<u>GREEN ISLAND</u> AGIOS EFSTRATIOS

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THE ISLAND after the 1968 earthquake



Άγιος Ευστράτιος 1971



The island today (not much development)



REGIONAL DEVELOPMENT

Traditional approach (REDUCE» DISTANCE (more and faster boats)

2. NEW APPROACH SUSTAINABLE ECOLOGICAL DEVELOPMENT = SELF CONTAINED with local resources

3. Economy of needs vs Economy of profit



• ENERGY

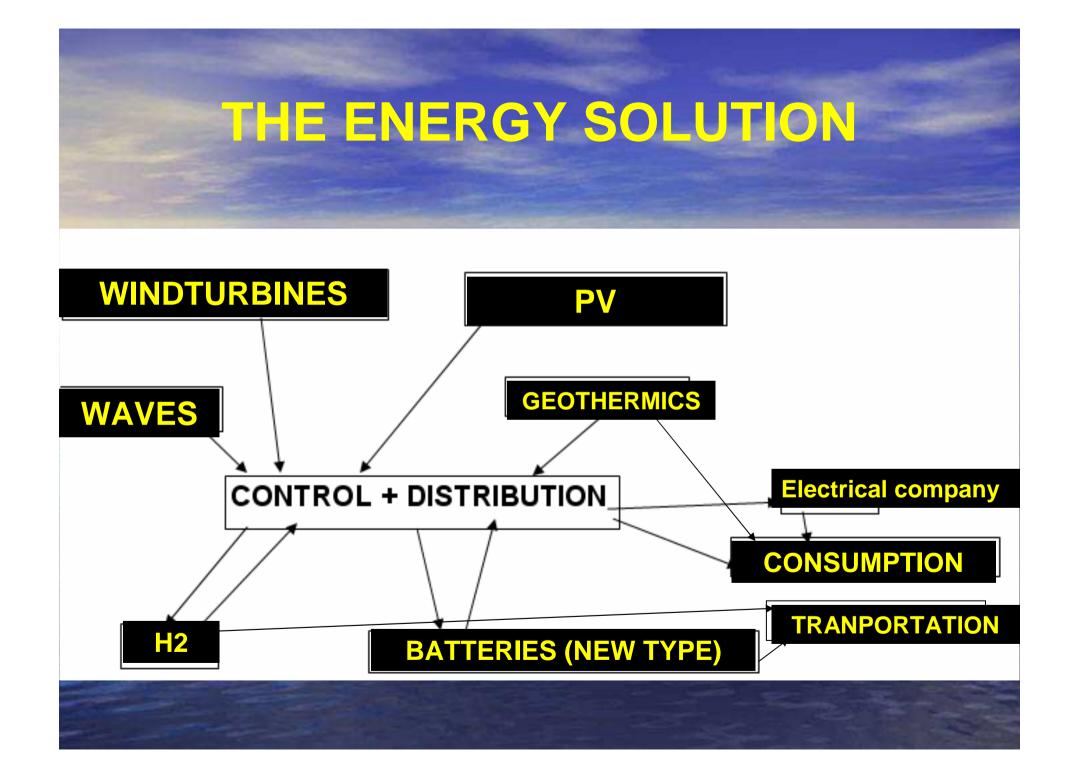
Renewable Energy Sources REDUCE ENERGY CONSUMPTION SAVING ENERGY BIOMASS - HEAT (WASTE) • GEOTHERMIC • FOOD WASTE – WASTE WATER TREATMENT AGRICULTURE, FISHING

