

MRV Challenges of Integrating National Initiatives into International Mechanisms

A Case of Perform, Achieve and Trade Mechanism in India

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Key Message

- Synergising PAT with International mechanisms is expected to face methodological challenges and raise concerns about double counting.
- Stakeholders observe possibility of stringent MRV measures if linked with international mechanisms.
- PAT scheme may make necessary methodological adjustments and procedural modifications to fit into international mechanisms, depending on the success of its first operational cycle.

The views expressed in this working paper are those of the authors and do not necessarily represent those of IGES. Working papers describe research in progress by the authors and are published to elicit comments and to further debate.

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1. Introduction

Carbon market has emerged as a significant component of the climate mitigation efforts. It has brought together efforts by government and business sector in combating climate change. Despite the apprehensions about the fall in price³ of carbon credits, potentially leading to the collapse of the clean development mechanism (CDM) it is noted that 'the current and upcoming domestic and regional Emission Trading Schemes (ETS) and Market Mechanisms in several countries such as South Korea, China, Brazil, etc., are an example of the growing interest and awareness among countries.'⁴ As any negative impact on the carbon market may potentially affect the climate mitigation efforts in developing countries. It is important, therefore, to take measures that ensure continued interest among countries to sustain the mechanism. Creating adequate demand for credits among developed economies by raising ambition level of mitigation is an important policy step to ensure sustainability of carbon markets. Newer mechanisms proposed by certain countries have also been emerging as promising pathways for sustaining the carbon market by generating supply and demand for carbon credits. However, the most important aspect regarding the new mechanisms and their compatibility with the existing international carbon market will depend on the effectiveness of institutional setup, especially the measures adopted for monitoring, reporting and verification (MRV). There are many critical questions that raise concern about the feasibility of new mechanisms. First, whether the monitoring and evaluation structure proposed or developed by the host country will be compatible with the requirement of international mechanisms? Second, whether the domestic

mechanism with its originally planned design and purpose would be sufficient enough to generate carbon credits? Third, can the host government accept the MRV measures that are stipulated by international mechanisms? And fourth, how far can a domestic program designed to meet domestic targets an international mechanism without being criticised for double counting.

In order to examine these questions, the study focuses on India's domestic energy saving certificates trading scheme, Perform Achieve and Trade (PAT)⁵ that has gained significant attention from policy makers as well as industries alike. Although PAT is designed to be a domestic scheme, it has the potential to gain support from international finance and technology transfers, enhancing its sustainability and success. This, however, would require compatibility of the governance structure of PAT with those that an international arrangement may require apart from the questions raised in the above section. This paper explores the possibility of linkages between the PAT scheme and the bilateral carbon offset mechanism proposed by the Government of Japan. It is well established that linking a domestic program with any international mechanism requires it to demonstrate efficient institutional structure for monitoring and verification. Considering the fact that the exiting measures of monitoring and verification under the PAT are primarily developed based on the domestic requirement, any attempt for linking it with any international carbon offset mechanisms would require development of specific guidelines that ensure transparent monitoring, reporting and verification tools and also avoid double counting at the same time. Building on the stakeholder interviews conducted during the month of August 2012, this paper elaborates on three important issues. First, it describes the functioning of the PAT scheme

³ In June Reuters reported that 'CER prices have lost around 70 per cent of their value over the past year, mainly due to a supply glut and flagging demand for carbon permits due to a slowing European economy', under the report 'UN Carbon credits fall to new record low', Reuters, Accessed: <http://www.reuters.com/article/2012/07/30/carbon-market-idUSL6E8IU8Q820120730>, 30 July 2012.

⁴ Pradipto Ghosh, Ritika Tewari, Carbon markets on verge of collapse, <http://www.trust.org/alertnet/news/carbon-markets-on-a-verge-of-collapse-require-immediate-rescue-by-nations-suggests-un-panel/> Accessed: 23 Oct 2012.

