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Plugging Green Power into the EU-ASEAN Partnership

The future is green but the transition requires a transformation of energy systems. Grid optimisation is a crucial element of energy transition, as it facilitates the integration of renewable energy sources into the power system and helps avoid grid instability and blackouts. The EU and ASEAN share a commitment to accelerating the roll-out and efficient use of renewable energy sources. Smart technologies and power grid connectivity are two promising ways to achieve this objective. This policy brief assesses the strategic value of greater cooperation on green and smart energy systems. It argues that the EU and ASEAN could accelerate the integration of renewable energy into power systems by facilitating private and public investments in the modernisation and expansion of electricity grids, for instance with targeted Team Europe Initiatives. ASEAN and the EU need to couple investments in renewable energy with power grid optimisation, while engaging stakeholders from the energy and digital technology sectors in the process and avoiding creating new cyber security risks.

EU-ASEAN cooperation on green energy on the cards

The European Union (EU) and Association of Southeast Asian Nations (ASEAN) are operating in a fast-changing energy landscape. Climate change, geopolitical shifts, increased energy demand and higher fossil fuel prices require energy systems to adapt and become more resilient, cheaper and less polluting. Together, home to more than 1.1 billion people, the EU and ASEAN have an interest in transitioning to a low-carbon and climate-resilient future.¹

Both regional organisations have committed to accelerating the roll-out of renewable energy sources (RES), including wind and solar, with ASEAN aiming to achieve a 23% renewable energy share by 2025 and the EU a 40% by 2030. Yet, considering the current state of play – 14.2% and 22% RES in each bloc’s respective energy mix in 2020 – meeting those targets will be difficult. Because many RES are more variable and intermittent than fossil fuels, advancing the transition will demand changes to the current power system.

Since late 2022, the EU and ASEAN have stepped up cooperation between their two blocs and member states in the energy field. At the EU-ASEAN Commemorative Summit on 14 December 2022, EU and ASEAN leaders celebrated 45 years of diplomatic relations and

¹ Joseph Teo, “How can ASEAN and the EU best cooperate for climate goals and alleviate the impact of climate change related incidents?”, *Friends of Europe*, 26 April 2021.



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reaffirmed their partnership in various areas, including clean and just energy transition.

‘We look forward to the efforts to realise the energy transition towards climate neutrality, linked to ASEAN and EU goals to increase energy efficiency and the share of renewable energy, underpinned by cooperation and investment projects in renewable energy in ASEAN Member States [...]’.²

Leaders also launched the EU-ASEAN Energy Dialogue to increase exchanges on energy policy, including the establishment of internal energy markets and the integration of renewables into the grid. Moreover, in 2022, the EU, together with its member states and international partners, launched the Just Energy Transition Partnership (JETP) with Indonesia and Vietnam.

The twin transition in the fields of green and digital technologies is an opportunity for the EU and ASEAN to build together more sustainable, smart, clean and efficient energy systems. But how can EU-ASEAN cooperation be shaped to accelerate the renewable transition in a

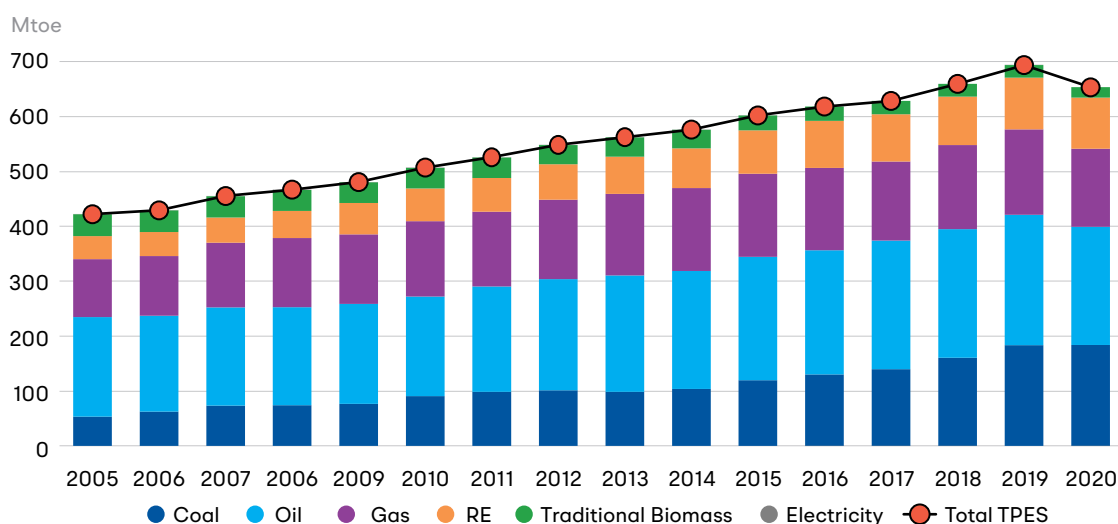
smart way? What practical steps are required to develop and achieve this objective?

