P2N0

NEWS AND VIEWS ON THE DRIVE TOWARDS NET-ZERO GHG EMISSIONS

Welcome to **Edition 29** of **P_2N_0** covering the drive to avoid, reduce and remove greenhouse gas (**GHG**) emissions to reach net-zero emissions (**NZE**).

P_2N_0 covers significant news items globally, reporting on them in short form, focusing on policy settings and legal and project developments and trends. This **Edition 29** covers news items arising during the period **April 1** to **April 13, 2025** (a function of the bumper bundle of new items during this period).

Edition 30, covering **April 14** to **April 30, 2025**, will be published on **May 2, 2025**.

P_2N_0 does not cover news items about climate change, M&A activity, or news items that are negative.

Access previous editions of **P_2N_0** at bakerbotts.com.

Content

HEADLINES FROM APRIL 1 TO 13, 2025

Opening observations:

The first thirteen days of April 2025 provided a bumper bundle of news, hence this slightly earlier and longer than usual edition of P_2N_0, providing a long-than usual "weekend read".

- **Renewable energy and the energy transition continue to progress** with a little less than 41% of electrical energy in 2024 was sourced from renewable sources, and a little over USD 2 trillion was invested globally in the energy transition in 2024.
- **AI and electrical energy a continued focus:** The **IEA World Energy Outlook Special Report Energy and AI** estimates that the demand for electrical energy globally by 2030 will exceed the electrical energy demand of Japan.
- **Natural gas and LNG – transition fuel:** LNG capacity will increase from **578 bcm in 2023** to **850 bcm by 2030**, with LNG projects continuing to be approved, and an FSRU providing 5 bcm of regasification capacity for Switzerland.
- **Green and Natural / White Hydrogen** continue to make progress in the European Union (EU) with RFNBO production and facilities being certified, across the EU and the UK continued government funding continues to be provided in Spain (€1.2 billion) and UK (with 27 H2 projects shortlisted for funding), while in France two licences granted to allow exploration for Natural / White Hydrogen.
- **Critical metals and minerals rare earths** continue to make the news across the world, with new major finds in Central Asia and the US, and EU and China investment in Central Asia.

News headlines:

- **International Maritime Organization (IMO) agrees "mid-term measures":** On **April 9, 2025**, it was reported widely that the **IMO** had voted for the purposes of agreeing on carbon pricing rules. The **IMO Net-zero Framework** (**N-ZF**) was approved by the Marine Environment Protection committee. The **N-ZF** includes a new fuel standard for ships and a global pricing mechanism for emissions. The measures are to be adopted in **October 2025** and to enter into force formally in 2027, becoming mandatory for large ocean-going vessels over 5,000 gross tonnage. Please click here for the **IMO** press release.

- **Renewable electrical energy matches nearly 41% of electrical energy dispatch during 2024:** During the second week of **April 2025**, there was considerable coverage of an Ember publication that concluded that **40.9%** of electrical energy was dispatched from renewable electrical energy sources: 14% from hydroelectric, 9% from nuclear, 8% from wind, 7% from solar, and 3% from other renewable sources.

  The **Managing Director** of **Ember**, **Phil McDonald**, stated: "Solar power has become the engine of the global energy transition. Paired with battery storage, solar is set to be an unstoppable force".

  The **Ember** publication drawing all the attention was published on **April 8, 2025**, is titled Global Electrical Review 2025. This is the sixth annual review from **Ember**. You can access the previous five editions by clicking on the following links – 2024, 2023, 2022, 2021, 2020. The publication is an excellent read, and well-worth printing for weekend reading.

- **Headwind and Tailwinds in the Energy Transition:** On **April 9, 2025**, the good folk at **Resources for the Future** published Global Energy Outlook: Headwinds and Tailwinds in the Energy Transition. For the author, the headlines from the publication (consistent with other findings covered in this **Edition 29** of P_2N_0) are: **1.** During 2024 over **USD 2 trillion** was invested globally in the energy transition; and **2.** LNG capacity will increase **from 578 bcm** in 2023 to **850 bcm** by 2030.

- **European Parliament stops the clock**: On **April 3, 2025**, the **European Parliament** adopted the **Omnibus Stop-the-Clock** (**STC**) proposal in respect of the **Corporate Sustainability Reporting Directive** (**CRSD**) and the **Corporate Sustainability Due Diligence Directive** (**CSDDD**).

