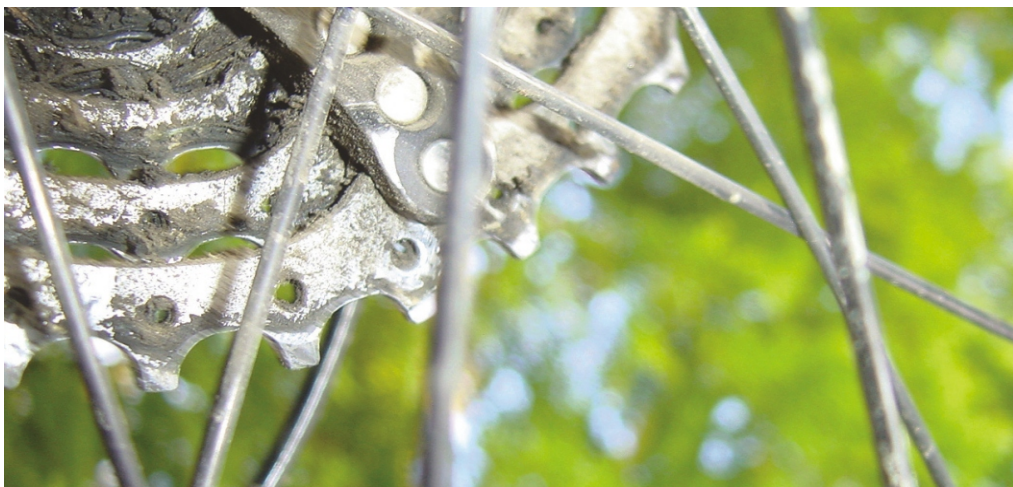


2 0 0 4 E U R O P E A N
ELE-DRIVE TRANSPORTATION
Conference & Exhibition on
**URBAN SUSTAINABLE
MOBILITY IS POSSIBLE
NOW!** **Battery, Hybrid and Fuel Cell Electric Vehicles**



17*18*19*20 MARCH 2004
ESTORIL CONGRESS CENTER - PORTUGAL

17* National Conference - Mayor's Welcome Reception - EV Parade

18* European Conference - Keynote Speakers - Press Conference - Gala Dinner

19* European Conference - Final Round Table - Closing Session

With Portuguese Wine and Cheese Tasting

Exhibition - Ride and Drive (all Days)

Programme

www.apve.pt
+351 963 309 911
veiculo.electrico@apve.pt

Sponsors

HONDA

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ren
Rede Eléctrica Nacional, S.A.



Official Transport Operators of the Conference

SCOTT **URB** **CP** Caminhos de Ferro Portugueses, EP

Exhibitors

TH!NK

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The Power of Dreams

TOYOTA



A.F.R.E.
Association Française pour le Réseau Electrique



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CP Caminhos de Ferro Portugueses, EP



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E CASINO ESTORIL



MUNICÍPIOS & REGIÕES
de Portugal



Organisers



AVERE

DC TT

Cascais
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Message from the Chairmen

Urban sustainable mobility is a today's imperative. Electric Driven Vehicles are already a real solution and they are operating quite successfully in their niche markets. Successful demonstrations like EVD-Post, ELCIDIS, LISELEC, Battery and Hybrid bus fleets, etc., have already been showing results, demonstrating that Electric Driven Vehicles can, in fact, provide real contributions to a better quality of life in the cities. An urgent discussion is required on a roadmap for urban sustainable mobility technology, showing the way to the implementation of Electric Driven Technology: Battery, Hybrid and Fuel Cell Electric Vehicles. At the event, we want to get the key actors together for a round table: **local government, transport providers, professionals, government and NGO's.**

The **2004 European ELE-DRIVE Transportation Conference & Exhibition on "Urban Sustainable Mobility is possible - now!"**, 2004 EET for short, to be held at Estoril, Portugal, on the 18 and 19 March 2004, will provide an opportunity to observe:

- The vision of the cities on sustainable transport systems for mobility and goods distribution;
- State of the art of Battery, Hybrid and Fuel Cell Electric Vehicles
- Successful demonstrations developed in several European cities
- Market niches
- Research and development activities
- The need for short-, medium- and long-term roadmaps for the implementation of Electric Driven Vehicles technology

This European event, of **AVERE - European Association for Battery, Hybrid and Fuel Cell Electric Road Vehicles** - aims at filling the gap between two successive European venues: the very successfully EVS, Battery, Hybrid and Fuel Cell Electric Vehicle Symposium and Exhibition, the world's largest event on Electric Driven Vehicles, that takes place in Europe only every 4-5 years.

The **two-day European Conference** offers you an opening session with top keynote speakers, a round table with the presence of major actors from the field of sustainable mobility and electric driven vehicles technology; 22 parallel sessions with some 100 papers will illustrate practical solutions as well as the latest technical and scientific progress. The European conference will be preceded by a 1-day national conference.

With a **four-day Exhibition**, open to the public, an **EV Parade** and a permanent **Ride & Drive**, this event will also be a unique opportunity for car and components manufacturers, energy and infrastructure suppliers, research institutes and public and private actors to present their latest progress in the field. The **Estoril Congress Centre** is very well located, near the sea and in the heart of the Lisbon coastal area, with the famous Estoril, Cascais and Sintra close by.

If your agenda allows it, the Lisbon area is famous for the various opportunities it has to offer, in complement to the 2004 EET professional achievements. With several major events taking place in Portugal and in the Lisbon area during 2004, this could be a further opportunity for you to enjoy our country.

We are sure that the 2004 EET will be a great opportunity for you to connect to the EV world and to urban sustainable mobility. We invite you to visit, see and experiment the many exciting pleasures and adventures that await you in Estoril next March.

