



## **ANGVA2U Info** 16/2021. 16<sup>th</sup> October 2021 (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.

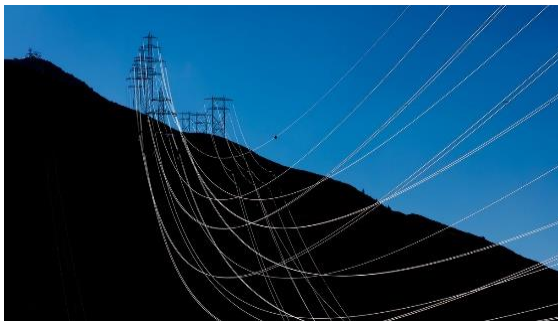
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### **1.0 Selected News / Articles**

#### **1.1 International**

### **World Energy Outlook 2021 shows a new energy economy is emerging – but not yet quickly enough to reach net zero by 2050**

13<sup>th</sup> October 2021. Press Release. International Energy Agency (IEA)



A new energy economy is emerging around the world as solar, wind, electric vehicles and other low-carbon technologies flourish. But as the pivotal moment of COP26 approaches, the IEA's new *World Energy Outlook* makes it clear that this clean energy progress is still far too slow to put global emissions into sustained decline towards net zero, highlighting the need for an

unmistakeable signal of ambition and action from governments in Glasgow.

At a time when policy makers are contending with the impacts of both climate change and volatile energy markets, the *World Energy Outlook 2021 (WEO-2021)* is designed as a handbook for the COP26 Climate Change Conference in Glasgow, which offers a critical opportunity to accelerate climate action and the clean energy transition. The new analysis – which the IEA is making available for free online – delivers stark warnings about the direction in which today's policy settings are taking the world. But it also provides clear-headed analysis of how to move in a well-managed way towards a pathway that would have a good chance of limiting global warming to 1.5 °C and avoiding the worst effects of climate change.

The *WEO-2021*, the IEA's annual flagship publication, shows that even as deployments of solar and wind go from strength to strength, the world's consumption of coal is growing strongly this year, pushing carbon dioxide (CO<sub>2</sub>) emissions towards their second largest annual increase in history.

“The world's hugely encouraging clean energy momentum is running up against the stubborn incumbency of fossil fuels in our energy systems,” said Fatih Birol, the IEA Executive Director. “Governments need to resolve this at COP26 by giving a clear and unmistakable signal that they are committed to rapidly scaling up the clean and resilient technologies of the future. The social and economic benefits of accelerating clean energy transitions are huge, and the costs of inaction are immense.”

The *WEO-2021* spells out clearly what is at stake: what the pledges to reduce emissions made by governments so far mean for the energy sector and the climate. And it sets out what needs to be done to move beyond these announced pledges towards a trajectory that would reach net

zero emissions globally by mid-century – the **Net Zero Emissions by 2050 Scenario** from the landmark IEA report published in May, which is consistent with limiting global warming to 1.5 °C.

As well as the Net Zero Emissions by 2050 Scenario, the *WEO-2021* explores two other scenarios to gain insights into how the global energy sector may develop over the next three decades – and what the implications would be. The **Stated Policies Scenario** represents a path based on the energy and climate measures governments have actually put in place to date, as well as specific policy initiatives that are under development. In this scenario, almost all of the net growth in energy demand through 2050 is met by low emissions sources, but that leaves annual emissions still around today’s levels. As a result, global average temperatures are still rising when they hit 2.6 °C above pre-industrial levels in 2100.

The **Announced Pledges Scenario** maps out a path in which the net zero emissions pledges announced by governments so far are implemented in time and in full. In this scenario, demand for fossil fuels peaks by 2025, and global CO<sub>2</sub> emissions fall by 40% by 2050. All sectors see a decline, with the electricity sector delivering by far the largest. The global average temperature rise in 2100 is held to around 2.1 °C.

For the first time in a *WEO*, oil demand goes into eventual decline in all the scenarios examined, although the timing and speed of the drop vary widely. If all today’s announced climate pledges are met, the world would still be consuming 75 million oil barrels per day by 2050 – down from around 100 million today – but that plummets to 25 million in the Net Zero Emissions by 2050 Scenario. Natural gas demand increases in all scenarios over the next five years, but there are sharp divergences after this.

