



## Climate Change:- Indian And American Perspectives

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### Abstract:

Climate is perhaps the biggest challenge facing the world today. India and America launched a series of strategic partnership allows US to share experience and knowledge with in climate change. It is really a 'love force' or 'soul force' aimed at achieving all the good human values like love, good will cooperation, fellow feeling and the like. These are real values of life, which teaches us the messages that 'live and left live'. The individual approaches of the two countries may differ but their end goal is the same cooperation in the field of energy and climate change is mutually beneficial. The time has come neither India nor the US could bypass each other even if either so desired. But sooner the better we have to make a beginning with the motto "think globally, and act locally". The people of the world let us join hands in fighting the negative factors that are rapidly reducing the defence capacity of earth.

### Keywords:

Climate Change, Perspective, Meteorological, Energy, Hazard, Electricity, Conservation, Partnership, Environment, Wildlife, Aids.

Received 15 Jan., 2023; Revised 29 Jan., 2023; Accepted 31 Jan., 2023 © The author(s) 2023.

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### I. Introduction :

During 2003, India and the United States launched a new initiative known as the US-India climate change partnership, which includes 18 activities focused on research, technology cooperation, carbon sequestration, market based mechanisms and institutional approaches and adaptation. It has created greater awareness of climate change issues among a broad group of stakeholders, worked closely with municipal corporations in Hyderabad, Bangalore, Agra and Delhi on specific initiatives and biomass technologies in Karnataka, Andhra Pradesh, Tamil Nadu, Rajasthan, Himachal Pradesh, Gujarat and Madhya Pradesh. There are many other areas where collaboration between the two countries has paid off e.g. meteorological relation in 1983, clean energy trap, clean technology initiatives, greenhouse pollution prevention (GEP), fly ash and health hazards reduce, electricity generation, DRUM project (distribution reform upgrades and management), ecotel project, fossil-fuel depletion, green flyway, zero pollution mobility, environment conservation, green business centre in Hyderabad, Delhi metro, hydrogen technology, wildlife conservation, nuclear and solar routes, renewable energy, solar energy, lighting the way, Odisha cyclone in 1999 and the Gujarat earthquake in 2001, battle against aids. The fact that the US and India at different levels of development hardly matters. What does matter, however, is the willingness to work together and learn from one another. The individual approaches of the two countries may differ but their end goal is the same cooperation in the field of energy and climate change is mutually beneficial. The bilateral partnership allows US to share experience and knowledge with india in climate change.

### Meteorological Relation :

On the February 8, 1983, INSAT IA the multipurpose Indian National Satellite built to the specifications of the Indian Department of Space by Ford Aeronautics and Space Administration (NASA). Besides serving telecommunication and TV, the fifth meteorological satellite in the world will fill a gap in the world meteorology data resources. Once it is placed in orbit, meteorologists will be able to get weather data every half hour. Until now two US satellites, TIROS and NOAA, had been supplying vital information related

to cyclone warning, wind speed, atmospheric pressure, humidity etc. INSAT IA and INSAT IB (the latter to be launched in 1983) will give a boost to Indian meteorology by providing a very fast and regular supply of information<sup>[1]</sup>.

#### **Clean Energy Trap :**

The Joint statement on environment issued by the US and India on the occasion of the US President's visit has prompted criticism on this count, will the agreement, by promising extensive "soft" loans for cleaner technologies using conventional fuels, set the country on a 'clean energy' path for removed from the development of alternative fuels and a less energy consuming development model. The recent India-US environment agreement promising aid in installing 'clean' power generation has given future cause for worry. The agreement offers no assistance for the development of alternative sources, which require large investment<sup>[2]</sup>.

#### **Clean Technology Initiative :**

As you reach the banks of the Yamuna River near Agra, the magnificent white marble edifice of the Taj Mahal rises into the horizon stirring your senses to the 15<sup>th</sup> century beauty - a testimony of mughal king shahjehan's love for his wife Mumtaz. But over the years, the pollution created by vehicular traffic and small scale industries surrounding the Taj Mahal has damaged the monument, prompting the Government of India, courts, activist groups and donor agencies to raise awareness about the threat and develop programs to ensure the monument's survival.

