IMPROVING ENVIRONMENTAL COMPLIANCE THROUGH MANDATORY DISCLOSURE - *A HOME GROWN MODEL FOR INDIAN SMEs*

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INTRODUCTION

India's rapid and remarkable economic growth in last several years is also the reason for the country's decision dilemma regarding sustainable development. While the economic growth has lifted millions out of poverty it has also caused accelerated depletion of natural resources and rapid deterioration in environment quality. Even after six decades of this 'single-minded' support for development and growth, the nation finds itself ranked 127th in the Human Development Index and saddled with an uneasy realisation that this approach cannot be sustained for long. Deforestation, soil erosion, water pollution, air quality and land degradation continue to worsen and are hindering economic development in rural India, while in urban India pollution is straining the limits of municipal services and causing serious environmental and health problems. The severe environmental problems have besides local and regional, global ramifications too.

India, which is home to 18% of the world's population, is not endowed with sufficient natural capital to sustain it. It only has 2.4% of the planet's landmass, 4% of the fresh water resources and about a percent of the world's forest. India's ecosystems are already highly degraded. The paradigm of rapid economic growth along with the need of conserving the natural and ecological resources challenges our concept of economic growth. Compelling issues like climate change, green accounting, energy security and sluggish progress towards the millennium development goals have further made growth and development a critical balancing act. For the business fraternity, this calls for a sustainability approach of doing business; wherein business success is measured not only in terms of its financial bottom line, but also in terms of its performance in social and environmental areas.

SMEs And Pollution.

An estimated 70 percent of the total industrial pollution load is attributed to the Small and Medium enterprises (SMEs) many of which, particularly the small-scale units, continue to use obsolete technologies with no or primitive pollution control methods. This is an issue which has been of concern to the industry associations also. CII Natural Capital Conservation & Development (NCCD) Council in its key Issues / directions[1] calls for developing ways in which SMEs could be assisted to implement sustainability practices. A study of the environmental performance of Indian SMEs would reveal that a progressive framework or roadmap of environmental performance does not exists .There is a requirement to put in place a system, with suitable training assistance and financial aid and incentive at each stage to derive a progressive and enhanced environmental performance from the SMEs. The existing assistance and financial schemes are to an extent piecemeal and uncoordinated and are required to be integrated into a well thought out frame work. The accepted challenges to improving environmental compliance by SMEs can be stated as:

[1] http://www.govtindustry-environment.com/industryspeak-main.asp?id=1

(a) The governments regulatory stand; reflected by its Legislation, policies and procedures.
(b) The challenge of Education and Awareness. The need for the businesses to understand and appreciate the degradation of the environment specifically by their actions.
(c) The third Challenge is time. Time to start and the time for the actions to yield results. Lesser the time taken the better.
(d) The fourth challenge is cost. Funding compliance which in most cases is viewed as unproductive expenditure.

Aim

Strengthening enforcement and compliance with pollution standards has engaged environmentalists and law makers alike in the context of designing policies that can foster sustainable development and yet not hinder economic growth. Recent discussions have shown the need to promote better understanding of the incentive structures facing firms and the requirement to provide governments with approaches that can optimize their expenditure on assuring environmental compliance. This paper explores the use of mandatory public disclosure of pollution compliance data within the existing environment legislation in India as the 'stepping stone' of a three stage model to foster conformity to pollution standards by a larger percentage of SMEs.

Justification

An international workshop jointly organised by the Ministry of Environment and Forests (MoEF), the World Bank(WB) and the CII on Economic Instruments (EIs) for Industrial Pollution Prevention and Control in India was conducted from 13 - 15 of June 2001 at New Delhi[2]. The workshop gathered several stakeholders from different spheres and the overall objective of the workshop was to explore the potential of EIs in the country. This paper appropriates the recommendations of the workshop as its justification. The following points were stressed during the deliberations.

(a) The time is ripe for introducing economic instruments (EIs) for prevention and control of industrial pollution in India.
(b) EIs should complement the existing standards regime and not be a substitute;

(c) EIs should be used as an incentive mechanism to encourage industry to adopt environment friendly technologies;

(d) Preparatory work should be done on the relative costs and benefits of EIs compared with command and control (CAC) instruments; and

(e) Involvement of the stakeholders in the design and enforcement of EIs is necessary to ensure the success of EIs in improving environmental quality.

[2] http://www.govtindustry-environment.com/indgov-wr-ecoinstruments.asp

The experts recommended that that the initiatives could be taken in the form of one or more simple area or sector specific pollution charge schemes. Parallel activities in other areas like product charges, public disclosure, green rating and tradable permits would improve the acceptability of these instruments. Selectivity of instruments is required based on starting in areas where high damages have occurred, in areas where political will exists, in areas where the institutional feasibility is known and in areas where one gets a local champion to lead the way through the performances required. The workshop concluded on the note that a multi dimensional approach would certainly increase the potential of EIs in the country.

Information Disclosure

Some experts have classified information disclosure as the third phase (wave) in the evolution of environmental regulation – after CAC and market based instruments.[3] It is largely believed that Information disclosure as a policy instrument has not been employed to its envisaged potential, and as a result is described as "piecemeal," "inchoate," and "haphazard."[4] Notwithstanding the criticism, the blame generally rests more with inadequate study of the functional employment and an unimaginative approach rather than the concept itself. There exists a fairly broad agreement that information disclosure is a significantly underutilized policy tool that if imaginatively applied, it has the potential to achieve significant environmental payoffs at relatively low cost.[5]

Mandatory information disclosure has the USP of remarkably low-cost environmental policy tool; an idea reinforced by the success of various right- to- know programmes. Governments including the Indian government have traditionally used mandatory information disclosure to pressure firms to reduce toxic chemical releases into the environment purely from the point of view of public safety[6]. Mandatory information disclosure will provide consumers, investors, and regulators with more information to assess corporate strategies and liabilities vis-à-vis pollution control. Mandatory information disclosure it is not *the* solution, and should serve as a complementary tool to market-based policies. Furthermore, it creates incentives for self regulation not provided by traditional regulatory approaches. In the context of this paper it can be termed as '**regulation by commitment'**

The Changed Context

Information disclosure and a ratings programme have been used earlier in India to improve regulatory compliance but with limited success (the Green Ratings Project [7]and the CII monitored Environment Performance Ratings project[8]).The manifestations of climate change and increased environmental awareness and concern of the present generation creates an atmosphere to again attempt the usage

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[3] Tom Tietenberg, *Disclosure Strategies for Pollution Control*, in The Market And The Environment: The Effectiveness Of Market-Based Policy Instruments For Environmental Reform (Thomas Sterner ed., 1999).
[4] Paul R. Kleindorfer & Eric W. Orts, *Informational Regulation of Environmental Risks*, 18 Risk Analysis (1998).
[5] David W. Case, The Law and Economics of Environmental Information as Regulation, 31 ELR (July 2001).
[6] S.O.966(E), [27/11/1989] - The Manufacture, Storage and import of Hazardous Chemical Rules, 1989 http://www.envfor.nic.in/legis/hsm/hsm2.html and G.S.R.347(E), The Chemical Accidents (Emergency Planning, Preparedness, And Response) Rules, 1996 Ministry Of Environment & Forests Notification, August 01, 1996).

[7] http://www.cseindia.org/programme/industry/industrial_sector.htm
[8] http://www.govtindustry-environment.com/industrygovinterface-eprp.asp?id=5

of information disclosure in a mandatory format and that too for the SMEs. The changed context can be described as under:

- Indian government will undoubtedly follow the global direction in terms of increasing legislation for environmental governance and compliance. Some Indian corporations will anticipate this trend and proactively develop their own sustainable development cultures to be better equipped to compete in today's global marketplace than those who wait for the legislation to force them to develop. Mandatory disclosures can be viewed as prepatory actions to be competitive in the global market place.
- At the operational level there is increased realization amongst the SMEs that Green is black and that relatively small investments in new technologies that reduce the consumption of energy, water or materials result in real cost savings that pay back the investment in a few years. Hence the cost of environmental compliance appears relatively more justified.
- Scientifically corroborated or not today the effects of global warming and climatic change is hitting us between the eyes; cutting across geographic and social boundaries. It is quite simple now to convince a villager or a farmer of environmental pollution and the need to change and adapt. Global warming maybe a Global issue but its effects are local. Environmental compliance now makes more business sense under Business Continuity Plans.

The model

The model is a three stage process aimed to achieve enhanced environmental performance by SMEs. In the first stage compliance with stipulated pollution standards by the SMEs is sought to be achieved through mandatory public disclosure with an associated rating scheme. This is its 'baseline' achievement. In the second stage of the process/ framework put in place an EMS with requisite certification and avail government sponsored incentives and training assistance in this regard. Thereafter, if applicable, proceed to environment labelling/certification of its products to enhance global competitiveness. In the final stage of the process SMEs would benefit from the CDM through the generation of CERs/VERs. This stage would also require a 'clean' technology distribution mechanism with appointed mentors and inherent capability to foster and operationalise innovation. And importantly creation an Indian Environment Fund sustained through taxes on CERs to exclusively finance the clean technology deployment. The corresponding administrative actions at each 'stage' of information gathering and dissemination system providing easy public access co-managed by the PCBs and designated NGOs.

The paper is organised as under:

- **Part I** - A description of Indian SMEs and pollution issues associated with them
- **Part II** - Issues to be considered while deciding a pollution control instrument including a theoretical snap shot of mandatory information disclosure
- **Part III** - Design of a pollution control scheme and a rapid assessment of India's experience with rating and labelling schemes involving some form of disclosure both voluntary and mandatory.
- **Part VI** - The 'home grown 'compliance model for SMEs commencing with mandatory disclosure of their compliance of pollution standards. Model will

provide a low cost and financially assisted environmental path of progression for the SMEs.

What is this paper excludes from its scope is:

- Issues related to information disclosure in particular its economic treatment and pros and cons of a voluntary disclosure versus a mandatory one.
- Pollution control organisations and their functional constraints.
- Constructs of the various rating schemes fielded in India.
- Structure and effectiveness of compliance assistance and training programmes.
- Details of CDM and its implementation cycle

PART I - State Of Pollution Enforcement And Compliance In India With Special Reference To SMEs.

General

India's economic development propelled by rapid industrial growth and urbanization is causing severe environmental problems that have local, regional and global significance. Deforestation, soil erosion, water pollution and land degradation continue to worsen and are hindering economic development in rural India, while the rapid industrialization and urbanization in India's booming metropolises are straining the limits of municipal services and causing serious environmental problems. India's rivers and streams suffer from high levels of pollution from waste generated primarily from industrial processes and municipal activities. Untreated sewage and non-industrial wastes accounts for four times more pollution than industrial effluents. While it is estimated that 75 percent of the wastewater generated is from municipal sources, industrial waste from large and medium-sized plants contributes to over 50 percent of the total pollution loads. In major cities, less than five percent of the total waste is collected and less than 25 percent of this treated[9].

