



Weekly News

13 December 2024

Controversy flares up in Berlin as Adlon hosts LNG Summit

LNG is a controversial topic in Germany: Green paint was thrown at the back entrance of Berlin's luxury Hotel Adlon at the opening day of the Global LNG Summit while Stefan Wenzel, state secretary to Germany's economy minister Robert Habeck spoke just prior to a panel with top executives from Cheniere Energy, ADNOC Gas, Shell and bp.

In the panel, some of the world's largest oil and gas suppliers shared their view on the scale and speed of new LNG export capacity built-out, taking place predominantly in North America. Committed US projects will double export capacity over the next three to four years, but analysts are wary about how many more projects will go ahead afterwards, as prices are expected to recede.

All eyes on US export growth

As early as 2028, the United States will be home to 232 billion cubic meters per year (bcm/y) of LNG export capacity, up from 126 bcm/y today – far ahead of Qatar with 171 bcm/y. On the supply side, analysts anticipate a 80% surge in volumes coming to the market by 2030.

On the demand side, natural gas is becoming the world's preferred fossil fuel – both to decarbonise heavy industry and for dispatchable power stations. Investment in liquefaction and export capacity is hence forecast to soar over 50% by 2029.

Gas-burn has shown signs of recovery in 2024, largely driven by



Inside the Hotel Adlon, Berlin, on December 10, 2024

the fast build-out of data centres and the global AI boom.

Industry participants gathered in Berlin are positive that both factors will create a healthy business environment for infrastructure investment – both in LNG export terminals and the upstream side of the gas value chain as well as in regas terminals in key demand markets in Europe and Asia.

Europe's largest economy changes takt

Germany – late-comer in terms of LNG buying activities – is facing an uphill struggle when it comes to mitigate risks of de-industrialisation, security of energy supply and price volatility. All against the backdrop of a broken coalition government, brought down by the

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Qatar dismisses EU sustainability directive as 'harmful'

Qatar's energy minister and CEO of QatarEnergy, Saad Sherida Al-Kaabi has dismissed the implementation of the EU Corporate Sustainability Due Diligence Directive (CS3D). The novel regulation affects any company that earns more than €450 million from deals in or from Europe, and makes them accountable for tier emissions 1, 2, and 3 and liable for a penalty of up to 5% of total revenue worldwide.

Though Qatar supports the concept in principle, "the issue is how you go about it," Al-Kaabi told press in Doha, criticising the directive as "making absolutely no sense."

'Do you want our LNG into the EU?'

Under the CS3D directives, the international oil and gas majors would be made accountable for tier emissions 1, 2, and 3 which in Al-Kaabi's view "makes absolutely no sense."



Mozah, one of Nakilat's flagship QMAX vessels

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Liberal's exit of a coalition with the Social Democrats and the Green Party.

The latter party has been in charge of the German economy and environmental ministry, with minister Robert Habeck at the forefront of getting several LNG import terminals being built. They were put into operation in a rush, and supplied by often staggeringly expensive LNG deliveries, at a time when the Kremlin's war on Ukraine halted most of its long-term imports of Russian pipeline gas.

The first German LNG regas terminal was inaugurated in December 2022 and today here are seven import terminals are in operation:

- Brunsbüttel, where RWE chartered the FSRU *Hoegh Gannet* with a regas capacity of 7.5 bcm/y. The first cargo was supplied by Abu Dhabi National Oil Company (ADNOC), with subsequent deliveries mostly originating from the US.
- Wilhelmshaven, where Uniper hosts two FSRUs – the *Hoegh Esperanza* with about 5 bcm/y regas capacity and *Excelsior* FSRU with 3 bcm/y capacity, operated by a consortium of E.ON, Engie and Tree Energy Solutions (TES).
- In Stade near Hamburg, the first land-based German LNG import terminal is developed by the Hanseatic Energy Hub (HEH) which consists of the Buss Group, the energy infrastructure operator Fluxys and its customers as well as Dow Chemicals of the US. Minister Habeck said in July 2022 Stade LNG would host one of the government-leased floating terminals, Dynagas' *Transgas Force* with 5 bcm/y to 7.5 bcm/y nameplate



LNG regas terminal at Mukran, Germany

capacity. Construction for the jetty started in early 2023 and the terminal is scheduled to go into operation in 2027.

