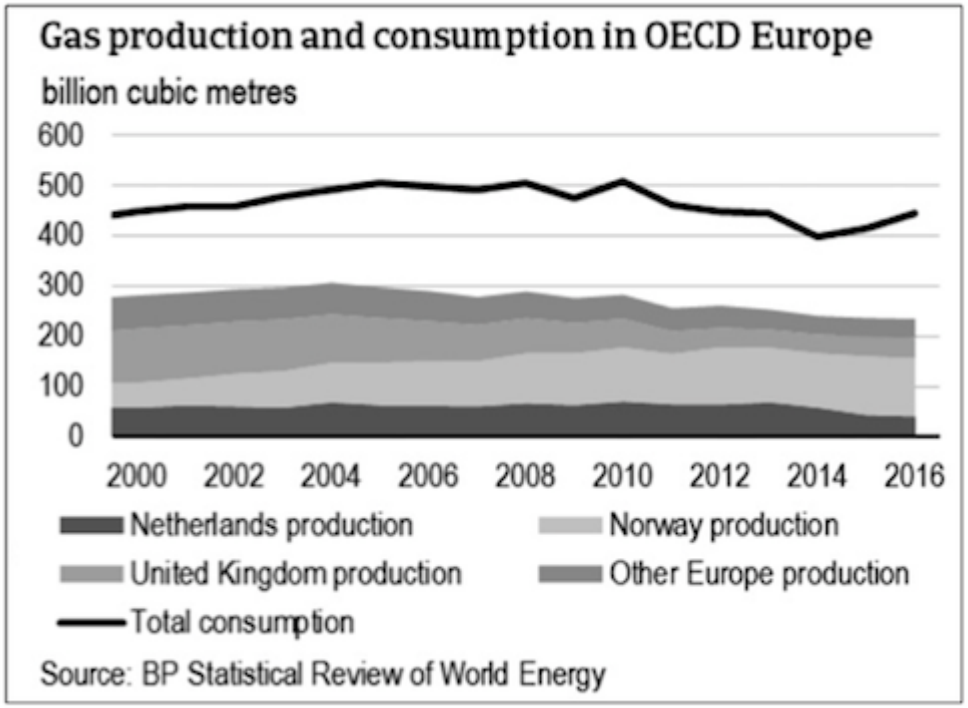
Global wind power may jump 50% in five years: GWEC



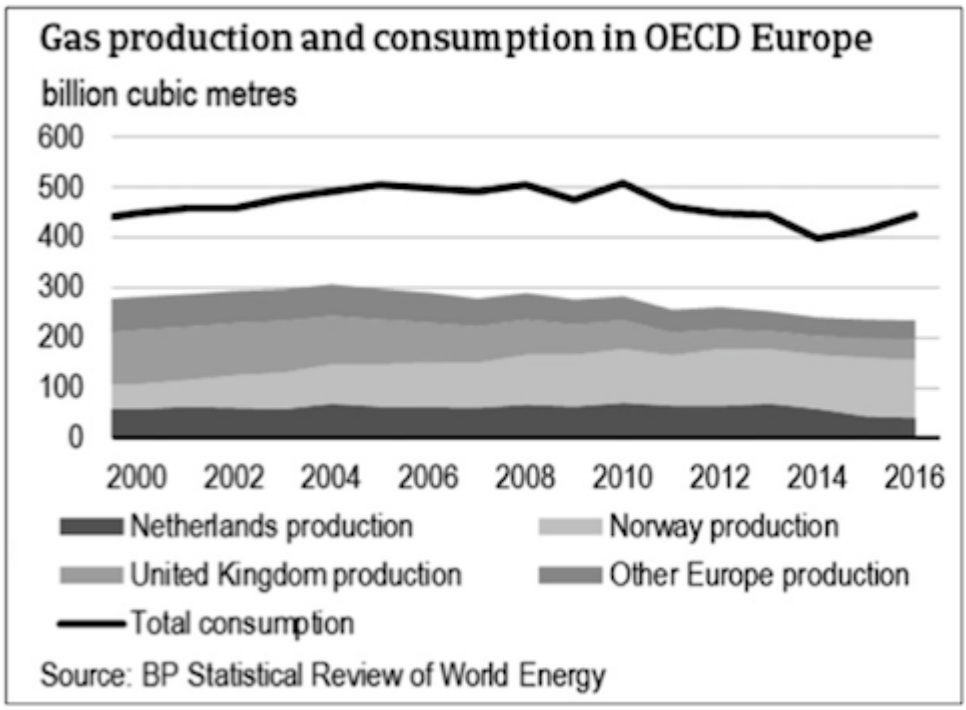
Wind turbine installations are likely to accelerate in the next five years as new markets open across Asia and Africa, jump-starting an industry that to date enjoyed steady but unspectacular growth. Led by China, the US and new markets in South-East Asia, wind installations may grow by 50% in total in the next five years and add 300 gigawatts of power generation capacity, the Global Wind Energy Council, an industry group, said yesterday in its annual report. The South-East region including Vietnam may grow to a 4-gigawatt wind market by 2023, up from 1.5 gigawatts last year, GWEC said. The group identified several new drivers for the industry’s growth in addition to lower turbine prices and government commitments to reduce pollution set out in the Paris Agreement on climate change. It said developers and investors are increasingly tapping finance outside government support wind power. Those include power purchase agreements, enabling a faster roll out of projects both in mature and fledgling markets. The cost of turbines has fallen sharply in recent years, although that trend will probably stabilise in 2019, said GWEC. Global installations of on- and off shore

