



## **INDIA'S NUCLEAR ENERGY PROGRAMME AND THE 123 AGREEMENT WITH UNITED STATES**

### **1. Rising Demand for Energy**

For a developing country like ours one of the most important constraints on our economic growth is the availability of energy. The consumption of electricity in India is very low since most of our people do not have access to power. As the economy develops and as our incomes rise, the demand for electricity and other forms of energy will increase.

Our farmers know that over the years their demand for energy has gone up. Our farmers need power for their pump sets to irrigate their fields. Many farming operations are now getting mechanized and these machines need electricity. Rural households need electricity. The Government has committed itself under Bharat Nirman and Rajiv Gandhi Vidyutikaran Yojana to ensure complete electricity connectivity across the country.

But it is an unfortunate fact that we are unable to meet this growing demand. Most of our people still live in villages without regular and reliable power supply.

Our cities are also being starved of power. Most jhuggi-jhompris have no power supply at all. Even when electricity connections exist, most people are harassed by power cuts and load shedding.

Hence, a major challenge before us is to increase the supply of electricity in the country. This will allow every one of our households to be lit; it will allow our children to study under proper lighting at home and at school; it will allow our farmers, artisans and workers to use energy as a means of production; it will enable all of us to use electrical appliances that make life easier to live and, it will contribute to industrial development and better infrastructure and more efficient public transport.

## **2. Strategy to Increase Power Supply**

Our Government has been working hard to increase the supply of power in the country. There are many sources of energy supply. The most common means of generating electricity have been the burning of coal (thermal power), tapping the natural flow of rivers (hydro electricity) and burning natural gas and petroleum. Coal, gas and oil are all non-renewable resources. Moreover, burning coal and oil has a harmful effect on environment and contributes to pollution and global warming. Hydro-power is clean but not always green because large dams can destroy our natural habitat and displace people.

Modern science has enabled us to tap energy from renewable natural resources like wind, bio-gas and solar energy. However, these are still limited in their scope and potential. In the future we hope to generate more power from these sources. To develop new and affordable technologies to tap these sources of energy, and develop new clean coal technologies, we have to invest more in research and development and also seek international cooperation.

## **3. Importance of Nuclear Energy**

Modern science has also helped us discover a new source of clean and renewable energy. This is nuclear energy. Our first Prime Minister Pandit Jawaharlal Nehru recognized early that nuclear technology offered a tremendous potential for economic development, especially for a developing country aspiring to leapfrog technology gaps brought about by long years of colonial exploitation. India's indigenous nuclear programme was founded to address the challenge of energy security and attain self-reliance and technological independence.

## **4. Nuclear Energy is also Clean Energy**

Most scientists agree that pollution is contributing to global warming and to climate change. This can hurt agricultural production and harm all living beings on our planet. We must, therefore, reduce pollution that causes global warming. This requires environment friendly energy sources – clean and green energy.

Any means of producing electricity involves some wastes and environmental hazard. The nuclear industry is unique in that it is the only energy-producing industry that has taken full responsibility for the disposal of all its wastes and meets the full cost of doing so. Nuclear energy also does not contribute to global warming.

Also the cost of fuel for a nuclear power station is very much less than for an equivalent coal fired power station. Electricity from nuclear reactors in many regions is competitive with electricity produced from coal, even after providing for management and disposal of radioactive wastes and the decommissioning of reactors. **So, nuclear energy will be a clean and an affordable source of energy**

Presently, only 3% of India's energy needs are met from nuclear sources. India plans to produce 20,000 MWe from the nuclear sector by 2020, increasing from the very low level of 3,700 Mwe at present.

Increased share of nuclear power in the Indian energy mix will diminish the reliance on fossil fuels and reduce carbon emissions from India.

