

Mitigation Talks

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From Series Editor's Desk

The climate talks after Cancun have been able to bring about only a little clarity on the architecture of the future international climate regime. There still exists uncertainty on how the eventual regime post-2012 will look like and how countries will contribute to global mitigation framework. While developed countries arguably should play a greater role and take the lead in such a framework, talks also will have to be centred on mitigation in developing countries. As we progress towards Durban, the negotiations will substantially focus on defining and operationalizing the Nationally Appropriate Mitigation Actions (NAMAs). In doing so the focus inadvertently is on 'emerging economies'. The BASIC countries (Brazil, South Africa, India, and China) thus form an interesting negotiating bloc wherein most action is expected to occur. The present series of this research letter aims to initiate an informed dialogue between various stakeholders on issues related to NAMAs with an aim to provide a comprehensive and transparent approach to assess their needs, identify effective and achievable mitigation actions, and design domestic processes with significant stakeholder participation.

This issue presents an overview of the current discussions in the climate talks in the Diplomacy section. The lead article points out that though NAMAs refer to mitigation actions by Non-Annex I Parties, the Annex I Parties also have a crucial role to play in supporting such actions. It further highlights a number of questions that still remain unanswered - especially, the lack of definitional clarity on what NAMAs are and the nature of support needed for NAMAs. Another article elaborates on the need to focus on 'balance' between Annex I and Non-Annex I requirements emphasizing on the need to maintain sufficient flexibility to cater for 'national appropriateness' of mitigation actions.

The Perspective section highlights some of the ideas that are crucial in defining NAMAs, particularly aiming to identify a set of guiding objectives for the NAMAs, on the basis of a series of expert interviews carried out. It further highlights the key areas of disagreement that needs further research. Another article conceptualizes how existing mechanisms such as p-CDM could be scaled up to take the form of NAMAs. The next article argues that investing early in data collection and capacity-building exercise can improve a country's ability to access carbon markets and finance.

In the BASIC Brief section, the first article discusses the climate policy and its drivers in Brazil, pointing out its ambitious domestic and international goals. The other article discusses, China's measurement, assessment and evaluation (MAE) systems for domestic NAMAs.



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The European Union: understanding and supporting NAMAs

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Although NAMAs refer to mitigation actions by Non-Annex I parties, Annex I parties have a crucial role to play in supporting such actions. Representing 27-member states across the European continent, the European Union (EU) is a key party with regards to Annex I parties' approach to NAMAs. Following the Cancun Agreements, the two latest rounds of international climate negotiations under the United Nations Framework Convention on Climate Change (UNFCCC)¹, have been accompanied with workshops to discuss the further development of NAMAs. Although these discussions have not narrowed the gap between proposed and necessary actions to achieve the two-degree target², it revealed what points require further attention in order to move forward. In the following, we describe a number of issues raised by the EU negotiators, most notably through a speech by the chief negotiator Artur Runge-Metzger, at the workshop on NAMAs held in Bonn³. The presentation and questions put forth by EU representatives to Non-Annex I parties during the workshop focussed on two main areas: the understanding of NAMAs and the support for NAMAs.

Understanding of NAMAs

The COP-decisions reached in Cancún in 2010 were an important step to include NAMAs in the international climate negotiation process, but the workshops conducted in Bangkok and Bonn in 2011 showed that a number of questions still remain unanswered. A prime concern is that it is by no means clear what NAMAs actually are. The scope for interpretation as to what NAMAs should contain although significant has led to a large variation in their design to date. The EU raised a number of questions in order to increase the understanding and thus increase its approach to support NAMAs.

While the Non-Annex I parties are not obliged to submit economy-wide quantifiable emission reduction targets, a number of countries including China and India, have done so. A first issue in this respect concerns the assumptions used in these targets. Some countries have expressed their targets in relation to business-as-usual (BAU) scenarios. Such scenarios require assumptions, such as a baseline and expectations of future developments, and the EU consequently raised the question of how parties arrived to their BAU calculations. Also, some countries expressed a target based on expected gross domestic product (GDP) developments, for which the EU sought further clarification on assumptions of economic growth.

