

## **Nuclear Energy**

Facing growing energy needs, the UAE is assessing the possibility of developing a peaceful nuclear energy program. The UAE government is acutely aware of the sensitivities involved in the deployment of nuclear reactors and even the simple evaluation of the possibility. Accordingly, the UAE government has worked to make its peaceful and unambiguous objectives clear, in terms of its current evaluation of a peaceful nuclear energy program as well as its potential future deployment.

### **Need for Electricity**

The UAE's interest in evaluating nuclear energy is motivated by the need to develop additional sources of electricity to meet future demand projections and to ensure the continued rapid development of its economy.

Recent analysis has concluded that national annual peak demand for electricity is likely to rise to more than 40,000 megawatts by 2020, reflecting a cumulative annual growth rate of about nine percent from 2007.

Based upon these projections the UAE has taken steps to evaluate viable options to meet future demand. As part of this evaluation, it was determined that the known volumes of natural gas that could be made available to the nation's electricity sector would be insufficient to meet future demand, providing adequate fuel for only 20,000-25,000 MW's of power generation capacity by 2020.

While the burning of liquids (e.g., crude oil and/or diesel) was found to be logistically viable, this option would entail extremely high economic costs, as well as poor environmental performance. Coal-fired power generation offered a lower relative price, compared to liquids-fired power generation, but its widespread use would have an even more severe detrimental effect on environmental performance. The coal option also raised thorny issues related to security of supply.

Evaluation of alternative energies, including solar and wind suggested that, while these options are being deployed within the UAE, even aggressive development could only supply a small portion (4-5%) of peak electricity demand by 2020.

### **Commitment to Peaceful Program**

In order to make clear its intentions with specific regard to nuclear power, the government of the UAE released an in-depth policy paper to the public, addressing how the potential development of nuclear energy would be pursued safely, securely and peacefully. The UAE government formally endorsed the following policy statements as a reflection of its views on the potential establishment of a peaceful civilian nuclear energy program in the UAE:

1. The UAE is committed to complete operational transparency.

2. The UAE is committed to pursuing the highest standards of non-proliferation.
3. The UAE is committed to the highest standards of safety and security.
4. The UAE will work directly with the IAEA and conform to its standards in evaluating and potentially establishing a peaceful nuclear energy program.
5. The UAE hopes to develop any peaceful domestic nuclear power capability in partnership with the governments and firms of responsible nations, as well with the assistance of appropriate expert organizations.
6. The UAE will approach any peaceful domestic nuclear power program in a manner that best ensures long-term sustainability.

Through the adoption of these policies and actions, the government of the UAE hopes to establish a new model through which non-nuclear states may explore and potentially deploy nuclear energy with the full support and confidence of the international community. Steps in the process have included:

- In March 2008, the UAE cabinet approved a memorandum submitted by Foreign Minister HH Sheikh Abdulla bin Zayed Al Nahyan on the UAE's potential development of a peaceful nuclear energy program.
- In April 2008, the full details were released in the *Policy of the United Arab Emirates on the Evaluation and Potential Development of Peaceful Nuclear Energy*.
- Mr. Hamad Al Kaabi was named Special Representative of the Ministry of Foreign Affairs for International Nuclear Cooperation and Ambassador to the International Atomic Energy Agency.
- Virginia-based Thorium Power is providing consulting services to the UAE on the design, development and management of the key organizations required to implement a nuclear energy program according to the highest international standards.
- In June 2008, UAE government entities began informal talks with international contractors regarding the appointment of a managing agent to assist in the possible design and construction of nuclear power plants within the UAE. The Emirates Nuclear Energy Corporation invited leading international firms to an exploratory conference in Abu Dhabi and continues to assess the capabilities of interested firms with the aim of identifying an ideal candidate for the potential role of managing agent.
- In June 2008, a UAE delegation met with representatives of the IAEA in Vienna to brief the latter on the UAE's ongoing evaluation of the potential for a peaceful nuclear energy program in the UAE. The UAE delegation sought to obtain IAEA guidance on means for improving the evaluation process, as well as agreeing upon new areas for technical cooperation with the IAEA.
- In August 2008, the UEA pledged \$10 million to support an IAEA-administered international uranium fuel bank initiative, resulting from a proposal by the Nuclear Threat Initiative (NTI). The fund is designed to provide assurances against supply disruptions, while strengthening the nuclear non-proliferation regime.
- Englewood, Colorado-based CH2M Hill won a 10-year contract to manage the UAE's nuclear program in October 2008.

- Paul C. Rizzo Associates, a leading global engineering and consulting firm based in Pennsylvania, is working on siting and engineering during the planning process.

A number of international agreements have been concluded or are underway:

- In January 2009 HH Sheikh Abdulla and US Secretary of State Condoleezza Rice signed a bilateral agreement for peaceful nuclear cooperation, which enhances international standards of nuclear non-proliferation, safety and security. Known as a “123 Agreement,” the new pact establishes a required legal framework for commerce in civilian nuclear energy between the two countries. A Memorandum of Understanding on cooperation on peaceful uses of nuclear energy had been signed in April 2008.
- In January 2008, the UAE and France agreed to cooperate on a peaceful nuclear program. The agreement set a framework for continued and future cooperation on nuclear energy between the two countries.
- In May 2008 the UAE has signed a memorandum of understanding with the United Kingdom for cooperation in the use of nuclear energy.
- In January 2009 Japan's Ministry of Economy, Trade and Industry and the UAE's foreign ministry signed a memorandum of cooperation on the development of civilian nuclear energy in the UAE.

### **Other Steps to Support Nonproliferation**

- The UAE joined the Nonproliferation Treaty in 1996, is a member of the International Atomic Energy Agency, and cooperates with the Missile Technology Control Regime. UAE is also a partner nation on the [Global Initiative to Combat Nuclear Terrorism](#).
- Dubai Port participates in the US Department of Energy's [Megaports Initiative](#), a cooperative effort aimed at deterring terrorists from using the world's seaports to ship illicit materials; detecting nuclear or radioactive materials if shipped via sea cargo; and interdicting harmful materials so they cannot be used by terrorists.
- The UAE is a signatory to the [Proliferation Security Initiative](#) (PSI), which is aimed at stopping shipments of weapons of mass destruction, their delivery systems, and related materials worldwide.
- The UAE participates in the [US Container Security Initiative \(CSI\)](#), a security regime that includes a team of US Customs and Border Protection officers permanently stationed inside Dubai's ports, where they work closely with Dubai Customs to screen containers destined for the United States.
- Ports operated by Dubai Ports World participate in the [Security Freight Initiative](#), a US Department of Homeland Security pilot program to test the methods used to screen US-bound cargo for radiation.
- Dubai Ports World [has been certified](#) as a partner in the [Customs-Trade Partnership Against Terrorism](#), a government-business cargo security initiative led by the US Department of Homeland Security's Customs and Border Protection component.

- The U.S. Department of State, through its Export Control and Related Border Security Assistance program, is helping the UAE improve its enforcement and licensing capabilities aimed at curbing the transshipment of illicit materials.

**Additional Resources**

[www.usuae123.org](http://www.usuae123.org)

January 2009