# 2nd Global Ministerial Conference on System Integration of Renewables

The IEA has been calling countries to elevate the importance of System Integration of Renewables (SIR) as a key topic for governments and policymakers, seeking to strengthen the resilience and sustainability of their power sectors. In 2019, the IEA co-hosted the First SIR Ministerial with the government of Germany. The event catalysed a global, multi-stakeholder conversation about the importance of renewable integration and system flexibility, highlighting that perceived challenges to integrate renewables in power systems can equally be seen as opportunities for investment, growth, and resilience.

Coming out of the bi-annual IEA Ministerial meeting held on the 5th and 6th of December 2019, the IEA was asked by member governments to explore power sector resilience, and particularly, electricity security. In response, and over the course of 2020, the IEA produced Power Systems in Transition, its first Electricity Security report. The report adds new and critical data on electricity security, highlighting three key challenges to ensuring electricity security: energy transitions, cybersecurity risks and climate impacts. The report outlines the importance of electricity security in our modern economies and in the future energy landscape – a particularly important topic since the onset of the COVID-19 pandemic.

Following the successful first annual IEA SIR Ministerial, and in the context of an urgent dialogue around electricity security, the IEA and Singapore agreed to co-host the second edition in October 2020, alongside Singapore International Energy Week. The second SIR Ministerial built on the first, and had the purpose of adding to the discussion with a clear focus on emerging threats and opportunities, and with a focus on the Asia-Pacific region. Climate and cyber resilience, as well as power sector investment, was the key focus points, and the event served as the launch pad for the Energy Security Report.

The Second SIR Ministerial was co-chaired by IEA Executive Director, **Dr. Fatih Birol**, and Singapore's **Minister Dr. Tan See Leng**, Second Minister for Manpower and for Industry and Trade, and Minister in the Prime Minister's office. It featured over 30 senior officials including Ministers and CEOs who had an in-depth virtual dialogue on key power sector concerns. Topics included accelerating investment in renewable energy technology and infrastructure, and pathways to develop resilient and flexible power systems.

Opening remarks by Dr. Birol and Minister Tan were followed by a keynote address by H.E. Supattanapong Punmeechaow, Deputy Prime Minister and Minister of Energy of Thailand. Minister Punmeechaow highlighted Thailand's new policies strengthening energy security

and flexibility, including new energy sources and technologies. He also emphasized the importance of energy access and inclusivity in energy transitions.

**“The energy system we construct after the pandemic will have to be more resilient, most sustainable and more inclusive. We are on the right track to maintaining energy security and stability during the transition and the pandemic period.” Minister Supattanapong Punmeechaow, Thailand.**

Mr. Keisuke Sadamori, Director of Energy Markets and Security, launched the IEA Energy Security Report, and presented the key findings. The changes in the structure of the power sector – from centralized generation and unidirectional communications, to distributed, diverse, and variable systems, facilitates a more flexible and dynamic system, but also increases certain risks. Massive projected growth in electricity demand to 2040 – by 50 per cent up to 40,000 TWh – across multiple scenarios, is expected to be mostly met with variable renewables – solar PV and wind. Overall, while investments in electricity security from an infrastructure perspective is key, institutions and markets must also be strengthened. Investment in power system flexibility resources must go hand in hand with the rapid deployment of variable renewables. Grids are a particular concern, as they require long-term planning and timely investment.

**“The drastic growth in electricity needs and generation mix shows the strong requirement for expanded, more robust, well connected and smarter grid networks”. Mr. Keisuke Sadamori.**

The launch was followed by panel sessions on power infrastructure investment, and on enhancing grid resilience. A diverse set of speakers discussed key challenges and opportunities, with an additional focus on system integration in Southeast Asia. In this region, accelerated economic activity and increasing prosperity are projected to drive post-pandemic energy demand growth. This demand can be met by renewable energy and ASEAN has a target of 23 % renewable energy by 2025, which will be facilitated by ASEAN Member States working together to promote renewable energy and regional integration. Participants agreed that international cooperation is key to achieve this objective, and that the IEA was playing a critical role in convening stakeholders and providing robust policy and data analysis to strengthen decision-making.

Participants noted that governments and the private sector must collaborate to ensure increased and strategic investment is firmly part of government’s recovery plans. Governments must also ensure stable, transparent and predictable regulatory and policy environments that facilitate investment, not only in renewable energy but also grids and storage options. Participants agreed that these issues would need to be included in the

policy and investment frameworks that will drive ambitious decarbonisation objectives, such as the net-zero commitments put forward by Japan, Portugal and China.

The speakers also highlighted the importance of the region's power grids, as vital to transport variable renewable energy (VRE) from resource-rich areas to load centres. This issue is particularly salient in Southeast Asia due to its unique regional geography and abundance of islands. Grids are also the facilitator of international collaboration with regional integration as a facilitator of integration of renewables. This was underlined by H.E. Dato Lim Jock Hoi, Secretary General, ASEAN Secretariat who emphasized that regional cooperation – particularly in ASEAN – would be a focus of further work.

**"IEA engagement on multilateral power trade … is helping lay the groundwork for closer regional power system integration – and I am very pleased to see that there are close synergies between this topic and ongoing work there". Secretary General, Dato Lim Jock Joi, ASEAN.**

The message of the importance of grids and international collaboration was also reinforced by Finland, Germany and Thailand. Mr. Jérome Pécresse, CEO of GE Renewables pointed out that distribution grids will require 80% more investment than in the last 10 years, a key opportunity echoed by Mr. Claudio Facchin, CEO of Hitachi ABB Powergrids and Mr. P.K. Pujari, Chairman, Central Electricity Regulatory Commission of India.

In addition to investment in grids, energy storage is another important enabler of successful integration of high shares of variable renewables. The focus on different types of storage technologies that can add flexibility to power systems was noted particularly by Portugal, Japan, Laos PDR and Poland. Further, other countries such as Norway and Estonia, noted the importance of taking a whole-of-economy approach to decarbonisation – something that be accelerated with accelerated electrification.

**"We have a '3 H' strategy, Hydropower, Hydrogen and Heat, because we want to tackle intermittency of renewables". Minister Michał Kurtyka, Poland.**

In short the message was clear: In order to ensure secure, resilient, clean and affordable power systems, governments must focus on stable and transparent policy measures that incentivise investment in renewable energy, grids, storage and demand response, as well as ensuring market design and institutions that support system integration of renewables.

The event closed with remarks from H.E. Mr. Arifin Tasrif, Minister of Energy and Mineral Resources, Indonesia. Minister Tasrif outlined Indonesia's strategy for clean energy transitions as well as pointed out the importance of several measures for system integration.

**“Renewable energy and digital technologies are two of the strongest drivers for the ongoing energy transition. The whole system becomes increasingly interconnected as digital technologies and cooperative business models facilitates and accelerates the energy transition. Indonesia highly appreciates the many years of strong partnership and collaboration with the IEA in accelerating the energy transition in the country.” Minister Arifin Tasrif, Indonesia.**

The IEA is planning the 2021 edition of the SIR Ministerial, building further off previous editions, as well as new, cutting edge analysis.

*The IEA and Singapore are grateful for the participation of many distinguished speakers in the Second Global Ministerial Conference on System Integration of Renewables. Their insightful and valuable contributions to the dialogue of the Ministerial demonstrate the growing recognition of the importance of the topic of system integration. The IEA looks forward to next year’s Global Ministerial Conference on System Integration of Renewables and remains committed to supporting governments in achieving their goals for clean energy transitions and system integration of renewables.*