CENTRE FOR POLICY RESEARCH
CLIMATE INITIATIVE

Working Paper 2010/2 (November)

# A DISCLOSURE-BASED APPROACH TO CLIMATE CHANGE IN INDIA? EARLY LESSONS FROM BUSINESS REGULATION

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**Abstract** This paper argues that as a step towards improving Indian corporate response to climate change, it is worth exploring an appropriate disclosure-based regulation system. It sets out reasons why Indian companies need to improve their responses to climate change; and compares and contrasts disclosure-based regulation with other traditional models of regulation (command-and-control or market-based) in terms of their approach, strengths and weaknesses, based on its implementation in different parts of the world.

The paper discusses examples of regulatory efforts on energy conservation attempted in India: the Energy Conservation disclosure regime under the Companies Act; the initial efforts at the Perform, Achieve and Trade (PAT) regime under the Energy Conservation Act and; the GHG Emission disclosure under the Carbon Disclosure Project. Through empirical analysis, the paper discusses the aims and objectives of these examples and evaluates their relative strengths and limitations.

The paper concludes with some broad inferences on the contours of an appropriate disclosure-based regulation that has the potential to improve corporate India's response to climate challenges.

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# A DISCLOSURE-BASED APPROACH TO CLIMATE CHANGE IN INDIA? EARLY LESSONS FROM BUSINESS REGULATION[1]

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## Introduction

Regulating business is not a new discipline. Indeed several aspects of the working of corporations have been regulated for decades in India. These include corporate governance parameters that discuss corporate structures, practices, risk management and listing requirements,[3] pollution standards,[4] duty of care, use of hazardous substances,[5] waste management,[6] workers' health and safety,[7] and collective bargaining rights.[8]

In addition to these approaches it has become increasingly common to see disclosure-based regulation being used to regulate corporate behaviour. Over the last few decades, Parliament and regulators have used disclosure-based regulation to change corporate behaviour and practices. For instance, in 1988, Parliament required companies to publish their annual foreign exchange earnings;[9] in 1989, the Central Government required companies handling hazardous chemicals to submit details of chemicals they were manufacturing or importing;[10] in 2000, companies seeking to raise capital or debt from the market were required to publish financial, sectoral and company related risks to potential investors;[11] and as recent as in 2009, companies selling packaged food have been required to display nutritional information.[12]

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[1] An earlier version of this paper was produced as a Policy Analysis Exercise (PAE) for the Lee Kuan Yew School of Public Policy, National University of Singapore in April 2010 as part of requirements for a degree program.

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[3] Indian Companies Act, 1956

[4] Environment Protection Act, 1986

[5] Hazardous Waste (Management and Handling) Rules, 1989

[6] Municipal Solid Waste (Management and Handling) Rules, 1999

[7] Indian Factories Act, 1948

[8] Indian Trade Unions Act, 1926

[9] The Companies Act, 1956 section 217(1) reads: "There shall be attached to every balance sheet laid before a company in general meeting, a report by its Board of directors, with respect to… **foreign exchange earnings and outgo** ..."

[10] Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 available at http://envfor.nic.in/legis/hsm/hsm2.html (accessed on March 15, 2010)

[11] Securities and Exchange Board of India (Disclosure and Investor Protection) Guidelines, 2000 available at http://www.sebi.gov.in/acts/ipguidelines.pdf (accessed on March 15, 2010). These guidelines have been replaced with new regulations in 2009.

This is not to say that the growing reliance on disclosure-based regulation as a policy option for regulating corporate behaviour is necessarily by design. It is more likely that specific disclosure-based regulatory options were chosen based on their appropriateness in response to a particular policy gap; and cumulatively this has ended up creating an entire body of disclosure-based regulation.

It is also relevant to note that Indian civil society has a long tradition of working on transparency and disclosure-based initiatives. There is a vast network of civil society organizations and groups working in the pro-disclosure realm under the National Campaign for People's Right to Know.[13] From the publication of minimum wage records at the grassroots / village level[14] to the disclosure of financial assets by Indian Supreme Court judges,[15] civil society has used and worked with different types of information disclosure.

Significant among these is the Centre for Science and Environment's Green Rating project that seeks information from companies in an effort to rate them (within a specific sector) on the basis of their environmental impact. The project analyzes the information received and publishes the results in an effort to encourage companies to adopt better environment management policies and benchmark themselves against others in the sector.[16]

Disclosure allows civil society to assist Indian companies to benchmark themselves against international players as well. "It tells us where to start, identify leakages, and open up opportunities to explore international best practices."[17] For instance, when Indian environmental NGOs lobbied local chlor-alkali industries to stop using mercury and instead to replace it with membrane technology, it resulted in a 30% reduction in energy conservation, though energy conservation was not the focus of the campaign, the toxic impacts of mercury was.[18] "International business knew about this advantage, our companies did not."[19]

Indian civil society thus has a strong tradition of working with disclosure; and as a policy approach, it has been tried and found to be reasonably successful. However, as mentioned above, this is not

[12] Chitrodia, R.B., Packaged foods must list nutritional facts, Times of India, Oct 31, 2008 available at http://timesofindia.indiatimes.com/biz/india-business/Packaged-foods-must-list-nutritional-facts/articleshow/3656231.cms (accessed on March 13, 2010)
[13] See http://www.righttoinformation.info/ (accessed on April 15, 2010)
[14] See About us, MKSS India available at http://www.mkssindia.org/node/1 (accessed on April 15, 2010)
[15] "Supreme Court judges agree to make their assets public", The Hindu, August 26, 2009 available at http://beta.thehindu.com/news/national/article9774.ece (accessed on April 15, 2010)
[16] Green Rating Programme, Centre for Science and Environment, Delhi, available at http://www.cseindia.org/taxonomy/term/20082/menu (accessed on July 10, 2010)
[17] Interview with Ravi Agarwal, Director, Toxics Link, conducted by the author on February 6, 2010
[18] *Ibid*.
[19] *Ibid*.

to suggest that this was by design. Indeed as in other sectors, in the Indian energy conservation sector too, disclosure is relatively by default rather than design.

This paper examines three examples of the disclosure approach to climate: the energy consumption disclosure requirement under the Companies Act, 1956, the energy conservation disclosure requirement under the recent Perform, Achieve, Transfer (PAT) scheme of the Energy Conservation Act, 2001 and the carbon emissions disclosure effort under the Carbon Disclosure Project (CDP). The first two examples are more focused on energy, not carbon, but are nonetheless relevant to climate. The PAT scheme is also relatively new, and has not yet produced empirical data for a comparative analysis. There is thus an inherent challenge in drawing inferences from these examples, since they comprise a mix of approaches – national and international; those designed as disclosure and those designed for other reasons; and the incomplete empirical data.

The paper begins with an outline of relevant aspects of the climate debate. It then reviews the literature around disclosure-based regulation and specifically discusses its benefits and limitations with illustrations. The paper sets out the framework used for analysis that has been adopted in this paper. It then introduces the three examples on energy conservation and analyzes them using this framework. The paper concludes with some inferences and questions on the contours of an appropriate disclosure-based regulation that has the potential to improve corporate India's response to climate challenges.

*The Climate Change Context*

The issue of climate change is one of the most difficult challenges the global community has ever had to face. The impacts of climate change are all too visible. The rising sea levels, melting glaciers and shrinking ice-sheets; and the rise in number and magnitude of typhoons and floods as well as the increased intensity of droughts and desertification increasingly suggest a tangible link between climate science observations and outcomes.[20] Historically, developed countries including the US and the EU contributed to the increase of greenhouse gases (GHGs) by the nature of their industry and growth. Under the Kyoto Protocol Annex I, or industrialized countries, took on specific GHG limitation obligations. While developing countries like India have not been bound to commitments the Government of India has nonetheless published the National Action Plan on Climate Change with the twin objectives of "adapting to climate change" and "enhancing the ecological

[20] Pew Center on Global Climate Change and the Pew Center on the States, Climate Change 101: Understanding and Responding to Global Climate Change, available at http://www.pewclimate.org/docUploads/101_Science_Impacts.pdf (accessed on February 10, 2010)

sustainability of India's development path"[21] At the COP 15 in Copenhagen, the Indian Prime Minister said "…as responsible citizens of the globe, we have agreed to take on a voluntary target of reducing the emission intensity of our GDP growth by around 20% by 2020 in comparison to 2005."[22]

A week later, India's Environment Minister informed the Indian Parliament that "Copenhagen is not a destination but the beginning of a long process… We have to get down to implementing a comprehensive domestic agenda of both adaptation and mitigation and of moving on the road to cutting our emissions intensity…We must soon unveil a detailed roadmap for a low-carbon growth strategy."[23]

This confirms the notion that climate change is increasingly becoming a more politically visible issue in India. The focus on energy intensity reduction targets is significant as India grapples with the challenges presented by widespread poverty and with large populations without access to electricity and drinking water. The National Action Plan for Climate Change is aimed at helping India meet its developmental objectives while also yielding co-benefits for addressing climate change through multiple programs and projects initiated by the government – including the Solar Mission and the Enhanced Energy Efficiency Mission.

