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## Piped natural gas still a dream for Haryana and Punjab region

When the Central government authorised GAIL Gas Ltd to start city gas distribution (CGD) network in Sonapat in June 2009, it was anticipated that it will be the first city in North India to get piped gas connections. Same is the case of Chandigarh, Mohali and Panchkula residents. They were expecting to join the premier league of cities having CGD network when IndianOil-Adani Gas (P) Ltd won the bid for these cities in May 2013. However, nine years later, GAIL has succeeded in roping in only 8,500 piped natural gas (PNG) customers in Sonapat. In Chandigarh, only 9,000 customers are getting piped gas. Even other awarded projects in Punjab and Haryana are running behind schedule. PNG is around 20% cheaper than LPG supplied in cylinders but the slow progress in laying underground pipes has been a major stumbling block and eluding customers from cheaper fuel. According to a senior functionary of the company which won the bids for the CGD network, teething problems at local level, infrastructure constraints and mindset of people are the main reasons behind the slow progress. We are facing infrastructure constraints in the city as the lanes are very narrow and it's very difficult to lay the pipelines. Secondly, the mindset of people has to change. People are still not coming forward to opt for piped gas," said a GAIL official. The companies who have already won the bid said the right of use (RoU) charges for laying the pipeline in Punjab, Haryana and Chandigarh are very high.

<https://www.tribuneindia.com/news/business/piped-natural-gas-still-a-dream-for-region/704923.html>

## CNG buses piloted for interstate routes in India

Delhi Transport Corporation (DTC) is planning to restart interstate passenger services after an eight-year hiatus, with buses using Compressed Natural Gas (CNG) to commence a pilot project around the national capital from February 2019. DTC ceased interstate activity when the entire fleet switched to CNG in 2010 and because of challenges with range of operations using steel cylinders. At that time the CNG refueling network was only available in cities, but the recent push by the government to move to a gas-based economy has heightened investment in piped gas networks and

refueling infrastructure. Type IV carbon composite cylinders have been imported for use in the trial and if the pilot is successful, the cylinders will be manufactured in India. Approval of this cylinder type is in accordance with India's amended Gas Cylinders Rules 2015. The carbon composite cylinders are lighter and more can be carried onboard buses, hugely extending the range. The existing ordinary CNG buses have five steel cylinders with a capacity of 100 kg fuel top up. The new buses will have seven fibre cylinders which can store up to 300 kg CNG. The Times of India reports the existing ordinary bus cost is about Rs 32 lakh (USD 45,700), while the one with fibre cylinder would cost Rs 39 lakh (\$ 55,700) as each cylinder cost is Rs one lakh (\$1,430 per unit). Dubbed 'green corridors' because of the use of CNG as a fuel that is significantly cleaner for bus operations than diesel, routes are proposed for the busy highways from Delhi to Agra, Jaipur, Haridwar and Chandigarh.

[Source: NGV Global](#)

## Tap on IGL app before you queue up for CNG

Next time you want to tank up on CNG in Delhi-NCR, you need not wait in a long queue. A few taps on a new IGL app on your phone will tell you the average waiting time at stations within a radius of five kms and beyond to help you chose the

one where you can get the quickest refill. The 'CNG Queue Management' app is the key ingredient of a basket of digital initiatives launched on Friday by NCR's sole supplier of CNG and PNG services for improving consumer interface and service. "These initiatives will provide seamless information and convenience to consumers as well as a big push towards creating a Digital India," oil minister Dharmendra Pradhan said launching the initiatives. The New app divides CNG consumers into three broad categories- buses, cars and autos and help disperse demand in a particular area to ease the queues. IGL has been hamstrung by lack of land in expanding its CNG network, especially in east and south, to meet over 10% rise in annual demand as more and more vehicles switch to the clean-burning fuel. But still, the company is refueling a million vehicles daily and supplying PNG to an equal number of households, which drew a rare compliment from Pradhan. "Good to see that IGL has grown beyond the initial mandate of supplying CNG for public transport vehicles to become one of India's biggest CGD companies. Of the 1500 CNG stations operating in the country, more than 450 are in Delhi. IGL plans to add another 50 CNG stations in NCR," Pradhan said.

<https://timesofindia.indiatimes.com/india/tap-on-igl-app-before-you-queue-up-for-cng/articleshow/67198328.cms>

## Government should increase CNG distribution centres, promote hybrid tech before going electric: R.C. Bhargava

R.C. Bhargava, chairman, Maruti Suzuki India, suggests that providing subsidies will not be a viable way to make small electric cars affordable with rich vehicle owners pocketing most the subsidies. As carmakers the world over struggle to develop affordable small electric vehicles, the Indian government should invest in increasing infrastructure for distribution of CNG and promote hybrid technology in the interim to reduce car emissions in the country, R.C. Bhargava, chairman, Maruti Suzuki India Ltd, said. He also suggested that providing subsidies will not be a viable way to make small electric cars affordable with rich vehicle owners pocketing most the subsidies. "CNG is the most affordable and clean, fuel. Then why not use the funds to increase the distribution centres for CNG? The sales of such vehicles have grown by almost 50% this fiscal year," said Bhargava. Realizing the problem of shifting directly to electric vehicles, the Union government has shown an inclination towards reducing taxes on hybrid vehicles. The government is also contemplating imposing a cess on traditional vehicles to generate funds for electric vehicles. According to Bhargava, two-thirds of the petrol consumption is by two-wheelers the focus should be on converting these vehicles and that the government should not impose taxes on four-wheelers to incentivize electric two-wheelers. Suzuki Motor Co. and Toyota Motor Co. have collaborated to make small electric and hybrid cars for the Indian market which will be launched in 2019. Maruti Suzuki, Suzuki's Indian subsidiary, has already started testing 50 units of an electric version of its Wagon R car in Indian conditions.

<https://www.livemint.com/Industry/zjkelxUtpPlmclJFFDNQtJ/Govt-should-increase-CNG-distribution-centres-promote-hybrid.html>

**Ashoka Buildcon plans to bid for Rs 400-crore city gas distribution projects**

Roads developer Ashoka Buildcon (ABL), through its city gas distribution (CGD) business, Unison Enviro (UEPL), is planning to bid for projects worth Rs 400-600 crore in the next round of bidding scheduled in February. A day after ABL said it has received Rs 150 crore from Morgan Stanley in exchange for a 49% stake in UEPL, Paresh Mehta, CFO, ABL, told FE the Wall Street giant would invest more funds as and when required in order to bid for new projects and set up the required infrastructure. "We will also put in funds so as to maintain our holding of 51% in UEPL. The idea is to grow this business together with Morgan Stanley, over time," Mehta said. UEPL has already set up three fueling stations for CNG for vehicles and plans to add to this tally over the next few years, Mehta added. UEPL will also set up pumping stations to supply piped natural gas to both commercial and domestic consumers. According to analysts at Edelweiss, with corresponding equity infusion in line with their respective stakes, UEPL currently has a war chest of `300 crore, which is enough not only to fund its existing projects, but also to grow its portfolio by winning new ones. While ABL's foray into CGD has been a deviation from its core engineering and toll roads business, analysts believe the partnership with a reputed investor such as Morgan Stanley will assuage these concerns and that it would reduce ABL's own equity commitment. They added that while equity infusion in the business is not a concern anymore, the deal is the first step towards growing the business and eventually, unlocking value.

<https://www.financialexpress.com/industry/ashoka-buildcon-plans-to-bid-for-rs-400-crore-city-gas-distribution-projects/1418155/>

**NATURAL GAS/PIPELINES/ COMPANY NEWS****PM Narendra Modi lays foundation of gas pipeline projects in Odisha on December 24**

Prime Minister Narendra Modi laid the foundation of Paradip Hyderabad Pipeline Product Project (PHPL) and Bokaro-Angul section of Jagdishpur-Haldia and Bokaro-Dhamra Gas Pipeline Project (PM Urja Ganga) on December 24 during his visit to Odisha. Union Minister of Petroleum and Natural Gas Dharmendra Pradhan informed about the Prime Minister's visit. Highlighting the details of the 1212 kilometre long Paradip Hyderabad Product Pipeline, the Union Minister said PHPL is being built by the Indian Oil Corporation Ltd. at a sanctioned cost of Rs. 3,800 crores. It is capable of transporting 4.5 MMTPA of petrol, diesel, kerosene and Aviation Turbine Fuel (ATF). The pipeline originates at Paradip and traverses through three States Odisha (329 Km), Andhra Pradesh (723 Km) and Telangana (160 Km) before terminating at Hyderabad. Pradhan further informed that the 667 Km long Bokaro-Angul pipeline sections of the landmark Jagdishpur-Haldia-Bokaro-Dhamra Pipeline Project (PM Urja Ganga) is being built by GAIL at a sanctioned cost of Rs. 3,437 crores. "The pipeline is a part of the landmark Pradhan Mantri Urja Ganga project and traverses 367 Km across five districts in Odisha and 360 Km across six districts in Jharkhand," he added. The Prime Minister shall flag-off a basket of projects totaling an investment of over Rs. 14,523 crores by the Government of India in Odisha. The investment is a continuation of the special focus on the state by the Central Government under the Prime Minister's vision of Purvodaya which envisions rapid socio-economic development in States like Odisha to unleash their true potential and bring them at par with the most developed States in the country.

<https://www.freepressjournal.in/latest-news/pm-narendra-modi-to-lay-foundation-of-gas-pipeline-projects-in-odisha-on-december-24/1419369>

**ONGC, OIL spent Rs 13,000 crore on 115 discoveries centre took away, says Oil Minister**

State-owned Oil and Natural Gas Corporation Ltd., and Oil India Ltd. spent over Rs 13,000 crore on 115 oil and gas discoveries which were taken away from them by the government for auctioning to private companies, Oil Minister Dharmendra Pradhan said. The BJP-led NDA government took away the so-called idle small and marginal discoveries of ONGC and OIL and auctioned them to private firms under Discovered Small Field bid rounds. Under DSF bid round one, 67 discoveries, mostly of ONGC, were auctioned. In the second round, bids for which are due next month, another 48 finds are being auctioned, he said in a written reply to a question in the Lok Sabha. ONGC and OIL are not compensated for the amount they had spent on discoveries of these oil and gas reserves. Unlike state-owned firms, the private players are allowed pricing and marketing freedom to make these discoveries viable. ONGC and OIL have stated that they could not produce from the discoveries as they are economically not feasible at current cap prices. Pradhan said the government has notified the Hydrocarbon Exploration and Licensing Policy on Mar. 30, 2016, which is based on revenue sharing model wherein explorers offering a higher share of oil and gas to the government are awarded blocks. HELP has easy-to-administer revenue sharing model and marketing and pricing freedom for crude oil and natural gas has been guaranteed for operators, he said, adding that it provides for zero royalty rates for deep-water and ultra-deep-water blocks for first seven years.