Controversy over Mukran LNG project

Mukran, a small town on the Rugen Island in the Baltic Sea has become the centre of controversy over Germany's future LNG and wider energy policy.

- In April, Deutsche ReGas secured an operating permit under German federal and state laws for its Deutsche Ostsee LNG import terminal at Mukran on the island of Rügen. The controversial project will have initial capacity of 7.5 bcm/y, based on one FSRU 'Energos Power'.
- As second vessel, FSRU *Neptune* is scheduled to arrive at Mukran once its current service ends at Lumbin. Once in place and commissioned, Deutsche ReGas will be able to feed 13.5 bcm/y of natural gas into the German gas transmission network in Lubmin through the 50-kilometer-long OAL pipeline.

In September, Deutsche Regas started regular operations at Mukran LNG terminal in Mukran where up to 110 ship-calls per year are permitted. Local residents complain about the ongoing noise problem,

alleging the discharge of vessels would sound as if several airplanes were flying over the house.

Campaigners want total fossil fuel exit

Environmentalist campaigners outside Adlon Kempinski hotel in Berlin were protesting with green paint, party hats and pepper spray against the use of natural gas and other fossil fuels in Germany's energy mix.

They are disappointed that the traffic light coalition government (SPD, FDP, Green Party) did not use the Ukraine war and the Russia sanctions to get rid of all fossil fuels as quickly as possible in order to focus on renewable energy sources. Instead, the economy and environment minister had been on the lookout for new gas and LNG suppliers and supported the construction of new LNG regas and import terminals.

Deliveries from the Gulf emirate of Qatar were met with "incomprehension" by the human rights organisation Amnesty International. Opponents also say the route for the deliveries proved to be "unsafe" and criticise the emissions-intensive practises of shale gas fracking in large parts of the United States and in the Canadian provinces of Alberta and British Columbia. ■

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Europe-wide CO₂ market can save 20% in storage costs

Setting up a pan-European market for transporting and storing industry and energy-related emissions in the North Sea could slash storage costs. Modelling by Xodus Group finds emitters using UK offshore CO₂ storage could save 20%, or €11/t of stored CO₂ and with the market set to grow to 243 million tons by 2040, this would represent €2.7 billion in annual savings.

EU emitters would receive the bulk of the savings, with an average cost reduction of 28% or €16/tCO₂, amounting to €2.6 billion per year in 2040.

Fundamentally, the savings stem from reducing the transport distance for CO₂ headed to offshore storage. The economies of scale caused by the largescale storage in the UK and Norway have not been incorporated, researchers noted.

Huge storage potential under UK North Sea

The UK's offshore CO₂ storage potential is estimated at 78 billion tonnes, almost one third of Europe's geological storage capacity. Meanwhile, in countries across Europe, there is often a mismatch between the amount of industrial CO₂ that will need to be captured, and the amount of CO₂ storage resource available to prevent it reaching the atmosphere.

By storing cap-

tured carbon in the UK North Sea, emitters in the EU-27 countries could, on average, save over €17/t or have a nearly 29% reduction in transportation and storage cost. With the EU alone projected to need 164 MtCO₂pa of offshore CO₂ storage by 2040, this would represent €2.6 billion in annual savings, analysts noted.

Conflicting regulatory regimes

As of today, however, conflicting policy remains the largest obstacle to transporting CO₂ across the EU-UK border which would otherwise be technically feasible. To facilitate cross-border CO₂ transport and stor-

age, the European Commission and the UK Government are urged to "take concrete actions" to harmonise policies and regulations.