While the government has initiated several such actions, what has Indian business been doing? Companies are seen as contributing significantly to environmental degradation through GHG emissions.[24] Indian companies use over 40% of the commercial energy produced in the country and generate 31% of the country's CO2 emissions.[25] Their involvement is thus important in the fight against climate change since they can drive technological innovation and adoption of environment-friendly technologies and practices, thus reducing GHG emissions. In a 2008 survey conducted by the ASSOCHAM, only 20% of the respondent companies had initiated actions in response to climate change.[26] In a 2009 PWC survey of 62 top CEOs in India, the response was

[21] National Action Plan on Climate Change, 2008, Prime Ministers Council for Climate Change available at http://pmindia.nic.in/Climate%2520Change.doc (accessed on January 12, 2010)
[22] Prime Minister's remarks at the Informal Plenary at the 15th COP, 18 December 2009, Copenhagen available at http://beta.thehindu.com/news/national/article69887.ece (accessed on February 10, 2010)
[23] Hon'ble Minister for Environment and Forests' statement to the Indian Parliament available at http://beta.thehindu.com/news/national/article69893.ece (accessed on January 15, 2010)
[24] See Intergovernmental Panel on Climate Change (IPCC), Climate Change 2007: Synthesis Report 36, available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf (accessed on January 10, 2010)
[25] National Action Plan on Climate Change, *Supra* n 21
[26] Associated Chambers of Commerce and Industry of India, "Fewer Indian Companies fighting climate change", ClimateChangeCorp, 15 July 2008, available at http://www.climatechangecorp.com/content.asp?ContentID=5490 (accessed on July 20, 2010)

more positive; suggesting that Indian business has gradually upped its responses to climate change.[27]

The role of the government must be to catalyze and incentivize such corporate behaviour that helps India meet its development challenges while also providing co-benefits for addressing climate change. This paper looks at possible policy options that help Indian companies step-up their responses to climate change challenges; and in particular, the catalyzing role of disclosure-based regulation.

**Literature review: Business and the role of Disclosure-based regulation**

In Ogus' definition, "All regulatory systems require a number of tasks to be performed: as an exercise of policy-making, the goals of a regime must be established; those goals must then be translated into the principles and rules which control behaviour; and there must be procedures for explicating and enforcing the principles and rules for the adjudication of disputes arising from them."[28]

A regulatory system to improve corporate response to climate change in India can take one of three forms. The first is the *command-and-control* regime that prescribes standards and penalizes non-compliance; the second with *market instruments* of taxes, performance bonds and tradable permits; and the third consists of *information disclosure* strategies.[29]

Information (disclosure-based) regulation is defined as "any regulation which provides to third parties information on company operations.... Information disclosure opens up the traditional bilateral relationship between the regulator and the regulated to include other social institutions, most importantly, economic markets and public opinion."[30] A comparison of the approaches is provided in Table 1 (below) that shows command-and-control regimes (to a great extent) and market instruments (to a lesser degree) rely on government to ensure compliance by companies. Disclosure-based regulation relies on stakeholders like consumers, workers, investors and the society in general, not just the government, to exert pressure on firms to comply with existing

[27] PricewaterhouseCoopers, "Indian CEOs poised to respond to climate change", PwC Briefing, November 2009, available at http://www.pwc.com/en_GX/gx/sustainability/assets/india-ceo-climate-change.pdf (accessed on July 21, 2010)
[28] Ogus, Anthony. *Regulation: Legal Form and Economic Theory*. Oxford: Clarendon Press, 1994.p.99
[29] Adapted from T. Tietenberg and D. Wheeler, 'Empowering the Community: Information Strategies for Pollution Control', New Ideas in Pollution Regulation, World Bank, 1998, available at http://www.colby.edu/personal/t/thtieten/front.pdf (accessed on March 12, 2010)
[30] Kleindorfer, P. and Orts, E. 1998. Informational Regulation of Environmental Risks. Risk Analysis: An International Journal, 18: 155-170 cited in Egan, M.L. et al, 'France's Mandatory "Triple Bottom Line" Reporting: An Informational Regulation Approach to Sustainable Development, Second International Conference, International Center for Corporate Accountability (ICCA), New York, June 2007.

regulations and conform to societal standards of acceptable behaviour.[31] While the overall costs may not differ all that much between the types of regulation, the inclusion of other stakeholders in monitoring and enforcement makes disclosure-based regulation less expensive than the other two regimes.

**TABLE 1**

| **Characteristic** | **Command-and-Control** | **Market Instruments** | **Disclosure-based** |
|---|---|---|---|
| How it works | Prescribes standards and penalizes non-compliance | Taxes, performance incentives, tradable permits | Provides information about the company to third parties |
| Examples of regulatory action | Emission standards | Tradable emission permits | Toxic Registry |
| Enforcement | Relies on government / regulator | Relies on government / regulator | Relies on stakeholders / receivers of information |
| Cost-effectiveness | Requires inspectors, enforcers, prosecutors – costly | Requires inspectors, enforcers – costly | Relies on stakeholders exerting pressure on producers – less costly |
| Flexibility | Often very detailed and inflexible | More flexible since it sets objectives and uses incentives / disincentives | More flexible since it sets objectives and not detailed manner of ensuring compliance |

This comparison of regulatory options (as provided in Table 1) also shows that while they work differently, they can each be effective in addressing, for instance, the negative externality of pollution. While it is true that the other regulatory regimes, command-and-control regimes (emission standards that are enforced) and market instruments (tradable emission permits) are effective in tackling negative externalities, so is disclosure-based regulation.

Disclosure based approaches, however, rely on external actors rather than government regulation for its effect. “The very fact that the public will be in a position to engage in general monitoring,

[31] Egan, M.L. et al, ‘France’s Mandatory “Triple Bottom Line” Reporting: An Informational Regulation Approach to Sustainable Development, Second International Conference, International Center for Corporate Accountability (ICCA), New York, June 2007.

may well spur desirable outcomes."[32] An obvious example here is the US Congress law in 1986 that required manufacturers to make annual disclosures of toxic pollution released into the environment, factory by factory, chemical by chemical.[33] Even before the first company reports, executives of some large companies made commitments to reduce this pollution by as much as 90 percent. The mere anticipation of bad publicity had created strong incentives to improve environmental protection. By 1997, reported toxic releases had reduced by half.[34] Significantly, this was not direct regulation, and companies faced no consequences for high toxic releases. Thus a toxics release inventory may provide just as much of an incentive for companies to reduce their emissions as a pollution charge or tax.

Disclosure-based regulation also directly deals with asymmetric information, another source of market failure where the producer has much or all of the relevant information and the consumers have little or none.[35] Without adequate information consumers cannot differentiate between products. Requiring companies to provide the relevant information (which is what disclosure-based regulation is about) will potentially address the information asymmetry and correct this market failure.

Market-based instruments provide more flexibility than command-and-control regulations, since they set the objectives and use incentives and disincentives to ensure companies achieve them. However, disclosure-based regulation is equally flexible. In food labelling, for instance, if consumers are informed of the ingredients of foods, they can trade off the health implications or characteristics however they see fit. Workers with information about risks at their workplace, can trade safety against other possible variables (such as salary, investments for children or retirement, and leisure).[36]

Disclosure-based regulation can be effective even when it is voluntary. An example is the US Aviation Safety Reporting System model of confidential incident reporting which was established in 1976 through an MOU between the US Federal Aviation Authority (FAA) and NASA to eliminate unsafe conditions in the national aviation system and prevent avoidable accidents.[37] The first step was to design a system which the aviation community trusts. NASA was thus asked to operate as a

[32] Adrian Henriques, CSR, Sustainability and the Triple Bottom Line in Adrian Henriques et. al. (Eds). The Triple Bottom Line, does it all add up? Assessing the sustainability of business and CSR. Earthscan. London. 2004 p.26-34.
[33] Archon Fung, Mary Graham, David Weil. *Full Disclosure: The Perils and Promise of Transparency.* New York: Cambridge University Press, 2007 p.29
[34] *Ibid*.
[35] Sunstein, Cass R. "Information Regulation and Informational Standing: Akins and Beyond." *147 U. Pa. L. Rev. 613*, 1999.
[36] Adrian Henriques *Supra* n 32
[37] NASA. "Aviation Safety Reporting System: The Case for Confidential Incident Reporting Systems." 2001. http://asrs.arc.nasa.gov/docs/rs/60_Case_for_Confidential_Incident_Reporting.pdf

highly respected, independent third party that would administer the program. Next, they designed a confidential, voluntary, non-punitive incident reporting system that can be used by any person to share information about safety incidents. The safety data gathered from incident reporting is used to identify and reduce system vulnerabilities and gain a better understanding of the root causes of human error so as to eliminate them.

