Sustainable Development: Emerging Issues In India's Steel Sector

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ABSTRACT

In India, economic reforms and liberalization introduced since 1991 along with the forces of globalization, have no doubt increased the pace of economic growth, but have also raised concerns about inequality, unsustainable use of natural resources and environmental damage. Sustainable development is a buzz word in natural resources development today. In view of the increased awareness of environmental problems, the accent on sustainable development has grown in recent times, particularly in respect of activities which degrade the environment and affect communities adversely. In these circumstances, sustainable steel development boils down to bringing about a balance between economic, social and environmental well-being. Achieving a dynamic balance between steel production, good governance and environmental management, economic and social stability and intra-generational and inter-generational equity is the challenge that India faces today for the development of its steel sector. Economic progress is being achieved at the expense of such significant damage to natural resources, environment and social justice that future generation will be worse off than the present one. The study seeks to examine how governmental and industry practices can be aligned for a sustainable outcome.

KEY WORDS: *Sustainable Development, Environmental Management, Inter-generational Equity, Steel Sector*

Sustainable Development

Sustainable development is interpreted primarily in terms of environmental protection and management. Sustainable development is a bridge concept connecting economics, ecology and society, famously known as the three pillars of sustainability. 'Sustainable development', an all-inclusive concept, basically means economic and social development that endures over the long-term and its core ethic is intergenerational equity. The resource-intensive, urban-industrial growth model has resulted in large-scale exploitation of the natural resources and to the consequent deprivation and marginalization of the indigenous people residing in these areas. There are many definitions of 'sustainable development', but the most frequently quoted is that formulated by the Brundtland Commission in 1987. According to this definition, "sustainable development" is that pattern of development which "meets the needs of the present without compromising the ability of the future generations to meet their own needs." An environmentally sustainable system must maintain a stable resource base, avoiding over-exploitation of non-renewable resource systems or environmental sink

functions, and depleting non-renewable resources only to the extent that investment is made in adequate substitutes.

Strong measures are needed to integrate steel development with social concerns, environmental integrity and good governance. The relevance of the study for development planning arises from the fact that steel development has a close interface with the issues of environment, development, welfare of local communities and poverty alleviation and its sustainability is crucial for the promotion of inclusive growth.
Modernization and progress are defined in terms of human capacities to harness and use nature for mankind's benefit. This has resulted in severe environmental degradation and resource constraint. If very strong measures are not adopted even now and sustainable development practiced in every walk of human life it would lead to severe health hazards to mankind and invitation to natural disasters, severe climatic changes and total annihilation of the planet earth.

Subsequent global conferences on the themes of development and environment, in particular the 1992 United Nations Conference on Environment and Development (the Earth Summit) in Rio de Janeiro, Brazil through its outcome (Agenda 21 and the associated Earth Charter) and the 1995 World Summit on Social development through its declaration and programme of action have elaborated the principles of sustainable development. The 2002 World Summit on Sustainable Development held in Johannesburg, South Africa further elaborated the definition through its inclusion of "economic development, social development and environmental protection — at the local, regional and global levels" as the "interdependent and mutually reinforcing pillars of sustainable development".

Globalization and the Indian Steel Sector

India's economic growth is contingent upon the growth of the Indian steel industry. With strong backward and forward linkages, steel industry is an engine of economic growth and a symbol of economic prosperity. Consumption of steel is taken to be an indicator of economic development. While steel continues to have a stronghold in traditional sectors such as construction, housing and ground transportation, special steels are increasingly used in engineering industries such as power generation, petrochemicals and fertilizers. . Moreover, steel is vital to the nation's economic security as it is extensively used in strategic areas such as defense, power, atomic energy,and in creation of social and economic infrastructure of the country. Most of the developed nations during their course of economic development had relied heavily on their domestic steel industry to meet the requirement of faster industrial development and for building physical infrastructure.