<https://www.bloombergquint.com/business/ongc-oil-spend-rs-13-000-cr-on-115-discoveries-govt-took-away-from-them-pradhan#gs.pZ-zOsQA>

## India's energy subsidies down by 36 percent to Rs 1.51 lakh crore in FY 17

India's total energy subsidies amounted to Rs 1,51,480 crore in financial year 2017, a 36% decrease since FY14, according to a new report released on December 20. The report released by the International Institute of Sustainable Development (IISD) and the Council on Energy, Environment and Water (CEEW) said, India's fossil-fuel subsidies fell sharply by nearly 70%, from Rs 1,73,330 crore in FY14 to Rs 52,980 crore in FY17. Between FY16 and 17, fossil-fuel subsidies declined by Rs 12,270 crore (USD 2 billion). The decline was driven by lower world oil prices during this period and reforms to subsidies for consumption of petrol, diesel, cooking gas and kerosene, a release issued by IISD and CEEW said. On the other hand, renewable energy subsidies increased six-fold since 2014, including a mammoth increase of INR 5,770 crore (USD 0.8 billion) from FY16 to 17, it said. Vibhuti Garg of IISD said a growing share of subsidies are dedicated to making India's energy mix cleaner. Despite this, subsidies to oil, gas and coal were more than three times the value of subsidies to renewables and electric vehicles in India in FY17, he said. The government must redirect more subsidies to cleaner energy sources to achieve its goals of cutting greenhouse gas emissions and air pollution, as well as to exceed the 175 GW target for renewable power by 2022. In FY17, support for coal alone (Rs 15,990 crore) exceeded that for renewable energy (Rs 15,000 crore)," Garg is quoted as saying the release. Abhinav Soman of the CEEW said a concerted shift to public transportation, electric mobility and supporting renewable energy application beyond the generation of electricity, would reduce import dependency and the subsidy burden in the long run. The IISD-CEEW report further found that coal subsidies (mining and power generation) amounted to Rs 15,990 crore (USD 2.4 billion) in FY17, a rise of Rs 1,150 crore (USD 116 million) between FY16 and FY17. The biggest coal subsidies were tax breaks that reduce the cost of coal to power plants. The electricity sector saw the single largest increase in subsidy support between FY16 and 17 of Rs 20,800 crore (USD 3.3 billion). These subsidies compensate electricity companies for keeping consumer prices below cost and accounted for half of India's energy subsidies in FY17 (Rs 72,439 Crore or USD 11.2 billion), the report said.

<https://economictimes.indiatimes.com/news/economy/finance/indias-energy-subsidies-down-by-36-percent-to-rs-1-51-lakh-crore-in-fy-17/articleshow/67177941.cms>

## India mulls building natural gas reserves

India is considering building emergency stockpiles of natural gas, on the lines of strategic oil reserves, to deal with supply disruption amid the country's growing dependence on fuel and its import. The government wants domestic consumption of natural gas, a cleaner fossil fuel, to rise two-and-a-half times by 2030 and is encouraging big public and private investments in gas production, import, transport and distribution infrastructure. Local demand increased 5.5% between April and October to 35.1 BCM, increasing dependence on imports to 47% of total consumption from 44% a year earlier. The panel formed by the petroleum and natural gas ministry to evaluate the need for strategic gas storage and prepare a plan to go about building and managing these. The panel has representatives from ONGC, GAIL and Oil Industry Development Board. "We would need to answer two key questions: First, how do we build the storage, and second, what would be the right business model to operate it," the person said. The panel plans to hire consultants soon and hopes to finalize a report in about six months, he said. Most heavy gas consuming countries already have natural gas storage in place, primarily for supply security. About 30% of gas storage capacity is in the US, a major producer and consumer of natural gas. Russia, Ukraine, Canada and Germany together account for another 40%. China, a late entrant to the game, too is fast building gas storage facilities.

About three-fourths of underground gas storage is in depleted gas and oil fields while the balance is distributed between salt caverns and aquifers. "The simplest way to start would be to launch depleted field storage as it would be cheaper and less time-consuming than a salt cavern or rock cavern," said the person quoted earlier. The first storage in India could come up at a site connected to a pipeline, the person said, adding that the reserve would store imported gas, which could be released when needed in the domestic market.

<https://economictimes.indiatimes.com/industry/energy/oil-gas/india-mulls-building-natural-gas-reserves/article-show/67184324.cms>

## Domestic gas pricing to be freed as global rates decline

In one of the last reform initiatives in the oil and gas sector, aimed at scaling up local production from fields of ONGC, OIL, Reliance and Vedanta, the government is set to open pricing of domestic gas. A panel, led by the NitiAayog vice-chairman, has also suggested free-market pricing for natural gas produced from domestic fields to boost output. The NDA government's reform initiatives have already allowed free gas pricing for production from small and marginal blocks, difficult high pressure/deep water blocks and output from the newly bid blocks under the hydrocarbon exploration licensing policy (HELP). The pricing and marketing from pre-NELP exploration blocks and those under the new exploration

licensing policy (NELP) are still regulated. This will be lifted gradually, once the new policy is approved. Under the current formula, the current gas price is at \$ 3.36 per MMBtu. At present, producers can charge market rates for gas from deep sea and other difficult fields but rates must stay below a government-prescribed ceiling that's linked to prices of alternative fuels. The price ceiling is currently at \$7.67 per MMBtu. The new policy will look into this ceiling price as well, sources said. Domestic gas output shrank by 1% in April-October of FY19 raising the demand of expensive imported LNG. The government is aiming to increase gas production by two-and-a-half times by 2030, which would help raise the fuel's share in the energy mix to 15% from 6%. At present, of the 310 exploration blocks awarded under various bidding rounds (discovered field, pre-NELP and NELP), 189 blocks/fields are operational. 17 blocks under nomination are being operated by Oil and Natural Gas Corporation and Oil India Limited. The petroleum exploration licences (PEL) for domestic exploration and production of crude oil and natural gas were granted under four different regimes over a period time: nomination basis – PEL, pre-NELP discovered field, pre-NELP exploration blocks and NELP. As many as 117 entities-11 public sector undertakings, 58 private firms and 48 foreign companies — are operating in these blocks after the ninth NELP round.

[Source: Financial Chronicle/Indian Oil & Gas](#)  
[Edited]

## Petronet LNG to invest Rs.2,100 crore at Dahej terminal

Petronet LNG has submitted an investment proposal for the expansion in Dahej LNG terminal to the Gujarat Maritime Board. Petronet LNG Ltd, India's top gas importer, plans to invest Rs.2,100 crore to expand its terminal capacity in Dahej, Gujarat, from 15 MMTPA to 20 MMTPA in the next two or three years, said two officials close to the development. Of the total, Rs.1,300 crore would be used to expand the Dahej terminal, while Rs.800 crore will be spent on building LNG storage tanks, they said, requesting anonymity. An investment proposal for the expansion in Dahej has been recently submitted to the Gujarat Maritime Board the regulator for all the non-major ports and maritime activities in Gujarat, confirmed a senior Gujarat government official, who did not wish to be named. A Petronet LNG official declined to comment. A company official did not respond to an emailed query. Prime Minister Narendra Modi had in October inaugurated a LNG terminal promoted by GSPC LNG Ltd, a subsidiary of Gujarat State Petroleum Corp. Ltd. The project is the third such LNG re-gasification project in the state after Petronet LNG's Dahej LNG terminal and the Hazira project of Shell Gas BV, a unit of Royal Dutch Shell Plc. Shapoorji

Pallonji group and Swan Energy have also announced plans to set up LNG terminals in Gujarat. Consumption of natural gas in India has increased by 17.1% on a year-on-year basis during FY19 (April-October period), Care Ratings said in a 19 December report. Increase in demand and fall in domestic production has led to an increase in imports of LNG by 12.7%. "India is scheduled to add 27.5 MMTPA additional R-LNG terminal capacity in the coming few years depending on the techno-feasibility of the project. The current regasification facilities are all located on the west coast of the country. With the proposed new plants which will be set up on the east coast of India, the disparity in the supply of LNG should diminish," adds Care Ratings.

<https://www.livemint.com/Companies/6vy-dxX2EkPbvbQiEUwVRKL/Petronet-LNG-to-invest-2100-crore-at-Dahej-terminal.html>

## Indian Oil may drop plan to buy stake in Mundra LNG terminal

State-run Indian Oil Corp. Ltd may drop its plan to acquire as much as 50% stake in the Mundra LNG terminal in Gujarat, three officials aware of the development said. In August 2017, Indian Oil said it has received an in-principle approval from its board to buy a 50% stake in the 5 MMTPA for around Rs.750 crore. The Rs.5,000

crore projects is being built by GSPC LNG Ltd, a unit of Gujarat State Petroleum Corp. Ltd (GSPC). Currently, GSPC owns a 50% stake in the project, while Adani group holds 25%. Adani and GSPC were looking at inducting a strategic partner such as Indian Oil. It is, however, not clear if Indian Oil would still book LNG import capacity in the terminal. While one of the main reasons cited by Indian Oil is that a concession and sub-concession agreement between the special purpose vehicle, GSPC LNG, and maritime regulator Gujarat Maritime Board is yet to be signed, the expenditure made towards the port and port-led development is another stumbling block for the refiner, the official said. An industry official, the third cited above, said GSPC LNG has invested close to Rs.1,200 crore for dredging and other port-led development activities, which Indian Oil finds hard to justify to their board because the expenditure was not part of the discussions when Indian Oil expressed interest in investing in the LNG terminal. The Mundra LNG terminal, whose capacity can be expanded to 10 MMTPA, is designed to have a berth for receiving LNG tankers and storage tank facilities for regasification and gas evacuation.

