World Energy Transitions – 1.5C Pathway

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The world knows what is needed for energy transition

- Phase out coal power rapidly
- Accelerate deployment of renewable power significantly
- Enhance the flexibility of power systems to enable higher solar and wind shares
- Electrify transport & heating
- Use clean hydrogen where direct electrification is not possible
- Deploy bioenergy
- Apply CCS for remaining emissions including CDR/BECCS
- Use energy wisely and efficiently

*There is a general agreement on these principles amongst experts*
Net zero emissions by mid-century

- **Planned Energy Scenario:** Baseline emissions continue to rise, while the policies of governments result in flatlining of emissions.

- **1.5C Scenario:** Global CO2 emissions need to drop to net zero by 2050.

- **2020-2030 must be the decade of action:** Steepest decline necessary over the next 10 years.
Renewables, efficiency and electrification dominate energy transition

90% of all decarbonisation in 2050 will involve renewable energy through direct supply of low-cost power, efficiency, electrification, bioenergy with CCS and green hydrogen.

• 90% of total electricity needs will be supplied by renewables by 2050
• Direct-use of electricity makes up over half of final energy consumption
• Hydrogen provides 12% of final energy consumption (renewable share in hydrogen: 66%)
By 2030, coal generation would halve and eventually would be phased out by 2050.

Global renewables capacity additions need to increase four-fold this decade.

The share of renewables would grow to 90% in 2050 from 25% in 2018.

VRE like wind and solar would grow to 63% of all generation in 2050, compared to 10% in 2018.

Such power systems will require increased flexibility.
Thanks for your attention!