



## **ANGVA2U Info** 06/2023. 4<sup>th</sup> July 2023 (for ANGVA members only)

*ANGVA2U Info aims to share information, data, and news related to low and net zero carbon fuels with ANGVA members. However, these information, data, and news are collected and shared in good faith, without any guarantee of accuracies. Members are advised to use these information and data prudently and at their own risks.*  
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### **1.0 Selected News / Articles**

#### **1.1 Peru**

#### **13.5 million tons of CO2 mitigated thanks to the use of NGV in Peru**

3<sup>rd</sup> July 2023. News.

**One of the most important commitments adopted in recent years by the Government of Peru is the protection of the environment through the use of compressed natural gas.**

June 26, 2023. One of the most important commitments adopted in recent years by the Government of Peru, through the Ministry of Energy and Mines, is the protection of the environment through the use of a fuel with low polluting emissions such as compressed natural gas (CNG).

In this sense, according to a study carried out by the Supervisory Agency for Investment in Energy and Mining regarding the effects of the use of natural gas on CO2 mitigation in the sectors of electricity generation, industry and transport in Peru, the entry into operation of the Camisea Project resulted in an important energy substitution in various economic activities.

The results show that, if CNG had not started to be used, CO2 emissions would have accumulated close to 40 million tons of CO2 between 2006 and 2019, while the real figure in that period was 26.5 million tons, mitigating a total of 13.5 million tons of CO2.

Likewise, if the CO2 emissions that have been mitigated were valued, thanks to the consumption of CNG in the vehicle fleet during the analysis period, they would total US\$ 255 million updated to the year 2019.

It should be noted, the difference in the cost of CNG with other fuels, where it can be identified that on average it is 70% cheaper than diesel, 70% less than gasoline and 33% less than LPG. Based on the study of the governing entity, it warns of the considerable savings on the part of CNG users, who have been able to save S/ 3,182 million during 2022, and have accumulated savings of more than S/ 20 billion since 2005, benefiting the economy of their homes.

*Source:* <https://www.gnvmagazine.com/en/13-5-million-tons-of-co2-mitigated-thanks-to-the-use-of-ngv-in-peru/>

#### **1.2 Czech Republic**

#### **Bonett establishes tenth CNG station in Prague**

30<sup>th</sup> June 2023.

**The largest Czech CNG retailer continues to expand with a new site as part of its network encompassing one fifth of all service stations in the Czech Republic.**



© Bonett

Bonett has opened its tenth compressed natural gas (CNG) fueling site in Prague, Czech Republic, a public self-service location with non-stop operation. The new CNG pump is part of an existing service station for conventional fossil fuels and has extended its portfolio of fuels offered.

The company is the largest Czech CNG retailer, buying almost 100% biomethane for its customers. It has been building its own CNG station infrastructure since 2006 and currently owns and operates more than one fifth of all gas stations in the country.

"Biomethane is the most environmentally friendly renewable fuel today and we see great potential in it. We have already invested almost half a billion CZK in the development of gas mobility and we want to continue actively developing this sector," says Václav Holovčák, member of the Bonett Group Board of Directors.

According to statistics from the Czech Gas Association, a total of 30,085 CNG-powered vehicles were on Czech roads last year, including 27,895 passenger cars and vans, with the rest of them being buses.

Source: <https://www.petrolplaza.com/news/33101>

### 1.3 India

#### **Bihar govt approves new biofuels policy to set up compressed biogas units**

4<sup>th</sup> July 2023. By Piyush Tripathi / TNN

**TOI**

PATNA: The Bihar government on Tuesday approved Bihar Biofuels Production Promotion Policy, 2023, which will pave the way for production of compressed biogas (CBG) apart from ethanol in the state.

CBG is produced from biomass and waste sources like agricultural residue, cattle dung, sugar cane press mud, municipal solid waste and sewage treatment plant waste among others. As per Sustainable Alternative Towards Affordable Transportation (SATAT) Scheme of the Centre, CBG has properties almost similar to CNG. Hence, a vehicle running on CNG can be filled with CBG without any modification.

“The new policy will allow production of CBG apart from ethanol. Setting up of CBG plants will help in climate conservation, reduce importation of natural gas and create employment. It will also give an opportunity to choose a cleaner fuel at economical rates,” state industries minister Sameer Mahaseth told TOI.

Firms or individuals interested in setting up CBG units in Bihar can start applying for taking the benefits of the new policy after its notification and till June 30 next year.

CBG consists of methane (90%) and other gases like carbon dioxide (less than 4%). The Ministry of Road Transport and Highways, through a gazette notification in June, 2015, has permitted CBG for motor vehicles as CNG alternatives. SATAT envisages setting up 5,000 CBG units in the country by 2024-25. As per a study by IIT Guwahati, India has potential to produce 80,000 tonnes per day of compressed biogas, replacing 50% of the current diesel use in transport.

