Energy Technology Perspectives: Collaboration on Energy Systems Transition

Gaps and Strategic Opportunities in International Collaboration on Low-Carbon Energy Technologies Workshop

27 February, 2014

International Energy Agency

IEA's programme of work in energy technology

ETP 2014

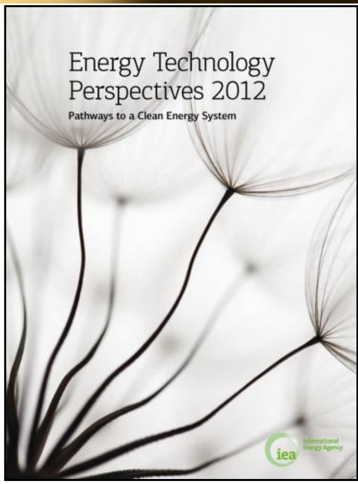
- Where do we need to go?
- Where are we today?
- How do we get there?

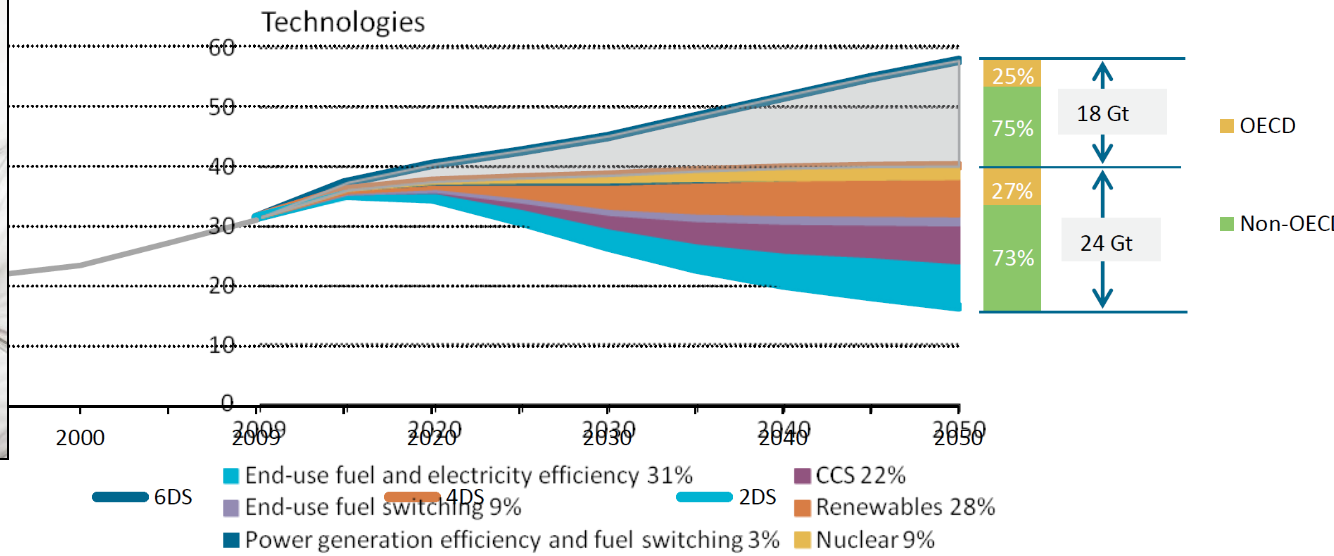
INTERNATIONAL LOW-CARBON ENERGY TECHNOLOGY PLATFORM