<https://www.hellenicshippingnews.com/indian-oil-may-drop-plan-to-buy-stake-in-mundra-lng-terminal/>

## LNG plant in Gujarat: Milestones unmet, Nikhil Merchant's Swan asks govt oil firms to ease norms

In a letter dated October 13, Swan's special purpose vehicle Swan LNG Private Ltd wrote to users Indian Oil Corp, Oil & Natural Gas Corp, Bharat Petroleum and Gujarat State Petroleum Corp to consider fixing the project's "Effective Date" as December 8, 2016. Rejected once and unable to meet key milestones, including financial closure, even 17 months after deadline, Swan Energy Ltd, promoted by influential Gujarat businessman Nikhil Merchant, has asked state-run oil companies to give him a fourth extension. And approve a new commissioning date of March 2020 for its proposed LNG regasification terminal at Jafrabad in Gujarat. The Rs 5,117-crore plant is meant to convert LNG, imported by these firms, into its gaseous form so that it can be piped to domestic end-users. At a capacity of 5 million tonnes, it will bring Swan an annual revenue of an estimated Rs 1,400 crore. As per the agreement between Swan and these four firms, commissioning of the plant is envisaged 33 to 39 months from the Effective Date which means the four have to decide on their overseas LNG suppliers and tie up with their domestic natural gas buyers by March 2020. The four are yet to reply to the October letter but a similar request made by Swan on September 1 was turned down at a joint meeting of the four companies on September 21. But the four firms argued that they would suffer either way if the commissioning was set for March 2020: they have to start using the terminal by then or pay "Use or Pay" charges. That would entail paying 75% of the tolling charge (Rs 57.38 per MMBtu) even without using the terminal. Also, they would have to tie up with both the LNG supplier and buyers in anticipation of Swan's readiness. And, in case of further delay by Swan, they would end up paying a penalty to both. "In case Swan is unable to obtain financial closure in the coming months, the User's liabilities will not only be towards 'Use or Pay' to Swan LNG but also to the LNG supplier under 'Take or Pay' clause (\$8-\$9 per MMBtu) and regasified LNG buyer under 'Supply or Pay' clause (\$9-\$10 per MMBtu)," they warned. That's why, the firms argued, the "effective date" should be when Swan LNG notifies in writing that it has achieved all six pre-conditions, including financial closure, and decided to give Swan LNG time until December 31 to satisfy all pre-conditions as requested on September 1. On his request for a new Effective Date, Merchant said that it should be considered on the basis of the letter of intent issued by the Gujarat Maritime Board which has granted space for the project. "The Concession Agreement (issued by GMB) supersedes all agreements and therefore this should be considered for the effective date," he said.

<https://indianexpress.com/article/india/lng-plant-in-gujarat-milestones-unmet-nikhil-merchants-swans-asks-govt-oil-firms-to-ease-norms-5508387/>

## Tough to stop Nord Stream 2 gas pipeline - European Commissioner

Trump has attacked Berlin for supporting the \$11 billion gas pipeline spanning the Baltic Sea. U.S. President Donald Trump's criticism of the Russian-backed Nord Stream 2 pipeline is no reason to stop the project and any attempt to do so would be difficult now that it is being built, European Commissioner Guenther Oettinger said. Trump has attacked Berlin for supporting the \$11 billion gas pipeline spanning the Baltic Sea, accusing Germany in July of being a "captive" of Russia due to its reliance on Russian energy. U.S. Energy Secretary Rick Perry said last month that Washington retained the option of imposing sanctions on companies working on the pipeline, which would bring Russian gas directly to Germany. Berlin and Moscow have been at odds since Russia annexed Crimea four years ago, but they have a common interest in the Nord Stream 2 project, which will double the capacity of the existing Nord Stream 1 route from next year. He added: "Trump's threats are no reason for that." Germany refuses to join opposition to the project from many EU states and - thus far - from the EU executive, describing it as a private enterprise. Washington is concerned that the pipeline, which will bypass Ukraine by running under the Baltic Sea, will strip Ukraine of important transit revenue and says Moscow is using

the project to divide Europe. Ukraine derives up to 3 percent of its gross domestic product (GDP) from transit charges. Construction of the project is progressing. Oettinger, a German, pressed Russian gas giant Gazprom, which is leading the project, to agree "a fair deal on the further use of the existing pipelines through Ukraine". Gazprom is the sole shareholder in Nord Stream 2, shouldering half of the 9.5 billion euro (\$10.89 billion) construction cost. Gazprom's European partners are Germany's Uniper and Wintershall, Anglo-Dutch group Royal Dutch Shell, France's Engie and Austria's OMV.

<https://energy.economictimes.indiatimes.com/news/oil-and-gas/tough-to-stop-nord-stream-2-gas-pipeline-european-commissioner/67296370>

## CNPC boosts exports of Central Asian gas

Since the beginning of 2018, the CNPC International Pipeline Company supplied the transnational gas pipeline from Central Asia to China with 46.9 billion cubic meters of natural gas. It makes a major contribution to the country's winter heat supply, the website of the oil and gas complex of Turkmenistan reports, citing the press release of the company. The export gas pipelines operated by CNPC have consistently maintained high performance during 2017. Central Asian suppliers pumped 38.7 BCM to China with an increase of 13.4% compared to

2016. At present, the gas pipeline Central Asia-China includes three lines A, B and C with a total length of 1,830 km. Since the commissioning of the Turkmenistan-Uzbekistan-Kazakhstan-China pipeline in December 2009, about 250 BCM of gas have been exported to China. In order to bring the trans-Asian gas pipeline to full capacity, the oil and gas production corporation PetroChina, owned by CNPC, has strengthened coordination with partners from Turkmenistan, Uzbekistan and Kazakhstan. Central Asia, a total area of 3,994,400 square km, in general, occupies about 10 percent of the territory of the Asian continent while representing an important geostrategic region on the world map. In terms of fuel and energy resources (oil and gas), the region ranks second in the world, also having solid reserves of such rare minerals like gold, copper, uranium and heavy metals. According to confirmed data, the total volume of oil reserves in Central Asia reaches 15-31 billion barrels, and the total volume of natural gas reserves is 230-360 TCM, which is about 7.2% of world oil resources and 7% of gas resources. Given the dynamic growth of the global economy, the need for hydrocarbon energy sources is increasing. According to world statistics, the consumption rate of natural gas, which reached 95 BCM in 2003, will increase to 182 BCM by 2030.

[https://www.hellenicshippingnews.com/cnpc-boosts-exports-of-central-asian-gas/\[Edited\]](https://www.hellenicshippingnews.com/cnpc-boosts-exports-of-central-asian-gas/[Edited])

## Mexico's renewed focus on oil and natural gas

Mexico's new President Andrés Manuel López Obrador (AMLO) took office on December 1 and will serve one six-year term. It was the largest landslide in Mexico's recent history, and AMLO claims that he will head the biggest transformation since the 1910 revolution. Energy is clearly at the top of AMLO's agenda. In order of importance, the focus will be oil, natural gas, and electricity. State-owned Pemex's oil and gas output has been plummeting. Over the past decade alone, crude oil production has been declining 4-5% per year, dragging Mexico's share of global output down from 5% to 2%. Despite the 2013 Energy Reforms that brought deregulation to help, Mexico's oil output today is about 30% below the 3 million b/d that was promised by then-President Peña Nieto back in 2015. Given that Mexico's natural gas extraction is associated (i.e., coming along as a by-product of crude oil production), the country's gas output has dropped 40% since 2012. With overly limited E&P of new wells, proven oil reserves have spiraled from nearly 50 billion barrels in the mid-1990s to 7 billion today. Mexico's oil and gas collapse is an immense problem. With a population closing in on 135 million people and adding \$35 billion in real GDP every year, Mexico's is the fastest growing OECD energy user. Expected economic growth is a solid 3-5% per year, and oil and gas supply 85% of the country's energy. Revenues are dwindling. Although down from 40% a decade ago, oil sales still account for 20-25% of federal revenues - an over reliance that has siphoned money and not allowed Pemex the chance to re-invest in more E&P. The ability to export has plummeted, with sales of crude to primary customer the U.S. dropping 60% in the past 15 years to 680,000 b/d in 2017. For natural gas, Mexico's most vital source of energy going forward, falling production has meant soaring reliance on U.S. shale gas. Over the past 10 years, the strategy has been to displace fuel oil in power generation with natural gas. Today, gas accounts for over 60% of the country's electricity. And Mexico gets nearly 65% of its natural gas from the U.S. This increasing reliance on the U.S. has Mexican leadership concerned because the U.S. has plans to export huge amounts of liquefied natural gas to all corners of the globe. China and India and others want U.S. gas, and we could be exporting 25% of our current production by 2025.

<https://www.forbes.com/sites/judeclemente/2018/12/30/mexicos-renewed-focus-on-oil-and-natural-gas/#2c869cbc44d0>

### China's CNOOC to boost oil, gas exploration spending

China's CNOOC Ltd plans to invest a record amount of money in oil and gas exploration in the next few years to raise the company's output and reserves, according to its chairman. "Currently the central government highly values oil and gas exploration and development and gave special directions," CNOOC's Chairman Yang Hua said at a company event. He did not give details on the amount to be spent. Yang said the government is likely to give favourable policies to oil companies to support their offshore oil and gas exploration. His comments came as President Xi Jinping repeatedly asked oil majors to boost national energy security. Central government officials have met recently with executives from China's three state-owned oil majors – PetroChina, Sinopec and CNOOC – to discuss plans to boost China's crude oil and natural gas output, Yuan Guangyu, vice president of the CNOOC group said on the sidelines of the event. CNOOC also signed strategic agreements with nine foreign companies to conduct exploration at two oil and gas blocks in southern China.

<https://www.hellenicshippingnews.com/chinas-cnooc-to-boost-oil-gas-exploration-spending/>

### Qatar Petroleum signs agreement to acquire interest in three offshore oil fields in Mexico

Qatar Petroleum entered into an agreement with Eni to acquire a 35% participating interest in three offshore oil fields in Mexico. The agreement covers the Amoca, Mizton, and Tecoalli offshore oil fields, which lie in Area 1 in Mexico's Campeche Bay. The agreement is subject to customary regulatory approvals by the government of Mexico. Following such approval, both Eni and Qatar Petroleum will jointly hold 100% interest in the Area 1 production sharing contract. Commenting on this agreement, H.E. Mr. Saad Sherida Al-Kaabi, Minister of State for Energy Affairs, President & CEO of Qatar Petroleum, said: "We are pleased to sign this agreement, with our valued partner, Eni, to participate in the development and production of oil fields in Mexico. This agreement marks another milestone for Qatar Petroleum as it strengthens its international footprint and expands its presence in Mexico." H.E. Mr. Al-Kaabi added: "Qatar Petroleum is pleased to

enhance its fruitful cooperation and partnerships with a major energy player like Eni. We are also excited about participating in this development in Mexico's Campeche Bay, and with first oil production expected by mid-2019, we look forward to collaborating with Eni to ramp up production to around 90,000 barrels of oil per day by 2021." Qatar Petroleum's international upstream footprint has been expanding recently in Brazil, Mexico, Argentina, Cyprus, Congo, South Africa, Mozambique and the Sultanate of Oman. His Excellency Minister Al-Kaabi concluded by saying: "These expansions go hand in hand with our previous announcements to develop and increase our natural gas production from 77 million tons per year to 110 million tons in the coming years; and to raise our production capability from 4.8 million barrels oil equivalent per day to 6.5 million barrels during the next decade."