Status of Environmental Compliance

According to the CPCB, as of June 2006, 73 percent of the 2672 units under 17 categories of highly polluting industries were in compliance, which is a decrease from 2004, when the rate was 84 percent. According to the U.S. EPA (2005), there were 1551 initially non-complying facilities within the same 17 categories, of which 1351 facilities complied with subsequent SPCB orders and 178 were shut down, with 22 units defaulting. This actually shows a negative compliance trend in large industry

[9] OECD 2006. Environmental Compliance and Enforcement in India: Rapid Assessment. Jointly produced by OECD and the Secretariat of the Asian Environmental Compliance and Enforcement Network (AECEN) under the OECD Programme of Environmental Co-operation with Asia. http://www.oecd.org/dataoecd/39/27/37838061.pdf

in India in recent years. In addition, the real compliance rates are likely to be lower, since inspections usually do not evaluate compliance with all environmental requirements (e.g., stack tests are rarely conducted to check air emissions for compliance) (OECD 2006).The situation with SMEs is much worse. According to the MOEF, SMEs account for 40 percent of industrial production, employ limited pollution control technologies and are responsible for an estimated 70 percent of the total industrial pollution load nationwide.

Effective environmental enforcement requires informed consensus on environmental management objectives and policies that are based on a good understanding of the shared roles and responsibilities of all players, including the regulator, the regulated community (developers and polluters) and the affected community (general public). This fundamental notion of *shared responsibility* is currently challenged in India by the general perception among the public, project proponents, and development authorities alike that environmental ills are the sole responsibility of environmental agencies failing to effectively implement and enforce the laws (WB 2006)[10]. As India's economy continues to accelerate, the performance of the environmental regulator will come under increased scrutiny and pressure. The study shows, however, that unless an increasing public demand for better performance by the environmental regulatory agencies is matched by adequate support to these agencies, conditioned on institutional reforms to increase efficiency, transparency and accountability, it would be naive to expect substantial progress and unfair to solely blame the regulator for the lack of it.

To deal with these impacts, India has developed a comprehensive set of environmental laws and institutions, including a very active judiciary. Despite a strong policy and institutional framework and some successes, environmental degradation has not been arrested on a large scale. The country-wise average compliance ratio for monitored industries (falling far short of all polluting sources) is only 50 percent. Furthermore, the trends in environmental quality indicators are mixed; for example, urban air quality (measured as suspended particular matter of less than 10 microns) has been improving in the largest cities, such as Delhi and Mumbai, where significant efforts have been made to control multiple pollution sources, while it is deteriorating in many other cities.

To address these environmental challenges in coordination with the state governments, the central government has identified and targeted 17 highly polluting industries and 24 environmental problem areas. The chemical and engineering industries are at the top of the government's list, since they are the major contributors to air, water, and waste pollution. These industries include integrated iron and steel plants, non ferrous metallurgical units, pharmaceutical and petrochemical complexes, fertilizers and pesticide plants, thermal power plants, textiles, pulp and paper, tanneries and chloralkali units. (OECD 2006)

Regulatory Capacity

[10] The World Bank (2006): *India: Strengthening Institutions for Sustainable Growth*, Country Environmental Analysis, October 2006

The increase in pollution load, however, is yet to be matched by the regulatory capacity of environmental agencies. While the capacity of the MoEF, the Central Pollution Control Board (CPCB) and the State Pollution Control Boards (SPCBs) has improved over time, keeping up with the challenges of rapid growth has proved difficult. Many would argue that the judiciary filled the vacuum left by the lack of regulatory oversight. India's enormous economic and social diversity needs to be better appreciated in this context. There are significant segments of population that have other more pressing priorities. Thus, political commitment to environmental improvement still varies by State and constituency, particularly when measured up against multiple competing needs. This has a bearing on the status and capacity of both the State and national environmental agencies. And besides a large-scale sector, there are numerous smaller scale industries (the backbone of India's growth and employment), which are often unable to adopt modern technologies that would be required for compliance with environmental laws. The understanding of the environmental impacts, their origins, consequences and cost-effective mitigation strategies, while evolving gradually, is still incomplete, particularly with respect to cross-sectoral and cumulative impacts. The understanding and perceptions significantly differ across stakeholder groups. All of this further complicates the formulation and delivery of an effective regulatory response that would benefit from a broad-based support.

Sustainability Reporting

The level of sustainability reporting in India is at an infancy stage and still evolving (KPMG)[11]. Traditionally, while many organizations both in the public and private sector practice some sort of corporate social responsibility programmes, reporting has not been a common practice. While currently there are no officially recognized guidelines or reporting standards on sustainability reporting (by accounting or regulatory bodies), there has been an increasing trend amongst companies to publish a variety of information relating to themes such as community, corporate social responsibility, environment, health and safety. Indian companies therefore present diversity in content and format under the overall umbrella of sustainability reporting. Discussions confirmed that sustainability reporting in India often starts as a voluntary initiative, in the midst of limited pressure from local NGOs to publish sustainability reports. Reports are often produced and used for internal purposes.

Reporting Patterns. Many organizations in India have certified environmental management systems, based on ISO 14001. Consequently, data on environmental indicators are more readily available and many companies start reporting by issuing environmental reports which also include health and safety data. It is only after this initial phase that companies in general start developing reporting formats that conform with the GRI Guidelines. In accordance with global trends, some Indian companies have also started seeking independent assurance on their sustainability reports.

There are many reasons for this change in mindset. Foremost is the increasing globalization of business. As more Indian companies expand internationally and

[11] KPMG's Global Sustainability Services And UNEP. *Carrots And Sticks For Starters* -Current trends and approaches in Voluntary and Mandatory Standards for Sustainability Reporting

acquire interests overseas, whilst at the same time there is a rapid increase in foreign investment in Indian corporates, demands on transparency from a more 'global audience' have put pressure on Indian companies to start reporting on sustainability issues. Within India there has also been a change in the mindset and attitudes of stakeholders on issues relating to environmental and social responsibility. Recently government faced public protests and pressure to refuse entry by foreign ships that were brought to India for decommissioning, as they contained large amounts of asbestos and other harmful substances. While the general public opinion on sustainability issues is still evolving, it suggests that companies taking the first steps can expect intense public scrutiny, which again highlights the need for transparent reporting on operations.

Another significant push factor has been the role of government as a stakeholder. India has historically had stringent laws on labour, environment, health and safety. However, their enforcement could have been much more efficient. Over the past few years the government has become increasingly proactive in addressing enforcement. ***Indian stakeholders*** also expressed a strong emphasis on the principle of "Sustainability Context", viewing the local sustainability context as essential in determining relevant report content. The Mumbai meeting expressed strong support for an Indian national annex to the GRI, in order to help Indian organizations report on their specific sustainability challenges.

Self-monitoring and Reporting. According to the national Environmental (Protection) Rules of 1986, each polluting facility must submit an Environmental Statement at the end of each financial year (April through March). The Environmental Statement should include the following information:

• Water and raw material consumption;

• Air and water pollution discharged by parameter (average daily quantity and concentration as well as percentage of variation from the prescribed limits);

• Hazardous waste generation (total quantity from the production process and pollution control installations) and methods of disposal;

• Solid waste generation, reuse, recycling, and disposal; and

• Pollution abatement measures implemented.

The consents prescribe parameters and respective self-monitoring frequencies, although procedures and requirements across states are not uniform. Lack of reporting or false reporting may lead to criminal or administrative penalties. The existing legal framework, however, does not authorize enforcement actions through the courts based on self-disclosed reports. Rather, government agencies can only pursue legal action on the basis of "legal" samples taken by inspectors who are certified to conduct inspections in accordance with specified procedures. As a result, not using self-reported information is a significant constraint in promoting compliance and enforcement.

Reporting developments

In the absence of formal reporting frameworks in India, companies are becoming increasingly oriented towards global standards on sustainability reporting, in particular the GRI. As part of the G3 revision process, the GRI Reporting as a

Process Working Group (RPWG) met in Mumbai, India, on 6 – 8 September 2005 at the headquarters of Air India. The main challenges for sustainability reporting in India are the following:

■ Lack of a specific sustainability/CSR reporting ***legislation or guidelines***;

■ Companies find it challenging to report how they conduct business in the absence of clear ***guidance*** based on local conditions;

■ Efforts need to be focused and ***standardized***. Typically companies tend to report their community initiatives on a few pages in their Annual Reports, rather than providing detailed information on internal practices and issues such as transparency, risk, and social or environmental impacts; and

■ Synergizing social and business interests needs top priority. Corporate philanthropy needs to transform into the realm of core business and corporate social responsibility.

Stakeholder Involvement: NGOs & Citizens

Third-Party Audit in Gujarat. To support monitoring and enforcement efforts, Gujarat has introduced an Environmental Audit Scheme aiming at ascertaining the performance of environmental management systems in various industries in the state. One objective of the program is to arm the Gujarat PCB and the association of industries with necessary performance information to support compliance monitoring. Introduced under the directions of the High Court of Gujarat and implemented under the direction of a technical committee consisting of experts from the National Institute of Occupational Health, CPCB and the Government of Gujarat, the scheme requires industries to submit an annual environmental audit report through designated auditors recognized by the Board. If a specified industry does not submit its audit report according to the prescribed time schedule, the Board issues a notice of direction to the defaulting unit, failing which, the Gujarat PCB can request the concerned authority to disconnect water or electricity services.According to the Gujarat PCB, the Environmental Audit Scheme has resulted in improved compliance and enforcement of environmental laws, creating an effective mechanism for supplementing legal monitoring of industries with a third party audit.

Citizen Involvement

While it is very important to increase the effectiveness of the more traditional forms of public participation, such as public hearing, the program should also promote innovative and more interactive approaches that can increase the level of public awareness, involvement, and ownership of environmental problems and solutions. One such example, already piloted in India, is the citizen involvement in environmental monitoring and enforcement**,** which should be further supported.

Key Points

• Significant *human and technical capacity constraints* are an obvious factor that impacts effective execution of all compliance and enforcement functions at the central, state and local levels.

• In the absence of strong political will to address environmental challenges, *funding limitations* remain a significant challenge facing all environmental institutions.

• *Over-emphasis of permitting, monitoring and inspection activities on industry in general and large industry in particular* limits SPCB regulatory programs to an important but not dominant pollution source, while the significant cumulative pollution impacts from SMEs (contributing roughly 70 percent of the industrial pollution load), municipal sources, transport and agriculture are virtually disregarded.

• *Available punitive tools for non-compliance have proven ineffective* because procedures are rigid and time-consuming while penalties are too low and fail to consider the full economic and environmental impacts of the violation.

