CHAIRS' SUMMARY

SUMMIT ON THE FUTURE OF ENERGY SECURITY

LANCASTER HOUSE, LONDON, 24-25TH APRIL 2025

The International Energy Agency (IEA), in partnership with the UK Government, convened a globally representative Summit of 60 governments and 65 industry leaders, international organisations, civil society and other key stakeholders to discuss how to respond to the changing nature of energy security. At the 2024 Ministerial, IEA Ministers asked for research and insight into the future of energy security and this Summit was the first global event to address that request.

Below is summary of the proceedings that has been issued under the authority of the co-chairs, the Rt Hon Ed Miliband MP, UK Secretary of State for Energy Security and Net Zero, and Dr Fatih Birol, Executive Director, International Energy Agency.

The changing nature and multiple dimensions of energy security

From our keynote speakers, Prime Minister Starmer and President von der Leyen, we heard that energy security is critical for national security, and the importance of acting together and cooperating on these shared challenges. The Summit provided an opportunity to review the trends redefining global energy security, including changes in energy demand, supply and trade; the adoption of clean energy technologies; and the implications for the energy system as a whole. The Summit also included discussions on the diverse energy security challenges faced by different countries, including energy as a driver of growth and the importance of access to affordable energy, and just energy transitions.

The Summit discussed that as energy in all its forms is at the basis of human and economic development, achieving secure, affordable, and sustainable energy for all remains a fundamental priority in the years to come, and should never be taken for granted. While efficiency and diversification of fuels, energy technologies and supply routes remain key traditional strategies for increasing energy security, participants noted the increased complexity and interlinkages of present and future energy systems. They called for new approaches, expanded scope and multiple dimensions of energy security, including critical mineral and component supply chains. In a period of global instability, the way out is not defending the status quo but depends on change and cooperating with others.

There was acknowledgment that the global energy landscape has continued to change in recent years with the emergence of new technologies, increased interdependencies and more

complex supply chains, as well as rapid growth in electricity demand. Clean energy sources – including wind, solar, nuclear – are continuing to play an increasing role in energy systems. This is bringing opportunities to diversify energy supply, harness domestic resources, reduce import dependency and protect billpayers from volatile fossil fuel markets. It is also helping to drive economic growth, create new industries and jobs, and tackle climate change. Participants also underlined the ongoing need to continue to balance fossil fuels production and consumption.

As the energy landscape changes, so too does the nature of energy security. At the same time, the IEA Executive Director underlined 'three golden rules' for tackling energy security that have not changed: diversification, predictability, and cooperation. The UK Secretary of State expressed that shared challenges invite shared solutions, and that multilateral co-operation can make us stronger, not weaker – noting that each country has its own national pathway. What was heard again and again was the importance of acting together and cooperating on these shared challenges.

Over the course of two days, the following themes were discussed:

Establishing a holistic approach to energy security

In the context of the changing nature of energy systems and relations, participants discussed major risks, emerging threats and vulnerabilities to energy security in both the near and long term. They also explored effective responses, as well as expanding the scope and principles of energy security to align with future risks, solutions and opportunities. It was noted that a holistic approach should address at the same time security of energy supply, increased competitiveness, and decarbonisation, and that focusing exclusively on one of these dimensions leads to sub-optimal results. Participants noted the need to strengthen the focus on new energy security dimensions connected to new and expanding technologies, while remaining vigilant to risks associated with oil and natural gas supplies. They discussed some of the key emerging challenges, including the importance of addressing extreme weather events and cybersecurity, and the opportunities available to ensure security and resilience is embedded into new energy systems.

Oil and gas security during a just and fair transition

Participants noted that oil and gas will continue to be needed for years to come, even as countries increase the use of renewable forms of energy, nuclear power and new and emerging energy technologies. Participants suggested that traditional security of supply measures, such as strategic oil stocks and demand restraint, should be maintained, strengthened, and adapted to the changing nature of the oil and gas markets. It was noted

that it remains important to monitor markets to ensure security and affordability of these supplies, and to ensure that sufficient investment is made in decarbonisation along oil and gas supply chains, to lower emissions from their production; here, policy stability was seen as important for mobilising this investment. The sector needs to ensure that infrastructure when decommissioned is done so responsibly, and governments must put in place measures to ensure skilled workers can be redeployed and, where necessary, receive additional training as part of a just transition.