<https://www.hellenicshippingnews.com/qatar-petroleum-signs-agreement-to-acquire-interest-in-three-offshore-oil-fields-in-mexico/>

### Karachi industrialists to shut down factories as gas crisis worsens

Factory owners in the metropolis' Sindh Industrial Trading Estate (SITE) on Saturday announced they are shutting down their plants as they have been experiencing extremely low gas pressure crippling production activity. "Industries in SITE area will be closed from Sunday, December 30," SITE Association Chairman Saleem Parekh said. "We are suffering huge losses owing to the mismanagement of Sui Southern Gas Company (SSGC)," Parekh added and announced that they will be staging a protest outside the Sindh Governor House on Tuesday (January 1). SSGC has decided to not provide gas to CNG stations across Sindh, including Karachi, today. Meanwhile, SSGC and industrialists will meet today to discuss the gas crisis. Earlier this month, SSGC, the supplier of gas in Sindh and Balochistan, announced to halt gas supply to CNG stations and captive power plants of all general industries. SSGC said that it was facing acute shortage of gas and low pressure in the system, which was affecting adequate supply to domestic and commercial sectors.

<https://www.geo.tv/latest/223487-karachi-industrialists-to-shut-down-factories-as-gas-crisis-worsens>

### Uzbekistan borrows \$2.3 billion for gas-to-liquids plant project

The \$3.7 billion GTL plant, set to be launched in 2020, will allow the Central Asian nation to use its large natural gas reserve to produce more fuels. TASHKENT: Uzbekistan has agreed loans worth \$2.3 billion for its gas-to-liquids (GTL) plant project with 11 banks from Japan, China, South Korea, Russia and the West. The \$3.7 billion GTL plant, set to be launched in 2020, will allow the Central Asian nation to use its large natural gas reserve to produce more fuels such as diesel which it currently imports due to declining crude oil output and insufficient refinery capacity. The plant will refine 3.6 BCM of gas a year and produce 1.5 MMT of fuel, its management said at a signing ceremony in Tashkent. Lenders include China Development Bank, Credit Suisse, Japan's MUFG, Mizuho, and SMBC, Korea's Eximbank, KSure, and Woori Bank, Russia's Exiar, Gazprombank, and Roseximbank.

<https://energy.economictimes.indiatimes.com/news/oil-and-gas/uzbekistan-borrows-2-3-billion-for-gas-to-liquids-plant-project/67111971>

### Russia and Belarus to decide on gas pricing from 2020

Russia and Belarus should elaborate proposals on gas pricing from 2020, First Deputy Prime Minister of Russia Anton Siluanov told reporters on Tuesday after the bilateral summit. "We have gas pricing - we should decide on this issue and work out proposals on pricing for this kind of energy, starting from 2020," the official said. Belarus carried negotiations with Russia on reduction of natural gas prices since early 2016. The dispute was settled in April 2017. Gazprom provided a discount on the gas price for Belarus in 2018-2019. The price of Russian natural gas for Belarus equals \$129 per thousand cubic meters in 2018 and \$127 in 2019.

<http://tass.com/economy/1037878>

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## World's largest floating LNG platform starts production in Australia

Royal Dutch Shell announced that it has begun output at its Prelude floating liquefied natural gas facility in Australia, the world's largest floating production structure and the last of a wave of eight LNG projects built in the country over the last decade. Though the project started up later and cost more than originally estimated, it is expected to further cement Australia's lead as the world's biggest LNG exporter, after the country took the crown in November. In a statement, Shell said wells have now been opened at the Prelude facility, located 475km north-north east of Broome in Western Australia. This means Prelude has now entered start-up and ramp-up, the initial phase of production where gas and condensate - which is an ultra-light form of crude oil - is produced and moved through the facility. Prelude is expected to have an annual LNG production capacity of 3.6 MMT, 1.3 MMT a year of condensate and 400,000 tonnes a year of liquefied petroleum gas. Analysts estimate exports to start by early next year, with condensates likely to start first. First LNG cargo is still several weeks assuming all proceeds as planned, but the timing of first cargo and pace of ramp-up is still subject to technical risk," said Saul Kavonic, energy analyst at Credit Suisse in Sydney. Shell owns 67.5% of the project, while Japan's Inpex Corp, Taiwan's CPC Corp and Korea Gas Corp hold the rest of the shares.

<https://www.afr.com/business/energy/gas/worlds-largest-floating-lng-platform-starts-production-in-australia-20181226-h19h9o>

## Global LNG-Asian prices snap three-week losing streak as winter kicks in

Asian spot prices for LNG snapped a three-week losing streak to end higher this week, with the onset of winter expected to boost demand for natural gas for heating. But gains were limited amid forecasts of warmer-than-usual temperatures for most of next week in Tokyo, Beijing and Seoul, the top demand centres for natural gas in Asia, and as more spot supply entered the market from the United States and Russia. Spot prices for January delivery edged up about 10 cents to around \$8.90 per MMBtu, with cargoes trading from as low as \$8.50 per

## Report sees massive increase in LNG demand

The world's biggest buyers of LNG will quadruple their uncontracted demand for LNG, and more buyers will be on the hunt for additional LNG soon, too, a report from Wood Mackenzie suggests. That's good news for Texas, which is transforming into an LNG export hub as companies tap into cheap natural gas supplies. By 2030, the seven major LNG buyers are expected to gobble up 80 MMT of LNG over and above their existing contracts, according to Wood Mackenzie. Total demand from those buyers, including purchasing LNG on contract and off contract, will grow to 180 MMT, up from 150 MMT today, the research firm said. The major seven LNG buyers are clustered in Asia, including China National Offshore Oil Corp., PetroChina, Sinopec, Tokyo Gas, Jera Co. and CPC Corp. Together they account for more than 50% of the global LNG market. Next year could be a record year for new LNG projects too - collectively suppliers could give the green light on LNG investments totaling 220 MMTPA of capacity. To put that in perspective, nearly 300 MMT of LNG was traded globally last year - a jump from 100 MMT at the start of the century, according to an outlook from Shell. Several projects are expected to get the green light next year, including the \$27 billion Arctic LNG-2 in Russia, at least one project in Mozambique and at least three the U.S. Expansion projects in Australia and Papua New Guinea will also be in the running. A new report from the U.S. Energy Information Administration earlier this week said the U.S. could more than double its export capacity in the next year to become the third largest LNG exporter behind Australia and Qatar. Companies behind another four export projects on the Gulf Coast - Magnolia LNG, Delfin LNG, Lake Charles and Golden Pass - have federal approvals and are expected to make final investment decisions in the coming months, according to the Energy Information Administration. Several other companies, including Sempra Energy of San Diego, NextDecade of Houston and Tellurian of Houston, are working on projects expected to start up in the coming years. Browne said 2019 will be "the biggest year ever" in terms of LNG projects advancing and receiving final investment decisions. "Asia's major buyers will be at the forefront in ensuring this next generation of LNG supply is brought to market," he added.

[https://www.hellenicshippingnews.com/report-sees-massive-increase-in-lng-demand/\[Edited\]](https://www.hellenicshippingnews.com/report-sees-massive-increase-in-lng-demand/[Edited])

MMBtu to as high as \$9.10 per MMBtu, several industry sources said. Prices for February delivery also inched higher and were estimated at around \$9.10 to \$9.30 per MMBtu, keeping the price curve in contango. "The (spot) market has probably bottomed out with (prices) being pretty flat and I am hearing of more people looking for cargoes," said a Singapore-based LNG trader. China, the world's No. 2 LNG importer, has ramped up both domestic gas production and imports to meet rising demand as the government switches more households to gas heating this winter. China's November natural gas output climbed 10% to a record-high of 14.3 BCM, according to official data. It has switched another 3.29 million households to gas heating this winter, Reuter's calculations show, more than it added last year. But analysts said the increase would not necessarily boost overall consumption in the country. "Till now, China's demand is increasing, but it has not affected the inventory too much," a trader familiar

with the Chinese market said. With forecasts of a warmer-than-usual week next week, LNG buyers in China are taking a wait-and-see approach before deciding to ramp up imports of the super-chilled fuel, he said. Taiwan's CPC Corp entered the spot market to seek a cargo for delivery in January, while South Korea's state-run Korea Gas Corp (KOGAS) is looking for long-term supply starting from 2025, traders said. On the supply side, Cheniere Energy loaded the commissioning cargo of LNG from its Corpus Christi liquefaction facility in Texas, the third big LNG export terminal to enter service in the lower 48 U.S. states. Greece this week said it would import its first U.S. LNG cargo of 150,000 cubic metres on Dec. 29 from Cheniere. Russia's Yamal LNG has started up train 3 at its plant, 12 months ahead of schedule, with the plant reaching full capacity of 16.5 MMTPA.

<https://www.hellenicshippingnews.com/global-lng-asian-prices-snap-three-week-losing-streak-as-winter-kicks-in/>



## ExxonMobil shelves Canada LNG export project

U.S. oil major Exxon Mobil Corp has withdrawn its WCC liquefied natural gas (LNG) export terminal in Canada from the environmental assessment process, it said, signaling that the project has been shelved. The decision to pare its LNG project portfolio follows the go-ahead of a giant Royal Dutch Shell-led project in British Columbia, and Exxon's focus on LNG projects in Asia, the Middle East and the United States. Global LNG demand is expected to double to 550 MMTPA by 2030, as countries like China move away from coal to cleaner fuels. The top import market for LNG is northeast Asia. Exxon's West Coast Canada (WCC) LNG export project, located in northern British Columbia, was expected to produce around 15 MMTPA of LNG to serve Asian buyers, with plans for further expansion up to 30 MMTPA. The project was being jointly reviewed by the province and Canadian environmental regulators, an assessment that had been underway since 2015, though no major documents have been filed since 2016. Exxon formally withdrew from the process in a Dec. 5 letter to the British Columbia Environmental Assessment Office, posted on the regulator's website. LNG demand is growing but environmental groups say exports will boost carbon emissions in Canada, both through gas extraction and the liquefaction process. The WCC LNG export project planned to have liquefaction and storage facilities for natural gas, loading facilities and a third-party pipeline. Exxon's shares were off 3.12 percent at \$68.57 apiece, the lowest since August 2015.

