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Né le quatre Janvier 1959 à Tlemcen, a suivi ses études de graduation en électronique pour l'obtention du diplôme d'ingénieur d'état à l'Université des Sciences et de la Technologie d'Oran (USTO). Il est également diplômé de l'université de Nottingham (Angleterre) où il a obtenu son Master et doctorat d'état (MSc et PhD). Il est à présent Professeur au département d'électronique à l'USTO. Expert auprès de l'ONU sur les énergies renouvelables dans la région MENA. Membre de SPIE, ISES, IAEE et 2AH. Expert-lecteur auprès de plusieurs journaux scientifiques. Organisateur de plusieurs conférences nationales et internationales. Responsables de plusieurs projets de recherche dont celui baptisé Sahara Solar Breeder, projet international en collaboration avec deux agences nippones JICA, JSTA et six universités japonaises. Editeur en chef de la Revue Scientifique Internationale RIGEL (Revue Internationale de Génie Electronique, ISSN 1112-9506) de la faculté de génie électrique de l'USTO. Il est également auteur d'un livre et trois polycopies.



Shift of global energy paradigm from Sahara: Energy through the Sahara Solar Breeder plan

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Abstract

Energy security, economic growth and environmental protection are the national energy policy drivers of any country of the world. Scientists, governments, and industries are witnessing the long-term consequences of energy consumption and foresee catastrophic outcomes if alternative methods of energy production are not developed and utilised to meet the needs of our global economy. In recent years, photovoltaic (PV) is proposed as a competitive energy policy and a step forward to the target of sustainable development and environmental friendly energy source. In this contribution a particular attention is being given to the joint event that bring together the relevant parties, the University of Sciences and Technology of Oran (USTO), Japan International Corporation and Japan Science and Technology Agencies (JICA, JST) University of Saida and the URER/MS Renewable Energy Centre of Adrar to develop a long-term vision and strategy to boost the ideas for the realization and the development of the Sahara Solar Breeder (SSB) project. SSB advocates the view of undertaking collaborative basic, applied and development research, as well as industrial production and technical, commercial and financial support services to implement PV solar energy systems. The strategic objective is the establishment of a Global Clean Energy Superhighway as the solution to global energy challenges, water shortages, levelling

of electric power supply in the world, climate change and other environmental problems arising from the current fossil-fuel heavy global energy paradigm. This project will tackle the key challenges and issues related to the field of PV putting forward the USTO perspective and promoting its R/D activities by a collaborative research plan between Japan and Algeria. This event also seeks to identify the most important challenges facing both the research and economic sectors and put forward new strategies that will identify the required skills to transform the research prospects of USTO based on the analysis and prospect of elementary processes and system design. . In order to speed up the electric superhighway, the generated electricity from SSB, made up of a network of Very Large Scale-PV Power Systems in Sahara desert, will have to be transferred to the North Africa, then Europe, Africa, and ultimately the rest of the world, via High critical Temperature Superconducting Cables (HT_cSC) that can provide, in compact dimension, firm capacity for base load, intermediate and peaking power, effectively complementing conventional electricity sources. Because HT_cSC are compact and can transmit a large amount of electric power (up to 10 times as much power as conventional electric power transmission cable), it can utilize more effectively congested underground space where a lot of piping and other units already exist.

SSB = Energy/Climate security with global justice and development of civilisation for whole world, Clever global development strategy for solving the energy and climate problems with existing solar grade Silicon production from Sahara sand technology for a world in a sustainable way.

Keywords: *Sahara, silica sand, photovoltaic energy, environment, HT_cSC*