This is perhaps, one of the most visible examples of the US-India partnership on energy and climate. Among the many activities that have formed the partnership over the years is the Clean Technology Initiative (CTI), a Joint effort of the US Agency for International Development and the ICICI Bank to promote climate - friendly technologies and Certifiable Environment Management System (EMS). In its newest evolution, CTI is focused on the 10,400 sq km Taj Trapezium Zone (TTZ) to help achieve sustainable industrial growth while protecting the environment<sup>[3]</sup>.

#### **Greenhouse Pollution Prevention (GEP):**

During 2003, India and the United States launched a new initiative, known as the US-India climate change partnership, which includes 18 activities focused on research, technology cooperation, carbon sequestration, market - based mechanisms and institutional approaches, and adaptation. The initiative is being led by the US Department of State and the Government of India's Ministry of Environment and Forests. A broad coalition of government agencies from both countries participates in the climate change partnership. The partnership builds on the past success in climate change cooperation between India and the US while looking towards future opportunities.

Central to this partnership is the work of the Greenhouse Gas Pollution Prevention (GEP) project. This is USAID'S largest climate change initiative worldwide. The project's efficient power generation component seeks to reduce greenhouse gas (GHG) emissions per unit of electricity generated by thermal power stations. Power plants of both the National Thermal Power Corporation and State Electricity Boards have benefited from this program. GEP's Alternative Bagasse Cogeneration Component encourages efficient use of biomass fuels in sugar mills. In the past, cogeneration units used low temperature and low pressure turbines which deliver lower efficiency. The focus is now on high efficiency configuration systems at nine sugar mills where financial and technical assistance have been provided. Also, the project's climate change supplement seeks to develop human and institutional capacity to design and implement that reduce GHG emissions. It has created greater awareness of climate change issues among a broad group of stakeholders, worked closely with municipal corporations in Hyderabad, Bangalore, Agra and Delhi on specific initiatives, and helped to secure funding for a diversity of GHG mitigation projects.

#### **Fly Ash and Health Hazards Reduce:**

There are many other areas where collaboration between the two countries has paid off. With coal accounting for nearly 70% of power production in the country, the World Bank pressed India to come up with innovative measures to dispose of the huge quantities at fly ash. Current estimates put the figure at 90 million tons of fly ash produced each year. Rising to the critical occasion, the ministry of power and the NTPC began to work with USAID and the US Department of Energy (DoE) to find to productive use for fly ash and reduce the risk of health hazards. Efforts have focused on using fly ash in wasteland reclamation, as construction material in concrete and brick-making and as foundation for road beds. As an example, the Delhi-Noida-Delhi flyway has been built over fly ash recovered from thermal power plants. One good possibility to utilize large quantities of fly ash lies in the Gorbi Mine ash haul back study, which explores the feasibility of back filling the abandoned mine with fly ash and eventually returning it to a forested state.

### **Energy and Climate Change:**

The US first raised the idea of cooperation in the energy sector back in the 1960s. The fact that the US and India are at different levels of development hardly matters, what does matter, however, is the willingness to work together and learn from one another. The individual approaches of the two countries may differ but their end goal is the same - cooperation in the field of energy and climate change is mutually beneficial. Says Harlan Watson, senior US climate negotiator: "The bilateral partnership allows US to share our experience and knowledge with India in climate change, science and technology:

Not surprising then, India and the US are collaborating on range of activities that require educational inputs, consultancy services and funding in the energy sector, practitioner-to-practitioner contacts have become the norm between utilities under the Energy Partnership Program. In states like Andhra Pradesh, Maharashtra, West Bengal and Karnataka, a series of links have been developed to ensure better electricity supply and distributions. And it is this second element, energy distributions, that is quickly becoming the key to the growing bilateral relationship on energy and climate change<sup>[4]</sup>.

