BR-GC-01

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Project information	
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings x Green Cars	
Topic/Title	**Agile and Ambient Electric Vehicles for On-Road and Off-Road Mobility (O2-ROAD)**
Project idea, objectives	The project idea lies in the innovative electric vehicle architecture with advancements related to the dynamics control, adaptive human machine interface and integrated design solutions both for the city and rural driving. The project objectives are: 1. Progress in development of a universal EV-platform allowing the adaptation of electromobility to the different conditions of the urban, inter-urban and off-road driving. 2. Development of advanced electric vehicle concept, which uses new principles of vehicle dynamics control to increase the driving efficiency, i.a. with innovative methods of continuous regeneration 3. Creation of adaptive human machine interface for electric vehicles having more intuitive driver's communication with both traditional and EV-related controlling elements and providing the driver with advisory functions for efficient manoeuvre performance. Preliminary interest in the project participation has been received from 3 Industrial companies (Czech Republic, Germany, Finland), 2 SMEs (Malta, Greece), 4 Universities (Germany, Finland, Hungary, France).
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**	
Partner 1	Company / SME Desired skills: powertrain systems for electric vehicles
Partner 2	Company / SME Desired skills: vehicle dynamics control system

BR-GC-02

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Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings x Green Cars			
Topic/Title	**Complex Aggregation management of large fleets of PEV**		
Project idea, objectives	The management of the aggregation of millions of PEV connected to the electricity network and fully participating in the electricity market presents important potencial advantages and shortcomings from both points of view of the Electricity network and the Transportation and Mobility. This great opportunity can easily be wasted because the multiple problems and inertia that will have to be faced during the following years, looking at the present Electrical and Mobility markets and models. Our focus is to address our expertise in management and control of aggregated small distributed resources to progress on methodologies and technologies in order to allow the real future integration of large PEV fleets into the electricity network.		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1	DSO, TSO: to visualize the problems that such a great impact would involve, the way to do it and to implement a demonstration of the information management with the Aggregators and the PEV		
Partner 2	Vehicle manufacturers: to envisage the problems from their point of view and the ways to make progress through them		

BR-GC-03

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Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings X Green Cars			
Topic/Title	**LivingCAR: A living lab of electrical vehicles**		
Project idea, objectives	The main objective of this project is to run a "living lab" based on the utilization of electrical vehicles in a real urban environment (and with conventional people). Here, living lab is understood as a real scenario for extracting crucial information about: - *Technical issues.* To identify bottle-necks from the technical point of view when using electrical vehicles in real life. - *Social issues.* To identify the social barriers of using electrical vehicles by "current people" by extracting data from a set of live experiments with users. Specific objectives are: - To extract key information about the feasibility of utilization of electrical vehicles in a real urban environment and with "normal" people. - To get valuable information on the potential customers behaviour - To identify the social and technical barriers to adopt electrical vehicles and to define actions to overcome these limitations. - To have social and media impact on the use of electrical vehicles at national and international level - To test the technologies of the companies involved to be applied in the field and to identify future Research projects between partners. We expect to build a project led by trustable private companies with real interest in the field. The idea is to have a very successful living lab which could be replicated to other part at international level. **PARTNERS ALREADY INVOLVED:** ***TEMPER GROUP**:* The Grupo Temper is a holding company that has been working for over 30 years in connection with the world of energy ***ISASTUR GROUP:*** The Isastur Group is a holding company located in Asturias. ISASTUR's activities are focused on erection and maintenance, boasting a renowned capacity in the supply, erection and start up of Low, Medium, High, Very High Voltage and Wind Power and Photovoltaic Generation installations. ***CITY COUNCIL OF GIJÓN:*** The city of Gijón is located in the North of the country and has approximately 350.000 inhabitants. ***PRODINTEC:*** Technology Center devoted to product design, manufacturing processes development and innovation management The main idea of the project is to build a "living-lab" involving green mobility in		

	strategic areas of Europe.
Partner search description **Type = Company/SME/Research organisation/university + desired skills/knowledge**	
Partner 1	We are looking for non-Spanish partners with the following profile: - Electricity suppliers - Electric vehicles manufacturers - RTD centres with experience in electrical vehicles - City Councils - Electrical installations maintenance companies

