

**Inaugural Address
By**

**CMD NPCIL & BHAVINI
On**

15th National Symposium on Environment (NSE-15)
Theme: Mitigation of Pollutants for Clean Environment
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Introduction:

Prof. Dr. G. Thiruvassagam, Vice-Chancellor, Bharathiar University, Shri. Kuswaha, Director, HS & E Group, BARC, Dr. Puranik, Head, EAD, BARC, , Dr. S. Selvasekarapandian, Convener Symposium Organizing Committee, distinguished delegates, ladies & gentlemen. I feel very happy to be with all of you this morning on the occasion of commencement of NSE-15. This is the 15th National Symposium on Environment in the series, with a focal theme of “Mitigation of Pollutants for Clean Environment” The theme is very appropriate as the continual degradation of the planet's environment is something that affects every person in every country, be it developed or developing. A diverse society like ours provides numerous challenges in the economic, social, political, cultural and environmental areas.

It is accepted that industrialization has played an important role in our economic growth and quality of life. It has provided the much needed commodities such as of electricity, Heavy machineries, efficient means of transport, textiles, pharmaceuticals, chemicals, electronic equipments, communications and so on without which the life would have been tough and tedious. Therefore, industrialization is here to stay. However, the increasing environmental concerns such as green house effect, air pollution

(cities life is becoming increasingly unfit for healthy living), water pollution (most of the rivers are highly polluted), soil erosion / contamination (frequent flooding) threatened bio -diversity (resulting in ecological imbalance) have made to think that growth without sustainability of environment would be a shortsighted policy. For example DDT, which was used to increase the crop yield and protection against diseases caused by mosquito bite, is proved to be carcinogenic and got tendencies for bio-accumulation. Once ground water was considered

The Human Development Index for India, is 126 (HD Report, 2006, UNDP), which is beyond GDP to a broader definition of well being (measured by life expectancy, adult literacy and purchasing power parity). This indicates that we have to go a long way to achieve good quality of life to our citizen. No doubt, our development challenges have evolved and our understanding of centrality of environmental issues in development has sharpened. Therefore, there is a constant need to review our strategies to achieve the objective of sustainable development. For this to happen there is a need for balance and harmony between economic, social and environmental needs of the country.

Key Environmental Challenges: Causes & Impacts

The key environmental challenges that the country faces relate to the nexus of environmental degradation with poverty in many dimensions, and economic growth. As on State of Tamilnadu has 30,044 industries (large, medium, small) registered with TNPCB, out of which District of Coimbatore has around 2143, ranking third after Thiruvallure (2868) and Kancheepuram (2736). In the present scenario of increasing urbanization, industrialization,

the increasing trend of pollution of various environmental matrixes such as air, water, land has become an issue of concern.

If we look at the ambient air quality of our metropolitan cities, it is observed that the quality is deteriorating with respect to many of the air quality parameters especially with respect to Respirable Suspended Particulate Matter (RSPM), which has crossed the permissible levels at all major cities such as Chennai, Mumbai, Delhi, Kolkata, Bangalore, Hyderabad etc. This is becoming a cause of concern, as poor air quality means increasing health risk to the citizens. Over billion tones of toxic chemicals are released by industry into the nation's environment each year, including sizable amount of recognized carcinogens. Most of the people suffering from asthma also live in areas with poor air quality: ozone, particulates and sulfur dioxide are all known to worsen the health of asthmatics and trigger asthma attacks. Particular attention is required to be given to Emissions from Heavy Duty Diesel Vehicles especially in urban areas because of the concentration of vehicles, people and buildings there.

Water covers 70 percent of the Earth's surface, yet billions of people lack access to clean water. Population growth in many water-stressed areas, plus excess water use and non implementation of effective water harvesting mechanisms is shrinking water resources worldwide and raising fears about water scarcity.

The pollution of water sources (rivers, lakes, ground water) is becoming another area of concern. For example, the 22 km stretch of river Yamuna from Wazirabad barrage to Okhala barrage has been categorized as septic with D.O (Dissolved Oxygen) concentration ranging from 0.0 to 3.0 mg / l (The upstream D.O concentration are 5.7 -12.0 mg /l). Even for the city of Coimbatore, the ground water quality vis -a -vis Drinking Water

Standards (DWS: IS: 10500) is not within desirable limits for 50% time of observations.

