

Report

Workshop of the IEA Transport Related Implementing Agreements

IEA Headquarters, Paris, 27-28 March 2008

IEA IA Advanced Materials for Transportation Applications
Executive Committee Meeting

at

BAM Federal Institute for Materials Research and Testing, Berlin,
Germany

June 26 and 27, 2008

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IEA

IEA - International Energy Agency
Established 1974
Agency under the

OECD

Governments of countries committed to democracy and the market economy from around the world.

Fast facts

Established: 1961

Location: Paris, France

Membership: 30 countries

Budget: EUR 342.9 million (2008)

Secretariat staff: 2 500

Secretary-General: [Angel Gurría](#)

Official languages: English/French

NEA - Nuclear Energy Agency
Established 1958
Now under OECD

United Nations

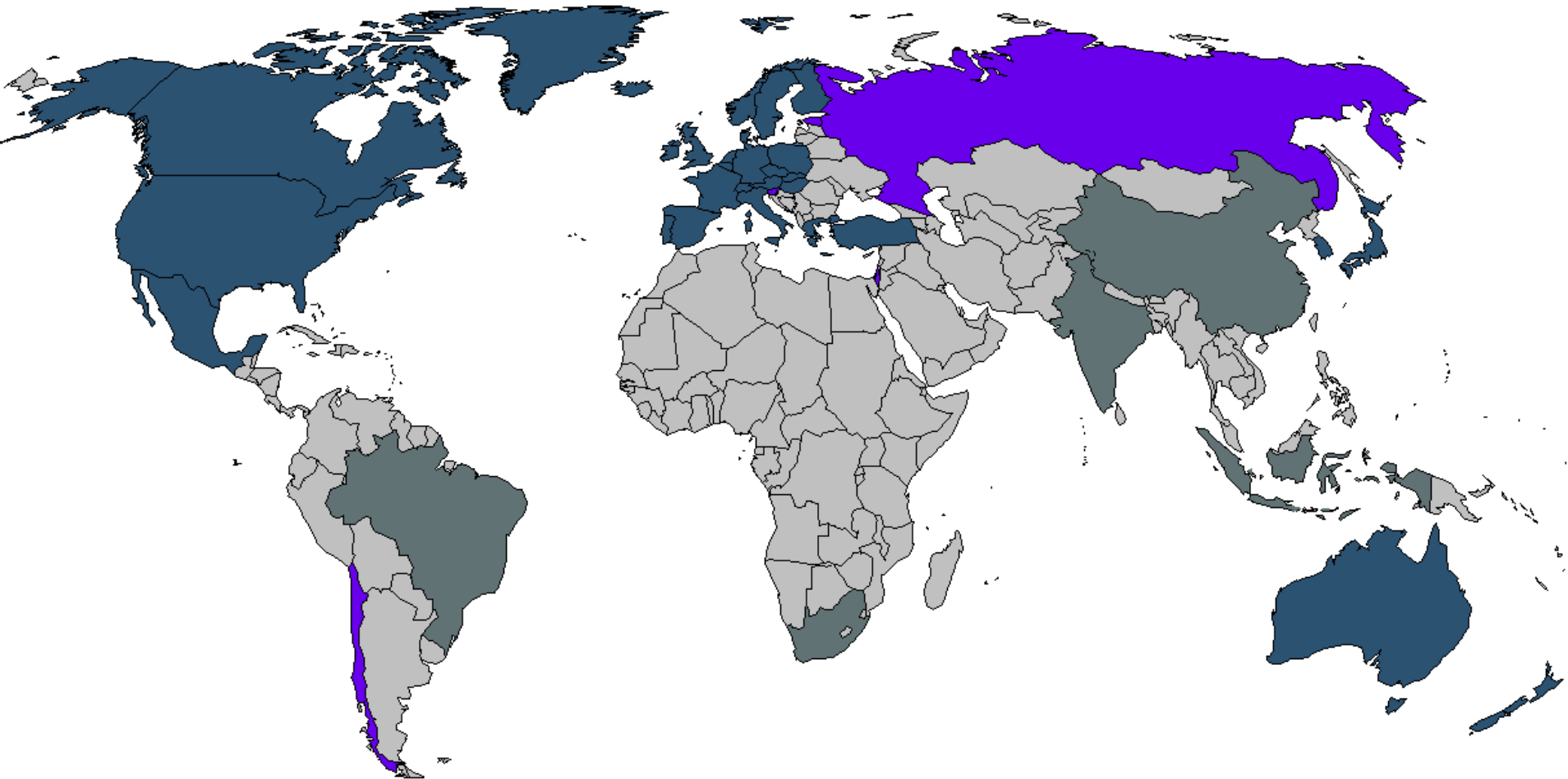
Established in 1945


Located in New York, USA

192 member countries

IAEA – International Atomic Energy Agency
Established

Global partners



 OECD member countries

 Countries invited to open talks on potential membership

 Countries to which OECD is offering enhanced engagement

OECD

30 member countries

AUSTRALIA	KOREA
AUSTRIA	LUXEMBOURG
BELGIUM	MEXICO
CANADA	NETHERLANDS
CZECH REPUBLIC	NEW ZEALAND
DENMARK	NORWAY
FINLAND	POLAND
FRANCE	PORTUGAL
GERMANY	SLOVAK REPUBLIC
GREECE	SPAIN
HUNGARY	SWEDEN
ICELAND	SWITZERLAND
IRELAND	TURKEY
ITALY	UNITED KINGDOM
JAPAN	UNITED STATES

- Countries invited to membership talks

CHILE
ESTONIA
ISRAEL
RUSSIA
SLOVENIA

- Enhanced engagement

BRAZIL
CHINA
INDIA
INDONESIA
SOUTH AFRICA

Organisation

- OECD is established by the Governments of its Member countries
- Council of OECD following the Convention of the OECD
- IEA autonomous body within OECD

IEA – Policy advisor

- IEA acts as energy policy advisor for the governments of its 30 member countries and beyond
- Major strategic elements of the IEA portfolio are
 - Energy efficiency,
 - CO₂ -capture and storage,
 - Renewables and