However, it is also true that where companies are provided the option of either not providing any information or providing some information (as identified by them) the objective of the disclosure regulation may not be met. Allowing firms to report in the absence of legal requirements gives them the privilege of deciding what to report, when to report and to whom to report (publicly or selectively). From a regulatory point of view, while this does provide *some* information, it also gives companies freedom to manage their image and advance other strategic objectives.[38] However, voluntary schemes may have other drivers, some of which are discussed later in the context of the Carbon Disclosure Project.

With this overview of how disclosure-based regulation can be more appropriate than command-and-control and market-based instruments to trigger improved corporate responses to climate change, this paper now discusses specific advantages and limitations of disclosure-based regulation.

*Advantages of Disclosure-based Regulation*

*Improves Accountability***:** Corporate accountability, in its simplest form is about giving account to the shareholders (owners) of a company, who are often not involved with day-to-day activities, though they have a direct interest in its functioning and its outcomes. In this paper, accountability takes a broader meaning; that *all stakeholders* (investors, consumers, workers and the society in general) have an interest in the functioning of the company and are thus entitled to some kind of account of company activities. Disclosure-based regulation by requiring disclosure of company activities thus promotes accountability.[39] Further, the aggregate market pressure of informed consumers, investors and workers force producers to furnish safer and more environment-friendly and reliable products and safer, more inclusive and healthier workplaces.[40]

[38] Hilson, Chris. "Information Disclosure and the Regulation of Traded Product Risks." *Journal of Environmental Law* 17, no. 3 (2005): 305-322

[39] *Ibid*.

[40] Eugene Bardach, Robert A. Kagan. *Going by the Book: The Problem of Regulatory Unreasonableness.* London: Transaction Publishers, 2002.

*Improving choice and participation*: With relevant information individuals can avoid dangerous or risky products or situations and, instead, pursue more secure, more reliable alternatives.[41] Disclosure-based regulation also tends to have advantages in democracies. India has a Right to Information law that through disclosure requirements provides a host of information from government and public agencies to citizens; enabling citizens to read, engage and monitor their activities.[42] Requiring relevant information to be shared by private agencies thus has intrinsic democratic benefits, as it could foster civic involvement which in turn, creates greater awareness and pressure on firms for better performance.[43]

*Providing baselines and benchmarks*: Disclosure-based regulation "has often been chosen as an initial; often tentative response to emerging and thorny policy problems."[44] On a practical level, disclosure-based regulation plays some critical roles: it can provide initial baselines, and critical initial numbers that will assist regulators to establish benchmarks.[45] In the medium to longer term, the baselines will allow regulators to introduce other regulatory mechanisms to seek further improvements.

*Limitations of Disclosure-based Regulation*

There are limitations to disclosure-based regulations which need to be discussed as well. An inherent limitation is that in the absence of cross-checks or incentives for truth-telling, there is the potential for misrepresentation. By some accounts the 2008-09 financial crises exposed this limitation of disclosure-based regulation.[46]

*Higher Costs to Business*: Another important limitation of disclosure regulation is that information often costs substantial amounts to gather, aggregate and report for business. Disclosure-based regulations require businesses rather than governments to bear the informational costs, which can be considerable. Those costs are borne by government in command-and-control systems.

[41] *Ibid.*
[42] The Right to Information 2005 mandates provision of information relating to government offices and functions to Indian citizens. See http://righttoinformation.gov.in/ (accessed on January 10, 2010)
[43] Ogus, *Supra* n 28.
[44] Fung, *Supra* n 33.
[45] Bardach, *Supra* n 40.
[46] Barth, Mary E. and Landsman, Wayne R., How did Financial Reporting Contribute to the Financial Crisis? (May 6, 2010). European Accounting Review, Forthcoming; Rock Center for Corporate Governance at Stanford University Working Paper No. 79. See 'Goldman Sachs Sued by SEC for Fraud Tied to CDOs', Bloomberg, April 16, 2010 available at http://www.businessweek.com/news/2010-04-16/goldman-sachs-sued-by-sec-for-fraud-on-mortgage-backed-cdos.html (accessed on July 28, 2010). See also current efforts aimed at improving credibility in financial disclosure by the International Federation of Accountants (IFAC)'s Task Force on Rebuilding Public Confidence in Financial Reporting available at http://www.ifac.org/Credibility/ViewPoints.php (accessed on July 28, 2010)

*Determining cost-benefits***:** Measuring and determining the reasonableness of the regulation based on 'costs versus benefits' is often difficult. The costs are often tangible and it is possible to total up what it is going to cost a company to disclose information. At the same time, the benefits to society or environment and other uses of the information are often very broadly diffused and difficult to calculate. Arithmetic aside, the broader concern is whether the regulatory requirement will yield the intended benefits or not. If it does not or if the costs clearly exceed the resulting social benefits, then the regulatory requirements would be "unreasonable".[47] If the costs are not high, the information disclosure regulation could show impressive net benefits to society.

*Impact on Small Firms***:** Compliance costs may vary with the size of the firm. Generally speaking, the compliance cost per unit of production will be greater for a firm with a small output than one with a large output. Thus, the disclosure regulation will benefit large firms at the expense of small firms and, at the margin, may well drive some of the latter out of business.[48]

*Limited Public Capacity***:** Even if the costs are not too high, the provision of information is sometimes ineffective, or even counterproductive. This is so for various reasons, the primary of which is that people often have limited capacity to use the information. If the information is not provided in a clear and usable form, it may actually make people less knowledgeable than they were before, producing overreactions, or under reactions, based on an ability to understand what the information actually means.[49] Further, technological development, globalization and the internet have increased the significance of quality information; but its communication is problematic and often involves a high degree of subjectivity.[50]

*Relevance and Mode of Information***:** Equally bothersome is the reality that a mandatory disclosure requirement could end up compelling the disclosure of information that most of the public do not care very much about. In most cases, rules of thumb and cognitive shortcuts (previous own experience, brand and reputation etc.) are used to determine consumer decision-making. Few consumers, investors or workers may take advantage of this information in making their decisions. It is difficult to determine how much information is enough and also what the most effective manner of communicating it is.

*Framework for Analysis:*

[47] Bardach, *Supra* n 40, p.6
[48] Ogus, *Supra* n 28, p.125
[49] Sunstein, *Supra* n 35
[50] Ogus, *Supra* n 28, p.132

In this section I draw on a framework developed by Fung, Graham and Weil (2007).[51] This framework was developed after careful scrutiny of a select group of 18 disclosure-based regulations from the US and other countries. These were all regulations that (a) fit the definition of disclosure-based regulation; (b) were mature regulations; (c) were distilled across a range of public policy areas, with potentially important consequences[52] and; (d) have had their effectiveness assessed in rigorous empirical studies.[53] This multidisciplinary approach allowed the authors to develop a theory of effectiveness for disclosure-based regulations that explains the varying outcomes of existing policies.

At a macro-level, they conclude that disclosure-based regulations are most effective when they are user-centred and sustainable.[54] User-centred disclosure-based regulations are those that place the individuals and groups who will use the information at the centre-stage of the regulatory design. Sustainable disclosure-based regulations are those that "gain in use, accuracy and scope over time" as policymakers fill the gaps discovered by reluctant information disclosers.

They conclude that the reasons why disclosure regulations are gaining traction are because:

- conventional forms of government intervention are sometimes ill-suited and rigid; disclosure regulations often reflect 'pragmatic compromises';
- it is a politically viable means of responding to emerging risks in the context of widespread skepticism about the capacity of government alone to solve the problems and;
- the internet provides new ways to customize and share information about the risks companies create.[55]

In the public domain, electronic capabilities to layer, customize and share information have shattered the settled assumption that in-depth information can be communicated only among a small group of experts while broad audiences should only receive superficial ideas or simple warnings.[56]

