India-USA nuclear deal

Indo-US nuclear deal—impact on India Inc

Key points

- On November 17, 2006 the US Senate passed the bill to implement civilian nuclear energy cooperation with India. During July 2005, India and the USA had reached an agreement on the separation of civil and military nuclear plants and technology transfer for civil nuclear plants.
- The Indo-US nuke deal brings a reliable source of nuclear technology that can be exploited to set up nuclear power plants in India. This in turn could possibly go a long way in quenching India's current and projected thirst for power. Needless to say that the companies like BHEL, Larsen & Toubro, KSB Pumps and Honeywell Automation that provide products and services for nuclear power plants would be the primary beneficiaries in this scenario.
- India's power generation today is approximately 15% below the actual consumption. As per the energy and resources institute (TERI) the projected economic growth of 7-8% over the next 20 years will quadruple India's energy needs.
- Coal, the main source of India's energy needs today, is peaking its exploitation and the gas supply from Iran via a pipeline is unlikely to materialise due to the US opposition.
- Hence if India's power generation has to keep pace with the burgeoning economy, nuclear power has to provide a significant component of it, as opposed to its current contribution of 3%. A very plausible scenario to look at is the building of nuclear power plants with the help of the USA.

Background of the Indo-US nuke deal

On November 17, 2006 the US Senate passed the bill to implement civilian nuclear energy cooperation with India, with a majority of 85:12. A total of 18 amendments were proposed during the debate and all "Killer" amendments were rejected. The amendments that would have either wrecked the deal, forced renegotiation or made the implementation stage quite difficult, were part of the rejected "Killer" changes.

Circa July 2005: India and the USA reached an agreement on the separation of civil and military nuclear plants and technology transfer for civil nuclear plants. The USA would help develop the civil nuclear power programme in India in return for New Delhi placing its civil nuclear facilities under safeguards of the International Atomic Energy Agency (IAEA).

Circa March 2006: India and the USA crossed a major milestone in civil nuclear cooperation after the Prime Minister, Dr Manmohan Singh, and the visiting US President, Mr George Bush, reached an understanding on the implementation of the July 2005 agreement on this issue. India had agreed that 14 of its civilian nuclear reactors would be open to international safeguards.

Since the meeting in March this year there has been much debate on both sides about the logic, benefit and timing of the deal. The placing of the fast-breeder programme, the bedrock of India's strategic weapons programme, under IAEA was the bone of contention for India. There were also internal differences on the possible impact of the deal on our nuclear programme. For the USA, there was a furore about making exceptions about declassifying nuclear secrets to a nation that was not a signatory to the Non Proliferation Treaty (NPT).

The USA also needed approval of both the houses to waive some provisions of the Atomic Energy Act to ratify the treaty. Finally given the trust placed on India due to its relatively clean past in terms of non proliferation and the geo-economical importance of India to the USA, the deal was passed.

So what's next?

Now that the Senate has approved the bill, it will have to reconcile the differences with the House of Representatives' version of the bill, and then both the chambers would have to vote again on a final bill in December 2006. Once this is done the Nuclear Supplier Group will be approached to adjust its guideline for India and the IAEA will be persuaded to fashion an appropriate India-specific safeguards agreement.

Indo-US nuke deal—benefits for India

The Indo-US nuke deal brings three key advantages for India.

1) A reliable source of commercial nuclear technology will open up for India that could possibly go a long way in quenching India's current and projected thirst for power.

2) US interests in India will be tied down for a long time to come.

3) India will be at the receiving end of huge foreign direct investment (FDI) into the country. Needless to say that the companies providing products and services for nuclear power plants would be the primary beneficiaries.

Current power generation in India—around 15% short of consumption…

India's power generation today is approximately 15% below the actual consumption. This results in perpetual power shortages and outages. This gap will grow in the next 10 years, as India moves up the ladder towards the developed world. The projected economic growth of 7-8% over the next 20 years will quadruple India's energy needs as per TERI.

About 65% of the power in India is generated by coal fired thermal power stations. Gas, hydropower, wind and nuclear power plants generate the remaining 35% of the power. Hydroelectric power provides 15% of India's power needs with gas providing an additional 10%. A mere 3% of the power is generated by nuclear energy. A cluster of local captive power plants built to meet local needs provide the remaining power needs. The above situation is unlikely to change in the near future unless an un-interrupted very cheap supply of gas comes to India or nuclear power plants are built in quick succession.

…nuclear energy—inevitable for bridging shortage gap

Coal, the main source of India's energy needs today, has peaked its exploitation. The gas supply from Iran via a pipeline is unlikely to materialise due to the US opposition and the unpredictable behaviour of Pakistan, the middleman in the gas supply scenario. As a result a host of supply sources like nuclear energy have to be explored. Hence if India's power generation has to keep pace with the burgeoning economy, nuclear power has to provide a significant component of the deficit. A very plausible scenario to look at is the building of nuclear power plants with US aid.

So what does the deal bring in for Indian Inc???

A nuclear power project requires many conventional items apart from the nuclear reactor components. However, the projects are also required to meet more stringent quality requirements and subjected to elaborate inspection and testing. In a typical nuclear power plant, the design and supply of the nuclear reactor is the onus of the technology provider. However its erection and other engineering and installation works is the area of expertise of an EPC contractor. In India, Larsen & Toubro and BHEL are the foremost EPC contractors that have the expertise and experience of erecting a nuclear power plant. In the following exhibit we have indicated the key products and services that are required for the erection of a nuclear power plant. Also we have given an indicative list of the companies that are capable of supplying these products and services. While preparing the indicative list we have considered the past supply experience of these companies as far as nuclear power plants are concerned.

In a nutshell

The Indo-US nuclear deal is a golden opportunity to tie down US interests in India. The economic development will receive a much-needed shot in the arm. The US businesses will consider India as a better place to do business and divert FDI funds from China to India. In addition the nuclear power plants will go a long way to quench India's growing thirst for power. Needless to say that the companies like BHEL, L&T, KSB Pumps and Honeywell Automation that provide products and services for nuclear power plants would be the primary beneficiaries in this scenario.

Products and services	Companies who provide them
Project handling (EPC contractor)	L&T, BHEL
Civil construction works	L&T, HCC, Gammon
Nuclear reactor	L&T
Boiler	BHEL
Boiler feed pumps	KSB, Kirloskar Brothers, Mather & Platt, Jyoti Ltd, Bharat Pumps and Compressors
Steam turbine	BHEL
Valves	BHEL, L&T, KSB
Cooling water condenser	BHEL, L&T
Heat exchanger	Alpha Laval, GEI Hammon
Pipes	Maharashtra Seamless, Ratnamani Metals and Tubes
Control panels	Honeywell Automation
Consulting and engineering service	Rolta India (technological tie-up with Stone & Webster)

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