Small And Medium Enterprises (SMEs)

Introduction

The role of SMEs in our economy cannot be overemphasised. India has nearly three million SMEs or 95 per cent of industrial units in the country, which account for almost 50 per cent of industrial output and 42 per cent of total exports (39% of the manufacturing output and 34% of exports according to some reports). SMEs account for 50 per cent of private sector employment and 30 to 40 per cent of value-addition in manufacturing. By employing 29.5 million persons through 400 SME clusters, 2,000 artisan clusters and nearly 12 million enterprises they are the largest job creators in the country. SME contribute 9% of the country's $1-trillion GDP. The SME sector forms a significant percentage of the Indian software and services industry too. They are engaged in the production of around 8,000 items mainly that of intermediates, machinery and consumer goods, the value of which is estimated to be $100 billion.[12] The SME sector has significant contribution to various socio-economic objectives, such as growth of employment, higher output, promotion of exports and fostering entrepreneurship. It is often said that the success of SMEs determines India's success.[13]

In accordance with the provision of Micro, Small & Medium Enterprises Development (MSMED) Act, 2006 the Micro, Small and Medium Enterprises (MSME) are classified in two Classes[14]:

(a) **Manufacturing Enterprises.** The enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the industries (Development and regulation) Act, 1951). The manufacturing enterprises are defined in terms of investment in Plant & Machinery.

(b) **Service Enterprises.** The enterprises engaged in providing or rendering of services and are defined in terms of investment in equipment**.**

The limit for investment in plant and machinery / equipment for manufacturing / service enterprises, as are as under[15]:

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[12] Call to promote exports of small, medium enterprises. Date:05/06/2008 URL: http://www.thehindubusinessline.com/2008/06/05/stories/2008060550912100.htm
[13] Ganesh Chella.' SMEs must put leadership before HR' .The Hindu Business Line. Jun 23, 2008. http://www.thehindubusinessline.com/manager/2008/06/23/stories/2008062351191100.htm
[14] http://www.laghu-udyog.com/ssiindia/defination_msme.htm

Manufacturing Sector	
Enterprises	**Investment in plant & machinery**
Micro Enterprises	Does not exceed twenty five lakh rupees
Small Enterprises	More than twenty five lakh rupees but does not exceed five crore rupees
Medium Enterprises	More than five crore rupees but does not exceed ten crore rupees
Service Sector	
Enterprises	**Investment in equipments**
Micro Enterprises	Does not exceed ten lakh rupees:
Small Enterprises	More than ten lakh rupees but does not exceed two crore rupees
Medium Enterprises	More than two crore rupees but does not exceed five core rupees

SME Clusters

SMEs operating in the same, or related, industrial sectors tend to concentrate in the vicinity of large industries or in metros and big cities. This "spatial concentration" of SMEs of a certain product is called an Industry Cluster. There is increasing evidence that clustering and networking can help SMEs boost their competitiveness. India has over 400 SME clusters and about 2000 artisan clusters.

SMEs operating in clusters derive a clear competitive advantage from proximity to sources of raw materials; availability of suitably customised business development services; abundance of clients attracted by the cluster tradition in that industry; and presence of a skilled labour force. SMEs clusters faced with common opportunities and threats can:

(a) Give rise to external economies (e.g. specialised suppliers of raw materials, components and machinery; sector specific skills etc.);
(b) Favour the emergence of specialized technical, administrative and financial services.
(c) Create a platform for the development of inter-firm cooperation and specialization as well as of cooperation among public and private local institutions to promote local production, innovation and collective learning.

Growth of The SME Sector

SME sector which is at the end of the Indian industrial spectrum has three clear stages in the growth path followed by the sector in the post-independence history of Indian industry.[16] The first stage is when most small units were tied to the apron

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[15] Notified, vide S.O. 1642(E) dtd.29-09-2006

[16] Rajrishi Singhal. SMEs can fill the void in India's growth story.14 Jul, 2008. http://economictimes.indiatimes.com/Opinion/Columnists/Rajrishi_Singhal/SMEs_can_fill_the_void_in_Indias_growth_story/articleshow/3229512.cms

strings of large manufacturers and were essentially suppliers of either raw materials or intermediate products, or were providers of other essential finishing products, such as packaging material. India's SMEs have remained protected to meet the twin objectives of enhancement of employment and dispersion of industries while it should have developed as a supporting industry rather than a producer of finished goods[17]. With the advent of economic reforms and globalisation the MNCs entered the Indian manufacturing scene. Companies had to build a robust and dependable pipeline with the vendor at the other end. It also became necessary for buyers to invest in improving the suppliers' technological state, his shop-floor practices, quality culture and financial management, among other things. The buyer realised that his well-being was directly proportionate to the well-being of his suppliers. The transformed SMEs with new technology, management practices and enterprise-wide systems became preferred suppliers to a large number of Fortune 500 companies.

SMEs are characterised by unity of ownership, management, liability and risk. The enterprise is owned and managed by the same person or group of persons. The owner is responsible for and involved in all decisions related to corporate policy. The owner-entrepreneur has enormous autonomy in all decision-making matters. SSI Sector plays a major role in India's present export performance. It has been estimated that a million Rs. of investment in fixed assets in the small scale sector produces 4.62 million worth of goods or services with an approximate value addition of ten percentage points. 45%-50% of the Indian Exports is contributed by SSI Sector. Direct exports from the SSI Sector account for nearly 35% of total exports. Besides direct exports, it is estimated that small-scale industrial units contribute around 15% to exports indirectly. An evaluation study was carried out by M/s A.C. Nielsen on behalf of MMSME and US, EU and Japan were identified as major export markets for 16 product groups[18] with the potential to enhance SME exports.

Indian SME Clusters

Within the SME sector, an important role is played by the numerous clusters that have been in existence for decades and sometimes even for centuries[19]. Some Indian SME clusters are so big that they account for 90 per cent of India's total production output in selected products. As for example, the knitwear cluster of Ludhiana, Gems and Jewellery clusters of Surat and Mumbai. The formidable challenges created for the SME sector due to the liberalisation of the Indian economy, as well as its closer integration within the global economy, has brought focus on novel approaches for SME development. As a result, both private and public sector institutions at the Central as well as the State levels are increasingly undertaking cluster development initiatives. About 131 clusters have been developed so far in 3 specific areas of cost management, energy management and quality systems. About 60 clusters are still ongoing and the others are progressing towards the second phase including ICT[20].

Funds

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[17] 'SMEs must remain globally competitive'. August 22, 2008. http://www.financialexpress.com/news/SMEs-must-remain-globally-competitive/351689/

[18] http://www.laghu-udyog.com/ssiindia/exportdest.htm

[19] http://web5.laghu-udyog.com/clusters/clus/indsme.htm

[20] 'Cluster approach necessary for SMEs development'. Date:24/04/2008 URL: http://www.thehindubusinessline.com/2008/04/24/stories/2008042451911200.htm

The SME sector faces huge challenges like fragmented markets in respect of their inputs as well as products; vulnerability to market fluctuations; limited access to technology and product innovations; lack of awareness of global best practices; considerable delays in the settlement of dues or payment of bills by large-scale buyers; non-formal business practices; and, above all, a lack of transparent financial information. Asymmetric information, low economies of scale for lenders, high demand for collaterals, high risk perception towards small enterprises have been cited as reasons for poor credit flow from the formal sector to SMEs.[21]

Bangalore-based private equity (PE) firm Forum Synergies is launching one of the biggest India-focused SME funds. The fund, which will raise money from both overseas and domestic investors, is expected to have a total corpus of $150-200 million (Rs 650-850 crore. The SME space has been attracting funds from various quarters in the country. Recently, SBI announced that it is in the process of floating a Rs 500 crore SME fund, SIDBI Venture Capital is also raising a Rs 500 crore plus third fund.[22]US banks have spotted a huge business opportunity in the SMEs in India that contribute 9% of the country's $1-trillion GDP[23]. Its line of credit has US Exim Bank guarantee and does not require collateral — which most Indian banks insist on from SMEs.

Credit Rating. In India, most SMEs rely on extremely expensive funds sourced from the unorganised financial sector. Lack of financial transparency and dependability is the key concern. Credit rating addresses that issue. Most banks encourage SMEs to get rated so that they can improve their access to finance. Some banks offer interest concessions to the extent of 0.25% a year. In fact the recent government package, announced in February 2007 for the MSME sector, reworked guidelines for lending by the Reserve Bank of India and the facility of rating enterprises for their creditability and debt repayments.

Persisting problems

About a third of small industries at the all-India level are classified as "sick." According to the third All-India Census of SSIs 2001-02, 11 States account for 89 per cent of the sick units and in nine of these States, 69 per cent of these units are closed. These numbers are of units that have entered the books of the financing institutions. There are many which have not borrowed but turned sick, with assets such as land and machinery idling for decades. A rough estimate of such assets in the industrial estates alone would be 5-6 per cent of the GDP[24].The States ranking high on the 'sickness' list are Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Punjab, and Maharashtra.

The problems common to small enterprises as a whole and persisting for over four decades include insufficient demand, lack of access to finance, non-availability of

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[21] B Yerram Raju. 'Sick SMEs and the Chakrabarty clinic.' The Financial Express. July 28, 2008. http://www.financialexpress.com/news/Sick-SMEs-and-the-Chakrabarty-clinic/341288/

[22] Vivek Sinha & Chaitali Chakravarty. Small's Big: Forum Synergies plans $200-mn fund for Indian SMEs .18 Jul, 2008. http://economictimes.indiatimes.com/News/News_By_Industry/Banking_Finance_/Finance/Smalls_Big_Forum_Synergies_plans_200-mn_fund_for_Indian_SMEs_/rssarticleshow/3247199.cms

[23] Gireesh Chandra Prasad & Priti Patnaik. US banks turn greenbacks flow towards Indian SMEs 24 Jul, 2007. http://economictimes.indiatimes.com/News/Economy/US_banks_turn_greenbacks_flow_towards_Indian_SMEs/articleshow/2228734.cms

[24] B. Yerram Raju.'Small enterprises need big push'. Business Line. January 15 2008. http://www.thehindubusinessline.com/2008/01/15/stories/2008011550020800.htm

raw materials, inadequate and high-cost infrastructure, low technological up-gradation capability (again for want of financial support), poor marketing, non-adherence to international quality standards and inadequate business-related information. Information asymmetry and adverse selection stare at both the bankers and entrepreneurs in equal measure.

What needs to be Done

Broadly two types of policy measures have contributed to the growth of small enterprises. The first relates to upfront or backend subsidies depending on the development thrust — either specific sectors or specified backward areas. The second is regulatory and procedural facilitation.[25]The government needs to devise a policy that encourages the SME sector to invest in R&D and create a modernisation fund to enable them to enhance their capacities, provide for sustained growth and remain globally competitive. As SMEs have limited access to capital, human resources and technology steps should be taken to ensure greater credit flow through cluster-based financing for the fund-starved sector. Policy level support to SMEs is provided by a Focal Point Office[26] that is based in New Delhi. It seeks to disseminate the principles of cluster development through sensitization, awareness building, technical support in policy formulation, provision of training at the implementation level and assistance to programme monitoring and evaluation[27].