NAMAs include propositions for mitigation action, but the expected impacts in terms of emission reductions from these actions are, however, not clear. Against this background, the EU expressed concerns regarding the estimation and communication of the expected impacts. A clearer view of the effects would bring important lessons of what is needed for implementation forward tailoring support to Non-Annex I parties in general and described actions in particular.

Much work consequently remains to clarify NAMAs and understand how they are going to be implemented so that their potential can be unleashed. In this context, Runge-Metzger stressed a continuous dialogue between parties, in order to increase the understanding of NAMAs.

Support for NAMAs

The principle of common but differentiated responsibilities permeates much of the discussions within the international climate negotiations. It holds that states have a joint responsibility for the protection of the environment but that different circumstances

¹ AWG-KP 16/AWG-LCA 14 in Bangkok, April 2011, and SB34 in Bonn, June 2011.

² Höhne Niklas, Hare Bill, Schaeffer Michiel, Chen Claudine, Vieweg Marion, Moltmann Sara (2011) Emissions and CO₂ concentrations at record highs: Developed countries ambition stalled while developing countries gearing up to act, Climate Action Tracker Update, June 16, 2011, retrieved August 3, 2011, at http://www.climateactiontracker.org/CAT_update_Bonn_2011-06-16.pdf

³ This article builds on an observation of this workshop and data collection for the research project 'Comparing national initiatives in a fragmented international climate regime', funded by the Swedish Energy Agency. The speech by Artur Runge-Metzger is available online at: http://unfccc4.meta-fusion.com/kongresse/110606_SB34/templ/play.php?id_kongresssession=3594&theme=unfccc

should be taken into account, in particular each state's contribution to the problem and its ability to prevent or reduce it⁴. Against this backdrop, the Annex I parties are seen as vital in providing support for mitigation action in Non-Annex I parties.

In Bonn, the EU made clear that it stands ready to support NAMAs. At the same time, it stressed their view that larger developing country parties should themselves make a substantial contribution to financing their NAMAs, complemented by support from Annex I parties. In the words of Runge-Metzger, "developing countries are in the driving seat". The EU also raised two key concerns regarding the support needed: 1) what types of support are needed, and to what areas, now and in the future; and 2) how the support from Annex I parties can be mobilized. In order to address these questions, the EU encouraged the Non-Annex I parties to articulate their needs and called for an increased dialogue with the Annex I parties ready to provide support for NAMAs.

There is a great diversity in terms of the type of support countries may request in order to implement their NAMAs. The EU recognized this in the workshop and called for a solution which manages this diversity in a cost-effective manner. A number of examples were provided to illustrate how the EU is already adjusting its support to respond to the nationally appropriate actions identified by Non-Annex I parties. Among these was the solar mission in India which can be pushed forward through a joint EU/India business and research centre. Other countries prioritize other mitigation actions, such as reforestation activities, which would call for other types of support.

Runge-Metzger demonstrated that the EU's financial support to Non-Annex I parties in the climate change area has grown over time. At the same time, he recognized that the gap between current actions and the two-degree target is partly due to an international gap in support. For this reason, the

EU wants to step up its efforts. When it comes to the climate change fast-track financing up until the end of 2012, in which Annex I parties have collectively promised to mobilize 30 billion US dollars, an important issue that comes to the forefront is that of mobilizing and how to best spend these funds. Keeping in mind the long-term finance goal, in which 100 million US dollars are to be mobilized annually, Runge-Metzger brought up the possibilities of using market-based mechanisms in order to drive mitigation action in a cost-effective way. The EU, through its regional Emissions Trading Scheme (EU-ETS), already creates by far the largest demand for international carbon credits. Finally, measurement, reporting and verification (MRV) which builds on robust systems in all involved countries was highlighted as important. Much of this work has to be done in a learning-by-doing-process, which was recognized as a process demanding support in itself.

Concluding discussion

Recent talks have shown that the EU recognizes the fact that support for Non-Annex I parties is crucial. The EU has also clearly expressed its eagerness to take forward the work with NAMAs. However, as exemplified in this article, many uncertainties still remain. More workshops were requested by the EU and others in order to sort out these questions, particularly the understanding of NAMAs and the support solicited.