Building on the momentum of increasing green energy cooperation between the EU and ASEAN, the Clingendael Institute and the Cambodian Institute for Cooperation and Peace (CICP) in 2022 organised a series of dialogues touching upon a key challenge of electrification: the integration of variable RES into the power grid.³ This policy brief presents the key findings of those debates and assesses EU-ASEAN cooperation on renewable energy penetration through smart technologies and power grid connectivity. Finally, it presents practical steps towards achieving this objective.

Southeast Asia is the region with the fastest growing demand for coal in the world

In recent years, ASEAN witnessed rapid industrialisation and urbanisation in the region, which led to an increase in electricity consumption and fossil fuel use, particularly coal, as illustrated in Figure 1. In fact, Southeast

Figure 1 ASEAN total primary energy supply (TPES) by fuel, 2005-2020⁴



2 Council of the European Union, “[EU-ASEAN Commemorative Summit \(Brussels, 14 December 2022\) - Joint Leaders’ Statement](#)”, 14 December 2022.

3 Between May and November 2022, Clingendael and the CICP brought together experts, business representatives, civil society stakeholders and government officials from the EU and ASEAN in four online dialogues. Dialogues will continue throughout 2023, with a focus on climate adaptation.

4 ASEAN Centre for Energy, “[The 7th ASEAN Energy Outlook](#)”, 15 September 2022.

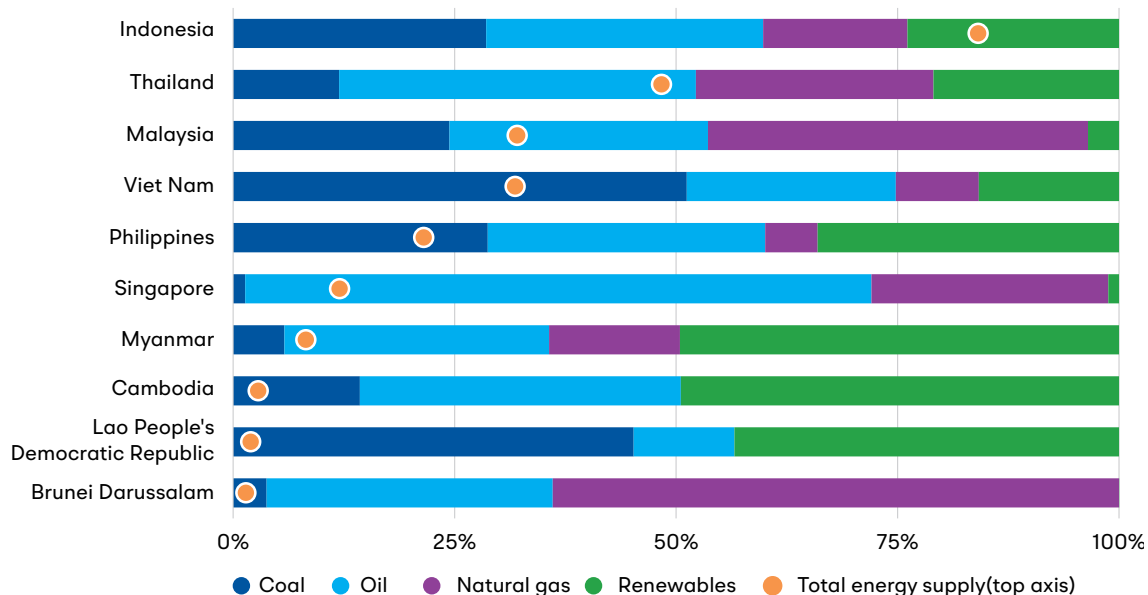
Asia is the region with the fastest growing demand for coal in the world.⁵ According to the ASEAN Centre for Energy (ACE), the ASEAN energy demand is expected to triple by 2050, reflecting the rapid growth of its economies and populations. The current energy mix is still dominated by fossil fuels, which accounted for about 83% in 2020. Renewable energy sources have rapidly increased in recent years, especially solar and wind power. Yet RES make up just a small percentage of the total energy mix, accounting for 14.2% in 2020.⁶

