



**A word from the Chair—
Remembering Paul MacCready**

Famous aeronautic engineer, glider pilot and inventor of human- and electric powered airplanes and electric vehicles Paul

MacCready died 28th August 2007 at the age of 82. One of the most important engineers of the 20th century, Dr. MacCready reached several milestones in the search for energy-efficient airplanes and cars. The first, invented when he was a student at the California Institute of Technology, was the “MacCready-Ring,” a device that helps glider pilots optimize speed and achieve maximum distance in flight. Every glider now has a MacCready-ring mounted over the variometer. MacCready himself was a famous glider pilot, known for his high altitude flights in the air streams and waves over the Rocky Mountains. He thrice won the American soaring championship (1948, 1949 and 1953) as well as the 1956 St. Yan (France) world competition in a Breguet 901 glider.

In 1977, MacCready and a crew from his company AeroVironment fulfilled a long-held dream of human powered flight in the “Gossamer Condor” which he and the company designed. They won the Paul Kremer prize for the first human powered plane that could successfully fly in circles. More than fifty teams and aircraft had tried unsuccessfully to reach this goal between 1959 and 1976.

In a new human powered plane, the “Gossamer Albatross,” MacCready’s crew crossed the English Channel in 1979. After this success had made him a legend in aeronautic history he began construction of a solar-powered flyer in the early 1980s. This “Solar Challenger” had about 3,000 W of solar cell power; in 1981, when this plane also crossed the English Channel, it contained roughly 4% of all solar cells in America. MacCready expressed some anger toward American energy policy at that time, citing the fact that President Reagan had

dismantled the solar hot water installed by his predecessor in the White House.

On November 1, 1987, the GM-Sunraycer, a solar car built by MacCready for racing performance participated in the first Australian SolarChallenge drive from Darwin to Adelaide. Dr. MacCready used his expertise in lightweight construction and solar-technology and applied his glider innovation, the MacCready-ring, as a race tactic for the GM-Sunraycer. His team won the race two and a half days ahead of the second-place finisher, bringing great publicity to General Motors and Paul MacCready. In 1990 his AeroVironment Company built an electric car for General Motors called the “Impact”. It was the most successful concept car GM ever displayed, and fostered GM’s decision to build a consumer-market electric car, the “EV- 1.”

AeroVironment then built a solar powered plane, the “Pathfinder,” with a 247 foot wingspan and an altitude capability of over 50,000 feet. In June 1996 the Pathfinder reached a height of 67,000 feet over Hawaii.

These successes brought Dr. MacCready many prizes and awards as well as general recognition of his technological achievements. For inspiring young engineers to apply high-efficiency techniques to powered human transport and other activities, the IA-HEV nominated Paul MacCready for its “personal award 2007.” His vision and spirit will be greatly missed.

Urs Muntwyler, Chair

In this issue

A word from the Chair	1
ExCo, Annex I welcome new member countries	2
New IA-HEV Annexes conduct first meetings and networking activities	2
Clean Vehicle Awards 2007	2
Operating agents/Country experts	3
Events calendar	3

ExCo, Annex I welcome new member countries

With great pride and pleasure, the IA-HEV Executive Committee (ExCo) Chair and the Operating Agent of Annex I (Information Exchange) announce that membership in the Agreement has increased by three nations, with Canada, Denmark, and Turkey becoming signatories to the Implementing Agreement during the past several months. The new delegates to the ExCo have been named and are, respectively: Mr. **Charles Thibodeau** of Natural Resources Canada (CAN) [Mr. Kim Smith, alternate], Mr. **Jørgen Horstmann** of the Technical University of Denmark - Ørsted (DEN), and Mr. **Hamdi Ucarol** of the Scientific and Technological Research Council of Turkey (Tübitak -- TUR) [Mr. Eren Öszu, alternate]. All three countries sent representatives to the ExCo and Annex I meetings conducted in Brussels in May/June of 2007, and all expect to be represented at the December 2007 meetings in Santa Ana, CA, USA. Canada's active participation in many aspects of hybrid and fuel cell propulsion technologies, Denmark's deep commitment to the implementation of renewable energy solutions (especially wind power), and Turkey's burgeoning growth in components technology for electric propulsion all represent welcome fresh perspectives for our Agreement as growth in hybrid and electric vehicle markets and development continues to extend its global horizons.