⁵ The Perform Achieve and Trade program is developed as a policy tool under the National Mission on Enhanced Energy Efficiency, one of the missions focusing on mitigation under the National Action Plan on Climate Change. The Mission focuses on four key areas including PAT, Market Transformation for Energy Efficiency (MTEE) for accelerated shift to energy efficient appliances through promoting innovation and advanced technologies, Energy Efficiency Financing Platform (EEEP) institutional structures for overcoming barriers to energy efficiency project and Framework for Energy Efficient Economic Development (FEED).

and its institutional arrangement. Second, it lists some of the key challenges that various stakeholders face in successfully implementing or participating in the scheme. And third, it elaborates on the potential ways of linking PAT with international and bilateral carbon offset mechanisms. In particular, it explores if the existing MRV measures are sufficient enough to equip the scheme to benefit from international support and collaboration.

2. PAT: The Institutional Framework

The Perform Achieve and Trade program is developed as a policy tool under the National Mission on Enhanced Energy Efficiency (NMEEE). The scheme aims to contribute to the overall energy efficiency improvement of the country by specifically addressing the energy efficiency issues in the industrial sector. The first cycle of PAT is also aimed to achieve energy saving of 6.686 mtoe distributed among the selected industrial units.⁶ As the industrial units under the same sector possess wide bandwidth of energy consumption levels it highlights the potential for energy saving. Hence each unit are mandated by the PAT to reduce their energy consumption based on their current specific energy consumption (SEC) or baseline SEC. The baseline specific energy consumption has been estimated with the yearly average of past three years of energy consumption and production of units from the year 2007-08 to 2009-10. According to BEE the specific energy consumption of a unit is calculated using the method: $SEC = (\text{net energy input into the designated consumers' boundary} / \text{total quantity of output exported from the designated consumers' boundary})$ ⁷

In its first cycle the PAT program covers only those units from selected energy intensive sectors termed as designated consumers (DCs) whose annual energy consumption is more than a certain threshold level. Among these various sectors power sector will have

the highest contribution to energy saving target, which is currently estimated to be close to 50%. The targeted saving is to be achieved by 2015 as the first cycle ends.

The governance structure in terms of hierarchy among various agencies can broadly be described with four different institutional structures. The overarching structure is provided by the specific functions that the Bureau of Energy Efficiency (BEE) has to perform under the Energy Conservation Act of 2001 and the guidance provided by the National Mission on Enhance Energy Efficiency under the National Action Plan on Climate Change⁸. The overall scope for the BEE to intervene and regulate, and hence that of the PAT scheme, is defined and limited by the Act. At the second level are the agencies that have the responsibility and authority to demand information from the industrial units covered under the scheme. These include the State Designated Agencies (SDAs) and Accredited or Designated Energy Auditors (DEAs). At the third level are the designated energy consumers (DC) and a range of solution providers helping industry with ways to improve energy efficiency. These are the actors that would play important role in the success of the scheme. Hence, the choices that these actors make will define whether the targets set by the BEE under the PAT scheme are achieved, or the SDAs and DEAs are able to perform their assessments with adequate certainty. The fourth level consists of Energy Exchanges where the energy saving certificates is to be traded. Apparently, they are likely to operate independent of the BEE interventions.⁹ In its simplest form, the BEE is responsible to lay down rules, guidelines and procedures to achieve the targets of the NMEEE, in accordance with the Act. The SDAs and DEAs draw their responsibilities and authority from these rules, guidelines and procedures. The designated consumers are legally bound to take action and provide necessary information as stipulated by the BEE, particularly in terms of format and frequency of reporting and meeting the target. Solution providers (e.g. energy and

⁶ PAT Booklet, Bureau of Energy Efficiency, Government of India, New Delhi, July 2012 p-5

⁷ PAT Booklet, Bureau of Energy Efficiency, Government of India, New Delhi, July 2012 p-5.

⁸ The 'National Action Plan on Climate Change' was released by Prime Minister's Council on Climate Change on June 30th 2008.

