Tapping technology’s potential to secure a clean energy future

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ETP 2012 – Choice of 3 Futures

2DS
A vision of a sustainable energy system of reduced Greenhouse Gas (GHG) and CO₂ emissions
The 2°C Scenario

4DS
Reflecting pledges by countries to cut emissions and boost energy efficiency
The 4°C Scenario

6DS
Where the world is now heading with potentially devastating results
The 6°C Scenario
Clean energy: slow lane to fast track

Progress is too slow in almost all technology areas

Significant action is required to get back on track
Renewable power generation

42% Average annual growth in Solar PV

75% Cost reductions in Solar PV in just three years in some countries

27% Average annual growth in wind

Renewables provide good news
Hydropower remains the main renewable power source, but Non-hydro renewable sources are growing at fast rates
Renewables, covering today already more than 60% of electricity generation, could reach a share of almost three quarters by 2050 in the 2DS.
Key measures to maintain momentum....

- Maintain Supportive Policies Whilst Managing Policy Costs
- Redesign and adapt markets: e.g. subsidy removal, carbon pricing
- Continue R,D & D for Key Technologies: e.g. Offshore Wind, Enhanced Geothermal, Ocean Energy
- Enable Integration: e.g. power system flexibility for integration of variable RE;
- Expand RE Market to More Countries: e.g. many countries enacted policies but deployment yet to occur

Leaders in OECD and BRICS

New Markets
A smart, sustainable energy system

A sustainable energy system is a smarter, more unified and integrated energy system.
Smart grid benefits exceed costs by a factor of between 1.5 and 4.5.

..., but direct benefits of investment in one sector may be found in other sectors.
Decarbonising electricity generation in Canada

- Promoting renewables
  - Renewable electricity targets and support policies in place in several provinces, e.g. FITs in Ontario

- Reducing the carbon intensity of thermal plants
  - Phase-out of coal in Ontario by 2014
  - Legislation underway to introduce performance standards for coal-fired generation after 2015
Unconventional gas rises in importance

The share of unconventional gas of total gas supply continues to increase in both 4DS and 2DS.
Two very different profiles for power generation

- Power generation from natural gas increases to 2030 in the 2DS and the 4DS.
- From 2030 to 2050, generation differs markedly.

Natural gas-fired power generation must decrease after 2030 to meet the CO₂ emissions projected in the 2DS scenario.
More than 90% of new light duty vehicles need to be propelled by an electric motor in 2050.
Every additional dollar invested in clean energy can generate 3 dollars in return.
Recommendations to Governments

1. Create an investment climate of confidence in clean energy

2. Unlock the incredible potential of energy efficiency – “the hidden” fuel of the future

3. Accelerate innovation and public research, development and demonstration (RD&D)
Explore the data behind ETP

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