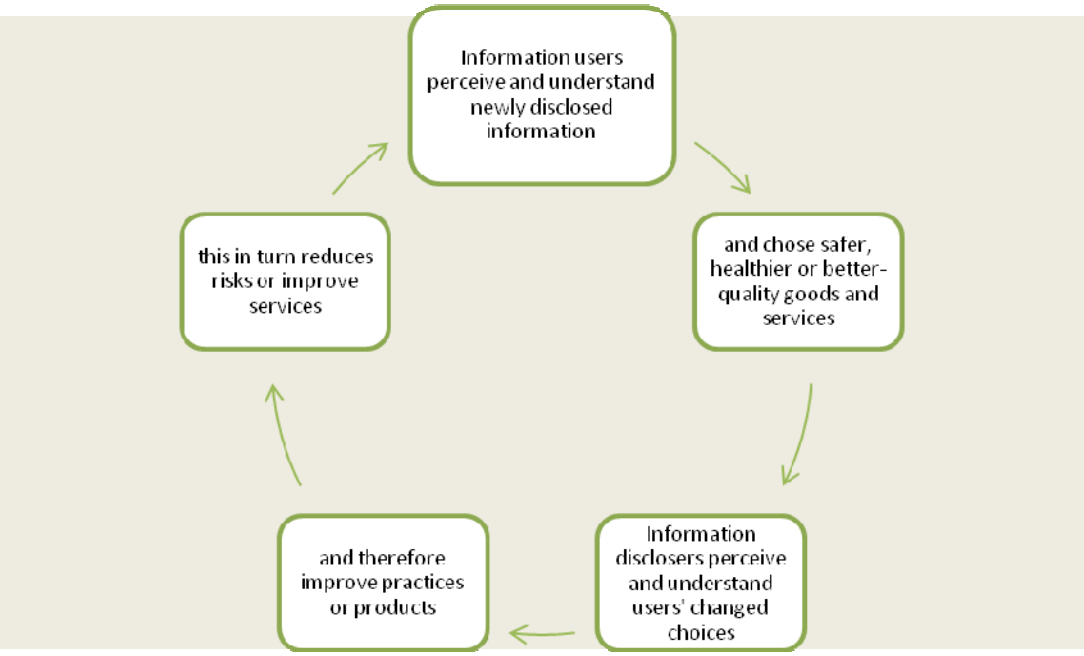
The core characteristics for a successful disclosure-based regulation are:[57]

1. Mandated public disclosure by corporations or other private or public organizations;

[51] Fung *et. al., Supra* n 33
[52] *Ibid*. at p.12-13. The authors looked at disclosure regulations across a range of public policy areas: company financial data, campaign financial data, workplace hazard data, genetically modified food labeling, infectious disease surveillance data, mortgage lending disclosure, toxics release data, nutritional data, school performance data, terrorism threat disclosure, drinking water contaminant data, patient safety disclosure, etc.
[53] *Ibid*. at p.10
[54] *Ibid*.
[55] *Ibid*. at p.14-15.
[56] *Ibid*.
[57] *Ibid*. at p.6

2. Of standardized, comparable, disaggregated information;
3. Regarding specific products or practices to further a defined public purpose;
4. Incorporating an "action cycle".

Government action is required to make public disclosure mandatory. This is because only governments can compel disclosure of information from private entities, legislate performance in transparency and create disclosure requirements backed by the legitimacy of democratic processes.[58] The "Action Cycle" is a crucial ingredient since it completes the accountability loop of the disclosure regulation. As conceived by the authors, the "action cycle" works in the following way:




The 'action cycle' ensures that disclosure regulations focus on the needs and interests of the information users, as well as on their ability to comprehend the information provided, hence remaining "user-centred".

The paper will now discuss the empirical data collected to explain corporate India's experience with disclosure-based regulation on energy conservation.

**Corporate India and Disclosure-based Regulatory Efforts on Energy Conservation:**

This section of the paper evaluates three different efforts at disclosure that have been attempted in India. The first is the requirement to publish energy consumption and related data under the

[58] *Ibid*.

Companies Act, 1956; the second is a recent policy effort by the Bureau of Energy Efficiency that builds on the Companies Act disclosure and requires select companies to capture and file energy consumption data and meet standards issued by the Bureau; and the third is the Carbon Disclosure Project (CDP), which is a voluntary effort by the investment community that requests companies for information of their carbon emissions. Whereas the CDP effort is directly linked to carbon and climate change, the other two policies examined are more focused on energy, though they too have effects on carbon

*1. Energy Conservation under the Companies Act*: The first is the 1988 amendment to the Indian Companies Act, 1956 which introduced the Companies (Disclosure of Particulars in the Report of Board of Directors) Rules.[59] The rationale for picking this policy instrument is because (a) it was probably the first disclosure-based regulation by the government dealing with energy conservation / efficiency (in turn related to the climate change) within the Indian corporate sector; and (b) it was introduced in 1989 and therefore provides over 20 years of data, which is publicly available.

These Rules made it mandatory for companies to disclose (as part of the Report of the Board of Directors in the Annual Reports) a statement relating to, *inter alia*,

- energy conservation measures undertaken by the Company;
- additional investments and proposals, if any, being implemented for reduction of consumption of energy;
- impact of the measures at energy conservation and reduction of energy consumption and consequent impact on the cost of production of goods ;
- total energy consumption and;
- efforts made in technology absorption for conservation of energy.[60]

The rationale behind this amendment was not climate change-focused: indeed, there was less scientific consensus about "climate change" at the time and it consequently received less political and academic attention. The Statement of Objects and Reasons states that the amendment was based on the recommendations of the High-Powered Committee on Companies and MRTP Acts,

[59] The amended Companies Act, 1956 section 217(1) reads: "There shall be attached to every balance sheet laid before a company in general meeting, a report by its Board of directors, with respect to… **the conservation of energy**, **technology absorption**, foreign exchange earnings and outgo, in such manner as may be prescribed." (emphasis mine)

[60] The Companies (Disclosure of Particulars in the Report of Board of Directors) Rules, 1988 was published by Notification No. GSR 1029, dated 31 December 1988. It applied to companies upon closure of accounts on April 1, 1989.

1977, also known as the Sachar Committee.[61] The Sachar Committee was asked to, *inter alia*, "consider and report on what changes are necessary in the Companies Act, 1956… with particular reference to… measures by which re-orientation of managerial outlook in the corporate sector could be brought about so as to ensure the discharge of social responsibilities by companies…"[62]

In its report, the Committee recommended: "In order to ensure implementation of the concept of social responsibility and *dissemination of adequate information* in this regard, a provision should be made in the Act that every company, along with the Directors report shall also give a Social Report, which will *indicate and quantify in as precise and clear terms* as possible the various activities relating to socially responsible aspects which have been carried out by the company in the previous year."[63] (Emphasis mine)

In 1988, when the amendment was introduced in Parliament, the focus was narrowed.[64] The focus on energy consumption and conservation, in particular, was supported by the Ministry of Petroleum, which wanted companies to report on their energy use, and in particular to estimate the savings companies could make from improved energy conservation.[65] "This information needed to move from the boiler room to the board room."[66] The rationale was to get board members involved with energy conservation issues. "If every year, the board members see that the savings (to the company) from energy conservation efforts has been nil, nil, nil, they will turn around and ask WHY and in this way, the company will be forced to start looking for avenues to improve their energy efficiency"[67]

Not all companies were required to provide this information, only those in energy-intensive sectors.[68] The mandatory disclosure requirement was accompanied by criminal sanctions for non-

[61] Justice Rajinder Sachar was the Chairman of the Committee. This Committee was constituted by the Ministry of Law, Justice and Company Affairs (as it was then known) vide Resolution No. 7/6/77-CL.V dated 23 June, 1977. See Press Release No. 14/46/85-CL-V, issued by the Government of India, Department of Company Affairs, 23 June 1989.

[62] Terms of Reference, High-Powered Committee on Companies and MRTP Acts, Ministry of Law, Justice and Company Affairs, Government of India, 1977

[63] Chapter XII, Recommendations, Report of the High-Powered Committee on Companies and MRTP Acts, Ministry of Law, Justice and Company Affairs, Government of India, 1977.

[64] See Notes on Clauses, Companies (Amendment) Act, 1988. "Clause 30 seeks to amend section 217 to require companies to disclose prescribed particulars regarding **conservation of energy, technology absorption** and foreign exchange earnings and outgo." (Emphasis mine)

[65] Interview with Dr. Ajay Mathur, Director-General, Bureau of Energy Efficiency, Ministry of Power, Government of India conducted on February 4, 2010 by the author.

[66] *Ibid*.

[67] *Ibid*.

[68] The following 21 industries were required to provide the information: Textiles, Fertilizers, Aluminum, Steel, Refineries, Petro-chemicals and chemicals, Cement, Dairy and food processing, Cold storage plants, Electric arc furnaces, Chlor alkali, Edible oil, Engineering (Steel forging and re-rolling), Glass, Jute, Paper, Refractory and pottery, Tea, Tire, Sugar and Drugs and pharmaceuticals. Schedule to the Companies (Disclosure of Particulars in the Report of Board of Directors) Rules, 1988.

compliance.[69] A survey of the Annual Reports of 30 largest Indian companies (based on market capitalization on a randomly chosen date in January 2010)[70] over the period 2006-2009 confirms that companies required to submit this information have maintained compliance with the disclosure requirement.

Banks and financial institutions are among those industries excluded from providing this information. Interviews conducted with representatives of India's largest banks confirm that they believe that "these regulations are not applicable to us."[71] No convictions have been recorded under this law till date.[72] Does this suggest that the policy achieved what it set out to do?