“Under the Ethanol Production Promotion Policy, 2021, incentives were being given to the units producing ethanol only. However, the biofuels policy will allow production of CBG as well in the state by availing the same benefits as the ethanol production promotion policy,” director (industries) Pankaj Dixit told TOI.

Elaborating on the incentives under the new policy, additional chief secretary (cabinet secretariat) S Siddhartha said: “The selected unit can get capital subsidy up to 15%, maximum up to Rs5 crore, and women from SC/ST and EBC can get up to 15.75% and maximum up to Rs5.25 crore. Such benefits will be apart from the incentives given under Bihar Industrial Investment Policy, 2016.

The state cabinet also approved the industries department proposal to extend the period of Bihar State Investment Promotion (Textile and Leather) Policy, 2022 up to June 30, 2024. “The extension of one year under the textile and leather policy will allow more investors to avail the benefits of the scheme and set up their units in Bihar,” Mahaseth said

**Source:** <https://timesofindia.indiatimes.com/city/patna/bihar-govt-approves-new-biofuels-policy-to-set-up-compressed-biogas-units/articleshow/101495087.cms?from=mdr>

## 1.4 Sweden

### Gasum opens new liquefied gas station in Sweden

4<sup>th</sup> July 2023.

**The company now operates a gas refueling network of over 50 stations across the country as part of its goal to help reduce emissions throughout the mainland.**



© Gasum

Gasum has opened a new liquefied gas filling station in Växjö, Sweden, offering renewable liquefied biogas (LBG) and liquefied natural gas (LNG).

The company can now provide both compressed and liquefied gas to transport companies operating across the nation, from the northernmost parts to the southern regions. As its 22nd station in the country, the new opening has extended its network to over 50 fueling sites.

Currently, there are almost 1,000 heavy-duty vehicles driving on liquefied gas in Sweden, making over 2,200 vehicles taking into account the heavy-duty industry.

"We are thrilled to strengthen our filling station capacity in Växjö, enabling an increasing number of logistics operators to reach their emission targets by switching to cleaner, more cost-effective fuels. The Växjö station is the fruitful outcome of a partnership between Alwex Transport and Gasum that enables a new corridor connecting Sweden's East and West coasts," says Sharareh Edström, Head of Business Sweden, Traffic at Gasum.

Sweden's national target is to reduce emissions by at least 70% by 2030 compared to 2010 levels and Gasum is investing on stations and trucks to help the nation to reach this target

**Source:** [//www.petrolplaza.com/news/33124](https://www.petrolplaza.com/news/33124)

## 1.5 Europe

### Hydrogen vs CNG vs LNG vs EV. Which is the Right Future Fuel For You?

4<sup>th</sup> July 2023.



Despite the move towards decarbonisation, internal combustion engine (ICE) vehicles are still prevalent in most markets.

Up to 2020, nearly 80% of all passenger vehicles sold in the leading European markets were petrol or diesel, with the average lifespan of road vehicles being 10 years.

Clearly, the road to carbon-neutrality is a rocky one with barriers to adoption including price, range and refueling/charging anxieties. However, news that UK electric vehicles sales outpaced ICE sales for the first time in December 2022 offers cause for optimism in the race for adoption.

As motorists continue to embrace greener transport, many drivers will be considering which clean fuel is best for them. For fleet managers and sustainability directors, many will be wondering which is best for business?

At present, market leaders appear to be hydrogen, electric, Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) – each with their own advantages. But which is right for you, your business sector or personal driving habits?

We drill down into the data and review what your fuel of the future might look like.



## Hydrogen

Hydrogen would appear to be a strong choice for long-haul, heavy-duty vehicles and other commercial transport and we are starting to see the first fuel cell trucks recently appearing on the European market.

The Hydrogen truck lends itself naturally to the mass mileage demands of HGV haulage. Hyundai's current Xcient model, for instance, can travel 400 miles on a single tank, while Volvo is pouring millions into the development of its own hydrogen-powered alternative with a range of 1000 km.

Volvo's simple nozzle-to-pump dispensation will also appeal to motorists, with no need for time-consuming charging which may complicate electric, battery-powered alternatives.

To fully flourish, however, greater infrastructure is needed to support future fuel development. Hydrogen investment is growing but not as quickly as that of electric vehicles (EV). Market leaders, Germany provide a neat case study with total German hydrogen refueling stations

expected to reach 85 by 2025 and 300 by 2030. Despite this, cumulative hydrogen investment totals €40 billion, which lags behind EV at €51 billion.

