# P2N0

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

Welcome to the **Edition 18** of **$P_2N_0$** covering the drive to reduce greenhouse gas (**GHG**) emissions to net-zero (**NZE**). **$P_2N_0$** identifies significant news items globally, reporting on them in short form, focusing on policy settings and project developments. This **Edition 18** covers news arising during **October 1** to **October 16**, **2024**.

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

**Edition 19** of **$P_2N_0$**, covering the second **two weeks** of **October 2024**, will be published in the first week of **November 2024**.

Access previous editions of **$P_2N_0$** by clicking **here**.

**Content**



## HEADLINES FROM OCTOBER 1 TO 16, 2024

Continuing the theme recognized in **Edition** 17 of **$P_2N_0$**, ahead of **COP-29** a good number of publications and reports have dropped, and the content of this **Edition 18** reflects this, with the first five pages providing an overview of some of the publications and reports that have dropped during the first 16 days of October 2024.

Also, given the number of governmental and ministerial meetings, the balance of this **Edition 18** includes more than the usual level of coverage of these meetings:

- **International Energy Agency** (**IEA**): has published key publications and reports during the first 16 days of **October 2024**, as follows:

  - **World Energy Outlook 2024**: On **October 16**, **2024**, the **IEA** published its flagship publication, **World Energy Outlook 2024** (**WEO 2024**). Continuing the publication of publications and reports ahead of COP-29, **WEO 2024** is alongside **BloombergNEF** flagship publication, **Energy Transition Fact Book** and **IRENA's Delivering on the UAE Consensus Tracking progress toward tripling renewable energy capacity and doubling energy efficiency by 2030** (see below) as the bulge bracket publications that have dropped since the end of **September 2024**. Given the release date of **WEO 2024**, and publication date of this **Edition 18**, what follows is very high level, but reflects the key high-level takeaways.

    **WEO 2024** continues the ongoing analysis of its **three scenarios**, **Announced Policy Settings** (**APS**), **Stated Policies Scenario** (**STEPS**) and **Net Zero Emissions by 2050 Scenario** (**NZE**). Click through to the previous WEOs, **2021**, **2022** and **2023**.

    Given the current dynamics of the energy market, each of **APS**, **STEPS** and **NZE** are view through the dynamics of those dynamics, including AI, efficiency of energy use and the development of renewable electrical energy capacity, the impacts of heatwaves and the impact of the increasing use of LNG. This is a helpful development.

    In addition, **WEO 2024** takes in themes outlined below, and what may be regarded as orthodoxy (and reflected in agreed outcomes from COP-28), the tripling of the renewable electrical energy capacity to 11,000 GW by 2030, and the doubling of energy efficiency. Again, this is helpful.

- **Renewables 2024 – Analysis and forecast to 2030** on **October 9**, **2024**.

  As with previous **Renewables** annual reviews from the **IEA,** the publication provides a comprehensive overview of the rate and scale of the development of renewable electrical energy globally.

  As with the **BloombergNEF** **Energy Transition Factbook**, **Renewables 2024** is anchored to the COP-28 commitment to tripling the development and deployment of renewable electrical energy capacity by 2030.

  The headline from **Renewables 2024** is that renewable electrical energy capacity is expected to increase **2.7 times** by **2030**, and as such short of **3 times** (or tripling). It is clear that countries need to do more.

  China is leading the world, both in terms of the rate and scale of development and deployment and means of development and deployment of photovoltaic solar. As noted in **Edition 14** of **$P_2N_0$**, by July 2024 **China** has achieved is target of developing and deploying renewable electrical energy of **1,200 GW** by **2030** five and half years early.

  While we are not in target to triple renewable electrical energy development and deployment, the target is not out of reach. Together, activities undertaken in **China**, the **EU** and the **US** give rise to around **75% of global GHG** emissions, and together they have the economic strength to accelerate the rate of avoidance, reduction, and removal of **GHG** emissions. While there is a good deal to be done, there is cause of cautious optimism: **GHG** emissions are at the highest point ever, and yet **GHG** emissions seem to have peaked (as reported by DNV).

- **Global Hydrogen Review 2024** on **October 2**, **2024**.

