Delivering on the clean energy agenda: prospects and the role for policy

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Climate pledges shift the energy sector

- One-quarter of the world’s energy supply is low carbon in 2030; energy intensity improves three-times faster than the last decade.

- Renewables reach nearly 60% of new capacity additions in the power sector; two-thirds of additions are in China, EU, US & India.

- Natural gas is the only fossil-fuel that increases its share of the global energy mix.

- Total coal demand in the US, Europe & Japan contracts by 45%, while the growth in India’s coal use slows by one-quarter.

- Climate pledges for COP21 are the right first step towards meeting the climate goal.
Demand and emissions growth decouple in the power sector

Growth in world electricity demand and related CO₂ emissions since 1990 (left) and related CO₂ emissions by region (right)

Power sector emissions stay broadly flat as the share of low-carbon generation grows to almost 45% in 2030, while electricity demand rises by more than 40%
Electricity demand triples, with shift towards coal set to continue

Power capacity expands by 400 GW, equal to current size of Japan and Korea power systems, with increasingly deployment of more efficient coal-fired plants
Growth shifting to emerging markets and developing countries

As the OECD slows, non-OECD countries account for two-thirds of renewable growth, driven by fast-growing power demand, diversification needs and local pollution concerns.
Peak in emissions: IEA strategy to raise climate ambition

Global energy-related GHG emissions

Savings by measure, 2030

Five measures – shown in a “Bridge Scenario” – achieve a peak in emissions around 2020, using only proven technologies & without harming economic growth
Since 1990, energy efficiency improvements in IEA countries avoided 10.2 billion tonnes of CO$_2$ emissions.

These emissions savings equal almost one year’s worth of energy-related emissions in IEA countries, helping to make 2 degrees achievable.
Lock in the vision: What more does it take for 2 °C?

An emissions goal would give greater clarity & certainty to the energy sector, strengthening the case for RD&D investment & technology transfer.
Evidence of lower costs on the horizon

Recent announced long-term contract prices for new renewable power

A combination of price competition, long-term contracts, good resources and financial de-risking measures is creating deployment opportunities in newer markets and at lower costs.
Renewable growth can be accelerated back on track to meet climate goals

Renewable energy can be brought back rising annual installation growth, through enhanced domestic policies, e.g. grid integration of variable renewables
Conclusions

- Pledges are not yet enough to achieve our climate goal, but are a basis from which to build ambition.

- Companies that do not anticipate stronger energy & climate policies risk being at a competitive disadvantage.

- For COP21, the IEA proposes four key energy sector outcomes:
  1. Target a near-term **peak in emissions**
  2. **Five-year revision**, to test the scope for raising ambition
  3. **Lock in the vision** by setting a long-term emissions goal
  4. **Track the transition** in the energy sector

- Climate change will lead the agenda at the IEA’s Ministerial meeting on 17-18 November 2015.