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Abstract for an Invited Paper for the MAR16 Meeting of the American Physical Society

Generation of Electric Energy and Desalinating Water from Solar Energy and the Oceans Hydropower

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Brief. All warnings and fears about the environment in our Earth planet due to the serious effects of the industrial revolution were certainly predicted early. But the eager contest and the powerful desire for more profits beside the human interest for welfare and development closed all minds about the expected severe destuctive impacts on our earth planet. Also, we have to remember that the majority of the African, Asian and Latin American countries are still in the first stage of their development and if they will be left to generate all their demand of energy by the conventional machine e.g (Fossil Fuel, Biofuel and Nuclear Fuel), then our Earth planet will confront an endless and ceasless severe destructive impacts due to the encroach of the released hot Carbon Doxide and hot vapours of Acids which will never forgive any fruitful aspect in our Earth Planet from destruction. 1. Importance of the New Project. Building the Extra cheap, clean Power plants with safe and smooth Operation in addition to the long life time in service for generating enough and plentiful electric energy the sustainable renwable resources will invigorate the foresaking of all Nuclear, Fossil and Biofuel power plants to avoide the nuclear hazards and stop releasing the hot carbon doxide, hot acids for the recovery of our ill environment. Also, the main sustainable, renewable, and cheap resources for generating the bulky capacity of the electric energy in our project are the Sun and the Oceans in addition to all Seas Surrounding all Continents in our Earth planet. Therefore, our recourses are so much enormous plentiful, clean, and renewable. 2. Generation of Electricity from Solar Energy by Photovoltiac Cells (PVCs) or Concentrated Solar Power (CSP). Characteristics of Photovoltiac Cells (PVCs). It is working only by Sun's Light (Light photons) and its efficiency will decrease as the Solar Thermal Radiation will increase, i.e. as the temerature of the Solar Voltiac will increase, its output will decrease or when the Solar thermal radiation of the Sun will increase, the efficiency of the Solar Voltiac Cells will nearly fully degrade at the ambient temperature 55C?(131Fahrenheit). As known, in the African countries near the Atlantic Ocean like Mauritania, Senegal, South Africa and Guinea ..etc, also the middle east countries like Moroco, Tuniz, Lybia, Algeria, Egypt, Sudan, Saudi Arabia, Kuwait, United Arab Emarates and Iraqetc. the range of the ambient temerature in the Summer seasons especially in the Desrt near the Atlantic Ocean, the Mediterranean Sea, Red Sea and the Persian Gulf is around (60-70)C? or (140F-158F). Similarly the majority of the Latin American countries with India and China. So, all the environments of the antecedent countries are not the suitable environment for generating electric energy from the Solar Voltiac cells in all seasons along the year. Characteristics of the Concentrated Solar Power (CSP). It uses half cylindrical mirrors to reflect with concentration the Solar thermal Radiation around a pipe to heat a special liquid. When the liquid will be heated it will pass through a water tank to exchange its heat in water tank to evaporate the water and create a steam to drive the Power Turbine for generating electricity. Also the capacity of the electric power generated by such technique is so much limited with respect to the wide area (3000 acres, about five miles end to end) occupied by