TARGET

POWER 100% from RES

INNOVATION: NOT CONNECTED TO MAIN GRID

INTEGRATED APPROACH FROM THE BEGINNING



WIND ENERGY

1st Small windturbine in Agios Efstratios

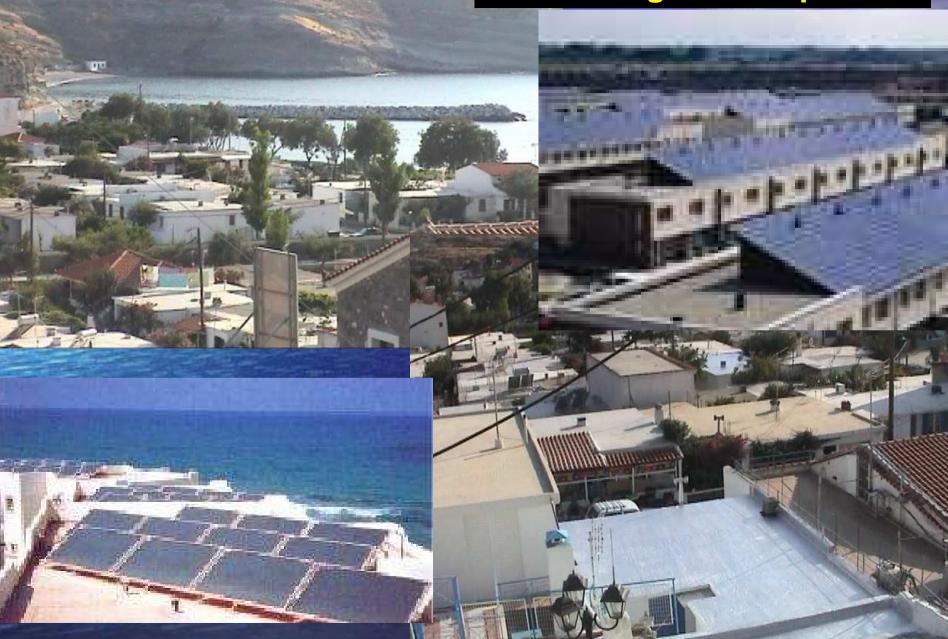
PHOTOVOLTAICS





Some in the roofs to provide better design + a PV park

Some in the roofs to provide better design + a PV park



WAVE ENERGY(waves in Ag. Efstratios)