  The **STC proposal** delays a number of obligations under the **CRSD** and **CSDDD**. The **STC proposal** provides that:

  - in relation to the CSRD:
    - large enterprises and parents of large enterprises scheduled to begin reporting in 2026 for the 2025 financial year, now have a new reporting start date of 2028 for the 2027 financial year; and
    - small and medium-sized enterprises with securities listed in the EU scheduled to begin reporting in 2027 for the 2026 financial year, now have a new reporting start date of 2029 for the 2028 financial year;
  - in relation to the CSDDD:
    - the deadline for EU member states to enact the CSDDD into national law has been postponed by one year to 26 July 2027; and

- the initial phase of the CSDDD requirements for the largest companies in the first wave of the CSDDD (i.e., EU companies with more than 5,000 employees and net worldwide turnover exceeding EUR 1.5 billion and non-EU companies with an EU turnover above this threshold) has been postponed to 2028.

By way of a reminder: **Edition 26** of **P_2N_0**, reported that the **CSRD** imposes obligations on corporations and other organisations to collect and to report data and information. These obligations relate to sustainability impacts arising from their activities, by reference to the EU Taxonomy. The corporations and other organisations subject to these obligations were large EU corporations (being entities with an annual turnover > €150 million) and listed SMEs and non-EU entities with significant EU turnover.

The **CSDDD** imposes obligations on corporations and other organisations (with certain characteristics, but not financial institutions) to assess impacts of their activities on the **environment** and on **human rights** along, and arising from, supply chains, and to address significant impacts arising from their supply chains. Assessing and addressing these impacts requires due diligence. The due diligence is required to be risk based.

- **European Commission (EC) to simplify European Sustainability Reporting Standards (ESRS)**: At the end of **March , 2025**, the **EC** tasked the **Sustainability Reporting Board (SRB)** with the development of technical advice to inform the amendment of the ESRS to reduce substantially "the number of mandatory datapoints by (i) removing those deemed least important for general purpose sustainability reporting, (ii) prioritising quantitative over narrative text, and (iii) distinguishing further between mandatory and voluntary datapoints, without undermining interoperability with global reporting standards and without prejudice to the materiality assessment of each undertaking".

  The **EC** is seeking the provision of technical advice from the **SRB** by **October 31, 2025**. This marks the continued reset in the EU, reflecting the prevailing practical and realistic view.

- **International Energy Agency (IEA)**: During the first two weeks of **April 2025**, the **IEA** published:

  - Its **Gas Market Report (GMR), Q2-2025**: As usual the **GMR** is well-worth a read. The key headline is that there has been a slight softening in the rate of increased demand for natural gas.

  - Its World Energy Outlook Special Report Energy & AI. The publication provides a timely and helpful analysis of the development of energy generation and storage capacity to power the increasing demand for electrical energy as AI develops. The headline finding from the publication is:

    > "It [is projected] that electricity demand from data centres worldwide is set to more than double by 2030 to around 945 tera-hours (TWh), slightly more than the entire consumption of electricity in Japan today".

    The publication makes clear what this means for countries:

    > "In the United States, power consumption by data centres is on course to account for almost half of the growth in electricity demand between now and 2030. Driven by AI use, the US economy is set to consume more electricity in 2030 for processing data than for manufacturing all energy-intensive goods combined, including aluminium, steel, cement, and chemicals".

"In advanced economies more broadly, data centres are projected to drive more than 20% of the growth in electricity demand between now and 2030, putting the power sector in those economies back on a growth footing … ".

As might be expected, the report is excellent, and is well-worth a read. For those looking for a summary, we have attached a link to a **Statista** graph, Data Center Energy Consumption Surges Amid AI Boom.

- Its **Clean Energy Transmissions Programme** (**CETP**) Annual Report 2024. The report provides a look-back on the initiatives undertaken during 2024 under the **CETP**. The look-back illustrates the important role played by the IEA across the full range of energy transition initiatives.
- The State of Energy Innovation provides an assessment of recent progress in energy technology innovation, and the attendant challenges. In assessing recent progress, the report analyses R&D spending (public and private sector), and venture capital involvement, and picks-up on the increasing focus on lower, low and no GHG emission technologies, and the use of modular and mass-manufactured technologies.

  Given the key dynamics in decarbonisation, the report includes chapters specific to diversification of the mineral supply for the battery sector, the impact of AI on energy innovation, and the development of CO_2 removal technologies. (See CDR.fyi to track details of CDR transactions.)

  The **Executive Summary** makes the following points:

  1. Spending on energy innovation has risen, and continues to rise (both public and private sector), and the spending realises "widespread payoffs", with private sector R&D spending increasing at a rate up to three times faster than the growth in GDP;

  2. The global landscape for energy innovation is changing, with China having become the country with the greatest number of energy patents in 2021, with up to 95% of the patents relating to low, lower and no GHG emissions technologies, and 50% relating to modular and mass-manufactured technologies;

  3. Trends in venture capital include deployment of investment to modular and mass-manufactured technologies, with around 95% of venture capital deployed being invested in these technologies in China. The report notes that except for investment in AI, there has been a slight downturn in venture capital investment in energy innovation; and

  4. Battery minerals, AI and CO_2 removal technologies "are in the spotlight for international cooperation": in the case of battery minerals, the need for diversity and resilience of supply chains from mine and from recycling, applying AI, to assure diversity and resilience and to accelerate supply chain development, and in the case of CO_2 removal, the need to promote energy innovation through certainty around carbon credits.

