ANGVA2U Info 22/2020. 28th November 2020 (for ANGVA members only)

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1.0 Selected News / Articles

1.1 India

India kicks off 1000 LNG stations development

19th November 2020. By Adnan Bajic

India's minister of petroleum and natural gas and steel, Dharmendra Pradhan laid the foundation stone for 50 LNG fueling stations.



Courtesy of India's Press Information Bureau

The stations are part of the project that will see the construction of 1000 LNG stations across the golden quadrilateral and major National Highways.

This is part of a slew of initiatives of the ministry of petroleum and natural gas in realizing towards transforming India into a gas-based economy.

The government has identified LNG as a transport fuel due to the potential reducing pollution in transport.

Speaking on the occasion, Pradhan said that gas infrastructure is being set up in order to enable India's transition to a gas-based economy. The infrastructure includes laying of pipelines, setting up of terminals, enhancing gas production, and the introduction of a simple and rational tax structure.

He said that LNG is the fuel of the future for transport. In this regard, retrofitting of the vehicles as well as development by original equipment manufacturers is being undertaken.

Pradhan noted that the government will set up LNG stations at a distance of 200-300 km on the golden quadrilateral, and within 3 years, India will have 1000 LNG stations on all major roads, industrial hubs and mining areas.

Minister expressed confidence that 10 per cent of the trucks will adopt LNG as fuel.

Pradhan also said that the government will continue to promote CNG vehicles, electric vehicles, Auto-LPG, but at the same time, LNG as long-haul fuel will be pushed.

He added that 20-25 mmscmd equivalent LNG will come to the country, and cheaper LNG is likely to be available in the global market. Increased LNG consumption in the country will reduce the country's dependence on crude oil.

LNG stations part of the government's long-term plan

Tarun Kapoor, secretary of the ministry of petroleum and natural gas said that the government will promote LNG under its long-term plan. The first trial of the fuel was started in 2015, and it is now ready to take off on a commercial scale.

Country's Oil & Gas majors such as IOCL, BPCL, HPCL, GAIL, PLL, Gujarat Gas and their joint venture companies and units will set up and commission the 50 LNG stations.

Out of these 50 facilities, IOCL will set up 20 LNG stations, while BPCL and HPCL will set up eleven LNG stations each.

Further, the heavy duty vehicle segment will grow significantly with increased highway development which is ongoing across the country.

<u>Source:</u> <u>https://www.offshore-energy.biz/india-kicks-off-1000-lng-stations-</u> development/?utm_source=lngworldnews&utm_medium=email&utm_campaign=newsletter_2020-11-20

1.2 Spain

Naturgy opens dual natural gas station in Galicia

26th November 2020. Author: PetrolPlaza Correspondent Pablo Plaza

The LNG/CNG site, located in the province of Lugo, will serve fleets in Galicia heading for northern Spain, France and Europe.



© Naturgy

Naturgy has launched the first public dual gas filling station for liquefied and compressed natural gas (LNG/CNG) in Galicia. The site is located in Vilalba (Lugo), a highly strategic location due to its proximity to the A-8 motorway, the starting point of the Cantabrian corridor, providing the possibility to refuel for

fleets in Galicia with destination to the North of Spain and Europe.

The station has a 60 m3 LNG tank, a LNG dispenser and two CNG dispensers, allowing both light and heavy vehicles to be refuelled. The new gas station intends to "fill with private initiative the lack of LNG infrastructures in the Cantabrian corridor, as the A-8 is not included in European transport development projects," according to Naturgy's press release.

The Vilalba refuelling station will support Naturgy's CNG stations in San Cibrao das Viñas (Ourense) and Santiago de Compostela, in addition to its other stations currently under construction in Vigo and in the Polígono de A Sionlla, in Santiago de Compostela.

Naturgy focuses on the development of sustainable mobility, both in heavy and light transport, through the use and promotion of biomethane, green hydrogen, electricity and NGV.

Source: https://www.petrolplaza.com/news/26075

1.3 India

JCB India launches first dual-fuel CNG backhoe loader

25th November 2020. By Autoar Pro News Desk

JCB India, the leading manufacturer of earthmoving and construction equipment, today launched the industry's first dual-fuel CNG (compressed natural gas) backhoe loader in India.



