Project Management Agency for the

Federal Ministry of Economics and Technology

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Innovation policy, information society, telecommunications

30 years German-French Cooperation in Transport Research (DEUFRAKO)

Workshop B: Alternative Propulsion Systems for Clean Vehicles

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Alternative Propulsion Systems for Clean Vehicles

Structure:

A.1 Overview about the results of the 2nd R&D-Programme „Mobilität und Verkehr“ (2000-2007)

A.2 The priorities of the new (3rd) R&D-Programme “Mobilität und Verkehrstechnologien” (2008 - 2011), field “Environmental Protection”

A.3 Ideas for DEUFRAKO cooperation

Alternative Propulsion Systems for Clean Vehicles

A.1 Overview about the results of the 2nd R&D-Programme „Mobilität und Verkehr“ (2000-2007) in the research field „Schonender Umgang mit Gesundheit, Umwelt und Ressourcen“

Aims of programme

- Minimizing the use of materials and energy necessary for transport
- Traffic emissions must not lead to unacceptable effects in the environment and on the health of people

S**ubprogrammes** (with focus to environmental/ health protection):

- “Auf dem Weg zur Minimalemission” (1998-2008),
- “Alternative Antriebe/ Hybridkonzepte” (2005-2010) and
- “Leiser Verkehr” (2002-2008),

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Selected results of the subprogramme (1):

“Minimalemission” (“Minimum Emission”) :
about 25 demonstration projects

- Reduction of PM and NOx of Diesel engines
- New Concepts and components for alternative drive trains
- New measurement techniques for detection of minimum emissions
- Reduction of traffic noise “at the source” on rail and road

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Selected results of the subprogramme (2):

“Hybridantriebe” (“Hybrid drive trains”) :
about 10 demonstration projects

- Development of electrical energy storage components and systems
- Development of core components and functional modules of power train
- Application and integration of power train into vehicles
- Test and validation in real life

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Aims within the programme-area “Environmental Protection”

- Managing the challenges of the climate change
- Meet the emission regulation of the future to minimize the impact of traffic on environment and health

Fields of future R&D-activities

- Alternative drive-train technologies and fuels
- New materials and processes in automotive and engine technologies

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R&D-activities in the field of alternative drive trains and fuels

- Advanced Hybrid Vehicles
- Plug-In Hybrid vehicles
- Electric Vehicles
- Next generation of bio fuels

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- R&D-activities in the field of new materials and processes

- New Combustion Systems (e.g. CAI, HCCI)
- Adanced fuel injection technologies and modelling
- Friction optimization
- Resilient materials to meet increased requirements for pressure and temperature

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Ideas for DEUFRAKO-cooperation

- Development/ testing of new materials/ concepts for electricity storage
- Fleet/ field tests of hybrid/ electric vehicles
- Mechanical/ electrical power from thermal waste energy
- Fundamental research on new combustion concepts (CAI, HCCI) and combustion control

Thank You for Your Attention