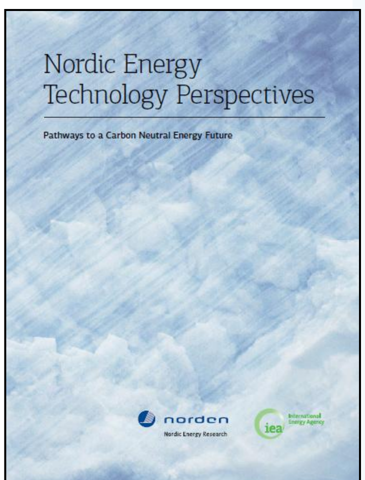
International Energy Agency

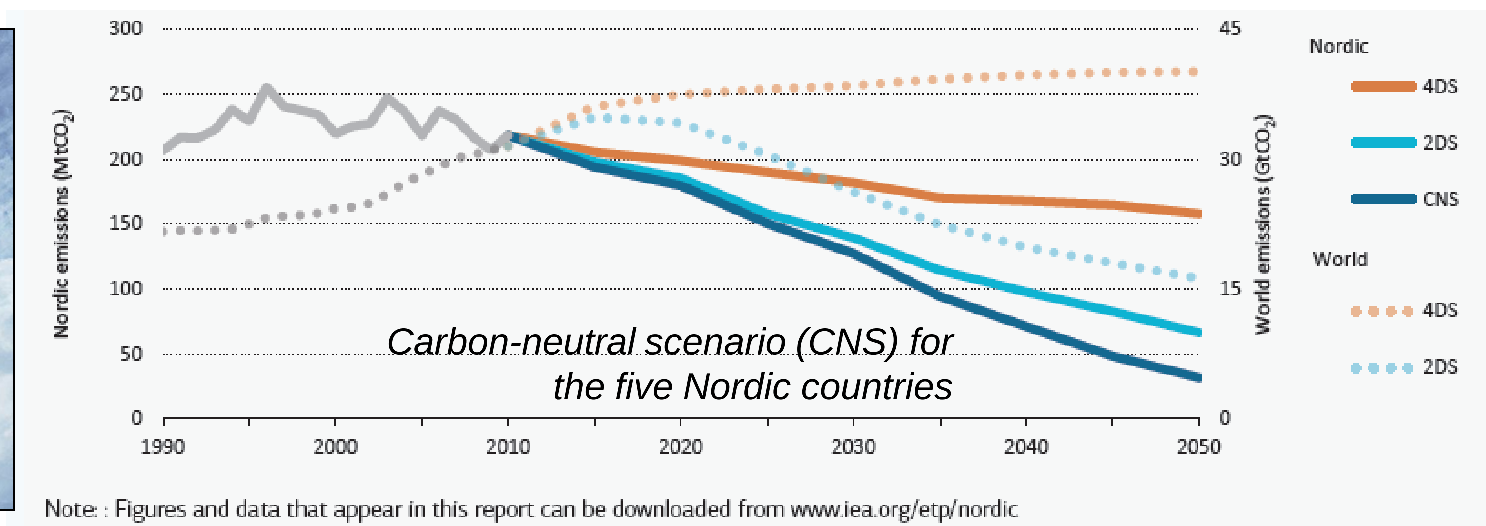
Energy Technology Perspectives (ETP)

ETP 2014





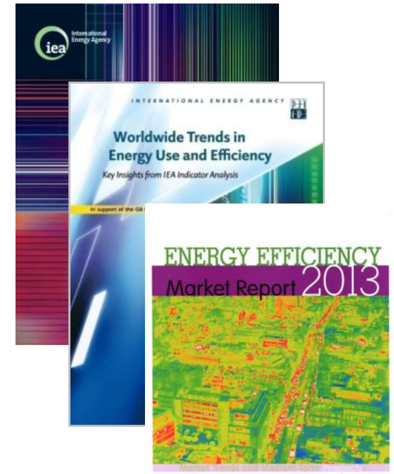




Understanding where we are

ETP 2014

- IEA work on energy indicators
  - Energy Efficiency Indicators
    - Long history in the IEA
    - Recent push for better data
      - ID investment opportunities
  - Energy Technology and R&D indicators
    - Analysing Development and Deployment of Clean Energy Technologies
    - Emerging work stream
      - Defining solid and insightful indicators
      - Developing novel data sources