<https://www.hellenicshippingnews.com/exxonmobil-shelves-canada-lng-export-project/>

## Rising LNG demand to exert more pull on U.S. natural gas prices

U.S. LNG export capacity is on the brink of doubling in 2019, which will boost the super-cooled fuel's influence on the U.S. natural gas market, where volatility surged in 2018 after several years of slumber. LNG exports have been the fastest growing source of U.S. natural gas demand since the country started ramping up exports in 2016, and is expected to expand deliveries in coming years as several more export terminals enter service. Its imprint is being felt in the U.S. gas futures market, which in November experienced its longest stretch of extreme

volatility in nine years due to demand, low inventories and unseasonably cold U.S. weather. LNG currently accounts for just a small amount of overall domestic gas demand. But as the country opens more facilities for export to meet growing needs abroad, analysts said more ups and downs in prices are expected. "As LNG exports increase, so will future gas prices," said Tom DiCapua, managing director of wholesale energy services at Con Edison Energy, a provider of energy management services, including the purchase of gas, for power plants owned by several companies. Prices at the U.S. Henry Hub benchmark in Louisiana hit \$4.929 per MMBtu in November - their highest in four-and-a-half years. That was also well above the five-year average from 2013-17 of \$3.25/MMBtu.

<https://www.reuters.com/article/us-usa-lng-prices-analysis/rising-lng-demand-to-exert-more-pull-on-us-natural-gas-prices-idUSKC-N1OJ0H9>

## Sempra Energy inks 20-year deal to export LNG to Poland

Sempra Energy subsidiary Port Arthur LNG and Polish Oil & Gas Company (PGNiG) have inked an agreement to export 2.0 MMTPA of LNG from North America to Poland. The deal is a 20-year sale-and-purchase agreement for LNG from the Port Arthur LNG liquefaction-export facility under development in Jefferson County, Texas. "This agreement

with PGNiG represents an important expansion of our portfolio of contracts for LNG exports and major step forward in the development of our Port Arthur LNG project. Last month, we began the commissioning phase of our Cameron LNG liquefaction-export facility in Louisiana," said Jeffrey W. Martin, chairman and ceo of Sempra Energy. Piotr Woźniak, president of the management board of PGNiG, commented: "Another long-term contract not only allows us to develop LNG portfolio with a view to delivering to Poland, but it gives us, in the near future, the possibility of trading in LNG purchased on a global scale." Under the agreement, LNG purchases from Port Arthur LNG will be made on a free-on-board basis, with PGNiG responsible for shipping the LNG. Port Arthur LNG will manage gas pipeline transportation, liquefaction processing and cargo loading, giving PGNiG flexibility in cargo management. The Port Arthur LNG liquefaction-export facility in Jefferson County is proposed to include two natural gas liquefaction trains capable of processing approximately 11mtpa of LNG, up to three LNG storage tanks, two marine berths, and associated facilities. The liquefaction-export facility is expected to receive its final environmental impact statement from the Federal Energy Regulatory Commission next month.

<http://www.seatrade-maritime.com/news/americas/sempra-energy-inks-20-year-deal-to-export-lng-to-poland.html>

## Qatar Petroleum to invest \$20 billion in U.S. in major expansion

Qatar Petroleum (QP) is looking to invest at least \$20 billion in the United States over the coming few years, its chief executive told Reuters, after the Gulf Arab state unexpectedly quit OPEC this month. Saad al-Kaabi, who holds the energy portfolio of the world's top liquefied natural gas (LNG) supplier, also said on Sunday the company aimed to announce foreign partners for new LNG trains needed for an ambitious domestic scale-up by the middle of next year, but was keeping open the possibility of going it alone. As part of its more than \$20 billion investment push in the U.S. QP is looking "at gas and oil, conventional and non-conventional," Kaabi said. Qatar Petroleum is majority owner of the Golden Pass LNG terminal in Texas, with Exxon and ConocoPhillips holding smaller stakes. Kaabi said he expected to make a final decision on that investment and whether to move ahead with the project "by the end of the year, if not January." The company is in talks with international oil firms about the LNG expansion project at home, including Eni, Kaabi said. Other partners already operating in Qatar include Exxon Mobil Corp, Total, Royal Dutch Shell and ENI. QP said it will self-finance the LNG expansion rather than borrow, a shift from previous practices where it used lenders to fund up to 70 percent of project costs. Kaabi said it could carry out the expansion alone if no good offers from foreign firms were made. "We are looking for a lot of things (in our partners) including asset swaps, things that will help me in my international expansion," he said. "If I don't get good deals, nobody will come."

<https://www.hellenicshippingnews.com/qatar-petroleum-to-invest-20-blm-in-u-s-in-major-expansion/>

## Lithuania to buy LNG vessel, import LNG until at least 2044

Lithuania has given the go ahead to state-owned Klaipėdos Nafta to purchase a LNG storage vessel by late 2024, as it shores up energy supplies and reduces its reliance on Russian natural gas. Klaipėdos Nafta is currently leasing a floating storage and regasification unit (FSRU), called Independence, from Norway's Hoegh LNG. The use of the vessel has allowed Lithuania to import LNG since 2014, breaking the monopoly Russia's Gazprom had on natural gas supply to the country as well as neighbouring Latvia and Estonia. "This will keep us able, beyond 2024, to strengthen our energy security and ensure pricing pressure for the Russian gas," Lithuania energy minister Zygimantas Viciūnas said, as parliament voted to operate the country's LNG import facility until at least 2044. Natural gas use has been dwindling in Lithuania, partly in response to high gas prices before 2014. The government said use of LNG had forced Russia to cut its natural gas prices by a third, removing its ability to use fuel costs as a means of political pressure. Klaipėdos Nafta will run an international tender for a FSRU between 2021 and 2024, its CEO Mindaugas Jusius told Reuters. The current 10-year lease on Independence runs out at the end of 2024 but one option is to purchase the leased vessel. The state will guarantee a loan to Klaipėdos Nafta of up to 160 million euros to finance the purchase or replacement of the FSRU, Lithuania's government said in a submission to the parliament. Lithuania currently pays 66 million euros a year to lease and operate Independence, and up to 30 million euros to support it. Lithuania's state-owned energy company Lietuvos Energija, through subsidiaries, has a contract with Norway's Equinor to import LNG until 2024. Klaipėdos Nafta launched a 27 million-euro LNG reloading station last year to pump the gas into LNG-powered vessels and onto road-going trucks. <https://www.hellenicshippingnews.com/lithuania-to-buy-lng-vessel-import-lng-until-at-least-2044/>

## Two more LNG terminals to be set up at Port Qasim: Senate told

Minister for Maritime Affairs Syed Ali Haider Zaidi informed the Senate that two more Liquefied Natural Gas (LNG) terminals will be set up at Port Qasim. Responding to questions of the Senators

during question hour in Senate, he said, tenders of the two proposed terminals will be floated soon. He said, Karachi Port Trust (KPT) was also planning to set up an LNG terminal. However, a feasibility study would be undertaken for establishing of LNG terminal, keeping in view the national economy, national energy policy and revenues to KPT, he added. The minister said decision for establishment of LNG fueled integrated power project including desalination plant will be undertaken in the light of the recommendation of feasibility study to be conducted. He said, that five port terminals / berths have been established through private sector investment during the last five years at Port Qasim.

<https://www.hellenicshippingnews.com/two-more-lng-terminals-to-be-set-up-at-port-qasim-senate-told/>

## BP, Partners FID 2.5 million tonnes per year Africa FLNG Project

BP plc and its partners said they have sanctioned the initial phase of an innovative cross-border natural gas export project, which would produce from a deepwater development offshore West Africa beginning as soon as 2022. The final investment decision (FID) for Phase 1 of the Greater Tortue Ahmeyim development, designed to provide 2.5 MMTPA of gas, was made following agreement between the Mauritanian and Senegalese governments, as well as BP and its partners, which include Dallas-based Kosmos Energy Ltd. In addition to Kosmos, which is helmed by former BP exploration chief Andy Inglis, BP also is partnering with national oil companies Petrosen of Senegal and Mauritania's SMHPM. BP Gas Marketing was selected as the sole buyer for LNG offtake for Tortue Phase 1. Tortue is to produce gas from an ultra-deepwater subsea system and mid-water floating production, storage and offloading (FPSO) vessel, which would process the gas, removing heavier hydrocarbon components. The gas then is to be transferred to a floating liquefied natural gas (FLNG) facility at an innovative nearshore hub on the Mauritania and Senegal maritime border. Total gas resources in the field are estimated to be around 15 Tcf. The project, the first major gas project to reach FID in the basin, is planned to provide LNG for global export as well as making gas available for domestic use in Mauritania and Senegal. Once the initial phase is under development, expected in early

2019, the parties plan to finalize additional agreements and regulatory approvals. <https://www.naturalgasintel.com/articles/116894-bp-partners-fid-25-mmta-africa-flng-project>

## Russia's first FSRU to arrive at Kaliningrad to start up LNG imports

Russia's first LNG floating storage and regasification unit (FSRU) is expected to dock at the port of Kaliningrad on Dec. 18, a source familiar with the matter told Reuters. The FSRU, called Marshal Vasilevskiy, is being installed at Kaliningrad - a city separated from Russia and bordering with Lithuania and Poland - by Russian energy major Gazprom in a move to bypass pipeline gas deliveries via Lithuania in case there are any disruptions in gas transit. The FSRU will be the first LNG import facility in Russia, the world's second largest gas producer. The vessel is currently anchored outside the port of Kaliningrad, according to Refinitiv Eikon shipping data. The Marshal Vasilevskiy came from Singapore with a cargo on board to commission the LNG import facility with the gas to be supplied to Kaliningrad's gas system. No further deliveries are currently expected to arrive at the FSRU, the source said, as gas flows via Lithuania are stable and it is cheaper to flow gas via the pipeline rather than buy an LNG cargo.