After Indian independence, the domestic industries enjoyed considerable protection and government control. But at the beginning of 1990's, severe economic crisis created in India. At that juncture to get rid of that situation, new liberalized economic policies were adopted to integrate with the globalized world. Liberalization Policies (abolition of licensing, decontrol of price, disinvestment of public share, reduction in custom duty,

liberalization, Ex-im policy etc.) brought a radical transformation in the Indian steel industry. A remarkable positive growth rate was observed in production of finished–steel in the globalized regime, which is much higher than global growth rate and pre-globalized era. Moreover Indian steel producers became more competitive in terms of productivity and techno-economic parameters in globalized era. India became a net exporter from a net importer country.

After globalization, the Indian steel industry has entered into a new development stage from 2007-08, riding high on the resurgent economy and rising demand for steel. Rapid rise in production has resulted in India becoming the 4th largest producer of crude steel and the largest producer of sponge iron or DRI in the world. At the time of its release, the National Steel Policy 2005 had envisaged steel production to reach 110 million tons by 2019-20. However, based on the assessment of the current ongoing projects, both in Greenfield and Brownfield, the Working Group on Steel for the 12th Plan has projected that the crude steel capacity in the county is likely to be 140 mt by 2016-17. The National Steel Policy 2005 is currently being reviewed keeping in mind the rapid developments in the domestic steel industry (both on the supply and demand sides) as well as the stable growth of the Indian economy since the release of the Policy in 2005.

Govt. Initiatives for Sustainable Development of Steel Sector

Since 1980 the Government of India , especially its Ministry of Environment and Forests (MoEF) has been quite active in formulating policies and laws for meeting India's environmental challenges. Of course India has an elaborate legal framework with a large number of laws relating to environmental protection. Of these, The Water (Prevention and Control of Pollution) Act 1974, The Air (Prevention and Cont rol of Pollution) Act, 1981, The Forest (Conservation) Act, 1980 and The Environment (Protection) Act 1986, are the main statutes which impact on and regulate industrial activity in the country: The National Environment Policy (2006) addresses a wide range of issues concerning environment and sustainable development and emphasizes the need to ensure intra-generational and inter generational equity and efficiency in environmental resource use.

Iron & steel industry in India are covered under the Environment Protection Act (EPA) as well as Environment Protection Rules & Regulations enacted & published by Ministry of Environment & Forest (MoEF). At the beginning, the entrepreneurs are required to obtain statutory clearances from the Union/State Governments required under the EPA for setting up of any new iron & steel plants or its substantial expansion. Further, the steel companies are required to install specified pollution control equipments/facilities and also operate well within the prescribed Standards/Norms in respect of air, water and noise pollutions as also solid waste generation & utilization. These are monitored by Central/State Pollution Control Boards. MOS helps & facilitates formulation/amendment of Norms and standards.

Government is addressing the energy & environment issues in iron & steel sector through various forums/ mechanism, details of which are given below:

i)Charter on Corporate Responsibility for Environment Protection (CREP):

This is an initiative of Ministry of Environment & Forests/ Central Pollution Control Board (CPCB) in association with Ministry of Steel and the main/ major steel plants to reduce environment pollution, water consumption, energy consumption, solid waste & hazardous waste management etc as per mutually agreed targets with the purpose to go beyond the compliance of regulatory norms for prevention & control of pollution through various measures including waste minimization, in-plant process control & adoption of clean technologies. The implementation is being monitored by a National Task Force in CPCB. Ministry of Steel is coordinating with MoEF & CPCB on matters on Corporate Responsibility on Environment Protection (CREP) and National Task Force for energy, environment and waste management in steel plant and Formulation/implementation of Environment Standards/Guidelines in iron & steel sector.

ii)Clean Development Mechanism (CDM) under Kyoto Protocol :