  As with previous **Global Hydrogen Reviews** from the **IEA**, the publication is weighty, the weightiest yet, at 295 pages.

  In a rare event, the IEA cautions the application of regulatory requirements in both the EU and the US:

  > "Extra requirements for electricity used to produce electrolytic hydrogen, such as additionality, temporal and spatial correlation, should be applied cautiously."

  The publication provides a helpful update on the progress of the development of green hydrogen projects, with **final investment decisions** (**FIDs**) taken in respect of around **6.5** GW of green hydrogen production capacity in the last 12 months alone, with **FIDs** now at around **20 GW**.

  Previous **Global Hydrogen Reviews** can be viewed by clicking here **2023**, **2022**, and **2021**.

- **Clean Energy Innovation Policies in Emerging and Developing Economies** on **October 3**, **2024**.

  The publication is well-worth a read, among other things, providing 11 case studies (which are specific to the country in respect of the country to which they relate), on domestic national policy development and implementation in economies that continue to develop, being, Argentina, Brazil, China, Colombia, India, Kazakhstan, Kenya, Mexico, Morocco, Nigeria, and South Africa. The publication outlines seven shared findings[1].

[1] **1**. Clean energy innovation has risen to high up the policy agenda; **2**. Innovation policy can build upon and reinforce broader trends to catalyze technological change; **3**. There are multiple ways to set innovation in motion; **4**. Institutional history exerts powerful influence on policy choices; **5**. Existing technical expertise can provide a springboard; **6**. There are demonstrated ways to make the most of limited resources; and **7**. Few countries have well-established and comparable processes for evaluations outcomes against the original policy goals.

While there is nothing surprising in any of the shared findings, the collation of them is helpful. This said, it is important to note that each case study is specific to the country to which it relates, and as such in respect of any specific element of the energy transition it is difficult to draw common conclusions.

Also, during the first two weeks of **October 2024**, the **IEA** published its **Global Gas Security Review**. The review includes a section on scaling up of low-emission gases, with the focus being on the transport sector.

These publications follow on from publication of the **2024 Breakthrough Agenda Report** published on **September 27**, **2024**, and covered in **Edition 17** of **$P_2N_0$**[2].

- **Global CCS Institute Status of CCS 2024 Report**: On **October 16**, **2024**, the good folk at the **Global CCS Institute** published its **Status of CCS 2024 Report**. As the name of the **Report** suggests, it provides an overview of the progress that continues to be made to develop CCS projects, and to the likely CCS projects to be developed. The Report is well-worth a read.

- **Article 6 taking shape**: On **October 9**, **2024**, the **Article 6.4 Mechanism Supervisory Body** (**SBM**) published its **Standard – Requirements for activities involving removals under the Article 6.4 mechanism**. This is a significant development. In the first instance, providing a basis for the transition of existing clean development mechanism (**CDM**) projects, rather than to provide a methodology for new **Article 6.4** projects.

- **G20 Clean Energy Ministerial meeting and Mission Innovation conference take place in Brazil**:

  From **September 30**, **2024,** to **October 4**, **2024**, the **G20 Clean Energy Ministerial** meeting and the **Mission Innovation** conference took place in **Foz do Iguaçu**, **Brazil**. The key themes of **G20 Clean Energy Ministerial** were the just and inclusive energy transition, how to accelerate the financing to the energy transition, the social dimension of the energy transition and the perspectives of sustainable fuel and innovation.

  The **G20 Climate Energy Ministerial** brings together Ministers and leaders from corporations and other organizations to agree on initiatives intended to accelerate the development of clean energy to make it accessible, affordable, and attractive for all. The outcome statement from the G20 Energy Transition Ministerial Meeting can be found by clicking through on this **link**.

  The **G20 Climate Energy Ministerial** is notable for the main events and the discussions on the margins / the sidelines. This year Australia and the US made a joint statement **On the 2024 Ministerial Dialogue on Clean Energy**. The joint statement is well-worth a read if for no other reason that it shows the commonality of policy settings across two countries rich in critical metals and minerals and radiative heat.

