

2nd Implementing Agreement Day Belgium, 29 May 2012, Brussels

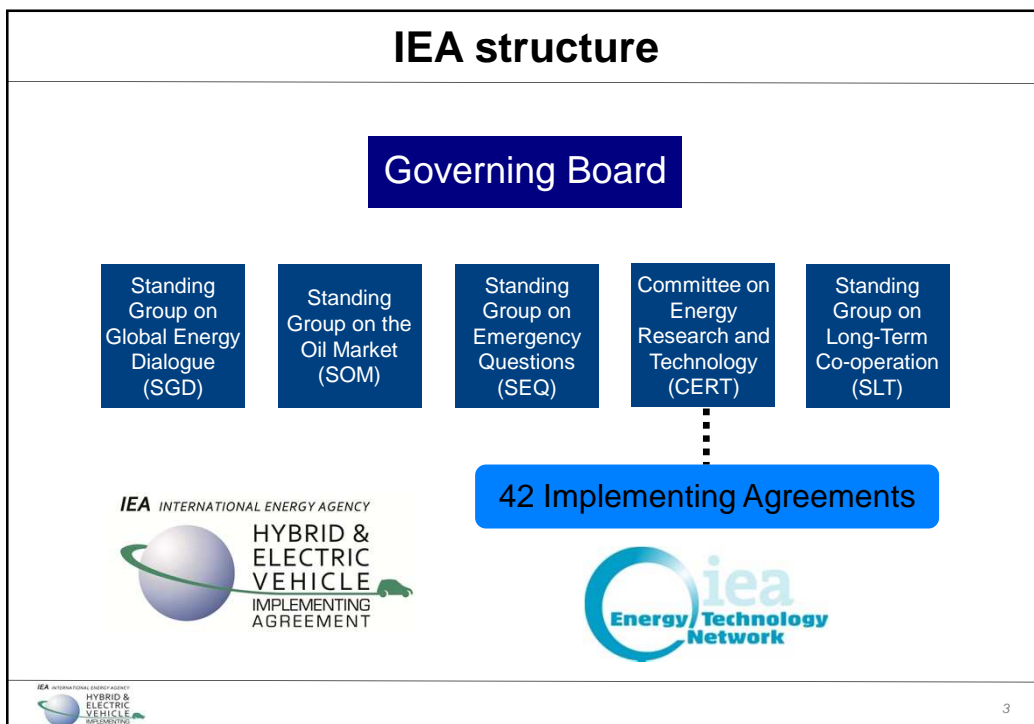


Carlo Mol

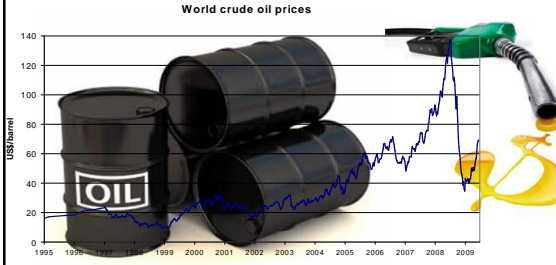


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- Introduction IA-HEV
 - Completed IA-HEV Tasks
 - Active IA-HEV Tasks



IA-HEV Introduction - Driving forces for electrification



World crude oil prices



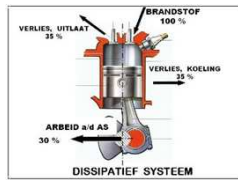
Economical : fuel cost reduction, energy efficiency, ...

Ecological : reduce global and local impact on the environment


Technical : performance, comfort, ...

Legislation : emission standards, ...