Visionary SME programme

CII has taken to identify a few SMEs for a unique mentoring programme that aims at accelerating their growth from a mid-sized (Rs 100 crore) firm to a large (Rs 1,000 crore) company in 2-3 years as it asses that . “Indian SMEs are not geared to go global”.[28] The Visionary SME (VSME) programme will select 15 SMEs and put them in accelerated growth mode. As per CII’s criteria, the SMEs should be entrepreneur-led, medium in size—having a turnover ranging from Rs 100 to Rs 500 crore, mostly from the manufacturing sector, with good corporate governance. A minimum of 30% growth year-on-year should also have been achieved. The VSME being a mentoring programme the transformation will be brought about by a collaborative effort of industry (CII and various companies), the government (National Manufacturing Competitiveness Council and the Japan International Cooperation Agency) and the academia (IIT Madras and Kanpur, IIM-Calcutta). The first batch of the VSME programme starts this September at the CII centre in Mumbai. The target is to create 600 visionary SMEs over 4 years[29]. 400 SME clusters, 2,000 artisan clusters and nearly 12 million enterprises.

Climate Change

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[25] ibid
[26] The Focal Point is linked to the Project Steering Committee headed by Development Commissioner (MSME), Ministry of MSME that supports and monitors the UNIDO Cluster Development Programme.

[27] http://web5.laghu-udyog.com/clusters/unido/cdp.htm
[28] ‘CII's VSME programme mentors small businesses for scaling up.’ The Economic Times. August 04, 2008. http://economictimes.indiatimes.com/Corporate_Trends/CIIs_VSME_programme_mentors_small_businesses_for_scaling_up/articleshow/3322075.cms
[29] Cluster development programme to increase MSMEs’ competitiveness’. The Financial Express. July 11, 2008. http://www.financialexpress.com/news/Cluster-development-programme-to-increase-MSMEs-competitiveness/334004/

Though India has the highest number of registered CDM projects in the world, but the number of Indian SMEs participating in CDM constitutes only around 5% of the total registered CDM projects in India. SMEs' contribution is more than 50% of industrial production in India and in terms of its value added figures in the manufacturing sector; it makes for one-third of total exports.[30] CDM can provide incentives to SMEs to adopt new and more efficient technologies, improve energy and environmental performance, and help them access finance at low costs.

Benefits from potential carbon revenue streams could be significant in raising the equity component of financing their modernisation. Energy efficiency, which enables flow of carbon revenue in the segment, will not only enhance their environmental quality but will also make the working environment better. Increasing the SME participation in CDM is very critical to achieve desired modernisation and cost competitiveness in the segment. A strategic approach needs to be formulated to leverage carbon finance to strengthen SMEs and their future potential in contributing to the Indian economy and making the economic growth more inclusive.

Key Points

- SMEs have a critical balancing role to play. The sector makes a vital contribution for inclusive growth. The sector also plays a major role in India's present export performance. There are variations in performance levels of SMEs across sub-sectors; which face specific problems, and vulnerability to global competition also varies significantly across the sub-sectors.
- SMEs tend to concentrate in the vicinity of large industries or in metros and big cities. This "spatial concentration" of SMEs of a certain product is called an Industry Cluster. A SME cluster provides that informal organisation/affiliation for conduct of a sector/sub-sector specific programme or training.
- India's SMEs have remained protected to meet the twin objectives of enhancement of employment and dispersion of industries. The SME sector faces huge challenges including lack of awareness of global best practices;
- Asymmetric information, low economies of scale for lenders, high demand for collaterals, high risk perception towards small enterprises have been cited as reasons for poor credit flow from the formal sector to SMEs. A recent GoI guideline calls for the rating of enterprises for their creditability and debt repayments.
- The government needs to devise a policy that encourages the SME sector to invest in R&D and create a modernisation fund to enable them to enhance their capacities, provide for sustained growth and remain globally competitive.
- To remedy the fact that 'Indian SMEs are not geared to go global'. The VSME being a mentoring programme the transformation will be brought about by a collaborative effort of industry, the government and the academia.
- India has the highest number of registered CDM projects in the world, but the number of Indian SMEs participating in CDM constitutes only around 5% of the total registered CDM projects in India.

[30] It's time for SMEs to tap carbon finance. The Financial Express. May 05, 2008. http://www.financialexpress.com/news/Its-time-for-SMEs-to-tap-carbon-finance/305346/

SMEs AND POLLUTION

The Problem

With about 40 percent of the total value of industrial production and over 4.5 million units across the country, the SMEs are a major engine for growth, employment and poverty reduction for the nation. On the other hand an estimated 70 percent of the total industrial pollution load is attributed to SMEs many of which, especially small-scale units, continue to use obsolete technologies with no or primitive pollution control methods.[31] The share of small-scale industries in wastewater generation among different classes of industries is about 40 per cent[32]. The total volume of wastewater generated by the most polluting sector of small-scale industries is 3,881 million litres per day (mld). Even going by the conservative estimate that 10 per cent of the small-scale units are polluting in nature, about 3.2 lakh units are causing harm to the environment. This would amount to nearly the same impact as all the large and medium industries put to gather. The issue is complicated by the fact that the *cumulative* effect of factors like rapid growth, dispersion, diversity (a mix of large and small industries from multiple sectors) of SMEs and unwieldy urban development far outweighs the impact on pollution load due to adoption of advanced technologies by individual units.

The dispersion of SMEs is an important factor especially because several small-scale units are located in non-industrial areas, be it residential or commercial. SMEs, particularly those set up before the start of deregulation in the 1990s, fell outside the jurisdiction of either the local industrial authority or the SPCB. Though individual SME units discharge only a small volume of polluting effluents, they cause immense damage when located in clusters. However clustering is advantageous from the point of view of providing common treatment facilities for the effluents and solid wastes. The characteristics of wastewater from the industrial units have a bearing on the type of treatment, while its volume dictates the size of the treatment units and their economics. The wastewater from a unit may be alkaline, acidic, organic, toxic, inorganic and so on. Segregation of these various categories is desirable for accomplishing effective treatment and economy. It is a different issue that neither old industrial estates nor many of the new ones have common effluent treatment plants (CETPs) and common hazardous waste disposal facilities. Also to promote and attract investments in the State, development authorities tend to offer attractive concessions and tax holidays to the project proponents in many cases without considering the environmental sensitivities of investments or their cumulative effect.

As a result, according to one recent Bank project document, “indiscriminate dumping of waste, both on site and alongside roads, rivers and canal pits outside industrial estates, is occurring and posing significant hazards to the labour force and local population, and turning sizeable areas into ecologically degraded zones.”[33] The note

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[31] Ministry of Environment and Forests (MoEF) Website, http://www.envfor.nic.in

[32] Mahendra Pandey, Meenu Mishra. ‘Tackling water pollution from small units’. Business Line September 05, 2001 http://www.blonnet.com/2001/09/05/stories/040567pa.htm

[33] Project Concept Note (PCN) for the proposed India Capacity Building for Industrial Pollution Management Project, Environment and Social Development Unit, South Asia Region (SASES), February 10, 2006 pg. 2.

also observes that “pollution prevention and waste minimization is relatively more expensive and technologically challenging for SMEs” and that “many of them cannot afford the requisite investments in effective pollution mitigation.”

Thus it is beyond doubt that by extending targeted monitoring and compliance assistance efforts to SMEs and clusters of small-scale industries, PCBs would address a significant and growing pollution source. While the number of inspections conducted by different SPCBs is impressive (for example, in Andhra Pradesh, 24,565 inspections were carried out over the last three years), most SMEs are inspected very rarely or never at all. Over-emphasis on permitting, monitoring and inspection activities on industry in general and large industry in particular limits SPCB regulatory programs to an important but not dominant pollution source. The net result is that significant cumulative pollution impacts of SMEs go unaddressed. (OECD 2006)

The Central and State governments and the PCBs in particular have not paid much attention to the pollution generated by SMEs largely because of: (i) difficulties in monitoring SMEs due factors mentioned above (ii) the relatively high costs of pollution abatement for small units compared with large units (iii) Organization and resources constraints of the PCBS and (iv) the perceived adverse impact on the output and employment of SMEs and (v) Political inclination.

Pollution Issues

Shifting the focus on reducing pollution from SMEs emerged as a top priority. Lack of knowledge, access to technology and financial resources are all significant barriers to compliance by SMEs, especially among small-scale industries (SSI). Given these barriers and constraints, compliance assistance schemes are widely used for SMEs. There is a requirement to develop more balanced and to an extent tailor-made compliance monitoring and compliance promotion programs by extending them to SMEs.The CPCB has recently drafted Guidelines for Management of Consent and Authorization 5 which try to streamline the permitting process across the states and stipulate consent validity periods for different categories of industry (red, orange or green6) based on their potential environmental impact[34].. The red category includes 64 types of industry, the orange – 25 sectors, and green – 55 sectors. Currently, each state sets its own rules, and consent validity periods vary between one or two years for highly polluting industries to 15 years for SMEs.

Environment & Pollution Related Clearances

In case your product is covered under the list of the polluting industries as defined by the state government, it will be necessary to get specific clearance from the state

[34] All the industries which are covered under the provisions of Water (Prevention & control of Pollution) Act, 1974 and Air (Prevention & control of Pollution) Act, 1981 are required to obtain ‘consent to establish’ for establishment of any new unit or before carrying out expansion/modernization of any existing unit. Two types of consents are issued. Consent for establishment (CFE) has to be obtained prior to establishment of an industry, operation or a process. Consent for operation (CFO) has to be obtained prior to commissioning of an industry and for continuation of discharge of emission and effluents or for expansion and modernisation of existing Industry.

Pollution Control Board/Committees. Pollution control equipments/measures will have to be installed by the enterprise as per need. Such polluting enterprises can only be set up in the designated industrial areas or locations and may have to link up with the common affluent treatment facility, if available in the area. Pollution control board/ Committees and State Directorate of industries provide details of pollution control requirements. MSME's provide training in pollution control for different type of industries as per their local needs. PCBs & MoEF also support training efforts. The method of granting consent under water and air pollution to SMEs units has been simplified. Except for 17 critically polluting sectors given below, in all other cases SME will merely have to file an application and obtain an acknowledgement which will serve the purpose of consent[35].SMEs in 'Orange' category and all units covered under the green category need not submit the feasibility report. However, the SPCBs may, in specific cases, where pollution due to combined effect or in the limits of sensitivity of location, is considered necessary, call for the feasibility report from any of the industrial unit.[36]

Packaging Compliance Assistance to SMEs

As the first step in this process, an inventory of operating SMEs in the area should be conducted to determine how many are covered under the consent management system and how many are operating illegally or without environmental oversight. Environmental awareness and technical assistance programs, which are being increasingly provided to SMEs, need to be complemented by simplified monitoring programs suitable for SMEs and financial assistance, all together amounting to an effective package. To make the task feasible, further progress in devolution of monitoring and enforcement authority to local offices of SPCB and greater involvement of the local government and citizens in monitoring and enforcement, with corresponding capacity building would be required.