  Ahead of the meeting and conference the good folk at:

  - **BloombergNEF** published their flagship **Energy Transition Factbook** (**ETF**). As always from **BloombergNEF**, the publication is excellent. The tripling of the development and deployment of renewable electrical energy by **2030**[3] (to **11,000 GW**) agreed at COP-28 (see **Edition 6** of **$P_2N_0$**) is aligned with the analysis of **BloombergNEF**.

[2] The **Breakthrough Agenda Report** is one of the key annual reports, covering power, hydrogen, road transport, iron and steel, cement and buildings, and the progress being made or that needs to be made compared to the previous report. As noted in the report, the purpose of the report is to "galvanise public and private action … to make [transition across these priority sectors] quicker, cheaper and easier for all". The report is excellent and will be key ahead of, and at, COP-29. The consideration of iron and steel and cement are particularly timely: iron and steel and cement (and the concrete resulting) are required, and as such they need to be decarbonized, with the sourcing of raw material, its transportation to the point of production, production, and transportation of finished product to the point of use of these two industries accounting for up to 20% of GHG emissions.

[3] **Note:** At **COP-28** two key commitments were to: "Tripling renewable energy capacity globally and doubling the global average rate of energy efficiency improvements by 2030". This in turn reflect the work of the good folk at the **Global Renewables Alliance**, who co-published **Tripling renewable power and doubling energy efficiency by 2030: Crucial steps towards 1.5C**, with IRENA. The publication noted that while the pledge is an historical milestone, realization for the pledge requires transformational action across the world.

Since the last edition of the **Energy Transition Factbook**, over 90% of the additional installed electrical energy capacity is renewable globally. The publication is data and information rich, and well-worth a read.

- **International Renewable Energy Agency** (**IRENA**) published **Global trade in green hydrogen derivatives: Trends in regulation, standardization, and certification**. The report identifies that key to the development of global trade in green hydrogen derivatives is the developments of aligned or universal certification and standardization regimes. For these purposes, the report provides insights between certification and standardization regimes in specified markets. The report is well-worth a read.

And after the meeting and conference, on **October 11**, **2024**, the good folk at **IRENA** published **Delivering on the UAE Consensus Tracking progress toward tripling renewable energy capacity and doubling energy efficiency by 2030**. The publication provides a detailed analysis of the commitments made at **COP-28** (held in Dubai, UAE).

The headlines from the publication are:

1. Despite unprecedented growth in development and deployment of renewable electrical energy in 2023, of **473 GW**, this is not enough. Through 2030, **1,044 GW** of renewable electrical energy needs to be developed and deployed each year. In dollar value, the **USD 570 billion** committed in 2023 needs to increase to **USD 1.5 trillion** a year; and
2. The combined **nationally determined contributions** (**NDCs**) of each Country that is a party to the Paris Agreement need to be more ambitious to provide for NDCs that together will result in the development and deployment of an additional **7 GW** of renewable electrical energy capacity by 2030. Looking forward to 2025, **IRENA** notes that it will be vital to increase NDCs to close this gap.

As with the report published by the **Global Alliance** ahead of **COP-28** (and that informed and gave rise to the commitments given at COP-28), **IRENA** recognizes that the publication has been released pre-COP 29 to inform national delegations and negotiators on these key matters. While there is more to be done, the progress made is known and recognized, and what needs to be done is known. The publication is compulsive reading.

- **DNV Energy Transition Outlook 2024**: In **October 2024**, the good folk at **DNV** published **Energy Transition Outlook 2024 – A global and regional forecast to 2050**. The publication is excellent.

- **Transition Metals Outlook**: On **October 3**, **2024** (as if to predict the Australia and US joint statement), the good folk at **BloombergNEF** published their flagship **Transition Metals Outlook 2024**. The publication is well-worth a read. While the findings in the publication are not revelatory, rather they are affirmatory, of the dynamics of the current market and the need for increased development of resources, the headline is that over the near to medium term aluminium, copper and lithium will face supply shortfalls, some as soon as within the next 12 months.