The response to this question is mixed. The information was sought by the Department of Company Affairs; not the Stock Exchange. Therefore, even if the company did not comply with the requirement, the Exchange does not have jurisdiction and does not track compliance with this requirement under the Companies Act.[73]

The Ministry of Corporate Affairs does look at this portion of the Annual Reports, but the focus is compliance; i.e., whether the company has included the information in the Directors Report or not; not the content or quality of the information provided.[74] Despite being the lead Ministry for corporate issues, and the Ministry that administers the Companies Act, 1956, the Ministry has not conducted any study on what information companies have been filing.[75]

However, another Ministry has paid more attention to these reports. In 2005, the Bureau of Energy Efficiency at the Ministry of Power asked the Centre for Monitoring Indian Economy (CMIE)[76] to go through the data filed by companies since 1988 and interpret it while also identifying possible trends.[77] They wanted to know if companies had been improving their energy conservation efforts and whether some sectors and industries were doing better than others.

[69] Companies Act, 1956. Section 217(5). "If any person, being a director of a company, fails to take all reasonable steps to comply with the provision of sub-sections (1) to (3)… he shall, in respect of each offence, be punishable with imprisonment for a term which may extend to six months, or with fine which may extend to twenty thousand rupees or both."
[70] See Appendix A
[71] Interview with Mr. B. Gopalakrishnan, President and Head (Law), Axis Bank conducted by email; and interview with Mr. Sachin Khandelwal, Senior General Manager, 'Go Green' Banking Initiative, ICICI Bank conducted by telephone by the author on March 22, 2010.
[72] Interview with Manoj Arora, Director, Ministry of Corporate Affairs, Government of India conducted on February 9, 2010 by the author.
[73] Interview with a senior official at the National Stock Exchange conducted by the author in January 2010.
[74] Interview with Manoj Arora, Ministry of Corporate Affairs, *Supra* n 72
[75] *Ibid*.
[76] http://www.cmie.com/
[77] Interview with Ajay Mathur, Bureau of Energy Efficiency, *Supra* n 65

CMIE went through Annual Reports of hundreds of companies over a period and told the Bureau of Energy Efficiency that the data was incomprehensible for analysis.[78]

The primary problem with the data was that companies were asked to report on energy conservation efforts at the level of the *entire company*. So even though companies were reporting on their energy consumption data and energy conservation efforts, it was impossible for CMIE to ascertain if a decrease in energy consumption was due to improved energy efficiency or simply the shutting down of one plant.

Further several companies produced multiple products, and ran multiple factories and production units; and since the data was aggregated at the level of the entire company, it made analysis and comparisons impossible.[79] It was not possible to distinguish between energy efficiency measures and the introduction of new products and processes or the streamlining of existing ones.

The lack of a standardized reporting framework further complicated any potential analysis. For instance, some sugar factories that produced electricity through co-generation added this quantity to their energy conservation data, while other sugar factories did not.[80] This made intra-industry comparisons also impossible. In the absence of a harmonized reporting framework, individual companies developed their own parameters for reporting. Consequently, the 1988 amendment requiring mandatory disclosure of energy consumption and energy conservation data can be said to have been "of limited or no help to the government."[81]

But it does appear to have helped a few companies, and to this extent the desire to shift the information from the "boiler room to the board room" may have seen some progress. Though it is difficult to establish whether and how board rooms used this information, it has been opined that the process of collection, aggregation, reporting and analyzing the data year-on-year was useful.[82]

From this early example of a disclosure-based regulation, the following key lessons emerge: (a) there needs to be greater clarity and purpose for requiring the disclosure; (b) there is need for institutions and informed civil society to use the disclosed data and; (c) even in the absence of these two requirements, there is evidence that some companies find disclosure-based regulation useful.

*Perform, Achieve and Trade (PAT) scheme under the Energy Conservation Act:*

[78] *Ibid*.
[79] *Ibid*.
[80] *Ibid*.
[81] *Ibid*.
[82] Interview with Mr. Nazeed Arif, ITC Ltd. and Mr.A.J. Satoskar, Head, Corporate EHS, Larsen & Toubro conducted by the author via email

The second policy evaluated is a much improved extension of the Companies Act disclosure requirement; the PAT (Perform, Achieve, Trade) scheme by the Bureau of Energy Efficiency. The PAT scheme is not a pure disclosure-based regulation; indeed it is a market-based mechanism to enhance cost-effectiveness of improvements in energy efficiency in large energy-intensive industries, through certification of energy savings that could be traded.[83] However, since it involves collecting and reporting information as an adjunct to market-based regulation, it is included in this paper. The PAT scheme has been introduced under the Energy Conservation Act, 2001, and adopts mandatory-reporting requirements[84] similar to the Companies Act, 1956, while also learning from its limitations. As in the case of the Companies Act, the focus of the PAT scheme is energy-intensive industries, identified in the scheme as "designated consumers".[85] However, unlike the Companies Act where companies had to disclose energy consumption and energy conservation data at the level of the company, under the PAT scheme companies are required to report this information *per unit of production*.[86]

Another gap in the Companies Act disclosure requirement, the absence of a harmonized reporting framework has been overcome by the Ministry of Power rolling out detailed rules on the form and manner of reporting energy consumption and energy conservation data.[87] The PAT scheme is quite new,[88] and the Bureau of Energy Efficiency has only received two years of data (the reporting format was provided in 2008).

Since energy-intensive companies are required to provide energy consumption data *per unit of production*, this is expected to allow policy makers to not just compare energy consumption figures between companies, but also specify energy consumption norms for each band of companies to meet. Later this year, the government is expected to specify energy consumption norms for 714 identified energy-intensive industries, aggregated into bands / groups.[89] Companies that do better than the targets set by government would have the excess (savings) provided to

[83] Interview with Dr. Ajay Mathur, Director-General, Bureau of Energy Efficiency, Ministry of Power, Government of India, December 1, 2009 available at http://www.theclimategroup.org/our-news/interviews/2009/12/1/ajay-mathur-on-energy-efficiency-in-india/

[84] Every act of non-compliance will attract a penalty of ten thousand rupees and for continuing non-compliance, one thousand rupees per day. Section 26, Energy Conservation Act, 2001.

[85] The Ministry of Power has notified 9 energy-intensive industries as 'designated consumers' under the Energy Conservation Act, 2001: 1) Thermal Power Stations, 2) Fertilizer, 3) Cement, 4) Iron & Steel, 5) Chlor-Alkali, 6) Aluminum, 7) Railways, 8) Textile and 9) Pulp & Paper. See http://www.bee-india.nic.in/content.php?id=5

[86] The Energy Conservation (the Form and Manner for Submission of Report on the Status of Energy Consumption by Designated Consumers) Rules, 2007, Ministry of Power, Government of India available at http://www.bee-india.nic.in/notifications/GSR174(E).pdf

[87] *Ibid*.

[88] The government is still finalizing the blueprint for implementation of this 'trading' aspect of the scheme. See Anil Sasi, "India Inc may soon be trading energy-saving certificates", BusinessLine, January 26, 2010 available at http://www.thehindubusinessline.com/2010/01/26/stories/2010012653000100.htm

[89] *Ibid*.

them as tradable energy savings certificates. These could then be sold to other units unable to comply with their specific energy consumption norms.[90] In order to assist with implementation, the Ministry has begun empanelling energy auditors and ESCOs (energy service companies).[91]

Unlike the Companies Act that requires information to be disclosed to the public (through Annual Reports); the PAT scheme only requires companies to collect the information and report it to the Bureau of Energy Efficiency. The scheme as it stands today does not require the information to be disclosed to the public, and may not even qualify to be termed as a disclosure-based regulation. Nonetheless, since the PAT scheme has potential to develop into a disclosure-based regulation, it is worth observing carefully in the future.

*GHG Emissions under the Carbon Disclosure Project:*

The third disclosure effort that is evaluated is the Carbon Disclosure Project (CDP). The CDP is a voluntary global initiative based in the UK that provides a platform for companies around the world to report on their carbon emissions.[92] There are three levels of reporting – called 'scopes'– sought under the CDP: scope 1 are carbon emissions due to processes in the companies' business, scope 2 is energy consumed by the company, and scope 3 are emissions by other enterprises that are related to the operations of the company (for instance, those in the supply chain or emissions due to business travel.)[93] CDP began in 2002 and the first Indian companies were included in 2006.[94]

The CDP's leverage comes from its representation of the investment community: in 2010, it spoke for more than 534 investors from around the world having US$64 trillion worth of assets under management.[95] Over 2,000 companies around the world report their climate change strategies and GHG emissions based on a questionnaire sent by the CDP coordinators.[96]

The rationale for picking the CDP despite it being a voluntary disclosure model is because (a) it provides a comparator case to identify what, if any, are perceived incentives to disclose; (b) it focuses on corporate disclosure of energy consumption and GHG emissions (directly climate

[90] Interview with Ajay Mathur, Bureau of Energy Efficiency, *Supra* n 83.
[91] ESCO (Energy Service Company) is defined as "A consultancy group engaged in a performance-based contract with a client firm to implement measures which reduce energy consumption and costs in a technically and financially viable manner." Bureau of Energy Efficiency, Ministry of Power, Government of India, 2008. See http://www.bee-india.nic.in/content.php?id=16
[92] See http://www.cdproject.net/
[93] For a detailed explanation of what is included in Scope 1, 2 and 3, see https://www.cdproject.net/en-US/Respond/Pages/CDP2010-Guidance-Index.aspx (accessed on February 20, 2010)
[94] CII-ITC Centre of Excellence for Sustainable Development & WWF, Carbon Disclosure Project Report 2010: India 200, available at http://assets.wwfindia.org/downloads/carbon_disclosure_project_2010_india_200_report.pdf (accessed on October 31, 2010)
[95] *Ibid*.
[96] For the complete questionnaire sent by CDP to companies, see https://www.cdproject.net/CDP%20Questionaire%20Documents/CDP_Investor_2010.pdf (accessed on February 20, 2010)

focused) and; (c) Indian companies have been included in the CDP starting 2006, and responses to the CDP over the period 2006-2010 are publicly available.