We wish all participants an enjoyable stay in Portugal



Jorge Esteves

Chairmen of the
2004 EET



Robert Stüssi

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- 23 - Sessions 4B, 4C, 4D
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By courtesy of Artur Real Bordalo, Painter, 1989

President of the Republic - **Jorge Sampaio**

President of the National Association of Portuguese Municipalities - **Fernando Ruas**

Mayor of Cascais - **António d'Orey Capucho**

Minister of Public Works, Transports and Housing - **António Carmona Rodrigues**

Minister of Science and Higher Education - **Maria da Graça Carvalho**

Secretary of State for Transports - **Francisco Seabra Ferreira**

Director - General for Inland Transportation - **Jorge Jacob**

Mayor of Beja - **José Manuel Carreira Marques**

Mayor of Braga - **Francisco Mesquita Machado**

Mayor of Bragança - **António Jorge Nunes**

Mayor of Coimbra - **Carlos Encarnação**

Mayor of Leiria - **Isabel Damasceno Costa**

Mayor of Portalegre - **José Mata Cáceres**

Mayor of Portimão - **Manuel António da Luz**

Mayor of Sintra - **Fernando Seara**

Mayor of Viana do Castelo - **Defensor Oliveira Moura**



Topic List

- Vision of the Cities
- Good Practices
- Perspectives: Environment and Technologies
- Public Transportation Systems and Electric Buses
- Perspectives for Hybrid Public Transportation
- Urban Mobility Logistics
- Car-sharing
- Advanced Systems for the Future
- Batteries Technology and Vehicles
- Hybrid Electric Vehicles
- Fuel Cells and Fuel Cells Vehicles
- Small EV's
- Electric Bikes
- Electric Boats
- Standards
- Drives / Components / Simulation Tools
- Drive trains / Simulation tools

Global Conference Programme

March 17 NATIONAL CONFERENCE

Ride & Drive - Exhibition

09:30 Opening Session

Director-General of Inland Transportation - DGTT

Mayor of Cascais

Chairman of the National Association of Portuguese Municipalities -ANMP

Secretary General of the European Association for Battery, Hybrid and Fuel Cell Electric

Road Vehicles - AVERE

President of the Portuguese Electric Vehicle Association - APVE

10:45 Round Tables

13:00 Lunch

14:30 Round Tables

NATIONAL AND EUROPEAN CONFERENCE

Ride & Drive - Exhibition

17:00 Closing session of the national conference and official inauguration of the Exhibition

Secretary of State for Transportation, Director-General of DGTT, Mayor of Cascais

President AVERE, President APVE

18:00 Electrical Vehicles Parade

from the Estoril Congress Centre to the Cultural Centre of Cascais

19:30 Welcome Reception hosted by the Mayor of Cascais at the Cultural Centre of Cascais

March 18 EUROPEAN CONFERENCE

Ride & Drive - Exhibition

09:30 Opening Session

Minister of Public Works, Transports and Housing, Mayor of Cascais

President AVERE, President APVE

10:30 Plenary Session - Keynote Speakers

12:15 Lunch

13:30 Parallel Sessions

20:00 Gala Dinner (Guest speaker)

March 19 EUROPEAN CONFERENCE

Ride & Drive - Exhibition

08:30 Parallel Sessions

12:00 Lunch

13:30 Parallel Sessions

15:10 Final Round Table

"Roadmap for Electric Driven Vehicles"

17:00 Closing Session - Portuguese Wine and Cheese tasting

Minister of Science and Higher Education, Mayor of Cascais

President AVERE, President APVE



March 20 RIDE & DRIVE - EXPOSITION

2004 EET International Steering Committee

Chairmen

Jorge Esteves President of APVE, Portugal

Robert Stüssi Vice-President of APVE, Portugal



Co-Chairmen

Urban Karlström, President of AVERE, Sweden

Frederic Vergels, General-Secretary of AVERE, Belgium

International Steering Committee

Athanassios Safacas, University of Patras, Greece

Antoni Szumanowski, Warsaw University of Technology, Poland

Arne Johansson, Catella Generics AB, Sweden

Bertrand Heilbronn, EDF Transports et Véhicules Electriques, France

Carlos Barroso, Siemens, Portugal

Carlos Sousa, Almada Energy Agency, Portugal

David F. Porter, UNIPEDE-EURELECTRIC

Dietrich Naunin, Berlin Technical University, Germany

Dionissios Negkas, Hellenic Institute of Electric Vehicles, Greece

Francis Wolters, Electrabel, Belgium

Frédéric Vergels, AVERE, Belgium

Gaston Maggetto, VUB, AVERE, CITELEC, EPE, Belgium

Georges Dick, AMAVE, Monaco

Giampiero Brusaglino, Fiat Centro Ricerche, Italy

Gunter Schaedlich, Accumulatorenwerke Hoppecke, Germany

Jacques Lemonnier, AVERE-France

Jorge Esteves, IST / CAUTL, Portugal

José Maia, EST Setúbal / CAUTL, Portugal

José Quadrado, ISEL / CAUTL, Portugal

José Sabino, GolfJardim, Portugal

José Sequeira, IST, Portugal

Joseph Beretta, PSA Peugeot Citroën, France

Karl Ernst Noreikat, DaimlerChrysler AG, Germany

Lívio Honório, EDP, Portugal

Mario Conte, ENEA, Italy

Peter Van Den Bossche, CITELEC, Belgium

Pietro Menga, C.E.I.-CIVES, Italy

René Bautz, Gaznat, Switzerland

Robert Stüssi, Perform Energia, Portugal

Thor Erik Musæus, Norstart, Norway

Urban Karlström, VTI, Sweden



2004 EET Organisation

National Conference Coordinator

José Quadrado (ISEL/CAUTL)

