



**European Territorial Cooperation Programme**  
**“Greece-Bulgaria 2007-2013”**  
**Project HYDECON – Contract B1.33.01/31.03.2011**

# ZERO EMISSION RACING

## Contest for School students

Organized by the HYDECON Network:



CENTER FOR RESEARCH &  
TECHNOLOGY HELLAS



SOUTH WEST UNIVERSITY  
“NEOFIT RILSKI”



MUNICIPALITY OF  
THERMI



ECO ENERGY  
FOUNDATION

The “ZERO EMISSION RACING” contest is a part of the international project  
“HYDROGEN ECONOMY COOPERATION NETWORK FOR RESEARCH – PUBLIC AWARENESS – BUSINESS  
OPPORTUNITIES ACROSS GREEK – BULGARIAN BORDERS”

(Acronym: HYDECON) – Contract B1.33.01/31.03.2011

of the European Territorial Cooperation Programme “Greece-Bulgaria 2007-2013”.

**The primary goals of the contest are to:**

- to popularize the potential and advantages of technologies related to the hydrogen economy concept among Bulgarian and Greek school students
- Generate enthusiasm for science and engineering at a crucial stage in the educational development of young people and force their creative thinking to present original ideas
- Improve students' understanding of scientific concepts and renewable energy technologies and give them the opportunity to demonstrate their knowledge and technical skills on construction and racing with demo fuel cell cars



## RULES AND TIME-LIMIT OF THE COMPETITION

### Rules for application and participation

- ◆ The competition is open to school students between the ages of 15 and 19.
- ◆ The official team can consist of one or two participants.
- ◆ The leadership of a supervisor is obligatory. The supervisor should be a teacher at the same school as the participating students. The role of the supervisor is to guide, help and monitor the students during the preparation of their project and accompany them in case they are selected to participate at the final stage of the competition in Bansko.
- ◆ The participation should be officially permitted by the school director.
- ◆ The contest includes two stages – preliminary selection of participants based on submitted projects; participation at the final stage in Bansko.
- ◆ The official language of the contest is English.
- ◆ The applicants must submit the completed Project Application Form and their CV, in English. All documents have to be mailed to [eefound@mail.bg](mailto:eefound@mail.bg) before 10<sup>th</sup> January 2012

### Project Application Form content

- ◆ The projects (written text) should refer to hydrogen fuel cell vehicles, emphasizing on:
  - the differences with the vehicles utilizing traditional combustion engines
  - advantages and drawbacks of both concepts

Application of schemes, diagrams and especially prototypes is highly appreciated. The project should not exceed 10 standard pages.
- ◆ The projects should include:
  - Title;
  - Name and surname of author(s);
  - School, town, project supervisor
  - Project description;
  - Applications: schèmes, diagrams, photos etc.





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- ◆ Teams may use any source of data or materials: journals, computers, software, references, web sites, books, etc. All sources used **MUST** be cited.

### **Preliminary selection**

- ◆ The preliminary selection of submitted projects will be performed by an Expert committee.
- ◆ The best five (5) projects from Bulgaria and the best five (5) projects from Greece will proceed to the 2<sup>nd</sup> - final stage of the contest, which will held in Bansko – Bulgaria, in April 2012.
- ◆ The selected participants will be announced at least two months before the final stage.
- ◆ The cost expenses of the participants and their supervisors for the travel from Thessaloniki or Blagoevgrad to Bansko and contrariwise as well as the accommodation and full board in Bansko will be covered by the HYDECON project.

### **The competition in Bansko – final stage**

The final stage consists of two rounds:

#### **1<sup>st</sup> round - Oral presentation of the projects (10 minutes)**

The applicants should present their projects in English using PowerPoint presentation, poster, models, prototypes, etc.

The projects will be **evaluated** by the following criteria:

- content and arrangement;
- oral presentation;
- visualization

#### **2<sup>nd</sup> round - ZERO EMISSION RACING competition**

The student teams will be provided a Fuel Cell Car kit.

During competition the teams should assemble the fuel cell cars and refuel them with hydrogen, produced by water electrolyzer.





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Race will be run in a double-elimination format in which a participant ceases to be eligible to win upon having lost two races. The top four fastest cars, after all of the timed trials are complete, will compete in the final "head-to-head" race for first, second and third place.

The teams will be **evaluated** on three components:

- used time for assembling the fuel cell car;
- time for refueling the car with hydrogen;
- final position in the race.

### **Final evaluation**

The final ranking of the participants will be estimated from the scores obtained in both rounds.

### **Awards**

The first, second and third place winner teams will be awarded with special prizes. The rest of participants will receive consolation prizes. Each participant will receive certificate for attendance.

### **Contact Information**

For further information and clarifications please contact:

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