  The Executive Summary and the Full Form Report are well-worth a read over the coming weekend. Also, check out the **IEA Everything Energy Podcast**, Why global energy demand is surging.

- **Aluminium Industry**: During **April 2025**, the **International Renewable Energy Agency** (**IRENA**) published Reaching Zero with Renewables – Aluminium Industry. As with recent publications and reports on iron and steel production (covered in **Editions 27** and **28** of P_2N_0), this report provides a timely and helpful

assessment of how to decarbonise this difficult to decarbonise industry. As with iron and steel, the production and use of aluminium are essential to the global economy.

The mining of bauxite, the refining of bauxite to produce alumina, and the production of aluminium, is CO_2 intensive, giving rise to around **1.1 billion metric tonnes** of CO_2 a year, with smelting of alumina to produce aluminium accounting for about **three-quarters** of the **1.1 billion** metric tonnes of CO_2. The CO_2 arises from the use of electrical energy generated from the combustion of fossil fuels. If fossil fuels are displaced by sources of renewable electrical energy, this will result in the decarbonisation of aluminium production to a material extent.

To achieve **deep decarbonisation** of the aluminium sector, it will be necessary to decarbonise refining of bauxite to produce alumina, and the use of inert nodes: about one-fifth of CO_2 emissions arise from the refining of bauxite to produce alumina, using carbon anodes. While these measures would allow for deep decarbonisation by avoiding and reducing up to 95% of CO_2 emissions arising, these measures require the use of low carbon technologies in refining and the development of inert anodes.

As might be expected, this report suggests how government support would allow the deep decarbonisation of the aluminium sector.

- **Glowing Ember**: On **April 2, 2025**, the good folk at **Ember** published From fossil flows to renewable cooperation – tripling renewables in the Med. The headline is that the deployment of renewable electrical energy capacity is on target to double by 2030. While this achievement is laudable, the publication states that pace of the deployment of renewable electrical energy across the Mediterranean region needs to increase. The publication packs a punch and is a punchy read at 18 pages.
- **China plans to issue Sovereign Green Bond**: On **April 1, 2025, Bloomberg** (at https://www.bloomberg.com, under China's green bond debut) reported that China was preparing to issues its debut **USD 830 million** sovereign green bond.

  The **Bloomberg article** reports that **China** spent **4.5%** of its GDP on the energy transition during 2024 (in contrast to 1.3% of its GDP on defence). This comparison is made in the context of the **Bloomberg** reporting that during 2024, **USD 2.1 trillion** was spent on the energy transition globally, and **USD 2.46 trillion** was spent on defence globally.
- **Visual Capitalist**: At the start of **April 2025**, the good folk at the **Visual Capitalist** published a graphic reporting that half of the CO_2 emissions globally arise from 36 corporations and other organisations.

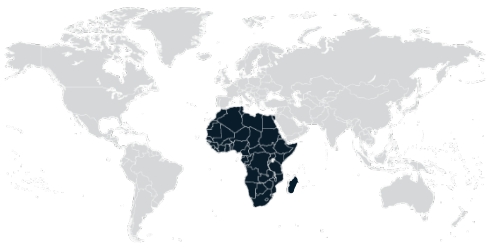
  The identity of those corporations and organisations will not be a surprise. The key takeaway is that the largest emitters have the greatest capacity to avoid, reduce and remove CO_2 from the climate system.
- **One eye on coal**: At the start of **April 2025**, **Global Energy Monitor** published Boom and Bust Coal 2025 – Tracking the Global Caol Plant Pipeline. The publication provides a fair and balanced perspective starting with an apparent contradiction:

  > "In 2024, coal power hit a new milestone: The world opened the lowest amount of new coal fired capacity in twenty years [at 44 GW]. Retired coal power in the European Union … grew fourfold,

while the United Kingdom shut down its last coal plant – becoming the sixth country to phase out coal power entirely since the 2015 Paris climate agreement.

Yet 2024 also marked another milestone: record high construction starts for coal plans in China, following on the heels of the country's 2022 to 2023 coal plant permitting resurgence. The year 2024 was also a record high for new coal plant proposals in India, as the government renewed the country's support for coal power after a multiyear slowdown".

We know the subject matter of these headlines, and they have been covered in previous editions of P_2N_0. And all of this said, the trend there is a clear trend that electrical energy from coal-fired power generation is downwards as a proportion of electrical energy generation globally. The publication is helpful, being data and information rich.