⁹ Interview with SP Garnaik, Energy Economist, BEE. Government of India, on 30th August 2012 at Bureau of Energy Efficiency, New Delhi.

technology consultants) help the DCs to meet these requirements keeping in mind the business preferences of DCs. Together, the flow of actions and information among these three institutional structures will generate a commodity in the form of energy saving certificates (ESCs). The ESCs can be traded through energy exchanges such as Power Exchange India Limited (PXIL), which will function as independent commodity markets

3. MRV Framework of PAT: Challenges and Capacity Development Opportunities

The credibility of the scheme, and hence its contribution to the achievement of goals set in the Energy Conservation Act 2001 and the NMEEE, depends on the reliability of the MRV framework. So far the BEE has developed the framework for measurement and reporting but the structure for verification is in the process of conception.¹⁰ The purpose of the MRV mechanism under the scheme is to ascertain the changes in the value of a single variable i.e. the specific energy consumption (SEC) of a plant. SEC is measured according to the Gate-to-Gate concept, which defines SEC as the ratio of net fossil fuel based energy input to the total output from a plant. Important to note here is that renewable energy input is not accounted for in measuring SEC. The reporting framework consists of the three forms (A, B, and C) prescribing the format and required information that each of the designated consumer must provide (BEE 2012)¹¹ and an E-filing network. The E-filing network is an internet based platform where all designated consumers are to submit their energy consumption data in prescribed formats.

Various levels of stakeholders view different types of challenges as critical to the effective implementation and success of the scheme. These challenges will have a major role in influencing the trajectory of the program in the further cycles of PAT and hence are of utmost policy relevance.

3.1. Policy-level Challenges for Administrator, Nodal Agency and State Designated Agency

Identifying designated consumers: One of the critical challenges faced by PAT in its initial stage was to identify the actual major energy consumers that could be brought under the scheme. Though the initially planned designated consumers were more than seven hundred, the number of final consumers shrunk to less than five hundred. This was primarily due to the changes in the numbers estimated by the State Designated Agencies which were the nodal point for collecting and sharing information about the specific industrial units listed under each state.

Centre-State Administrative Dilemma: Often the impact of centre-state relations is seen as a critical factor in deciding the effectiveness of national level policies that are to be implemented in the states. The differences in jurisdiction of the state government and the central government over specific industrial units will be a critical factor in determining the efficacy of MRV process that is being developed under the PAT scheme.

3.2. Implementation Challenges for Designated Consumers

The most critical challenge faced by the DCs in adhering to the PAT scheme is the lack of adequate in-house capacity in terms of estimating, managing and implementing energy efficient practices within the premises of industrial units. PAT scheme stipulates that every industrial unit needs to have an energy manager who would be responsible for the activities related to energy efficiency improvement, including data management. The industrial units also require capacity in terms of understanding the best practices in energy saving. Factors such as lack of product uniformity or diversity under a single category of industrial units¹² also put burden on the DCs in meeting the MRV processes.

¹⁰ Interview with SP Garnaik, Energy Economist, BEE. Government of India, on 30th August 2012 at Bureau of Energy Efficiency, New Delhi.

¹¹ PAT Booklet, Bureau of Energy Efficiency, Government of India, New Delhi, July 2012

¹² According to Avijit Choudhury ([Accredited Energy Auditor], ENFRAGY Solutions Pvt. Limited, New Delhi) various industrial units under a single category DCs undertake different industrial activities which has different specific energy consumption e.g. in textile industry, different industrial products are involved but are often put under same category of units as per PAT classification.

3.3. Challenges to Monitoring and Reporting for Accredited Energy Auditors

From the interviews with industry consultants and energy auditors who verified the data towards determining baseline SEC, against which the individual targets are decided, it is evident that there are considerable problems related to measurement and reporting due to management practices and capacities of personnel at the DCs. Many respondents have found a range of inadequacies at the staff level which is responsible for maintaining necessary data in appropriate formats. These inadequacies primarily relate to:

Lack of information about the procedures and requirements: even though the top management might be aware of these requirements through various consultation processes, the lower level staffs are not adequately well informed about what information to keep and in what format. Although, from the minutes of the four stakeholder consultations that the BEE had with industry, it appears that on many procedural issues the BEE officials did not provide a clear satisfactory answer.