After decades of growth, the prospects for coal power go downhill in the Announced Pledges Scenario – a decline that could be accelerated further by China’s recent announcement of an end to its support for building coal plants abroad. That move may result in the cancellation of planned projects that would save some 20 billion tonnes in cumulative CO<sub>2</sub> emissions through 2050 – an amount similar to the total emissions savings from the European Union reaching net zero by 2050.

The differences between the outcomes in the Announced Pledges Scenario and the Net Zero Emissions by 2050 Scenario are stark, highlighting the need for more ambitious commitments if the world is to reach net zero by mid-century.

“Today’s climate pledges would result in only 20% of the emissions reductions by 2030 that are necessary to put the world on a path towards net zero by 2050,” Dr Birol said. “Reaching that path requires investment in clean energy projects and infrastructure to more than triple over the next decade. Some 70% of that additional spending needs to happen in emerging and developing economies, where financing is scarce and capital remains up to seven times more expensive than in advanced economies.”

Insufficient investment is contributing to uncertainty over the future. Spending on oil and natural gas has been depressed by price collapses in 2014-15 and again in 2020. As a result, it is geared towards a world of stagnant or even falling demand. At the same time, spending on clean energy transitions is far below what would be required to meet future needs in a sustainable way.

“There is a looming risk of more turbulence for global energy markets,” Dr Birol said. “We are not investing enough to meet future energy needs, and the uncertainties are setting the

stage for a volatile period ahead. The way to address this mismatch is clear – a major boost in clean energy investment, across all technologies and all markets. But this needs to happen quickly.”

The report stresses that the extra investment to reach net zero by 2050 is less burdensome than it might appear. More than 40% of the required emissions reductions would come from measures that pay for themselves, such as improving efficiency, limiting gas leakage, or installing wind or solar in places where they are now the most competitive electricity generation technologies.

These investments also create huge economic opportunities. Successfully pursuing net zero would create a market for wind turbines, solar panels, lithium-ion batteries, electrolyzers and fuel cells of well over USD 1 trillion a year by 2050, comparable in size to the current oil market. Even in a much more electrified energy system, major opportunities remain for fuel suppliers to produce and deliver low-carbon gases. Just in the Announced Pledges Scenario, an additional 13 million workers would be employed in clean energy and related sectors by 2030, while that number doubles in the Net Zero Emissions by 2050 Scenario.

**Source:** [https://www.iea.org/news/world-energy-outlook-2021-shows-a-new-energy-economy-is-emerging-but-not-yet-quickly-enough-to-reach-net-zero-by-2050?utm\\_campaign=IEA+newsletters&utm\\_source=SendGrid&utm\\_medium=Email](https://www.iea.org/news/world-energy-outlook-2021-shows-a-new-energy-economy-is-emerging-but-not-yet-quickly-enough-to-reach-net-zero-by-2050?utm_campaign=IEA+newsletters&utm_source=SendGrid&utm_medium=Email)

[ANGVA Note: Copy of IEA’s World Energy Outlook 2021 (WEO-2021) can be downloaded for free from IEA website: <https://www.iea.org/reports/world-energy-outlook-2021> or please contact ANGVA Secretariat.]

## 1.2 Thailand

### Government of Thailand targets carbon-neutrality by 2065

12<sup>th</sup> October 2021.



The Government of Thailand is moving toward a low carbon economy with a goal of achieving carbon neutrality by 2065. The Ministry of Natural Resources and Environment (MNRE), as well as the Ministry of Energy (MOE), have developed plans to make the country carbon neutral by 2065.

The government will also assist the country’s private sector in transitioning to a low carbon economy and ensuring that the shift has minimal impact. The government is also developing a long-term strategy to attain net-zero emissions, with the energy and transportation sectors at the forefront of the effort to reduce carbon emissions.

One of the most important initiatives under the government’s plans is to encourage the expansion of the electric vehicle (EV) manufacturing business, with the goal of having 15 million green automobiles on the road by 2030.

