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Coal in Net-Zero Transitions

On 15 November, Executive Director Fatih Birol, together with Laura Cozzi and Tim Gould, presented key findings of the report, Coal in Net Zero Transitions, during a livestreamed press event.

Coal is not only the number one source of CO_2 emissions globally but also the main source of poor air quality in many countries. Rather than coal being in decline or undergoing a renaissance, the reality is that CO_2 emissions from coal have been relatively stable for the past decade. Analysis has shown there is no pathway that addresses climate change and avoids local pollution that does not tackle emissions from coal. Reaching global and local environmental goals can only be achieved by reducing markedly the use of unabated coal.

Even if no further coal plants were built, if today's coal assets continued to operate in line with their economic lifetimes, i.e., for 40 or 50 years, the carbon budget to remain within the 1.5°C target would still be exceeded. Moreover, 175 GW of coal plant is currently under construction! With 95% of today's global coal consumption occurring in countries with a commitment to net zero, transitioning away from coal presents a formidable challenge, particularly to emerging economies and their pursuit of secure and affordable energy.

While there are many countries where coal use was in decline or where its use was modest, the IEA identified seven countries where coal was firmly embedded in their energy systems, was an essential component of their economies and played an important role in local development, namely Botswana, China, India, Indonesia, Mongolia, South Africa and Vietnam. Given this, transitioning away from coal would be easier said than done. Even though solutions exist to dramatically reduce the growth of coal globally, to do it effectively, in a manner that would lead to a just and fair transition, three interconnecting themes must be addressed: people; technology; and finance. What needs to be done and how the transition might be realised form the content of this report.

People. Worldwide an estimated 5 million people work in coal mining and a further 1 million in coal transportation. In some parts of the world, more than one in ten people have jobs relating to the coal industry, particularly in parts of China, India, Indonesia and South Africa. Without doubt, people will be affected by the transition away from coal. Jobs will be at risk. While the clean energy transition will create many job opportunities, these may be in different parts of the country or even further afield. Local job losses will be inevitable and, consequently, it will be important to support local communities and those affected. At present, only 4% of countries with communities where those workers are located have put in place comprehensive just transition policies.

While several ways in which communities can be supported are described in the report, one lies with the increasing global demand for critical minerals. With many more jobs to be created in the mining of critical minerals and, with around 40% of coal workers living in proximity to areas where critical mineral deposits are located, opportunities to directly transfer their mining and transport skills plainly exist.

Technology. In the power sector there are clean alternatives to unabated coal-fired generation, e.g., solar PV and wind, other renewables, nuclear, CCUS, low-carbon hydrogen and ammonia. However, this is not the case in some key industrial applications such as steel and cement, where clean alternatives are not yet readily available. While some short-term measures may be applied, the development and commercial deployment of innovative new clean energy technologies will be essential over the next decade. Particularly for industry, 'innovation' is the watchword. CCUS has the potential to play an important role in both power and industry, with almost 90% of coal used in the IEA's NZE Scenario in 2050 consumed in plants equipped with CCUS.

The IEA estimates that more than half of the emissions reductions sought will depend on technologies currently at the prototype or demonstration phase. While advanced economies are at the forefront of development, the emerging economies are at the forefront of deployment.

Finance. The international financing of new coal plants must, slowly but surely, be halted. Existing coal plants may be repurposed to run less, retired early, or retrofitted with co-firing or carbon capture technologies. As mining productivity improves and countries implement their net zero emissions pledges, the IEA has estimated that the early retirement of coal-related employees would cost in the region of $10-$30 billion.

It is estimated that around $1 trillion of capital remains to be recovered from today's coal plants, predominantly in emerging markets and developing economies. This represents a powerful constituency that is resistant to change. With the age of coal assets in Asia averaging 15 years and steel assets 16 years, these are young plants that potentially have many years of profitable operation ahead of them. Innovative financial solutions will be needed for change to be achieved.

With many solutions currently under discussion, international financial institutions (IFIs) and multilateral development banks (MDBs) will have an important role to play. International assistance together with a domestic commitment to change will be vital in this endeavour. Dr Birol said that IFIs and the MDBs were under an important moral and economic obligation to provide international funding to support emerging economies in reducing the negative impacts of cutting their coal consumption. The IEA estimates that between now and 2030, $150 billion of international financing would be needed for economies to transition from coal in a secure and affordable way.

Finally, the IEA welcomed the new **Just Energy Transition Partnership** (or JETP) that Indonesia and a group of leading economies launched at the G20 Leaders' Summit in Bali. The JETP, a ground-breaking deal that secured $20 billion of funding from the United States, Japan and others, was recognised as an important step forward for international cooperation on financing clean energy transitions in emerging economies. In helping Indonesia accelerate its transition from coal to clean electricity, it marks an important development that targets an ambitious and equitable power sector transition in Indonesia, underpinned by the IEA's recent report, Energy Sector Roadmap to Net Zero Emissions in Indonesia. With Indonesia just

the second country to receive a JETP after South Africa in 2021, Vietnam and India are likely to follow hot on their heels.

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