The MoEF, CPCB and SPCBs, in collaboration with industrial associations (such as CII) have programs to provide technical information to SMEs on different environmental technologies and alternative approaches to pollution prevention. The MoEF has also launched a centrally sponsored scheme for enabling the SSIs to set up pollution control equipment for treatment of effluents. The financial incentives included a central grant up to 25 percent of the total cost of the CETP on the condition that a matching grant is sanctioned and released by the State government. The CETP companies are expected to meet the remaining cost by equity contribution by the industries and loans from financial institutions. This initiative has helped set up more than 90 CETPs, currently operating with varying degree of performance, for the management of effluents from clusters of SSIs.

The West Bengal PCB has adopted such a program for a cluster of industries in Kolkata, which integrates tightening emission standards and focusing enforcement efforts with technical assistance and financial help[37] . Similarly, a "packaged" approach of combining regulation, enforcement, technical and financial assistance, including support with providing the gas infrastructure, has been applied in Agra, reportedly also with success.

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[35] http://www.laghu-udyog.com/howtosetup/clearances.htm
[36] http//rpcb.nic.in/consenttoestablish.htm
[37] http://www.wbpcb.gov.in

Greening of the supply chain

Supply chain management is an important factor which links three important concepts — business competitiveness, economic productivity, and environmental management. Greening of the supply chain is a growing industry concept that advocates the purchaser to use its purchasing power to demand improved environmental performance from the suppliers, which in many cases are SMEs, upstream in the supply chain. In Mexico, the Guadalajara Environmental Management Pilot was established to assist 20 SMEs to implement ISO 14001 environmental management systems by linking them with larger companies, to which they supplied their products, as a mentor support system.

The best solution to the water pollution problem in SMEs units is the adoption of new technologies that minimise the generation of polluted waste even at the source[38]. For instance, in electroplating units, as much as 60-70 per cent of water consumption is reduced by adopting counter current rinsing; another 50-60 per cent reduction is achieved by eliminating acid treatment at the pre-treatment stage. And adding a neutraliser for derusting reduces chemical use, resulting in savings of Rs 1,80,000 per annum. Studies indicate that the adoption of better water management, optimised raw material and energy use, recycling of waste streams, close process control and good house-keeping could result in savings of Rs 67.2 lakhs per annum in silk textile mills. Similarly, spent wash from textile hosiery processing is proposed to be reused for detergent manufacture to reduce the pollution load and effect benefits worth Rs 5,00,000 per annum.

Incentive Scheme for ISO Certification

In order to enhance the competitive strength of the small scale sector, the Government introduced an incentive scheme for their technological up gradation/quality improvement and environment management. The scheme provides incentive to those small scale/ ancillary undertaking who have acquired ISO 9000/ISO 14001/HACCP certifications. The scheme for ISO 9000 reimbursement has been in operation since March, 1994 has undergone an important adjustment to include reimbursement of expenses for acquiring ISO 14001 certification in October, 2002.[39] The total number of units reimbursed since the launching of Incentive Scheme in 1994 Ministry of MSME is 15498 .[40] However the number of SMEs who have adopting voluntary environmental management system standards based on ISO 14001 is significantly smaller.

Conclusion

``Small is beautiful'' can no longer remain so for SMEs if they increasingly pollute the environment. No doubt, the number of SSIs is burgeoning, and they will continue to play a key role in economic development, but the reduction of environmental pollut ion is equally important. A set of innovative measures needs urgently to be put in place to ensure the environmentally sustainable growth of SME units. The WB study

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[38] Mahendra Pandey Meenu Mishra. 'Tackling water pollution from small units'. Business Line. September 05, 2001.http://www.blonnet.com/2001/09/05/stories/040567pa.htm

[39] http://www.laghu-udyog.com/schemes/sciso9000.htm

[40] http://www.smallindustryindia.com/NASApp/senetwar/isoremb.jsp

recommends formulation of effective packages for clusters of SMEs that combine focused enforcement effort with extensive outreach and compliance assistance in the form of knowledge, capacity building, and financial aid. These actions finally culminating in a national program for SME clusters that would guide the design and implementation of suitable packages at the local (municipality) level tailored to the specific local circumstances. The program encompass grants for compliance assistance, construction of CETP for SME clusters and other pollution control and prevention measures identified as priority by initiatives at the state level. The programme for SMEs at a later stage would contribute to the national climate change plan by providing easy access to carbon finance and other concessional global environmental financing instruments.

Key Points

- An estimated 70 percent of the total industrial pollution load is attributed to SMEs many of which, especially small-scale units, continue to use obsolete technologies with no or primitive pollution control methods.
- The most successful programs for SMEs have involved a multi-pronged approach to compliance which incorporates a *complete package* of targeted regulation, a credible threat of enforcement, information dissemination, and technical and financial assistance to comply.

- Involving citizens in the monitoring of State and municipal facilities would make the regulation of public entities more transparent and effective.

- Environmental awareness and technical assistance programs need to be complemented by simplified monitoring programs suitable for SMEs.

- Environmental Mentors. International experience has shown that SMEs are more likely to accept and adopt compliance measures where large companies act as environmental mentors. The incentives are particularly strong and the chances for success higher when there is a direct business relationship between a mentor and a small business.

PART II - Choice of Pollution Control Instrument And Mandatory Disclosure

General

The choice of pollution control instrument is a crucial environmental policy decision. The choice is inherently difficult because competing evaluation criteria are involved. Economists have tended to focus on the criteria of economic efficiency (a policy's aggregate net benefits) and associated cost-effectiveness. Other important criteria are the distribution of benefits or costs (across income groups, ethnic groups, regions, generations, etc.) and minimizing the risks of excessive or insufficient abatement in the presence of uncertainty (Goulder and Parry, 2008). Some analysts

would also include political feasibility as a criterion. As a result, selecting the most appropriate instrument involves art as well as science.

A basic tenet in elementary textbooks is the “Pigouvian” principle that pollution should be priced at marginal external cost. This principle usually suggests that emission taxes are superior to alternative instruments. However research results over the past few decades indicate that it is not always sufficient or reliable because of information problems, institutional constraints, technology spillovers, and fiscal interactions. Therefore more intricate and elaborate set of considerations are required, which at times will provide the rationale for using instruments other than emissions taxes.

This section of the paper attempts to pull together some key findings in the recent research literature and cull out pointers for policy makers in general and justify the use of mandatory information disclosure and the proposed ‘home grown’ model in particular. The issue and the use of mandatory disclosure despite forming the part only the first stage of the three stage model is ‘stressed’ because of two reasons. Firstly the author feels that given the peculiarities/characteristics of the SMEs in India and their sheltered status, any policy tagged as mandatory is going to face implementation issues. The second is that use of mandatory compliance disclosure in the first stage of the model makes it the stepping stone of the model and hence crucial for its viability and success.

Some of the relevant issues to be considered while selecting a pollution control instrument for a scheme are (Goulder and Parry, 2008):

- No single instrument can satisfactorily address all the dimensions pertaining to policy choice; its efficiency in tackling each single dimension often depends on the circumstances involved.

- Trade-offs are involved in the choice of instrument and therefore it maybe prudent to design hybrid instruments that incorporate desired features of various instruments.

- Employing more than one instrument can be justified to an extent by the fact that for many pollution problems, more than one market failure may be involved.

- Potential interactions among environmental policy instruments require attention along with possible adverse interactions between policies simultaneously employed.

- Involvement of the stakeholders in the design and enforcement of EIs is necessary to ensure the success of EIs in improving environmental quality.

Following the CAC approach the second phase commencing from the seventies advocated the use of market-based approaches, called as market-based instruments (MBI) or EIs. These included tradable permits, emission charges, deposit refunds etc. MBIs went on to substitute CAC instruments in certain areas while in others they complemented them by enhancing flexibility, thereby improving the effectiveness of pollution control (Tietenberg, 1998). However the MBIs in particular did not find much success in developing countries; even in the industrialized world, the employment of MBI was is in conjunction with other instruments. This is because the market based approaches required presence of certain institutions, framework and resources which developing countries often lacked (Kathuria, 2006). The situation is compounded by the prevailing corruption in developing countries (Kathuria and Sterner, 2006).

The failure of formal regulation and market-based approaches to control pollution brought into prominence informal regulation in the form of 'public disclosure' and 'rating' for achieving environmental goals in the nineties. In the public disclosure programs regulator disseminates information about the emission and discharge from a particular unit into the public domain; in most cases in an appropriate format. Rating involves categorizing different firms on the basis of their pollution profile primarily to enhance relevance and aid assimilation. The reduced resource requirement and cost on account of public disclosure and rating has now become possible due to information revolution. According to Tietenberg (1998), this formed the beginning of the third phase of pollution control and that the increasing role of disclosure strategies seems to stem from two main reasons – a) from the increasing perceived need for more regulatory tools rather than simply relying on formal regulation and fines, and b) declining cost of information collection, aggregation and dissemination .

Disclosure approaches like labeling including in the mandatory format have foun applicability in pollution control. Labeling and public disclosure are the approaches that provide signals to investors, consumers, regulators and general public about the relative and absolute levels of emissions of polluters (Grafton *et al*., 2004). The widely used signaling devices and the most appropriate for the model proposed in this paper are those that indicate an appliance or a product has achieved some minimum acceptable level of environmental quality. The examples include energy efficiency rating for refrigerator or chlorine-free paper etc. While labels and awards convey a signal of how environmentally friendly is a product or polluter, disclosure rules normally provide information on how poorly a source or firm is performing. Tietenberg (1998) points out that public disclosure programs entail four elements: (i) detecting environmental risks, (ii) assuring reliable information, (iii) disseminating the information to those at risk from the pollution, and (iv) allowing public- and private-sector agents to act on the information to create pressures for pollution control.

Mandatory information disclosure has distinct advantages compared to more traditional forms of regulation. In contrast to command-and-control and market-based instrument regulation, information disclosure imposes no additional compliance requirements and expenditure it only requires covered entities or SMEs to place their compliance details in the public domain for interested stakeholders, who subsequently put pressure on poor-performing firms. Hence the creation of a

pollution compliance database should be the first step in the implementation of the scheme, Disclosure now is also more politically feasible in India than direct regulation because of the tacit support it receives from the RTI Act, and is not easily tagged as a barrier to development. Furthermore, it creates incentives for self regulation not provided by traditional regulatory approaches. In the context of this paper it can be termed as 'regulation by commitment'.