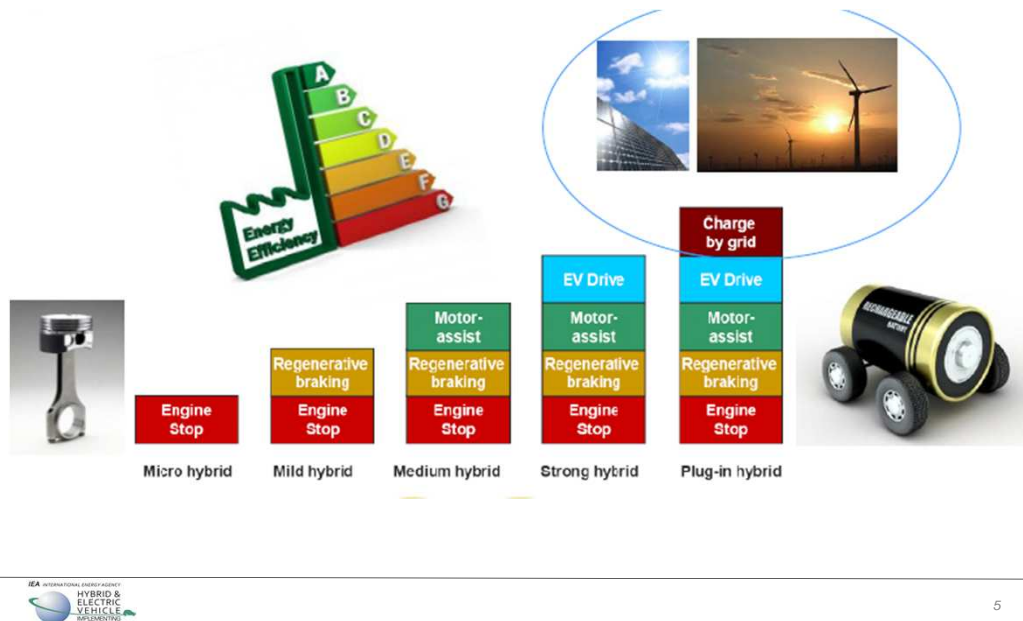
Government : oil independency, strategic energy plans (EU Renewable Energy Directive), ...



BRANDSTOF 100 %
VERLIES, UITLAAT 35 %
VERLIES, KOELING 25 %
ARBEID a/f AS 30 %
DISSIPATIEF SYSTEEM


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IA-HEV Introduction : From ICE to HEV, PHEV, EV,



IA-HEV strategic objectives (1)

- 1) Produce objective information -for policy and decision makers- on H&EV technology, projects and programmes, and their effects on energy efficiency and the environment
- 2) Disseminate this information to the IEA community, national governments, industries, and others

IA-HEV strategic objectives (2)

- 3) Collaborate on pre-competitive research projects, and investigate the need for further research in promising areas
- 4) Collaborate with transport related IAs, and with specific groups or committees
- 5) Be a platform for reliable information on hybrid and electric vehicles



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IA-HEV participation and organization