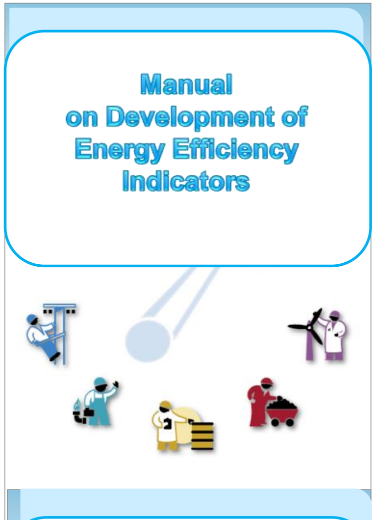


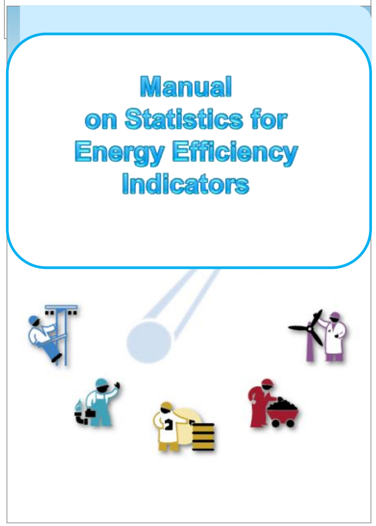
Two Complementary EE Indicators manuals being developed in parallel

- Development of indicators: to provide guidance and methodological tools to develop energy and energy efficiency indicators

- Statistics for indicators: to provide guidance on how to collect the data needed for those indicators
  - Includes a compilation of good and best existing practices from across the world

- Available from March 2014





Tracking Clean Energy Progress

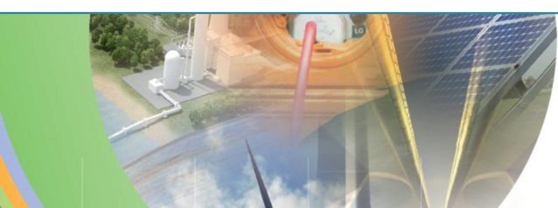
- Renewable power
- Nuclear power
- Gas-fired power
- Coal-fired power
- Carbon capture and storage
- Industry
- Electric and hybrid-electric vehicles
- Biofuels
- Fuel economy
- Buildings
- Smart grids

IEA Technology Roadmaps

Mapping where we need to go …

2009 **2010** **2011** **2012** **2013**

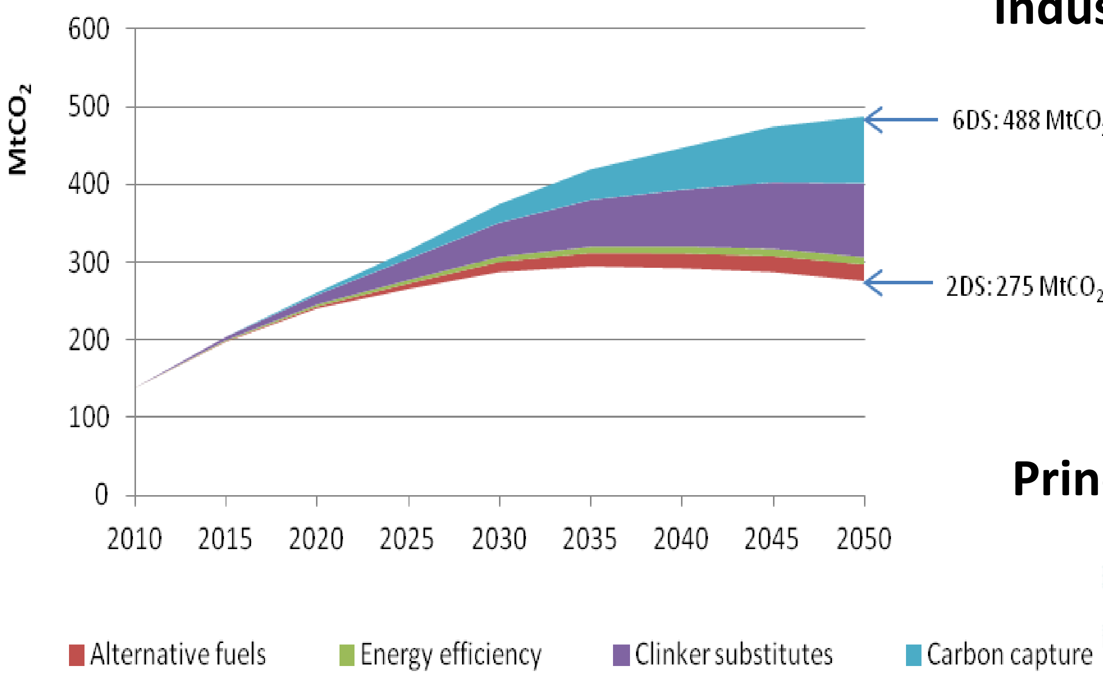
2014
- **Energy Storage**
- **Hydrogen**