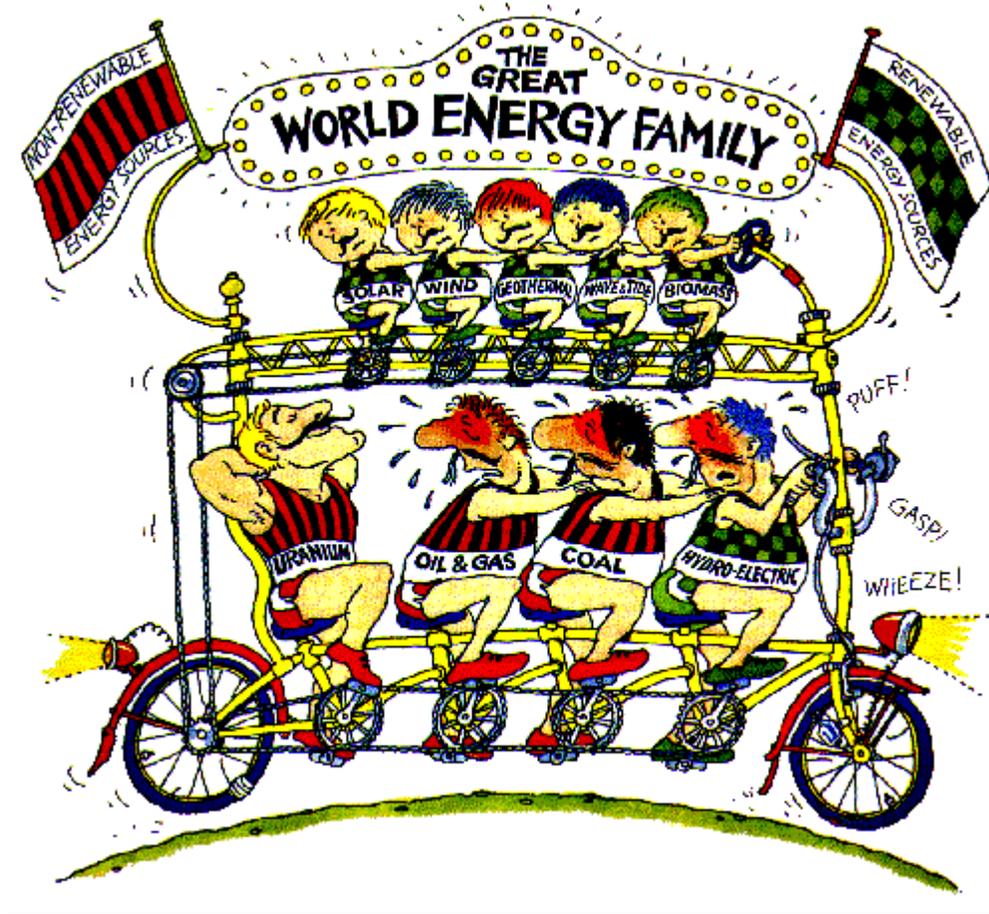
Many countries are actively developing nuclear power. It is of particular interest to rapidly growing and populous economies like China and India. No country would want to be too dependent on a single energy source.

Therefore, it is not a question of coal, hydro or nuclear but that we need a combination of various renewable sources of energy to ensure our energy security in years to come.

Indian nuclear scientists also wish to participate in global research projects so that our science and technology can develop. Nuclear science and technology have a high applicability in the field of medicine, in irradiation and storage of food.

Nuclear energy will enable us to meet the twin challenges of energy security and environmental sustainability. It will also have major spin-offs for the development of our industries, both public and private.

The 123 Agreement between India and United States of America would put an end to technology denial regimes against India that have been in place for three decades and end India's nuclear isolation. It will open the doors for India to have civil nuclear cooperation as an equal partner with the USA and the rest of the world.



## 5. India- US Agreement on bilateral civil nuclear co-operation

**India needs imported uranium to rapidly expand its capacity to generate nuclear energy.**

During Prime Minister Manmohan Singh's visit to the US in July 2005, the two countries – India and the US – carried forward an on-going dialogue towards resumption of civilian nuclear co-operation. This dialogue had started in the days of Pandit Jawaharlal Nehru but had been frozen since 1974, when India conducted a peaceful nuclear explosion.

President George Bush told the Prime Minister that he will work to achieve full civil nuclear energy cooperation with India as it realizes its goals of promoting nuclear power and achieving energy security.

President Bush would also seek agreement from the United States Congress to adjust U.S. laws and policies, and the United States will work with friends and allies to adjust international regimes to enable full civil nuclear energy cooperation and trade with India.