Initially Indian companies were included as part of the CDP Asia study. However, starting 2008, separate CDP India studies targeting the largest 200 Indian companies (by market capitalization) are being conducted. In this paper, the responses of India's largest 30 companies are analyzed over the period 2006-2010.[97] (Table 2) The questions ask companies if and how they have integrated the long-term value and costs of climate change impacts into the assessment of the financial health and future prospects of their businesses.

**Table 2 – Survey of responses to the Carbon Disclosure Project[98]**

| % | **2006 (Companies surveyed: 12)** | **2007 (Companies surveyed: 25)** | **2008 (Companies surveyed: 28)** | **2009 (Companies surveyed: 30)** | **2010 (Companies surveyed: 28)** |
|---|---|---|---|---|---|
| **Non responsive** | 41.66% | 44% | 46.42% | 50% | 35.71% |
| **Declined to participate** | 16.67% | 0 | 0 | 0 | 10.71% |
| **Provided incomplete information** | 0 | 4% | 0 | 0 | 0 |
| **Provided complete information but did not want it shared** | 25% | 24% | 10.71% | 6.67% | 10.71% |
| **Provided complete information and shared it publicly** | 16.67% | 24% | 39.28% | 43.33% | 42.85% |
| **Response merged with parent company** | 0 | 4% | 3.57% | 0 | 0 |

In terms of actual numbers, while the overall number of companies who have responded to the questionnaire has been gradually increasing, there has been a steady set of companies who have

[97] The India 200 Report of 2010 is available at http://assets.wwfindia.org/downloads/carbon_disclosure_project_2010_india_200_report.pdf All other reports are available at https://www.cdproject.net/en-US/Results/Pages/All-Investor-Reports.aspx (accessed on October 31, 2010)
[98] *Ibid.*

ignored the questionnaire or declined participation. This is confirmed by the percentages of responses (Table 2). Even adding companies like Hindustan Unilever (who merged its response with that of its parent company in 2007 and 2008) and companies who provided incomplete information to the category of those who responded to the questionnaire, the overall percentage of companies who have responded to the CDP has moved from 41.67% (2006) to 56% (2007) and 54% (2008) to 50% (2009) and is currently 53% (2010).

Probing this data could potentially provide key insights to why companies do and do not respond to voluntary disclosure requests. At the global level, despite being voluntary, CDP has multiple drivers: existing regulatory frameworks in some countries, stakeholder pressure (for e.g., green standards for procurement), existing investments in climate mitigation measures, resource risks (water, energy, raw materials), supply chain risks and green business and service opportunities.[99] In India, the incentives for reporting are similar. In addition to the supply chain and market-based financial value arguments, there is also the comparative positioning (companies want the first-mover advantage in their sector) as well as the bandwagon impact (companies do not want to be outliers).[100] "The bottom line is that the companies who respond to the CDP or are considering responding to it understand that it adds value to their business."[101]

**Table 3 – India's top 200 companies performance compared to Australia's top 200, China's top 100, South Africa's top 100 and the top 500 Global companies** [102]

| Sample | % of sample that responded (2009) | % responders seeing regulatory risks (2009) | % responders externally verifying emission disclosure (2009) | % responders engaging with policymakers on responses to climate change (taxation, regulation, carbon trading) (2009) |
|---|---|---|---|---|
| Australia 200 | 52 | 79 | 46 | 73 |
| China 100 | 10 | 67 | 22 | 44 |
| **India 200** | **22** | **34** | **27** | **55** |

[99] David St. Maur Sheil, Carbon Disclosure Project, Presentation made at the CSR Asia Summit, organized by CSR-Asia, 27-28 October 2009, Kuala Lumpur.
[100] Interview with Bhoopinder Bali, CDP India, conducted by the author on February 9, 2010.
[101] Interview with Ms. Bhawna Prasad, Head, Business and Industry, WWF-India conducted by the author on February 9, 2010.
[102] Data sourced from CDP 2009 Report, CII-ITC Centre of Excellence for Sustainable Development & WWF, Carbon Disclosure Project Report 2009: India 200, p.18 available at http://assets.wwfindia.org/downloads/cdp2009_1.pdf (accessed on February 20, 2010)

| | | | | |
|---|---|---|---|---|
| South Africa 100 | 68 | 73 | 38 | 65 |
| Global 500 | 81 | 78 | 63 | 74 |

Indian level of CDP reporting is rather poor (see Table 3) when compared to most other geographical locations – except China. The limited reporting is primarily due to the low levels of awareness about how companies should collect the data for responding to the CDP questionnaire.[103] "They are still putting their data collection systems in place… it is gradually moving forward."[104] Another difficulty has been the time period for reporting. The CDP period for reporting is one calendar year (January to December) while Indian companies tend to report based on the financial year (April to March).[105] Companies prefer to report after the financial reports are audited.[106]

Nonetheless, this example shows that some companies are undertaking focused efforts to account for, reduce and manage their carbon footprints, and a few are willing to share this publicly. Since the primary audience of CDP disclosures are investors, the question that remains is whether the information furnished in the disclosures is influencing the decision-making of financial institutions. In 2009, CDP published the results of a survey it carried out of its institutional investors to assess how CDP data is being used and how its use might be enhanced.[107] Several institutional investors indicated that they were working towards systematically incorporating CDP data into financial analysis and it was a key goal for many of them.[108] They expect to increase their use of CDP data over time, but were still refining their approach to use the data, given its relatively new and evolving status.[109]

The survey revealed that investors use the CDP data to enhance their engagement with companies; either to compare the progressive climate-friendly companies against the laggards, or as a means of validating other sources of information. Some investors focus on companies already

[103] Interview with Mr. Sachin Joshi, Deputy Director, Confederation of Indian Industry, ITC-CII Centre on Sustainable Development conducted by the author on February 8 , 2010.
[104] *Ibid*.
[105] *Ibid*.
[106] *Ibid*.
[107] Investor Research Project – Investor use of CDP data, Carbon Disclosure Project, February 2009.
[108] *Ibid.* at p.17
[109] *Ibid.*

reporting to improve the level of disclosure; while others target companies who have not responded to the CDP request at all, encouraging them to do so.[110]

The key lesson that comes out of this example is that companies perceive different "incentives" to disclose information. However, where the costs for collecting and disclosing the information outweigh any perceived benefits – a voluntary effort like the CDP will have low traction among business. This could be at the level of transaction costs – for instance, CDP adopting a different time frame for reporting or perceived low benefits due to the limited number of Indian institutional investors currently represented by CDP.[111] "As more members of the Indian financial sector get involved with the CDP, you will see higher levels of responses – both in terms of quantity and quality."[112] When this happens, it could potentially lead to more use of the CDP data in investment decisions by institutional investors in such a way as to influence the manner in which companies respond to climate change.

**Disclosure-based Regulatory Efforts: Framework for Analysis**

In this section of the paper, the three regulatory efforts will be analyzed using the framework of an effective disclosure-based regulation.[113]

1. Mandated Public Disclosure (by corporations)
2. Of standardized, comparable and disaggregated information
3. Regarding specific products or practices (to further a defined a public purpose)
4. Incorporating an 'action cycle'

*1. Mandated Public Disclosure*: The Companies Act and the PAT scheme make collecting and disclosing information mandatory, and non-compliance will attract punishment either in the form of imprisonment or fines. On the other hand, as the CDP disclosures are voluntary they do not meet the first requirement of the framework. The voluntary CDP effort is not accompanied by any sanctions for non-compliance, though as the CDP experience suggests, there could be other drivers for disclosure. As Dr. Navroz Dubash rightly suggests, "The voluntary versus mandatory reporting is important. But stating exactly what information needs to be collected and how, is more important. Otherwise the effort is of no use."[114]

[110] *Ibid.* at p.18
[111] Interview with Bhoopinder Bali, CDP India, *Supra* n 100
[112] *Ibid*.
[113] Fung *et. al., Supra* n 33
[114] Interview with Dr. Navroz Dubash, Senior Fellow, Centre for Policy Research conducted by the author on February 5, 2010.