**Source:** <https://southeastasiainfra.com/government-of-thailand-targets-carbon-neutrality-by-2065/>

### 1.3 Russia

#### **CNG Gazprom makes arrangements for further development of NGV infrastructure in four Russian regions**

8<sup>th</sup> October 2021. News provided by Gazprom.

A number of documents for developing the Russian [NGV](#) market were signed today at St. Petersburg International Gas Forum 2021.

Gazprom Gazomotornoye Toplivo signed agreements on the wider use of natural gas as a vehicle fuel with the governments of three Russian regions: the Republics of Tatarstan and Mordovia and the Kaliningrad Region.

The documents were signed in furtherance of previously existing agreements. The parties will continue creating conditions for the conversion of motor vehicles in their regions to methane, the most eco-friendly fuel.

Specifically, Gazprom will, as before, provide for the construction and reconstruction of NGV infrastructure in the abovementioned regions of the Russian Federation. In their turn, the governments of Tatarstan, Mordovia, and the Kaliningrad Region will facilitate the expansion of regional NGV fleets.

Gazprom Gazomotornoye Toplivo and the Russian Highways State Company (Avtodor) signed an action plan to develop NGV refueling infrastructure along the roads that were handed over for trust management to Avtodor in the Moscow Region.

It is planned to create refueling infrastructure on the motorways of the Moscow Region that form part of the Europe – China international transportation route, namely, the Central Ring Road and sections of the M11 Neva and M12 (Moscow – Kazan) motorways.

Under the agreement, Gazprom will install NGV infrastructure facilities on said roads. Avtodor, in its turn, will take the plans of Gazprom into account when developing general schemes for mixed-use highway service areas.

#### **Background**

Gazprom Gazomotornoye Toplivo is a special-purpose company that was established by Gazprom to ensure the continuous development of the NGV market.

Natural gas (methane) is the most cost-effective and eco-friendly motor fuel. It costs the drivers of methane-powered passenger cars around RUB 2 per kilometer driven. In terms of fuel consumption, 1 cubic meter of methane is equivalent to 1 liter of gasoline. Methane-driven vehicles have repeatedly proven their reliability during international long-distance auto races and sports competitions.

***Source:** [https://www.einnews.com/pr\\_news/553390099/gazprom-makes-arrangements-for-further-development-of-ngv-infrastructure-in-four-russian-regions](https://www.einnews.com/pr_news/553390099/gazprom-makes-arrangements-for-further-development-of-ngv-infrastructure-in-four-russian-regions)*

## 1.4 India

### Mahanagar Gas Hikes Piped Cooking Gas, CNG Prices. Check New Rates

14<sup>th</sup> October 2021. Edited by Prashun Talukdar.

**Mahanagar Gas Ltd has hiked the retail price of compressed natural gas (CNG) and piped natural gas (PNG) with effect from Wednesday midnight.**



**New Delhi:** Mahanagar Gas Ltd has hiked the retail price of compressed natural gas (CNG) and piped natural gas (PNG) with effect from Wednesday midnight.

"MGL announces the revised prices of CNG as ₹ 57.54/Kg and PNG ₹ 33.93/SCM (Standard Cubic Meter) in and around Mumbai w.e.f. midnight of October 13, 2021," the natural gas distribution company tweeted.

This is the second price hike in the month of October. MGL had increased the retail price of CNG and PNG by ₹ 2 each on October 4. "Given the massive increase in supply side cost, the company is constrained to increase the base price of CNG by ₹ 20/kg and domestic PNG by ₹ 2/SCM in and around Mumbai," it had said.

Noting that the re-gasified liquefied natural gas price is also at a historical high now, MGL had said these combinations have resulted in a significant increase in the cost of gas being procured by it.

**Source:** <https://www.ndtv.com/business/mahanagar-gas-hikes-piped-cooking-gas-cng-prices-check-new-rates-2574898>

## 1.5 India

### CGD network may cover 70% of India's population by 2030

6<sup>th</sup> October 2021. Kalpana Pathak

**PNGRB is working on its 11th bidding round with the aim of covering 300 districts, which will increase the reach to the entire population**



*Expansion in PNG connections and increase in CNG usage looks more promising (Photo: Bloomberg)*

**MUMBAI:** Gas demand will continue to grow in India in the medium term buoyed by increasing coverage of the city gas distribution (CGD) network, according to analysts.