For our part, our Government reciprocally agreed to assume the same responsibilities and practices and acquire the same benefits and advantages as other leading countries with advanced nuclear technology, such as the United States. Reciprocally, India agreed to give an assurance that nuclear supplies for civilian purposes would not be diverted to her strategic programme.

Based on this concept, in March 2006, during the visit of President Bush to India, a Separation Plan was agreed upon by the two sides – according to which, India agreed to identify and place under IAEA safeguards 14 of her 22 thermal power reactors between 2006-14 in a phased manner.

In order to be able to enter into such a co-operation with India, the US Administration sought and obtained from the US Congress a legislative waiver from a stipulation in Section 123 of the the US Atomic Energy Act of 1954 requiring full scope safeguards as a condition for civil nuclear co-operation.

An enabling legislation, called the Hyde Act, was passed in the US Congress in December, 2006, to enable the US Government to cooperate with India. The Hyde Act is only a US law. It is not binding on India. We have entered into only a bilateral Agreement with the US, called “Agreement for Co-operation Between the Government of India and the Government of the United States of America concerning Peaceful Uses of Nuclear Energy.”

This Agreement is not at the cost of (i) the autonomy of our strategic nuclear programme, (ii) our indigenous three Stage Nuclear Programme; and (iii) our research and development activities. Our Government remains committed to all these.

## **6. Main features of the 123 Agreement**

1. The Agreement could be a major contributor to our energy security. For India it is critical that we maintain our current economic growth rate of 8 to 10 per cent per annum if we are to achieve the goal of eradicating poverty. Inadequacy of energy supply is one of the primary constraints on accelerating India’s growth rate. We are trying to expand all forms of energy production in a manner which takes care of concerns about environment. Nuclear energy is a logical choice in this context and can make a larger contribution to our overall energy mix. At present its share is only about 3%. We have an ambitious programme to increase our nuclear energy generating capacity to 20,000 MWe by 2020 and double this by 2030. While our domestic three stage programme continues, using our own uranium resources, this Agreement, by adding additional capacity quickly, would help us to reach that target soon.

- 2.** The Agreement also opens the door for cooperation in civil nuclear energy with other countries. We are already discussing with France and Russia similar bilateral cooperation agreements on civil nuclear energy. Once the NSG adopts an exemption to its Guidelines we hope to operationalise all these agreements.
- 3.** The Agreement places India in a special category as a “State possessing advanced nuclear technology”, like the United States, with both parties “having the same benefits and advantages”.
- 4.** The Agreement provides for full civil nuclear energy cooperation covering nuclear reactors and aspects of the associated nuclear fuel cycle including enrichment and reprocessing.
- 5.** The Agreement provides for nuclear trade, transfer of nuclear material, equipment, components, and related technologies and for cooperation in nuclear fuel cycle activities.
- 6.** The Agreement contains a full reflection of the March 2, 2006 supply assurances, its linkage to safeguards in perpetuity and the provision for corrective measures in case of disruption of fuel supply.
- 7.** The Agreement provides for the development of a strategic reserve of nuclear fuel to guard against any disruption of supply over the lifetime of India’s reactors.
- 8.** The Agreement provides for the application of IAEA safeguards to transferred material and equipment. There is no provision that mandates scrutiny of our nuclear weapons programme or any unsafeguarded nuclear facility.
- 9.** The Agreement explicitly provides that it will not affect the unsafeguarded facilities of either party and that it shall be implemented in a manner so as not to hinder or otherwise interfere with any military nuclear facilities or nuclear material produced, acquired or developed independent of this Agreement.
- 10.** The Agreement grants prior consent to reprocess nuclear material, transfer nuclear material and its products. To bring this into effect, India will establish a national reprocessing facility to reprocess safeguarded nuclear material. Consultations on arrangements and procedures will begin within six months of a request by either party and will be concluded within one year.
- 11.** The 123 Agreement does not affect India’s right to conduct nuclear tests in any manner.