Organising Committee

Duarte Mesquita (IST-DEEC / CAUTL) **Coordinator**

António Victor Anunciada (IST-DEEC/IT)

Beatriz Borges (IST-DEEC /IT)

Carlos Sousa (AGENEAL)

Eduardo Correia (IPQ)

Gil Marques (IST-DEEC / CAUTL)

José Fernando Silva (IST-DEEC / CAUTL)

José Luís Sequeira (IST-DEM / IDMEC)

Luís Silva (ADENE- Agência para a Energia)

Maria João Martins (IST-DEEC)

Maria José Resende (IST-DEEC / CAUTL)



2004 EET Secretariat

Carlos Peralta

Cláudio Casimiro

Filipe Guerreiro

Joana Antunes

Inês Santos

Maria José Bellard

APVE Secretariat

Bruno Mateus

Maria Sousa

HONDA

The Power of Dreams

Opening Session

Thursday - March 18th - 09h30

Minister of Public Works, Transports and Housing, Mayor of Cascais
President of AVERE, President of APVE

Plenary Session - Keynote Speakers

Thursday - March 18th - 10h30

Michel Duchène City of Bordeaux - Vice Mayor Urban Affairs and Transport
Eric Britton EcoPlan International - Managing Director
James Rosenstein - Toyota Motor Europe - Vice President for External Affairs

Final Round Table

Friday - March 19th - 15h30

"Roadmap for Electric Driven Vehicles"

Moderator: Professor Gaston Maggetto, Vrije Universiteit Brussel

Municipalities

Coimbra / Portugal - Mayor Carlos Encarnação
Reggio Emilia / Italy - Mayor Antonella Spaggiari
Stavanger / Norway - Harald N. Røstvik



Authorities and Transport Operators

ATAC - Roma / Italy Transport Authority - Director Giovanni Rovere
STCP - Porto / Portugal Transport Provider - President Juvenal Silva Peneda

Manufacturers

Think / Norway - Director Bernd Winkler
Honda / Portugal - Director Pedro Meunier
Toyota Motor Europe - Vice President James Rosenstein

Energy Providers

EDF Electricité de France - Bertrand Heilbronn
BP / Hydrogen - Director Stephen Cook



Ride & Drive

All Days - 10h00 - 18h00

2004 EET gives to the delegates the opportunity to experiment a range of vehicles on a test loop around the beautiful scenario of the Estoril Casino's garden.



Electric Vehicle Parade

Wednesday - March 17th - 18h00

In the 2004 EET "kick off", an Electric Vehicle Parade will take place. This EV parade starts at the Estoril Congress Centre and ends at the Cascais Cultural Centre, passing by the Cascais Town Hall. This will be an important occasion for a big public impact of the 2004EET.

**2004 EUROPEAN
ELE-DRIVE TRANSPORTATION
Conference & Exhibition on
URBAN SUSTAINABLE
MOBILITY IS POSSIBLE
NOW!** Battery, Hybrid and Fuel Cell Electric Vehicles

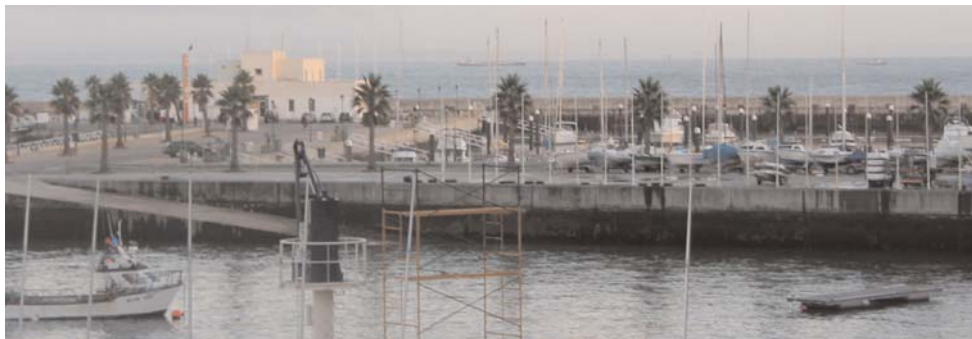


Town Hall



Cascais Cultural Centre

**Electric Vehicle Parade
17th March
18h00**



Welcome Reception

Wednesday - March 17th - 19h30

2004 EET Conference Delegates are invited to a welcome reception hosted by the Mayor of Cascais. This event will take place at the Cascais Cultural Centre. The reception begins after the Electric Vehicle Parade.



Gala Dinner

Thursday - March 18th - 20h00



For the Gala Dinner delegates are invited to join the exquisite atmosphere of the luxurious Tivoli Palácio de Seteais. A magnificent example of 18th century architecture, this palace hotel is located in the heart of the Serra de Sintra (Sintra Mountain), a UNESCO world heritage site, some 20 km from Estoril. You will enjoy an open bar and splendid dinner, with Piano music as well as Fado.

On the way we will have a sight of the Pena Palace, with its magnificent nineteenth century mélange of neo-moorish and neo-medieval styles. The Royal Palácio de Sintra, right in the centre of town and lovingly built over many centuries, is also known for the gigantic chimneys in its Royal Kitchen.



Portuguese Wine and Cheese Tasting - Closing Session

Friday - March 19th - 17h00



The 2004 EET delegates are invited to a closing session with Portuguese Wine & Cheese tasting, and music by a string quartet, the "Quarteto Intempore". After an impacting Round Table about the "Roadmap for Electric Driven Vehicles", this closing session is designed to give a relaxed atmosphere and to provide for personal contacts and networking opportunities. The Minister of Science and Higher Education - Professor Maria da Graça Martins da Silva Carvalho will close the Conference.