Public Disclosure As A Policy Instrument

Environmental area being complex results in heavy information demands. Indonesia faced a tough challenge in choosing and designing policy instruments to deal with industrial pollution. Conventional regulation had proved to be grossly inefficient, since it provided no incentive for firms to innovate. Furthermore, the whole process of setting standards was easily manipulated by powerful industrial lobbies. It is difficult for resource constrained environmental regulators to enforce meaningful and costly requirements. Information disclosure is of special interest because it is both a prerequisite for other instruments and an instrument in its own right[41].

(a) A good deal of information is necessary for any form of environmental policy. Environmental protection agencies in developing countries, however, do not have such information and cannot collect it easily—especially if it is intended to be used for regulation or taxation. *A program for information disclosure can provide a useful mechanism for the authorities to collect information*. The information gathered allows authorities to set priorities and eventually make a more informed choice of instruments. It is in this sense a prerequisite for regulation.

(b) The fact that the information is used for public dissemination and grading makes the provision of correct information important and provides possible avenues for monitoring and control.

(c) The information collection is also a signal that the authorities are becoming more serious, and that signal itself can have important effects.

Somewhat less obvious is the fact that information disclosure can act as an instrument in its own right. Today, information can be easily compiled, processed, and transmitted, and the U.S. TRI has demonstrated that the mere public provision of pollution data can trigger strong and sometimes unexpected effects on factor and output markets in addition to more traditional political channels. There are other ipats too; for example public disclosure about a plant's handling of toxic materials can prompt *employees* to demand higher safety standards or compensatory wages, enable *communities* to negotiate pollution reductions with local plants, cause environmentally conscious consumers to switch to greener products, and change investors' behaviour. The reaction is not limited to agents with "green" preferences.

[41] García López, Sterner, and Afsah. 'Public Disclosure of Industrial Pollution: The PROPER Approach for Indonesia?' October 2004 • Discussion Paper 04–34. Resources for the Future

Bankers and neighbors fear the market reactions to decreasing sales, liability exposure, declining profitability, falling property values, and so forth.

Forms Of Information Disclosure. Information disclosure can take several forms. Complex information can be interpreted and conveyed through labeling schemes, of which there are several types.

(a) **Type-1** is certification—of products, firms, processes, or management procedures—by independent agencies.
(b) **Type- 2** is self-certification, without fixed criteria or independent outside review.
(c) **Type-3** is the provision of raw data, without interpretation or judgment, sometimes in the form of life-cycle analysis.

Type 1 green labelling of products has become popular in northern Europe; Germany's Blue Angel, started in 1977, was the first national ecolabeling program. Another form of disclosure is environmental certification of firms by ISO 14000 or EMAS standards, which are oriented toward management: it is the environmental management system that is certified, not the products or processes per se. Type 3 labelling is fairly common in industry. Volvo, for instance, evaluates its performance according to several criteria and its own internal goals, and the results are published in environmental reports. The U.S. TRI has characteristics of Type 3 programs, except that it is not voluntary. One criticism of these is that the public cannot interpret such information. Experience has shown that other organizations will use the information to develop ratings and evaluations for communities, NGOs, investors, and others. PROPER, has a trait of both Type 3 and Type 1: the information is interpreted through rating and refers to firms or plants rather than products, and the rating—which is not voluntary—is carried out by a ministry rather than by a nongovernmental organization. For Economics of Public Disclosure please see Kathuria, V. (2004) and Kathuria, V. (2006 B)

Conclusion

To sum up, public or information disclosure incorporates conventional environmental monitoring institutions and systems, self-regulation and community pressure using environmental ratings to promote better environmental management. In its mandatory format it is aptly described as 'carrot and stick' and forms an effective tool to control pollution in a country like India.

Key Points

- Information problems, institutional constraints, technology spillovers, and fiscal interactions ect call for more intricate and elaborate set of considerations which provide the rationale for using alternate instruments

- No single instrument can satisfactorily address all issues. Trade-offs are involved in the choice of instrument and employing more than one instrument can be justified as more than one market failure may be involved.

- The failure of formal regulation and market-based approaches to control pollution brought into prominence informal regulation in the form of 'public disclosure' and 'rating' for achieving environmental goals.

Information disclosure is of special interest because it is both a prerequisite for other instruments and an instrument in its own right.

PART III - Design Of A Scheme Involving Mandatory Disclosure To Improve Environmental Performance Of SMEs

The task of reducing process pollution in a community setting, where emissions from the manufacturing facility adversely affect the larger community, presents a particular challenge to environmental practitioners due to be a lack of formal relationships between the polluter and those affected by the pollution (Tietenberg & Wheeler, 1998). The effectiveness of a scheme involving information disclosure hinges appreciably on the ability of the public/community to leverage the availability of the information in public domain and make an effective impact on environmental compliance; which in many cases has proved to be the undoing of the scheme.[42]

Information disclosure approach is not designed to influence pollution levels directly, but rather require firms to regularly disclose certain environmentally relevant information about their processes or products to the general public; which maybe available on request through the mechanism of a RTI or simply as a database on the internet. Information disclosure is also known to have negative or positive implications for the disclosing firms, because civil society may choose against or in favour of a firm's products based on the information provided. Similarly, the disclosure may change a firm's market valuation if it gives rise to concerns over future liabilities or would demand corrective action against such liabilities through good environmental management. Combining a traditional pollution standard with a mandatory disclosure requirement can result in additional costs of non-compliance to firms and hence for inducing them to abate their levels of pollution. Thus, mandatory information disclosure holds the promise of complimenting costly regulatory enforcement.

The empirical evidence on mandatory information disclosure in the reduction of process pollution comes primarily from two cases (the U.S. TRI and Indonesia's PROPER). A recent research study considers the conditions under which the regulator's and civil society's efforts to enforce pollution reductions are complementary, and how the regulator can foster this positive interplay (Killmer, 2004). Specifically, a systematic analysis of the dynamics introduced by the

[42] Killmer, Annette B. 'Designing Mandatory Disclosure To Promote Synergies Between Public And Private Enforcement'.

involvement of civil society in pollution prevention enforcement suggests that the design and implementation of a mandatory disclosure policy should (Kilmer 2006):

• Involve careful consideration of (a) what information is presented, (b) how it is presented and distributed, (c) how civil society can be assisted in its use of the information through capacity building and other education initiatives, and (d) whether the existing legal and institutional context permits the level of civil society involvement that the disclosure policy is supposed to encourage.

• Take into account that the effectiveness of different options for community involvement.

• Provide greater functional autonomy to the regulator. In this new context, the regulator is not only charged with maximizing compliance by the polluting firms within the usual budget and maximum-penalty constraints. Therefore, the design and implementation of a mandatory disclosure policy should make provisions to allow for certain flexibility in the regulator's behaviour to adapt to these new demands. Regulator's response and reaction of polluting firms will form an important component in the effectiveness and evolution of the scheme and the significance of the same must be recognised.

To derive further indicators/lessons for our model we consider some of the labelling schemes undertaken in India which involved a certain level of information disclosure; which was voluntary initially and thereafter mandatory in certain cases.

Ecomark Scheme

Labeling and environmental marketing can be an effective public policy tool to effect behavior change of an intended audience which is generally the consumer. There are multiple types of labeling strategies, each suited to a specific set of circumstances and requirements of a given audience. ISO had described three basic forms of environmental labeling approaches[43].In India too the issue of environmental protection had brought focus on the third constituent of the triad; the consumer (after the industry and the government) after the writing was on the wall that regulatory actions by pollution control agencies alone would not be sufficient to arrest the degradation of the environment due to industrial pollution. To increase consumer awareness and easy identification of environment-friendly products, the Government of India launched the voluntary eco-labelling scheme known as `Ecomark' in February 1991[44]. Under the scheme any product, which is made, used or disposed of in a way that significantly reduces the harm it would otherwise cause the environment, was to be considered as an Environment-Friendly Product. The GoI declared the Ecomark program to be a "purely voluntary scheme open to all manufacturers, both domestic and foreign." This came as the Ecomark Steering Committee felt that while there was a need for greater transparency, voluntary eco-

[43]Three basic forms of environmental labelling approaches:
• Type I environmental labels are "voluntary multiple criteria third party programs" that award labels to products that meet certain criteria. They are, in essence, a "seal of approval."
• Type II environmental labels are "self-declared" information labels by manufacturers about specific environmental attributes.
• Type III environmental labels are "declarations generally based on a lifecycle approach," providing information about multiple attributes. http://www.iso.org/iso/en/ISOOnline.frontpage

[44] http://cpcb.nic.in/oldwebsite/Eco-mark Scheme/THESCEME.html

labelling schemes should not be brought under the scope of the technical barriers to trade agreements.

The MoEF, with the technical advice of the CPCB, manages Ecomark scheme. Characteristically unlike many other international eco-labelling programs that are independent, India's Ecomark is tied with the Bureau of Indian Standard's (BIS) product quality standards. Thus in order to be Ecomark certified, products must conform to both the BIS quality standards, as well as product-specific environmental criteria set by the Ecomark scheme. And as result on meeting Ecomark requirements, manufacturers will automatically be eligible to display the BIS's quality standards label on their products.

Criteria for Eco-mark

The criteria are based on the cradle-to-grave or life cycle approach (LCA), i.e. from raw material extraction to manufacturing and finally to disposal. The basic criterion covers broad environmental aspects, but is specific at the product level. The product general requirements deal with the issues of compliance of the pollution control acts, raising environmental awareness among consumers etc., in addition to safety, quality and performance of the products.

Procedure

The procedure for grant of a licence by BIS under the Scheme of Ecomark is the same as applicable for grant of licence by BIS under its Product Certification Marks Scheme. Each application under the scheme of Ecomark shall be accompanied with a copy of the following documents[45] :

- **Pollution Compliance.** Consent/environmental clearance certificate from the concerned State Pollution Control Board.

- **Preliminary Inspection.** A preliminary inspection of the unit of the applicant on a mutually convenient date for assessment of the manufacturing and quality control facilities.

- **Collection of Samples**. Samples are drawn for factory testing and independent testing to assess the conformity of the product with the requirements.
- **Preliminary Inspection.** The preliminary inspection (PI) report, independent test reports of samples drawn during PI and acceptance of STI and marking fee schedule are verified at the Bureau. In case all documents are complete and found satisfactory, a licence is granted to use the standard mark of the Bureau for a specified period.

- **Unannounced Visits.** During the period of validity of licence the Bureau arranges periodic unannounced visits to the manufacturing premises to assess the operation of the BIS Certification Mark Scheme for the product. During the visit by BIS officer, samples are drawn for testing both in the factory as well as for independent testing.

[45] http://cpcb.nic.in/oldwebsite/Eco-mark Scheme/LICENCE TO USE ECOMARK.html

- **Fees**. The fees[46] charged are nominal and are required to be paid to the BIS for obtaining the Ecomark. SMEs can avail the concessional rate on producing a certificate issued either by the office of the Development Commissioner, SSI or Industries Department of the concerned State Government.