One other thing to note, when it comes to this future fuel is cost. In Germany, the average price of fuel per 100km is 7.60 euros for Hydrogen, compared with 9.05 euros diesel and 11.74 euros for petrol.

### **Compressed Natural Gas (CNG)**

One lesser known option is CNG which is widely accepted to be the ‘cleanest fossil fuel’. Its chemical properties mean it’s compressed to less than 1% of its volume while it reduces carbon monoxide emissions by 90 to 97 percent.

Although it’s a non-renewable source, having been formed millions of years ago from decomposing plants and animals, CNG is non-toxic and has fiscal benefits too. Every 1% increase in natural gas production can create 35,000 jobs.

Statistically, CNG is 30% more efficient than petrol with a vehicle able to travel the same distance on 6/7 litres of CNG as 10 litres of petrol. As with any fuel, pricing is subject to global market conditions, but it remains the cheapest non-renewable energy source. Its nozzle-to-pump refuelling method is also a clear user benefit.

Despite this, CNG adoption is currently in its infancy. There are currently only 4,159 refilling stations across Europe, which makes it more of an option for fleet owners as opposed to the everyday motorist. This is not to say that CNG doesn’t have mainstream potential, with the fueling option accepted in Europe for passenger vehicles. Almost any petrol vehicle can be retrofitted with a CNG system for around €3000 - €5000, which could make it a shrewd alternative to other clean fuels. This may appeal to businesses or commercial fleets that require its efficiency benefits.

In Germany – CNG market leaders – the fuel compares favourably in terms of price too. The average cost of fuel is 6.48 euros per 100km for CNG, compared to 9.05 euros for diesel and 11.74 euros, petrol.



### **Liquefied Natural Gas (LNG)**

LNG is another derivative of the abundant natural gas, formed when natural gas is compressed and cooled to -162 degrees Celsius. The International Energy Agency estimates that if consumption remains at present levels, there are enough resources to last 230 years.

Again, much like its counterpart CNG, LNG is a cleaner fossil fuel, producing 40% less carbon dioxide than coal and 30% less than oil. It’s clean and quiet burning, while its familiar refilling method should appeal to drivers.

LNG infrastructure may be embryonic, but it is fast growing. There are around 635 LNG stations on the continent with the bulk concentrated in Western Europe – Germany with 162, Italy with 130 and Spain with 90, This represents a network that has doubled in size in less than two years. Ultimately, consumers want energy to be affordable, secure and capable of driving down Carbon emissions. LNG ticks all these boxes. Its cost-competitive benefits mean it has strong potential for commercial transport.

### **An alternative energy spark – electric vehicles**

While the hydrogen propulsion method first gained traction in the early 2000s, this has been supplanted in recent years by the rise of EVs.

The European market is currently leading the charge on the global stage with 1,390,000 units sold across the continent per year. By 2030, every second car sold is expected to be powered by electricity. This has serious potential for the general motorist. Massive investments are being made across EMEA as countries pour billions into charging infrastructure. The Netherlands is currently blazing the trail with 90,000 charging points as of 2022, while Europe plans to have 1.3 million public chargers in place by 2025 and 2.9 million by 2030.

Price points also offer mainstream charging potential. In the Netherlands, the average cost of electricity per 100km is 5.31 euros compared to 8.66 euros for diesel and 12.32 euros, petrol. Home and workplace charging stations, meanwhile, remain safe and easy to use where drivers can simply ‘plug in’ their vehicle to the charge point. Despite this, charging times, range anxieties and initial cost remain main barriers to adoption.

David Mc Guinness, Director of Product Management, Electric Vehicle Charging at Dover Fueling Solutions expands on reasons for this: “While price and range concerns are being addressed by automotive manufacturers, more needs to be done by authorities to improve access to ‘the plug’.

“Dependable, renewable energy infrastructure is required to feed the grid with a need to create a consumer-centric recharging model that serves the practical needs of EV drivers.

“As local governments begin to embrace this, companies can deliver high-quality fast chargers to market.”



As the world, and the transport industry, move towards Net-Zero, it’s likely all four options will be an integral part of the decarbonisation mix, each with their own distinct benefits.

In fact, each offers something unique, so you should take time to explore your options and make a well-informed decision on which of these future fuel

alternatives will suit your business goals and lifestyle the best.

**Source:** <https://www.doverfuelingsolutions.com/thoughtleadership/hydrogen-vs-cng-vs-lng-vs-ev.-which-is-the-right-future-fuel-for-you%3F>

## 1.6 Thailand

### Toyota to make hydrogen out of waste from Thailand's CP, others

26<sup>th</sup> June 2023. SAYUMI TAKE, Nikkei staff writer

#### Automaker tests equipment for project to decarbonize Thai trucks



*Toyota sees many options besides electric vehicles that can help decarbonize the transport sector. It is eager to develop hydrogen technology to power fuel cell vehicles. © Reuters*

TOKYO -- Toyota Motor announced Monday that it will start producing hydrogen in Thailand from November using biogas, a step forward in its project with Thai conglomerate Charoen

Pokphand Group to utilize hydrogen to help decarbonize the country's transport sector.