Called JCB 3DX DFi, this new machine can operate on CNG and diesel simultaneously using HCCI (Homogenous Charge Compression Ignition) technology.

The machine was launched in New Delhi by Nitin Gadkari, Minister for Road Transport & Highways and Micro, Small and Medium Enterprises. He has been a leading voice for the development of construction machinery that uses alternate fuels.



Transport Minister Nitin Gadkari launched the dualfuel JCB 3DX DFi.

The utilisation of alternate fuels is a significant step-change in the construction equipment industry. Since the JCB 3DX DFi operates on a mixture of CNG and diesel, there is a substantial drop in particulate emissions, claims the company.

CNG is also more economical and helps lower the operating costs to the end customer. With the global concern on environment and sustainability, JCB India the machine has been indigenously developed and tested in various operating conditions before its launch. It will be built at company's Delhi-NCR factory at Ballabgarh.

This dual-fuel CNG backhoe loader is based on the popular 3DX model and offers flexible fuelling, which will help customers sustain operations in remote areas of the country, where a CNG refilling point is unavailable.

According to JCB India's CEO and MD, Deepak Shetty, "Throughout our four decades of operations in India, we have continued to invest in innovation. This dual-fuel machine can substitute diesel with CNG and has to developed to cater to the evolving needs of our customers. It will also be exported."

Deepak Shetty further said "JCB has been working on this project with the inputs of its customers, dealers and suppliers. These machines have been tested at actual customer sites across various geographies and terrains and feedback has been incorporated in the development of the product."

Source: https://www.autocarpro.in/news-

national/jcb%C2%A0india%C2%A0launches%C2%A0first%C2%A0dualfuel%C2%A0cng-backhoeloader-77830

1.4 Italy Air Liquide To Build Two Biomethane Plants in Italy

19th November 2020. By Mary Page Bailey

Air Liquide (Paris) has announced the construction of its first two biomethane production units in collaboration with its local partner Dentro il Sole (DIS). These two units will be built in Truccazzano (Milan) and Fontanella (Bergamo) in Italy, recycling organic material from agricultural and livestock activities to convert it into biomethane, a renewable energy source. These investments to support the circular economy are in line with Air Liquide's Climate Objectives, and contribute to the development of a low carbon society.

The two new production units, whose entry into operation is scheduled for the second quarter of 2021, will allow to valorise agricultural and livestock waste from local farms for the production of liquefied biomethane and will have a total production capacity of 3,200 t/y, equivalent to about 50 GWh/y. From a circular economy perspective, the two units will also be complemented by one filling station for the supply of bio-Liquified Natural Gas (bio-LNG) and bio-Compressed Natural Gas (bio-CNG) to local transport companies. Open 24 hours a day, 7 days a week, the station will be able to refuel up to 100 trucks per day. Air Liquide and DIS partnered with local agricultural operators to produce biomethane for the transport sector.

Air Liquide has developed skills along the entire value chain of biomethane: production from organic and agricultural waste, purification, liquefaction, storage, transport and distribution. Air Liquide today has more than 80 stations distributing bio-NGV across Europe and 20 biomethane production units worldwide.

Emilie Mouren-Renouard, Member of the Air Liquide Executive Committee, in charge of Innovation, Digital & IT, Intellectual Property and Global Markets & Technologies World Business Unit, said: "These new investments illustrate our ability to support road transport customers by offering efficient solutions that enable them to lower their carbon footprint. With these two new production units in Italy, Air Liquide continues to develop its biomethane activity in Europe. In line with its Climate Objectives, Air Liquide is taking actions with ecosystems to meet the challenges of the energy transition."

Source: <u>https://www.chemengonline.com/air-liquide-to-build-two-biomethane-plants-in-italy/?printmode=1</u>

1.5 Finland Finland gets first liquefied biogas plant

17th November 2020.



The major expansion and modernisation of Gasum's biogas plant in Topinoja, Turku, has been completed. The plant is now open, and commercial use of the plant has started. It is the first in Finland to produce liquefied biogas for transport, industrial and maritime needs.