BR-GC-04

Contact person			
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Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings ❒ Green Cars			
Topic/Title	**Self-Generating Power Technology EV with V-2-G Capabilities**		
Project idea, objectives	**Project Area** Advanced Electro-Automotive Technology, Self-Generating Power Technology Electric Vehicle with Vehicle-To-Grid Capabilities, Road Electrification, Alternative & Renewable Energy Solutions. **Title** Development of Absolute Zero Carbon Emission Transport Systems "Self-Generating Power Technology Electric Vehicle" with "Vehicle-To-Grid Capabilities." Strategic Green Grid. Roads and Highways Electrification. **Objectives** In the process of developing the most economic electric vehicle with normal efficient batteries bank and more than 500 miles range. Aiming at mass production as early as 2010-11 for Europe and North America. **We are currently seeking grants and sponsorship from both the public and private sectors.**		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1	**Scope** To research and develop new generative components, new electric motors built in wheels, develop new commercial vehicles that use alternative energy for refrigeration and transportation of perishable goods. Primarily harnessing free energy and low cost energy. Conducting own field research and studies about complete road and highway electrification through alternative energy and Total Environmental Solution. Strategic Green Grid Advocacy and Consultancy (clean energy). Interests include Thin Film Technology PV, solar, wind power and desalination by alternative and renewable energy. **Skills / capabilities sought** Our skills/ assets/ and capital reside within 30 original inventions with continuous patent applications. Looking for an academic institution as a backbone for full range of R & D. Electro-mechanic capabilities manufacturing, testing, tooling, design and prototyping are essential. Total respect for disruptive technologies and thinking out the box strategists are needed with desire and passion to discover new sciences' and Nano Technology.		
Partner 2	To establish synergies, strategic alliances and joint ventures to create manufacturing facilities for both electric vehicles, commercial vehicles (16-18 wheelers), light electric trains and transportation systems and alternative and renewably energy industries. Full consultancy offered for energy saving strategies, measures and efficiency for the food industry.		