### **Electricity Generation :**

The US-India partnership in energy has evolved from a focus on electricity generation to an emphasis on energy distribution. To this end, USAID/India is funding a variety of distribution based projects with the aim of contributing to the power distribution reform process and introducing commercial best practices with regards to energy and water resource management. The Water Energy Nexus Activity (WENEXA) strives to bridge the policy gap between the water and energy sectors and works with institutions on the national, state and local levels. The project's objectives include developing policies that promote and support viable power distribution companies, fostering state-level water sector reforms, reinforcing market oriented energy policies and ensuring the effective communication of water and energy issues to village and town residents.

### **DRUM Project :**

The Distribution Reform Upgrades and Management (DRUM) project is another example of the shifting focus in US-India energy collaboration. Today, the reform of power distribution is widely viewed as the key to improving the commercial performance and financial viability of India's power sector. In recent years, a number of states have worked to improve the commercial performance of their state utilities, including the unbundling of state entities, the creation of more independent regulatory systems and the development of measure to control losses and theft.

Recognizing the urgent need to address the issue of reducing losses and improving the quality of power delivery, the Ministry of Power (MoP) has focused on implementing distribution reforms and has introduced several measures to further the process. The recent initiatives include the enactment of the Electricity Act 2003, which provides the framework for a more competitive, transparent and commercially - driven power sector. The Act recognizes the need for a strategy that distinguishes urban power distribution from rural electricity supply. It also facilitates establishment of participatory models for rural distribution, including electricity cooperatives, Rural Gram Panchayats (local government), distribution franchisees, etc. Another program focused on improving electricity distribution is the Accelerated Power Development Reform Program (APDRP), which finances the modernization of sub-transmission and distribution networks, including a system of local management and energy accounting through widespread metering in every state utility's distribution circles. As result, USAID/India designed the DRUM project with the purpose to demonstrate best commercial and technological practices that improve the quality and reliability of "last mile" power distribution in selected urban and rural distribution circles in the country. The project is in synch with the GoI policy on power sector reforms, the Electricity Act 2003 and the APDRP scheme. DRUM is a five-year bilateral project with a planned funding of Rs.135 crore (\$30 million) over the life of the project.

### **ECOTEL:**

Even day-to-day operations in various industries have recorded a change. CTI's efforts, along with CII and FICCI, to introduce eco-friendly measures and enhance productivity has managed to realize savings for automotive companies, five-star hotels, cement producers and the textile mills.

The Orchid Hotel in Mumbai is a good example of US-India cooperation. A stone's throw away from the domestic airport, the plush five-star is a unique ecotel has benefited from the US-India collaborations, everything about this hotel is in keeping with its larger goal of conservation; a facade designed to cut radiation, reusable wall panels made from fertilizer waste, triple glazed windows that block the sunrays and provide a buffer against the roar of the constant plane traffic above, a rooftop pool that acts as an insulator, special aerators to manage water flow through vermin-culture there's nothing in the hotel that is not eco-friendly. And after it turned into an ecotel, the orchid is believed to be saving approximately Rs.1 crore (\$ 223,000) a year<sup>[5]</sup>.

### **Zero Pollution Mobility:**

Two for the road: Reva, The smokeless car, is not only affordable but offer's privacy for those who do not want a third person on a relatively long and fast trip. It can carry two at 8 kmph, has no gears, no petrol or diesel is needed and of course, other is no smoke. It can travel 80 km without a recharge, and it is called Reva. India's very own electric car, Reva was designed in a Joint Venture between the Maini Group, Bangalore and American, Monrovia, CA. Compared with a petrol driven car, which costs Rs.2.60 per km Reva costs barely 40 paise per km, using the equivalent of nine units of hour. The basic Reva model is priced at Rs.2.47 lakh (\$6.000), while the fully loaded version comes at Rs.3.22 lakh ( \$7,000). A truly cutting edge collaboration supported by USAID. Reva has been tested in the US and commercially marketed since mid-2001 in India and abroad<sup>[6]</sup>.