  Based on the analysis of the **BloombergNEF** team, recycling of metals and minerals needs to become an integral part of the supply chain for critical metals and minerals, both from a supply side perspective and lowering lifecycle GHG emissions. For these purposes, government policy settings are needed, including to establish collection networks, to prescribe recovery rates, and to trace net-zero waste.

| **Snapshot of recycling rates** | | | | |
|---|---|---|---|---|
| Gold: 86% | Platinum: 60% | Nickel: 60% | Silver: 50% | Copper: 46% |
| Aluminium: 42% | Chromium: 34% | Zinc: 33% | Cobalt: 32% | Lithium: 0.5% |

- **Lots of COPS, no robbers!**: As noted in **Edition** 17 of **$P_2N_0$ COP-16** is to take place in Cali, Columbia. **COP-16** is the **Sixteenth meeting of the Conference of Parties to the Convention on Biological Diversity**, to take place between **October 21** and **November 1**, **2024**. **Edition 19** of **$P_2N_0$** will report on the outcomes of **COP-16**.

Ahead of **COP-16**, on **October 14**, **2024**, the European Commission settled upon the negotiating mandate for COP-16 (and for COP-29, and for the Desertification Conference, and progressed thinking on the Global Plastics Treaty).

## Africa

**ESKOM plans roll-out of 2 GW of renewable capacity**: On **October 15**, **2024**, it was reported widely that **Eskom** intend to develop around **2 GW** of renewable electrical energy capacity. Future editions of **$P_2N_0$** will follow these plans.

**Algeria considering green hydrogen export projects**: On **October 15**, **2024**, the good folk at **Hydrogeninsight** (at **https://www.hydrogeninsight.com**, under **Algeria launches feasibility studies for large-scale green hydrogen exports to Europe via pipeline**) reported that **Sonatrach** and **Sonelgaz**, have signed a memorandum of understanding with **Snam**, **SeaCorridor** (an **Eni** and **Snam** joint venture), **Verbund** and **VNG** to assess jointly the feasibility of the development of green hydrogen production in **Algeria** for export, via a hydrogen transmission pipeline, to **Italy**, **Germany** and **Austria**. The use of a hydrogen transmission pipelines appears to be the most likely means of developing a north Africa to Europe green hydrogen export market.

**APRA Africa Investment Forum attended by the great and the good**: On **APRA Africa Investment Forum** (mentioned in **Edition 17** of **$P_2N_0$**[4]), commenced on **October 14**, **2024**, as reported by IRENA. The forum marks a significant milestone in implementing the Nairobi Declaration, and the Call for Action to boost the continent's renewable capacity to 300 GW by 2030, contributing to the COP-28 goal to triple global renewable power by the end of the decade.

**Egypt continues to progress green hydrogen**: On **October 8**, **2024**, **Scatec** announced that had been awarded a grant of **€30 million** from the **PtX Development Fund** in respect of its green hydrogen project in Egypt. While the amount of the grant is not as large as some of the funding support provided within the **EU**, it is the first grant from the **PtX Development Fund**.

The **PtX Development Fund** was established by the **Federal German Government**, with the objective of supporting the development of **PtX projects** in developing and emerging economies.

The grant will assist in respect of the development of the **€500 million Scatec** green hydrogen project and serves as a reminder that Egypt has over 20 green hydrogen and green ammonia projects at various stages of development.

**Namibia Green Hydrogen progress report**: As is the case with **Egypt**, **Namibia** is making progress in the development of green hydrogen (and ammonia) production capacity. In **October 2024** the good folk at **Namibia Green Hydrogen Programme** published **Namibia Green Hydrogen Sector Development**. The publication provides a useful means of understanding what is happening in Namibia.