 - Nuclear power (cf. NEA)

IEA – Organisation

- Governing Board (GB) of all participating countries
- GB establishes organs and procedures
- GB is assisted by Executive Director and staff (Executive Office)
- Executive Office
 - Nobuo Tanaka**, Executive Director
 - William C. Ramsay**, Deputy Executive Director
- Staff: approx. 150

IEA - Other Organs

- Management Board
- Secretariat
- Committees
- Offices
 - Executive Office
 - Oil Markets and Emergency Preparedness (OME)
 - Office of Global Energy Dialogue (OGED)
 - Energy Technology and R&D Office (ETO)
 - Long-Term Co-operation & Policy Analysis Office (LTO)

IEA Committees + Working Parties

Committee on Energy Research and Technology (CERT)

Energy Technology and R&D Office (ETO)

ETO helps oversee the international collaborative activities of the IEA energy technology network,
which includes 42 international collaborations known as

“Implementing Agreements” grouped in Working Parties

- Working Party on Fossil Fuels (FFWP)
- Fusion Power Coordinating Committee (FPCC)
- Working Party on Renewable Energy Technologies (REWP)
- Ad Hoc Group on Science and Energy Technologies (AHGSET)
- **Working Party on End-Use Technologies (EUWP)**

End-Use Working Party IA

- Electricity Network Implementing Agreements
- Industry Implementing Agreements
- Building Implementing Agreements
- **Transport Related Implementing Agreements**
 - Advanced Fuel Cells
 - Advanced Motor Fuels
 - **Advanced Materials for Transportation**
 - Hybrid And Electric Vehicles
- Non End-Use Working Party transport related Implementing agreements
 - *Bioenergy*
 - *Hydrogen*

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- introduce participants from implementing agreements
- give an update on ongoing work in the agreements
- discuss opportunities for future collaboration

Model for cooperation

- Establish a transport coordination group under the IEA End Use Working Party.
- Participants: Representatives from IAs, EUWP and Secretariat.