Across the ten ASEAN member states, the energy mix varies considerably, as shown in Figure 2. Some member states have unsatisfactory levels of energy diversification as they tend to over-rely on their domestic reserves of energy resources. For instance, coal dependence is greater in coal-rich countries such as Vietnam and Indonesia. Likewise, countries like Laos, Cambodia and Myanmar through which the Mekong River flows, rely highly on hydroelectric power. However,

the security risks associated with climate change, high costs of fossil energy and severe air pollution have recently highlighted the urgent need to change the energy mix. Southeast Asia is one of the most vulnerable regions to climate-disaster risks, including prolonged droughts, floods and typhoons.⁷ Climate change is even reducing the water flows needed for hydropower.

To address these pressing challenges, ASEAN has made a commitment to secure 23% of its primary energy from renewable sources by 2025, as outlined in the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025.⁸ However, the green transition brings with it several challenges for the region. For instance, coal phase-out will be difficult and costly due to the relatively young power plants. Grid connectivity is yet another challenge, especially in archipelagic countries such as Indonesia and the Philippines, but also on the mainland where energy infrastructure is dispersed. The ASEAN Centre for Energy estimates that investment of up to USD 184 billion

Figure 2 Total energy supply by fuel, by country in ASEAN, 2019⁹



5 International Energy Agency, “Southeast Asia Energy Outlook 2022”, May 2022.

6 ASEAN Centre for Energy, “The 7th ASEAN Energy Outlook”, 15 September 2022.

7 Beni Suryadi, “Climate Change, Security and Regional Cooperation in ASEAN”, ASEAN Climate Change and Energy Project, 6 February 2020.

8 ASEAN Centre for Energy, “(2021-2025) ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025 Phase II”, 23 November 2020.

9 International Energy Agency, “Southeast Asia Energy Outlook 2022”, May 2022.

would be needed to support power expansion and meet the ASEAN RES target.¹⁰

To assist vulnerable countries transitioning away from coal, in 2022 the International Partners Group – consisting of the EU, the United Kingdom (UK), the United States (US), Japan, Germany, France, Italy, Canada, Denmark and Norway – launched a Just Energy Transition Partnership (JETP) with Indonesia¹¹ and Vietnam,¹² notably the countries with the largest use of coal combustion for power generation in the region. The JETP aims to mobilise public and private finance over the next three to five years to an expected €19.4 billion for Indonesia and €14.6 billion for Vietnam. Key targets include peaking emissions by 2030, reducing peak coal capacity and accelerating the deployment of renewable energy to reach 34% of all power generation by 2030. However, details of the power transition still need to be spelled out.

Several ASEAN member states, for example Vietnam and the Philippines, have already approved largescale installations of wind power, including offshore wind farms. Others like Thailand and Indonesia are betting on solar power with floating solar farms.¹³ The rapid price drop of solar panels has created a rush towards solar installation with little consideration to grid connection. This is problematic because if the speed of introducing renewables exceeds the threshold of grid capacity or outpaces the ability to upgrade grid infrastructure, the result will be instability, poor power quality and blackouts. This happened, for instance, in Vietnam where solar and wind farms were forced to limit operations due to infrastructure

limitations following the expansion of renewable power supply.¹⁴

Because of the intermittent and variable nature of RES, balancing electricity demand with supply requires changes to power system operations. In the next decades, renewable energy projects are expected to scale up across ASEAN countries, creating a need to invest in renewable energy storage capacity and grid infrastructure to facilitate the integration of RES into the system.¹⁵ Digitalisation of energy systems could facilitate this process. It could also help to shift demand patterns by stimulating the use of electricity at times when it is more available.