At least two important lessons can be drawn from the workshops conducted in Bangkok and Bonn. For many countries, the most urgent issue is how to support the development of NAMAs as such. Thereafter, more clarity is needed on how to support the actions proposed in NAMAs. This highlights that Non-Annex I parties now have an opportunity to communicate their needs in order to create a basis for diversified support that is nationally appropriate.

⁴ The Centre for International Sustainable Development Law (CISDL) (2002). The Principle of Common But Differentiated Responsibilities: Origins and Scope, A CISDL Legal Brief, retrieved August 3, 2011, at http://www.cisdsl.org/pdf/brief_common.pdf

Striking the right balance between comparability and flexibility of mitigation actions

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Most of the current discussions in the UNFCCC mitigation space focusses on the ‘balance’ - between IAR¹ & ICA² and between Annex I commitments and Non-Annex I actions as well as Annex I support for Non-Annex I actions. ‘Comparability’ across Annex I commitments under the KP and LCA track is yet another balance, which links to the issue of deciding on common accounting rules³. This is analysed in the context of trying to maintain sufficient flexibility to cater for ‘national appropriateness’ of mitigation actions when developing the final format and function for NAMA’s and the NAMA Registry⁴.

Balance

Understandably, there is a need for balance. For example, when it comes to matching Annex I support to Non-Annex I mitigations actions or the financial flows allocated and received, the need for balance arises. There is also an element of ‘I will if you will’ – for example developing countries agreeing to make their national communications regular (every four years) only if Annex I is at least as frequent – and there is some enhancement, since they already report every four years. Where the IAR process aims to ensure comparability of Annex I Parties mitigation efforts, the ICA focuses on increasing transparency of mitigation actions and their efforts – and is not a review, does not have compliance implications or assigned consequences. The ICA primarily focuses on the international verification of voluntary domestic mitigation actions from developing countries (internationally funded actions are subject to international MRV guidelines as per 1/CP.16, para 61). The IAR process, by its name, is a review – and there is little point in having a review if it does not have consequences.

Reporting on mitigation

Discussions at the AWG-LCA in Bonn also concentrated on issues pertaining to the development

of common guidelines for MRV, Biennial Reports and Biennial Update reports. Processes for ICA and IAR need to be developed in time for COP18 and decisions need to be made about the final format and function of the NAMA and the Registry. All this geared towards providing a more robust reporting system, which will ultimately assist in recording actual and proposed mitigation efforts from developed and developing countries. Yet whilst attempting to improve consistency in the reporting mechanisms it is also important to allow the necessary flexibility for Parties to put forward a range of mitigation actions that are not limited by reporting requirements.

Flexibility of NAMA’s

The final format or function of a NAMA has not been decided nor has how to deal with supported and unsupported NAMA’s in terms of reporting. What constitutes a NAMA is also much debated – and without getting caught up in definitional issues, it is clear that NAMA’s are aimed at encouraging a range and diversity of voluntary mitigation actions appropriate for developing country Parties (BAP para (b) (ii)).

NAMA’s could be anything from a large scale wind project, where tCO₂ or \$/tCO₂ can be easily calculated, to an improved cook stove project where the co-benefits such as improved air quality and indoor health may be stronger indicators than tCO₂. NAMA’s should encourage ‘national appropriateness’ that are ideally not limited by prescribed formats, content, type, or assessed on their capacity to include quantitative indicators such as tCO₂ or \$/tCO₂. There needs to be sufficient flexibility to allow for these intricacies, which raises a series of questions for example:

- How can a NAMA format and the Registry be set up to capture and compare the diversity and range of projects?
- How broad and flexible must the MRV system be to allow for this?

¹ IAR= International Assessment and Review as per 1/CP.16, para 44

² ICA= International Consultation and Assessment 1/CP.16, para 63

³ 1/CP.16, para 41

⁴ 1/CP.16, para 43

- How will information from both Non-Annex I national communications and the Registry be brought together – in a robust reporting framework and for MRV?
- How would a registry be structured to pick up the diversity of mitigation actions without creating undue reporting and administrative burdens?
- How would such flexibility fit into the larger reporting framework aimed at improving comparability?

