ANGVA2U Info aims to share information, data, and news related to low carbon, carbon neutral, and zero carbon fuels towards Net Zero Emissions target and limiting earth temperature rise to 1.5 ^{0}C by the year 2100. These information, news, and insights, are shared in good faith, without any guarantee of accuracies. ANGVA members are advised to use these information, news, and insights, prudently and at their own risks.

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1.0 Introduction

This newsletter aims to keep members abreast with the latest news on NGVs, Renewable Natural Gas (RNG) / Biomethane, Renewable Fuels, and other related news. Members can contact ANGVA Secretariat if they have any comments related to this newsletter.

2.0 Natural Gas – Low Carbon Fuel

2.1 Thailand

Thailand to inspect CNG vehicles after 23 killed in school bus fire

3rd October 2024. By Phan Anh

Thai rescuers bring bodies out of a burned school bus in Bangkok, Oct. 1, 2024. Photo by AFP

Thai authorities are set to inspect fire safety standards on all passenger buses equipped with compressed natural gas (CNG) cylinders, following a bus fire that claimed 23 lives in suburban Bangkok on Tuesday.

Surapong Piyachote, Thailand's Deputy Minister of Transport, on Wednesday said the Department of Land Transport (DLT) has been tasked with completing the inspection in two months, according to the Straits Times.

The move comes in response to the fatal fire on a bus chartered by Wat Khao Phaya Sangkharam School for a sightseeing trip involving 45 students and teachers.

Of the passengers, 23 were killed when the CNG-fueled bus caught fire. According to the transport department, approximately 13,426 passenger buses in Thailand are currently powered by CNG.

Surapong has also directed the department to draft new regulations requiring bus drivers and staff to undergo safety and management training. He urged collaboration with schools to ensure all buses used for school trips meet safety standards, The Nation reported.

The transport ministry is also exploring the possibility of adjusting the maximum number of years a passenger bus can remain in service. Another potential measure includes mandating that all passenger buses provide safety briefings to passengers before every trip, similar to airline procedures.

Source: *https://e.vnexpress.net/news/news/thailand-to-inspect-cng-vehicles-after-23-killed-in-school-bus-fire-4799921.html*

2.2 Thailand

Forensic police find 'gas leak' behind fatal bus fire

4th October 2024. By writer: WASSAYOS NGAMKHAM

A family member reacts as he arrives at the funeral for children from Wat Khao Phraya School who have been killed in a bus which was engulfed in a fire while on a field trip in Bangkok, in Uthai Thani province, Thailand, October 2, 2024. (Reuters photo)

A probe by forensic police has concluded that a gas leak was the cause of the bus fire tragedy that claimed the lives of 20 students and three teachers on Tuesday.

Pol Lt Gen Trairong Phiewphan, commander of the Office of Police Forensic Science (OPFS), said on Thursday that an initial investigation found the gas leak occurred at the front of the bus.

However, it has not yet been determined what caused the sparks that ignited the flames, nor why the gas was leaking, he said.

Experts specialising in vehicle gas systems will be invited to provide further information.

An inspection by OPFS officers and experts also revealed that 11 tanks containing compressed natural gas (CNG) had been installed on the bus.

A House committee on transport invited officials from the Department of Land Transport (DLT) and the Automotive Engineering Bureau (AEB) on Thursday to explain the cause of the fire and discuss potential solutions.

Chirute Visalachitra, the DLT's director-general, informed the committee that six of the eleven CNG tanks installed on the bus were registered, while the remaining tanks were not.

The inspection found that the gas leak originated from one of the unregistered tanks, which had not been checked by engineers, he said, adding that the police are working with the department to determine who is responsible.

"How did officials inspecting the bus fail to notice the excessive number of gas tanks?" Mr Jirut asked.

Cheep Nomsian, director of the AEB, told the House committee that the bus involved in the accident was a single-deck vehicle, not a double-decker, and that the emergency door at the rear was functional.