The EU is committed to speeding up the global green transition

On the other side of the globe, the EU is faced with sky-high energy prices and global energy market disruptions caused by Russia's invasion of Ukraine. To end the EU's dependence on Russian fossil fuels, while moving towards climate neutrality by 2050, the EU has pledged to accelerate the green transition and massively invest in renewable energy.¹⁶ However, to cope with the high energy demand and enhance security of energy supply in the short term, some EU countries, for example Germany and Austria, have temporarily restarted their coal power plants. Such a move threatens to slow down the path towards the EU's ambitious climate goals.

In 2021, renewable sources accounted for 22% of the energy consumed in the EU, according to the European Environment Agency.¹⁷ Figure 3 shows various degrees of RES penetration among EU member states. While the Nordic countries are leading the transition, several countries with lower GDP levels, for example Latvia, Estonia

10 ASEAN Centre for Energy, "[The 7th ASEAN Energy Outlook](#)", 15 September 2022.

11 European Commission, "[Joint Statement by the Government of the Republic of Indonesia and International Partners Group members on the Indonesia Just Energy Transition Plan](#)", 15 November 2022.

12 European Commission, "[Political Declaration on establishing the Just Energy Transition Partnership with Viet Nam](#)", 14 December 2022.

13 Viktor Tachev, "[The ASEAN Energy Outlook 2022-Advancing Energy Transition Through Innovation](#)", *Energy Tracker Asia*, 3 February 2022.

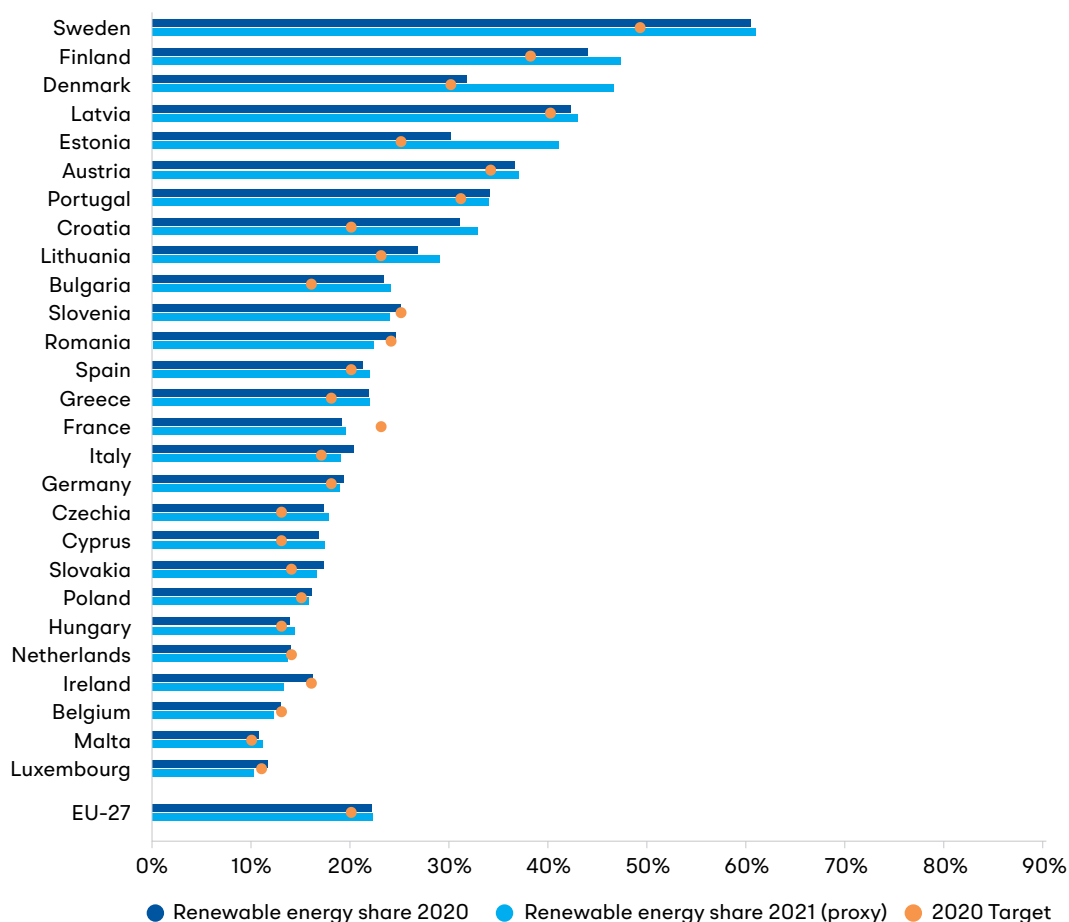
14 Lam Le, "[After renewables frenzy, Vietnam's solar energy goes to waste](#)", *Aljazeera*, 18 May 2022.