**Brazil – Africa Energy Transition Ministerial Dialogue – South-South Cooperation for a Just and Equitable Energy Transition**: On the sidelines of the **G20 Energy Transition Ministerial Meeting** (see page 3 above), Ministers and high-

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[4] By way of reminder, **Edition 17** of **$P_2N_0$** reported on **"**APRA activity: In early September 2024, ahead of the APRA Investment Forum 2024 (to take placed on October 12 to 16, 2024), the good folk at the IRENA reminded us of the Accelerated Partnership for Renewables in Africa (APRA).
APRA was launched on December 2, 2023, at COP-28.
In the words of IRENA, APRA "is rooted in the Nairobi Declaration on Climate Change and Call for Action, which targets at least 300 GW of renewable energy [across Africa] by 2030".
APRA comprises seven (of the 54) African countries, Ethiopia, Ghana, Kenya, Namibia, Rwanda, Sierra Leone, and Zimbabwe. Between these seven countries, the intention is to install 9.5 GW and renewable electrical energy in 2023, then 4 GW each year to reach 37 GW by 2030."

level representations from the **African Union**, **Ghana**, **Kenya**, **Nigeria**, **Sierra Leone**, and **Zambia** and the **Brazilian G20 Presidency Team** met to discuss closer cooperation. The parties to the discussions outlined the basis, and objectives, of cooperation in a **communique**.

**Flooding in desert**: On **October 14**, **2024**, there was considerable reporting on the levels of rainfall across the northwestern Sahara Desert, principally in southeastern Morocco. As reported, rainfall at these levels has not been send for fifty years of so. A report published on **June 28**, **2024**, entitled **Contrasting fast and slow intertropical convergence zone migrations linked delayed Southern Ocean warming**, anticipated increased levels of rainfall to increased ocean temperatures.

**Middle East and South Asia**

**KSA 4.5 GW renewable energy procurement**: On **September 24**, **2024**, the **Saudi Power Procurement Company** (**SPPC**) released a **request for qualification** (**RfQ**). The **RfQ** is the sixth procurement undertaken by the **SPPC**, as part of the **National Renewable Energy Programme** (**NREP**).

As reported, five projects are contemplated: **1**. the **1.5 GW Dawandi Wind IPP**, to be located in Riyadh; **2**. the **1.4 GW Najran Photovoltaic IPP**, to be located in Najran; **3**. the **600 MW Samtah Photovoltaic Solar IPP**, to be located in Jizan; **4**. the **600 MW Ad Darb Photovoltaic Solar IPP**, to be located in Jizan; and **5**. the **400 MW As Sufun Photovoltaic Solar IPP**, to be located at Hail[5].

**Hydrogen procurement for production of iron and steel using blast furnace and DRI technology**: At the end of the first week of **October 2024** the **Ministry of Steel** and the **Ministry of New and Renewable Energy** released a **Request for Proposal for Hydrogen Injection in Existing Blast Furnace and Existing Vertical Shaft**.

The **Request for Proposal** is consistent with the **National Green Hydrogen Mission** for India. The hydrogen procured will displace existing fossil fuel sources of high heat so as to decarbonize the production of iron and steel. This marks continued, and accelerating progress by the Government of India across all sectors of the Indian economy.

**Development of Roadmap for a Green Hydrogen Cluster in Ramagundam** (**Remagundam Roadmap**): In late September the author read the **Remagundam Roadmap** (published by the Indo-German Energy Forum with Deloitte and decided not to include).

On reflection the Roadmap is very much worth a mention, and a read, providing supply side and demand side analysis (including price ranges), and funding gap. The Roadmap is recommended.

[5] **By way of reminder Edition 17** of **$P_2N_0$** under "**Kingdom of Saudi Arabia (KSA) overview**" we reported on **interactive maps** at **https://renewable.vision**, among other things which depict **30 GW** of renewable electrical energy capacity being developed within **KSA**, and many other initiatives and projects to decarbonize activities within the KSA. The interactive maps are excellent. Also **Edition 17** of **$P_2N_0$** reported on a similar procurement program in Oman under "**Oman pre-qualifies applicants for wind power projects**" reporting that: "On **September 16**, **2024 Nama Power and Water Procurement Company** (**PWP**) released a **list** of pre-qualified applicants for the purposes of the participation in the five wind power projects: **1**. Dohor II Wind IPP, **2**. Duqm Wind IPP, **3**. Jaalan Bani Bu Ali Wind IPP, **4**. Mahoot I Wind IPP, and **5**. Sadah Wind IPP. As will be noted for those who click on the link, the names of the pre-qualified applicants speak volumes from the process being run by PWP".