### **Environment Conservation through Partnership:**

US-India cooperation on environment is an outstanding representation of how the bilateral relationship is being transformed. The changing role of the Department of State (DoS) and the United States Agency for International Development (USAID) over the past 50 years in addressing environmental issues and the emergence of new US players in India, such as the United States Environmental Protection Agency (EPA), the Department of Energy (DoE), the US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA), show the importance of the environment and the depth and breadth of the US-India partnership to address environmental issues of common concern. India has witnessed more population growth in the past decade than ever before, and the US-forging a partnership with indian institutions and individuals is helping India to address environmental outcomes of that growth. This chapter highlights just a few of the many important ways the US Government is developing partnerships to achieve sustainable development in India.

### **India's First Ever Green Business Centre:**

The Green Business Centre (GBC) in Hyderabad promises to be a brick and mortar symbol of US - India partnership on the environment. The GBC, located in this high-tech city, has received the prestigious LEED'S (Leadership in Energy and Environmental Design) platinum rating, the highest rating given by the US Green Building Council, one of the world's foremost bodies supporting environment friendly architecture. The GBC is unique in concept and design. It houses experts in energy efficiency, water management, recycling technologies and green building. Built using fly-ash bricks, GBC is an eco-friendly building that not only meets global standards in green design, but one that also belongs to its local landscape.

Green Unique Features :

- The green business centre is a building like few others.
- The GBC is a model green building, from construction outside to activity within.
- The GBC has experts in environment protection who consult with industry.
- GBC is 50-60% more energy efficient than other buildings uses solar energy for 25% power generation.
- It has been constructed using bricks made of fly ash, a waste material from nearby power plants.
- A "green roof" of grass and vegetation keeps the building cool.

### **Wildlife Without Borders :**

This we know: the earth does not belong to man, man belongs to the earth. To conservationists around the world, these lines constitute an article of faith. They reflect the assumption that earth's rich biodiversity is not a treasure that belongs to individual nations. Any attack on the world's endangered species is an attack on nature itself. Its defence too, therefore, becomes a global responsibility. The nature of the US-India partnership in the field of wildlife conservation is a variation of this theme. Fittingly, the motto of the international outreach program of the US Fish and Wildlife Service (USFWS), the chief driver of US-India collaboration in wildlife conservation, is "Wildlife Without Borders". India, home to 21,000 species of plants, 500 varieties of mammals, and 1500 types of birds, is ranked sixth among global biodiversity centers. But the demands of modernization have placed a constant challenge on the country's dazzling variety of species<sup>[7]</sup>.

### **Energy Security and A Clean Environment :**

- Welcomed the successful completion of discussions on India's (nuclear facilities) separation plan and looked forward to the full implementation of the commitments in the July 18, 2005, joint statement on nuclear cooperation.
- Welcomed the participation of India in the ITER (experimental) initiative on fusion energy as an important further step toward the common goal of full nuclear energy cooperation.

- Welcomed India's interest in the Integrated Ocean Drilling Program, and international marine research endeavour that will contribute to long-term energy solutions such as gas hydrates.
- Noting the positive cooperation under the Indo-US Energy Dialogue highlighted plans to hold joint conferences on topics such as energy efficiency and natural gas, to conduct study missions on renewable energy, to establish a clearing house in India for coal-bed methane/coal mine methane, and to exchange energy market information<sup>[8]</sup>.

#### **The Nuclear and Solar Routes :**

The low-carbon path that the minister has offered in Copenhagen can either be a nuclear or a solar route or a combination of the two. Nuclear power could become a major component in the future - 40,000 MW by 2020 as was propagated during the India-US nuclear deal. The route is the 20,000 MW solar thermal plants by 2022, according to the National Solar Mission. The solar thermal route is another possible low carbon route. Using a solar route, the capital cost would be around Rs. 20 to Rs.25 crore per MW or four to five times that of coal-fired plants<sup>[9]</sup>.

#### **US-India Sign Green Energy Pact :**

Barack Obama, President of US (United States) and Dr. Manmohan Singh, Prime Minister of India, have agreed to step up cooperation on renewable energy sources and have signed an agreement pledging to speed up development and utilization of clean energy sources. The renewable energy pact, along with a raft of other agreements, was signed in Washington on the second day of the Prime Minister's week-long visit to the US. It is seen as a new phase in the partnership between the two countries, which are among the top five carbon dioxide emitter's in the world. A MoU (Memorandum of Understanding) was signed between the two countries to 'enhance cooperation on energy security, energy efficiency, clean energy and climate change.' The MoU would 'bring together joint ideas on energy efficiency, renewable energy and green technologies to stimulate the India-US energy dialogue'<sup>[10]</sup>.