15 Randi Kristiansen and Lucila Arboleya, "[Southeast Asia can reach clean energy targets by investing in transition](#)", *International Energy Agency*, 5 February 2021.

16 European Commission, "[REPowerEU Plan](#)", 18 May 2022.

17 European Environment Agency, "[Share of energy consumption from renewable sources in Europe](#)", 26 October 2022.

Figure 3 Progress towards renewable energy sources target, by country in the EU¹⁸



and Portugal, are progressing quickly towards renewable energy.

However, despite its relatively higher share of RES compared to ASEAN countries, Europe faces a problem with integrating them into the power system. In fact, occasional grid congestion occurs when electricity supply exceeds demand. In the North Sea, for instance, offshore wind power is often curtailed due to lack of grid capacity. Europe’s power grid is under pressure because investments in grid infrastructure are not keeping up with the deployment of new wind farms, rooftop solar panels, and heat pumps.¹⁹

In October 2022, the European Commission published an Action Plan for digitalising the energy system, highlighting the need to build a smarter energy system.²⁰ The plan estimates that in order to reach its climate objectives, Europe needs to invest EUR 584 billion in the electricity grid between 2020 and 2030 and dedicate a substantial portion of these investments to digitalisation. Rules for the energy infrastructure and electricity market are set at EU level and the EU emissions trading scheme ensures a penalty for carbon dioxide emissions, thus creating incentives for the green energy transition. The EU has one internal energy market, although EU member states are free to choose their preferred energy sources.

18 European Environment Agency, “Share of energy consumption from renewable sources in Europe”, 26 October 2022.

19 Nikolaus J. Kurmayer, “Growing demand puts EU electricity grid under pressure”, Euractiv, 17 January 2023.

20 European Commission, “Digitalising the energy system - EU action plan”, 18 October 2022.

Worldwide, the EU is committed to speeding up the global green transition and supporting its international partners in implementing the Paris Agreement on climate change. This takes place against the backdrop of a desire to become more strategically autonomous and reduce Russia's income from gas and oil revenues as well as geopolitical competition over green tech leadership and access to critical raw materials needed for the energy transition. The EU Green Deal and the External Energy Engagement Strategy set the tone for the EU's international efforts, including working with partners on renewable energy technologies, such as smart grids, solar and wind technologies, and green hydrogen.²¹ Catalysing the green energy transition by using digital technologies is also a priority for the Global Gateway – the EU's alternative to China's Belt and Road Initiative – which supports investments in green and smart infrastructure. The same applies to Team Europe Initiatives, through which member states are aligning with the EU.

Based on its own experience and with instruments that aim to accelerate the green and digital transition abroad, the EU certainly has an interest in cooperating with ASEAN. Now, the idea must be translated into implementation and meaningful action with regard to the most promising technologies. Smart technologies and power grid connectivity are two promising areas where the EU and ASEAN could step up their cooperation, as outlined below.

1. Smart technologies

Smart technologies, such as artificial intelligence (AI), 5G, the Internet of Things (IoT), the cloud and edge computing, have the potential to facilitate the integration of renewables into the power system and improve energy efficiency.²² Several options exist to deploy digital solutions in the energy sector and build smart energy

systems. Examples include smart grids, smart meters, and intelligent controllers for energy storage.