Understaffed energy management units: It is a legal requirement for the DCs to have an energy manager who has been certified by the BEE through examination. Although, all DCs have informed the BEE to have appointed these energy managers, the SEC baseline auditors have faced a problem of the energy management cell at plant level being understaffed, and hence, unorganized, making the reporting and verification process cumbersome.

A similar problem has already been identified by the BEE with regard to technical capability of the SDAs in order to assess and evaluate provided data. This, however, has been taken care of by the capacity building exercises by the BEE.

A second type of problem that has been reported relates to the methodological challenges in calculating SEC under different scenarios. This is particularly complex in case of multiple by-products from a plant. Since the SEC is to be measured for the plant and not different products, SECs for all by

products are required to be converted and aggregated into the SEC of the main product that the plant produces. The variety of products within same sector plants, which in some cases such as textile can be in 100s, makes it difficult to apply any common method for measurement.

From the discussion above, capability enhancement for DCs and DEAs emerges as the key challenge and need from the MRV perspective. In addition, lack of cooperation from the DCs with DEAs has also been pointed out by experts¹³ as factors that adversely affected the estimation of energy consumption in the industrial units.

Although the verification structure is still emerging, the process followed during the determination of baseline SEC is generally believed to be adequate. The mutually agreed methodology by the DCs and DEAs to calculate SEC and its two level approvals by the EESL and the BEE ensures that sufficient checks and balances are there in the process. In addition the provision of stringent penalty to be paid by the DEAs (termination of license and full payment of calculated loss) in case of wrong information favouring any DC ensures that DEAs remain disciplined and alert in their work. To carry out the verification work, the BEE is in the process of identifying/training/examining energy auditors (individuals as well as institutions) to be awarded the status of 'accredited energy auditors'.¹⁴

3.4. Operational Trajectory of PAT and its Sustainability

Whether the PAT scheme is able to deliver its energy efficiency objectives, would also depend, in addition to the efficacy of the governance and MRV mechanisms, on the ability of the DCs to meet their targets and continuity of the scheme over a long period of time. With respect to continuity of the scheme there is a sense of confidence among different stakeholders. This optimism is grounded in the belief that the random threshold energy

¹³ Interview with Energy Auditors (Anonymous)

¹⁴ Interview with SP Garnaik, Energy Economist BEE. Government of India, on 30th August 2012 at Bureau of Energy Efficiency, New Delhi.

consumption at plant level, which is the basis to identify a DC, can be modified. In addition, new sectors are likely to be added to the scheme. Together, these two steps are expected to expand the scope of the scheme vertically as well as horizontally over time.

On the operational feasibility of the scheme, however, stakeholders follow a wait and watch approach.¹⁵ Operationalization of the scheme implies that there is actual reduction in the SEC of a plant. The scheme relies on the combination of incentives and penalties. While the possibility that some may not achieve their targets provides a strong incentive for those who are in a position to overachieve (in addition to the benefits of energy savings), the cost implications in case of failing to meet the targets in the form of paying penalties (at the current price of underachieved oil equivalent energy consumption plus Rs. 10 Lakh) is even a stronger incentive to perform. It is expected that those who fail to meet their targets would use a mix of trading and paying penalties. But for trade to occur at least some DCs must over-achieve their targets. In this context, some are of the view that the 'trade' part of the PAT scheme is only accidental and there is no guarantee that trade would necessarily happen. Those involved in the designing of the scheme, however, feel that some, particularly those who have a higher target to achieve are not likely to be able to meet required targets. Hence, trade is bound to occur. Further, to safeguard against a situation of general overproduction of ESCerts, the BEE has also provided for government buying those ESCerts.¹⁶