The Companies Act disclosure-requirement scores high by making the disclosures "public" since the disclosure forms part of the annual report of the company. Annual reports are circulated to all shareholders and are freely available on the website of the company and at the office of the Registrar of Companies.

On the other hand, companies who provide responses to the CDP can choose to withhold the sharing of their response with the public. This restricts the potential for stakeholders to receive information on the companies' activities. The PAT scheme restricts company disclosures to the government and does not share it with others. Though mandatory, the PAT scheme is not 'public' disclosure.

*2. Standardized, Comparable and Disaggregated Information*: Under the Companies Act comparison was impossible since the information was aggregated and provided at the company level. The Companies Act disclosure requirement also suffered from the lack of a standardized reporting framework. The PAT scheme seeks to overcome this limitation by prescribing a detailed reporting framework; and since the data is provided per unit of production, it becomes eminently possible for policy makers to compare relative energy efficiencies of different companies. Companies too can ascertain relative efficiencies and seek to improve their performance under the PAT scheme. For instance, if Steel company A consumes X units of electricity to produce 1000 kg of steel, and company B consumes X+1000 units of electricity to produce 1000 kg of steel, company B knows there is scope for improvement in their energy efficiency. However, with the government intending to establish different targets for different companies in the same sector based on their "potential", the scope for comparison reduces.[115] With the CDP disclosures, comparison is possible but is subject to the companies agreeing to share their responses with the public.

The Companies Act and PAT scheme have been structured around the annual financial reporting cycle of companies. This makes it convenient for companies to collect, aggregate and report their energy data.[116] The CDP on the other hand, seeks information in the month of May, for the period from January to December of the preceding year. This will definitely incur additional costs for the company, and unless there are significant benefits (real or perceived) companies may choose not to respond to the questionnaires.

[115] Interview with Chandra Bhushan, Associate Director, Centre for Science and Environment, conducted by the author on February 9, 2010

[116] Interview with Dr. Sejal Worah, Director (Programs), World Wide Fund for Nature – India conducted by the author on February 9, 2010.

*3. Regarding Specific Products or Practices (to further a defined Public Purpose):* The Companies Act requires energy consumption and conservation details at the level of the company; the PAT scheme requires detailed electricity consumption including consumption by specific fuels per unit of production and; the CDP requires details about GHG emissions and strategies adopted by the company to reduce emissions.

Though not included in the framework for analysis, it may also be pertinent to compare the scope of these efforts. The scope of the PAT scheme is narrow, focusing on 714 industries from 9 energy-intensive sectors based on a threshold of energy consumption.[117] There is much merit in starting with a manageable number of industries, but there is some controversy about not including the chemical industries and the entire transport sector (barring railways).[118] The Companies Act is much wider, though its focus is also on energy-intensive industries. The Companies Act disclosure-requirements apply to 21 industries irrespective of their actual energy consumption.[119] The CDP, on the other hand, applies to the largest 200 companies in India based on market capitalization, and is not related in any way to energy-intensity or energy consumption.

The CDP and the PAT scheme thus have limited or no impact on small firms, since they do not require disclosure from small firms. However, the Companies Act does not distinguish on market capitalization or energy-consumption thresholds, and potentially could have greater impact on small firms. This is also related to compliance costs to the company, since they tend to vary with the size of the firm. Generally speaking, the compliance cost per unit of production will be greater for a firm with a small output than one with a large output.[120]

*4. Incorporating an 'Action Cycle'*: The CDP 2009 report reveals that very few Indian companies perceive regulatory risks because primarily there is no pull factor from NGOs or the public.[121] "Greater pull from retail and institutional investors, asset managers, NGOs and the media will have tremendous impact on the way companies look at the disclosure-requests."[122] This is closely related to the limited public capacity in India. If the information is not provided in a clear and

[117] The threshold for Thermal Power Stations, Fertilizers, Paper & Pulp, Cement and Iron & Steel is 30,000 metric tons of oil equivalent (MTOE) per year; for Chlor Alkali, it is 12,000 MTOE per year; for Aluminum it is 7,500 MTOE per year, for Textile it is 3,000 MTOE per year and for Railways, any electric traction Sub-Section(TSS), diesel loco shed, Production units and Workshops having total annual energy consumption of 30,000 MTOE. See http://www.bee-india.nic.in/content.php?id=5

[118] Interview with Ravi Agarwal, Toxics Link, *Supra* n 17.

[119] Textiles, Fertilizers, Aluminum, Steel, Refineries, Petro-chemicals and chemicals, Cement, Dairy and food processing, Cold storage plants, Electric arc furnaces, Chlor alkali, Edible oil, Engineering (Steel forging and re-rolling), Glass, Jute, Paper, Refractory and pottery, Tea, Tires, Sugar and Drugs and pharmaceuticals. Schedule to the Companies (Disclosure of Particulars in the Report of Board of Directors) Rules, 1988.

[120] Ogus *Supra* n 28, p.125

[121] Interview with Bhawna Prasad, WWF-India, *Supra* n 101

[122] Interview with Bhoopinder Bali, CDP India, *Supra* n 100

usable form it may confuse people.[123] For instance, when a microbe infested the drinking water of Milwaukee, Wisconsin in 1993 and caused widespread illness and even death, the US Congress responded by requiring water authorities to inform their customers about contaminants in the water supply. However, the information that reached consumers was a detailed laboratory analysis of the various metals, organic, inorganic and radioactive pollutants, their concentrations and the range of their presence in the water sample. In other words, the information was so complex that some consumers ended up relying on the information as an assurance that the water was safe, when it was actually unsafe for drinking.[124] In fact, the number of health incidents from consumption of contaminated tap water *increased* after the information was provided.[125]

All three efforts, the CDP, the Companies Act and PAT scheme require detailed information from companies. The disclosed information is quite technical and comprehensible only by sector experts and relevant policy makers. To the credit of the CDP process, the information they receive goes through analysis to make it readable and useful for investors. But for the other stakeholders and in the case of the other regulatory efforts, the link between information disclosure and accountability as well as efficiency is weak since other stakeholders do not participate. To reiterate, disclosing information to the public in a form that is comprehensible to them is key to the action cycle.

In similar instances, the response has been to replace provision of raw data with symbols (for instance, a five star rating of water safety or energy efficiency). The PAT scheme has thus begun accrediting energy auditors and energy service companies to scrutinize and interpret the information and certify the companies' performance. The symbol (auditor's certificate) thus replaces the information because it is easier for people to comprehend but in itself the symbol is not accurate. There is thus a trade-off between the relevancy and accuracy of the information and its comprehensibility.

A summary of the relative strengths and weaknesses of the three efforts is tabulated below:

**Table 4 – Comparative analysis of existing disclosure-based regulatory efforts**

| **Characteristic** | **Companies Act** | **PAT Scheme** | **CDP** |
|---|---|---|---|
| **Mandated public disclosure** | Yes, mandatory and public | Mandatory, but not public | Not mandatory; partially public |

[123] Adrian Henriques, *Supra* n 32
[124] Fung *et. al., Supra* n 33, p.7-8
[125] *Ibid*.

| | | | |
|---|---|---|---|
| **Standardized, comparable, disaggregated information** | Not disaggregated or standardized making comparison impossible | Standardized and disaggregated, but not comparable (different targets for different industries) | Yes, standardized, comparable and disaggregated |
| **Regarding specific products or processes to further a public purpose** | Seeks to make Boards aware of energy consumption and thus improve energy conservation | By requiring energy consumption data per unit of production, and allowing trading energy savings, seeks to incentivize energy efficiency | Seeks to make companies aware of their GHG emissions, benchmark against global companies and reduce GHG emissions |
| **Action cycle (Users understand and use the disclosed information in their purchasing behaviour** | Information is provided to shareholders but aggregated data makes use of information difficult | Information is limited to government agency, making it impossible for others to use this information | Information provided to investors, whose investments depends on how companies perform on GHG reduction |

This comparative analysis leads to the following inferences:

1. None of the three policies meet all aspects identified by the framework for an effective disclosure-based regulation.

2. Mandatory Public Disclosure: The Companies Act fulfils the requirement of this characteristic, followed by PAT scheme. The CDP disclosures are voluntary.

3. Standardized, comparable and disaggregated reporting: The CDP disclosures fulfil this requirement by providing standardized, comparable and disaggregated reporting. The PAT scheme meets most of the requirements of this characteristic, except that it sets different targets for different industries making comparison difficult. The Companies Act data does not meet any of the ingredients of this characteristic because the data are not standardized or comparable and are aggregated.

4. Incorporating an 'Action cycle': This is clearly the weakest aspect in all three regulatory options studied. The Companies Act provides information to the public by publicly disclosing the information; but information-users cannot act on it since the data is not standardized, comparable or disaggregated. The CDP focuses on investors, and has limited impact because of the low number of Indian investors that subscribe to CDP. PAT withholds information from public, thus denying the opportunity for the 'action cycle' to begin.