The smart grid, for instance, collects and monitors information about the health of the grid, where to expect congestion and how to alleviate outages. What makes a grid 'smart' is the IoT: sensors embedded in solar photovoltaic or wind farms that are able to connect and exchange data with other systems and networks. According to GSMA Intelligence, around 35% of solar and 10% of wind parks have IoT connectivity, mainly in Europe and parts of the US. These are expected to rise to 75% by 2050 and expand to other parts of the world where there is less renewable capacity, including in Southeast Asia – where electricity demand will rise considerably.²³

With a view to efficiency gains, the digitalisation of energy systems is increasingly becoming a priority in both the EU and ASEAN. For instance, Singapore has announced various initiatives to improve the grid architecture by leveraging digital technologies, such as a Grid Digital Twin.²⁴ Likewise, Germany has recently launched a bid to accelerate the roll-out of smart meters for businesses and households.²⁵

Digitalisation of the grid, however, raises several issues, including cyber security, data access governance, data protection and privacy.²⁶ To address these challenges, the European Commission published in October 2022 an action plan for digitalising the energy system.²⁷ Among the priorities, the Commission aims to create common standards of digital energy systems – including interoperable technical

21 European Commission, "[EU external energy engagement in a changing world](#)", 18 May 2022.

22 International Energy Agency, "[Digitalisation. Energy system overview](#)", September 2022.

23 Tim Hatt and Emanuel Kolta, "[Industry pathways to net zero. Mobile and digital technology in support of industry decarbonisation](#)", GSMA Intelligence, November 2021.

24 Government of Singapore, "[Future of the Grid: Super-charging Singapore's Energy Transition](#)", 16 June 2022.

25 Nikolaus J. Kurmayer, "[Germany announces 'acceleration' of smart meter rollout](#)", Euractiv, 12 January 2023.

26 To learn more about digital cooperation between EU and ASEAN, [see our work from last year](#) on digital connectivity.

27 European Commission, "[Digitalising the energy system - EU action plan](#)", 18 October 2022.

standards, cyber security, data protection – and shape a global consensus on the choice of technologies. ASEAN is a key partner of the EU that shares similar values for data governance.²⁸ Therefore, the choice of which software operates the grid is essential to ensure alignment with these values.

Private sector participation is crucial. Leading European companies such as Siemens and Nokia could support ASEAN countries in this process with investments and skill sharing. Siemens, for instance, is the largest industrial manufacturer in Europe, among the world's leading companies in smart grid technology, according to a Canadian market research company.²⁹ It is already operating in ASEAN countries by investing in smart energy systems, such as in the digitalisation of the Trung Nam Solar Park in Vietnam.³⁰ Moreover, it regularly organises conferences and events to engage various stakeholders operating in the energy sector, like the Asia Pacific Energy Week.³¹

Governments can also facilitate private sector investments. With the Global Gateway, the EU aims to mobilise 300 billion euros of private and public investments up until 2027. An overview of key Global Gateway efforts in ASEAN can be found in Table 1 at the end of this brief. As part of the Global Gateway, the EU, some of its member states (i.e., Germany, France, Italy, Denmark, Austria and Romania) and the European Investment Bank (EIB) will mobilise 10 billion euros for inter alia green transition and energy connectivity in ASEAN. This money will be mobilised by two Team Europe Initiatives: the Sustainable Connectivity Initiative and the Green

Team Europe Initiative.³² However, investments to support the integration of electricity infrastructure constitute only a small part of the package, which is spread across various areas from digital and transport connectivity to biodiversity and sustainable food systems. More targeted initiatives are thus needed.

2. Power grid connectivity

Another opportunity to support renewable energy penetration and increase the flexibility of power systems is through enabling cross-border power transmission. Power grid connectivity supports more efficient use of energy sources, improves access to energy services and ultimately improves regional energy security. In the presence of a regional power market, interconnection among neighbouring countries allows the trading of surplus renewable energy produced in one country with another country having a high electricity demand.³³

Over the years the EU has built a system that interconnects national power grids to enable electricity to be traded across borders. This is known as the European internal energy market. In 2015 the European Commission launched the Energy Union aimed at restructuring the energy system to improve the transmission of intermittent volumes of renewable energy. This includes an expansion of the power grids across Europe to allow a greater amount of energy to be transported over longer distances.³⁴ A recent example is the linking of Ukraine's grid to Europe's electricity system following the Russian invasion.³⁵

28 Maaike Okano-Heijmans, Henry Chan and Brigitte Dekker, "Growing stronger together Towards an EU-ASEAN digital partnership?", *Clingendael*, February 2022.

29 Emergen Research, "Top 10 Companies Advancing Smart Grid Technology To Create Sustainable Energy Future", 7 April 2022.