Africa

- **Coral Norte project approved**: On **April 8** and **9, 2025**, it was reported widely that the Government of Mozambique had approved the Eni **USD7.2 billion Coral Norte** floating liquified natural gas (**FLNG**) project. This continues the approval of LNG projects (land based and floating) expected during 2025. By way of reminder, this is the second FLNG project **offshore** of Mozambique, the first was the **Coral Sul.**

  As noted in **Edition 27** of P_2N_0, given the increasing acceptance of natural gas and LNG as an energy transition fuel, it is increasingly the case that natural gas and LNG liquefaction facilities will be developed, including floating liquefaction to allow the development of offshore natural gas resources.

- **Egypt and France to progress GH_2 project:** On **April 8, 2025**, it was reported widely that **Egypt** (through the Red Sea Port Authority and the New and Renewable Energy Authority) and **France** (the Green Fuel Alliance) signed a collaboration agreement to provide a framework for the financing, development and operation of a project to produce GH_2 and fuels and feedstock derived from GH_2. The GH_2 and green ammonia (**GNH_3**) project is to be in the **Ras Shukeir** region of Egypt.

  As reported, the GH_2 project will be developed in three phases, with the total investment estimated to be around **€7 billion** to allow the production of **1 million metric tonnes** of GNH_3.

- **What African Electrification Requires**: On **April 1, 2025**, **Fatih Birol** and **Alain Ebobissé** published What African Electrification Requires.

  The headline from the article is that:

  > "Africa will not achieve universal access to reliable electricity without significant investment in transmission infrastructure, which in turn requires private-sector participation".

  The publication provides a sound outline of what is needed and is well-worth a read.

Middle East, Central Asia, and South Asia

- **India National Critical Mineral Mission**: On **April 9, 2025**, the **Government of India** published its National Critical Mineral Mission "to establish a robust framework for self-reliance in the critical mining sector". For these purposes, the **Geological Survey of India** is to conduct 1,200 exploration projects.
- **Pakistan copper and gold resources progressing to development:** On **April 8, 2025**, **Reuters** (at http://www.reuters.com, under Barrick's Reko Diq project in Pakistan aims new financing) reported that **Barrick** is progressing financing term sheets for **USD2 billion** to develop its **Reko Diq** project. As reported, the **Reko Diq** project (owned by **Barrick**, and the **Governments** of **Pakistan** and **Balochistan**) will source funding from ADB, IFC JBIC, Export Development Canada, and US EXIM Bank.
- **Pakistan imports 22GW of solar panels**: On **April 5, 2025**, **CleanTechnica** (at **https://cleantechnica.com/**, under Pakistan's 22GW Solar Shock: How a Fragile State Went Full Clean Energy) reported that during 2024 Pakistan imported "22 gigawatts worth of solar panels". The report article is well-worth a read.
- **EU to invest €12 billion in Central Asia**: On **April 4, 2025**, it was reported widely that the **European Union** intends to provide funding for raw materials resource development and supply, critical infrastructure, and energy projects. The attached link provides a link to the **European Commission** announcement.

  By way of background, Central Asia comprises Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, and within these countries there are approximately 276 metal and mineral production sites and deposits.

  On **April 1, 2025**, the development of the **Tajik Metallurgical Plant**, in **Bobodjon-Gafurov** in the **Sughd** region commenced, with capacity to process up to **2.5 million tonnes** of iron ore a year, to produce **1.1 million tonnes** of iron concentrate.
- **CycloneCC deployed for Fertiglobe**: On **April 3, 2025**, it was reported widely that the mobile **CycloneCC** unit had been operated at **Fertiglobe**'s **Al Ruwais Industrial Complex**, **Abu Dhabi**, with the CO_2 captured to be used to produce urea.
- **Large rare earth find in Karaganda**: On **April 2, 2025**, it was reported widely that a rare earths[1] find had been made in the **Karaganda region** of **Kazakhstan** (**New Kazakhstan**). As reported, the find includes

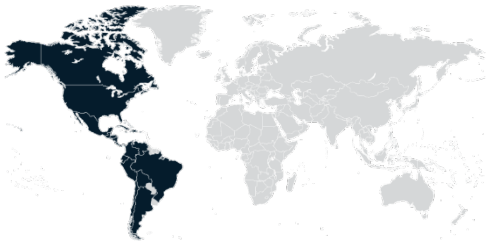
[1] **Rare Earth Elements** are 17 elements that are regarded as key to the energy transition. They are Cerium (Ce), Dysprosium (Dy), Erbium (Er), Europium (Eu), Gadolinium (Gd), Holmium (Ho), Lanthanum (La), Lutetium (Lu), Neodymium (Nd), Praseodymium (Pr), Promethium (Pm), Samarium (Sm), Scandium (Sc), Terbium (Tb), Thulium (Tm), Ytterbium (Yb) and Yttrium (Y).

cerium, lanthanum, neodymium, and yttrium, and may yield up to 20 million metric tonnes of rare earths.