The plant expansion was one of the Sipilä's Finnish Government key projects in bioeconomy and clean solutions, the objective of which is to increase in a sustainable way the share of renewable energy of the energy used in Finland by, in particular, improving its availability.

The plant will process around 130,000 tonnes of biomass a year to produce an annual 60 GWh of liquefied biogas (LBG), which corresponds to the annual fuel consumption of 125 heavyduty vehicles or 5,000 cars. The plant will also produce around 4,000 tonnes of ammonia water for use as a recycled nutrient. The Turku biogas plant promotes the realisation of the circular economy and the development of the gas market in the Turku region.

"We're one of the few companies in the Nordic countries to be able to provide industrial scale biogas production and distribution. Gasum is continuously investing in biogas plants and increasing the performance of our existing ones. Demand for biogas is growing in all segments and we are constantly pursuing new opportunities to increase production capacity. We are investing in the development of our plants so that we can take the circular economy even further. Demand for recycled nutrients is also showing development in different industrial sectors. Our Turku plant is a superb example of the realization of the circular economy," says Johan Grön Vice President, Biogas, Gasum.

Gasum is boosting its biogas production capacity by expanding existing biogas plants, by building new ones and by increasing procurement of biogas from the production plants of other actors. The company is pursuing cost-efficiency in biogas production and the use of new feedstocks suitable for biogas production.

In November, Gasum acquired ownership of the Skövde biogas plant in Västergötland, Sweden. The plant has an annual production capacity of up to 40 GWh.

Gasum has also made a basic plan and started to apply for permits to expand the biogas plants in Kuopio, Oulu and Kouvola. The Lohja biogas plant and the Viinikkala biowaste transfer station under construction in Finland, and the Nymölla biogas plant in Sweden will be completed by the start of 2021.

Gasum also plans to build a new industrial scale 120 GWh biogas plant in Götene, Sweden by the beginning of 2023.

Gasum processes around 800,000 tonnes of biomass a year in its biogas plant network and produces a total of around 740,000 tonnes of fertiliser products a year in Finland and Sweden.

Biogas is a fully renewable energy source that can be produced from many types of biodegradable waste. The use of biogas as a fuel can help to reduce carbon dioxide emissions by up to 90 per cent compared to fossil diesel. Gasum now has 15 biogas plants in Finland and Sweden, making the company one of the largest producers of biogas in the Nordics.

Gasum will make 4 TWh of biogas available in the Nordics by 2024 through its own production and partners.

The energy company Gasum is a Nordic gas sector and energy market expert. Gasum offers cleaner energy and energy market expert services for industry and for combined heat and power production as well as cleaner fuel solutions for road and maritime transport. The company helps its customers to reduce their own carbon footprint as well as that of their customers. Together with its partners, Gasum promotes development towards a carbon-neutral future on land and at sea.

Source: http://tradearabia.com/news/OGN_375268.html

1.6 Europe Plans unveiled to deploy 1,500 hydrogen stations in Europe by 2030

24th November 2020. PetrolPlaza Correspondent Pablo Plaza

A 62 members coalition revealed a "milestone [statement] towards the decarbonisation of the heavy-duty industry in Europe" during the European Hydrogen Week.



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A 62 members hydrogen coalition unveiled plans to deploy up to 100,000 hydrogen-powered trucks and 1,500 hydrogen stations in Europe by 2030. The announcement was made by the President of Hydrogen Europe, Valérie Bouillon-Delporte, representing the coalition statement signatories

during day one of the first ever European Hydrogen Week.

The coalition virtually delivered its "milestone [statement] towards the decarbonisation of the heavy-duty industry in Europe", states the coalition's press release, only a few weeks before the publication of the EU Sustainable and Smart Mobility Strategy on 9 December, the sector roadmap for the years ahead.

According to Hydrogen Europe, the number of registered hydrogen-powered vehicles is expected to double every year from 2030 onwards to meet the targets of the EU's CO2 emissions regulations.

The coalition statement <u>'On the deployment of fuel cell and hydrogen heavy-duty trucks in</u> <u>Europe'</u> is supported by 62 signatures including OEMs, fuel cell and hydrogen technology suppliers, refuelling and hydrogen infrastructure providers, truck operators, users of road freight services and related industry associations.

