

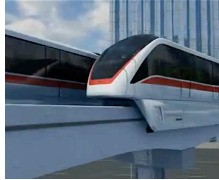


# DEMOKRIT

Distributed E\*Mobility in Kriti

A short teaser of a concept and feasibility study for the implementation of a solar-powered public and private e-mobility system for citizens and visitors of the Mediterranean Island of Crete (Kriti) in Greece.

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## Monorail Train with Aerial Guideway Structure for People and Cargo Transportation

The plan is to connect the airports of Chania, Heraklion, Sitia and all other northern Cretan beach places with an elegant, silent and fast public monorail for tourists and citizens. To be constructed on pylons 5 meters above ground and along the existing highway E 75 (Chania-Sitia). Moves people and cargo (integrating containers) with a velocity of 90 km/h. The study will demonstrate that and how such a monorail can be built in Crete, how it can be conceived as a cheap island wide transport system, a »cult-system« for citizens & tourists and a job machine for the whole island.



## Integrated Solar Power Plant on the Guideway for E-Mobility

We call the train a »Sun-Glider« because the monorail is conceived as a huge integrated solar PV power plant with a capacity of 200 MW (see left). The system is designed to supply the train with energy in a self-supply manner. Stations and other buildings are further equipped with other means of renewable power generation. The total electricity is also to be used for the energy needs of a private e-mobility system consisting of e-cars, e-bikes and e-scooters. Our study shall investigate and demonstrate that a traffic system can self-supply monorails and e-vehicles with renewable energy.



## Big Architecture for Smooth Infrastructures

The monorail itself and in particular the stations and stops are to be planned, built and designed by worldwide known master architects. The SunGlider shall be the first transportation system completely designed by architects adapted to nature and culture. The stations are also nodal points for mobility and communication comprising forums, charging stations, sharing&rental stations, shops and cultural venues. Our study shall investigate how such an eco-friendly »Wonder of the World« shall look like.



## E-Train, E-Cars, E-Bike and E-Scooters to Build a Network

The concept is to combine the SunGlider with a network of e-vehicles not bound to rails. The main connecting objective is the power: all e-vehicles shall be charged with renewable power by special locations inside the stations. The second one is the vehicle-rental and sharing system. **The stations shall be turntables of e-mobility.** In order to replace combustion vehicles a concept is needed to win tourists and citizens for e-mobility. It is to be investigated how the distributed presence of rental and/or sharing points as well as a smart tariff and billing systems may convince them.



## Manufacturing, Raw Materials and Jobs

E-vehicles are still too expensive. This can be improved on the basis of existing technologies. First by manufacturing: Cheaper cars can be produced nearby with better concepts. Second by construction materials: Common materials with negative CO<sub>2</sub> balances to be replaced by composite materials of herbal substances. Special features: a local Cretan vehicle industry may arise and local farmers on site of the island can produce the raw materials. The study shall investigate how and where on the island this may be feasible.



## Civil Society in Dialogue

A plan like this is not a question of technology and engineering alone. Not even in the first place. It is a matter of social and political change. It will work only if the affected people support and adopt this as their own project. In one word: it will happen if the Cretan civil society is involved from the beginning and has the opportunity to decide. What sociologists call a »discourse« in civil society is fundamental here. To implement this discourse, is one of the basic tasks of this study.



## Master Plan Study

DEMOKRIT is a proposal for a feasibility study and a master plan of the SunGlider on the Island of Crete. The partners who propose this are well known professionals in planning and studies of this kind and level. But DEMOKRIT is also a concept for social and economic implementation and not focussed on the engineering and planning aspects only. To establish a funding concept is also a master task of this proposal. In particular it seems to be a European task. The European added value is to export this model to other Mediterranean areas. What works in Crete will work in Spain or Italy as well.

**PROPOSED PARTNERS:** SOLAR DEVELOPMENT CONSULTING UG (GER) | BOMBARDIER TRANSPORTATION GMBH (GER) | IMPORTANT ARCHITECTURAL PRACTICE (UK) | HQ NAMCO INTERNATIONAL AG (GR) | FRAUNHOFER IFAM BREMEN (GER) | MECHATRON PV (GR) | ONE OF THE WORD LEADING SOLAR COMPANIES (GER) | ONYX COMPOSITES GMBH (GER) | ZETA CONSTRUCTION (GR) | TECHNICAL UNIVERSITY OF CRETE (GR) | FURTHER PARTNERS.

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