PRESS RELEASE

March 2014

Advent signed a contract with European Space Agency, European Space Research and Technology Center (ESA/ESTEC)

Advent signed a contract with European Space Agency (Contract No. 4000109578/13/NL/SC) for the development of a closed loop regenerative fuel cell system (RFCS) at the Technology Readiness Level TRL5-6. The price of the contract amounts to 986,185 Euros. Advent is the prime contractor while FORTH/ICEHT (Foundation for Research and Technology Hellas, Institute of Chemical Engineering Science), CERTH (Center for Research and Technology, Hellas) and University of Patras are the subcontractors. These activities are financed within the framework of the Greek task force under the supervision of the Greek General Secretariat for Research and Technology.

Within the ESA TRP, GTF and ARTES 5 programs activities have been undertaken to develop and test elements of a fuel cell system to compliment or even replace batteries in future robotic and human exploration missions or on future new generation very large GEO satellites in the long term. The technology demonstration in the current ESTEC contract will be based on a closed loop regenerative fuel cell system (RFCS) comprises as a high pressure PEM electrolyser (HPPEMELY),a high temperature PEM fuel cell (HTPEMFC), the storage and flow system and the control unit. The HTPEMFC will be developed based on the proprietary HTPEM technology of ADVENT SA. As a whole the closed loop RFCS operates as a rechargeable system. During charging, the HPPEMELYsplits water into hydrogen and oxygen by power supply being available from the solar array. During discharge when the solar array does not generate power the fuel cell converts the stored hydrogen and oxygen into water and generates electrical power and heat. The latter causes significant load on the thermal subsystem under space conditions. The use of HTPEMFC operating at elevated temperature allows for the easier dumping of the produced heat.

Head Office	L. Kifissias 44, Marousi Athens, GR15125	T: +30 210 637 8820	F: +30 210 637 8888
Research Laboratories	Patras Science Park, Rio Patras GR 26504	T: +30 2610 911 583	F: +30 2610 911 585
Advent North America	222 Pitkin Street, East Hartford, CT 06118, USA	T: +1 860 291 8832	F: +1 860 291 8874