## Americas

**BESS goes live to provide power assurance to Meta data centre**: On **October 14**, **2024**, **Energy-Storage.news** (at **https://www.energy-storage.news**, under **Arizona's biggest battery storage system goes on line to feed Meta data centre demand**) reported that **Ørsted** and **Salt River** had commenced operation of the **Eleven Mile Solar Center** (south of Phoenix) which is co-located with a "**4-hour duration 300 MW/1,200 MWh**" **BESS**.

**Electrical energy and data centers … the trend continues**: On **October 14**, **2024**, it was reported widely that Google had signed an agreement with Kairos Power to purchase electrical energy from **small modular reactors** (**SMRs**). As reported, **Kairos Power** intends to develop six or seven SMRs, with the first SMR to be developed by 2030, with the additional SMRs to be developed through 2035.

In **September 2024** it was announced that **Microsoft** had contracted 20 years for the supply of **837 MW** of power from **Three Mile Island** and that **Oracle** planned to develop **1 GW** data center with electrical energy to be supplied from three SMRs.

Given the increasing scale of data centers and the need for assurance of uninterruptible electrical energy supply appears, the use of SMRs appears likely to continue and to accelerate.

**ExxonMobil CCS projects progressing**: On **October 11**, **2024**, **ExxonMobil** announced that it had executed a lease with the **Texas General Land Office** to secure access in respect of over **271,000 acres** of offshore $CO_2$ storage capacity in the state waters of Texas. As announced, the lease covers the largest area of any like lease granted in the US to date.

**US to introduce demand side incentives**: On **October 9**, **2024**, it was reported widely that the US **Department of Energy** (**DOE**) will introduce demand-side incentives to encourage users of clean hydrogen to contract for the purchase of clean hydrogen and to invest in equipment and infrastructure that will allow the use of clean hydrogen.

For over seven years, the author of **$P_2N_0$** has been advocating government policy settings that develop the supply of hydrogen a little ahead of the demand for hydrogen (i.e., in tandem), such that the supply side is certain and sustainable as to cost, and mass, of production, and demand side is certain and sustainable as to price and mass and production. This initiative seeks to address the gap in policy settings identified by the **DOE** some time ago.

**Brazil progressed $H_2$ tax credits**: On **October 7**, **2024**, the good folk at **Hydrogeninsight** (at **https://www.hydrogeninsight.com**, under **Brazil's $3.4 bn hydrogen tax credit law finally on the statute books after president finally gives green light**) reported that a law allowing **USD 3.4 billion** in tax credits had been enacted as the **Low Carbon Hydrogen Development** program under **Law 14, 990**. The tax credits will be granted under auctions to be conducted between the start of 2028 and the end of 2032.

**Canada legislates to develop offshore wind farm (OWF) capacity offshore of Labrador, Newfoundland, and Nova Scotia**: On **October 3**, **2024**, **Bill-C49** received Royal Assent. As reported, the legislation creates common regulatory framework for OWF developments.

In a statement the Ministry of Natural Resources stated: The offshore renewable energy sector presents a generational economic opportunity for Canada … Canada, in partnership with Nova Scotia and Newfoundland and Nova Scotia, is working to seize this unprecedented economic opportunity … By harnessing world-class wind resources in the Atlantic offshore, we are positioning Canada as the leading supplier of clean energy …".

## APAC

**Floating OWFs off South Korea connect**: On **October 11**, **2024**, it was reported widely that five floating OWF developments, Bandibuli, Gray Whale, Haewoori, KF Wind, and MunmuBaram, had entered into transmission service agreements (**TSAs**) with KEPCO. Under the five TSAs, **6 GW** of **installed OWF capacity** is now connected to the **KEPCO** transmission grid.

**Singapore aligning around energy connectivity**: On **October 9**, **2024**, **Singapore Prime Minister**, **Lawrence Wong** visited **Vientiane**, **Lao PDR**, to attend the **ASEAN Summit**, and related bilateral meetings.

While speaking in Vientiane, Prime Minister Wong called for **ASEAN** and the **US**: "The US can help develop ASEAN's renewable energy infrastructure. This will support our green transition while creating more opportunities for our key partners". Mr Wong remarked that Singapore and the US had made "good progress" in their **Joint Feasibility Study on Regional Energy Connectivity** which will help frame thinking around the ASEAN Power Grid. Prime Minister Wong foreshadowed the second phase of the of the study "which will provide direction on the legal, governance and financing frameworks for the Grid".