30 Siemens, "Sensformer® makes Vietnam future-ready", accessed 3 February 2022.

31 Siemens, "Asia Pacific Energy Week", accessed 3 February 2022.

32 European Commission, "Global Gateway: EU and its Member States to mobilise €10 billion for South-East Asia" 14 December 2022.

33 European Commission, "Electricity interconnection targets", accessed 16 January 2023.

34 European Commission, "Energy Union Package. A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy", 25 February 2015.

35 European Commission, "Statement by Commissioner for Energy Kadri Simson on Synchronisation of the Continental European Electricity Grid with Ukraine and Moldova", 16 March 2022.

In ASEAN there are similar efforts to establish a framework that enables cross-border power interconnection and trade, the so-called ASEAN Power Grid (APG).³⁶ The aim of APG is to first connect ASEAN electricity infrastructure on a bilateral basis, then gradually move to a fully integrated Southeast Asia power grid system. Recent developments include talks between the government of Vietnam and Singapore's energy development company Sembcorp to build a submarine power transmission line connecting the two countries.³⁷ Several challenges revolve around the development of APG and regional market trading, including overcoming regulatory, technical and financial barriers.³⁸

ASEAN and the EU are already working closely to enhance energy cooperation through the Enhanced Regional EU-ASEAN Dialogue Instrument.³⁹ Moreover, in December 2022 the two partner organisations agreed to set up the EU-ASEAN Energy Dialogue, a platform dedicated to policy dialogue and engagement on energy policy practices, including the promotion of business and industry exchanges.⁴⁰ Exchange on power grid connectivity is an area where the EU and ASEAN could share lessons learned.

In 2009, the EU set up the European Network of Transmission System Operators for Electricity (ENTSO-E), an association for the cooperation of transmission system operators (TSOs) for electricity. It represents 39 electricity TSOs from 35 countries across Europe, also beyond EU borders. By pooling together their expertise, the network secures and coordinates operation

of Europe's electricity system.⁴¹ ASEAN has a similar network, dating back to 1981, the so-called Heads of ASEAN Power Utilities/Authorities (HAPUA).⁴² With the aim of promoting cooperation among its members and energy connectivity, the current top priority for HAPUA is supporting ASEAN energy market integration with the implementation of APG.

Technical exchanges are key. To help achieve the EU electricity interconnectivity target of at least 15% by 2030, the European Commission set up an expert group on electricity interconnection including experts from European industry organisations, academia, non-governmental organisations and ENTSO-E.⁴³ Involving ASEAN energy stakeholders such as from HAPUA in similar initiatives could be beneficial for a successful development of the APG. Additionally, technical assistance needs to go hand in hand with targeted investments in power grid connectivity. Private sector investments are, in fact, expected to play an important role in developing the APG, especially for less-developed ASEAN member states.

Towards greater EU-ASEAN green power cooperation?

The EU and ASEAN have committed to accelerating the roll-out of renewable energy sources. But to integrate them while avoiding grid instability and blackouts it is necessary to upgrade or even redesign the grid. The EU has long experience with intermittent renewable energy sources, as well as internal energy market, while ASEAN is home to the fastest growing demand for electricity in the world. Despite reliance on fossil fuels, the energy landscape in ASEAN and the EU is already transitioning, accelerated by digital innovation.

In this context, the EU and ASEAN have an opportunity to enhance their cooperation on

36 Association of Southeast Asian Nations, "[Memorandum of Understanding on the ASEAN Power Grid](#)", 23 August 2007.

37 Reuters, "[Vietnam in talks with Sembcorp to build power line linking to Singapore](#)", 10 February 2023.

38 Southeast Asia Development Solutions, "[Building the ASEAN Power Grid: Opportunities and Challenges](#)", 29 September 2022.

39 European External Action Service, "[Enhanced Regional EU-ASEAN Dialogue Instrument \(E-READI\)](#)", 27 May 2019.

40 European Commission, "[EU and ASEAN establish Energy Dialogue](#)", 14 December 2022.

41 ENTSOE, "[ENTSO-E Mission Statement](#)", accessed 16 January 2023.

42 HAPUA, "[About HAPUA](#)", accessed 1 February 2023.

43 European Commission, "[Electricity interconnection targets](#)", accessed 16 January 2023.

renewable energy penetration through smart technologies and power grid connectivity. In the century of green energy transitions, grid modernisation is a key condition for power sector transformations. For direct stakeholders (regulators, energy suppliers, system operators, etc), it is one of the main challenges and priorities for the future. The issue is on the political agenda, but implementation is the next challenge.