wind will increase by as much as 65.4 gigawatts this year from 51.3 gigawatts in 2018, the group said. South-East Asia states like Vietnam, Indonesia, Thailand and the Philippines are markets to watch, said GWEC in its report. Urbanization, rapid industrialisation and population growth are encouraging the region’s governments to access clean power, it said.

EU: Between an American Rock and a Russian Hard Place



At this moment, shipped and regasified American LNG stands at a higher price than Russian piped gas. Are there any reliable, affordable alternatives available to Nord Stream 2?



Commentary: The mysterious case of disappearing electricity demand

Electricity is at the heart of modern life, and so it’s easy to assume that our reliance on electricity will increase or even accelerate. However, in many advanced economies the data reveals a surprisingly different story.

Electricity demand has increased by around 70% since 2000, and in 2017, global electricity demand increased by a further 3%. This increase was more than any other major fuel, pushing total demand to 22 200 terawatt-hours (TWh). Electricity now accounts for 19% of total final consumption, compared to just over 15% in 2000.

Yet while global demand growth has been strong, there are major disparities across regions. In particular, in recent years electricity demand in **advanced economies** has begun to flatten or in some cases decline – in fact electricity demand fell in 18 out of 30 IEA member countries over the period 2010-2017. Several factors can account for this slowing of growth, but the key reason is energy efficiency.

There have been a range of new sources of electricity demand growth in advanced economies, including digitalization and the electrification of heat and mobility. However savings from energy efficiency have outpaced this growth. Energy efficiency

measures adopted since 2000 saved almost 1 800 TWh in 2017, or around 20% of overall current electricity use.

Over 40% of the slowdown in electricity demand was attributable to energy efficiency in industry, largely a result of strict, broadly applied, minimum energy performance standards for electric motors. In residential buildings, total energy use by certain classes of appliances has already peaked. For example, energy use for refrigerators (98% of which are covered by performance standards) is well below the high point reached in 2009, and energy use for lighting has also declined. In the absence of energy efficiency improvements, electricity demand in advanced economies would have grown at 1.6% per year since 2010, instead of 0.3%.

Changes in economic structure in advanced economies have also contributed to lower demand growth. In 2000, around 53% of electricity demand in the industrial sector came from heavy industry, but by 2017 this figure had fallen to less than 45%. Advanced economies now account for 30% of global steel production, for example, down from 60% in 2000, and for 25% of aluminium production, also down from around 60% in 2000.

Finally, electricity demand for heat and mobility increased by only 350 TWh between 2000 and 2017. Today, electric cars represent only 1.2% of all passenger vehicle sales in advanced economies and account for less than 0.5% of the passenger vehicle stock. Since 2000, only around 7% of households in advanced economies have switched from fossil fuels (mainly gas) to electricity for space and water heating purposes, and use of electricity for meeting heat demand in the industrial sector remains marginal. In many regions, the price of electricity relative to fossil fuels limits its competitiveness for heating end-uses.

When we look to the future, the pace of electrification is set to pick-up somewhat in advanced economies. Nonetheless, electricity demand growth is projected to remain sluggish in

the IEA’s New Policies Scenario (NPS), as improvements in energy efficiency continue to act as a brake on increasing demand for many end-uses. In addition, fewer purchases of household appliances (most households in advanced economies today own at least one of each major household appliance such as refrigerators, washing machines and televisions), and a shift from industry to the less electricity-intensive services sector, all contribute to lower electricity demand growth.

On average, electricity demand in advanced economies is projected to grow at just 0.7% per year to 2040 in the NPS, with the increase largely due to digitalization and policies that incentivise the use of electric vehicles and electric heating. Without those policies, electricity demand would continue to flatten or even decline in many advanced economies.

There are other factors at play. For example, population growth in many advanced economies is barely exceeded by electricity demand growth, meaning that further growth in GDP per capita does not lead to an increase in electricity demand per capita (as an exception, the industry sector in Korea accounts for a large share of electricity demand, and so it is one of the few advanced economies that sees industry contribute to overall electricity demand growth on a per capita basis).

Ultimately, despite moderate growth in electricity demand, fuel-switching to electricity and energy efficiency improvements in the use of other fuels mean the share of electricity in final consumption is projected to increase to 27% in advanced economies by 2040, up from 22% today.