The inspection found no evidence of a front tyre explosion, as previously reported, he said, adding that the bus's front-wheel axle was broken and showed signs of scraping against the road surface.

He also said that a fuel line, which carries gas from the tank to the engine, had come loose, causing the leak. Early reports from first responders indicated that the front left tyre had blown out, causing the wheel to catch fire. The driver then lost control, and the bus swerved into the median barrier. Flames rapidly engulfed the vehicle.

Following the incident, the DLT suspended the transport operation licence granted to Panisara Chinnaboot, the operator of the Sing Buri-based Chinnaboot Tour, Mr Jirut said.

The licence will be revoked if the investigation finds that negligence by the company caused the tragedy.

Mr Jirut also noted that the registration of Kanittha Chinnaboot as the company's transport safety manager (TSM) has been revoked, and an investigation has been launched into Alternative Resource Engineering Co, which provides gas-fuelled vehicle inspection and testing services.

The licence of the bus driver, identified as Samarn Chanphut, 48, who surrendered to police on Tuesday night, has also been suspended. He faces losing his licence if found responsible.

There will be inspections of all 13,426 vehicles using CNG within 60 days.
Source: *https://www.bangkokpost.com/thailand/general/2877136/forensic-police-find-gas-leak-behind-fatal-bus-fire*

2.3 Vietnam

Plans announced to expand CNG infrastructure in Ho Chi Minh City

23rd September 2024. .

The State Government of Ho Chi Minh City has announced plans to expand its compressed natural gas (CNG) infrastructure by building new CNG filling stations at bus terminals in District 8, Nga Tu Ga, and the new Mien Dong Bus Station in Vietnam.

Currently, the city operates three CNG stations and serves 510 CNG buses on 18 subsidized routes. With 138 bus routes in total, 546 vehicles already run on clean fuel, while the rest use diesel. The Department of Transport aims to increase the use of CNG-powered vehicles, enhancing public transport and reducing emissions
Source: *https://southeastasiainfra.com/plans-announced-to-expand-cng-infrastructure-in-ho-chi-minh-city/*

2.4 Nigeria

50 CNG stations servicing 200 million Nigerians – NMDPRA

7th October 2024. By Dare Olawin

CNG

The Chief Executive of the Nigerian Midstream and Downstream Petroleum Regulatory Authority, Farouk Ahmed, says Nigeria has less than 50 Compressed Natural Gas compression stations to feed 200 million Nigerians.

This is despite efforts of the Federal Government, through the Presidential Compressed Natural Gas Initiative to give Nigerians access to CNG as a replacement to the pricey fossil fuels like petrol and diesel.

Ahmed stated this in his speech at the conference of the Nigeria Association of Energy Correspondents in Lagos.

Touching on energy security, which is crucial for Nigeria's economic growth, Ahmed maintained that despite having a huge gas utilisation deficit, "we still flare about 2.5 billion cubic feet of gas daily".

This wasted resource, he noted, could generate enough electricity for the country.

He stressed, “The Decade of Gas initiative seeks to end this waste, ensuring that by 2030, gas contributes significantly to our energy mix, adding up to 5,000 MW to the national grid and reducing our reliance on imported fuels.”

As the country invests in gas infrastructure, he advised that Nigeria must diversify its energy sources and reduce dependency on any single fuel.

“It is important to note that the number of Liquefied Petroleum Gas plants in the country is less than 3,000 while the CNG compression stations are less than 50 for a country of 200 million citizens.

“We must develop a robust gas sector not only to secure our domestic energy needs but also to position ourselves as a reliable energy supplier for neighbouring countries, thereby enhancing regional energy security and fostering economic collaboration,” he submitted.

He spoke further that “the Presidential CNG initiative is one of the Federal Government policies that will drive our energy security and reduce the dependency on oil.”

He posited that Nigeria is at a crossroads, facing the challenge of transitioning to a new energy future while resolving its economic and social challenges.

While recalling that Nigeria’s Energy Transition Plan launched in 2022, adopted gas as a transition fuel, wheeling the nation from carbon-dominated energy sources to less carbon-intensive fuels like LPG and CNG, he added that energy security and international politics constitute a hurdle that must be confronted head-on.