Conference Information

Language - English will be used in all provided documents and during the sessions.

Proceedings - Proceedings in CD-Rom will be published by the 2004 EET organisation and handed out the 2004 EET Delegates.

Lunch - Lunches will be served every day in the Estoril Congress Centre. For non Delegates lunch tickets will be sold at the registration desk.

Registration Desk - The registration desk and the conference secretariat in the main lobby of the Estoril Congress Centre will be open at the following times:

Wednesday, March 17th, - 08:00 - 18:00

Thursday, March 18th, - 08:00 - 18:00

Registration Fees

CONFERENCE AUTHORS - CONFERENCE DELEGATES

720 Euros

600 Euros for AVERE/APVE members



The Conference fee includes: Two-day European Conference, Exhibition, Ride and Drive, Welcome Reception, Gala Dinner, Portuguese Wine and Cheese Tasting Closing Session, two lunches, coffee breaks and the CD-Rom conference proceedings.

Accompanying Persons - 150 Euros

The Accompanying Persons fee includes participation in the Welcome Reception and Gala Dinner and Portuguese Wine and Cheese Tasting Closing Session, Exhibition, Ride and Drive.

Extra-Tickets

Extra-tickets for lunches and Gala Dinner and Portuguese Wine and Cheese Tasting Closing Session are available on-site. These tickets must be booked before the beginning of the Conference.



Exhibitors



APVE - Portuguese Electric Vehicle Association
Portugal
<http://www.apve.pt>



DGTT - Directorate-General for Inland Transportation - Portugal
<http://www.dgitt.pt>



AVERE - Association for Battery, Hybrid and Fuel Cell Electric Road Vehicles - Belgium
<http://www.avere.org>



CMC - City Hall of Cascais - Portugal
<http://www.cm-cascais.pt>



ADERA - Association pour le Développement de l'Enseignement et des Recherches auprès des universités, des centres de recherche et des entreprises d'Aquitaine - France
<http://www.adera.fr>



ELETRA
Portugal
<http://www.eletrabus.com>



GIPEMA
Portugal
<http://www.gipema.pt>



AFBE - Association Française pour le Bateau Electrique - France
<http://www.bateau-electrique.com>



HONDA
Portugal
<http://www.honda.pt>



AKASOL / Darmstadt University of Technology - Akademischen Solartechnikgruppe Darmstadt eV Germany
<http://www.akasol.de> <http://www.oneliter-car.de>



MODUL' EVASION
France
<http://www.deiva.fr>



AIXAM - Portugal
<http://www.aixam.com> <http://www.mega-vehicles.com>



STCP - Sociedade Colectiva Transportes Porto
Portugal
<http://www.stcp.pt>



CLUBCAR - United Kingdom
<http://www.clubcar.com>



THINK NORDIC
Norway
<http://www.think.no>



CP - Caminhos de Ferro Portugueses - Portugal
<http://www.cp.pt>



TOYOTA
Belgium
<http://www.toyota-europe.com>



EDP - Electricidade de Portugal Portugal
<http://www.edp.pt>

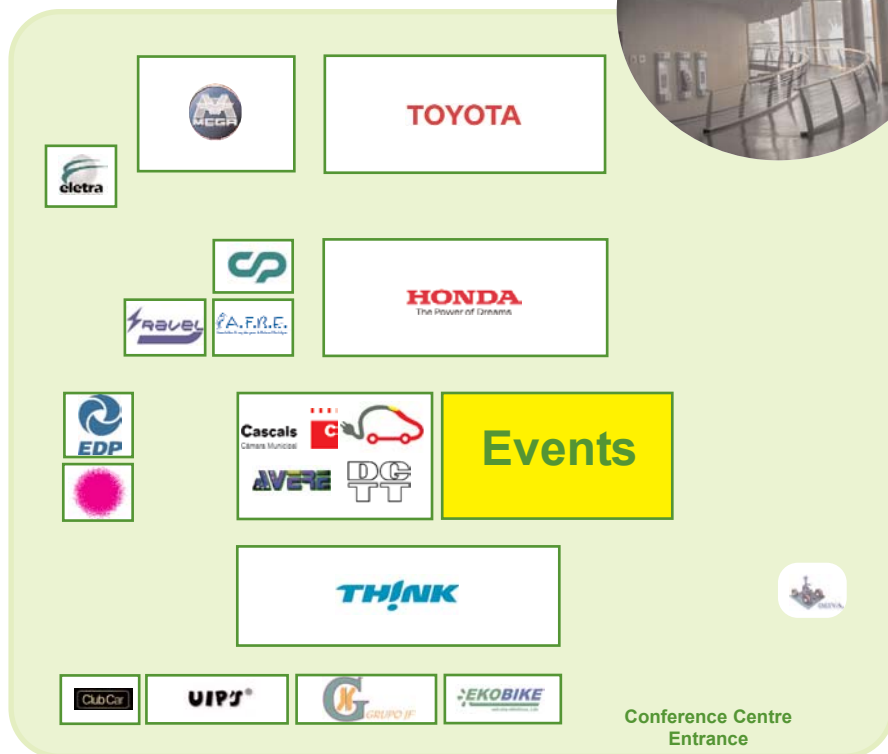


UIP's
Italy
<http://www.uips.com>



EKOBIKE
Portugal
<http://www.evtamarica.com>

Exhibition Plan



External Space



Conference Sessions

Sessions Summary

18 March 13h30 - 15h10

- 1A Vision of the Cities
- 1B Good Practices I
- 1C Batteries Technology and Vehicles I
- 1D Drives / Components / Simulation Tools I



18 March 15h30 - 16h50

- 2A Urban Mobility Logistics
- 2B Fuel Cells and Fuel Cells Vehicles I
- 2C Batteries Technology and Vehicles II
- 2D Hybrid Electric Vehicles I