As much as 70% of the population is expected to come under the CGD network by 2030, up from 20-30% at present. Improving gas pipeline connectivity with the doubling of the network compared to the current 50% utilization, an estimated 15% growth over two years in production of domestic gas, which is cheaper than liquefied natural gas (LNG) is expected to incentivize conversion to gas from fossil fuels. "With the completion of expansion of CGD network bid out during round 9 and 10, we expect population coverage to increase to 71% from <20% levels in 2014. From an area perspective as well, coverage will likely go up to 53% from <10% levels in 2014," HSBC said in a 1 October report.

The Petroleum and Natural Gas Regulatory Board (PNGRB) is working on its 11th bidding round with the aim of covering 300 districts, which will increase the reach to the entire population, it said.

Within the CGD network, expansion in domestic piped natural gas (PNG) connections and increase in gas usage as transportation fuel through compressed natural gas (CNG) looks more promising.

Over the last eight years, India's natural gas demand has largely remained stagnant. However, gas consumed by CGD recorded a compound annual growth rate of 8% over FY11-21 to 25 million metric standard cubic metres per day (mmscmd), boosting its share to 16% of India's total gas demand from 9% in FY12.

Crisil Ratings predicts sales volume of CNG and PNG to surge 25-27% this fiscal, driven by a recovery in vehicular mobility and industrial activity, as well as a strong price advantage of gas, compared with competing fuels such as petrol, diesel, and furnace oil.

The growth will help city gas distributors sustain robust operating margins of 28%, even as higher LNG prices are partly absorbed to cushion the impact on consumers.

Last fiscal saw city gas volumes contract 13% as both demand for CNG and industrial PNG, which together contribute 90% of total city gas consumption, were hard hit by the pandemic, especially in the first quarter.

*Source:* <https://www.livemint.com/industry/energy/cgd-network-may-cover-70-of-india-s-population-by2030-11633544031967.html>

## 1.6 Spain

### Repsol produces hydrogen from biomethane at Spanish refinery

5<sup>th</sup> October 2021. By Josh Lewis

**Spanish giant claims its first 10-tonne batch of renewable hydrogen offset roughly 90 tonnes of CO2 emissions**



*Producing renewable hydrogen: Repsol's refinery in Cartagena, Spain* Photo: REUTERS/SCANPIX

Spanish oil and gas giant Repsol has produced its first batch of hydrogen utilising biomethane as the feedstock.

Repsol confirmed Monday it had produced 10 tonnes of renewable hydrogen at its Cartagena Industrial Complex, in the Murcia region of south-east Spain.

The hydrogen produced from the process will be used to manufacture fuels such as gasoline, diesel, or kerosene for aviation.

By utilising the equivalent of 500 megawatt hours of biomethane to produce the hydrogen, Repsol claims it avoided roughly 90 tonnes of carbon dioxide emissions.

“This new process for production of renewable hydrogen is further evidence of the transformation of Repsol’s industrial complexes into multi-energy hubs capable of manufacturing decarbonized products. It also supports the company’s commitment to achieving zero net emissions by 2050,” Repsol said in Monday’s statement.

“Energy efficiency, circular economy, renewable hydrogen, and CO<sub>2</sub> capture and use technologies are the four main pillars on which Repsol is based to place its industrial complexes at the forefront of the energy transition.”

The milestone comes after Repsol in August claimed to have produced Spain’s first aviation biofuel from waste at its Petronor Industrial Complex in Bilbao.

It claimed the 5300-tonne batch of biojet would help avoid 300 tonnes of CO<sub>2</sub>, roughly the equivalent emitted from 40 flights between Madrid and Bilbao.

Repsol is also planning to start up a 2.5-megawatt electrolyser at its Petronor refinery in the second half of next year to produce green hydrogen, while it is aiming to have 1.9 gigawatts of installed capacity across its portfolio by 2030.(Copyright)

Source: <https://www.upstreamonline.com/hydrogen/repsol-produces-hydrogen-from-biomethane-at-spanish-refinery/2-1-1077365>

## 1.7 India

### **NTPC, Gujarat Gas to blend hydrogen for CGD networks**

15<sup>th</sup> October 2021.