The challenges to PAT operation and its continuity, mostly regarding the targets to be achieved are many and cannot be ignored. In the first instance, due the gap between the baseline year and beginning of the first cycle of the scheme, it is generally believed that the actual targets for many DCs have become relatively lenient and hence most of them are likely

to meet their targets. Nonetheless, there are concerns regarding access and awareness of technological options, availability of finance and positive reaction by industry. However, for the first cycle, these concerns are rather mild. More so, because the BEE has already developed a technology compendium to facilitate DCs choose action along with the provision of a Risk Guarantee Fund combined with technical assessment of actions to build confidence among the financial institutions to support energy efficiency projects. The real concerns begin with the second cycle, which begins immediately after the first cycle gets over in 2014. For those who have achieved a higher level of efficiency in the first cycle, the achievement of second cycle targets would require huge investment in technologies. Realization of that may take longer time. In that case DCs are likely to falter in meeting their targets.

To avoid such situations, the option of banking energy savings from the first cycle has been allowed. This implies that early movers will have advantage. However, some stakeholders are of the view that the necessary legal guarantee to support such 'early movement' is not there yet. There is a lack of clarity on the nature of targets in the second cycle for those who have been given targets in the first cycle. While there is a general expectation that there would be a second cycle and more targets would be given to DCs, a stronger indication is needed to give enough incentives for early investments.

4. PAT and Linkages with International Carbon Offset Mechanisms

Currently PAT mechanism is designed as a national scheme for improving industrial energy efficiency. The energy efficiency targets under the PAT scheme neither create any international obligations nor has any linkage to international financial instrument for emission reductions. According to the Energy Efficiency Services Limited (a Joint Venture Company of 4 Central Public Sector Undertakings of Ministry of Power, Government of India) 'PAT has no relationship with CDM or any such international scheme to incentivize emission reduction. Specific

¹⁵ Balwant Joshi, IBPS infra. New Delhi, interviewed on 27 August 2012

¹⁶ Interview with SP Garnaik, Energy Economist BEE, Government of India, on 30th August 2012 at Bureau of Energy Efficiency, New Delhi.

Energy Consumption (SEC) reduction targets under the PAT mechanism do not create any international obligations. These targets also do not intend to put any overall cap on energy consumption, consistent with the Indian stand in the on-going climate change negotiations'.¹⁷ However, looking at the procedures of the CDM and the proposed bilateral offset credit mechanism, it appears that with some modifications in the rules and regulations of the PAT scheme it may be institutionally compatible with the two mechanisms.

4.1. Synergies with Bilateral Offset Credit Mechanism Proposals

There have been various thoughts from industry experts about exploring options to tap the international finance options. 'The two prominent methods discussed by experts for making the international finance available to PAT scheme are: first, international finance can be directly utilized for the trading the ESCerts and second, the use of carbon offset fund can help the Indian government to create a domestic fund which in turn may finance the energy efficiency projects through providing soft loans'.¹⁸

As various proposals for new market mechanisms are being discussed widely, Bilateral Offset Credit Mechanism (BOCM) emerges as one of the options gaining policy attention in certain countries. The government of Japan submitted its proposals for BOCM to the UNFCCC secretariat in February 2011, highlighting that the new mechanism would enable faster diffusion of low carbon technology products and services. Japan's Ministry of Environment has supported various feasibility studies jointly with Global Environmental Centre Foundation which identified 29 projects in various countries that look at areas such as water management, biomass utilization, transportation, renewable energy, energy efficiency, REDD+ etc.¹⁹

The general scheme of BOCM is depicted in Figure 1. According to the proposal, Japan will support projects in developing countries with low carbon technologies, products and services that will enable them to reduce emissions. In return, the achieved emission reductions would be accounted for as contributing to the achievement of Japan's emission reduction pledges. The calculation balancing the exchange of support with flow of offsets will be based on the mutually developed and accepted methodologies.