18 March 17h10 - 18h10

- 3A Electric Buses
- 3B Fuel Cells and Fuel Cells Vehicles II
- 3C Electric Boats
- 3D Electric Bikes

19 March 9h00 - 10h40

- 4A Perspectives: Environment and Technologies
- 4B Good Practices II
- 4C Perspectives for Hybrid Public Transportation
- 4D Drives / Components / Simulation Tools II



19 March 11h00 - 12h00

- 5A Car-sharing
- 5B Standards
- 5C Small EV's
- ES SUBAT Study

19 March 13h30 - 14h50

- 6A Advanced Systems for the Future
- 6B Fuel Cells and Fuel Cells Vehicles III
- 6C Hybrid Electric Vehicles II



Conference Sessions

March 18th, 13h - 15h30m

Session - 1A

Vision of the Cities

Chairperson: *Michael Glotz-Richter*; City of Bremen, Germany

e-mobility Rotterdam

Anthony Vermie; E-mobility Rotterdam

Current and future commitments towards sustainable public transportation by the City of Luxembourg

Georges Feltz, Nico Pundel, Erik Verhaeven; Department of AVL (Autobus de la Ville de Luxembourg) Vehicules et Maintenance

Learning from Successful Market Introduction Programms for Clean City Vehicles

Sigrid Kleindienst Muntwyler; Engineering Office Muntwyler

The Importance for Infrastructures for EV: Experiences, and Relationships between Safety, Homologation, Level of Sophistication

W. Boldrini, S. Manfredi; PROGETTI S.R.L.- Milan Italy

Electric Buses and other Alternative Technologies in Rome's Public Transport

Giovanni Rovere; ATAC - Transportation Authority - Roma

Session - 1B

Good Practices I

Chairperson : *Jacques Lemonnier*; AVERE France, France

Public Initiatives for the Introduction of Electric and Hybrid Vehicles in Italy

Mario Conte, Pietro Menga; ENEA, Hydrogen and Fuel Cell Project - CEI-CIVES

Developing a Low-Carbon passenger Vehicle Incentive Programme in the UK

Alex Veitch; Energy Saving Trust

Promoting Alternative Energies in Transports

Jorge Jacob; DGTT - Directorate-General for Inland Transportation

Dissemination of Electric Vehicle Technology Through an Educational CD. Evaluation and Recent Experience in Brazil

Luiz Artur Pecorelli Peres; Departamento de Engenharia Elétrica da Universidade do Estado do Rio de Janeiro - UERJ

International Energy Agency prepares Third phase of its Hybrid and Electric Vehicle Agreement

Urs Muntwyler, Frans Koch; IEA Implementing Agreement for Hybrid and Electric Vehicle Technologies and Programmes

Session - 1C

Batteries Technology and Vehicles I

Chairperson : *Guy Sarre*; SAFT Batteries, France

EU SUBAT Study

Frédéric Vergès; European Association for Battery Hybrid and Fuel Cell Electric Vehicles

Ni-MH Advanced Technology Batteries for Hybrid Public Transportation Systems

B. Lacout, J.L. Liska; Saft Batteries

Evaluation of Battery Pack Requirements for Mild Hybrid Electric Heavy Duty Vehicle

Steven Wilkins, Sejul Shah, Alan Walker, Michael Lampérth; Mechanical Eng. Imperial College London

Conference Sessions

Ni-MH Batteries for Electric Vehicles under High Charging Rates

Juan Carlos Viera Pérez, Manuela González Veja; Universidad de Oviedo

Memory Effect on a Nickel - Metal Hydride Automotive Battery

Massimo Ceraolo, Carmine Miulli, Fiorentino Valerio Conte; DSEA, Università di Pisa

Session - 1D

Drives / Components / Simulation Tools I

Chairperson : *Karl-Ernst Noreikat; Daimler Chrysler, Germany*

Board Net for Road Vehicles with two or more Voltages - a Way to Soft Hybrid Vehicles

Hans Kahlen; University of Kaiserslautern

Electric Motorized Wheel Motor Design

José Carlos Quadrado; ISEL / CAUTL / APVE

Modelling Energy consumption in electric Buses

Pedro Matos, Maria José Resende, Robert Stussi, Inês Santos, Jorge Esteves; IP Tomar, IST, CAUTL, APVE

Ultracapacitors modelling: dynamic behaviour determination using impedance spectroscopy on a dedicated test bench

W. Lajnef, J.-M. Vinassa, O. Briat, C. Zardini, J.-L. Aucouturier; Laboratoire IXL CNRS UMR 5818, Bordeaux

SUPERCAR-Improved Energy Supply for the Integrated Starter Generator with Double Layer Capacitor and Energy Battery for Cars with 42V

R. Knorr, A. Schwake, M. Soria, H. Gracia, M. Reimerink, D. Macerata, M. Ullrich; Siemens VDO, EPCOS, EXIDE, University of Valencia, Norit, CRF, VW

March 18th, 15h30m - 16h50m

Session 2A

Urban Mobility Logistics

Chairperson : *Jacques Mollard; Ville de La Rochelle, France*

ELCIDIS - Electric Vehicle City Distribution

Anthony Vermie; ELCIDIS Project

City Logistics: An Approach to Map City Systems

José Crespo de Carvalho; ISCTE Business School - Lisbon

New approach to Rationalize City Mobility, Acting on City Logistics Optimisation - A new auto-adapting System

Ricardo Félix, Margarida Pereira, Rui Dias Alves; Logistema Consultores de Logística SA, Departamento de Geografia e Planeamento Regional (UNL), Innovagency

Hybrid Traffic and drive Train Simulation Modelling for the Assessment of the Introduction of Sustainable Transport Systems in Cities.