Furthermore, at the core of all these mitigation discussions is the aim of reducing CO₂ emissions, which in some cases is being undertaken by institutions that are not subject to UNFCCC guidelines or reporting systems. Therefore, reporting systems should be sure not to lose these mitigation projects in translation. Also these mitigation efforts may not actually be framed as a climate driven initiatives. For example projects that are aligned with other national developmental priorities – such as an improved public transport system or an energy-efficient housing scheme, could still significantly contribute to a reduction in CO₂ emissions but have not been framed as climate driven initiatives.

Comparability

According to the report back from the in-session informal group in Bonn (June 2011) on developed country mitigation⁵, many developing countries and developed countries supported common accounting rules on issues such as emissions targets, base years, sectors, GHG's and LULUCF. Such rules are well

established under the KP, but the key question remains whether the US will abide by multi-laterally agreed rules or not.

Common accounting rules are being elaborated for measuring developed country targets and enhanced reporting requirements for developing countries with the necessary financial, technical and capacity building support being developed.

Conclusion

There are attempts to incorporate flexibility into the reporting guidelines, particularly for developing countries. The ICA process recognizes the diversity of developing countries' NAMA's (ENB, 2011) by focusing on transparency rather than comparability of efforts. An MRV system will be designed to allow for domestic mitigation actions that are subject to domestic MRV without being assessed against international MRV guidelines.

Striking the right level of balance and flexibility between Annex I and Non-Annex I reporting requirements and the recording of a diverse range of mitigation actions through a NAMA registry is complex. This might be the reason for the delay in developing guidelines and deciding on process issues. However, there is recognition that there are benefits in making these decisions sooner rather than later. It will not only help in getting a better understanding of the scale of the emissions gap but also in capturing mitigation efforts however big or small and wherever possible matching support and action in order to ultimately move closer to implementation.

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⁵ Earth Negotiations Bulletin, Summary of the Bonn Climate Change Conference 6-17 June 2011, 12(513), June 20, 2011 accessed at <http://www.iisd.ca/download/pdf/enb12513e.pdf>

Objectives for Nationally Appropriate Mitigation Actions: where we agree and disagree

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The Nationally Appropriate Mitigation Actions (NAMAs) by developing countries are seen as the way forward to enhance mitigation in the developing countries. A number of Non-Annex I countries have already submitted their planned NAMAs to the United Nations Framework Convention on Climate Change (UNFCCC). Various workshops organized by the UNFCCC on these submitted NAMAs have highlighted a number of critical issues surrounding implementation of NAMAs, particularly with respect to various assumptions and need for support. A broad framework is needed to cater to these actions which are diverse in nature (Sterk, 2010).¹ This article, based on the expert interviews², aims to identify a set of guiding objectives for the NAMAs. The author further details out the views expressed by the interviewees on possible guiding objectives and then highlights key areas of disagreement that needs further research.

Possible guiding objectives

The Bali Action Plan (BAP) visualized NAMAs “*in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner*” (Para 1-b-ii). It is difficult to specify a global objective for NAMAs which are essentially situated within national contexts. Nevertheless, following three possible guiding objectives are recurrent in literature and in expert opinions:

- enhancing mitigation
- incorporating sustainable development
- enhancing cooperation

Enhancing mitigation

Most of the interviewees view mitigation benefits of NAMAs as medium to long term. They consider it as

an instrument to develop new institutions and thereby scale up the mitigation in Non-Annex I countries. Enhanced mitigation by means of NAMAs is, however, subject to ambitions of Annex I countries. Most of the respondents do not see any role for credited NAMAs without an increase in current level of ambitions. Mitigation is primarily seen as a co-benefit of NAMAs by Non-Annex I interviewees with sustainable development and other developmental prerogatives as priority objectives. This view also finds traction in Annex I interviewees but some Annex I interviewees prefer mitigation as the guiding objective for NAMAs.