... By building consensus among all stakeholders

- Goal to achieve
- Milestones to be met
- Gaps to be filled
- Actions to overcome gaps and barriers
- What and when things need to be achieved

India Cement Roadmap:
Regional Vision Implementation



Technology Roadmap partners

In consultation with

Industry supporters

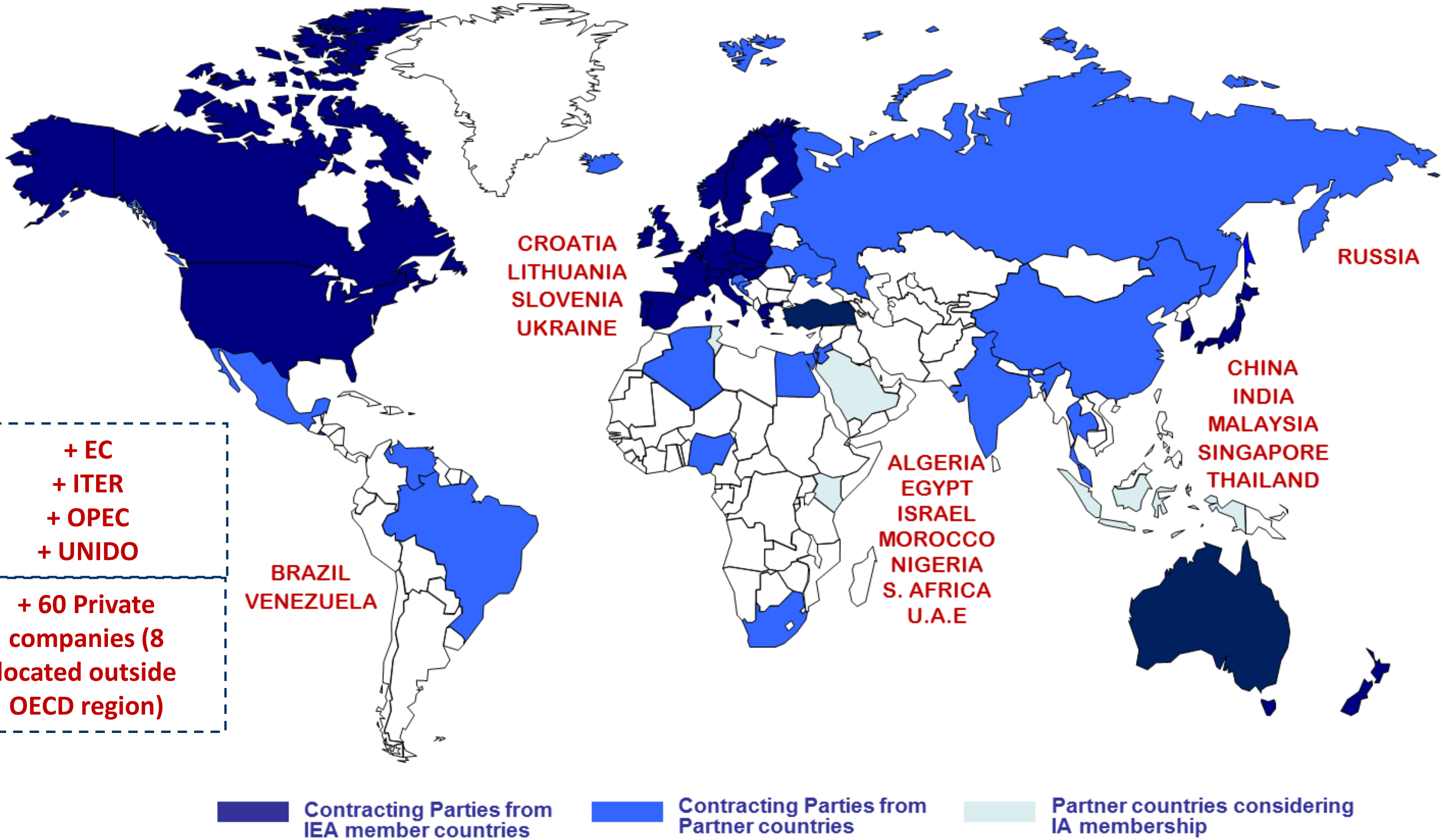
Principal supporter

International Low-Carbon Energy Technology Platform

INTERNATIONAL LOW-CARBON ENERGY TECHNOLOGY PLATFORM

- Created in 2010 by the G8 and IEA Ministers
- **IEA key tool for multilateral engagement with emerging and developing countries**
- Entirely VC-funded
- Two main streams of work:
  - Dialogue workshops: sharing international best practice for deployment of low-carbon technologies
  - How2Guides: series of manuals for development of technology roadmaps at the national level

IEA Energy Technology Network



+ EC
+ ITER
+ OPEC
+ UNIDO

+ 60 Private companies (8 located outside OECD region)

More than 1,300 research projects to date

Linking public and private – IEA Members and Partners

6,000 scientists and experts

Nearly 500 government agencies, research organisations, universities, energy companies, consultants

Energy Technology Data Source of ETSAP implementing agreement

- Consistent data set for more than 50 energy supply and demand technologies
- Free access on www.iea-etsap.org

ETSAP ENERGY TECHNOLOGY SYSTEMS ANALYSIS PROGRAM

Home | Tools | Documentation | Applications | Technology | Workshops | Members & Partners | About Us | Forum

E-TechDS – Energy Technology Data Source

GianCarlo Tosato
E-TechDS
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E-TechDS
Coordinator

MARKAL-TIMES models usually represent the entire energy system (i.e. demand and supply side) of a nation or region and need a huge amount of data on energy technologies to run (e.g. energy efficiency, lifetime, GHG emissions, investment and operation costs). Because MARKAL-TIMES models analyze and project the evolution of the energy system over time, data projections are also needed for each technology that is represented in the model.