Appraisal of the Scheme

Many reasons were put forth regarding the lack of response to the ecolabelling scheme from manufactures and consumers alike. In fact in August 1997, MoEF even launched a market survey for ecolabelled products. One stated reason was incorrect selection of product categories and another was lack of harmonisation with international standards. Indian exporters felt that many of the product categories chosen for Ecomark, with the exception of textiles and certain food items, do not reflect India's major export products for which an Ecomark might be of value. For example leather and leather products categories were initially left out Lack of harmonisation led several manufacturers to adopt the eco-labelling standards of their importing customers' countries in order to operate in those markets. The textile and leather products sectors (two of India's largest exports) have made efforts to conform to eco-labelling standards in EU countries such as Denmark and Germany.

The Ecomark label is seen as a "movement of consumers" and is therefore given exclusively to consumer products. By January 1997 sixteen product categories had been selected for the Ecomark, only one product, in the detergent product category, has been awarded the Ecomark. However, there were no products available on the market with the ecolabel; the manufacturer of the detergent product that had been awarded the Ecomark did not market the product with the ecolabel[47]. Some attribute this to the costs involved in applying for the Ecomark and the numerous regulatory requirements manufacturers must meet before being awarded the ecolabel. Other reasons may include industries' concerns about the Ecomark programme.

In close to two decades of its existence, only 12 companies have secured EcoMark licence from the BIS. Seventeen licences have been issued under product categories of paper, wood substitutes and finished leather products. Manufacturers of commonly used items such as soaps and electronics have not applied for licence yet and its generally attributed to 'under preparing the consumer' On the other hand it is felt that "The government should give incentives for Ecomark. Only then will the industry be motivated." Consumer groups too say the government should, at least initially, subsidise eco-labelled products. To that end the BIS says, "If manufacturers have an ISI mark, we don't charge extra for Ecomark."[48]

Key Points: Ecomark

From the study of the Ecomark scheme which was voluntary in nature the following lessons can be drawn out for the design of a rating scheme:

- **Costs.** The scheme involved limited costs, no subsidy was offered. Consumer preference for ecomark products was expected to compensate costs incurred.

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[46] http://cpcb.nic.in/oldwebsite/Eco-mark Scheme/FEES.html
[47] (EPA1998).Environmental Labeling Issues, Policies, and Practices Worldwide. Appendix B: Summaries of Environmental Labeling Programs Covered in This Report.. Pages B-59 toB-63. Pollution Prevention Division Office of Pollution, Prevention and Toxics, U.S. Environmental Protection Agency. December 1998. http://www.epa.gov/oppt/epp/pubs/wwlabel3.pdf
[48] Rucha Biju Chitrodia. 'Lack of awareness major hurdle'. The Times of India. June 29, 2007. http://timesofindia.indiatimes.com/articleshow/2159020.cms

- **Regulatory Requirements.** A very important aspect of the scheme was that manufacturers of the product had to provide evidence that they are in compliance with India's Water, Air, and Environmental Protection Acts and, if applicable, with the Prevention of Food Adulteration Act of 1954 and the Drugs and Cosmetics Act of 1940.Also Ecomark certified, products had to conform to both the BIS quality standards, as well as product-specific environmental criteria set by the Ecomark scheme.

- **Inspections.** Besides preliminary inspections for award of the Ecomark, during the period of validity of licence the Bureau had the right to arranges periodic unannounced visits to the manufacturing premises.

- **Consumers Awareness**. Consumer awareness on environmental issues in general and ecomark in particular which resulted in low preference foe ecolabelled products was a major reason.

- **Harmonisation with Global Standards**. This resulted in disincentivising exporters from obtaining ecomark for their products. At a workshop organised by the Consumer Unity and Trust Society (CUTS) and the Confederation of Indian textile Industries in collaboration with UNEP said EU ecolabels would provide Indian textile exporters new opportunities in European Markets[49]. In fact there is mounting pressure on the textile manufactures in India to go in for some form of 'environmental certification' to retain their market position.

Other Initiatives

The issues which would require further analysis in design of a public policy model in the context of consumer/community centric initiative are a) consumer preference, b) industry approach, c) Mandatory versus voluntary implementation and finally business case or financial aspects. To that end lets us consider the present status of some of the ongoing government initiatives in this field.

Bureau of Energy Efficiency's (BEE) Labelling

The BEE, Ministry of Power has developed a scheme for energy efficiency labelling of equipment, pending issue of Notification under clause (d) of section 14 of the Energy Conservation Act, 2001 by the Central Government[50]. The scheme has been developed in collaboration with all the stakeholders, and aimed at enhancing consumers awareness by providing information on energy performance so that they can make informed decisions while purchasing appliances. Manufacturers of equipment/importers/persons- in- trade can participate in the scheme by registering with the Bureau. The user would directly bear the cost of transportation, handling, and testing of samples for verification testing. Also the user of label comprising star ratings will print and affix the labels as per the label design, manner of display, and the rating plan prescribed for the particular equipment by BEE. At present, the star

[49] 'Eco-labels open new opportunities'. The Financial Express. June 30, 2008.

[50] The Standards and Labelling programme is a thrust area of the Bureau of Energy Efficiency (BEE). The Central government, under the Energy Conservation Act, 2001, has the powers to direct display of labels on specified appliances or equipment (14.d) and enforce minimum efficiency standards by prohibiting manufacture, sale and import of products that do not meet the minimum standards (14.c).

ratings, which denote the level of energy efficiency, are voluntary[51].It is also hoped that this would lead to large-scale energy saving in the medium and long terms and help the domestic industry compete in markets where norms of energy efficiency are mandatory

BEE will start the energy labelling programme but for products that already have a voluntary labelling programme the bureau has begun the process of making energy labelling mandatory ie fluorescent tube lights, air conditioners, refrigerators and motors [52] The standard approach by BEE is to start with a voluntary system and progress towards a mandatory one. As almost 90% of the ac and refrigerators come with labelling about 1.5 lakh labelled air-conditioners and 45 lakh similarly labelled refrigerators have been sold in 2008. With the labelling being made mandatory, manufacturers not conforming to the standards will not be allowed to sell in the market.

Challenge Testing. The scheme is also characterised by what is termed as Challenge Testing**.** The label contents can be challenged by any person. The challenge must be submitted to the Bureau in writing. The Bureau will examine the challenge within a month of the date of receipt in writing. The Standards and Labelling Implementation Committee will recommend whether to conduct a challenge test or not, keeping in view the basis of the complaint and examination of past records.

Consumer Awareness. The Bureau would prepare a poster/brochure informing the consumers as to how to read/interpret the label and select equipment for purchase. The user of label would distribute a copy of the poster/brochure along with their technical brochure to the buyer and would also display the poster/brochure at the point of purchase.

The BEE and SMEs

The BEE decision to make its star ratings mandatory from February 2009 has caught micro and SME electrical equipment manufacturers who manufacture home appliances, including air conditioners (ACs), refrigerators and tube lights unprepared[53]. Given the high cost of technology, well-equipped laboratory and testing fee for energy efficiency SMEs have sought government support to comply with energy efficiency standards. Unlike the larger manufacturers who have well-equipped laboratories to self-regulate the efficiency standards, the SMEs have only two laboratories accredited by National Accreditation Board for Testing and Calibration Laboratories (NABLs) in India to depend on. The testing fee is about Rs 40,000-50,000 for one sample product. Setting up own equipped laboratory would require almost Rs 3 crore. The SMEs are of the opinion that before making it mandatory the government must appropriate technical assistance, availability of loans, consultants ect to ensure compliance. The example of the pharmaceutical industry is being quoted which faced a similar situation when good manufacturing practices (GMP) requirement were notified and made mandatory. The government had to twice revise the deadlines. BEE labeling will also make manufacturers competitive in the global markets as all major countries have made energy efficient

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[51] For details of the scheme see http://www.bee-india.nic.in/Label-launch/Scheme.pdf

[52] http://timesofindia.indiatimes.com/Earth/Global_Warming/TVs_PC_monitors_to_have_energy_labels/articleshow/

[53] 'SMEs demand tech tonic to gain energy efficiency'. The Economic Times. June 9, 2008,

standards mandatory. The requirement to mandate the scheme was felt as taking advantage of lack of regulations in the country many manufacturers of energy efficient products for overseas' markets did not do the same for the Indian market.

Fuel Economy Ratings For Cars

The government is set to launch a system of fuel economy ratings for cars by the year end. Besides helping consumers reach a more informed choice the government estimates that the labelling standards will have helped the country save 5-15 million tonnes of fuel from the passenger vehicle segment by 2030.To begin with, the government will invite carmakers to voluntarily get their models labelled by the designated agency on a scale of one to five stars. But by 2011-12, the fuel efficiency norms will be made mandatory for all passenger vehicles — any car that fails will not be allowed on the road after the cut-off date. The government wants the poor performers use the most efficient technology available in India. Manufacturers for a fixed fee will be able to ask the government to test the car for mileage and then display the "star rating label". The label will also display the mileage, as certified by the government, that the particular model gives. It will inform the consumer how that particular model performs in comparison with the best and the worst in its weight category.

Public Disclosure.

Data on all the vehicles that manufacturers get tested by the government would also be put up on a website to help consumers compare figures even before they hit the showrooms. To build the programme, BEE and Petroleum Conservation Research Association had to secure fuel efficiency information from public databases as the industry has been constantly showing reluctance to share fuel data even while it discusses other issues with the government.[54]

Funding Issues.

BEE has proposed the creation of a fund that is targeted at helping energy servicing companies, or Escos, which provide solutions for improved energy efficiency in buildings, utilities and offices. Escos profits are directly linked to the savings that accrue to their customers.[55]The overall energy-efficiency investment market size under the model of performance contracts is estimated at Rs14,000 crore but Escos find it difficult to source finance as financial institutions are wary of these unsecured loans. The fund proposed by BEE will provide partial coverage of the risk for loans advanced by financial institutions to fund energy-efficiency projects. In the initial stage the agency has proposed the fund only for half the existing government buildings, which have the highest payback. The fund, whose capital level is yet to be fixed, will cover 50% of the lending risk, with Escos providing in at least 20% of the investment in equity or normal collateral. The fund will be created by the Power Finance Corp. Ltd and Rural Electrification Corp Ltd.