The Japanese automaker will install equipment that makes hydrogen using biogas at Toyota's Asia-Pacific headquarters in Samut Prakan province, south of Bangkok.

The biogas will be made from chicken manure provided by Thai poultry farms operated by CP Group and other parties, as well as food waste from the Toyota regional headquarters' cafeteria.

This will be the first time for Toyota or Thailand to launch a pilot project to make hydrogen using biogas, according to the automaker.

The equipment will be provided by Japanese engineering company Mitsubishi Kakoki and can produce 1,000 liters of hydrogen per hour, which is a marginal amount suited for such experiments. Toyota and its trading arm, Toyota Tsusho, will create a system to compress, store and transport the biogas and hydrogen. Toyota has not disclosed how much it will spend on the project.

The initiative is part of the automaker's partnership launched last December with CP Group, which operates in such industries as retail, distribution and agriculture. The two companies agreed to look into making hydrogen from biogas and using it to fuel hydrogen-powered delivery trucks that CP intends to introduce into its fleet to reduce carbon emissions.

The equipment will eventually be used for the project, although there is no concrete timeline yet.

Toyota's new management team, which took over in April, has strengthened pledges to compete in the market for electric vehicles and catch up with rivals like Tesla of the U.S. But the automaker continues to argue that EVs are just one option for reaching carbon neutrality in the transport sector. It is eager to develop hydrogen technology for use in fuel cell vehicles.

**Source:** <https://asia.nikkei.com/Business/Automobiles/Toyota-to-make-hydrogen-out-of-waste-from-Thailand-s-CP-others>

## 1.7 China

### China hits production milestone of 20 million new energy vehicles

4<sup>th</sup> July 2023. By Monika From Gasgoo|

Shanghai (Gasgoo)- On July 3, the momentous production of the 20 millionth new energy vehicle (NEV) in China was marked with an event in Guangzhou, according to a report from Xinhua News Agency.

The significant vehicle is a Hyper GT all-electric car from GAC AION's premium auto sub-brand Hyper. The model officially hit the market on the same day.



Photo credit: GAC AION

Xin Guobin, Vice Minister of China's Ministry of Industry and Information Technology (MIIT), addressed the occasion, stating that, "New energy vehicles are not only a key direction in the global auto industry's transformation and green development but also a strategic choice for high-quality

development of China's auto industry. The journey of our auto industry over the past 70 years, from nothing to something, from small to large, and from weak to strong, is encapsulated in the production of the 20 millionth NEV, marking an historically significant moment."

According to statistics from the China Association of Automobile Manufacturers, in the first five months of this year, China produced and sold approximately 3.005 million and 2.94 million NEVs, respectively, reflecting a year-on-year growth of 45.1% and 46.8%. The penetration rate of new energy vehicles (proportion of NEVs to total new vehicle sales) reached 27.7%.

Fu Bingfeng, the Executive Vice President and Secretary General of the China Association of Automobile Manufacturers, observed, "The rapid development of China's NEV industry in recent years has been truly remarkable. In September 2020, the cumulative production of NEVs in China exceeded 5 million, achieving the target proposed in the 'Energy Saving and New Energy Vehicle Industry Development Plan (2012-2020)'. In February 2022, this figure broke through 10 million. Today, we welcomed the 20 millionth vehicle off the line, taking only one year and five months to produce the second 10 million units."

Currently, China has established a comprehensive and synergistic NEV industry system and cultivated the world's largest consumer market. For eight consecutive years, China's production of NEVs has topped the global charts.

The MIIT announced that the next steps include optimizing policies to support the purchase and use of NEVs, encouraging enterprises to diversify the supply of NEVs, and accelerating the progress of scientific and technological innovation in NEVs and the development of related industries. This continuous push for innovation and sustainable practices further bolsters China's position as a leading player in the global NEV market.

**Source:**

[https://autonews.gasgoo.com/new\\_energy/70023252.html?utm\\_source=edma&utm\\_medium=email&utm\\_content=endingyue&utm\\_campaign=service&systemPlat=EDM\\_EN&userId=leegs@angva.org&From=2023-07-04](https://autonews.gasgoo.com/new_energy/70023252.html?utm_source=edma&utm_medium=email&utm_content=endingyue&utm_campaign=service&systemPlat=EDM_EN&userId=leegs@angva.org&From=2023-07-04)

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