Energy Technology Perspectives 2012
Pathways to a Clean Energy System

Tapping technology’s potential to secure a clean energy future

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Presentation to Press June 11 2012
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
Sustainable future still in reach

Are we on track to reach a clean energy future?

NO ×

Can we get on track?

YES ✓

Is a clean energy transition urgent?

YES ✓
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)
A smart, sustainable energy system is a smarter, more unified and integrated energy system.
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
Low-carbon electricity: a clean core

Renewables will generate more than half the world’s electricity in the 2DS
Around 2030, natural gas becomes ‘high carbon’
The CCS infant must grow quickly
Industry must become more efficient

**Significant potential for enhanced energy efficiency can be achieved through best available technologies.**
Electric vehicles need to come of age

More than 90% of light duty vehicles need to be propelled by an electric motor in 2050
Translating targets into action

Government targets need to be backed by policy action

Manufacturers' production/sales

Projection (Estimated from each country's target)

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About 70% of buildings’ potential energy savings between the 4DS and 2DS are in the residential sector.
Building sector challenges differ

75% of current buildings in OECD will still be standing in 2050
Heating and cooling account for 46% of global energy use. Their huge potential for cutting CO₂ emissions is often neglected.
Emissions must be eliminated by 2075

A zero-carbon future looks possible but will be very challenging, even if 2050 targets are met in the 2DS.
Clean energy investment pays off

Every additional dollar invested in clean energy can generate 3 dollars in return.
Explore the data behind ETP

www.iea.org/etp