Source: https://www.petrolplaza.com/news/26059

1.7 China

China's Guangdong pushes hydrogen fuel cell vehicles

13th November 2020.

Southeast China's Guangdong province has laid out plans to accelerate the development of hydrogen fuel cell vehicles (FCVs), continuing to enhance its core competitiveness in the new energy vehicle (NEV) industry, according to the province's development and reform commission.

The plans include innovations of the FCV industry chain, such as encouraging vehicle companies to take the lead in formulating development plans, while striving to develop FCV with independent core technology.

Guangdong will promote more use of FCVs as heavy-duty trucks, medium and long-range logistics vehicles, engineering vehicles and port operation vehicles. It is also on target to produce the first hydrogen fuel cell ship and the first set of fuel cell household heat and power applications in 2022.

The provincial government will subsidise hydrogen refuelling stations with refuelling capacity over 500kg/d, and build and put then into use before 2022, for 1.5mn-2.5mn yuan (\$227,000-378,000) each.

Guangdong earlier this month announced that it is on track to build <u>200 hydrogen fuelling</u> <u>stations</u> by the end of 2022, as part of its plan to create "national FCV promotion demonstration cities" in the Guangdong-Hong Kong-Macao greater bay area.

China <u>sold 79 FCV units in October</u>, up from just one in September and by 4pc from a year earlier, with January-October volumes down by 50.4pc to 658 units, according to data from China's automotive manufacturers association.

<u>Source:</u> https://www.argusmedia.com/en/news/2159613-chinas-guangdong-pusheshydrogen-fuel-cell-vehicles

1.8 Thailand

PTT: announced the launch of new business – the first one-stop service for renewable energy certificates and renewable purchases in Thailand 24th November 2020.

To reinforce PTT's leadership in energy innovation for the future, PTT launched the new business in one-stop service for Renewable Energy Certificate (REC), leveraging blockchain technology, to fully meet the strong demand from multinational companies for renewable energy in Thailand and the ASEAN region, continuing PTT's sustainability mission.

Mr. Worawat Pitayasiri, Senior Executive Vice President, Innovation and Digital, PTT Public Company Limited, revealed that PTT has been accredited by the International REC Standard (I-REC Standard) since early October 2020 as a representative to provide services in renewable energy equipment registration, renewable energy certificate issuing request and trading.

PTT is the first in Thailand to provide one-stop service simplifying the process and facilitating both renewable energy device owners and Thai/ multinational companies having operation in Thailand or in the ASEAN region who have renewable energy target to have an access to local clean energy easily and meaningful way e.g. community solar.

In November 2020, PTT started providing real commercial service to customers. PTT has also initiated the ReAcc Platform (Renewable Energy Acceleration Platform underpinned by blockchain technology, which enhances the security of the transactions. ReAcc will seamlessly support the purchase of Renewable Energy Certificates (REC), the Corporate Power Purchase Agreement (CPPA) and the use of renewable energy with electric vehicles.

ReAcc, a blockchain-based renewable energy platform, is initiated by the synergy of the electricity industry knowhow, innovation and digitization enhancing PTT's vision in Technology for all, emphasizing our mission in applying technology and innovation for all dimensions of the business and for the benefits of Thai people.

'The ReAcc platform was initiated by the venture lead of our innovation lab team (ExpresSo), and has been developed by Thai software developers collaborating with a global energy blockchain nonprofit. This new platform will be one of the mechanisms that will drive change and transition to renewable energy to achieve the greater clean future's energy targets in Thailand. It is also beneficial in creating convenience in a two-way connection between the renewable buyers and local renewable energy developers that help expand new investment in renewable energy with less government subsidy, create job opportunity and stimulate the Thai economy.' said Mr. Worawat.

ReAcc is operated under Alpha Com Company Limited, which PTT holds 100 percent shares. It is now ready for the one-stop service in renewable energy equipment registration to successfully request and trade renewable energy certificates that are compliant with the International REC Standard (I-REC) and the ReAcc platform plans launch a full online service in early 2021. For further information, please visit <u>www.reacc.io</u>.

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