“Nigeria is blessed with over 209 trillion cubic feet of proven associated and non-associated gas reserves, the largest in Africa and among the top ten globally. Despite this immense potential, gas has often taken a back seat to crude oil.

“Today, we have a chance to change that narrative. As a cleaner-burning fuel, natural gas emits about 50 per cent less CO2 than coal and 30 per cent less than oil, making it an ideal bridge to a low-carbon future while still meeting our immediate energy needs.

”Switching to gas can also help us manage the intermittency challenges faced by renewable energy sources like wind and solar. By embracing gas, we are not just talking about an energy transition; we are ensuring a reliable, cleaner, and more sustainable energy supply for Nigeria,” he explained.

However, Ahmed maintained that the financial investment required for Nigeria’s gas infrastructure is substantial, with estimates ranging in the billions of dollars.

“Various reports and initiatives suggest that we need significant funding to expand and modernise our gas infrastructure. However, the enactment of the Petroleum Industry Act in 2021 provides a solid foundation for attracting this investment by offering better fiscal terms and regulatory clarity.

“The establishment of the Nigerian Midstream and Downstream Gas Infrastructure Fund aims to support the growth of the sector by improving access to finance and encouraging local and international partnerships,” the ACE noted.

On the global scale, he worried that the continuous call for decarbonisation of energy sources away from fossil fuels is adding pressure on the already complex situation.

"Nigeria, being import-dependent until now, and also having just oil as its major Forex earner, will be caught in the web, should calls for phasing out fossil fuels materialise in the near term," he warned.
Source: https://punchng.com/50-cng-stations-servicing-200-million-nigerians-nmdpra/

2.5 Russia

Leningrad Region and Gazprom have agreed to develop the gas engine fuel market
10th October 2024. Source: OREANDA-NEWS

OREANDA-NEWS Sergey Kharlashkin, Deputy Chairman of the Government of the Leningrad Region, and Vitaly Markelov, Deputy Chairman of the Gazprom Management Board, signed a roadmap for the development of gas engine fuel markets at the St. Petersburg International Gas Forum, the press service of the government of the Leningrad Region reports.

The region, in cooperation with Gazprom structures, will continue to create conditions for the conversion of vehicles to natural gas," the message says.

Gazprom will also continue to expand the city and regional network of gas filling stations, and the Leningrad Region will support car owners and work to increase fleets of gas–powered vehicles, including municipal ones.

The Leningrad region is among the top 20 regions of Russia in terms of the level of development of the gas engine fuel market. From 2019 to 2023, the fleet of methane-powered vehicles in the Leningrad Region grew from 2.5 thousand units to 3.4 thousand units. In two years, the share of gas-powered buses in the Leningrad Region has increased from 12.9% to 15.1%. There are 12 automotive gas filling compressor stations (CNG stations) operating in the region, and their number is planned to increase to 23 by 2030.

The St. Petersburg International Gas Forum is taking place from October 8 to 11. It is attended by about 20 thousand participants from 53 countries. The Forum is supported by the Ministry of Industry and Trade, the Ministry of Energy and the Government of St. Petersburg, leading industry associations and associations.
Source: *https://www.oreanda-news.com/en/tek/leningrad-region-and-gazprom-have-agreed-to-develop-the-gas-engine-fuel-market/article1531887/*

3.0 Renewable Natural Gas (RNG) / Biomethane – Carbon Neutral Fuel

3.1 India

Assam to host four compressed bio gas plants, PM lays foundation virtually
2nd Oct 2024. By The Assam Tribune

PM Narendra Modi

Guwahati, Sept 2: Prime Minister Narendra Modi virtually laid the foundation stone for four Compressed Bio Gas (CBG) plants in Assam on Wednesday.