Major challenges influencing the IEA work

- Local pollution, problem in developing countries, natural gas
- GHG emission from transport is increasing
- Resource constraint, road transport depends up 97% on oil, oil price is rocketing
- Congestion
- In Europe all emissions except CO₂ are decreasing but World trends are going into the wrong direction.

Developments in vehicle technology

- Engine technology
- Fuel efficiency not very much improved
- Hybrid vehicles
- 150 trillion \$ to be spent on new cars until 2050

Busses – A model system for transportation

- Ulf Gustafsson,
Director, Energy, Volvo Buses
- Energy efficient transport by bus. A review of state-of-the-art technologies and future breakthroughs in efficiency.
- Major interest in H₂-solid storage

Hybrid and Electric Vehicles

- Urs Muntwyler, Chair, HEV IA
- Automobile technology to change more in the next 15 years than in the past 50 years / Madrisa project
- Need for sufficient supply of batteries (Li-Ion) range and supply is a major issue
- Application will be driven by consumer demand / requirement
- Exchange information with 3rd World countries to close the technology gap
- Ideas for IEA collaboration
 - Fuel consumption of vehicles from bicycle to vehicles, boats, planes, particular interest in busses
 - **Joint annex proposed: Travel (there is no such IA/Annex)**
(Are there other groupings who look at that?)

Advanced materials and improved engines

- Jürgen Lexow, BAM German Federal Institute for Materials Research and Testing, ExCo Member, AMT IA
- Light Weight Materials
- Surface Texturing
- Discussion
 - What are the IA's contacts to aerospace industry?
 - Corrosion of water containing biofuels in the pipes of the motor system

Advanced combustion systems

- Doug Greenhalgh, Heriot-Watt University, Chair, Combustion IA
- HCCI (Boosting and compression) will make gasoline and diesel engine more similar,
 - not a technological but cost issue
 - 5-10 years to approach the market
 - follow the same line, exhaust gas circulation will lead to optimization
 - Advance boosting: Turbines follow motor speed, bring booster to run more on optimum design condition
 - combination of supercharger and turbocharger
- Water will be allowed in the fuel, may even be advantageous, benefit for bio ethanol

Advanced Motor Fuels

- Nils-Olof Nylund, VTT, Vice Chair, AMF IA
- Fuel requirements
- Biodiesel is dominant only in Europe
- US renewable fuels standard – advanced fuel does not include fuel from corn
- Really strong growth in BTL up to 60 % of overall consumption
- Discussion and comparison on fuels should be done on prices without taxes

Action / Discussion

- International Advanced Mobility Forum Geneva Motor Show March 2009

<http://www.salon-auto.ch/en/>

- Experts are present during press days, but absent during public days
 - IEA-Booth during show
 - set up major side event,
 - organize a workshop presentation ,
 - 6 or 7 side events, 3-4 speakers on IA,
 - Urs Muntwyler: “That is contact with the real world”
Contact: Pierpaolo
- Similar for Paris motor show, October 2008
 - Main focus hybrid electric vehicles, Toyota and EDF, GM announced hybrid
 - Contact: Takao Onada

Action / Discussion (2)

- Are there high-priority areas in which to develop or expand international collaboration in transport technology research, development, demonstration and deployment both amongst IA's and between IA's and the IEA Secretariat?
- Budget for Internship (stagaire) available for project: Finding the data for a given country, energy demand in that country data for the IEA to feed the model with data
- ExCo-secretariats are invited to provide information to IEA-database
- Open to collaborative scenarios, available is cost characterization of “everything”

Action / Discussion (3)

- Establish a transport coordination group under the IEA End Use Working Party
- Ideas for IEA collaboration
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 - Joint annex proposed: **Travel**
There is no such IA/Annex, are there other groupings who look at that?