Venice Climate Conference

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Momentum towards net-zero has increased significantly over the last couple of years, today 70% of global CO2 emissions are covered by net-zero targets, with net-zero pledges covering almost all advanced economies. In light of the increasing levels of ambition, and following an official request by the COP26 Presidency, the IEA released in May this year a new special report, providing the first comprehensive energy-sector pathway towards global net-zero emissions by 2050. The report aims to help translate net-zero ambitions into action by providing some clarity on what is actually needed from the energy sector to reach the goal of global net-zero by 2050, and in doing so achieve the Paris Agreement objective to limit warming to 1.5°C.

The key finding of our analysis is that the pathway to reach net-zero by 2050 is narrow but still achievable. This decade must be the decade of action.

The global energy sector accounts for three-quarters of global greenhouse gas emissions today, these emissions need to fall by one-third by 2030 to remain on track for net-zero by 2050. We looked at what is needed at a sector by sector level to achieve these reductions.

The good news is that all the technologies that are required to achieve the reduction cuts for this decade are available and market ready today. Further, we know which policies work to push those technologies in the markets. What are we talking about to be more concrete?

1. **Decarbonise electricity generation:** We are talking about first and foremost the massive deployment of renewables in the electricity sector, bringing emissions from electricity production to net-zero. Today globally solar and wind, are the cheapest forms of producing electricity in the planet, this was not the case 5 years ago. Last year 90% of new electricity generation capacity installed globally was renewables, so we are getting there, we are getting towards the levels of investments needed, and the economics to further move the market, further moving investments towards the greener alternatives.
2. **Electrify as much as possible**: Once we push the decarbonisation of the electricity sector, we have a very clean energy vector that can be used in many applications. For example, cars, if we look at what is happened in the automotive industry, it's astonishing, over the past two years basically all of the major car manufacturers have put forward electric vehicles strategies and are bringing more and more electric models to market. We are tracking electric car sales, and looking at Q1 of this year, over 10% of cars sold in Europe were electric, and 6% globally, compared to just 1% a couple of years ago. So we are really in the cusp of a technology revolution in this space, and in some cases what's happening is that the clean energy technology is already cheaper than the alternative.
3. **Energy efficiency**: efficiency improvements are needed across the energy sector and I would push forward here energy efficiency in buildings in advanced economies, stressing again we have the technology. Further, action on efficiency has multiple benefits beyond reducing demand and CO2 emissions, we could use workers that have been laid off to rebuild and improve the efficiency of our built environment, reducing bills of consumers and improving health outcomes.

So how much money is needed to make this transition, and where will it come from?

The IEA's Executive Director, Dr Fatih Birol, mentioned this at the Biden summit at the begining of the year, we need to triple clean energy investment compared to today's level; currently around $1.2

trillion is going to clean energy investment globally, and it would need to reach above $4 trillion by 2030.

Clearly this has to come from a variety of sources, we cannot expect the public sector to cover all of the investment needs, private sector money needs to flow very strongly. But as I said earlier we see patterns of projects, especially renewables, being ready to be deployed and being very attractive for private sector investment. It's about ensuring the cost of capital is low, and it's about governance, putting the right energy policy in place that offers stability to private sector investors and reduces risk.

The IEA conducted a major review of capital costs for various energy projections, highlighting that we are living in an incredible period in advanced economies with very low costs of capital today, this is great news for clean energy, low capital costs will push and accelerate even further the clean energy transition. However, this is far from true in emerging economies, there has to be a concerted effort to make sure the cost of capital for green cleaner energy technologies is brought down in emerging economies. We are going to live over the next decade a transition of the global economy where we shift from energy to capital, and we need to make sure that this capital cost is brought down to ensure we see this shift. So I would say that focussing on lowering the capital costs is going to be really the key to unlock the private capital that we need to reach the trillions of dollars of investment needed.

A final point on investments, investing in clean energy brings many benefits beyond CO2 emissions reduction. In our analysis conducted in partnership with the International Monetary Fund, tripling clean energy investments adds an extra 0.4 percentage point a year to annual global GDP growth, the equivalent of adding another Japan to the global economy by 2030.

How can we ensure that energy transitions are just transitions for all concerned? There are three elements to be considered:

- **Investment:** The clean energy financing gap that needs to be filled to put us on a path to net-zero is much larger in energy economies that in advanced economies. This has to be front and centre of attention and analysis done together with the World Bank less than a month ago said that this could be the critical fault line in achieving our climate goals. So we need to support emerging countries to make the necessary investments, in our view the $100 billion that has been put forward by advanced economies has to be seen as the floor, but clearly we need to work in coordination to make sure that the cost of capital for this transition, for the green alternatives, is lower.
- **Jobs:** in analysis done together with the International Monetary Fund, we see a potential pipeline of 30 million new jobs globally in the clean energy sector on the pathway to net-zero over the coming decade. This is huge, big news for the energy sector, but what we are worried about is the 5million potential job losses in two key sectors, mostly coal, and we are worried about those communities, those countries, those regions, that are reliant on these revenues. These concerns are at the forefront of the work of the Global Commission on People-Centred Clean Energy Transitions that we have instituted with the Prime Minister of Denmark, Her Excellency Mette Frederiksen. Just transitions require that we talk with the countries and with the communities concerned and that we make sure that there are measures already in place to ensure there is a just transition there.
- **Advanced economies to lead the way:** a just transition requires advanced economies to lead the way to net-zero. They need to get to net-zero earlier than emerging economies to make a credible plan, demonstrate that it is possible and make the technology available earlier to then be transferred to emerging economies.
- **Electricity access**: we are talking about going to net zero emissions but we shouldn't forget that there are 850 million people today without access to electricity. Not only do they not have access to even the most basic services, this also means no access to digital tools and knowledge, this absolutely has to be part of the COP discussions this year to ensure equitable and fair transitions.