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[54]Nitin Sethi. 'Fuel economy ratings for cars soon'. The Times of India. July 19,2008.
http://timesofindia.indiatimes.com/Business/Fuel_economy_ratings_for_cars_soon/articleshow/3251940.cms
[55] Padmaparna Ghosh & Sanjiv Shankaran. 'Govt proposes fund to turn energy-efficient'. Mint. June 18,2008.
http://www.livemint.com/Articles/2008/06/17204353/Govt-proposes-fund-to-turn-ene.html?atype=tp

Rating

SME Rating Agency of India Limited (SMERA)[56] is a joint initiative by SIDBI, Dun & Bradstreet Information Services India Private Limited (D&B), Credit Information Bureau (India) Limited (CIBIL) and several leading banks in the country. These banks have equity stake in SMERA and also have their representatives nominated on the board of SMERA. The agency focuses primarily on the Indian SME segment with the objective to provide ratings that are comprehensive, transparent and reliable. The aim is to facilitate greater and easier flow of credit from the banking sector to SMEs. The rating model of the agency takes into consideration financial and non-financial factors for assigning a rating to a SME unit. SMERA ratings also factor-in payment score obtained from CIBIL indicating the payment track record of the SME unit being rated. Dun & Bradstreet's expertise on rating SME units is also an important contributing factor. All types of SMEs including manufacturing, service sector, trading etc can approach SMERA directly or through the banks for a rating from SMERA. The rating process and scale has been developed in consultation with leading banks. SMERA ratings can enhance an SME unit's market standing amongst trading partners and prospective customers, both in domestic as well as international markets. The ratings so assigned by SMERA can be reviewed on SME unit's or the referring bank's request.

Key Points

- Mandatory adoption of the scheme all stakeholders is crucial for the success of a scheme. Partial adoption tends to disorient consumers and invariably causes the initiative to lose steam. A point well made out by the energy efficiency ratings for electronics and a concern circumvented by the fuel efficiency ratings scheme by ab-initio declaring that the scheme would finally be mandatory in nature.

- Mandatory disclosure of customer friendly information is a basic construct of any scheme designed with the consumer as its target audience and key driver.

- Funding is a key driver of any scheme. Creating a dedicated fund to kick start and maintain a scheme is not an unexplored area of implementation design.

- Rating of SMEs is essential for correct assimilation of information by consumers and other stakeholders. SMEs are going to be rated for various aspects in their growth trajectory in the future.

[56] http://www.smera.in/index.asp

PART IV - 'HOME GROWN' MODEL

Introduction

With emphasis on climate change, we talk of energy efficiency and savings use of CFL sect but no body thinks of their disposal and recycling. There is focus low energy electronics but none of disposal of e-wastes. The difference is economics; one draws 'carbon finance' while pollution control lies in the domain of CSR and triple bottom line. While Indian industry seeks to improve its technological profile and energy efficiency through the CDM process we should look to channelise some of these benefits towards pollution control and compliance. It is just a matter of redefining 'clean' of the CDM to include pollution regulation compliant. A study of the environmental performance of Indian SMEs would reveal that a progressive framework or roadmap of environmental performance does not exists .There is a requirement to put in place a system, with suitable training assistance and financial aid and incentive at each stage to derive a progressive and enhanced environmental performance form the SMEs. The existing assistance and financial schemes are to an extent piecemeal and uncoordinated and are required to be integrated into a well thought out frame work.

CDM Projects

For a project to qualify as a CDM project, an investor must receive host country approval for the project and ensure that the project conforms to the specific criteria set forth in the Marrakech Accords. In the absence of official CDM rules, the general guidance states that CDM projects must:

- create real, measurable, and long-term GHG benefits;
- generate additional, verifiable emissions reductions;
- conform to the sustainable development objectives of the host country;
- be certified by officially designated entities; and
- begin after 1 January 2000.

Prior to the submission of the Validation Report to CDM board, confirmation from the host country government to the effect that the project activities will contribute to sustainable development is required. The judgment whether the project activities will contribute to sustainable development or not, is entirely subject to the host country government. Environmental aspects of sustainable development can be broadly termed as improvement of local environment, lengthening of life of waste disposal sites, conservation of rare species and ecosystems ect.

Environment Sustainability Criteria-CERs

Since the UN Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil in June 1992 there have been numerous attempts to find more operationally useful and an apt definition and indicators of sustainable development. These encompass (i) economic, (ii) environmental and (iii) social fields.

Environmental indicators used for the notion of sustainability in the sustainable development paradigm include the following[57]:

(a) Reduced air pollution
(b) Reduced water pollution
(c) Conservation of biodiversity
(d) Reduced soil erosion from deforestation
(e) Improved sustainability of natural resources

In the context of the proposed model we need to take two major policy decisions with respect to the implementation of CDM projects in India. First is to define explicitly sustainable development for an industrial facility to mean pollution regulation compliant in all respects and preferably have a certified EMS in place. The second is to tax the CERs and remit them to the 'created for the purpose' Environment Fund of India.

Terms of Reference

- There is a requirement to put in place a progressive framework or roadmap of environmental performance for the SMEs.
- **SMEs.** SMEs have a critical role to play in India's growth. A "spatial concentration" of SMEs of a certain product is called an Industry Cluster. A SME cluster provides that informal organisation/affiliation for conduct of a sector/sub-sector specific programme or training.
- An estimated 70 percent of the total industrial pollution load is attributed to SMEs many of which, especially small-scale units, continue to use obsolete technologies with no or primitive pollution control methods.
- The most successful programs for SMEs have involved a multi-pronged approach to compliance. Involving citizens in the monitoring of State and municipal facilities would make the regulation of public entities more transparent and effective. Environmental awareness and technical assistance programs need to be incorporated in any programme designed to improve environmental compliance by SMEs
- VSME is a mentoring programme for performing SMEs. International experience has shown that SMEs are more likely to accept and adopt compliance measures where large companies act as environmental mentors.
- Indian SMEs are not geared to go global. SMEs participating in CDM constitute only around 5% of the total registered CDM projects in India.

The Model

The model is a three stage process.

Stage- 1. This stage starts from the consent stage. Each SME is provided a nationally unique identification number (call it say UIN) at the time of grant of consent. The unique identification number of the SME is managed and accordingly has the same implication as the PAN number. The consent management continues

[57] Dr. Saleemul Huq. 'Applying Sustainable Development Criteria to CDM Projects: PCF Experience'. PCFplus Report 10, Prototype Carbon Fund, World Bank Washington DC, April 2002

to be guided by the current CPCB guidelines. After one year of operation the SME mandatorily declares its compliance status with the pollution regulations and is rated compliant/green or non-compliant or red. The model only aims at compliance in the first stage hence over-compliance is not 'rated'. The rating action is carried out by a designated NGO and the information is available in the public domain.

Stage- 2. Certification, export status, tax rebates as per UIN and compliance rating. At this stage the NGO with the assistance of affiliated accredited agency at no cost attempts to provide to those SMEs interested an EMS and ISO 14001 certification for the enterprise and 'ecomark' certification for its products. It is assumed that the 'ecomark' is rejuvenated and its failings addressed. The cost both or either is met partly by absorbing the incentive provided by the Ministry of MSME for ISO 14001 certification and partly from the 'India Environment fund' (details of which are discussed at the next stage).

Stage - 3. This stage primarily involves generation of CERs by SMEs and benefiting from them. All enterprises generating CERs would be taxed at an appropriate percentage and the tax will be remitted to the 'Environment Fund of India'. This fund would be used to meet all technology transfer and training requirements involved in the upgrading of the SMEs to cleaner technology. To induce clean technology deployment and assist in training and documentary requirements under a 'mentor' format all enterprises remitting taxes to the environment fund would have the first rights on their remittance. This remittance would be paid back to them against the costs they would occur in providing clean technology acquired by them to SMEs and the training requirements associated with them. The cost involved would approved by the designated fund regulator or his representative prior to the transfer of technology. Needless to say all technology transfers would be in accordance with the IPR laws.

Conclusion

As India's economy continues to accelerate, the performance of both the environmental regulations and the regulator will come under increased national and international scrutiny and pressure. The increasing public demand for better performance by the environmental regulatory agencies is matched by adequate support to these agencies, conditioned on institutional reforms to increase efficiency, transparency and accountability, it would be unfair to expect substantial progress and unfair to solely blame the regulator for the lack of it. We need to replicate climate change initiatives on finance and technology for pollution abatement within the country as this model has suggested. At a time when India is not under pressure to meet emission targets/cap implementation of the proposed would be ideally placed. We must induct some concern and commitment in our profiting from CDM and use CDM funds to ensure compliance of pollution standards.

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Acronyms and Abbreviations

ADB Asian Development Bank
BOD Biochemical Oxygen Demand
CDM Clean Development Mechanism
CEA Central Electricity Authority
CEM Continuous Emissions Monitoring
CETP Common Effluent Treatment Plant
CII Confederation of Indian Industries
COD Chemical Oxygen Demand
CoRE Corporate Roundtable on Development of Strategies for the Environment and Sustainable Development
CPCB Central Pollution Control Board
CREP Corporate Responsibility for Environmental Protection
CSE Centre for Science and Environment
CTE Consent to Establish
CTO Consent to Operate
DoE Department of Environment
EA Environmental Assessment
ECOP Environment Codes of Practices
EIA Environmental Impact Assessment
EMP Environmental Management Plan
EMS Environmental Management Systems
ENVIS Environmental Information System
ESI Environmental Sustainability Index
ESMAP Energy Sector Management Assistance Programme
ESPP Environmental Social Policy & Procedures
FHWA Federal Highway Administration
FICCI Federation of Indian Chambers of Commerce
GDP Gross domestic product
GEMI Global Environmental Management Initiative
GHG Greenhouse gases
GoI Government of India
IDA Industrial Development Authority
IEA International Energy Agency
IFC Information and Facilitation Counter
IRC Indian Roads Congress
ISO International Organization for Standardization
LCA Life Cycle Assessment
MoEF Ministry of Environment and Forests
MNRE Ministry of New and Renewable Energy
MoP Ministry of Power
MoRTH Ministry of Road Transport & Highways (Now known as the Ministry of Shipping, Road Transport and Highways)
MSME Micro, Small and Medium Enterprises
MSMED Micro, Small & Medium Enterprises Development Act, 2006
MW Megawatt
NEP National Environment Policy
NGO Non-Government Organizations
NHAI National Highways Authority of India
NHPC National Hydro Power Corporation
NIMBY Not in My Back Yard

NO_x Nitrogen Oxides
NPV Net Present Value
NTPC National Thermal Power Corporation
OECD Organization for Economic Cooperation and Development
PCB Pollution Control Board
PIL Public Interest Litigation
PCIL Power grid Corporation of India Limited
PPP Purchasing Power Parity
PROPER Program for Pollution Control, Evaluation, and Rating
PWD Public Works Department
R&M Renovation & Modernization
RSPM Respirable Suspended Particulate Matter
RTI Act Right to Information Act
SCC Supreme Court Cases
SMEs Small and Medium Enterprises
SPCB State Pollution Control Board
SPM Suspended Particulate Matter
SSI Small-Scale Industries
TA Technical Assistance
T&D Transmission & distribution
TERI The Energy and Resources Institute
TRI Toxics Release Inventory
UNDP United Nations Development Program
UNEP United Nations Environment Program
UNFCC United Nations Framework for Climate Change
USEPA United States Environment Protection Agency
UTPCC Union Territory Pollution Control Committee
VFG Vital Few Goals
VOC Volatile Organic Compounds
WBCSD World Business Council for Sustainable Development