[Source: LNG Global/Reuters](https://www.reuters.com/business/energy/russia-first-lng-floating-storage-and-regasification-unit-arrives-kaliningrad-2019-12-18/)

## LNG DEVELOPMENT AND SHIPPING

### Petronet LNG restructures its LNG supply purchase contract with Rasgas

Petronet LNG Ltd has restructured its gas supply contract with RasGas of Qatar. Petronet LNG Limited in December 2015 announced signing of a binding sale and purchase agreement with RasGas of Qatar (LNG Supplier) for supply of an additional 1 MMTPA of LNG for onward sale to IOC, BPCL, GAIL and GSPC. At the request of the four entities, the contract has been re-structured by having direct arrangement between the LNG supplier and the Indian entities with effect from January 1, 2019. Petronet will now continue to provide the storage, receiving and re-gasification services for the above mentioned contract but will not be the buyer of LNG.

[Source: Indian Oil & Gas](https://www.petrobras.com.br/en/press-releases/2019/01/01/petronet-restructures-lng-supply-contract-with-rasgas/)

## PIMK and IVECO bring 50 STRALIS NP (CNG) trucks to Bulgaria

PIMK Ltd., one of the leading transport companies in Eastern Europe and largest in Bulgaria, has increased its sustainability credentials with the purchase of 50 new IVECO Stralis NP 400HP trucks running on Compressed Natural Gas (CNG) to provide green logistics services to its partners across Europe. PIMK has selected the STRALIS NP AS440S40T/P model. IVECO, a brand of CNH Industrial N.V. which leads the way in sustainable transport with its advanced natural gas technology, says the STRALIS NP offers the perfect solution to PIMK Ltd. in the company's bid to convert its entire fleet to natural gas. Based in the Bulgarian city of Plovdiv, PIMK has a fleet of more than 1,400 heavy commercial vehicles and, together with its PIMK Rail service, offers sustainable and innovative friendly transport solutions to its customers throughout Europe and parts of Asia and Africa. For this reason, PIMK Ltd. chose to invest in natural gas-powered vehicles, which they see as the only sustainable choice available today for long-haul road transport. The IVECO Stralis Natural Power CNG vehicles feature a 400 hp engine, generate 99% less PM, 90% less NO2 and 95% less CO2 with bio-methane, com-

pared to equivalent diesel vehicles. With less than 71dB on the Piek Quiet Truck Test scale, these vehicles are perfect for transport in city centres with noise limitations and for night-time deliveries.

<http://www.ngvglobal.com/blog/pimk-and-iveco-bring-50-stralis-np-cng-trucks-to-bulgaria-1221>

## McDonalds Spain adopts Green Logistics with Scania and HAVI

As key players in the McDonald's supply chain, HAVI Logistics Europe (HAVI) and Scania are responding to growing consumer demands for more sustainable transports. In Spain, the companies are accelerating the five-year roadmap that aims to cut CO2 emissions from the restaurant chain's delivery vehicles. McDonald's logistics network transports food products more than 250 million miles every year and is committed to work with its suppliers and their partners to minimize the environmental footprint on its logistics activities.

HAVI Spain plans to add 14 gas-fueled vehicles to deliver product to McDonald's restaurants from HAVI's distribution centers in Madrid and Barcelona by the end of this year. Twelve of the vehicles will run on liquefied natural gas (LNG) and two on compressed natural gas (CNG). Previously HAVI Spain had two CNG trucks making

the new total 16 gas trucks.

<http://www.ngvglobal.com/blog/mcdonalds-spain-adopts-green-logistics-with-scania-and-havi-1221>

## California plans a 100% zero-emission public transport by 2040

The California Air Resources Board (CARB) approved the Innovative Clean Transit regulation, a first-of-its-kind initiative in the U.S. that sets a statewide goal for public transit agencies to gradually transition to 100% zero-emission bus fleets by 2040. "A zero-emission public bus fleet means cleaner air for all of us. It dramatically reduces tailpipe pollution from buses in low-income communities and provides multiple benefits especially for transit-dependent riders," said CARB Chair Mary D. Nichols. As longtime partners for clean air in California, the state's 200 public transit agencies play a pivotal role in transitioning vehicle fleets to zero-emission alternatives. Eight of the 10 largest transit agencies in the state are already operating zero-emission buses, including hydrogen fuel cell vehicles. Full implementation of the regulation is expected to reduce greenhouse gas emissions by 19 MMT from 2020 to 2050 – the equivalent of taking 4 million cars off the road. And it will reduce harmful tailpipe emissions (NOx and particulate matter) by about 7,000 tons and 40 tons respectively during that same 30-year period. Deployment of zero-emission buses is expected to accelerate rapidly in the coming years – from 153 buses today to 1,000 by 2020, based on the number of buses on order or that are otherwise planned for purchase by transit agencies. Altogether, public transit agencies operate about 12,000 buses statewide. To successfully transition to an all zero-emission bus fleet by 2040, each transit agency will submit a rollout plan under the regulation demonstrating how it plans to purchase clean buses, build out necessary infrastructure and train the required workforce. Agencies will then follow a phased schedule from 2023 until 2029, by which date 100% of annual new bus purchases will be zero-emission. To encourage early action, the zero-emission purchase requirement would not start until 2025 if a minimum number of zero-emission bus purchases are made by the end of 2021.

<http://www.ngvjournals.com/s1-news/c3-vehicles/california-plans-a-100-zero-emission-public-transport-by-2040/>

## More LNG-powered trucks for operations in the port of Rotterdam

Containerships has signed a collaboration agreement with the Dutch trucking company Don Trucking in order to increase the amount of LNG trucks in the region. The partnership guarantees trucking capacity of 15 new LNG trucks for Containerships' land operations in the port of Rotterdam. So far, Containerships' investments in LNG-based technology include four newbuild LNG-powered container vessels and a growing fleet of LNG trucks. In addition, Containerships opened its own LNG refueling station in the UK last year. "This capacity increase is an important step in our strategy to use LNG as main fuel source throughout the supply chain," said Janne Ritakoski, Containerships' Head of Land Operations. "Port of Rotterdam is our main hub to and from the mainland Europe. This makes the added LNG-fuelled truck capacity even more significant". As a door-to-door service provider, Containerships does not limit its ambitious environmental goals to cover only the sea operations, where the new LNG-powered vessels play an important role on reducing the emissions. On land, LNG trucks also offer a reduction of 25% in CO2 emissions, fulfilling the latest proposed EU legislation of 20% CO2 emission reduction from trucks by 2025. "We strongly believe that LNG's breakthrough is close, but the infrastructure is still premature. Our ability to use LNG on land operations depends highly on the refueling infrastructure of the region", added Ritakoski. Containerships believes that both the political and commercial demand on more environmental transport solutions will increase in near future. In Don Trucking, the company has found a partner with the same future vision and the same 'learn and do' mentality as Containerships.

<http://www.ngvjournals.com/s1-news/c3-vehicles/more-lng-powered-trucks-for-operations-in-the-port-of-rotterdam/>

## Ivorian government deploys first CNG buses to meet Paris agreement

The Ivorian Minister of Transport, Amadou Koné, and several government Ministers gathered to launch a ground breaking initiative as part of the country's commitment to the Paris COP 21 agreement. The Minister unveiled a fleet of buses commissioned by the Société des Transports Abidjanais (SOTRA), supplied by IVECO and fueled by natural gas. As part of the deal between IVECO and SOTRA, 50 Crealis buses will run on natural gas, serving Abidjan's wider urban area. Moreover, ENGIE and Tractebel collaborated to engineer, supply and install the first ever CNG fueling station in Abidjan. The CNG station is located on SOTRA's premises in Yopougon, Abidjan, and will facilitate the operation of the new fleet of CNG buses. When fully commissioned, the facility will have a compression capacity of 1360 m<sup>3</sup>/h, and will be split into two units, each equipped with two hoses, enabling four buses to refuel at the same time. The Abidjan station is the first stage in the Cote d'Ivoire's government and public transportation companies plan to increase the number of CNG buses and ensure that the region is working towards fulfilling its commitment to the Paris agreement. More importantly, it will lead the way for other African countries that are keen to further embrace clean technologies. Countries including Ghana, Togo, Benin and Cameroon are monitoring the success of the initiative with the intention of replicating the project.

<http://www.ngvjournal.com/s1-news/c4-stations/ivorian-government-deploys-first-cng-buses-to-meet-paris-agreement/>

## MAN truck & bus trials CNG vehicle for beer delivery in Mexico City

After presenting it at the ANPACT 2017 Expo Transport, MAN Truck & Bus México together with Heineken and Grupo Modelo, began pilot tests with the VW Constellation 24.280 truck powered by natural gas and Euro VI technology. This model is environmentally-friendly as it reduces CO<sub>2</sub> emissions by 21%, NO<sub>x</sub> by 70% and particulate by 95%, compared to a diesel engine; it is also quieter, ideal for urban delivery or last mile transport applications. The test vehicles will operate in Mexico City delivering Heineken and Grupo Modelo products to their customers. "We will closely monitor the performance of these trucks to ensure optimal

performance and exceed the expectations of our customers in the beverage sector," said Miguel Vallejo, commercial director of MAN Latin America. The VW Constellation 24.280 is equipped with a MAN E0836 CNG engine, 6 cylinders, power of 280 hp, a torque of 738 foot-pounds in a range of 900 to 1900 rpm and an Eaton transmission with built-in Voith retarder brake which provides much more security in the operation. It has a cab over cabin, a gross vehicle weight of 24 tons, a payload of 17.2 tons and ABS brake system. Three high pressure carbon fiber CNG cylinders are located in the back of the cabin. All experts agree that natural gas for vehicles is gaining momentum in Mexican fleets, and in this extremely encouraging scenario AltFuels Mexico 2019 will take place on 11-14 March at the World Trade Center in Mexico City. The event will feature first level conferences and exhibition led by national and international experts and companies that will share their experiences and knowledge with visitors and showcase the latest in alternative fuel technologies. <http://www.ngvjournal.com/s1-news/c3-vehicles/man-truck-bus-mexico-and-heineken-trial-vw-cng-constellation-24280/>

## More natural gas refueling stations opening in Estonia

Eesti Gaas is opening two CNG stations in Viljandi and Rakvere, and one more soon in Jõhvi. In addition to natural gas, the stations will be selling renewable natural gas –produced in Estonia. The facilities will feature two pump blocks, each equipped with two fueling nozzles one for cars and the other for buses. After the stations are opened, Eesti Gaas will be operating a total of 11 CNG refueling points in Estonia. "In a situation where petrol and diesel fuel prices are rising, it is reasonable for car owners to change to CNG. Driving on compressed natural gas is twice cheaper than petrol, so a hundred kilometers will cost you 3-4 euros, and the price has remained stable for years," noted Raul Kotov, Member of the Management Board of Eesti Gaas. "Moreover, natural gas is significantly cleaner and environmentally friendlier than liquid fuel. Because the composition and quality of green gas and natural gas are equivalent, both gases are equally suitable for the vehicle and can be used simultaneously," Kotov said. The three CNG stations were built by a subsidiary of Eesti Gaas, EG Ehitus. Aid for the construction was received from the state-owned Environmental Investment Centre, which, through its II application

round, will be financing the construction of 12 stations supplying biomethane all over Estonia. The total cost of the project reaches 2.23 million euros, and the aid will be allocated from the European Union Cohesion Fund.