While rare earths are not rare of such, it is rare to find them in concentrations that make the mining of them economically viable.

Further reading: Providing a knowledge base for decarbonizing the Kazakh metals industries published by **Deutsche Gesellschaft für Internationale Zusammenarbeit** (GIZ) **GmbH**.

- **Role of GH_2 in India iron and steel sector:** During the first two weeks of **April 2025**, **Ernst & Young – Parthenon**, in collaboration with **WWF-India**, published the Role of green hydrogen in the Indian steel sector. The publication provides an assessment of current dynamics and the prospects for systemic use of GH_2.



Americas

- **Blue Point all systems go**: On **April 9, 2025**, it was announced by **CF Industries Holdings, Inc. JERA Co., Inc.** and **Mitsui & Co., Ltd**, that they had taken a positive final investment decision to develop a low-carbon ammonia production project (**Blue Point**), in **Ascension Parish, Louisiana**, US. As announced, the **Blue Point** project will have an initial production of capacity of **1.4 million metric tonnes** a year, with a capital cost of **USD 4 billion**, of which **CF Industries** will invest **40%, JERA 35%, Mitsui 25%.**
- **First H_2 powered helicopter takes flight**: On **April 9** and **10, 2025**, it was reported widely that the first flight of a helicopter powered by H_2 proton exchange membrane (**PEM**) fuel cells took place at **Roland-Desourdy** Airport, Quebec, Canada. As reported, the helicopter was a retrofitted **R44 helicopter** developed by **Unither Bioelectronics** and **Robinson Helicopter**.
- **DACS on for OXI**: On **April 8, 2025**, it was reported widely that **Occidental Petroleum Corporation** (**OXI**) had been given approval by the **Environmental Protection Agency** for the **OXI DACS** project located southwest of **Odessa, Texas**. The **OXI DACs** project will capture CO_2 from the atmosphere, and store that CO_2 in non-permeable rock formations at 4,400 feet.
- **Atome for progress:** On **April 7, 2025, hydrogeninsight** (at https://www.hydrogeninsight.com, under Green hydrogen-to-fertiliser project developer signs $465m EPC contract ahead of FID) reported that **Atome** plans to develop a **260,000 metric tonnes** a year of clean **calcium ammonium nitrate** project in **Paraguay**, and for these purposes has executed a EPC contract with **Casale** for a **145MW** green fertiliser facility in **Villeta, Paraguay**. As reported, the project will produce GH_2 using renewable electrical energy sourced from hydroelectric power, with the GH2 used as feedstock to produce **calcium ammonium nitrate**.
- **McDermitt Caldera contains World's Largest Lithium Deposit**: On **April 7, 2025, indiandefencereview** (at indiandefencereview.com, under Geologists Uncover the World's "Largest Lithium Deposit" Under

American Supervolcano Worth 413 Billion Euros) reports on an article published in the journal Science Advances identifying lithium (and other) resources in the **McDermitt Caldera**. As reported, the **McDermitt Caldera** has "lithium-bearing clay minerals, including smectite and illite", with an exceptional concentration of lithium found in the illite layer".

- **The Projected US Data Center Energy Use**: On **April 3, 2025**, the good folk at the **Visual Capitalist** published an article entitled The Projected Rise in US Data Center Energy Use.

  The article provides the following **Key Takeaways**:

  > From 2023 to 2030, US data center energy use is forecast to quadruple: "The rise in energy use will be driven by AI and an increasingly digital world, and getting access to power is a critical step in the building of new data centers but this can take up to 10 years in some cases".

  The **Key Takeaways** are expected, continuing themes that noted in P_2N_0 for some time.

- **LNG Canda on the move**: On **April 2, 2025, CBC news** (at www.cbc.ca, under First LNG carrier arrives in Kitimat, BC., as $40B liquefied natural gas plant prepares to start) reported that the **Maran Gas Roxana** has passed through the **Douglas Channel** on **April 2, 2025**, carrying a cargo of LNG to be used for testing of the **LNG Canada facility**.

  By way of reminder: The **LNG Canada** project is to export **14 million metric tonnes** of LNG a year, for up to **40 years each year.** If the **LNG Canada** project is expanded, as planned, the export capacity will be increased to **28 million metric tonnes** of LNG a year. As noted, natural gas and LNG energy transition fuels, and will be permanent fuels if combined with carbon capture and storage.

