

# Saudi Arabian national centre for science & technology

06 OCT 1986

The Saudi Arabian National Centre for Science & Technology (SANCST), established by a Royal Decree in November 1977, is charged with the responsibility of promoting and encouraging applied scientific research and coordinating the activities of scientific research organizations and centres in accordance with the Kingdom's development requirements.

In its first few years of activity, several major programmes were initiated or expanded, each of which made significant contributions to the scientific and technological development of the Kingdom. In science and technology infrastructural development, the national science and technology information system has been working well. In other areas, the SANCST has been supporting the on-going and proposed research at the Kingdom's several universities through its (SANCST) applied research grants programme.

In the field of solar energy, several major procurements were awarded in cooperation with the United States. Among these is a contract for the construction of a 350-kilowatt photovoltaic electrical power generation facility in Saudi Arabia. The long-range goal of this project is the installation of a solar system capable of delivering 1 (one) megawatt of electrical power to two remote Saudi villages. Additionally, a contract was awarded for a series of solar cooling engineering field tests in the United States and a solar data-collection project in Saudi Arabia. The construction of solar-cooling test laboratories at four of the Kingdom's universities, and a solar-energy water-desalination study and a closed-environment agriculture study were among other projects.

### OBJECTIVES

The SANCST was established as an independent legal entity administratively attached to the Prime Minister. In accordance with its bylaws the Centre is entrusted with the responsibility of formulating a national science & technology policy directed toward and consistent with the social and economic development of the Kingdom. To achieve this national objective the Centre has been entrusted with the following responsibility:

- (1). Conduct applied scientific research programmes in the fields that serve the economic and social development objectives of the Kingdom.
- (2). Formulate a scientific research plan that will specify national objectives for achieving scientific advancement.
- (3). Establish and operate laboratories for applied scientific research in areas of importance to the Kingdom.
- (4). Establish and manage an information centre that collects and disseminate data on the scientific and technological manpower resources in the Kingdom.
- (5). Establish and manage an information centre for maintaining data on national and international scientific institutions.
- (6). Award scholarships to develop the necessary skills for conducting research work.
- (7). Award grants to individuals and scientific organizations to undertake applied research work.
- (8). Coordinate with government agencies, scientific organizations and research centres in the Kingdom to enhance research, information and expertise exchange and to avoid duplication of effort.
- (9). Provide assistance to the private sector in the development of productive agricultural and industrial research that will help increase the gross national product.
- (10). Support joint research programmes between the Kingdom and international scientific foundations; and (11) support joint research programmes between the Kingdom and international scientific foundations in an effort to keep pace with scientific developments in the world by awarding research grants and

of trends, fields, apparatus, and studies related to scientific research and modern technology.

undertaking joint research projects.

### ORGANIZATIONAL STRUCTURE

The SANCST is administered by an executive director, who serves as the chairman of the board of directors is responsible for developing and recommending national scientific and technical policies, reviewing SANCST's research plans on annual basis, and for periodically reviewing and approving budgetary requirements.

The key technical organization elements of SANCST are embodied in four directorates: (a) Directorate for science & technology infrastructure; (b) Directorate for scientific research; (c) Directorate for national research institute; and (d) Directorate for manpower Development & Science Education.

### INTERNATIONAL COOPERATIVE AGREEMENTS

Although oil is Saudi Arabia's primary energy resource the government is interested in research and development of solar energy which is a non-depletable energy source and also in plentiful supply. In May 1977, the then Crown Prince Fahd Bin Abdul Aziz expressed the Kingdom's interest in initiating a co-operative technical research programme with the United States for development of solar energy (SOLERAS). In October of that year, a bilateral agreement for setting up a 100 million dollar joint trust fund was signed for the purpose of supporting efforts to cooperate in the field of solar energy for mutual benefit of the two countries, to advance the development of solar technology, and to facilitate the transfer of technology developed through the programme.

Under the SOLERAS programme, the villages of Al-Jubailah and Al-Uyaynah were selected as the site of installation of the world's one of the largest photovoltaic system capable of delivering 1 (one) megawatt of electrical power.

The objective of the solar-controlled environment agriculture project is to integrate controlled-environment agriculture with solar energy to demonstrate the technical and economic feasibility of commercially viable solar controlled-environment agriculture facilities in hot arid zones.

Another SOLERAS programme is the solar-energy water-desalination project. In 1980 five system studies were started for a solar energy water desalination project. The objective of the project is to advance the technical and economic feasibility of large scale solar-powered desalination of brackish water and sea water.

The objectives of the resource-development activities programme of SOLERAS are to provide training of Saudi Arabia personnel for the monitoring operation maintenance and repair of all solar-powered demonstration equipment in Saudi Arabia and in the United States; to expand professional communities in the field of solar-energy technologies; and to develop educational programmes to establish self-sufficiency in professional training.

Yet another SOLERAS programme aims at improving the quality of life for inhabitants of urban areas in hot climates, both arid and humid, by providing domestic solar cooling. In 1980, two separate cooling projects were initiated. They are: engineering field tests for a solar active cooling system and Saudi Arabian University solar-cooling laboratories.

In February 1979, the Project Agreement for Technical Cooperation in Science and Technology was signed by the Saudi Government and the U.S. National Science Foundation (NSF). The agreement set forth the terms for an understanding in work in close cooperation during the period of programme planning, implementation and operation of SANCST. Another project

agreement was signed with the Canadian National Research Council for the National Observatory Project. The SANCST has been entrusted with the development of the Kingdom's national observatory project in cooperation with the Canadian National Research Council. As a result of a survey conducted in March 1979 by a team of scientists from the Republic of China and in accordance with the memorandum of cooperation in the field of science and technology two areas for cooperative projects were identified in the field of single-cell protein manufacture and aquaculturing.

### SANCST AND SOCIETY

The SANCST's operations are directly and indirectly related. Contd. on page 7

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of experts employed by the Kingdom's universities, providing them with the opportunity to introduce innovations and promote research and studies.

The Centre provides advice to several official agencies in the Kingdom. The Centre donates scholarships and research grants to Saudi students in various universities to support a new generation of experts and researchers capable of keeping pace with the rapid development in the field of science and technology.

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