NEW SOLUTIONS

Building Wave energy solutions



A LOT OF ENERGY

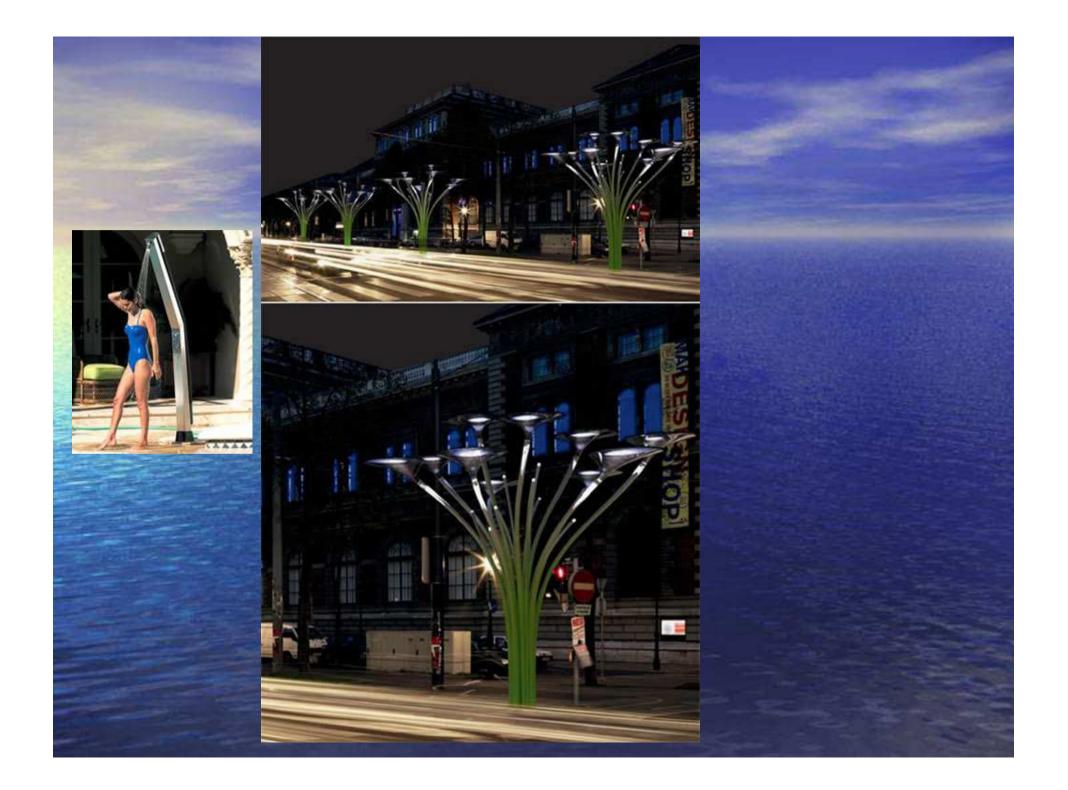


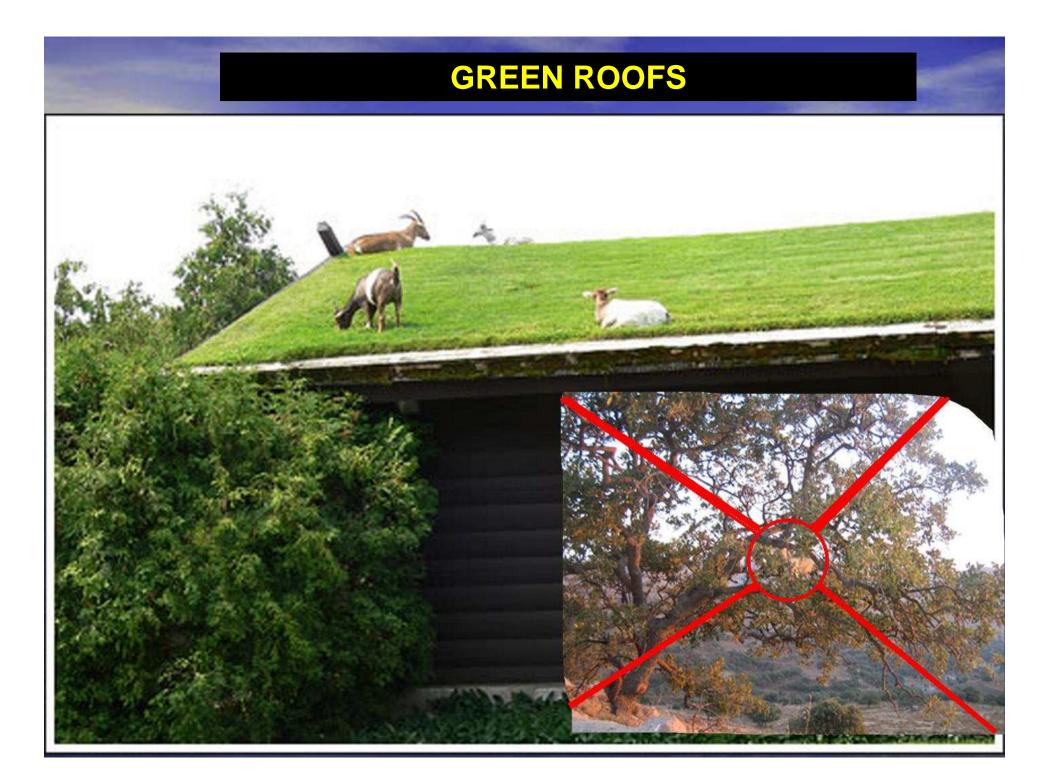
Using wave devices in the future in the NEW PORT of the island

Oscillating Water Column (OWC): Wavegen's Onshore LIMPET









CENTRAL HEATING COOLING (GEOTHERMIC)