- **Hyundai low-carbon investments in the US:** During the first two weeks of **April 2025**, it was reported widely that **Hyundai** intends to make investments of up to **USD 21 billion** in the US, including the development of a **USD 5.8 billion** electric arc furnace in the US **State of Louisiana** to produce **2.7 million metric tonnes** of **steel**.

- Prospectivity Mapping for Geologic Hydrogen published by **US Geological Survey** is a timely publication, which reflects the prospective nature of geologic (or gold or white) hydrogen.

  The key findings of the publication are:

  1. Exploration of geologic hydrogen is at an early stage; and
  2. The midcontinent of the US and the central coast of California provide the most prospective regions for extraction of geologic hydrogen.

  Edition 9 of P_2N_0 previously reported on another US Geological Survey report, which estimated that there is up to 5 trillion metric tonnes of natural or white hydrogen (and some gold hydrogen) underground.

APAC

- **Vietnam ETS pilot phase to begin in June 2025**: On **April 7, 2025**, it was reported widely that the ETS for Vietnam would begin as soon as June 2025. As reported, around 150 emitters would be subject to the ETS: the emitters include cement producers, iron and steel production, and thermal power generation. The ETS will comprise tradable units (allowances and offsets).
- **China to continue with Batch 2 of its low-carbon pilot projects**: On **April 7, 2025**, it was reported that China was progressing with 47 **Batch 2 low-carbon pilot projects**. As reported, the projects can be characterised as **1.** Carbon Source Reduction; **2.** Process Carbon Reduction; and **3.** End-use carbon sequestration.
- **Power and water for data centres:**
  - **Bridge Data Centres powers on**: On **April 4, 2025**, **datacenterdynamics** (at https://www.datacenterdynamics, under Bridge Data Centres, PacificLight ink MoU for hydrogen-ready power in Singapore) reported that **Bridge Data Centres** and **PacificLight Power** had signed an MoU to provide a framework for **PacificLight Power** to supply, and **Bridge Data Centres** to take, electrical energy from **PacificLight Power's 600 MW** natural gas and hydrogen-ready power station under development on Jurong Island.
  - **AirTrunk to waste no water**: On **April 4, 2025**, **datacenterdynamics** (at https://www.datacenterdynamics.com under AirTrunk establishes recycled water supply initiative in Malaysia) reported that **AirTrunk** was working with **Johor Special Water** (a wholly-owned subsidiary of the **Johor State Government**) to establish a recycled water supply initiative for its hyperscale data centers, JHB1 and JHB2 in Malaysia. As reported, wastewater sourced locally will be recycled.

    By way of a reminder: Back in **February 2025**, it was reported widely that the **National Water Services Commission** for Malaysia (**Span**) was preparing guidelines for the sources and uses of water, with potable water to be replaced by recycled wastewater.

    For further coverage of the sources of water and use of water within date centers, see Sustainability in the digital age: Water-saving data center operations from **datacenterdynamics**. Also, see the **Google** publication, 2025 Water Stewardship Project Portfolio.
- **Export controls on Heavy and Medium Rare Earth Elements**: On **April 4, 2025**, the **Ministry of Commerce and General Administration of Customs** in China, announced a Decision on Implementing Export Controls for Certain Medium and Heavy Rare Earth Elements. The export control relates to **Dysprosium**, **Gadolinium**, **Lutetium**, **Samarium**, **Scandium**, **Terbium**, and **Yttrium**. This continues a theme of critical metal and mineral and rare earth element security.

- **Australia announces "Critical Minerals Strategic Reserve"**: On **April 4, 2025**, the current Prime Minister of Australia announced plans to restrict the export of some commodities from Australia to make Australia more resilient against global trade measures, and to assure Australia of a secure supply of critical metals and minerals. Whether this **Critical Minerals Strategic Reserve** will become a policy setting in Australia will depend on the result of the Federal Election to be held on **May 3, 2025**.
- **Nickel Industry Indonesia 2025**: The good folk at **Electrios Energy** have published Nickel Industry Indonesia 2025 providing a helpful overview of the nickel industry in Indonesia. The publication is excellent.
- **MPA to license the supply of methanol**: On **April 1, 2025**, **hydrogeninsight** (at www.hydrogeninsight.com, under Clean hydrogen in shipping / Singapore's Maritime and Port Authority offers licenses to supply methanol from next year) reported that the **Maritime and Port Authority** (**MPA**) of Singapore was to license the supply of methanol "as a clean fuel for ships between the start of 2026 and the end of 2030".