This policy brief recommends the following practical steps towards greater EU-ASEAN cooperation.

- To avoid grid instability and blackouts, the EU and ASEAN could bundle policies for the roll-out of RES with grid infrastructure optimisation, including smart grids and interconnectors for cross-border power transmission. This would facilitate the integration of new RES in the power system. Because power grid transformation lags behind the rapid installation of renewable energy system in both regions, extra investments are needed in the grid in any case.
- Power system operation and integration is a key area of cooperation requiring the involvement of the energy actors. As part of their Energy Dialogue, the EU and ASEAN could replicate the EU expert group on electricity interconnection by including experts from industry organisations from the EU and ASEAN, such as ENTSO-E and HAPUA. This would foster technical exchange that could benefit both ASEAN and EU grid integration efforts.
- Improving technical knowledge among EU and ASEAN policy makers is also needed to establish common standards of digital energy systems – including cyber security, data protection and privacy. An exchange on common standards of digital energy systems could also be part of the EU-ASEAN Energy Dialogue. For both the EU and ASEAN, the challenge is to ensure a sufficient choice of software suppliers, but also to be certain that private sector actors offer competitive prices and can be trusted regarding cyber security and data privacy.
- EU and ASEAN governments need to create incentives to leverage more private sector investments in the renewable energy integration. To raise flexible funding and investments, the EU could launch bilateral Team Europe Initiatives in specific ASEAN countries to support the establishment of the APG, as well as to modernise grid infrastructure.
- Following the example of the JETPs with Indonesia and Vietnam, the EU, its member states and international partners could expand these partnerships with other fossil-dependent ASEAN countries to help them accelerate both the roll-out of renewables and integration in the grid.

Table 1 Global Gateway Team Europe Initiatives in ASEAN⁴⁴

Initiative	Geographical scope	Thematic priority	Contributors (EU, Member States and financial institutions)
REGIONAL			
Green Team Europe Initiative	ASEAN	Green and smart cities, biodiversity, clean energy, circular economy, sustainable food systems.	EU, Denmark, Germany, France, Austria, Romania, EIB
Sustainable Connectivity Initiative	ASEAN	Energy, digital and transport connectivity, sustainable value chains	EU, Germany, France, Italy, EIB
BILATERAL			
Sustainable Landscapes, Forests and Agriculture	Cambodia	Natural resources and sustainable agriculture	EU, Belgium, Czechia, France, AFD, FMO, EIB
Build back better – green energy and industrial value chains	Cambodia	Energy efficiency and trade facilitation measures	EU, Germany, Sweden, EIB
EU - Indonesia Green Agenda Team Europe Initiative	Indonesia	Sustainable energy and sustainable value chains	EU, Belgium, France, Germany, Poland, AFD, EIB, KfW
Green and Inclusive Economy - Agriculture Value Chains and Forest Partnership	Laos	Sustainable agriculture and land-use management	EU, France, Germany, Hungary, Luxemburg, Netherlands, EIB, FMO, Proparco
Green Recovery	Philippines	Circular economy and plastic waste management	EU, France, Germany, Spain, AFD, EIB, FMO
Digital Transformation and Connectivity	Philippines	Digital transformation and connectivity	EU, France, Spain, EIB
Decent Jobs & Skills	Vietnam	Decent employment and inclusive entrepreneurship	EU, France, Germany, Italy, Luxemburg, AFD, EIB, FMO, KfW
Climate Resilient, Low-carbon Circular Economy	Vietnam	Climate resilience, low-carbon development and circular economy	EU, Denmark, France, Germany, Italy, Luxemburg, Spain, AFD, CDP, EIB, Finnfund, KfW, Proparco

44 European Commission, "[Factsheet - Global Gateway in ASEAN](#)", 14 December 2022; European Union, "[Team Europe Initiatives and Joint Programming tracker](#)", accessed on 10 February 2023.

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