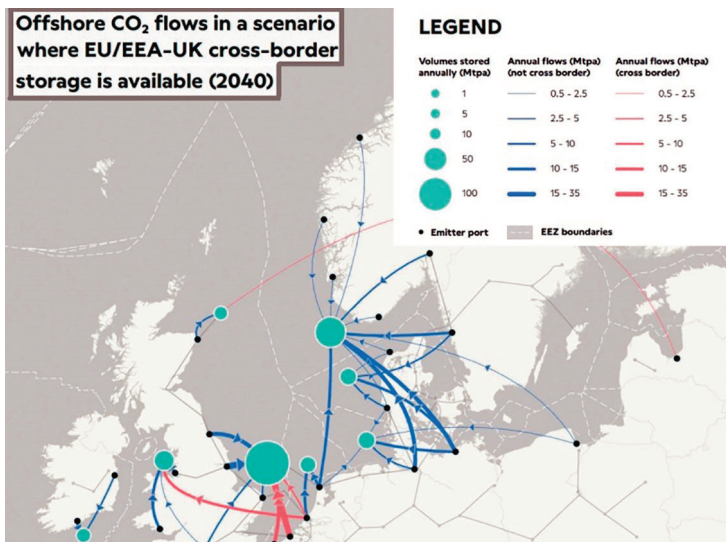
Necessary steps include: setting up a bilateral trade agreement to enable mutual recognition of each jurisdiction's CCS regime. Amending existing trading in Europe and the UK schemes to accommodate CO₂ storage outside the EU and EEA.

Need to harmonise policies, and trade

As CCUS projects progress in the EU, Norway and the UK – first Carbon Capture Utilisation and Storage (CCUS) sites will begin operations in as soon as 2026. Hence, facilitating cross-border CO₂ transport and storage are vital to make these systems more attractive and resilient.

"We need to act quickly before higher-cost options are locked in and the opportunity is lost," said Olivia Powis, head of the Carbon Capture and Storage Association (CCSA). A Europe-wide CO₂ market is within reach, but policies are standing in the way.

"We can cut storage costs by 20% and save billions annually if the EU and UK break down these barriers, and make cross-border CO₂ storage happen now," she said, suggesting the future of the European industry and its clean energy transformation depends on it. ■



BNetzA considers lowering grid fees for batteries, electrolyzers

Large-scale battery energy storage systems and hydrogen electrolyzers should pay lower grid fees in areas with surplus in wind and solar power supply, Germany's federal network agency BNetzA proposed. In a position paper, it offered to reform the one-off connection charge that TSOs are allowed to raise when adding large-scale users to the grid.

"Grid users should contribute to grid costs at different levels, depending on how beneficial it is for the overall system to be located at the respective site," BNetzA head Klaus Müller said.

Price signals to steer grid build-out

"Each grid connection point should be assigned to a pricing level depending on how well or poorly electricity can be transported to the new connection, according to the proposals."

With this move, BNetzA seeks to set price signals to steer the much-needed build out of the German electricity grid in the right direction, without incurring excessive costs.

"Expanding the electricity grid for the energy transition comes at a cost. That is why a price signal for the conscious and economical use of connection capacities and more cost efficiency is important," Müller stressed, suggesting, this would in turn reduce overall cost of expanding the high-voltage power transmission grid.

With the build-out of high-voltage power transmission lines, the so-called Strom-

Autobahn, progressing slowly, German TSO had to mandate power generator to curtail around 19 TWh of green energy to avoid grid congestion.

Avoiding power curtailments

That volume amounts to some 4% of Germany's total annual electricity generation, hence substantial amounts of mostly wind and solar power that could be produced in the northern part of the country currently go to waste. Revised grid fees, energy storage and targeted build-out of power interconnection lines could help remedy this issue. ■

INEOS takes FID on Europe's first full-scale CCS facility

Danish utility **INEOS**, together with Harbour Energy and Nordsøfonden, has taken a Final Investment Decision (FID) on the first commercial phase of Project Greensand, paving the way for more than \$150 million to be invested in carbon capture and storage (CCS). Storage operations are scheduled to begin at the end of 2025, or in early 2026.

As the day-to-day operator, INEOS will manage the Greensand CCS project for which partners entered commercial agreements throughout the entire supply chain – from CO2 emitters, to logistics, storage and shipping, backed by the necessary funding.

Aiming to store 8 mtpa by 2030

In Phase-1, the carbon dioxide will be captured and liquified at Danish biomethane production plants, transported to the port of Esbjerg, and then shipped to the Nini field in the Danish North Sea for permanent storage. The aim is to store 400,000 tonnes of CO2 each year to start with.