BR-GC-05

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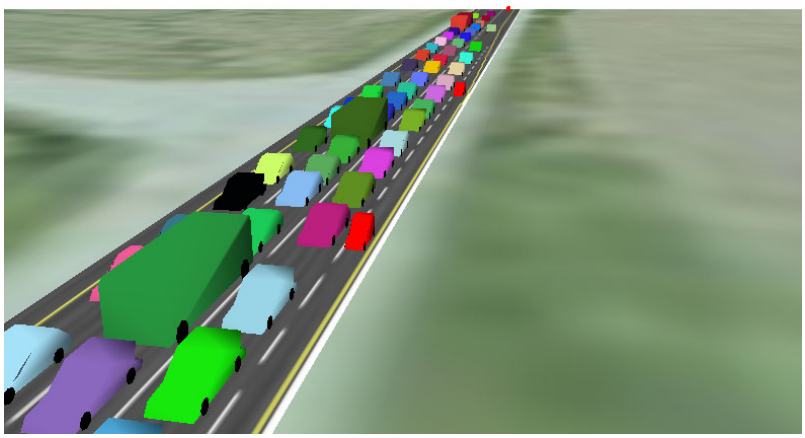
Project information	
PPP ❐ Factories of the Future ❐ Energy-efficient Buildings X Green Cars	
Topic/Title	**ElectricWorth – Making Small Electric Cars Worth Buying and Driving**
Project idea, objectives	Today, there is no real good reason to buy a small electric car: • You suffer from lower range, or depend on frequent recharge/replace of batteries – even if replace-stations will be soon spread all around. • You suffer lower safety, lower comfort, lower prestige… • You stand in traffic jams with everybody. • You help the environment, but don't see any personal benefit from it: you breathe other people's pollution. • You save on gas price, but most people are willing to pay a bit more for their comfort, safety and prestige. • You are "eco", but you don't see any cooperation from the authorities' side: roads and junctions are still built for large cars, and not adapted to you at all. So apart from very poor or very idealistic people, the majority of the public still needs an improvement in the parameters above to make the shift to small electric cars. The ElectricWorth consortium is composed of partners who believe that this shift is possible. The consortium contains highway authorities, car manufacturers, research institutes and SMEs. The consortium is now preparing two proposals: Proposal ElectricWorth This project proposal – with all the consortium partners - is designed to meet part (b) of Objective ICT-2009-10.3: ICT for the Fully Electric Vehicle: "European Fully Electric Vehicle Coordination Action". In this proposed project we will initiate the coordination activities supporting technologies that make small electric cars worth buying and driving. We will identify any infrastructure-related technologies supporting small electric cars: narrow lanes dedicated for small electric vehicles, the charge-while-drive principal, and others. We will also look at in-vehicle technologies for better convenience inside small electric cars. For all the above we will identify the research, development, regulation and standardization needed to bring these ideas out to the real world, and maintain an updated roadmap document supporting this effort. **Proposal SynchroLane** This project, with a subset of the ElectricWorth partners, is designed to meet part (a) of the same objective: '"Highly energy-efficient ICT components and solutions". In this proposed project we will actually develop a special technology that supports small electric cars. The project is about creating infrastructure that will provide congestion-relief and electrical-charge to small electric cars. The *synchronic lane* (see image) is a half-width lane (1.60m wide), typically built on the side of existing roads, in congested areas. This is not a theoretic

	idea: these lanes can initially be built on the expense of existing extra shoulder-space, without the need for construction works. As seen further, already at this initial phase they can give substantial benefit. Later, new roads could be built with these lanes, and existing lanes could be split to two.  the synchronic lane The use of the synchronic lane is permitted exclusively for cars equipped with the Synchro technology (or *synchronic cars*). Synchro technology can be built into any conventional electric car who is narrow enough (<1.50). In this size limit we can find totally conventional cars: for experiments in the Technion in Israel, we used a Hyundai ATOS, a small car commercially sold and used in Israel, allowed to carry 5 people. Its width is 1495m. A synchronic car functions normally on normal roads. Once found on a synchronic lane, it does two things: 1) It takes lateral control from the driver, and follows the exact path of the lane. 2) It electrically charges itself from a longitudinal metal strip laid on the road surface. The lateral guidance is done using the well-known method of magnets in the roadway. However, the ability to repeatedly follow the exact same path in any condition and speed is achieved through a new algorithm developed in the Technion. The algorithm was installed in a car and was field proven. Synchronic cars charge themselves by touching metal stripes on the road, transferring 24V high-current charge to their batteries. This charge-while-drive ability dramatically increases the attraction of electric cars. The more synchronic lanes will be installed, the more will the range of electric cars increase. Of course, this method will not fully replace night-charge or battery-replacement stations – at least not at the beginning - but will donate a comfortable and effective way for charging.
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**	
Partner 1	Car Manufacturer or automotive supplier, which will investigate the possibilities to make small electric cars more convenient for driving and attractive for buying. This include both technical and marketing innovations.
Partner 2	Governmental transportation bodies – e.g. Ministries of transport of various countries – that will help defining the institutional and legislative challenges that we face while changing the infrastructure to support small electric cars.
Partner 3	Insurance associations – that will identify the insurance-related difficulties in small, partly-automated cars.
Partner 4	Road authorities – road-owner companies – that will help to remove obstacles (both technical and institutional) related to creating special infrastructure.