The plants, being developed by Oil India Ltd. (OIL), were unveiled as part of the Swachh Bharat Diwas celebrations. The CBG plants will be located in Guwahati, Jorhat, Sivasagar, and Tinsukia, highlighting Assam's role in India's transition to a greener energy future. These projects are expected to bolster environmental sustainability by converting municipal waste into renewable energy.

"The four plants will collectively process 500 tonnes of waste to generate 8 tonnes of CBG per day," said Assam Chief Minister Himanta Biswa Sarma on a micro-blogging website.

The Chief Minister highlighted the plants' environmental and economic benefits, noting that the plants will reduce waste and offer new employment opportunities for the local population, improving the region's economy.

OIL highlighted the use of advanced zero liquid discharge systems, which ensure minimal environmental impact.

The initiative is part of the company's broader plan, in collaboration with the Ministry of Petroleum and Natural Gas, to establish 25 CBG plants nationwide by 2024–2025 through partnerships with private entrepreneurs and Public Sector Units (PSUs).

The move aligns with India's long-term goals of cleaner energy and enhanced waste management, positioning Assam as a key contributor to these efforts.

Source: *https://assamtribune.com/assam/assam-to-host-four-compressed-bio-gas-plants-pm-lays-foundation-virtually-1553430?infinitescroll=1*

3.2 Barbados

Barbados Launches First Bio-CNG Vehicle Powered By Sargassum

5th October 2024. By Editorial Staff

SOURCE: Caribbean Centre for Renewable Energy and Energy Efficiency. PHOTO: Dr. Legena Henry, founder and CEO of Rum and Sargassum Inc., and Dr. Mohammad Rafik Nagdee, Executive Director of The CCREEE, celebrate the launch of the first vehicle powered by bio-CNG.

Rum and Sargassum Inc., a local deep-tech start-up, and The University of the West Indies Cave Hill campus have launched the first vehicle powered by bio-compressed natural gas (CNG).

The bio-CNG uses rum distillery wastewater and a sargassum-based biomethane, an innovative fuel source derived from the invasive seaweed which is plaguing the region's coasts.

The seasonal issue posed by sargassum on the island's beaches is now being turned into a valuable resource as the country seeks to achieve its goal of becoming a 100 per cent renewable energy and carbon-neutral island state by 2030.

The project, spearheaded by Rum and Sargassum Inc., is an achievement for sustainable development in the Caribbean, thanks to partners like the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE).

Dr. Legena Henry and her team from the Renewable Energy Development Laboratory at the Cave Hill Campus are the innovators of the biomethane fuel.

Speaking during the launch of the vehicle, she said, “UWI Cave Hill Campus is really an incubator for creativity and innovation. Why I celebrate Cave Hill so much is because Barbados is a creative society, and we are leading the region right now in the energy transition.”

Additionally, she drew attention to the contributions from The CCREEE, stating that the regional body has been incredibly supportive of the project.

Dr. Henry noted that the launch of the bio-CNG vehicle would not have been possible without The CCREEE, which offered the use of its electric car for the test drive. It is now the flagship vehicle bearing the slogan ‘Runs on Sargassum’.

Building on this success, Dr. Henry also outlined the next phase of the project, which involves establishing a biogas station.

She said they currently have a small station at the Guinea Estate on four acres of agricultural land and described it as a perfect example of the circular nature of this process. She explained that “the digestate feeds the land, but the gas fuels cars,” creating a sustainable solution that benefits both agriculture and transportation.

In his remarks, Professor Clive Landis, Principal and Pro-Vice Chancellor of The UWI Cave Hill, praised Dr. Henry for embodying Cave Hill’s mission to “create value from ideas.” His comments came as he suggested that Dr. Henry’s work represents the next phase of The UWI’s strategy to evolve into an entrepreneurial university capable of leveraging research excellence to benefit society.

“Dr Henry is, firstly, leveraging her research on how to convert sargassum into biofuel to create value in society by tackling this pernicious environmental scourge,” Professor Landis stated, adding, “secondly, she is creating value for the university itself because the Cave Hill Campus is an equity partner in the venture. Taking an idea through the so-called tech transfer funnel, all the way from the point of conception to the successful pilot stage that we have witnessed today, the point at which it is ready for scale-up and investment, takes persistence and determination.”

