

Qatar: New centre to promote sustainable water use

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DOHA: The Texas A&M University at Qatar has initiated a major programme, the Qatar Sustainable Water and Energy Utilisation (QWE) Laboratory, under the patronage of the Deputy Premier and Minister of Energy and Industry, H E Abdullah bin Hamad Al Attiyah. The programme will establish a centre of scientific and technical excellence dedicated to supporting Qatar in addressing pressing water and energy problems.

The initiative will build upon the depth and breadth of the expertise available at Texas A&M at Qatar and be focussed through ongoing discussions with the governmental agencies and industries concerned. Its mission is to bring together all relevant public and private stakeholders in Qatar to help make sustainable water and energy utilisation a reality.

The Deputy Premier and Minister of Energy and Industry announced that this initiative was a realisation of the productive working relationship between the energy and industrial sectors and research and educational institutions to serve the needs of the community. He also stressed that **Kahramaa** was looking in depth at all possible technologies utilised in power generation/water desalination systems and state-of-the-art designing tools that are used in optimising designs for environmental protection purposes to maintain sustainable resources, especially those considered as the main sources for electricity generation and water production systems. To this end, ambitious conservation and loss reduction programmes have and are being implemented. Using solar and nuclear power in electricity generation and water desalination are considered to be the way forward in creating a sustainable and environmentally friendly system for water and electricity production in Qatar.

The initiative will be led by Dr Patrick Linke and Dr Ahmed Abdel-Wahab, two chemical engineering professors at Texas A&M at Qatar. It will work towards developing the scientific and technical base required to achieve the sustainable utilisation of water and energy resources in Qatar.

To ensure QWE's activities support the national needs, the project will have an advisory board with key representatives from the Ministry of Environment, the Ministry of Municipal Affairs and Agriculture, the General Secretariat for Development Planning, Mesaieed Industrial City, **Kahramaa** and **Qatar Petroleum**.

The objectives of QWE are not merely technical. A prime motive is to support public awareness campaigns ranging from activities for schoolchildren to collaboration with the media. The proponents also will build up human resource capacity in Qatar through activities ranging from project-based training of engineering students to advanced training workshops in leading technologies and methods for practicing engineers. "Such local capacity building will be a cornerstone for sustainable development and help support Qatar's National Vision 2030," Linke said.

Linke pointed to the fact that Texas A&M at Qatar has firmly established working relationships with the many organizations and agencies in Qatar as well as existing strong collaborations with groups in Europe, North America and Asia, that are interested in maximizing the efficient usage of water and energy. "The initiative will allow us to coordinate and expand our various projects," Linke said. "Our aim is that the laboratory becomes the center of scientific and technical excellence dedicated to solving the urgent water and energy problems in Qatar."

"Our research group is already very successful and has been recognized for excellence in Qatar. Our current research and development activities are supported by funding of more than QR 10 million from industry and government." Abdel-Wahab said. Ten engineers are currently engaged in delivering numerous research and development projects.

QWE will deliver technical solutions to the problems of national importance and provide the scientific and technological support for constructive policy decisions on water resources and usage. "We have outlined a series of policy objectives and technical areas that will be presented to our interested stakeholders," Abdel-Wahab said. Linke agreed, adding, "Specific projects will be developed to serve the needs of the State of Qatar. Such projects will be defined through discussions with our various stakeholders following the overall advice of our advisory board and the objectives of specialized advisory groups."

The technical areas of QWE are diverse yet coordinated: Environmental impact assessment of water and energy utilization, minimization of water consumption and discharge, maximization of industrial energy efficiency and reduction of Greenhouse Gas emissions, improved technologies for desalination, tailored water treatment systems for efficient water and waste water management, hazardous waste management, and systems design and optimization for maximum economic and environmental performance.

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