Europe and the UK

- **EET Hydrogen heats up**: On **April 8, 2025**, it was reported widely that **EET Hydrogen** had signed 10 MOUs with offtakers of blue hydrogen from its **Stanlow 1.35GW** blue hydrogen project. It is noted that a positive final investment decision (**FID**) remains to be made.
- **First RFNBO certified**: On **April 8, 2025**, it was reported widely that **European Energy** had produced methanol that had been certified as a **renewable fuel of non-biological origin** (**RFNBO**). As reported, the methanol that has been certified was produced during the commissioning of the **European Energy Kasso power-to-X facility**, located in Denmark. The certification was provided under the **International Sustainability and Carbon Certification** (**ISCC**) scheme.

  On **April 10, 2025**, it was reported widely that the **Air Liquide 20MW GH_2** production plant in **Oberhausen, Germany**, had been certified by **ISCC** as compliant with **RFNBO** requirements, the first such certification in Germany.
- **First H2 powered cruise ship under construction in Italy**: On **April 8, 2025**, hydrogeninsight (at https://www.hydrogensight.com, under World's first hydrogen-powered cruise ship now under construction in Italy) reported that **Viking Cruises** had contracted with **Fincantieri** to construct the **Viking Libra**. The **Viking Libra** will be powered and propelled by H_2.
- **Germany 2025 – Energy Policy Review:** On **April 7, 2025**, the **IEA** published Germany 2025 – Energy Policy Review. The review provides a helpful overview of the German energy landscape and provides 10 policy recommendations. For those active in the German energy sector, the report is well-worth a read.

- **Ultra-low CO_2 steel**: On **April 7, 2025**, **Blastr Green Steel** (**Blastr**) announced that it had signed an MoU with **Vogten Staal** for the supply of ultra-low CO_2 steel: **Blastr** will provide low-CO_2 steel for further refinement by **Vogten Staal**, at its facilities in **Maastricht**, the **Netherlands**. For **Blastr**, this is the third agreement concluded since the start of 2025.
- **GH_2 projects continue to attract government funding support:**
  - **Spain lucky seven projects shortlisted:** On **April 4, 2025**, the **Spanish Government** published the final proposal for **€1.2 billion** of funding support for seven projects. The projects have until **April 18, 2025**, to accept the final proposal. Following acceptance of the final proposal, the proponent of each project will have three years to undertake and to complete their projects.
  - **UK H_2 powered projects shortlisted:** On **April 7, 2025**, the **UK Government** (Department for Energy Security and New Zero), at https://www.gov.uk, under New Hydrogen power projects to boost growth, announced that 27 H_2 projects had been shortlisted. As announced, the 27 H_2 projects selected are part of the **Second Hydrogen Allocation Round** (**HR2**), and cover projects for ammonia production, brick making, clean power generation, glass manufacturing, and SAF production.

    By way of reminder the **First Hydrogen Allocation Round** (**HR1**) selected 11 projects that were allocated **£2 billion**. The author covered the allocations under HR1 (in 2022), including **Whitelee Green Hydrogen project**, **Scotland**, which is to produce green hydrogen for use at the InchDairnie Whisky distillery.
- **Ramping up Rampion**: On **April 4, 2025**, it was reported widely that approval had been given by the UK Government to the expansion of the **Rampion offshore wind field** project. As reported, the approval will allow the development of a further **1.2 GW** of offshore wind field capacity. As is usual, the reporting has it that the renewable electrical energy from the expansion will provide sufficient electrical energy for up to **1 million homes**.
- **Greening in Spain:**
  - **Green SAF on the wing:** On **April 7, 2025**, **hydrogeninsight** (at www.hydrsogeninsight.com, under Trio plan giant green hydrogen-derived e-SAF plant the uses CO2 captured from cement) reported that **Exolum**, **Holcim**, and **Ignis PX2**, plan to develop the **Eco2Fly GH_2** and **e-kerosene plant** at the site of Holcim's existing cement production plant in **Villagluenga de la Sagra**, south of **Madrid**. As reported, the **Eco2Fly GH_2** and **e-kerosene plant** will be powered by **1.5 GW** of renewable electrical energy to produce **450,000 metric tonnes of GH_2** a year.
  - **Green steel on the move**: On **April 2, 2025**, **hydrogeninsight** (at www.hydrogeninsight.com, under Thyssenkrupp agrees to buy 100,000 tonnes of flat steel from Spanish green hydrogen-based plant) reported that **Thyssenkrupps** had entered into an agreement with **Hydnum Steel** to purchase 100,000 metric tonnes of steel from the green steel mill of **Hydnum Steel** (**Puertollano**) in Spain over a seven year period.

    The **Puertollano project** will use green hydrogen to provide the high heat temperature to derive iron, and an electric arc furnace to produce rolled steel. As reported, a positive final investment decision remains to be taken on the **Puertollano project**.