Joeri Van Mierlo, Peter Van Den Bossche, Gaston Maggetto; Vrije Universiteit Brussel, ETEC-TW-VUB

Session 2B

Fuel Cells and Fuel Cells Vehicles I

Chairperson : *Giampiero Brusaglino; Centro Ricerca FIAT, Italy*

CUTE - Clean Urban Transport for Europe: Operation of Hydrogen Fuel Cell Urban Buses in the City of Porto

Gonçalves, G.A., Farias, T.L., Teixeira, R., Silva, A; Instituto Superior Técnico, Sociedade de Transportes Colectivos do Porto, BP Portuguesa

Experiences with Fuel Cell Vehicle Demonstration Fleets

Jochen Straub; Ballard Power Systems

Conference Sessions

People Movers Powered by a Triple Hybrid Fuel Cell System

Hanna Hellman; Delft University of Technology

Modelling and Testing of Fuel Cell Hybrid Vehicle Power Train: Dynamic Behaviour and System Parameters Characterization.

Giuseppe Gianolio, Luca Baldini, Ilaria Rosso, Marco Cerchio, Francesco Profumo; HySy_Lab, Environment Park, Torino; Dipartimento di Elettrica, Politecnico di Torino, Torino

Session 2C

Batteries Technology and Vehicles II

Chairperson : *Bertrand Heilbronn; Electricité de France, France*

Online State of Charge Determination and Range Forecast for Electric Vehicles by Use of Different Battery Models

René Strassnick, D. Naunin, Dirk Freyer; TU Berlin Fachgebiet Allgemeine Elektrotechnik und Systemelektronik

Design Rules for Air-Cooling of EV and HEV Batteries

Björn Eberleh, Thomas Hartkopf, Felix von Borck, Stephen Raiser; University of Technology Darmstadt, Department of Renewable Energy

State of charge and State of Health, Monitoring in VRLA batteries for Hybrid Vehicle Application;

Melchor Fernández; Paloma-Gema Gracia, Francisco Trinidad; Exide Technologies

Application of Lithium-Ion Battery Technology to Electric and Hybrid Vehicles

F. Barsacq, Ph Blanchard, M. Broussely, G. Sarre; Saft Batteries

A New Class of Battery Electric Car

Gordon Dower; Ridek Corporation

Session 2D

Hybrid Electric Vehicles I

Chairperson : *James Rosenstein; Toyota Europe*

The Hybridisation of Heavy Goods Commercial Vehicles

Michael Lampérth, Alan Walker; Hybrid Power Research, Mech. Eng., Imperial College London

Research Overview - Design Specifications for Hybrid Vehicles

Theo Hofman, Roell van Druten; Eindhoven University of Technology; Faculty of Mechanical Engineering

Mechanical Energy Storage Hybrid Vehicle - Simulation and Life Cycle Costs

Sejul Shah, Ulises Diego-Ayala, Keith Pullen; Mechanical Engineering; Imperial College, London

Hybrid - Vehicles in the Context of Ecodesign

P.Ferrão, S.Faias, J.Esteves; Instituto Superior Tecnico, IN+

Ultralight Small Hybrid Vehicles - Why not?

Antoni Szumanowski, Piotr Piorkowski; Warsaw University of Technology, Poland

March 18th, 17h10m - 18h10m

Session 3A

Electric Buses

Chairperson : *Giovanni Rovere; ATAC, Italy*

The "100 Electric Buses" Program in France

Philippe Vuillemin, Patrick Coroller; Electricité de France - Electric Transportation Division

Urban Environment Friendly Electric Buses Programme

Robert Stüssi; Inês Santos, Jorge Esteves; CAUTL, IST, Perform Energy, APVE

Conference Sessions

Electric Buses for City Centers - Onboard electric systems

Vorles Morlot; SODRETEL

Session 3B

Fuel Cells and Fuel Cells Vehicles II

Chairperson : *Dietrich Naunin; Technical University of Berlin, Germany*

HYSOCIETY - The European Hydrogen-Based Society

Gonçalves, G.A., Fernandes, T.R.C., Chen F., Carvalho, M.G.; Instituto Superior Técnico

Air Products: Fuelling Infrastructure Development

E. Guthrie, I. Williamson, Filipe Ramos; Air Products plc, Future Energy Solutions, GASIN -Gases Industriais, S.A

The ACCEPT Project :Ammonia, a Reliable Fuel Cell Bridge Fuel

Peter Coenen, Adwin Martens; VITO

Session 3C

Electric Boats

Chairperson : *Jean-Louis Aucouturier; Université de Bordeaux, France*

Application of Fuel Cell Systems on Board of Seagoing Ships

J. Thormann, W. Winkler; H. Watter; University of Applied sciences Hamburg Fuel Cell Lab- Institute for Ship Operation, Sea Transport and Simulation

A Prototype of Compact and Low Cost 5 to 10 kW PWM Inverter for 3-Phases Electric Motor Boat

Stéphane Azzopardi, Jean-Michel Vinassa, Christian Zardini, Jean-Louis Aucouturier; IXL - CNRS UMR5818 Université Bordeaux, RAVEL - Réseau Aquitain Véhicules Electriques

Electric Boats in Portugal - First experiments

Cláudio Casimiro, Jorge Esteves, Robert Stussi; APVE

Session 3D

Electric Bikes

Chairperson : *José Maia; EST Setúbal, Portugal*

E-Tour - Electric Two - Wheelers on Urban Roads

Anthony Vermie; E-Tour

NEWRIDE -Electric Two Wheelers in Swiss Cities

Urs Schwegler; Buero fuer Verkehrsplanung

Electrical Bike Eco-Design: A customer approach

G. Crespo, P. Ferrão, L. Rosado, G. Boutin; Instituto Superior Técnico, ISTIA Innovation

March 19th, 9h - 10h40m

Session 4A

Perspectives: Environment and Technologies

Chairperson : *Gaston Maggetto; Vrije Universiteit Brussel, Belgium*

The end of Oil - When?