As reported, Singapore Prime Minister Wong and Lao Prime Minister Sonexay Siphandone, held a bilateral meeting to discuss, including and Article 6.2 cooperation agreement (under the Paris Agreement), energy cooperation, and regional cooperation to achieve regional connectivity.

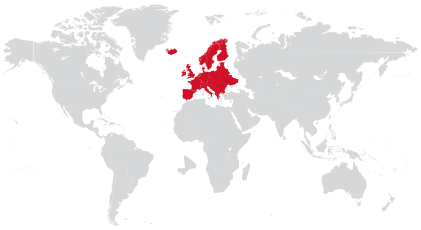
**By way of reminder**: **Edition** 17 of **$P_2N_0$**:

- under **Asian Energy Outlook published** reported that: "On **September 26**, **2024**, the **ASEAN Centre for Energy** (**ACE**) published the flagship **ASEAN Energy Outlook** (**AEO8**) report at the **42nd ASEAN Ministers of Energy Meeting** held at the same time as the **ASEAN Energy Business Forum** in Vientiane, Lao PDR. The AEO8 should be read with the **ASEAN Plan of Action for Energy Cooperation** (**APAEC**). Together the **AEO8** and the **APAEC** provide guidance in respect of the regional targets for ASEAN which will inform policy settings for 2026 to 2030"; and

- under **Singapore to increase current REE imports to 200 MW** reported that: "On **September 20**, **2024**, the **Energy Market Authority** (**EMA**) **announced** that current imports of renewable electrical energy will increase by 100 MW (to 200 MW), with the additional renewable electrical energy to be delivered through the **Laos-Thailand-Malaysia-Singapore** (**LTMS**) power integration project. The additional renewable electrical energy will be supplied under a power purchase agreement between **Keppel Electric Pte Ltd** and **Tenaga Nasional Bhd**.

  This announcement had followed news on **September 5**, **2024**, that **Shell Eastern Trading** (**400MW**) and **Singa Renewables** (**1 GW**) had been given "conditional approval" by the **EMA** in respect of the proposal to import up to **1.4 GW** renewable electrical energy. This continues the grant of conditional approvals, intended to facilitate engagement with regulators to obtain approvals and licences that would allow the import of renewable electrical energy into Singapore. For more detail, see the **EMA** announcement at **https://www.ema.gov**, under **Singapore and Indonesia Make Substantive Progress on Electricity Imports**), which provides coverage of five other Indonesian-based projects, and previously covered by **$P_2N_0$**."

**Singapore developing standards for ammonia and methanol bunkers**: On **October 9**, **2024**, the **Maritime and Port Authority of Singapore** announced that standards are to be developed during 2024 and 2025 in respect of ammonia and methanol bunkers: "The standards will cover custody and transfer requirements, safety procedures and crew competencies …". As the world's largest supplier of bunkers, the standards will define activities in Singapore and globally.



## Europe and the UK

**Renewable electrical energy galore**: On **October 13**, **2024**, Germany exported renewable electrical energy at record levels[6]: at 11 am on a Sunday morning, as Germany generated **73 GW** with load of **53 GW**. These factors illustrate that there is a need for more **BESS** (to store renewable electrical energy) and for **Battolysers** (to produce green hydrogen).

**Denmark honing policy settings on CCS**: On **October 9**, **2024**, the **Ministry of Climate, Energy and Utilities** and the **Danish Energy Agency** launched the **Danish CCS Fund** and a dialogue forum, the **NEKST Implementation Forum**. The **Danish CCS Fund** has **USD 4.2 billion** to secure capture and storage of **$CO_2$**. The tendering process to receive an allocation from the **Danish CCS Fund** will close on **March 25**, **2025**.

