



Project SfP 982620

Sahara Trade Winds to Hydrogen:
Applied Research for Sustainable
Energy Systems

Dr. Sidi Mohamed Ould Mustapha, Co-Director
Faculté des Sciences et Technologies - Mauritania



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is supported by:*

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Sfp-982620 : Objectives

Overcoming Limits of Wind Energy Utilization in Weak Grids and in stand-alone applications

Map out wind resource potential as a basis for evaluation of new market opportunities in the field of Energy

Expand knowledge-sharing opportunities where partnerships in Research-Development can be established and protected

Capacity building through R&D and technology transfer

Outline and promote the wind / hydrogen as one of main energy resources of the future

Sfp-982620 : the vision

(R&D) Capacity Building

Current Situation:

Scientific research (too theoretical, expensive equipment, remote from local applications)

Consequences: Brain drain of Scientists / local Scientists only teaching

SfP-982620 program: Integrated approach linking Academia with End User
Scalable, open platform aimed at reinforcing capacities in new energy technologies/processes.

'State of the art' topic to be reinforced further based upon end user interests.

END USER
Industrial
applications

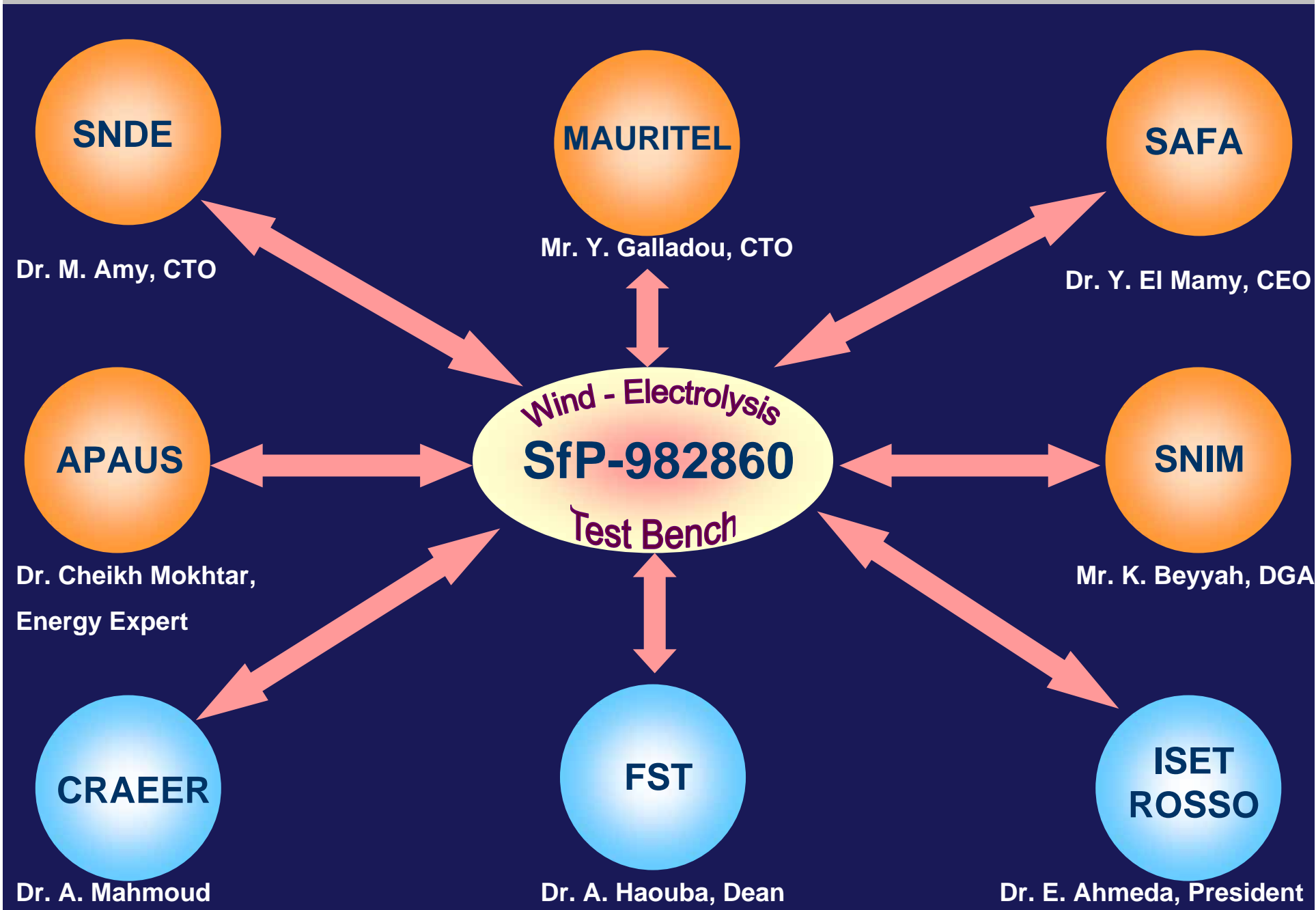


UNIV/RES PLATFORM
Support mechanisms
Capacity building
Co-Development
Testing, Training...