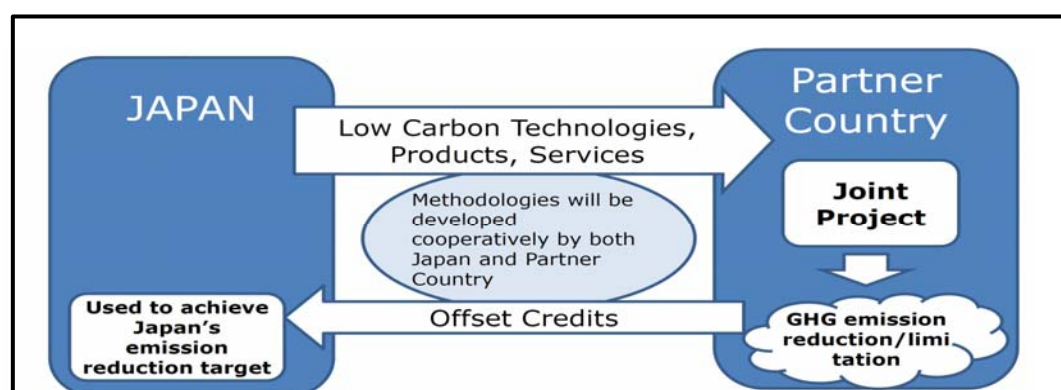


Figure 1. Schematic Representation of the BOCM

Source: Ministry of Environment, Japan, Accessed: http://www.mmechanisms.org/document/120309-MOEJ_Initiatives_on_BOCM_en.pdf (20/05/2012)

¹⁷ PAT Scheme, Accessed, 2 Nov 2010, <http://www.eesl.co.in/website/PAT.aspx>

¹⁸ Keith Regan, Potential benefits of Indian Industry by the PAT Scheme, <http://cij.in/WebCMS/Upload/Keith%20Regan%20-%20Camco%2018th%20presentation.pdf>, Accessed: 15 Sept 2012.

¹⁹ MoEJ initiatives of Bilateral Offset Credit Mechanism, November 2011, Climate Change Policy Division, Ministry of Environment Japan.

Currently, the PAT's methodological apparatus focuses on the calculation of reduction in SECs. However, consumption of fossil fuels can very well be translated into actual or avoided emission reductions, as is the case in the CDM. Further, improvement in SEC will require additional investment and advanced technologies. Therefore, the BOCM and PAT may find synergies among them. However, there are two main challenges that any attempt to link the two mechanisms will have to address.

Methodological Challenges: The primary challenge, however, would be that of developing appropriate methodologies to calculate emission reductions that can be used as offsets without compromising the logic and functioning of the PAT scheme. This would require not only synergies in the two institutional structures, but also additional legal mechanisms and modified guidelines and provisions. While the BOCM is intended to simplify the methodologies and shorten the time lag that usually appears in the case of exiting international offset mechanisms, attention needs to be paid in ensuring that the mechanism is comparable in benefits. The methodology used for estimation of emission reduction for the project or the scheme in the host country also needs to be compatible with that of the BOCM. In the case of PAT, this is one of the points highlighted by the stakeholders during the interviews. The existing methodologies governing PAT are structured in a way to meet the domestic targets of energy savings. There do not exist, as of now, any specific measurement and verification methods to assess emission reductions which may be a part of BOCM.²⁰ The challenge that any methodology linking PAT and BOCM will have to face would be to ensure that the offsets are calculated as over and above the achievement of energy saving targets under the PAT scheme.

Policy Challenges: Another critical issue being discussed widely is the acceptability of BOCM at the level of international climate negotiations as well as

in a host country. Unless the BOCM is recognized at the international level, its purpose to provide flexibility to Japan to meet its emission reduction pledges at lower costs would not be fulfilled. Further, the fact that BOCM is proposed as a mechanism that bypasses the existing offset mechanisms like CDM always raises questions and often makes way for debates about the credibility. This has been one of the factors that hinder any specific policy development favouring the BOCM in host countries.