Towards 2030, gradual expansion of storage capacity is envisaged and developers say Greensand CCS has a potential to store up to 8 million tons of CO2 per annum.

The EU needs to establish a carbon storage capacity of 250 million tonnes of CO2 per year by 2040, the Commission estimates, if the trade block wants to achieve the objectives of the Paris Agreement.

Nordsøfonden, a Danish state company, is tasked with exploiting the potential of the country's subsurface assets. Its two pillars are production of oil and gas as well as issuing



Render of INEOS' Greensand CCS project

licences for underground carbon storage.

London-headquartered Harbour Energy is an independent oil and gas company. Its geographically diverse setup that includes

near-infrastructure opportunities in Norway, unconventional scalable opportunities in Argentina and conventional offshore projects in Mexico and Indonesia. ■

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Openly addressing the EU Commission, he said: "Are you telling us that you don't want our LNG into the EU? Because I sure am not going to supply the EU with LNG to support their energy requirements and then be penalised with our total revenue worldwide."

Investment authorities, like Qatar Investment Authority (QIA), or any sovereign fund or fund manager around the world will worry about the companies they own" or plan to own whether they could be liable for such penalties, he noted, suggesting this would "affect their investments and end up pulling out of the EU to protect their funds and look at investing in other countries."

Commenting on Europe's new policy, Al-Kaabi called the EU's move really surprising. "I think it will harm them. And for companies that will have to comply, will need to put an army of people to do all this dili-

gence," he said. "If there is more cost on the company to do this diligence, who ends up paying for it? The customer. This will harm European companies first."

QatarEnergy unable to meet Net Zero

If enacted, the novel regulation would mandated QatarEnergy, Shell, or ExxonMobil and also car companies like Toyota or GM, to specify how they will abide by the Paris Accords. So, the company will have to commit to Net Zero, Al-Kaabi said, stressing:

"For us as QatarEnergy, and with all the expansions we are undertaking, I can assure you we cannot meet Net Zero as a company."

For the Qatari oil and gas giant to abide by the new CS3D directive it would need to set up a team of probably a thousand people in QatarEnergy. "Their dedicated job would be to go and look at all our subsidi-

aries and suppliers around the world, Al-Kaabi explained, lamenting:

"If there is a nail or a screw that we buy from a contractor who has a sub-contractor, we will be responsible for looking into their practices and would get penalised for that."

US/Qatari friendship – a 'win-win relationship'

Questioned about Qatar's relations with the incoming administration of President Trump, he stressed that US/Qatari friendship and energy relations transcend administrations.

"We have an excellent partnership between companies and between people, and that this is sustainable because it is good for business with mutual respect and mutual gain on both sides," Al-Kaabi said.

"It's a win-win relationship. We have oil and gas projects that are multi-decade projects and can survive governments and administrations." ■



India's blends LNG with domestic gas as demand doubles by 2040

India is poised to snap up big parts of the "substantial volume of uncontracted LNG" originating from the Middle East, Rystad Energy reckons. Buying interest for imported LNG is on the rise as the Indian government allows utilities to blend the super-chilled fuel with domestically produced gas – in a bid to make the fuel more affordable for power generation, compared to coal.

Watch out for uncontracted LNG cargoes, seems to be the motto of Indian commodity traders and large utilities. Looking ahead, Rystad's Kaushal Ramesh, Vice President Gas & LNG Research, expects savvy buyers to secure large parts of the uncontracted LNG production from Qatar, Oman and potentially Iran – at favourable terms.

"The nation is well-positioned to attract aggressive targeting from Middle Eastern producers and offtakers," he said, noting nearly 100 mtpa of Middle East LNG will remain uncontracted by 2035."

Flexible, low-cost supply preferred

Some potential pitfalls should, however, be taken into consideration: A key issue is Indian buyers' history of renegotiating or even abandoning near-complete deals, which creates uncertainty for suppliers. In Ramesh's view, "this preference for flexibility and cost-effectiveness over long-term commitments highlights India's focus on securing the best

prices for its consumers in a volatile global market – but it could limit LNG growth prospects."