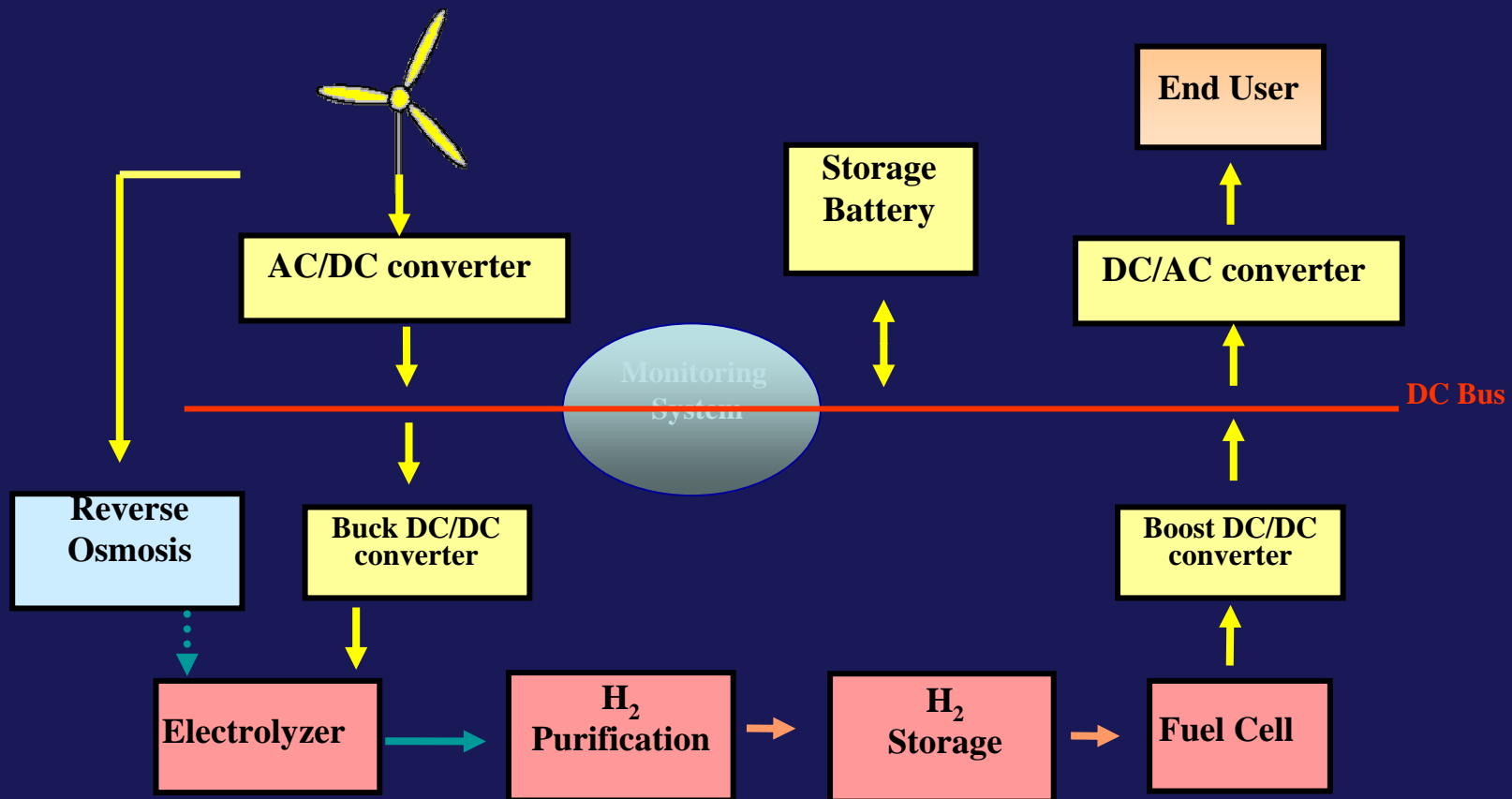


EQUIPT MFG
Electrolyzer
Fuel Cells
Batteries
Wind Turbine

Sfp-982620 Project Network (Mauritania)



Sfp-982620 : the prototype



R&D Main Topics

Wind Electricity Production

Wind Resource Assessment

Data Acquisition : MAURITEL

Data Analysis : GIS

Design and Assembling of Small
Wind Turbines : ANEPA, APAUS

Design and deployment of cost
effective small wind power systems

Wind Electricity Storage

Wind Powered Electrolyzers

Existing technologies

Efficiency

Sensitivity to Input fluctuations

Hydrogen Purification

Hydrogen Storage and Transport

Safety

Environment Impacts

Hydrogen to Electricity Conversion

Study and Evaluation of Fuel Cells

Existing technologies, efficiency, Sensitivity to Input fluctuations, Safety & Durability

Emphasis on DC-based more cost effective solutions for cooling, water pumping ...

Sfp-982620 : Expected results

Building the wind map of Mauritania coasts

Design and deployment of cost effective stand alone small wind power systems

Demonstrating the viability of the hydrogen as one of the main fuel of the future for large scale applications

Developing Intellectual Property

Selling the integrated vision to politicians and different stake holders (good luck !)



Sfp-982620 : pilot program

Design and deployment of a stand alone small wind power systems with one of our three partners under the UNIDO sponsorship :

Mauritel Mobiles for full supplying of one GSM repeater on the road linking Nouakchott to Nouadhibou

SNIM for energy production and hydrogen & oxygen production for iron processing

APAUS for full supplying of fishers in the village of Mhaijrat located at 100 km north of Nouakchott