4.2. PAT Compatibility of MRV structures for synergising with International Carbon Offset Market

Compatibility in terms of synergising with international carbon offset is reflected in two ways. First, the institutional arrangement, procedural requirements for data collection and reporting are already established or in the process.²¹ Second, the Scheme is expected to avoid CO₂ emission of 98 million tons per year²² which could be utilized in the carbon offset markets. However, there are also conceptual and institutional differences that need to be resolved before the PAT program could be linked to any International Carbon Offsetting Markets. First, challenge specific to CDM is the requirement of emission reductions being 'additional' to what is required by the regulatory and legal framework of the country. The emission reductions under the PAT are not additional on this account as they are a by-product of an assigned target to improve SEC. Second, under the PAT scheme the data is not collected on all parameters that are necessary to calculate emission avoidance. This however could be resolved with careful modifications in the data requirements as the processes of MRV are already in place. Third, currently the data is available to DCs, DEAs, SDAs, EAs only though login requirements, whereas the CDM requires public access to Project Design Document (PDD), including different types of data along with calculations for public scrutiny.²³

²⁰ Interview with SP Garnaik, Energy Economist BEE, Government of India, on 30th August 2012 at Bureau of Energy Efficiency, New Delhi.

²¹ Interviews and PAT booklet (requirement to submit Form# 1, Form A, B and D), e-filing

²² Presentation by S.P. Garnaik

<http://beeindia.in/NMEEE/Baseline_EA_Prebid_Conf.ppt>

²³ PDDs and associated excel files containing relevant calculations are made publicly available through the website for scrutiny.

A PDD is publicly accessible through the UNFCCC website. This, again, is not difficult to resolve. Fourth, the DEAs would do the verification. A DEA is a person who qualifies the examination conducted by the BEE specifically for the same. The CDM counterparts, the designated operational entity (DOEs) are recognized by the CDM Executive Board (CDM-EB) through a different process. These two need to be coordinated. With regard to compatibility between PAT and BOCM of Japan many of the challenges are yet to be explored as BOCM as a platform is still in its inception. However issues related to MRV mechanism, data collection, implementation of the PAT program etc. BOCM may demand stronger and stringent government intervention to ensure greater compatibility. Apart from these common challenges, BOCM may also face challenges in terms of differences in programs considered by different national governments which in turn require country specific approaches. Another potential challenge is with regard to the benefits BOCM from Japan can offers to PAT and the Indian Industry. The decision of a specific country to prefer BOCM from Japan rather than any third country will also be influenced by political economic and technological factors, where Japan may require demonstrating its competitive edge.

5. Conclusion

In this paper we have discussed the governance structure of the PAT scheme and issues related to its potential linkages with international and bilateral carbon offset mechanisms. We find that although the PAT focuses on energy savings and not on the

emission reductions, linking of this domestic market based mechanisms with international and bilateral offset mechanisms may help strengthen the domestic mechanism by way of creating a strong demand and hence sending a powerful price signal for carbon credits. However, it faces two basic hurdles. First, is the international acceptability of such linking and second relates to the methodological challenges necessary to avoid conflict between the domestic goals of a mechanism and MRV demands of integrating it with an international mechanism. Nonetheless, it may be argued that the foundational institutional and procedural arrangement for the PAT scheme may make the necessary methodological adjustments and procedural modifications easy once the international policy decisions are made increasing the mitigation ambition and accepting the linking of domestic mechanisms with international carbon offset mechanisms.

References

- Bureau of Energy Efficiency (2012), Perform Achieve and Trade (Booklet), Ministry of Power, Government of India, New Delhi.
- Bureau of Energy Efficiency (2011), PAT Consultation Document, Ministry of Power, Government of India, New Delhi.
- International Energy Agency (2011), Energy Transition for Industry: India and the Global Context, IEA, Paris.
- Central Statistical Office (2012), Energy Statistics 2012, Ministry of Statistics and Programme Implementation, Government of India, new Delhi

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