

Nuclear Energy – What Future for Oil?

By Dr Mohamed A. Ramady

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The recent public announcements of a host of countries to consider nuclear energy to meet their future needs, has opened up a list of long term questions for the non-renewable fossil energy producers such as Saudi Arabia . The nuclear energy option has been triggered by many reasons – strategic, environmental, security of supplies, and erratic high oil prices. With a looming U.S. economic slowdown, the forecasted oil prices of over \$100 a barrel now seems a distant memory, with prices forecasted to fall to under \$50 a barrel by early 2007. The commodity markets' old saying that prices that go up like a rocket, come down like a bomb, seems to be nearer to the truth

Energy security is of paramount importance today, as the success of global and national economies is more dependent on a consistent and timely supply of energy. At the same time, there is an increased sense of energy vulnerability and concern about the future availability of reasonably priced energy. The social, economic and political impacts associated with either natural or man-made disasters in the energy sector are vast, allied with a realization that energy infrastructure and supply chains are becoming complex and globally interrelated.

There is no doubt that nuclear power offers substantial long-term benefits to any government seeking to reduce the risks entailed in purchasing fossil energy from countries or regions that are perceived to be unstable suppliers. Nuclear energy advocates seem to be driven by two very loosely coupled needs – the first, for much more energy to support economic growth worldwide, and the second, to mitigate global warming, driven by the emersion of greenhouse gases from fossil oil. The fact of the matter is that countries as diverse as Finland, Venezuela, China, India, Turkey, Iran, Egypt and Nigeria have publicly stated that they will pursue a nuclear energy program in the long term.

Some of these nuclear energy programs are indeed ambitious, such as India's, which satisfies around 3% of its energy needs from 3,500 MW of nuclear energy, but is planning to expand this to 40,000 MW by 2030. Egypt's recent announcement on this matter is more modest – a facility of 1,000 MW, expected to cost around \$1.5 billion, while Venezuela's nuclear energy interest seems to be to reactivate Latin America's first nuclear research facility, started in the 1950's, but shut down due to lack of funds. Turkey, which produces 50,000 barrels of oil per day, consumes around 700,000 barrels per day and is planning to build three nuclear energy plants by 2015. Egypt, on the other hand, has reserves of 2.7 billion barrels of oil, produces, 700,000 barrels per day, and consumes 500,000 barrels per day.

It is not only developing countries that are seeking to expand into nuclear energy. During the July 2006 European Union Summit, there was a strong backing to review nuclear power as the answer to Europe's need to reduce its growing dependence on energy supplies and to combat climate change. Only Germany and Austria, explicitly rejected the nuclear option, but there was more support than opposition. Many argued that countries that wished to pursue the nuclear option follow the example of Finland,

which is building Europe's first new nuclear plant since the Chernobyl disaster 20 year ago – a French designed pressured – water reactor. The EU Summit endorsed the notion of an EU plan to reduce energy consumption by 20% by 2020, along with a target of raising the current 6% of primary energy use provided by renewable energy to 20%, by the same date.

At the same time, the European commission indicated that a critical answer to Europe's long term supply needs was to increase the market for Liquefied Natural Gas (LNG) which is to be imported from several countries, primarily Russia, Algeria, Libya and the North Sea. The aim is to provide 20-25% of European energy from LNG within the next 25 years. All the above points to one conclusion – a lot less oil will be consumed by these countries by 2020.

The nuclear option is not without opposition though. Many are unhappy with the idea, as concerns remain about proliferation, climate changes, radioactive waste disposal and the risk of accidents. Chernobyl and Three Mile Island nuclear accidents are still fresh in the world's collective memory. Nuclear waste is recognized as one of the biggest dilemmas faced by advocates of nuclear energy programs. This waste remains radioactive for thousands of years. The nuclear energy lobby is now urgently seeking long term disposal arrangements that are safe, environmentally sound, and above all, are publicly acceptable.

What are the options then for major oil producers such as Saudi Arabia, which is literally, the oil warehouse of the world? Shall it continue with its ambitious energy investment program, and continue to act as a moderating energy supplier to the world, only to be let down when energy consumption patterns change in the future? Should it also seek to explore renewable energy resources, such as solar, to meet local demand, while carefully marshalling its fuel reserves for future generations? Oil will still be needed by many industries in the future, principally the aviation sector. Whatever the future holds, the nuclear options debate has begun in earnest around the world.

A counter debate on Saudi energy policy long term options is also called for. For oil producers, it is no longer a viable option to tinker around, by pumping or curtailing a few hundred thousand barrels a day on the world markets, in the face of fast changing economic restructuring, energy insecurity needs, and environmental pressures

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