POWER GENERATOR H2 5Kw

PRODUCTION OF H2 HYDROLYSIS

>

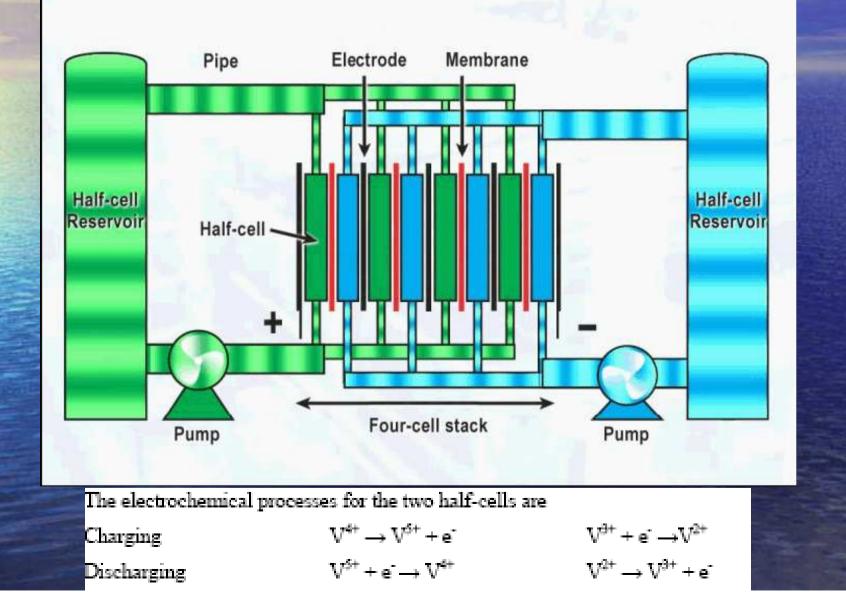
H2







NEW BATTERIES (FLOW, LITHIUM,...



2. TRANSPORTATION

• BOATS HYBRIDIC

• CARS





Figure 6: UNSW Vanadium Fuel Cell Powered Electric Golf Cart



THE «CITYCAR» Hydrogen Fuel Cells Citycar.

4 θέσεων)

ELECTRIC BICYCLES





TECHNOLOGIES to be used

WINDTURBINES

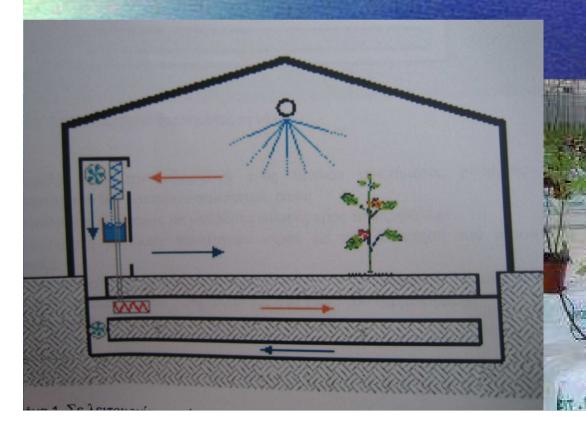
• PV

WAVE
GEOTHERMIC
H2
NEW BATTERIES
SAVINGS
CLEAN CARS + BOATS

3. FOOD AUTONOMY

HIDROFT WYCODET . HICEOT

NEW TYPE CLOSED HYDROPONIC GREENHOUSES



ANCIENT TECHNOLOGY HYDROPONICS

 Hanging Gardens of Babylon King Nebuchadnezzar 600 BCE
 Aztec Empire Floating gardens in Mexico
 Egyptians, Inca, Indian
 tribes



China Floating Gardens





PROHIBITION OF PLASTIC BAGS





• WASTE WATER TREATMENT (throwing nothing to the sea)

PLASTIC BAGS

 8.000.000 tonnes of plastic bags from ships to the sea per year 5.000.000 tonnes from waste disposal areas through the wind to the sea Are 15% of the total garbagies that cust up on shore. Kill a lot of fishes and sea animals 10-20 years for decomposition in the sea. • 2.000 plastic bags / km2 in the Mediteranean