<http://www.ngvjournal.com/s1-news/c4-stations/more-natural-gas-refueling-stations-opening-in-estonia/>

## POLICY MATTERS/GAS PRICING/OTHERS

### Moderation in gas prices will improve margins for urea players: ICRA

The moderation in the RLNG price will support profitability for urea manufacturers with lowering of the working capital requirements. In a research note, ratings agency ICRA said, "Natural gas is the key raw material for manufacturing urea and constitutes approximately 70% of the total cost of production of the fertilizer. Fertilizer sector receives natural gas under the pool price mechanism wherein all the players receive gas at same cost which is the weighted average of the cost of gas consumed by the urea manufacturers." According to ICRA, "Imported R-LNG prices had been on an uptrend driven by strong Chinese demand as the country partly replaced coal with natural gas as a key source of energy to combat pollution. However, as we move forward, R-LNG prices are expected to moderate given the forecast of a warmer winter in the Northern hemisphere, falling crude oil prices and high LNG storage levels in Japan, China and South Korea, the top three LNG consumers of the world." Commenting on the impact of lower gas prices, K Ravichandran, Senior Vice-President and Group Head, Corporate Ratings, ICRA, said, "Spot LNG prices have already moderated by approximately 13% in the beginning of December 2018 from the recent peak of \$11.5 a MMBtu achieved in the beginning of November 2018. The LNG prices are expected to moderate further to around \$8.5-9 a MMBtu by January with similar levels expected for entire fourth quarter of financial year 2018-2019."

<https://www.thehindubusinessline.com/todays-paper/tp-news/article25778996.ece>

## Korean shipyards almost sweep LNG ship orders

South Korean shipbuilders have bagged over 80% of new orders placed around the globe this year to build liquefied natural gas carriers, as per industry data. According to the data, Korean shipyards clinched new orders to build 56 LNG carriers in total, which is 86 percent of total new orders placed globally so far this year to construct 65 such ships. By shipbuilder, Hyundai Heavy Industries Co., the world's top shipyard, has clinched deals to build 25 LNG ships this year. The comparable figures for Samsung Heavy Industries Co. and Daewoo Shipbuilding & Marine Engineering Co. are 14 and 17. Driven by such a sharp rise in new LNG ship orders, the country's major shipbuilders have almost met their annual order target for the year. Hyundai Heavy has bagged orders valued at a combined \$13.4 billion, already surpassing this year's order target of \$13.2 billion. Daewoo Shipbuilding also achieved over 90 percent of its annual order goal of \$7.3 billion and Samsung Heavy met some 67 percent of its annual order target of \$8.2 billion. Demand for LNG carriers has been on a steady increase due to a rise in LNG demand in line with eco-friendly policies in China and the proactive push for en-

ergy exports by the United States. Park Moo-hyun, an analyst at Hana Financial Investment Corp., said the price of a LNG carrier will rise to some \$250 million in a year, a sharp increase from the \$187 million level seen earlier this year.

<https://www.hellenicshippingnews.com/korean-shipyards-almost-sweep-lng-ship-orders/>

## Thun Tankers names LNG-powered coastal tanker

On Saturday, December 15, Thun Tankers named their new environmentally adapted tanker Thun Evolve in Groningen, Holland. The tanker will be long-term leased by Preem, the largest fuel company in Sweden, for deliveries to the company's depots and customers in Sweden, Norway and Denmark. The ship will be delivered to Preem at the end of March. Thun Tankers, part of Erik Thun AB of Sweden, says the 115 metre coastal tanker built in the Netherlands is a welcome addition to the company's commitment to safer, efficient and sustainable maritime transport, with the least possible environmental impact. It is equipped with Wärtsilä equipment comprising a 6-cylinder 34DF dual-fuel main engine, a LNGPac fuel supply system, a Gas Valve Unit (GVU) and a Controllable Pitch Propeller (CPP) with

HP nozzle. "Our maritime transport is an important part of Preem's operations. We are therefore very pleased with the company's latest addition of new environmentally adapted tankers, using the latest hull design for improved performance, lower fuel consumption and reduced emissions. It is also in line with Preem's high-end sustainability requirements", says Fredrik Backman, Head of Shipping Department at Preem. Preem is the largest fuel company in Sweden. Preem's maritime transport also applies "just in time", which means that the vessels optimize and adjust speed to minimize the time of anchorage at refineries and ports. This contributes to lower fuel consumption, increased safety and the least possible environmental impact.

<http://www.ngvglobal.com/blog/thun-tankers-names-lng-powered-coastal-tanker-1219>

## New collaboration encourages LNG bunkering activities in the Emirates

ADNOC Logistics & Services and INPEX CORPORATION have signed a framework agreement for an LNG bunkering partnership in the United Arab Emirates (UAE). Under the agreement, ADNOC Group's subsidiary and INPEX will explore opportunities for LNG bunkering in the UAE as well as the potential to jointly expand LNG bunkering activities to cover other regions, including Southeast Asia. The UAE is strategically located as a major bunkering hub and is a reliable producer and exporter of LNG, through ADNOC LNG. "We have a long-established history in LNG shipping as well as bunkering operations. Our goal, through this partnership, is to offer safe and efficient LNG fueling solutions to our customers. With the support of our sister company, ADNOC LNG, as well as our partner, INPEX, we see a significant opportunity to become a major player in the LNG bunker market," said Captain Abdulkareem Al Masabi, CEO of ADNOC L&S. Shigeharu Yajima, SVP Global Energy Marketing Division, INPEX, also commented: "As outlined in VISION 2040, our long-term corporate vision, we will look to develop gas demand in Asia and other growing markets. LNG bunkering will be a key component to the creation of natural gas demand. INPEX aims to become a key player in natural gas development and supply in the Asia and Oceania region during the period until 2040."

<http://www.ngvjournal.com/s1-news/c7-lng-h2-blends/new-collaboration-encourages-lng-bunkering-development-in-the-emirates/>

## Gazprom Board of Directors reviews prospects of LNG bunkering market

The Gazprom Board of Directors reviewed the information about the prospects of the liquefied natural gas (LNG) bunkering market and the Company's ongoing efforts in this regard. It was noted that increased use of LNG as a bunker fuel was related to the restrictions imposed by the International Convention for the Prevention of Pollution from Ships (MARPOL). Starting from 2015, the maximum allowable concentration of sulfur in marine fuel was reduced from 1 per cent to 0.1 per cent in the designated Emission Control Areas (the Baltic and North Seas, the English Channel, North American coastal areas, and the U.S. area of the Caribbean). In 2020, MARPOL will implement a global 0.5 per cent sulfur cap for marine fuel. This measure is expected to significantly decrease the use of fuel oil and increase the consumption of LNG as a fuel meeting all of the environmental requirements set by MARPOL. Gazprom continues to build the LNG production, storage and shipment complex near the Portovaya compressor station. It is planned to use the plant's output to, inter alia, bunker marine vessels in Russia. The core process equipment of the complex is being assembled at the moment. Meanwhile, construction of an onshore LNG storage tank and berthing facilities is underway. The complex is slated to come onstream in 2019. In addition, Gazprom is exploring the possibilities of building plants in the area of the Black Sea and in Russia's Far East. Gazpromneft Marine Bunker, the Gazprom Group's single operator for selling LNG to end consumers in the bunkering market, is currently working on a project for an LNG bunkering vessel. Today, only four vessels of this kind exist worldwide, along with eleven small-scale gas carriers some of which are fitted out for LNG bunkering. The Management Committee was instructed to continue creating infrastructure for producing and marketing LNG as a bunker fuel.

<https://www.hellenicshippingnews.com/gazprom-board-of-directors-reviews-prospects-of-lng-bunkering-market/>

## Uniper intensifies LNG plans with Japan's Mitsui OSK

Energy group Uniper is a global energy company involved in trades and markets in gas, LNG and coal in Germany. The company announced it had entered into agreements with Japanese shipping



group Mitsui OSK Lines in the field of liquefied natural gas (LNG). Uniper and Mitsui will intensify their efforts to build a floating storage and regasification unit in Wilhelmshaven with an LNG storage capacity of 263,000 cubic metres, Uniper said. The unit could be in operation as early as the second half of 2022. Separately, Uniper said it had entered into a binding transportation agreement with Mitsui under which the shipping firm will provide Uniper with 180,000 cubic metres of LNG shipping capacity from December 2020.

<https://www.hellenicshippingnews.com/uniper-intensifies-lng-plans-with-japans-mitsui-osk/>

## Daewoo Shipbuilding wins another LNG ship order

Daewoo Shipbuilding and Marine Engineering Co., the world's second-biggest shipbuilder by sales, said Thursday it has won a \$230 million order to build a liquefied natural gas ship. Under the deal with an unidentified customer in the Oceania region, Daewoo Shipbuilding will deliver the 174,000-cubic meter vessel by the end of 2021. This month alone, Daewoo Shipbuilding has clinched deals to build six LNG ships. With the latest order, the shipyard, located on Geoje Island some 470 kilometers southeast of Seoul, has received orders to build 47 ships valued at a combined \$6.81 billion so far this year, achieving 93 percent of its annual order target of \$7.3 billion for 2018, it said.