Under this Scheme, energy efficient technologies are encouraged and any saving in carbon dioxide emission through adoption of energy efficient technologies is traded in the form of Certified Emission Reductions (CERs). The present rate of CER vary in the range of Euro : 10-20/ CER. In so far as iron & steel industry is concerned, the National CDM Authority has so far approved 158 projects amounting to reduction of 103 million tonnes of CO2 equivalent.

iii) UNDP-GEF Steel Projects:

Under this Scheme, a fund has been created with contribution from UNDP- Global Environment Fund (GEF) to support energy efficiency programmes in re-rolling mills in the country. The relevant energy efficient technologies have already been implemented in some of the units and are under implementation in several other units. This scheme is implemented by a Project Monitoring Cell (PMC) under the overall supervision of Ministry of Steel.

National Action Plan on Climate Change 2008

India unveiled its national climate change action plan on 30 June 2008, seeking to gradually move towards a less carbon-intensive growth pattern as well as renewable sources of energy and high energy efficiency. The plan outlines existing and future policies and programs for addressing climate change mitigation and adaptation, with a focus on eight “missions”: (i) pursuing solar energy; (ii) urging energy efficiency; (iii) creating a sustainable habitat; (iv) conserving water; (v) preserving the Himalayan

ecosystem; (vi) creating a "green" India; (vii) creating sustainable agriculture; and (viii) establishing a strategic knowledge platform for climate change.

Steps towards Sustainable Steelmaking

Energy consumption in most of the integrated steel plants in India is generally high at 6-6.5 Giga Calorie per tonne of crude steel as compared to 4.5-5.5 in steel plants abroad. The higher rate of energy consumption is mainly due to obsolete technologies including problems in retrofitting modern technologies in old plants, old shop floor & operating practices, poor quality of raw material viz. high ash coal/coke, high alumina iron ore etc. Indian steel companies are gradually adopting green practices and reducing energy consumption in steel plants by technological up gradation, utilization of waste heats, use of better quality inputs, etc. . Some of the more progressive steel manufacturers in the country are adopting integrated management systems encompassing Quality (ISO 9001), Environment (ISO 14001), Safety and Occupational Health (OHSAS 18000), and Social Accounting (SA 8000). Several steel manufacturers are embracing EMS (Effective Environment Management) enthusiastically, to continually improve their environmental performance and to increase their operating efficiencies with concomitant economic advantages.

Still India needs to go a long way in achieving sustainable development in its true essence. Enforcement of environmental regulations needs to be more rigorous and stringent and a better coordination among government bodies must prevail. . Moreover, dependence on fossil fuels should be reduced as much as possible. Alternative sources of energy like solar energy, wind energy and nuclear energy should be harnessed provided the nuclear wastes are disposed off safely. Clean and energy efficient technologies should be adopted which result in fewer emissions. Further research on low carbon technologies will help in reducing carbon emissions and atmospheric warming leading to a safer habitat and a sustainable future.

Conclusion

India is an extraordinarily diverse democratic country with one of the fastest growing economies in the world. It is the world's sixth largest consumer of energy. Its current per capita energy consumption and GHG emission values are low; however, these are bound to increase if it continues on the path of development that the West has followed. If India is to 'leapfrog' the already well-trodden path to one that ensures sustainable development, it is imperative for the country to redefine its development paradigm in order to ensure inclusive growth. Unsustainable consumption patterns, poor reform implementation, distorted energy prices and inadequate investment in renewable energy sources are some of the major constraints that the Indian government needs to re-examine so as to increase energy security and provide a framework for transition to a low-carbon economy. Building a sustainable society will require participation by governments,

businesses, and individuals. Although human systems may provide us with a steady stream of goods and services, they are systematically reducing the carrying capacity of the planet. Human systems produce pollution in excess of the planet's ability to absorb and detoxify wastes, deplete nonrenewable resources faster than substitutes can be found, and use renewable resources faster than they can be regenerated. Thus the depletion of natural resources and deterioration in environmental quality needs to be addressed on an urgent basis and all unsustainable growth patterns curbed.

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