According to the World Bank, as many as two billion people lack adequate sanitation facilities to protect them from water-borne disease, while a billion lack access to clean water altogether. According to the United Nations, which has declared 2005-2015 the “**Water for Life**” decade, 95 percent of the world’s cities still dump raw sewage into their water supplies. The other toxic and pesticide discharges from activities like industries, agriculture etc. has rendered the water quality unfit for consumption. In the present circumstances, “Doing more with less is the first and easiest step along the path toward water security.”

Burning fossil fuels such as natural gas, coal, oil and gasoline raises the level of carbon dioxide in the atmosphere, and carbon dioxide is a major contributor to the **greenhouse effect and global warming**. It is predicted by IPCC (Inter -governmental Panel on Climate Change, a UN Body) that the consequences of global warming would be of devastating nature.

You are aware that Hurricanes Katrina and Rita pounded the U.S. Gulf Coast in 2005 with devastating effects. Forecasters are predicting that 2007 could be particularly turbulent. It is expected that 2007 would witness 3 -5 hurricanes in the "strong" category. It is known that rising global temperatures worldwide are creating more frequent and severe hurricanes.

We should reduce the demand for fossil fuels, which in turn reduces global warming, by using energy more wisely. Adoption of the concept of **best practicable environmental option** or **BPEO** should be our MANTRA.

The other areas of concerns such as pollution arising from agricultural practices (in particular from pesticides, nitrogenous fertilizers and farm wastes) effects on the marine environment of oil, both from routine

discharges and from accidental spills. insufficient safety margin between lead concentrations in the blood of most people and the concentrations which were known to be harmful. The utilities, those who produce such waste should have a '**duty of care**' to ensure that their wastes were subsequently managed and disposed of without harm to the environment and to should develop pollution control measures that took account of risks to the whole environment. The risks to the environment is also involved in the release of genetically engineered organisms (GEOs) now called as Genetically Modified Organisms (GMOs) should be minimized and that those carrying out releases should be under a duty to take all reasonable steps for the protection of the environment.

The environmental issues pertaining to the under developed and developed societies are worthy of special attention in the light of uncontrollable growth and limited sustainability of habitat.

If we compare the situation in villages with cities, there is one glaring similarity. In both socio-economic settings the poor have to shoulder higher share of pollution. For example, in case of air pollution in the cities, although we all breathe the same air, the poor are situated closer to the source of pollution on one hand and they stay longer hours in the polluted environment when compared to the resourceful counterparts. Often, the people living in the slums on the edges of high ways also work in the industrial sectors that have poor environmental records.

Thus the efforts to curb pollution and promote the cleaner practices in farms, industries and in our neighborhoods will help the poor first. The war against pollution will therefore truly help "**we the people**" whose productivity will ultimately help our nation in remaining competitive in the world market. If we do not see the link between pollution and our survival

and do not unite for improving our environment, the entire exercise of bringing the so-called development may be futile in the years to come.

Energy & Environmental

Electricity is an essential requirement for all facets of life. It is a critical infrastructure on which the socio-economic development of the country depends. A comparison of the per capita electrical energy consumption in India with other countries indicates that we have a long way to go in electricity generation to meet world standards. To give an idea, the electricity generation in the fiscal year 2006-07 was 600 units on per capita basis, while actual consumption is less by an amount equal to transmission and distribution (T&D) losses. In the Organization for Economic Cooperation & Development (OECD) countries, the corresponding figure is about 10,000 units. Therefore, it is necessary to enhance the growth and development of the energy in the country to give better quality of life.

Accordingly, National Electricity Policy (NEP) -2005 notified by Ministry of Power has identified one of the objectives as to increase per capita availability of electricity to over 1000 units by 2012. The installed capacity of the country as on 28-2-2007 was about 128581 MWe. 65% of electricity in the country is generated using fossil fuel (predominantly by using coal and a small contribution by using diesel and gas) followed by hydel power (27%). The contribution of nuclear power as on date is around 3% of the total installed capacity in the country. Planning Commission of India in its report (Working Group on Power -11th Plan, 2007-12) has envisaged projected energy requirements to increase from 663 billion units in 2006-07 to 1140 billion units in 2011-12 with an annual growth rate of 9%, to meet the objective of National Electricity Policy (NEP) -2005 so as to

increase per capita consumption from 600 units in 2006-07 to 1000 units in 2011-12.