Professor Landis hinted that the sargassum-powered vehicle is just the beginning. He said The UWI plans to introduce other sargassum-based innovations soon, including products for pest control and diabetes treatment.

Meanwhile, in her address, Senator Lisa Cummins, Minister of Energy and Business, lauded the project as a significant milestone in Barbados’ renewable energy journey.

She underscored the fact that Barbados has 150,000 fossil fuel vehicles, and this innovation is important in the transportation sector as Barbados strives to meet its net-zero carbon emissions goals.

“Electrification and the use of renewables in transportation are critical for our energy transition,” Minister Cummins noted, adding that the project has the potential to “change the hearts and minds” of the Barbadian public regarding transitioning to renewable energy.

Minister Cummins also highlighted the broader potential of sargassum beyond Barbados, urging the region to embrace the opportunity. “This is a regional and a global first-mover opportunity. Barbados has pioneered a technology that can change the way the entire Caribbean treats to transportation, and I want us to not take that for granted,” she said, expressing confidence that Barbados will continue to lead in renewable energy.

The launch event was hosted by Rum and Sargassum Inc. and Supernova Lab of Future Barbados.

Sponsors included The CCREEE, The UWI, NGC Green Company Limited, the National Petroleum Corporation, the Inter-American Development Bank, the Caribbean Climate-Smart Accelerator, TOSL Engineering Limited, and RL Mark & Company.
Source: *https://stluciatimes.com/166346/2024/10/barbados-launches-first-bio-cng-vehicle-powered-by-sargassum/#google_vignette*

3.3 International

LNG, bio-LNG and synthetic LNG – a pathway to net zero emissions
10th October 2024. Accessed Shell website.

To meet the industry's 2050 net zero emissions ambition, the shipping industry must maximise the potential of lower carbon fuels available today while preparing for future solutions.

Liquefied natural gas (LNG) offers a pathway to net zero greenhouse gas emissions (GHG) by adding bio-LNG, and in the future, synthetic LNG, in any proportion to meet voluntary or regulatory carbon intensity targets.

LNG, bio-LNG, and synthetic LNG, which are primarily liquefied methane, can all be supplied through the existing and expanding LNG infrastructure and gas grid.

LNG

- Emits up to 23% less GHG emissions compared to very low sulphur fuel oil, depending on engine type
- Outperforms conventional marine fuels in air pollutants, with near-zero sulphur oxides and reduced particulate matter. Nitrogen oxide emissions can be reduced or be similar depending on engine type
- Abundant supply and available along key trading routes

Bio LNG

- Significant volumes of biogas are being produced today via anaerobic digestion of sustainable biomass feedstock such as manure, and can be further scaled up
- Can be mass balanced within the gas grid where regulation permits

Synthetic LNG

- Made from renewable hydrogen and CO2
- Production is being developed

Extensive LNG infrastructure across the globe

Shell has the largest LNG bunkering network in the world supplying marine LNG to ships in many locations around the world. This is backed by Shell's global LNG business, which has a sizeable portfolio, extensive shipping and storage assets, and access to regasification plants.

26 Bunkering Locations. 12 Countries. 12 Bunkering Vessels. 2000+ Bunkering operations

Source: *https://www.shell.com/business-customers/marine/fuel/lng-in-shipping.html*

4.0 Hydrogen – Zero carbon fuel

Korea

Hyundai has sold more than 1,000 hydrogen buses since launching the world's first in 2019

7th October 2024. By Leigh Collins Editor, Hydrogen Insight

The automaker is the only manufacturer of H2 buses in South Korea, which has a target of 21,200 units on the road by 2030

Hyundai's Elec City FCEV fuel-cell bus.Photo: Hyundai Motors

Korean automaker Hyundai says it has now sold more than 1,000 units of Elec City FCEV hydrogen bus since its launch in 2019, when it became the first commercially available H2-powered city bus model in the world.