Delays at infrastructure build-out hampers the development of India's overall gas and power gen sector. Regasification terminals remain concentrated in the western part of the country, and efforts to expand the gas pipeline network to other regions have been inconsistent. "Slow progress is due to regulatory hurdles, challenges in securing investments, difficult terrain, and competing priorities," he criticised, "as India channels significant resources into renewable energy development alongside its gas infrastructure."

Come 2040, India's total gas consumption is forecast to double to almost 114 Bcm and despite a 51% jump in domestic production to 36.7 Bcm by 2025, this won't suffice to meet India's growing energy hunger.

The Asian powerhouse and most populous nation will hence heavily rely on imports to meet its future energy needs. Long-term contracts, extending way into the 2030s and beyond, help shield India from

global price fluctuations and ensure a steady stream of cargoes shipped to Indian shores.

Coal still king in India, at least for now

India's heavy reliance on coal has become apparent during summer 2024 heatwaves which temporarily propelled up coal-burn to meet peak power demand. Gas, on the other hand, currently accounts for just 2% of the country's power mix – and in fact, coal-generated power is not projected to start falling this side of 2040.

Though gas-burn is unlikely to drive LNG imports, analysts at Rystad Energy believe "the sector could still see growth, however, depending on future policies to promote coal-to-gas switching or introduce carbon pricing."

NEWS NUDGES

Maersk Halifax gets dual-fuel MAN engine

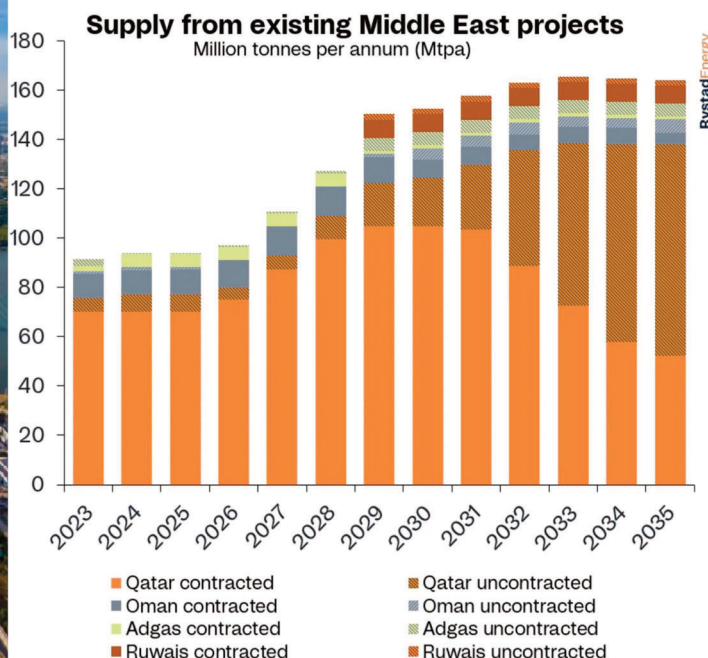
The main engine of the 'Maersk Halifax' has been retrofitted to a dual-fuel MAN B&W ME-LGIM unit. It was the first such project globally involving a Very Large Container Vessel (VLCV) and the retrofit also includes an upgrade to MAN's latest Triton engine control system.

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– Kaushal Ramesh, Vice President Gas & LNG Research, Rystad Energy



SSE and Siemens Energy launch 'Mission H2 Power'

Scottish Southern Energy (SSE) and Siemens Energy have launched 'Mission H2 Power' – aimed at delivering 100% hydrogen-ready gas turbine technology – in a bid to improve the UK's energy security and fuel the green energy transition. The collaboration supports the decarbonisation of SSE's Keadby 2 Power Station in North Lincolnshire.

Keadby 2, powered by a SGT5-9000HL gas turbine, is Europe's most efficient combined-cycle power plant which will facilitate blending hydrogen into operations.

The multi-million-pound investment by SSE and Siemens Energy will see the latter develop a combustion system that allows running its SGT5-9000HL fully on hydrogen, or on a natural gas/ H₂-blend. To that end, additional test facilities will be built at Siemens Energy's Clean Energy Centre in Berlin.

Developing, financing and implementing low-carbon power plants in the UK is essential, if the government wants to reach its net zero by 2050 target.