Waste disposal near the sea in many areas



They are transferred everywhere from the wind



5. DEMONSTRATION TRAINING

ENERGY ACADEMY



WATER+ENERGY SOLUTION (we have it) in FLOATING AUTONOMOUS ECOLOGICAL DESSALINATION UNIT



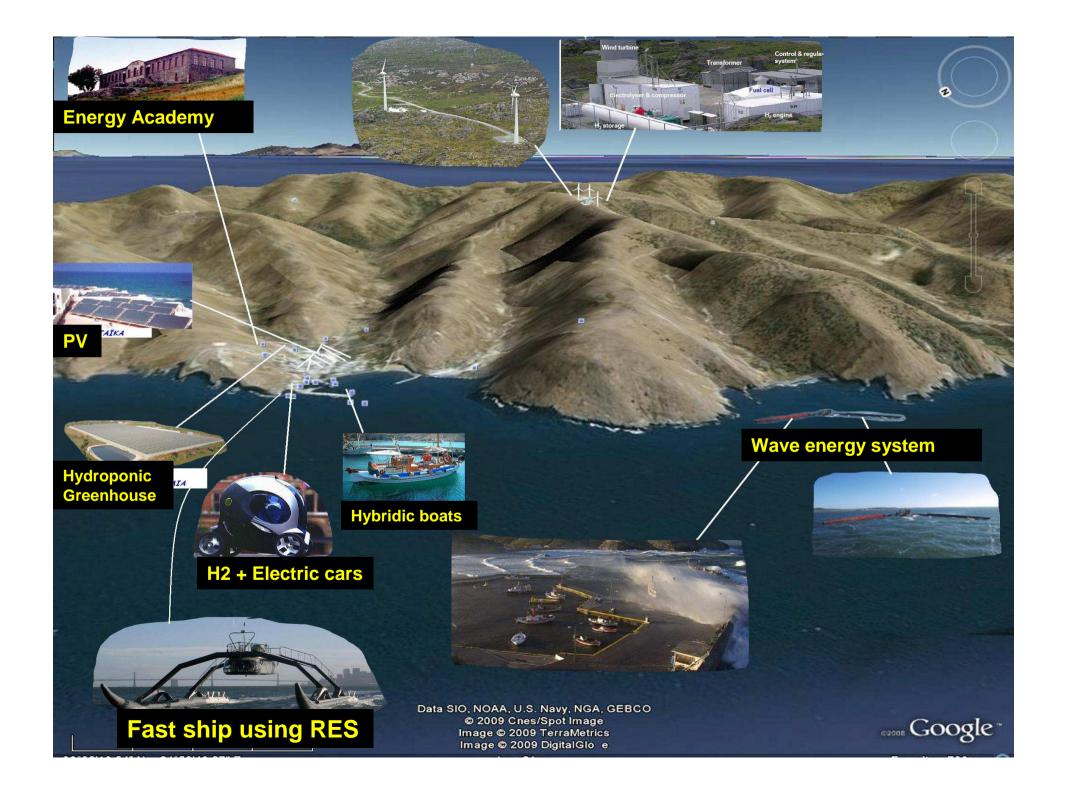
RESULTS - OPORTUNITIES

- 1. Sustainable Regional Development (+development of local economies)
- 2. Environmental Benefits
- **BUSINESS OPORTUNITIES for Investors**
- 1. Increasing the use of RES (>>20%)
- 2. Transfer this model to big islands, will create major oportunities
- 'New' Business Green Business e.g. FED for islands – real estate projects – golfs – hotels – big Greenhouses

SCHEMATICALLY THE EXPECTED RESULT

• The journey of a thousand miles starts with a single step.

Confucius







UNIVERSITY OF THE REGEAN Department of Shipping

Trade and Transport

Thank you for your attention

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