Harald Rostuik; Sivilarkitekt Røstvik SA

Think Paper #1: "Why Think Nordic Believes That BEV's are Part of The Future"

Christian Bech; Think Nordic AS

Hybrid Vehicles - Problems, Solutions, Experience, Future prospects

Marius Lehna; AUDI AG

Conference Sessions

The Comparison of two Environmental Rating Systems: BIM-EcoScore vs. EC-Cleaner Drive

Jean-Marc Timmermans, Joeri Van Mierlo, Gaston Maggetto, Sandrine Meyer, Walter Hecq, Leen Govaerts, Johan Verlaak; Vrije Universiteit Brussel, ETEC-TW-VUB, Université Libre de Bruxelles, Vlaamse Instelling voor Technologisch Onderzoek.

Improvement on Environment by using EV's: The Portuguese Perspectives

Inês Santos, Robert Stüssi, Jorge Esteves, Maria José Resende; CAUTL, IST, Perform Energy, APVE

Session 4B

Good Practices II

Chairperson : *Frédéric Vergels; AVERE*

An overall view of the Evolution of the Electric Road Vehicles in Portugal

Lívio Honório; EDP - Electricidade de Portugal

Clean Accessible Transportation for Community Health

Alan Lewis, Karen Booth, David Hall; CATCH Project

Combining Driving Behaviour with Environmental Parameters: Preliminary Results of Pilot Assessment of Toyota Prius in the Urban Environment of Thessaloniki, Greece

Fotis Stergiopoulos, Evangelos Bekiaris, Dionissios Negkas, Spyros Voutetakis, Athanasios Tsioutras; Center for Research and Technology Hellas / Hellenic Institute of Transport

Postal Distribution with EV's in Portugal

José Guilherme, Sérgio Faias, Carlos Sousa, Lopes Santos; CTT - Correios de Portugal, S.A

State of the Art and Future Concerns on Electric and Hybrid Vehicles in Romania

Grigore Danciu, Mihaela Chefneux, Virgil Raciovski; University Politehnica of Bucharest

Session 4C

Perspectives for Hybrid Public Transportation

Chairperson : *Durelli; Irisbus, Italy*

Urban Electric Bus - The Technical Viability of the Development of a New Vehicle for Urban Public Transportation in Europe

A. Victor A. Anunciada; Instituto de Telecomunicações, Instituto Superior Técnico

Hybrids in Public Urban Transportation

Uwe Koehler, Christian Rosenkranz; Varta Batteries

Hybrid Electric PowerTrain

André Neumann; Electra Industrial

Modifications and Enhancements on the 40 kW Auxiliary Power Units for the Series Hybrid Busses of Luxembourg City

Erik Verhaeven, Georges Feltz, Antonio Vecchio; Flemish Institute for Technological Research

Session 4D

Drives / Components / Simulation Tools II

Chairperson : *Joeri Van Mierlo; Vrije Universiteit Brussel; Belgium*

A New Modular Low-Cost Telemetry System to Monitor the Behaviour of Small Electric Vehicles on Road

Manuela González Veja, Gustavo Montoto, Jorge Montes Gutiérrez, Cecilio Blanco Viejo, Juan Carlos Viera Pérez; Universidad de Oviedo

Experimental Development of an Electrical Kart

D. Foito, M. Chaves, A. Roque, J. Maia, J. Esteves; ESTSetúbal, Instituto Politécnico de Setúbal, Instituto Superior Técnico, Centro de Automática da Universidade Técnica de Lisboa

Conference Sessions

The Development of Simulation Software for Electrical Vehicle

Xuexun Guo, Michael Lampérth, Alan Walker, Bin Wang Mech., Eng. Department, Imperial College of Science, Technology and Medicine, School of Automobile Engineering, Wuhan University of Technology, Wuhan

Simulation Tool for the Design of Alternative Propulsion Vehicle Drivetrains-Application to the Postal Service Fleet

Sergio Faías, Paulo Ferrão, Jorge Esteves ISEL, IN+, CAUTL, Portugal

New-age Magneto-Rheological Fluid Mechatronic-Commutator Prime Movers for Hybrid-Electric Vehicles

Bogdan Thaddeus Fijalkowski; Automotive Mechatronics Institution, Cracow University of Technology

March 19th, 11h - 12h

Session 5A

Car-sharing

Chairperson : *Robert Stussi*; APVE, Portugal

Improvement of Car Sharing Exploitation and Dimensioning: Organisation and Decision Tools

Dominique Breuil, Jacques Mollard, Jean Marie Boussier; Ville de La Rochelle, Direction Général des Services Techniques

Clean Transport needs more than 'just' clean cars- Examples of the Integrated Approach of the Vivaldi Project in Bremen

Michael Glotz Richter; City of Bremen

Car-Sharing as part of a New Mobility Industry Cluster

Conrad Wagner; Mobility Systems

Session 5B

Standards

Chairperson : *Mario Conte*; ENEA, Italy

Hybrid Vehicle Performance Measurement: a New Challenge in Standardization

Peter Van den Bossche; VUB-ETEC-CITELEC

EV Standards Activity in Portugal

Jorge Esteves, José Maia, Claudio Casimiro; APVE

Standards and the International Standards System - Relevance for a Domain in Development