- Executive Committee

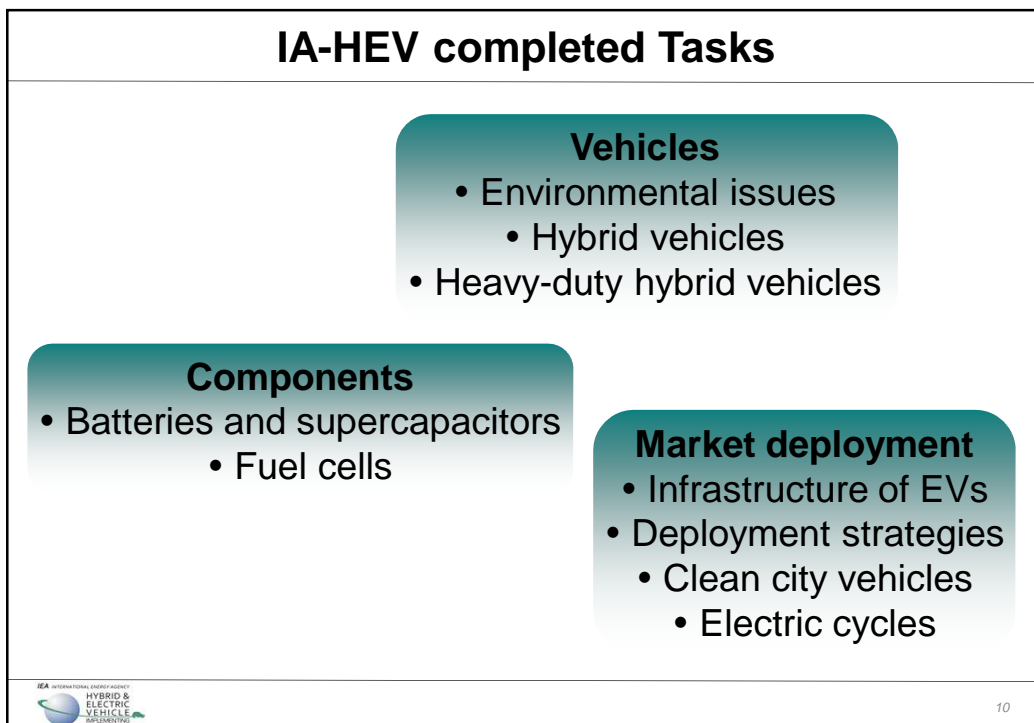
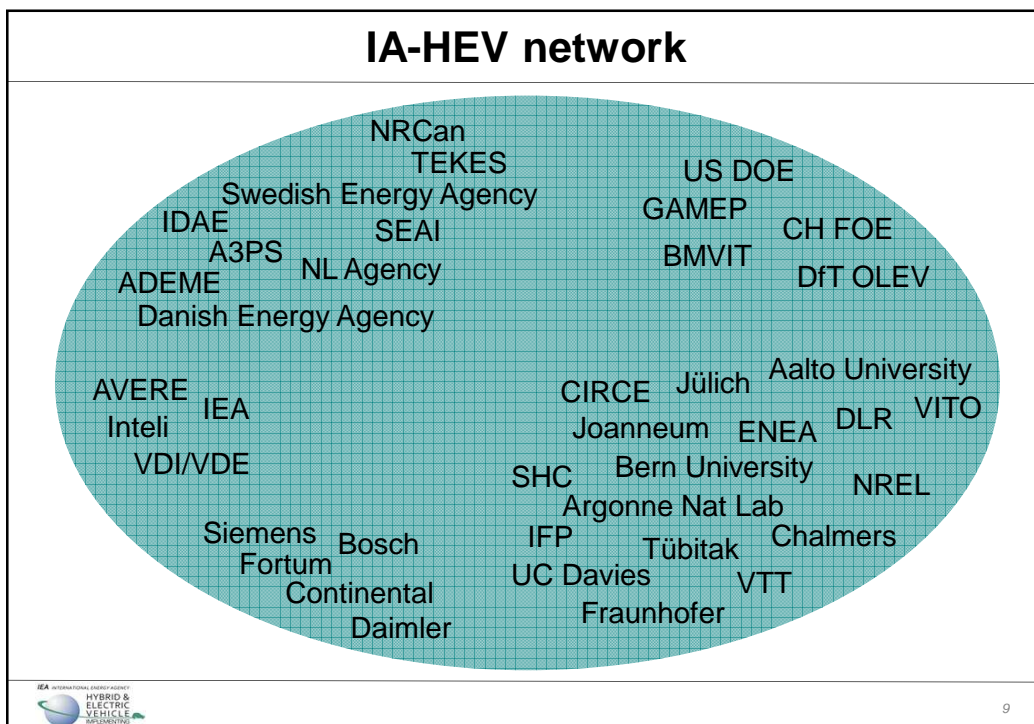
17 member countries:

 Austria	 Germany	 Sweden
 Belgium	 Ireland	 Switzerland
 Canada	 Italy	 Turkey
 Denmark	 Netherlands	 UK
 Finland	 Portugal	 USA
 France	 Spain	

- Task forces are lead by an Operating Agent (OA)



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IA-HEV - Task XII – Heavy-duty Hybrid Vehicles



IA-HEV - Task XII – Heavy-duty Hybrid Vehicles

Objective :

Report the current status of the heavy-duty hybrid vehicles “playing field”. Besides a general description of the current heavy-duty hybrid vehicle situation, the status report will also focus on emerging hybrid vehicle technologies and market trends.