## Conclusion

The analysis conducted in this paper has been limited by the fact that none of these regulatory efforts / schemes relating to energy conservation or GHG emissions has been explicitly designed as disclosure-based. This paper argues that to be effective there has to be this intent in the design of the regulation. Since this has not been the intent, it can be argued that it is premature to evaluate these regulations with a disclosure-lens. But extrapolating from other experiences of disclosure-based regulation, and building on the promising glimmers from the examples discussed in this paper make the case that this is an approach worth investigating.

This paper does not profess to have a silver bullet answer. Instead, it offers a list of inferences from this analysis as its conclusion.

1. Disclosure-based regulation requires the presence of strong institutions like the Bureau of Energy Efficiency and / or strong pull factors from civil society;

2. Designing the level of resolution and aggregation of disclosure must be done in order to encourage the public to use the information and act on it;

3. Transaction costs can be minimized, for e.g., through adoption of financial year reporting frequencies (in the case of CDP) to assist companies to see the benefits of disclosure;

4. Purely voluntary efforts have low uptake from companies; and may not yield the anticipated regulatory outcomes;

5. Designing the regulation such that disclosure of information is made available to the public is the most critical component for the success and effectiveness of the regulatory effort.

In the design of new policies aimed at improving corporate response to climate, or indeed, in the review of existing policies, like the PAT scheme, designing the scheme to place information in the public arena would allow the 'action cycle' to operate, bringing with it several benefits of disclosure-based regulation. Seen alongside precedents like the CSE Green Rating project, and the National Campaign for People' Right to Know, it is reasonable to argue that redesigning existing policies or designing new ones with an explicit disclosure-based approach could be made to work in India.

This must be accompanied by more efforts on public education and consumer education such that the public can demand accountability from the companies. Several of the benefits of disclosure-

based regulations are contingent on the use of the information by the stakeholders including investors, consumers and the general public.

To conclude, it is important to underscore the various benefits of the disclosure-based regulatory approach including in establishing benchmarks. Collecting information provides baselines and allows year-on-year comparison.[126] There is a lack of information on current energy consumption parameters (per unit of production) and possible improvements (which the PAT scheme seeks to overcome for some sectors) and also on what technologies would be required to help companies reduce their energy-intensity.[127] There is also need to better understand if these technologies are capable of being retrofit in some of the vintage manufacturing units in India.[128]

All of these, point to the need to enhance the information base in the country, and this is a task that a disclosure-based regulation is best suited to do. With an improved knowledge base on technologies and processes, it would also be possible to create blueprints or field manuals for how companies could reduce energy intensity and GHG emissions, even at the sectoral level. In the present case, where corporate India needs to improve its response to the challenges posed by climate change, this paper has argued that government policy must focus on the creation of incentives and disincentives, creation of knowledge and getting corporate India to self-catalyze. However, to figure out whether government policy aimed at catalyzing industry is achievable or not, it is necessary to have information in the public arena; and this is where disclosure-based regulation holds the key.

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[126] Interview with Dr. Lavanya Rajamani, Associate Professor, Centre for Policy Research conducted by the author on February 5, 2010.
[127] Interview with Dr. Nitya Nanda, Fellow, TERI conducted by the author on February 9, 2010.
[128] *Ibid.*

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## Appendix A

India's largest 30 companies (as on January 8, 2010)[129]

| S.No. | Company | Sector | Market capitalization (in Rs. Crores) |
|---|---|---|---|
| 1 | Oil and Natural Gas Corporation Ltd. | Oil and Gas | 2,60,225 |
| 2 | NTPC Ltd. | Power | 1,90,346 |
| 3 | Reliance Industries Ltd. | Oil and Gas | 1,81,050 |
| 4 | MMTC Ltd. | Miscellaneous | 1,76,542 |
| 5 | NMDC Ltd. | Metals and mining | 1,66,140 |
| 6 | State Bank of India | Finance | 1,45,197 |
| 7 | Infosys Technologies Ltd. | IT | 1,41,459 |
| 8 | Tata Consultancy Services Ltd. | IT | 1,37,101 |
| 9 | Bharati Airtel Ltd. | Telecom | 1,23,454 |
| 10 | BHEL | Capital goods | 1,18,620 |
| 11 | SAIL | Metals and mining | 98,695 |
| 12 | Larsen and Toubro Ltd. | Capital goods | 98,296 |
| 13 | Wipro Ltd. | IT | 98,123 |
| 14 | ICICI Bank | Finance | 97,306 |
| 15 | ITC Ltd. | FMCG | 96,943 |
| 16 | Sterlite Industries Ltd. | Metals and mining | 76,245 |
| 17 | HDFC Ltd. | Finance | 74,083 |
| 18 | HDFC Bank | Finance | 72,831 |
| 19 | Jindal Steel and Power Ltd. | Metals and mining | 66,226 |
| 20 | DLF Ltd. | Housing related | 66,224 |
| 21 | Reliance Petroleum Ltd. | Oil and Gas | 58,882 |
| 22 | Hindustan Unilever Ltd. | FMCG | 58,022 |
| 23 | Cairn India Ltd. | Power | 57,933 |
| 24 | Tata Steel Ltd. | Metals and mining | 57,703 |
| 25 | GAIL (India) Ltd. | Oil and Gas | 54,379 |
| 26 | Hindustan Zinc Ltd. | Metal and mining | 53,376 |
| 27 | Power Grid Corporation Ltd. | Power | 48,359 |

[129] As on January 8, 2010 (4 pm). http://money/rediff.com/companies/market-capitalisation

| | | | |
|---|---|---|---|
| 28 | Maruti Suzuki Ltd. | Automobiles | 41,397 |
| 29 | Axis Bank | Finance | 40,739 |
| 30 | Tata Motors Ltd. | Automobiles | 40,566 |

## Appendix B

### Survey of responses to the Carbon Disclosure Project[130]

| S. No. | Name of Company | CDP 2006 | CDP 2007 | CDP 2008 | CDP 2009 | CDP 2010 |
|---|---|---|---|---|---|---|
| 1 | **ONGC** | NR | AQ+ | AQ+ | AQ+ | AQ+ |
| 2 | **NTPC** | AQ* | AQ* | NR | NR | NR |
| 3 | **Reliance Industries** | NR | NR | NR | NR | NR |
| 4 | **MMTC** | NC | NC | NR | NR | NC |
| 5 | **NMDC** | NC | NC | NC | NR | NR |
| 6 | **SBI** | AQ* | NR | AQ+ | AQ+ | AQ+ |
| 7 | **Infosys Technologies** | AQ+ | AQ+ | AQ+ | AQ+ | AQ* |
| 8 | **TCS** | NR | NR | AQ+ | AQ+ | AQ+ |
| 9 | **Bharati Airtel** | AQ* | AQ* | NR | NR | NR |
| 10 | **BHEL** | NC | NC | NR | NR | NR |
| 11 | **SAIL** | NC | NR | NR | NR | NR |
| 12 | **L&T** | NC | NR | NR | AQ+ | AQ+ |
| 13 | **Wipro Ltd.** | NR | AQ+ | AQ+ | AQ+ | AQ+ |
| 14 | **ICICI Bank** | NR | AQ+ | AQ+ | AQ+ | AQ+ |
| 15 | **ITC Ltd.** | AQ+ | AQ+ | AQ+ | AQ+ | AQ+ |
| 16 | **Sterlite Industries** | NC | NR | AQ+ | AQ+ | AQ+ |
| 17 | **HDFC** | NC | AQ* | NR | NR | NR |
| 18 | **HDFC Bank** | NC | AQ+ | AQ+ | AQ+ | AQ* |
| 19 | **Jindal Steel & Power** | NC | NR | NR | NR | NR |
| 20 | **DLF Ltd.** | NC | AQ* | NR | NR | DP |
| 21 | **Reliance Petroleum** | NC | NR | NR | NR | NC |
| 22 | **Hindustan Unilever Ltd.** | DP | SA | SA | AQ+ | AQ+ |
| 23 | **Cairn India** | NC | NC | AQ+ | AQ+ | AQ+ |
| 24 | **Tata Steel** | NC | AQ* | AQ* | AQ* | AQ+ |
| 25 | **GAIL (India) Ltd.** | DP | NR | AQ* | NR | NR |
| 26 | **Hindustan Zinc** | NC | NR | AQ* | AQ* | AQ* |
| 27 | **Power Grid** | NC | NC | NC | NR | DP |
| 28 | **Maruti Suzuki** | NC | AQ* | NR | NR | NR |
| 29 | **Axis Bank** | NC | IN | NR | NR | DP |
| 30 | **Tata Motors** | NC | NR | AQ+ | AQ+ | AQ+ |

**LEGEND**

**NR:** No response
**DP:** Declined to Participate
**IN:** Provided incomplete questionnaire
**AQ*:** Answered questionnaire, but did not want it shared
**AQ+:** Answered questionnaire and publicly shares it
**NC:** Not contacted
**SA:** Response merged with parent company

[130] CDP Reports. *Supra* n 97

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