BR-GC-06

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Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings ☒ Green Cars			
Topic/Title	**Brake energy recovery for Electric and Hybrid vehicles**		
Project idea, objectives	The recovery of brake energy is one of the main contributors to the energy efficiency of HEVs and EVs. Within this project we will investigate this recovery and develop technologies and control strategies to maximize this recovery without reducing the safety of the vehicle. Topics to be investigated : electric motor technology and control, energy management strategy, influence on battery life, Use of capacitors or other high dynamic components, relation between hydraulic and electric braking, influence on vehicle dynamics, … Project will include modelling and simulation of the braking process, development of new control strategies for electric motors and energy management, development of testing rig, testing of new technologies to validate energy recovery and functional safety aspects		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1	Company : Electric motors and controllers		
Partner 2	Research organisation : Modelling of energy management; Modelling of conventional braking process		
Partner 3	OEM		

BR-GC-07

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Project information	
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings ☑ Green Cars	
Topic/Title	**The Interim solution for Electric drive vehicles**
Project idea, objectives	The design and development of a novel low-carbon range extender engine system for electric vehicles. This will mitigate the issues with current battery technology, weight, size etc and provide an extension to vehicle running time and distance. The system is optimised to run a specifically designed compression cycle engine in a small package size. The envisaged fuel is DME that is sourced and based on a sustainable bio-mass and municipal waste from non recyclables.
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**	
Partner 1	Experienced in the handling, storage and distribution of DME
Partner 2	Vehicle manufacturer seeking to develop an electric vehicle with an extended scope of operating over an extended range, and low carbon emissions

BR-FoF-20

Contact person			
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Project information			
PPP ☑Factories of the Future ❒ Energy-efficient Buildings ❒ Green Cars			
Topic/Title	**Factory of the future: Hethel Science and Technology Park**		
Project idea, objectives	Hethel Engineering Centre, the enterprise hub focussing on skills, enterprise and innovation within a clean technology context bringing together a consortium:- • Group Lotus PLC • Cluster of Automotive businesses • Norwich Research Park, inc. UEA and other Engineering Universities. • Relevant Public sector To deliver a third generation science and technology park that will be built using the latest technologies. This technology park will seek to build on it's significant expertise to become a world class research intensive cluster for low-carbon vehicle development		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1	Other Science and technology parks ideally located within low-carbon vehicle clusters		
Partner 2	Research technology development and innovation organisations including Universities seeking to share knowledge and best practice in factories of the future.		

BR-GC-08

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Project information	
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings ■ Green Cars	
Topic/Title	Development of Air Condition (AC) Scroll Tech solutions on Green Car's Cooling Systems
Project idea, objectives	Cooling solutions for electric vehicles demands an efficient system which is able to operate with a low energy consume. The current solutions in the market are less efficient than AC Scroll, reflecting on lower autonomy and higher environment impact. The project is based, but not limited, in the pursue of following objectives: • **Application**: to define requisites for the use of AC Scroll on Green Car's cooling systems and to map alternative technologies which are being developed. • **Theoretic Analysis**: viability study of mapped solutions, considering benefits and costs of each solution compared with AC Scroll. • **Prototype/Test**: to develop prototypes and tests to verify analysis consistence.
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**	
Partner 1	
Partner 2	

BR-GC-09

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Project information	
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings ■ Green Cars	
Topic/Title	Development of Microcompressor application on Green Car's Heating/Cooling Systems
Project idea, objectives	Devices which combine energy efficiency and low weight and volume ratios are key factors to successful introduction of electric vehicles in the market. As it is said, at the same time they should also be reliable and robust, in order to withstand the harsh environmental and usage conditions imposed by the automotive standards. The project is based, but not limited, in the pursue of following objectives: • **Application**: to define use requirements of microcompressor on Green Car's heating/cooling systems and to map alternative technologies which are being developed in this field. • **Market Analysis**: viability study of mapped solutions, considering benefits and costs of each solution compared with microcompressor. • **Prototype/Test**: to develop prototypes and tests to verify analysis consistence.
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**	
Partner 1	
Partner 2	

