

The role of new technologies for a more competitive and productive world energy mix

AMER8 Meeting

- Excellencies, dear colleagues, I am pleased to be here today with you to talk about an issue that is perhaps humanity's greatest challenge, and to speak with you about what the energy sector can do to put the world on a more sustainable trajectory.
- I want to focus my remarks on setting out where we are today? And what technologies we think are the most promising.
- In my opinion, as I mentioned yesterday at the plenary, there is growing disconnect between climate ambitions and real-world trends. In 2018, energy growth was its highest since the beginning of the decade and such growth is still fundamentally met by fossil fuels. As a result, energy-related climate emissions reached a new historic high in 2018, at over 33 billion tonnes.
- At the International Energy Agency, we track 45 critical energy technologies across the end use sectors and power generation, and assess how we can put them "on track" with Paris compliance. In our latest assessment, we found that just 7 of the 45 are on the right track, with the remainder either requiring more efforts, or not on track at all.
- Let me put it in another way. The share of fossil fuels in the global energy mix is exactly the same today as it was 30 years ago. If we want to reduce emissions while at the same time allowing countries to pursue their rightful ambitions to develop and grow their economies, then affordable and reliable alternatives are going to need to be needed.
- We at the IEA believe that fossil fuels will be fundamental in all scenarios going forward. But if we want to make sure that our fossil fuel use does not make our climate ambitions unreachable, then one technology that needs to see much wider adoption is **CCUS**.
- This is a critical technology, but so far there are only a few projects across the world. One interesting example is the Al-Reyadah plant here in Abu Dhabi, which captures 800,000 tonnes of CO₂ from the steel plant and uses it for enhanced oil recovery at the ADNOC fields. This not only reduced the carbon footprint of the steel production, but frees up natural gas that would otherwise have been used for oil recovery.
- Al Reyadah is promising and shows one way that CCUS can help meet multiple objectives at once. But as a technology viewed on a global scale, I am sorry to say that there is under-investment in CCUS, and this is deeply concerning to me. We know that we face an unprecedented challenge in meeting climate goals. Without CCUS, this challenge will be infinitely greater. We also know that this is essentially a policy question.

- Another issue I wanted to highlight was the potential for **hydrogen** in the future energy mix. Why are we hearing so much about this in the news and even the business community? The answer is that hydrogen, unlike many other alternative fuels, has the potential to decarbonize a range of “hard to abate” sectors including long-haul transport, chemicals, and iron and steel. This versatility is its key strength, and the good news is that the technologies needed to produce, store, move and use hydrogen in different ways already exists.
- We were asked by the Government of Japan, as part of its G20 Presidency, to identify the near-term opportunities to scale up hydrogen use:
 1. Make industrial ports the nerve centres for scaling up the use of clean hydrogen.
 2. Build on existing infrastructure, such as millions of kilometres of natural gas pipelines.
 3. Expand hydrogen in transport through fleets, freight and corridors.
 4. Launch the hydrogen trade’s first international shipping routes.
- The last issue I would like to highlight is that of **storage**: we have seen an extraordinary growth of renewables like wind and solar. But as the share of intermittent renewables grows and peak demand increases due to more EVs and cooling penetration, we will need to make flexibility the cornerstone of future power systems. Among the several options, battery storage is set to increase the most. Costs are declining (thanks to learning in other applications, such as EVs) and are set continue to decline further, providing a competitive edge to a technology that can ensure electricity supply security while supporting the economic case for variable renewables.
- Government policies will have an important role to play in driving the innovation we need for the transition. IEA governments spent close to \$19 billion last year on research, development and demonstration, with the increase mostly driven by higher budgets allocated to low-carbon energy technologies. This is promising, but the path towards Paris-compliance will require a greater emphasis on this.
- Excellencies, ladies and gentlemen. In closing, allow me to reiterate that providing clean and reliable energy to all requires a giant leap in innovation. It's time to harness humanity's innovative genius to ensure a sustainable future for generations to come