ETSAP E-TechDS is an Energy Technology Data Source that offers consistent sets of data on energy demand and supply technologies to help analysts to build their own MARKAL-TIMES model. To put data in the right context, E-TechDS is conceived as a series of **Technology Briefs**, which provide basic information on process, status, performance, costs, potential and barriers for key energy technology clusters. Each brief consists of typically 5 to 10 pages including Highlights, full text and charts, and a summary data table.

The ETSAP Briefs are intended to offer essential, reliable and quantitative information to energy analysts, experts, policymakers, investors and media from both developed and developing countries.

Since September 2011, ETASP E-TechDS is working in cooperation with the **International Renewable Energy Agency (IRENA)** to develop and update Briefs on renewable energy technologies.

ETSAP ENERGY TECHNOLOGY SYSTEM ANALYSIS PROGRAMME | IRENA International Renewable Energy Agency
IEA-ETSAP and IRENA © Technology Policy Briefs - www.etsap.org - www.irena.org

Are you an Energy Technology expert?

You can contribute to the ETSAP E-TechDS project by:

- Reviewing/updating briefs
- Drafting new briefs
- Joining as a sponsor

Contact: ETechBriefs@iea-etsap.org

Contributions will be highly appreciated, and acknowledged with a free access to all briefs

Click for : Sample brief | Energy Supply Technologies | Energy Demand Technologies |

Contributing Organisations:

AEA | ECN | ENEA | International Energy Agency | IEA | OES Ocean Energy Systems | IFE | IRENA | IER - Institute of Energy Economics and the Rational Use of Energy | KANE CRES | vito vision on technology

International Energy Agency

ETP 3-years Publication Programme

ETP 2014

ETP 2014	ETP 2015	ETP 2016
Part 1. Setting the Scene		
Global Outlook, Tracking Clean Energy Progress		
Part 2. Driving the Change (Thematic Focus) *		
The age of electrification	Energy Technology and Innovation impacts on Climate change mitigation	Urban Energy Systems
Partner Country		
India	China	Mexico

* Each year included topics are: Low-carbon Generation, Fossil Fuels, Energy Demand, System Integration, and Policy and Finance

International Energy Agency

What is ETP?

ETP 2014

It's not just a book!

Analysis and modelling framework

International Energy Agency