BR-GC-10

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Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings X Green Cars			
Topic/Title	**MagicBus** – Magnesium Sheet Forming for Transport Sector Applications		
Project idea, objectives			

Objective

The proposed project aims to establish the use of ultra light wrought magnesium alloys in road transport and to develop a cost- and energy efficient production route for magnesium sheets.
This goal supports the efforts of the EC to substantially decrease CO_2 emissions by reducing pollution of surface traffic due to weight savings. It is also in line with the Strategic Research Agenda of the PPP ERRTRAC and the Key Research Issues of the European Council for Automotive R&D EUCAR (December 2004).
Substitution of steel and aluminium sheets in utility vehicles by magnesium - which is 30% lighter than aluminium - will allow substantial overall **savings in energy and fuel consumption** in surface transport. Weight reduction will also offer the chance for **increased payload**, which in turn improves **competitiveness** of European transport industry. The project will focus on transporters, buses, coaches and light-trucks to ensure significant environmental and economical impact.

Need

Whilst cast magnesium alloys are increasingly being used in automotive industry, the use of magnesium sheets or more generally wrought magnesium alloys is still limited. The main reasons preventing the wide use of magnesium sheets can be summarised as follows:

- Commercial magnesium sheet alloys exhibit limited formability at low temperatures. Consequently, forming processes are carried out at elevated temperatures leading to high production costs and high energy consumption and, thus, preventing the development of a significant market for Mg-sheets.
- Due to this lack of market chances manufacturers of semi finished products (sheets) offer only limited rolling capacities for magnesium sheet production in Europe.

Solution

The proposed project aims at solving the above mentioned obstacles by

- Demonstration of economic magnesium sheet mass production by innovative twin

	roller strip casting. • Developing magnesium alloys with increased formability at low temperatures. • Involving major European manufacturers of transporters, buses and lorries in the project to create a market need for magnesium sheets. • Optimisation of traditional forming processes for Mg and further development of innovative alternative forming methods (e.g. high velocity sheet forming) for significant improvement of mechanical properties of Mg-sheet components. • Raising the acceptance level of magnesium sheets in transport industry.
Partner search description **Type = Company/SME/Research organisation/university**	
Partner 1	Company/SME Manufacturers of buses and/or trucks, suppliers to truck and bus manufacturers
Partner 2	Company/SME Forming of Mg-sheets

BR-GC-11

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Project information	**ENVIRONMENTAL and ROAD SAFETY**		
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings ❒ Green Cars			
Topic/Title	**Project HRWATT**		
Project idea, objectives	*APPLICATIONS of CARS WITH FRONT STOP LAMP TECHNOLOGICAL NOVELTY of ROAD TRAFFIC* */ DRL- FSL- LED /* Day runnig light- front stop lamp-led technology The cleaner environment and the safer traffic.		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1			
Partner 2			

BR-GC-12

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Project information			
PPP X Factories of the Future ❒ Energy-efficient Buildings **X Green Cars**			
Topic/Title	**DEVELOPING and MANAGING the ELV (END-of-LIFE) DISMANTLING/REUSE TECHNOLOGIES for TRUCKS, COACHES, AGRICULTURAL VEHICLES for economic RECYCLING and for ecologic, SUSTAINABLE ENVIRONMENTAL PROTECTION and for hundreds of NEW JOBS around ALL REGIONS in Europe** **Addressing GC-NMP-2010-1- ..technologies and processes for sustainable automotive... applications,** **Addressing FoF-NMP-2010-2 .. Supply chain approaches for small series industrial processes** **Addressing FoF-ICT-2010-1 SMART Factories, ICT for agle and environmentally friendly manufacturing - ICT**		
Project idea, objectives	There are directives and rules to manage the large number of personal car ELVs (M1,N1), but similar regulations and applicable technologies are MISSING for larger ELVs, like trucks, coaches, agricultural machines, etc. Without finding an environmentally and economically friendly solutions for the missing technologies, the increasing number of badly dismantled large ELV-s will create a disaster in the environment. The topic of EXTENDING the ELV TECHNOLOGIES and methodologies to involve trucks, coaches (busses) AND industrial/agricultural (transport) machines, like tractors, bulldozers, rollers, and further large mechanical structures, cranes, etc.. As far as we know it, presently the disassembly and recycling and reuse of these vehicles are NOT TREATED by directives neither by law nor by rules, but the environmental effects of dismantling a single truck is worth a dozen of personal car ELV's environmental risk. (e.g. 15+ liters of cooling liquid in the air-conditioners, 30+ liters of motor-oil, etc.) The R&D project could bring technological solutions for handling + management of such large ELVs.		