Energy and economic security

Participants discussed how energy access and affordability represent some of the biggest challenges societies face today, with huge impacts on global energy security and economic competitiveness. One of the key issues discussed was energy access. Across the world, nearly 700 million people do not have access to electricity, while over 2 billion do not have access to clean cooking, with Sub-Saharan Africa being the most affected. In addition, those who do have access may not always be able to afford it, which is true around the world. In advanced economies, the 10% lowest-income households spend on average nearly a quarter of their disposable income on energy, often having to forego other essential goods and services. This takes a tremendous toll on economies, on health and overall societal development, with energy poverty disproportionately affecting women and marginalised groups. Nonetheless, the emergence of new clean energy technologies has opened opportunities for countries that previously did not have natural energy endowments to build domestic energy industries supporting economic growth and energy security. Participants noted the significant economic savings stemming from fast deployment of renewables and interconnected power systems which are estimated to be currently around 60 billion euros per year in Europe. In addition, they discussed the opportunity that access to distributed energy resources provides for remote populations. Participants noted the IEA's successful ongoing work on clean cooking and ensuring fair and affordable transitions, and encouraged further work on affordability.

Exploiting technology and innovation potential

Participants noted that technology innovation can solve complex societal problems. In addition, they re-iterated the fundamental role of technology and innovation to ensuring energy security, whether by opening up new sources of supply or helping to make energy networks more efficient, flexible, and resilient to disruption. Technology and innovation are vital pillars of economic competitiveness and important to ensure energy supplies remain affordable and environmental impacts are minimised. Developing enabling regulatory and commercial frameworks is key to unlocking technology innovation. Participants highlighted how Artificial

Intelligence (AI) has numerous implications for energy demand growth and the future of energy security. They also emphasised the multiple and massive potential benefits that AI can bring to enable faster innovation and offer new ways to bolster energy security. Participants underscored the IEA's leading work on data and analysis in technology and innovation, including AI, and the need to further improve knowledge sharing and international collaboration to bring new technologies faster to the market, including at the IEA Energy Innovation Forum.

Ensuring Security in the Age of Electricity

Participants underscored that as electricity's role expands across sectors and economies, security of supply must be seen not just as a technical challenge but as a matter of strategic importance. They recognised how renewable and nuclear energy has underpinned diversification and energy security by reducing exposure to volatile markets, also delivering substantial consumer savings. Participants highlighted key measures required to meet evolving challenges in transitioning energy systems, with particular emphasis on the crucial role of grids. Participants further noted the importance of significantly increasing system flexibility to ensure secure and cost-efficient integration of high shares of variable renewables, as well as addressing cyber vulnerabilities in increasingly digitalised power systems. They emphasised the critical leadership role of policymakers in establishing long-term strategic visions, improving strategic planning, reforming regulatory frameworks and market design to provide the predictability needed for driving investment. Participants discussed the importance of proactive investment flexibility, including strengthened and expanded grid infrastructure, coupled with regional interconnection, affordable storage and unlocking the potential of demand-side resources. They noted that these approaches offer the most resilient approach to addressing electricity security risks and reaping the benefits an increasingly electrified future. They encouraged the IEA to expand their work on electricity security including through the newly established Electricity Security Task Force.

Securing emerging clean energy supply chains

An evolving global energy system demands an evolving approach to energy security – one that considers the fundamental interconnectedness of clean energy supply chains, from critical minerals extraction and refining, to energy technology manufacturing. As the demand for these technologies increases, participants discussed the need to ensure a diverse and sustainable supply chain that distributes the enormous benefits of the clean energy transition as equitably as possible. As nascent and emerging technologies develop their complex supply chains, countries are exploring opportunities to participate in the value chain that spans across critical minerals mining to technology manufacturing. Acknowledging the diverse views and positions

of countries is critical, including when taking global action to strengthen supply chains, and develop clear and accurate data. Participants noted the IEA's work on these issues and called on the Agency to continue its efforts to improve the security and diversity of clean technology supply chains, and to foster data transparency, particularly for critical minerals.

Managing risks from natural disasters, extreme weather and climate change

Participants discussed how energy security is inextricably linked with economic security, national security, and climate security. Natural disaster and extreme weather events pose an increasing and substantial threat to energy infrastructure, and participants shared firstperson testimony of their impacts. Climate change is exacerbating these risks. Risk identification and mitigation, including data reporting on disruptions and communication between countries, industry and government bodies, will be key to energy security. There was a notable emphasis in interventions on the role of water and water scarcity for energy security. Participants also noted that as electrification accelerates, enhancing the resilience of grid systems will be of increasing importance. It was noted that delayed action and consequent greater global temperature rise increases the technical challenge and cost of deploying climate-resilient infrastructure. As a result, they noted the importance of accelerating progress towards targets such as COP 28 targets of tripling renewable capacity and doubling energy efficiency intensity improvements. Participants requested that the IEA conduct an assessment of current and future risks as a first step to enhance resilience to these hazards.