## **7. 123 WILL NOT HARM OUR NUCLEAR WEAPONS PROGRAMME**

Till now India's nuclear installations have not been separated between the military and civil programmes. Thus, when nuclear tests were conducted in 1974, the belief that these were fueled by nuclear fuel supplied for civil nuclear energy led to sanctions being imposed against India. This resulted in denial of technology, fissile material and related support for our nuclear programme. Our first nuclear power plant at Tarapur, built with US help and based on US uranium supplies, was crippled without uranium supplies. It was a major set back to the 3 Stage programme as it imposed restrictions on imports of high-technology products, denied access to Uranium from the US and other countries, prohibited transfer of nuclear technology – reactors, reprocessing etc. The US, Japan and some other countries imposed economic and financial sanctions – withdrew bilateral assistance and restricted support from multilateral financial agencies like World Bank and International Monetary Fund.

Our nuclear policy has been marked by restraint and transparency. India has maintained effective export controls on nuclear materials as well as related technologies even though we are neither a party to the NPT nor a member of the Nuclear Suppliers' Group. India is committed to non-proliferation and the maintaining of stringent export controls to ensure that there is no leakage of our indigenously developed know-how and technologies. In fact, India's conduct in this regard has been better than some countries party to the Nuclear Non proliferation Treaty. India has not violated any international agreements and its record on non-proliferation has been unblemished.

Subsequent to the nuclear tests in 1998, the Government worked towards re-engaging countries like US to end India's nuclear isolation, project itself rightfully as a country with advanced nuclear technology and work towards greater international cooperation in areas of high technology and initiate measures to do away with technology denial regimes. The importance of the 123 Agreement is that it allows us to develop our civilian nuclear energy programme without hindering in any way our strategic nuclear weapons programme. The 123 Agreement does not stop India from proceeding further with her strategic nuclear programme, which will remain separate, her indigenous three stage programme, and her independent nuclear R&D.

## **8. Frequently Asked Questions About The India- US Agreement on Civil Nuclear Co-operation:**

**Q: Does the 123 Agreement affect our ability to conduct an independent foreign policy?**

A: Our Prime Minister has said categorically that our foreign policy is determined solely by our national interests and that there is no question of India being bound by a law passed by a foreign legislature. Government remains committed to the pursuit of an independent foreign policy which is a legacy of our national movement.

Our foreign policy will be dictated entirely by our national interest and this agreement in no way affects our ability to conduct an independent foreign policy. The 123 Agreement is a voluntary agreement between two equal partners. It states specifically that both India and the US wish to develop cooperation in the civil nuclear energy on the basis of mutual respect for sovereignty, non-interference in each other's internal affairs. If anything, by contributing to India's energy security, the Agreement will increase our capacity to follow an independent foreign policy and our self-reliance.

**Q: Will the 123 Agreement affect India's strategic programme?**

A: No. The Agreement, as Prime Minister stated on 13 August 2007 in the Parliament, is about civilian nuclear cooperation. There is no provision in the Agreement which limits India's right to build future nuclear facilities, whether civil or military. On the other hand the Agreement includes a clause which explicitly ensures that the Agreement will neither be interpreted nor implemented in a manner that would adversely affect our independent and military nuclear activities. This Agreement therefore does not in any way impact on India's ability to produce and utilize fissile material for its current and future strategic needs.

**Q: Does the Agreement affect our right to conduct nuclear explosive tests?**

A: No. The Prime Minister has stated on 13 August in the Parliament that the Agreement does not in any way affect India's right to undertake future nuclear tests, if it is necessary in India's national interest. A decision to undertake a future nuclear test would be our sovereign decision, one that rests solely with the Government of the day. There is nothing in the Agreement that would tie the hands of a future Government or legally constrain its options to protect India's security and defence needs.

**Q: Will the Agreement have any adverse impact on our indigenous three stage nuclear programme?**

A: Our rights to pursue our three-stage nuclear power programme remain undiluted. The Agreement fully preserves our right to use for our own purposes our independent and indigenously developed nuclear facilities. It also provides for non-hindrance and non-interference in our activities involving use of nuclear material, non-nuclear material,

equipment, components, information or technology and military nuclear facilities produced, acquired or developed independently for our own purposes.