	THEY DO NEED personal involvement, giving hundreds of new jobs, THEY DO NEED HIGH-TECH ICT solutions, e.g. adopting+ reuse of the successful 6th FW- E-MULT project, with many more advanced ICT applications, involving interactive multimedia support, etc. THEY DO NEED NEW networked SME management solutions, THEY DO NEED the development of NEW EU STANDARDS, THEY DO NEED a set proven technological elements on phases of disassembly. THEY DO NEED technology research for the BETTER seperation of secondary raw materials, (post-shredding technologies), THEY DO NEED a harmonized, EU standard to monitor and enable the documentation of the reuse/recycling ratio of the ELV-s, THEY DO NEED an EU-wide harmonized educational support, based on e-learning and acredited knowlege centres, THEY DO NEED a shared knowledge support on the individual technics needed for each large ELV's dismantling process, THEY DO NEED such solutions ALL around EU , and would equally benefit the new members states together with the older EU member states. and many more.
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**	
Partner 1	INNOVATIVE SMEs and research-oriented industrial partners for topics in : * POST-SHREDDING separation technologies, * robotized disassembly technologies, * intelligent sensor applications .....* Computer Aided Design strategies for disassembly
Partner 2	Large truck / coach , etc., factories that will face the responsibility of addressing product-change (enhancement) for recycling ... Industrial Associations for SME-s related to recycling/reuse

BR-GC-13

Contact person			
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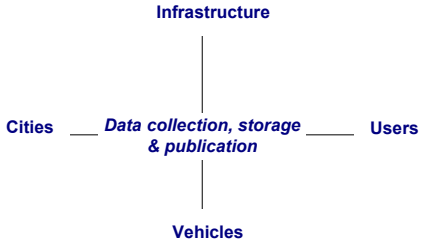
Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings X Green Cars			
Topic/Title	**IDPE – Integrated demonstration project on electromobility**		
Project idea, objectives	**<u>Diversified test fleets and coherent result</u>** In the coming years large volumes of EVs and charging infrastructure will be introduced in cities throughout Europe. Demonstration projects are initiated by cities, automakers and power generation and infrastructure companies. There is a lack of coordination and coherent test and analysis methodology that prevents tests to be used to draw conclusions and identify the changes, incentives etc required in the European Union to reach a sustainable transport solution. The objective of the project is to establish a pan-european demonstration project by coordinating existing and emerging demonstration projects in Europe with common data logging/collection methodology and technique, common data storage and publication.  Test site Sweden at Lindholmen Science Park offers: ▪ Established methodology and technique for collection and storage of demonstration data from diversified test fleets. ▪ Electric vehicle winter test methodology and procedure ▪ To coordinate the project.		
Partner search description **Type = Company/SME/Research organisation/university + desired skills/knowledge**			
Partner 1	Company - Electric Vehicle manufactures.		
Partner 2	Cities - European cities with existing or emergind electric vehicle demonstration projects.		
Partner 3	Universities/Research organisations - Competence in analysing large amounts of data through data mining, statistics etc.		