The company revealed yesterday (Sunday) that as of the end of September, it has sold 1,032 units of the 180kW fuel-cell bus, which has a range of up to 550km.

The model is "suitable for routes with heavy-traffic, long-distance routes, and routes with steep inclines, where electricity consumption is high", Hyundai said.

It was reported in April that Hyundai was planning to increase its annual hydrogen bus manufacturing capacity at its factories in the city of Jeonju from 500 to 3,000 units.

This was said to be in response to the South Korean government increasing the amount of subsidies for H2 buses from 700 units in 2023 to 1,720 in 2024.

The Elec City buses cost about 700m-800m won ($520,000-594,000) each, while subsidies from national and local governments tend to amount to 300m won per vehicle.

Last month, the South Korean government unveiled a new national target to have 21,200 hydrogen-powered buses on the country's roads by 2030 — up from 1,185.

The country is also aiming "to replace 25% of all metropolitan buses with hydrogen buses by 2030", said the Ministry of Envinroment in a press release, adding: "Intercity buses, along with city and charter buses, are the main targets for conversion".

Hyundai is currently the only manufacturer of hydrogen buses in South Korea, although Doosan's HiExium Motors division is due to start producing its own model by the end of this year, and electric-bus maker Woojin Industrial Systems is planning to introduce a hydrogen version of its Apollo 1100 model.

Hyundai launched a new hydrogen bus model aimed at the inter-city market last year — the Universe FCEV.

Europe's leading manufacturer of hydrogen buses — Poland's Solaris — announced in January that it had sold a cumulative total of 700 H2 buses since launching its first model in 2019.

Source: *https://www.hydrogeninsight.com/transport/hyundai-has-sold-more-than-1-000-hydrogen-buses-since-launching-the-worlds-first-in-2019/2-1-1720760?utm_campaign=2024-10-08&utm_content=hydrogen&utm_medium=email&utm_source=email_campaign&utm_term=recharge*

5.0 Electricity – Electric Vehicles (EVs)

United States of America

Tesla Semi fire in California took 50,000 gallons of water to extinguish

13th September 2024. By Lora Kolodny@IN/LORAKOLODNY/

KEY POINTS

- **The National Transportation Safety Board is investigating the cause of a Tesla Semi crash and fire that closed an artery of California's Interstate 80 last month for 15 hours.**
- **In a preliminary report, the NTSB said it took CAL Fire 50,000 gallons of water to extinguish the flames.**
- **Tesla CEO Elon Musk first unveiled the fully electric Semi trucks at an event in November 2017, but the company is still in pilot production.**

Tesla Semi. Courtesy: Tesla

A single-vehicle collision last month involving a Tesla Semi electric truck took 50,000 gallons of water to extinguish and required aircraft to dump fire retardant overhead, according to a preliminary report on Friday from the National Transportation Safety Board.

The crash, which occurred on California's Interstate 80 west of Lake Tahoe, is being investigated by the NTSB. CAL Fire's efforts to put out the flames cooled the vehicle's massive battery to keep it from reigniting and prevented the fire from spreading beyond the crash site, the NTSB said.

The Tesla truck, driven by an employee, was headed to the company's battery factory in Sparks, Nevada, from a warehouse in Livermore, California, the report said. The incident closed down part of the I-80 for 15 hours.

Tesla CEO Elon Musk first showed off the Semi truck design at an event in November 2017, promising it would come to market in 2020. The company still has not started producing the trucks in high volume, but it is building out production lines at its Nevada facility.

"Preparation of Semi factory continues and is on track to begin production by end of 2025," Tesla said in its second-quarter earnings report in July.

The NTSB report confirmed that Tesla's driver-assistance systems, which are marketed as Autopilot and Full Self-Driving (Supervised) in the U.S., were not "operational" at the time of the Semi collision and fire.

Tesla did not respond to CNBC's request for comment.

Source: *https://www.cnbc.com/2024/09/13/tesla-semi-fire-needed-50000-gallons-of-water-to-extinguish.html*

End