At a time when leading Indian companies like Reliance Industries Ltd and Adani Group are betting big on renewables with a special focus on hydrogen production, Indian government-owned National Thermal Power Corporation (NTPC) in association with Gujarat Gas is also planning an ambitious project to blend hydrogen with

piped natural gas (PNG).

To begin with, NTPC aims to reach out to its 200-home housing colony at Kawas near Surat by using about 100 cm<sup>3</sup>/d of PNG where it will initially blend hydrogen to the extent of 5% for domestic use, to be later ramped up to 20%.

“The residential township project will be the first of its kind in the country where we plan to blend green hydrogen in the city gas distribution (CGD) network.

Once this is successful, we plan to roll it out in various cities and towns of India with our CGD partner,” said an official of NTPC aware of the development.

Source: <https://www.energyinfrapost.com/ntpc-gujarat-gas-to-blend-hydrogen-for-cgd-networks/>

## 1.8 China

### Geely Holding eyes 5,000 battery swapping stations worldwide by 2025

27<sup>th</sup> September 2021. Monika From Gasgoo|



*E-ENERGEE's battery swapping station; photo credit: Geely Holding*

**Shanghai (Gasgoo)-** Zhejiang Geely Holding Group (Geely Holding) expects to operate 5,000 smart battery swapping stations worldwide by 2025 through E-ENERGEE, the battery swapping service platform under Geely Technology Group, according to a post on Geely Holding's WeChat account.

E-ENERGEE recently showcased its core technical components and solutions at an exhibition held in Beijing to display the achievements in the development of China's new energy vehicle (NEV) industry. For example, such parts as locking device and water-circulating fast-swap module all went through over 16,000 durability tests to guarantee 10 plus years of service life for battery swapping system; E-ENERGEE's self-developed 7-layer safety management solution is able to automatically eliminate hidden safety hazards within only 10 seconds.

According to Geely Holding, E-ENERGEE offers an open platform which is compatible with multiple types of vehicles with wheelbases between 2,700mm and 3,100mm, and enables a battery swap to be completed within 60 seconds.

E-ENERGEE has so far deployed battery swapping stations in more than 10 provinces and cities in China, including Tianjin, Chongqing, Zhejiang, Shandong, Jiangsu, Hunan, Hainan, and Anhui, only one year after the first one was launched in Chongqing.

Geely Technology Group started the R&D of battery swapping technology platforms and battery swappable car architectures in 2017, and has already pumped several billion yuan. Through joint efforts of over 1,000 staff members and more than 30,000 tests, the company has obtained 1,000 plus patents related to battery swapping technologies, and built a full-chain open platform integrating vehicles, battery swapping stations, and electricity.

**Source:**

[https://autonews.gasgoo.com/new\\_energy/70018809.html?utm\\_source=edma&utm\\_medium=email&utm\\_content=endingyue&utm\\_campaign=service&systemPlat=EDM\\_EN&userId=leegs@angva.org&From=2021-09-27](https://autonews.gasgoo.com/new_energy/70018809.html?utm_source=edma&utm_medium=email&utm_content=endingyue&utm_campaign=service&systemPlat=EDM_EN&userId=leegs@angva.org&From=2021-09-27)

## 1.9 Thailand

### EVLOMO to develop a lithium battery plant in Thailand's Nong Yai

23<sup>rd</sup> September 2021.

EVLOMO will develop a 8 GWH lithium battery plant in Thailand's Nong Yai that will support the demand of energy storage and electric mobility in the country. The battery plant project entails a total investment of USD1.06 billion. A prior memorandum of understanding (MoU) for the development of the battery facility with Rojana Industrial Park Public Company Limited has been cancelled.

The company has concluded the pre-front end engineering and design (Pre-FEED) process for the plant. EVLOMO has finalised sites for a battery facility in the Eastern Economic Corridor's (EEC) CPGC Industrial Estate. Construction is scheduled to start in first quarter of 2022 and commercial operations of the factory is stated to commence by the second half of 2024.

**Source:** <https://southeastasiainfra.com/evlomo-to-develop-a-lithium-battery-plant-in-thailands-nong-yai/>

*End*