Eduardo Correia; IPQ

Session 5C

Small EV's

Chairperson : *Anthony Vermie*; City of Rotterdam, Netherlands

Electric Unicycle Vehicle

Klaus Hofer; Univ. of Bielfeld

CIT(Y)RUS(H) - New Intermodal Human Urban Vehicle

Tor Inge Garvik, Anders Ilsøy; Peter Opsvik AS

Small electric Vehicles to Provide Various Community Proximity Transport Service

Bernard Guellard, Christophe Martinet, Cyriaux Bleijs; Electricité de France - Electric Transportation Division

Special Session FRIDAY, MARCH 19th - 11h00-12h00

DISCUSSION OF THE EU SUBAT (SUSTAINABLE BATTERIES) Study

CHAIRPERSON Peter Van den Bossche - VUB-ETEC-CITELEC

INTRODUCTION Frédéric Vergels, Secretary-General of AVERE - European Association for Battery, Hybrid and Fuel Cell Electric Vehicles

Conference Sessions

March 19th, 13h30m - 14h50m

Session 6A

Advanced Systems for the Future

Chairperson : *Hans Kahlen*; University of Kaiserslautern Germany

Cybernetic Transport Systems in Coimbra - Evaluation and Demonstration for CyberMove Project

Alberto Valejo, Tim Meisner, Jorge Dias, Urbano Nunes; IPN, ISR (Universidade de Coimbra)

Think Paper #2 “PicoBus the Missing Link in Sustainable Urban Mobility”

Ole Fretheim, Oystein Asphjell; Think Nordic AS

The Serpentine System. An Ecomonic, Ecological and Efficient Public Transportation System

Bernard Saugy, Christophe Prévot, Guy de Pourtalès ; CN Serpentine AS

Session 6B

Fuel Cells and Fuel Cells Vehicles III

Chairperson : *Fotis Stergiopoulos*; Hellenic Institute of Electric Vehicles, Greece

Automotive Fuel Cells at NedStack - Development of PEMFC stacks, Materials and Low-cost Production Methods

Wiebrand Kout, Erik Middelman, Hans Bosman, Jan Piet van der Meer, Bram Vogelaar and Emiel de Waal; NedStack Fuel Cell Components BV, NedStack Fuel Cell Technology BV

A comparison of different Fuel-Cell based DriveTrain Typologies to be used on two-wheel Vehicles

M. Ceraolo, C. Miulli, P. Cravini, University of Pisa, Piaggio & Co S.p.A

Numerical Study of the Environmental Impact of Hidrogen Fuel Cell Urban Buses in the City of Oporto

Gonçaves, G.A, Calhau, K.R., Farias T.L.; IST - Instituto Superior Técnico

PEM Fuel Cell Program at INETI

Carmen Mirea; INETI - Departamento de Materias e Tecnologia de Produção

Session 6C

Hybrid Electric Vehicles II

Chairperson : *Jean-Louis Lilien*; University of Liege, Belgium

Global Forward-Backward Approach for a Systematic Analysis and Implementation of Hybrid Vehicle Management Laws. Application on a Single Shaft Parallel Hybrid Power Train

R. Trigui, M. Desbois-Renaudin, B. Jeanneret, F. Badin; INRETS : French National Institut of Research on Transport and Safety

Prototyping of a Fuzzy based Energy Manager for Parallel Hybrid Electric Vehicles

Alfredo Vaccaro, Domenico Villacci; University of Sannio, Department of Engineering

Clutch Management in a Mild Hybrid Powertrain

Hamideh K. Razavi, Michael Lamperth; Department of Mechanical Engineering, Imperial College London

Development of a Power Train for the Civic IMA, a Gasoline-Electric Hybrid Vehicle

Tomas Brachmann; Honda R&D Europe (Deutschland GmbH, Offenbach)

Transport Information

Local Transport

SCOTTURB is the main transport operator in the area of Cascais - Sintra.

The Cascais municipality has a special city centre line called busCas, run by SCOTTURB, which operates at 7 minute intervals . www.scotturb.com

CP is the Portuguese railway company. - www.cp.pt



CP and SCOTTURB are the official transport operators of the 2004 EET Conference. During the event, the conference attendees may travel, free of charge (take your conference tag along) in busCas and in the CP lines between Cascais /Lisbon and Sintra/Lisbon.

To / From Airport

Airport Shuttle Bus (Scotturb)

To arrive at Estoril you can use the Airport Shuttle Bus of Scotturb, leaving just outside of the Arrival terminal (besides the taxi queue) and serves the 2004 EET selected hotels. Traveltime is approximately 45 minutes.

This shuttle has a one-hour frequency (for timetable www.scotturb.com).

The price is 7,00 Euros and includes a day of free travel on the Scotturb network (serving the Cascais / Sintra). You can also buy a 1 week pass for 16,00 Euro, with the same privileges.



Airport - Lisbon Centre Shuttle Bus (AEROBUS) + Estoril/Cascais Railway

AEROBUS: Linking the Airport to downtown Lisbon and Cais do Sodré (every 20 minutes from 7 a.m. to 9 p.m - takes some 20 minutes). Step out at the CAIS DE SODRE RAILWAY STATION (last stop) and get a train to Estoril/Cascais. The price is 2,35 Euros (one day Lisbon city bus network ticket) and free for TAP ticket holders (just hand in the boarding card slip).

ESTORIL / CASCAIS RAILWAY - The trip takes 30 to 40 minutes, all along the Tagus river and seaside! For timetable use http://www.cp.pt/linhas/Cascais/horarios/e_horario1.html

A one-way ticket Lisbon-Cascais costs 1,25 Euros

Arriving at Estoril you can walk or get a taxi for your hotel.

TAXIS:

Available right outside the Arrival terminal (approximate cost 25,00 € plus 1,5 € per luggage). This will take you 30 to 40 minutes.

