

HySolarCar

Hybrid Solar Vehicle for Sustainable Mobility



Proposal submitted to LLP (Lifelong Learning Programme) - Leonardo da Vinci - TOI (Transfer Of Innovation)

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Summary

The growth in mobility has a positive effect on our prosperity and quality of life, but its negative environmental impacts and the erosion of non-renewable resources are becoming more and more visible every day. As a consequence, the search for sustainable mobility is accelerating rapidly.

This project aims at promoting knowledge in the field of sustainable transportation, strongly related to energy conversion and environmental problems, by means of active participation in an educational project for the design and manufacture of an innovative prototype of a hybrid solar vehicle (HSV). The involvement in an advanced engineering project is a very effective way to improve the attractiveness and the quality of learning, also in a Lifelong perspective. In the last ten years, hybrid electric vehicles have emerged as a valid mid-term solution for reducing fuel consumption and carbon dioxide emissions. Their integration with photo-voltaic sources may further contribute towards the mitigation of fossil fuels depletion, global warming and climate changes.

A first prototype of a Hybrid Solar Vehicle was successfully developed by the proposer and its partners in a previous Leonardo project. It will represent a basis for further development of the vehicle and a very effective tool in the presentation and practical demonstration of operating such vehicles, where physics, chemistry, mathematics and mechanical, electrical and electronic engineering are strongly connected.

The partnership includes educational and training institutions, universities, SME's and research centres, with qualified backgrounds and significant experience in international projects. Most of them have developed significant experience and aptitude in their cooperation by participating in a previous Leonardo project.

The project would produce the following outcomes:

- An improved version of the solar hybrid prototype, with advanced lithium-ion batteries, a solar roof with more advanced PV panels and a self-orienting mechanism for the optimization of solar incidence during parking phases.
- A demonstrative and educational tour with the prototype around schools and universities in different European countries, with the participation of most of the partners and the production of video and webcasts.
- Advanced multilingual educational material, such as html pages, video and screen-casts.
- Multilingual website and newsletters, and advanced on-line educational tools (tests, simulation tools and games).
- Participation in exhibitions, competitions and conferences.
- Wide dissemination on TV, radio, media and web.

Based on the very positive experience acquired in the previous Leonardo project, where a first version of the prototype was available only at the end of the project, and considering the availability of an advanced website and of a mailing list of more than 6500 contacts, we believe this project can have a strong impact on its potential users, chiefly secondary school and university students, teachers, staff and workers. A remarkable impact is also expected on people interested in environmental and energy issues and more in general on public opinion. We believe that the demonstrative tour in Europe, and its diffusion via TV and web, can represent a very effective and successful way to disseminate the knowledge on sustainable mobility issues, and to attract the users toward further studies on these important topics.

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