

Project Summary

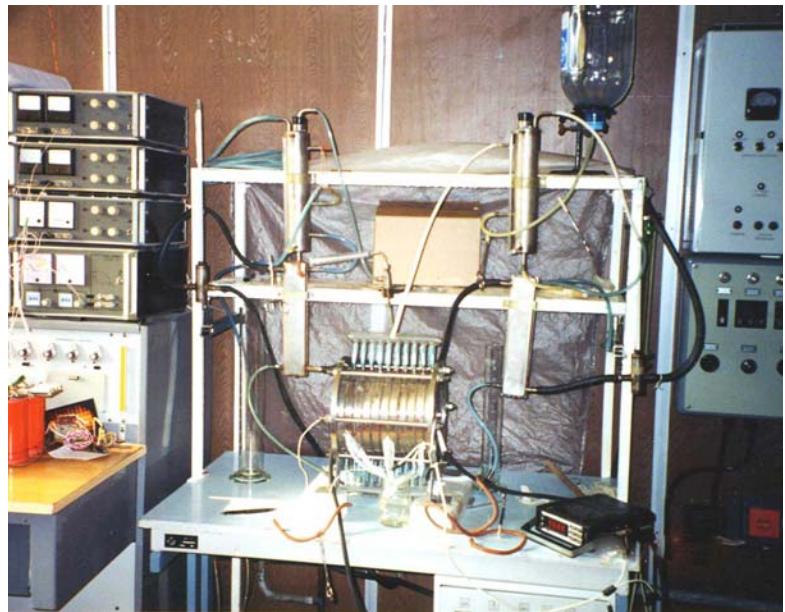
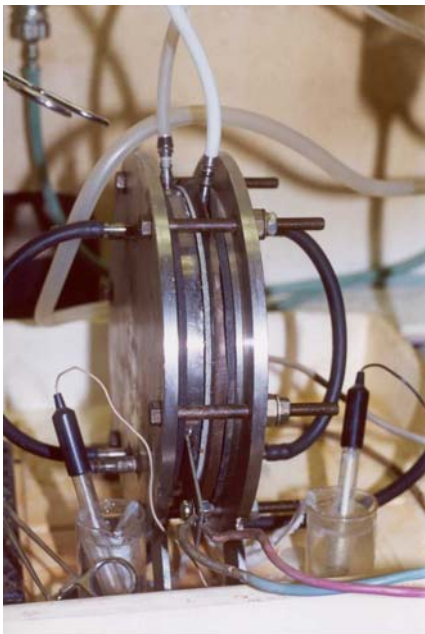
Project title: HYDROGEN PRODUCTION THROUGH SEA WATER ELECTROLYSIS

1. The project relates to the future power engineering which has a trend to be based on hydrogen power. The use of hydrogen as an energy source proves to become highly vital for reason of hydrocarbon fuel resources exhaustion and aggravation of environmental damages caused by the use of the latter. Hydrogen as an ecologically pure fuel with the greatest specific heat of combustion can substitute any kind of fossil fuel in a wide diversity of applications: in industry, transportation, power engineering including energy storage.

Rather attractive and promising procedure for hydrogen production is the electrolytic process using sea water as electrolyte self electrical conductivity of which is due to soluble salts.

2. The tentative theoretical and experimental studies have shown that direct seawater electrolysis can be technically performed and effective for the commercial production of hydrogen; apart from hydrogen, in the course of the procedure one can produce different sub-products possessing self commercial values.

Other benefits: 1. Sea water is the most widespread, cleanest and cheapest working medium with practically unlimited resources. 2. The technique makes it possible to solve the energy related problems in close connection with environmental ones. 3. There is explicit evidence of the technique commercial attractiveness and quick recouplement of investments, as for many regions it is preferable as compared with delivered fossil fuel.



Laboratory models of the electrolyzer.

3. The project consists in: The development of installation for hydrogen and non-polluting by-products production by means of direct seawater electrolysis; assessment of socio-economical and environmental impact followed by the technology and products commercialization.

4. The expected use of the capital raised:

Stage 1: Development - construction of pilot cost-effective installation for electrolytic hydrogen and by-products production from seawater of $5\div 10 \text{ nm}^3/\text{hour}$ hydrogen productivity

which use is preferable & profitable for fuel production as compared with delivered fossil fuel.
Stage 2: Development, fabrication and test of assembly and auxiliary devices for electrolytic installation of not less than 100 nm³/hour hydrogen productivity.

5. The investment amount sought

Development - construction of installation for electrolytic hydrogen and by-products production from seawater of 5÷10 nm ³ /hour hydrogen productivity (stage 1).	2 mln £	2 years
Development, fabrication and test of electrolytic installation of 100 nm ³ /hour hydrogen productivity (stage 2).	10 mln £	3 - 4 years

6. The return on investment in both financial and environmental terms over a period of time: Installations for electrolytic hydrogen production from sea water having been experimentally developed, the cost of units will be about 6 thousand £/nm³/hour. The investment must be reimbursed during the operation period of two years.

The project will facilitate of environment rehabilitation and guard against negative ecological changes and further climate warming-up.

7. Market features: The project is economically acceptable in power niche market and has good prospects of being competitive both commercially and ecologically. By virtue of high growth rate of the demand in ecologically safe power engineering, huge and not occupied market, the latter is predisposed to intense development and the project has a high commercializing potential.

8. The experience of management team

Applied Technologies Company (ATC) currently employs over 10 high skilled scientists and engineers who have the right background for the projects implementation in electrochemistry, designing, testing and manufacturing. The ATC is primarily active in R&D and designing on natural sciences and engineering basing on science-intensive and radically new technique and processes at international level. The ATC has a long and successful track record of projects in the fields of renewable energy and technology for hydrogen production by means of sea water electrolysis.

9. The given work was supported by:

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The ATC's project "Power System for Electricity & Hydrogen Production through Ocean Resources Utilization" was honored with the «National ENERGY GLOBE Award» from International ENERGY GLOBE Foundation in conjunction with European Commission.

10. Role of joint partner: Financing and Marketing. Other forms of cooperation are also possible. Detailed Business plan should be the subject of common work.

11. Type of ATS's ownership: Ltd. - private.

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