BR-GC-14

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Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings ☒ Green Cars			
Topic/Title	**Range extension by an enhanced energy management**		
Project idea, objectives	The storage of electrical energy in a car is still limited, due to cost and weight. With that also the range is limited and the most promising way to extend the range is an efficient power management. The basis of this is the prediction of the upcoming conditions the electrical vehicle will face to predict the energy consumption in these conditions, and achieve the most reasonable allocation of the remaining battery power. Those relevant conditions can be:- • Weather - as lights, wipers and HVAC (heating, ventilation, air condition) might be affected, • Daytime - as lighting might be affected • Traffic conditions - as stop and go driving consumes more energy per range • Left turns and traffic sign stops - for the same reason • Slope - as the consumption heavily depends on the grade of slope • Access to charging opportunities In a first step the energy allocation can be optimized. Speed at night might be less important than burning headlights. Reaching the top of the hill might be more important than air condition. Over discharging the battery might be less risky if a soon recharge can be expected. Even minor adoptions can have a major impact if they are made early enough. In a second step these conditions can be used in a navigation system to optimize the route regarding range. In addition to the 'shortest' and 'fastest' route also the 'most energy saving' route can be selected. The project needs Partners with the following expertises: - Electrical vehicles - Batteries for electrical vehicles - Software to visualise the 3D Map ahead (E-Horizon)		

	- 3D road geometry - Car-Navigation - Content for weather and traffic - Navigational map - Map attributes - POI (charging stations) The Project aim is to simply squeeze as much range from electrical vehicles, through using knowledge of the upcoming route and environment via as many useful inputs as possible, and intelligent software to compute the effect of these inputs and inform the driver accordingly. Intermap can bring to this Project their expertise in 3D roads and slopes as applied to Electric Vehicles and their Energy Management.
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**	
Partner 1	**Car manufacturer** Expertise in electrical vehicles and related battery technology
Partner 2	**Navigation supplier** Expertise in dynamic car navigation. Access to and ability to process dynamic online content.

BR-GC-15

Contact person			
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Project information	
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings X Green Cars	
Topic/Title	**Suspension + transmission system for automotive use**
Project idea, objectives	This document attempts to describe a system which combines a wheel suspension system + power transmission to the same wheel. The patent for that system is held by Mr. Y. Davidovitch, a mechanical engineer from Israel. The system consists of a vertical shaft, which is powered at the top by an electric motor, or other power source, and transfers power to a vehicle wheel trough an arc transfer box and horizontal shaft. Around the vertical shaft a set of bearings holds a diagonal spring system. The vertical shaft has the ability to change its length, as it is built from 2 shafts, one of them hollow & the other shaft can move vertically inside the hollow shaft. Assuming this system can operate in the conditions it is intended for, it can provide a solution for independent wheel drive, without the need to place the motor inside the wheel, and by that supporting an important feature for the design of all wheel drive vehicle, with independent control of each wheel, that alone could have substantial technical benefits and cost reduction. Another potential benefit is the built in ability to rotate each wheel around the vertical shaft, and allow high manoeuvrability for the vehicle, potentially allowing sideways movement of the vehicle, a great benefit while attempting to park. An additional potential benefit is the potential to seriously reduce the weight of the wheel system, by moving many components to the vehicle chassis, which could also improve vehicle performance and reduce fuel consumption. On the other hand, there are some serious drawbacks built into this concept. One clear drawback is the need to use an arc transmission, to transfer power from the vertical shaft to the horizontal shaft which is connected to the wheel, such a transfer box could cause significant loss of power, due to its lower power transfer efficiency, this transfer box will also have to stand up to typical wheel acceleration, a would therefore be an expensive sub system. Another clear drawback is the fact that the vertical shaft would have to stand to some dynamic loads caused by the wheel, and that would cause high stress on this shaft & the bearings which hold it & allow it to rotate. We estimate that there is a potential for using such a system in slow moving vehicles, that drive of flat surfaces, for indoors use, or for the wheels & suspension of airplanes, which drive very short distances on a system which is basically a vertical shaft, such airplanes usually do not transfer power to the wheels, and spend substantial power while taxing on the tarmac of airfields. We estimate that the basic design of the patent could be improved by some serious R&D, and potential applications of the system & patent could emerge and prove to be of value.