<https://www.hellenicshippingnews.com/daewoo-shipbuilding-wins-another-lng-ship-order/>

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## Brittany Ferries' LNG-powered Honfleur launched

Brittany Ferries' brand new LNG-powered cruise ferry Honfleur took to the water for the first time in November at a traditional ship launching ceremony at the FSG shipyard in Flensburg, Germany. The launch is the third milestone in the construction of Honfleur, following cutting of the first steel in March, and laying of the keel in August. Since the keel was laid, 118 huge steel hull sections have been welded together on the slipway to create the 10,000 tonne six-storey vessel. The completed hull already contains all the ship's main machinery including its efficient and environmentally-friendly LNG-electric propulsion system. Altogether Honfleur will carry up to 1,680 passengers and will offer 261 cabins, two cinemas, restaurants, boutique shopping and choice of spacious passenger lounges. Honfleur will be an environmental pioneer on the English Channel. When it enters service it will be the first ship on the Channel to be powered by LNG. The ship's hull has been hydro-dynamically optimized; this combined with gas-electric propulsion machinery will reduce energy consumption while improving onboard comfort and minimizing vibration and noise levels. The ship will complete a series of sea trials before the first passengers aboard the vessel on the Portsmouth to Caen/Ouistreham route in summer 2019. The route is Brittany Ferries' most popular carrying around 1 million passengers, 300,000 cars and 100,000 freight units each year. "Honfleur will be the largest and greenest ship that Brittany Ferries has ever operated – she'll also be the smartest: packed with new technology, innovation and comforts", said Christophe Mathieu, CEO Brittany Ferries. "It's a statement of our commitment to fleet renewal and long-term, sustainable development. And it will be the first of three new ships to be delivered post-Brexit, all part of a €450m investment programme to make Brittany Ferries fit for the future."

<http://www.ngvglobal.com/blog/brittany-ferries-lng-powered-honfleur-launched-1219>



## 500 compressed biogas plants to come up by 2023: Dharmendra Pradhan

Union Minister of Petroleum and Natural Gas Dharmendra Pradhan said plans are afoot to set up 5,000 compressed biogas (CBG) plants across the country by 2023. The Centre intends to move towards gas-based economy by increasing the share of natural gas in India's energy basket from present 6-7 per cent to 15 per cent by 2022. With the rising demand for natural gas in transport and industrial sector, CBG has been identified as a potential route, Pradhan said. Speaking at a road show organized by three oil marketing companies here to sensitize the stakeholders to participate in the SATAT (Sustainable Alternative Towards Affordable Transportation) initiative, the Petroleum Minister said the proposed CGB plants meant for extracting biogas from agricultural residue, cattle dung, sugarcane press mud, municipal solid waste, sewage treatment plant waste and municipal solid waste will have an estimated annual gas production of 15 million tonne. He said the OMCs have already conducted road shows in Chandigarh, Lucknow and Pune to sensitize the stakeholders and they have received an overwhelming response. Noting that Odisha has great potential to generate CBG, Pradhan said with an investment of about `1.7 lakh crore, this initiative is expected to generate direct employment for 75,000 people and produce 50 million tonnes of bio-manure for crops. He said CBG is a replacement for natural gas and can be used in the transportation sector in place of compressed natural gas (CNG). Presently, consumption of natural gas in India is around 140 million metric standard cubic meter per day (MMSCMD) out of which domestic production is only 70 MMSCMD and remaining 70 MMSCMD is imported which is around 50 per cent of total consumption. It will help India achieve self-reliance in the energy sector by enabling the country in drastic reduction of crude imports which currently constitute over 80 per cent of its total energy consumption.

<http://www.newindianexpress.com/states/odisha/2018/dec/17/500-compress-bio-gas-plants-to-come-up-by-2023-pradhan-1912627.html>

## Niti Aayog pushes for methanol as cooking fuel

A plant each would be set up in Bengaluru and Assam for manufacturing methanol cooking stoves based on a technology sourced from Sweden. Premier think tank Niti Aayog has proposed a move to transform the way food is prepared in India, reducing the massive import bill and worsening pollution. The Aayog has prepared a comprehensive plan advocating adoption of methanol as the preferred cooking fuel in households as well as commercially. It's a cleaner fuel and will reduce dependence on imported gas too, said people aware of the matter. Methanol is being produced by the Gujarat Narmada Valley Fertilizers & Chemicals, Rashtriya Chemicals & Fertilizers and Assam Petrochemicals. Methanol cooking fuel is being made available in canisters of 1.2 kg, to be priced at 32. Around 18 canisters would be equivalent to a conventional domestic LPG cylinder. A senior government official told ET work is on full swing to introduce methanol-run cooking stoves. "After Assam, we are eyeing Uttar Pradesh and then Maharashtra to provide such stoves in households. Simultaneously, we have tied up with some hotels in Bengaluru to use methanol stoves," said the official, requesting not to be identified. "Next in line would be big temples, gurdwaras and ashrams where cooking is done on a massive scale daily." There was a pilot launch of methanol stoves in Assam in October. The Aayog has been aggressively pushing for adoption of methanol as cooking as well as transportation fuel. It estimates that even partial use of methanol could help

reduce India's import bill \$100 billion and pollution 40%. In terms of heat value, a 14-kg LPG cylinder is equivalent to about 20 kg of methanol. But estimates show methanol is 30% cheaper and saving on an equivalent quantity of LPG is expected to be Rs 350. In contrast to the present cooking fuel, which is used in liquefied gas form, the methanol fuel will come in vapour form. Unlike LPG, which can explode if it combusts, the methanol canister will burn without explosion and will be safer.

<https://economictimes.indiatimes.com/industry/energy/oil-gas/niti-aayog-pushes-for-methanol-as-cooking-fuel/article-show/67116092.cms>

## Hyundai unveils new plan to promote hydrogen-powered society

Hyundai Motor Group announced its long-term roadmap 'FCEV Vision 2030' plan, as the group reaffirms its commitment to accelerate the development of a hydrogen society by leveraging their global leadership in fuel cell technologies. Aligned with the roadmap, Hyundai will drastically boost its annual fuel cell systems production capacity to 700,000 units by 2030 and explore new business opportunities to supply its world-class fuel cell systems to other transportation

manufacturers of cars, drones, vessels, rolling stocks and forklifts. The demand for fuel cell systems from sectors beyond transportation such as power generation and storage systems is also expected to emerge quickly. The Group plans to secure a 500,000-units-a year production capacity by 2030, including passenger vehicles and commercial vehicles, in anticipation of high demand for global fuel cell vehicles expanding to around 2 million units a year within that timeframe. The Group's flagship auto-making affiliate Hyundai Motor earlier this year launched NEXO, its second-generation commercialized fuel cell vehicle, improving upon the acclaimed Tucson FCEV introduced in 2013. NEXO was built on Hyundai's first dedicated fuel cell vehicle architecture, which provides many structural benefits including lighter weight, increased cabin space and improved fuel-cell system layout.

<http://www.ngvjournals.com/s1-news/c7-lng-h2-blends/hyundai-unveils-new-plan-to-promote-hydrogen-powered-society/>



## U.S. DOT approves high-pressure vessel hydrogen transport systems

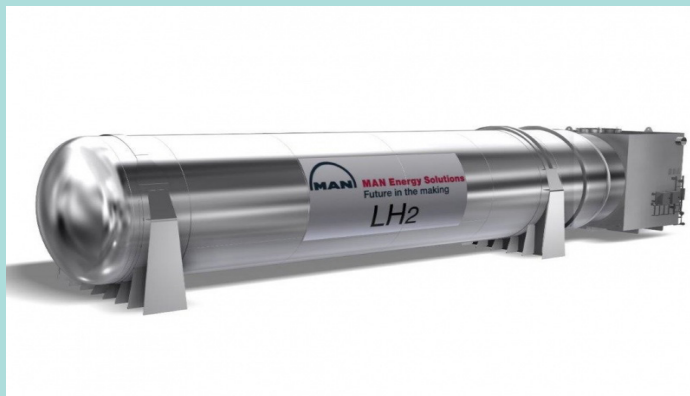
Hexagon Composites has received a special permit from the United States Department of Transportation (DOT) for the highest pressure gas transport systems ever. The permit authorizes the manufacture, marking, sale and use of Hexagon's 500 and 950 bar cylinders for over-the-road transport modules in the United States, for hydrogen and other gases. "The DOT permit is a milestone for the hydrogen refueling market where higher pressures are sought to move more hydrogen per trailer trip, which in turn reduces the overall price of hydrogen fuel at the pump," said Hartmut Fehrenbach, Vice President of Hydrogen Distribution of Hexagon. "This represents a key step to accelerate the ongoing adoption of fuel cell vehicles and transformation to a zero-emission and domestically sourced energy landscape." Hexagon is the first manufacturer to receive U.S. DOT special permit (SP20391) for 950 bar (13,775 psig). Being able to move 950 bar pressure vessel systems over the road enables the implementation of mobile hydrogen refueling units for fuel cell vehicles using 700 bar on-board storage tanks. Mobile refueling units strengthen the expanding hydrogen refueling network before permanent stations can be established. Hexagon is designing transport systems for hydrogen for the United States, building on their experience and success with hydrogen transport modules already in use with European distribution customers and Mobile Pipeline® transportation modules in use globally with natural gas distribution customers.

<http://www.ngvjournal.com/s1-news/c7-lng-h2-blends/u-s-dot-gives-permit-for-high-pressure-vessel-hydrogen-transport-systems/>

**All news and features carried in this NGS NG/LNG Update are compiled from various sources - print and web editions, and have been duly acknowledged.**

## MAN develops first liquefied hydrogen system for marine use

MAN Cryo, the wholly owned subsidiary of MAN Energy Solutions, has – in close cooperation with Fjord1 and Multi Maritime in Norway – developed a marine fuel-gas system for liquefied hydrogen. Multi Maritime's hydrogen vessel design for Fjord1, including the fully integrated 'MAN Cryo – Hydrogen Fuel Gas System', has been granted preliminary approval in principle (AIP) by the DNV-GL Classification society. The award is significant since it is the first marine-system design globally to secure such an approval. Dr Uwe Lauber, CEO of MAN Energy Solutions, said: "Winning this approval is a significant development for a number of reasons. As a solution for vessels employed on relatively short maritime routes, such as ferries, this technology is a world-first and showcases our company's ability



to deliver genuinely innovative solutions. Furthermore, hydrogen is a clean fuel whose profile fits perfectly with the general desire within the industry to move towards cleaner technology." MAN Cryo developed the Liquid Hydrogen Marine Fuel Gas System design in-house at its headquarters in Gothenburg in close cooperation with the ship-owner Fjord1 and ship designer Multi Maritime in Norway. The system has a scalable design that allows easy adaptation for different shipping types, sizes and conditions. In addition, the design is suited for both above- and below-deck applications, offering ship designers the flexibility to optimize their designs in relation to efficiency, and to cargo or passenger space. MAN Cryo has long experience with cryogenic gases and solutions for storage and distribution. The company has also made numerous hydrogen installations over the years on land that, in combination with its extensive experience from marine fuel-gas systems for LNG, have been invaluable when designing the new system. <http://www.ngvjournal.com/s1-news/c7-lng-h2-blends/man-develops-first-liquefied-hydrogen-system-for-marine-use/>

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