To meet the above mentioned energy requirement in India, energy managers are adopting an optimal mix approach in view of the uneven distribution of its natural resources, economics of power generation and environmental concerns. At present fossil fuels play a dominant role in energy production and there are two very important issues associated with the use of fossil fuels. One is the influence on environment (global warming as discussed above and other and other environmental pollution), the other is the time period for the depletion of the fossil fuels, which can be estimated by dividing the reserves with the rate of consumption. On both these issues alarm bells have been sounded. Oil production would probably decline before coal.

Hydel - potential is significant and concentrated in the north - eastern part of the country and must be fully exploited. However, growth of hydel power might be constrained because of associated social and environmental issues. For example, the land requirement for hydel power is significantly higher as compared to other sources of energy. Non-conventional energy sources like Solar, wind, Tidal, and Biomass should be exploited to their fullest potential, but they also seem to have their own limitations because of level of technological development, and, their contribution can be suitable more for limited applications. On the other hand, Nuclear Power can play a substantial role to supplement the fossil fuel in meeting the widening supply-demand gap.

Strategies have to be formulated to ensure sustainable development, so that future generations lead a standard of living, which is better than the present generation, as we are better off than our predecessors. Coal based

super thermal power plants, which are at present supplying the major portion of the country's energy demand (65%) will continue to play a major role in coming years; of course they would have to adopt cleaner technologies to reduce the environment load of GHGs. Also they cannot bear the entire burden, because of difficulties involved in transportation of coal and associated huge emissions to environment. On the other hand Nuclear Power is one of the available and viable sources (potential 310 GWe) to supplement the coal based power plant and hydel power especially at locations away from the source of these natural resources. It is only pertinent that growth of nuclear power in India is accelerated in near future. In any event, globally as well as for India, nuclear energy will be an important energy option for cleaner environment and sustainable development without further deterioration in the state of environment.

Nuclear sector, since its inception has focused by aiming excellence in all fields of its activities, while pursuing the goal of harnessing nuclear power for nations growth.

There have been coordinated, sustained and systematic efforts to upgrade all aspects of the activities on the one hand and on the other development and implementation of latest tools and techniques and quality, health, safety and environmental management systems to further enhance their effectiveness. Efforts are being made to integrate the requirements of these systems at the design stage itself so as to institutionalize them for continual improvement. As a result, e.g. most of the NPCIL plants have excellent safety record with around 260 years of reactor operating experience with radiation doses to the members of public of the order of 0.3% (for new plants) of the dose limit specified by the Atomic Energy Regulatory Board (AERB). No conventional pollutants are emitted or

discharged by nuclear power plants. The clean environment around nuclear power plant does not indicate the presence of power industry in its vicinity. Additionally NPCIL plants voluntarily have achieved ISO-14001 / IS-18001 certification for Environmental Management System and Occupational Health Safety Management system by an accredited agency. International communities such as WANO (World Association of Nuclear Operators) had carried out peer review of our plants and cited many strengths. NPCIL has also initiated “**Environment Stewardship Programme**” (ESP) in MOU with Bombay Natural History Society (BNHS), India to study biodiversity, especially avi-fauna in and around exclusion zones of Indian NPPs. As you are aware that NPP are having an exclusion zone of 1.5 to 1.6 km around each plant, which is developed as a green belt with no human intervention. This type of exclusion zone along with the presence of aquatic bodies in the vicinity has provided a natural habitat for many of the threatened and migratory species of avi fauna.

Conclusions

Therefore, I would like to conclude by saying that our aim should be self-sustaining environment that improve living conditions, public health and long term energy security. This can be achieved by partnerships with local people to promote a healthy economy, cleaner energy source like nuclear power that sustain clean environment.

As I mentioned earlier that the theme of the symposium is very much appropriate and it will further enhance the understanding of the environmental issues to achieve the objectives of clean environment that sustain economy and leads towards continual improvement.

I wish all the delegates fruitful discussions and eventful participation

Thank you all.