Activities :

Collect and organize information on heavy-duty hybrid vehicles technologies and market potential
Share and disseminate knowledge in participating countries

Period : from 01/01/2007 until 30/11/2010

6 Participating countries : Belgium (VITO), Canada (NRCan), Finland (Aalto University), Switzerland (HESS), The Netherlands (Agency NL), United States (NREL)

Website Annex XII: <http://ieahev.vito.be>

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IA-HEV - Task XII – Heavy-duty Hybrid Vehicles

The 26th World Heavy, Hybrid and Fuel Cell Electric Vehicle Symposium & Exhibition © IEA 2010 Shanghai, China, Nov. 5-6, 2010

Trends and insight in heavy-duty vehicle electrification

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Abstract—This paper describes the results from Annex XII “Heavy-duty hybrid vehicles” of the International Energy Agency (IEA) Implementing Agreement on “Hybrid and Electric Vehicles” (IA-HEV). Since 1993, this Implementing Agreement has provided a platform to exchange knowledge, experience and strategies among the member states on the latest developments in hybrid and electric vehicles, mostly passenger cars. Because heavy-duty vehicles have specific technical requirements and economic boundary conditions compared to the passenger car market, a dedicated Annex was started in 2007 and will run until the end of 2010. Six countries (Belgium, Canada, Finland, Switzerland, the Netherlands and the United States) are participating to collect and share relevant information on the latest technical and market developments in “electrified” trucks, buses and mobile work machines. This information will broaden the insight in the existing applications of heavy-duty vehicles electrification and can provide essential information for future heavy-duty hybrid vehicle deployment projects. *Copyright terms of IEA/IEA*

Keywords—Heavy-duty hybrid vehicles, Vehicle electrification, Trucks, Buses, Mobile Work Machines



Final Report

Task XII - “Heavy-duty hybrid vehicles”

2007 – 2010

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- Carol Burelle, NRCan (Canada)
- Alex Naef, Hans-Jörg Gusler, HESS (Switzerland)
- Martijn van Walwijk, IA-HEV Secretary-General



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IA-HEV active Tasks

Vehicles

- Plug-in Hybrid Electric Vehicles
- Life Cycle Assessment of EVs

Components

- Electrochemical systems
- BEV system integration

- Information exchange

Market deployment

- Lessons learned
- EV ecosystems
- Quick charging technology



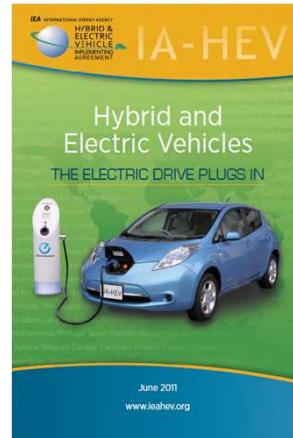
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Information exchange - Task 01

Operating Agent: Department of Energy (USA)
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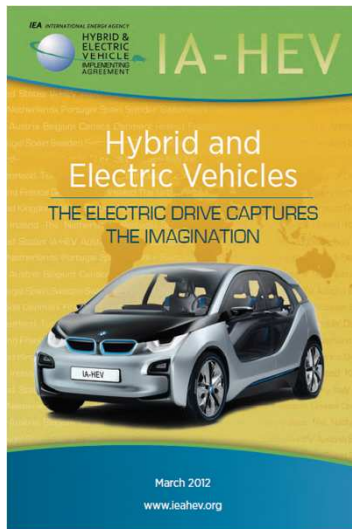
Activities:

- Country experts meetings
- Annual report
- Newsletter
- www.ieahev.org



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Information exchange - Task 01