The tendering materials have been published (see the **Danish Energy Agency website**). The headline is that those successful in their tenders for funding support will contract, under **15-year contracts**, for the costs of capture, transportation, and storage of **atmospheric**, **biogenic** or **hydrocarbon** sourced $CO_2$, on the basis that the capture and storage facilities will be commissioned by December 1, 2029, and operating on the basis of "full capture and storage from 2030".

**By way of reminder**: **Edition 17** of **$P_2N_0$** reported (under **Green light for Greensand**) that: "On **September 19**, **2024**, it was reported widely that **DNV** had certified that **$CO_2$ storage site** for **Project Greensand**, **Denmark** is in compliance with **ISO 27914**".

**Norway floats €3 billion plan**: On **October 7**, **2024**, the **Norwegian Government** announced that it intends to provide up to **€3 billion** in funding support in respect of the development of floating OWF capacity in the **Vestavind B** and **F** areas, and the **Sørvest F** area.

**UK Goes all in on CCS**: On **October 4**, **2024**, the Prime Minister, Chancellor of the Exchequer, and Minister for Energy Security and Net Zero Secretary together announced that the UK Government (Department for Energy Security & Net Zero) has committed to provide support of £ **21.7 billion** over the coming 25 years to underpin the development of CCS / CCUS sites around the UK, starting with funding for the **East Coast Cluster** (in the North East of England) and **Hynet** (in the Northwest of England) to commence in 2028. Among other things, the funding support will allow the production of blue hydrogen. The **East Coast Cluster** and **HyNet** both include Track 1 transport and storage systems. This announcement is consistent with policy settings of the previous UK Government.

For further detail click through to the following link: **https://www.gov.uk** at **Government reignites industrial heartlands 10 days out from International Investment Summit**.

During the first two weeks of **October 2024** the good folk at **The Oxford Institute for Energy Studies** published **Can UK green hydrogen contract for difference (CfD) match the cost-saving success of renewable electricity?** While this may be more niche than mainstream, the publication is excellent and well-worth a read.

**EC approves Polish Government State Aid**: On **October 3**, **2024**, the **European Commission** (**EC**) approved **€1.2 billion** in **State Aid** to be provided by **Polish Government**. The State Aid is to be provided in the form of funding support (direct grant and loans), of 65% of capital costs to develop "at least 5.4 GWh" of electrical energy storage projects across Poland.

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[6] As reported: Austria received 709 MW, Czech Republic received 2 GW, Denmark received 3.25 GW, France received 2.81 GW, the Netherlands 1.08 GW, Poland received 1.62 GW, Sweden 443 MW, Switzerland 359 MW.

**Spain greening**: On late **September 2024**, Reuters reported that the **Government of Spain** published its revised **Climate and Energy Strategy**. The revised strategy contemplates that by 2030 Spain will have installed **12 GW** of electrolyser capacity to allow the production of green hydrogen, and green ammonia. Consistent with this revised target is that by 2030 74% of the hydrogen used within Spain will be green.

## HELPFUL PUBLICATIONS AND DATA BASES

The most noteworthy publications read by the author during the first two weeks of **October 2024** is: **Energy Islands**: On **September 30**, **2024**, the good folk at the **Fraunhofer Institute for Energy Economics** and **Energy System Technology IEE** published Offshore production of hydrogen on Energy Islands can save more than 4 billion Euro per year for the future German energy system. The study is well-worth a read; among other things, the study reports on the benefits of the development of offshore energy islands to aggregate renewable electrical energy generation offshore, and the use of HVDC to transmit that energy onshore.


***Primary Author:***

**MICHAEL HARRISON***
Partner
michael.harrison@bakerbotts.com

***Other Contacts:***

**JASON BENNETT**
Partner
jason.bennett@bakerbotts.com

**RICHARD GUIT**
Partner
richard.guit@bakerbotts.com

**LEWIS JONES**
Partner
lewis.jones@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

**SHANE WILSON**
Partner
shane.wilson@bakerbotts.com


* Michael Harrison is the primary author of $P_2N_0$, and editor, written on Saturday mornings. Any errors are Michael's. Michael sources news items from original material. If a news item is covered broadly, the words **reported widely** connote that at least three publications have covered that news item, and **reported** connotes at least two sources. If there is only one source that is not the original source for the new item, that source is named.



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