#### **Alternative Resources for Energy Generation:**

Economic growth depends on availability of energy. Traditionally, fossil fuel is used for energy generation. It emits obnoxious gases that cause global warming, ozone hole and acid rain, with industrialization, energy consumption has increased. The scarcity of energy is a worldwide problem. China alone is consuming 12% of the World Energy (World Energy Outlook 2005). India too occupies the sixth position as an energy consumer in the world. The US insisted that India and china, which are growing at the rate of seven to eight percent annually must not be exempted from quota deadline of Kyoto Protocol.

Ken New Combe, the World Bank's senior adviser for sustainable development while expressing his views in a meeting in Paris in June, 2005 said, "a new global climate management regime must include limiting the emission of greenhouse gases in rapidly industrializing countries such as India, China, Mexico and Brazil. India is the 6<sup>th</sup> largest emitter of greenhouse gases. The growing economy of India needs more energy. The Fossil-fuels is limited, so there is need to replace fossil fuel with Bio-fuels and other renewable resources of energy, solar, wind wave, biomass, geothermal and nuclear are other resources of energy generation. The introduction of eco-friendly alternatives of windmills and solar panels are the best long term solution as their capability of regeneration is enormous. Similarly nuclear energy is most efficient, abundantly available, sustainable and cost effective energy source<sup>[11]</sup>.

#### **Progress in the Battle against Aids :**

In 1986 the first case of AIDS was reported in Tamil Nadu. Today there are 4.5 million Indians who are infected HIV, Second only to South Africa. A sobering situation, but with some good news- Tamil Nadu and HIV/AIDS "hot spot" is seeing infection rates plateau due to prevention efforts.

USAID began its AIDS Prevention And Control (APAC) project in Tamil Nadu in 1992. It is a US-India bilateral initiative that is administered by voluntary health services. HIV prevention is focused on high risk groups (trucker and commercial sex workers) in urban areas. It includes care and support for infected people.

Mass media campaigns, intensive support to NGOs, research and close collaboration with the State Government of Tamil Nadu have raised awareness and HIV and safe behaviors that prevent its spread. The effort is showing results: overall HIV infection rates are moving slightly downward; and condom use among truckers jumped from about 50% to nearly 80% and was even higher among sex workers (nearly 88%). First funded for Rs 48 crore (\$10 million) from 1992 to 2002, additional US assistance of Rs 70 crore (\$15.5 million) was awarded through 2007<sup>[12]</sup>.



### **US-India Cooperation on Energy and Climate Change :**

US-India Green Partnership, November 24, 2009: President Barak Obama and Prime Minister Manmohan Singh launched a Green Partnership; reaffirming their countries, strong commitment to taking vigorous action to combat climate change, ensuring their mutual energy security, working toward global food security, and building a clean energy economy that will investment job creation and economic growth throughout the 21<sup>st</sup> century. Toward that end, Prime Minister Singh and President Obama agreed to strengthen US-India cooperation on clean energy, climate change and food security.

Indian Prime Minister Manmohan Singh and US President Barak Obama met on September 27, 2013 at Washington and discussed among other things the first commercial agreement on civilian nuclear power between the two countries, White House released a statement underscoring the close ties between the US and India. The document underpins the shared democratic values that have strengthened and enriched both the nations<sup>[13]</sup>.

### **II. Conclusion :**

Climate change is an issue that has the possibility to create tensions between India and the West at a time when the United States has been seeking a closer relationship with India and will likely require adept diplomacy to bring India along in global efforts to address the problem. Large-scale mass movements are necessary to tackle the issues related to this cause of climate change. Government alone cannot solve this problem by formulating laws. We should sincerely believe in and act according to what Gandhiji said; “On this earth, there is enough for everyone's need, but not for their greed”. Man can live without food for a week, he can also live without water for some hours but he cannot sustain life without pure air even for a few minutes.

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