Partner search description Type = Company/SME/Research organisation/university	
Partner 1	

BR-GC-16_A

Contact person			
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Project information			
Green Cars			
Topic/Title	**GC.NMP.2010-1: Materials, technologies and processes for sustainable automotive electrochemical storage applications**		
Project idea, objectives	**Technical content/scope:** ➢ cinc-air-battery ➢ new technologies and chemistries for very high energy densities ➢ energy densities of >300 Wh/kg ➢ low cost ➢ long operational lifetime ➢ fast charging ➢ recyclability ➢ safety ➢ proving scalability towards industrial needs ➢ full electric vehicle **BASF, The Chemical Company, is interested in contacts to project partners or to an already existing consortium.**		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1	Academic partners with new scientific or technical approach Coordinator for the EU-project		
Partner 2	Additional partners along the value chain from academia to application		

BR-GC-16_B

Contact person			
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Project information

Lightweight Composites

Project idea, objectives	**Technical content/scope:** ➢ system solutions to enable lightweight construction ➢ functional composite materials ➢ smart combination with material solutions ➢ high strength **Applications/Markets:** ➢ automotive ➢ aerospace ➢ construction (e.g. VIPs) ➢ wind power **BASF, The Chemical Company, is interested in contacts to project partners or to an already existing consortium.**
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**	
Partner 1	Academic partners with new scientific or technical approach Coordinator for the EU-project
Partner 2	Additional partners along the value chain from academia to application

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Contact person			
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Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings X Green Cars			
Topic/Title	**Smart energy storage systems in electric vehicles**		
Project idea, objectives	Development of a smart energy storage system for electric vehicles. o Selection and development of most suitable energy storage hardware o High density batteries (e.g. lithium) o Super capacitors o Flywheels o Hydrogen & fuel cell. o Definition and development of the battery/storage management system (BMS). o Development of the control system and interaction with o Direct drive electric motors/generators o Power converters o Storage system o Smart Grid connection and communication (Vehicle-to-Grid). o RAMS – Reliability, availability, maintainability, safety.		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1	R&D departments of suppliers and manufacturers of energy storage systems : super capacitors, high density batteries, flywheels, fuel cells, …		
Partner 2	Universities and R&D partners.		

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Contact person			
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Project information			
PPP ❒ Factories of the Future ❒ Energy-efficient Buildings X Green Cars			
Topic/Title	**Vehicle to Grid (V2G)**		
Project idea, objectives	Definition and development of the communication and energy transfer system between the electric vehicle and the electrical network (Smart Grid). Development of hardware, software, information and communication technologies for the following functions: o Electrical energy transfer from the network (Smart Grid) to the vehicle to charge the vehicle batteries/energy storage. o Electrical energy transfer from the electric vehicle to the network (Smart Grid) during peaks of high energy demand. o Communication protocols for identification of the vehicle or owner and the quantity of transferred energy (e.g. IEC 61850, GPRS, …). o Control system for automated electric vehicle renting: availability, reservation, preparation, payment, … . o RAMS – Reliability, availability, maintainability, safety (e.g. IEC 61508).		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1	Electricity distributors and network operators		
Partner 2	Automotive industry		

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Contact person			
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Project information			
PPP : Green Cars			
Topic/Title	**Development of Green Trucks**		
Project idea, objectives	The objective of the project is to develop a truck with a small gas turbine using the Inter-Cooled Recuperated (ICR) cycle. This system can improve the actual diesel motor efficiency used in the trucks (by about 50%) and it can also reduce the micro-particle emissions.		
Partner search description **Type = Company/SME/Research organisation/university** **+ desired skills/knowledge**			
Partner 1	An organization with experience in heat exchanger manufacturing.		
Partner 2	An organization with experience in truck manufacturing.		
Partner 3	An organization with knowledge of truck drive trains.		