Hybrid and Electric Vehicles The Electric Drive Captures the Imagination

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Plug-in HEVs - Task 15

Operating Agent: Argonne National Laboratory (USA)
dsantini@anl.gov

Objectives:

- Estimate total ownership costs
- Find best niche(s) for multiple PHEV technology options
- Estimate market shares, oil savings, GHGs



LCA of electric vehicles - Task 19

Operating Agent: Joanneum Research (Austria)
gerfried.jungmeier@joanneum.at

Objectives:

- Provide policy and decision makers with facts for decisions on EV related issues
- Improve design for optimal recyclability and minimal resource consumption
- Improve vehicle end of life management



Electrochemical systems - Task 10

Operating Agent: Department of Energy (USA)
James.Barnes@ee.doe.gov

Objective:
Exchange information
to advance battery and capacitor technology
in focused working groups

Workshop examples:

- Availability of lithium
- Battery recycling



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BEV system integration - Task 17

Operating Agent: A3PS (Austria)
gabriela.telias@a3ps.at

Objective:
Assess the progress in
component development
and configurations
to determine the potential
for enhanced
overall system performance



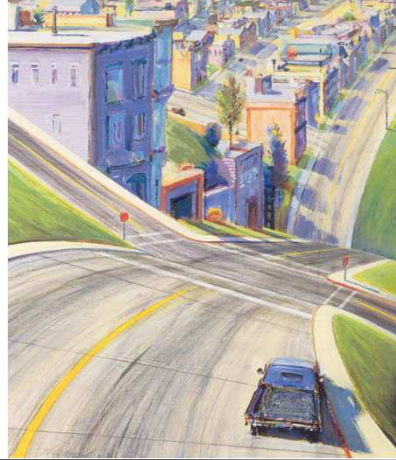
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Market deployment – Lessons learned - Task 14

Operating Agent: University of California at Davis (USA)
tturrentine@ucdavis.edu

Objectives:

- Capture lessons learned in past deployments
- Develop practical advice for utilities, local governments, OEMs, etc.



EV ecosystems - Task 18

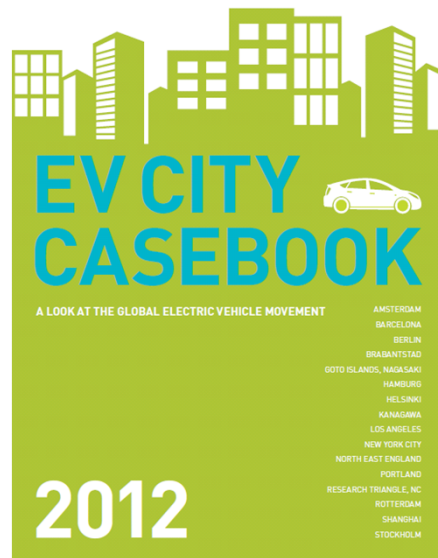
Operating Agent: Urban Foresight (UK)
david.beeton@evEcosystems.org

Objectives:

- Capture and promote examples of international best practice and innovative approaches in the design and development of EV ecosystems
- Shape a global vision on the technologies, policies, markets and commercial structures required to integrate EVs into future smart cities



EV ecosystems - Task 18

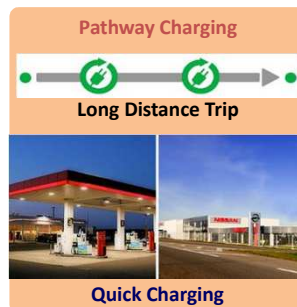


Quick charging technology - Task 20

Operating Agent: CIRCE (Spain)
imartin@unizar.es

Objectives:

- Report on current status of technology
- Share knowledge on market deployment roadmaps, considering quick charging technologies development and trends
- Get consensus on the standardization process



Potential new Tasks

- Wireless charging
- Electric cycles' infrastructure and public rental schemes
- Interoperability of EV charging systems
-

More information about IA-HEV & Questions ?

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[URL : www.ieahev.org](http://www.ieahev.org)

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