Our three stage nuclear programme holds immense promise for the future. However the thorium based technology, which would constitute the third stage, would become economically viable over a period of time following sequential implementation. Since our uranium supplies are inadequate we need to source it from elsewhere. While our three stage programme continues, using our own uranium resources, this Agreement, opens the door for international cooperation and would allow us to increase the share of nuclear energy. By separating our indigenous facilities from those that are imported our own programmes will continue to grow.

**Q: Does the Agreement provide for fuel supply assurances for safeguarded reactors?**

A: The Agreement provides for US support for an Indian effort to develop a strategic reserve of nuclear fuel in order to guard against any disruption of supply for the lifetime of India's reactors. This is in accordance with the provisions of the Separation Plan of March 2006. The US has also agreed that in case a disruption of fuel supplies occurs, it would jointly convene with us a group of friendly supplier countries, including countries such as Russia, France and the United Kingdom to undertake such measures which would restore fuel supply to India. India also retains its right to take corrective measures in the event of disruption in the supply of foreign nuclear fuel.

**Q: The Agreement states that it will be implemented by both sides according to their national laws and regulations. The Hyde Act will be one of the laws which the US will need to follow in implementing this Agreement. How will it then fulfill its assurances?**

A: As far as India is concerned we are committed to the terms and provisions of the 123 Agreement only. The 123 Agreement does not mention Hyde Act anywhere. There is no provision of the Hyde Act in the 123 Agreement which is undesirable from our point of view. The Hyde Act is an enabling legislation to permit the US Administration to negotiate bilateral nuclear cooperation agreement with India. It contained certain extraneous provisions and commitments on US and Indian foreign policy on which our external affairs minister commented, in his statement to Parliament on December 12, 2006: "We have always maintained that the conduct of foreign policy determined solely by our national interests is our sovereign right. We have also been clear that our strategic programme remains outside the purview of these discussions. We will not allow external scrutiny or interference with the strategic programme."

The US Administration has categorically assured that the Hyde Act enables it to fulfill all of the commitments it made to India in the July 18 and March 2 Joint Statements. President Bush has also made it clear while signing the Act on December 18, 2006 that that he would consider certain provisions of the Hyde Act as only advisory.

**Q: Why should Parliament not approve this Agreement?**

A: India follows a parliamentary model, as specified in our Constitution, wherein treaty making powers rest with the Executive. No bilateral treaty and agreement has ever been approved by the Parliament in the past. For instance the NDA Government had come to an agreement with the US called "Next Steps in Strategic Partnership" in January 2004, but this was never even made public. Even a major treaty such as the 1971 Indo-Soviet Union Treaty of Friendship was not brought to Parliament. Despite this Government has kept Parliament fully in the picture at various stages of our negotiations with the United States.

**Q: Does it mean India will have to sign the Comprehensive Test Ban Treaty (CTBT) or the Fissile Material Cut-off Treaty (FMCT)?**

A: The Agreement entails no obligations for India to sign CTBT/ FMCT. We, however, remain committed to a voluntary, unilateral moratorium on nuclear testing. We are also committed to negotiate an FMCT in the Conference on Disarmament. India is willing to join only a non-discriminatory, multilaterally negotiated, and internationally verifiable FMCT subject to it meeting our national security interests.

**Q: What happens to India's stand on Iran?**

A: The 123 Agreement is about cooperation for peaceful uses of nuclear energy. It has no reference to any extraneous issue or to India's relations with other countries.

**Q: Is it linked to any other issue such as purchase by India of aircrafts.**

A: The Agreement is not linked to any extraneous commitment or obligation on India's part.

**Q: Have PM's commitment to Parliament been fulfilled?**

A: Commitments made by Prime Minister to Parliament, including in his statement to Rajya Sabha on August 17, 2006, have been fully adhered to.

**Q: What happens to our independent 3 stage nuclear power programme?**

A: India's indigenous three stage nuclear programme does not get affected by this agreement. Its full autonomy has been preserved.

**Q: Does the agreement mean India has to give up its nuclear weapons programme.**

A: The agreement does not affect India's nuclear weapons programme in any way. As a responsible nuclear state India would continue to observe its voluntary moratorium on testing and its policies of credible minimum deterrence and no first use. These policies were enunciated by the NDA Government of Prime Minister Atal Behari Vajpayee.