New IA-HEV annexes conduct first meetings and networking activities

Three new annexes of the Implementing agreement on Hybrid and Electric Vehicles launched during 2007 have subsequently organised member activities across the globe.

Annex XII (Heavy-Duty Hybrid Vehicles), for which Mr Stefan Smets of VITO (Flemish Institute for Technological Research, Belgium) is the Operating Agent, has conducted an expert meeting (and a workshop) in San Diego, California USA and, in conjunction with a meeting of the standing Annex VII on Hybrid Vehicles, an expert meeting in Istanbul, Turkey. Belgium, Canada, the Netherlands, Turkey, and the United States are currently official participants. Canada will host the fourth Expert Meeting of this annex in February 2008.

Annex XIII (Fuel Cells for Vehicles), directed by Operating Agent Andreas Dorda of the Austrian Agency for Alternative Propulsion Systems, combined a September kick-off meeting in Graz, Austria with a workshop and visit to R&D institutions in Vienna. National governments are becoming increasingly committed to research and development on fuel cell technologies as the long-term way to achieve low-carbon-emitting transportation and reduced reliance on fossil fuels.

Annex XIV (Lessons Learned) held its kick-off meeting, in Santa Cruz, CA, USA in early October, hosted by Operating Agent Dr. Thomas Turrentine of the University of California at Davis. It brought together experts with, collectively, hundreds of years of experience in the development, marketing, and promotion of efficient clean/green vehicles. It is anticipated that this annex will produce a document that looks both backward and forward in defining productive and successful strategies to bring more electric propulsion into the world's vehicular fleets.

A new annex on Renewable Energies will hold its kick-off meeting in spring 2008, and in February 2008, Chairman Urs Muntwyler will introduce the planned annex at a conference on "Electricity in our Future Road Transport" in Copenhagen, organized by the Danish Energy Agency. Denmark is one of several countries relying increasingly on wind energy and other renewable forms of energy to provide for future electric power needs, both to meet commitments for reducing greenhouse gases and to mitigate dependency on fossil fuels. It is important to understand how and devise technical solutions for electric vehicle drive to be included/accommodated in these new end use profiles.

Clean Vehicle Awards 2007

Nominations are closed for the IA-HEV Clean Vehicle Awards to be announced 4 December at the EVS-23 Conference in Anaheim, California, USA. The three award categories are:

- 1) **Manufacturers**, for outstanding worldwide sales figures for hybrid models;
- 2) **Nation or Institutional Entity**, in recognition of outstanding promotion of electric vehicles; and
- 3) **Personal Award** honouring long-standing commitment by an individual to the promotion of clean vehicles.

Operating Agents and Annex I Country Experts for 2007-08

OPERATING AGENTS

Annex I: Information Exchange

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Annex XII: Heavy-Duty Hybrid Vehicles

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Annex XIII: Fuel Cells for Vehicles

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Annex XIV: Lessons Learned

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Denmark: *Jørgen Horstman*, Technical University of Denmark - Ørsted
France: *Stéphane Biscaglia*, ADEME
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Netherlands: *Arie Brouwer*, SenterNovem
Sweden: *Peter Kasche*, STEM
Switzerland: *Sigrid Kleindienst*, Engineering Office Muntwyler
Turkey: *Hamdi Ucaroll/Eren Öszu*, Scientific and Technological Research Council of Turkey (Tübitak)
United States: *Danilo Santini*, Argonne National Laboratory; *James Barnes*, *David Howell*, USDOE/EERE/OFCVT

Relevant Activities Agenda—4th quarter 2007/1st quarter 2008

November 19-20	IEA NEET Workshop, Brasilia, Brazil
November 22-23	IEA Workshop Eco-driving, Paris, France
December 2-5	EVS-23. Anaheim, California, USA
December 6-7	IA-HEV ExCo Meeting, Santa Ana, California, USA
December 8	Annex I Information Exchange, Expert Meeting, Santa Ana, California, USA
March 11-13, 2008	International Advanced Mobility Forum (EET- 2008), Geneva, Switzerland

Colophon

This electronic Newsletter is produced by IEA's Implementing Agreement on Hybrid and Electric Vehicle Technologies and Programmes (IA-HEV). For information about the agreement and for contributions to this Newsletter, please contact the IA-HEV secretary Mr. Martijn van Walwijk at: secretariat.ieahev@wanadoo.fr. For contributions to this Newsletter, please contact the Operating Agent of Annex I, Mr. Chris Saricks at: csaricks@anl.gov