- **FSRU arrives in the Port of Geneve**: On **April 1, 2025**, it was reported widely that the **FSRU Lac Léman** had arrived at the **Port of Geneve**. As reported, the FSRU has a capacity of 173,400 m^3, and will provide 5 bm^3 / year of regasification capacity, which equates to around 75% of the demand for natural gas within Switzerland. The send-out from the FSRU will connect to the Swiss national gas network at Lausanne.
- **French Government grants hydrogen exploration licences**: In early **April 2025**, it was reported that the French Government had granted two hydrogen exploration licences to **Storengy** and **45-8** to allow exploration for natural hydrogen in respect of 691 km^2 in Landes, and 266 km^2 in Pyrénées -Atlantiques.

  By way of remainder: Edition 28 of **P_2N_0** reported (under **France a Natural**) that: On **March 22, 2025**, it was reported widely that in the **Moselle** region **of France**, up to **46 million metric tonnes** of natural (or white) hydrogen had been discovered. The discovery was made by the **CNRS** and **GeoSources**, the two organisations working together to discover methane. As reported, at a depth of around **1,250 metres**, the natural hydrogen was discovered[2].
- **Fast tracking of fluidised and smelter technologies**: On **April 1, 2025**, **Mitsubishi**, **Primetals Technologies**, **Rio Tinto** and **voestalpine** signed a cooperation agreement to develop an industrial scale prototype plant located at the **voestalpine site**, in **Linz**, **Austria**, to develop a new process to produce net-zero iron making.

HELPFUL PUBLICATIONS AND DATA BASES

In addition to publications covered by this edition of **P_2N_0**, the most noteworthy publication read by the author during the first two weeks of **April 2025** is the IEA's The Energy Mix, its regular newsletter.

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[2] **By way of reminder**: French researchers have discovered a massive, naturally occurring hydrogen reserve, dubbed "white hydrogen," in the Moselle region, potentially revolutionizing clean energy, and positioning France as a global leader in the hydrogen energy sector. Edition 2 of P2N0 reported that during July and August 2023, a narrative arose around Natural Hydrogen (or native hydrogen or white hydrogen) including in a number of news items:

- In France, La Francaise d'Energie and GeoResources reported a large find of natural hydrogen in the Lorraine region of France at a depth of 1,000 metres.
- On July 17, 2023, Jorgo Chatzimarkakis, CEO of Hydrogen Europe, penned a piece outlining the potential of natural hydrogen, noting the resources that exist around Europe.
- On July 18, 2023, the good folk at The Business Times (under Could 'white hydrogen' change everything for shipping – and everybody else?) provided a helpful analysis.

Also, in July 2023, a number of news items reported on natural hydrogen, including on the plans of Kolonia to drill for natural hydrogen. Among others, Kolonia is backed by Bill Gates' Breakthrough Energy. For further reading, Science published an article entitled Hidden Hydrogen Does Earth hold vast stores of a renewable, carbon free fuel? back on February 16, 2023. Also in July 2023, Ryze Hydrogen provided a further perspective under Are we sitting on the clean energy of the future? And more recently, on August 12, 2023, The Guardian (under Prospectors hit the gas in the hunt for 'white hydrogen') published an article, with the key narrative being: "The size of the prize could be enormous: the US Geological Survey has said that even if only a small fraction of hydrogen under the Earth's surface could be recovered, there would probably be enough to last for hundreds of years".

Primary Author:

MICHAEL HARRISON*
Partner
michael.harrison@bakerbotts.com

Other Contacts:

JASON BENNETT
Partner
jason.bennett@bakerbotts.com

MARK BISCH
Partner
mark.bisch@bakerbotts.com

JULIE CRESS
Partner
julie.cress@bakerbotts.com

MONA DAJANI
Partner
mona.dajani@bakerbotts.com

RICHARD GUIT
Partner
richard.guit@bakerbotts.com

STUART JORDAN
Partner
stuart.jordan@bakerbotts.com

DANIEL REINBOTT
Partner
daniel.reinbott@bakerbotts.com

ANDREW ROCHE
Partner
andrew.roche@bakerbotts.com

MARK ROWLEY
Partner
mark.rowley@bakerbotts.com

SHAILESH SAHAY
Partner
shailesh.sahay@bakerbotts.com

REBECCA SEIDL
Partner
rebecca.seidl@bakerbotts.com

ELAINE WALSH
Partner
elaine.walsh@bakerbotts.com

SHANE WILSON
Partner
shane.wilson@bakerbotts.com

* Michael Harrison is the primary author of **P_2N_0**, and editor. Any errors are Michael's. **P_2N_0** is written early each Saturday morning. In writing **P_2N_0**, Michael sources from original material. If a news item is covered broadly, the words **reported widely** connote that at least three sources have covered that news item, and **reported** connotes at least two sources. If there is only one source that is not the original material, that source is named.

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