Analysis from National Energy System Operator shows that around 7 GW of low-

carbon flexible power will likely be needed on the system by 2035, with around half of that capacity provided by hydrogen-fuelled power stations.

"It isn't enough for developers to simply talk about an ambition to transition from gas to hydrogen," said Finlay McCutcheon, managing director of SSE Thermal. "We know hydrogen-fired power stations will be an essential element of the energy mix in a net zero world and Mission H2 Power will help us accelerate their deployment through engineering excellence."

Darren Davidson, Vice President of Siemens Energy UK&I said the UK Government wanted to deliver clean power by 2030, and hydrogen can be an important part of that energy mix. "We are living in a



Keadby 2 site in North Lincolnshire

transformative time for the energy sector. Our HL-class gas turbine has set records for efficiency and power performance," he said, calling the new collaboration a significant step in reaching the point where large gas turbines can be fully run on hydrogen. ■

Flex4H2 project aims for 100% hydrogen at H-Class temperatures

EU-funded Flexibility for Hydrogen (Flex4H2) project, led by Ansaldo Energia, is forging ahead with developing a fuel-flexible system to combust up to 100% hydrogen at H-Class operating temperatures. That's needed for highest cycle efficiency, while meeting emission targets without any use of diluents.

Researchers have designed and developed a novel system which they are now seeking to validate gradually increasing the blend of hydrogen during combustion. Design of the combustor is based on Ansaldo Energia's Constant Pressure Sequential Combustion (CPSC) technology and demonstrated in a stepwise approach, at full

gas turbine operating conditions.

Sequential combustion

"One single engine, equipped with the novel FLEX4H2 combustion system, has the potential of eliminating up to 2,000,000 tons of CO₂ emissions per year, whilst delivering enough clean energy to supply up to 500,000 households," explained Federico

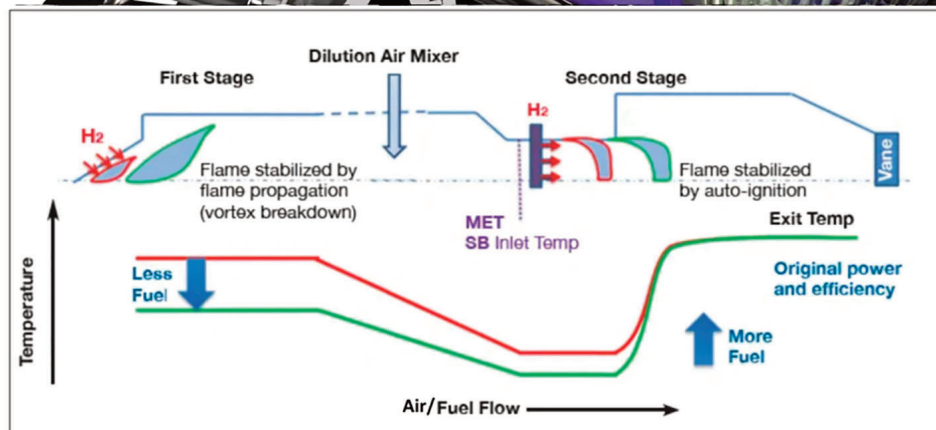
Bonzani, director product and technology at Ansaldo Energia.

The improved combustor design will be fully retrofittable to existing gas turbines, allowing operators to refurbish existing assets. Results of the FLEX4H2 will be made available for "comprehensive exploitation," participants promised, as they want to contribute to the EU Green Deal's objective to decarbonise the European power sector by 2030.

EU funded project runs through Dec 2026

Funded under the EU Horizon Framework and by the Swiss department of economic affairs, Flex4H2 has a budget of around €8.7 million and runs for four years through to December 2026.

The FLEX4H2 consortium includes nine partners from six European countries: Italy's Ansaldo Energia, Germany's Arttic Innovation, the French Centre Européenne de Recherche et de Formation Avancée en Calcul Scientifique – CERFACS, Deutsches Zentrum für Luft- und Raumfahrt – DLR, Italy's Edison, Belgium-based ETN Global, Norway's Sintef Energi, Ansaldo Energia Switzerland, and Zürcher Hochschule für angewandte Wissenschaften – ZHAW. ■



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