Some of the interviewees agree that it is hard to establish causality between a policy action and the emission reductions achieved. The effectiveness of NAMAs—which will be difficult to measure without measuring causality—witnesses a division amongst experts, with a number of interviewees preferring to wait and watch. Nevertheless, the effectiveness of NAMAs may depend on factors such as:

- definition of NAMA under consideration,
- sources and means of funding, and
- country of implementation.

Some interviewees see in NAMAs the potential to help developing countries transform to a low carbon path, while many others are unsure if it can prevent them from getting locked up into carbon intensive technologies.

Incorporating sustainability: subjective objective

Interviewees are unanimous that each individual country should define its ‘Sustainable Development’ criteria for itself and that agreeing on a global definition of sustainable development is impossible. The interviewees are conscious of the fact that sustainable development under the CDM has been

¹ Sterk, W. (2010): Nationally Appropriate Mitigation Actions: definitions, Issues and Options, Wuppertal Institute for Climate, Environment and Energy, Wuppertal.

² As of the middle of July, 25 structured and 4 unstructured interviews were conducted as part of the study. The structured interviews comprised of detailed questionnaire based discussion whereas unstructured interviews consisted of quick discussion of 15-20 minutes. Eight of the respondents were from Germany and seven were from India.

far from perfect. There is a shared concern that if necessary steps are not undertaken, then NAMAs will face the same problems as faced by the CDM with sustainability objectives – but at a much bigger scale. NAMAs may not be the ideal solution for the incorporation of sustainable development but are nevertheless perceived as better placed than the CDM to achieve it.

The biggest challenge for NAMAs is in understanding sustainable development objectively as compared to the norm. Some interviewees feel that it is impossible to incorporate sustainable development objectively within NAMAs, while few others feel that sustainable development could act as the gelling agent for finance and a pre-requisite for NAMA. A number of interviewees suggested using criteria-based approach—while taking account of differences in Non-Annex I circumstances—to define sustainable development. A number of factors were suggested indicating trade off amongst societal, environmental and economic aspects for Non-Annex I countries. This goes in sync with Article 4.7 of the UNFCCC which refers to “*economic and social development and poverty eradication are the first overriding priorities of the developing countries.*” At the same time it was also pointed out that such an approach may not find traction with the negotiators. At a minimum, it was felt that NAMAs should not have any sort of negative impact on the Millennium Development Goals (MDGs). Others suggested following an input, rather than output based approach to undertake Monitoring, Reporting and Verification (MRV). Enhancing capacities of Designated National Authorities to define and measure Sustainable Development was also suggested.

Enhancing cooperation: supporting and enabling NAMAs

Some interviewees hope that NAMAs when subject to local decision-making process will lead to long term transformation of Non-Annex I countries. Enhancing cooperation will increase trust and can also help in creating a “joint learning platform” based on respective core-competencies for experts to reflect upon what policy instruments can be applied and modified to have coherent landscape. NAMA is seen as a more effective instrument to promote collaboration when compared to CDM. Collaboration is subject to:

- Design aspect, political will and strong incentives on both sides
- Country under consideration
- Mode of support

There is high agreement on enhanced collaboration by means of finance. Criteria to link finance and action has also been suggested. The reference though is primarily made to supported-NAMAs only. There is no agreement on NAMAs leading to greater technology transfer. On technology, interviewees point to two key issues that hamper greater collaboration:

- No clear definition of technology transfer
- Lack of clarity on financing of the patents

Although capacity building is seen as an area of collaboration, it acts more as a side effect than an end in itself. Further, greater role for governments is foreseen but private players at the moment find it hard to see their role in NAMAs.

Other relevant issues

Some other issues that can have a direct influence on the NAMAs also came to the front. Of these few include the following:

- Maintaining national sovereignty of Non-Annex I needs to be balanced with the need of taxpayers in Annex I to know where and how the money is flowing.
- Links of NAMA with Low Carbon Development Strategy (LCDS).
- It was felt important not to attach too many conditions on NAMAs.
- Offsets were suggested for projects only with high sustainable development. Two separate mechanisms, one for emission reductions and another for sustainable development only also found some traction.

Conclusion

The guiding objectives listed are by no means exhaustive. However, these are considered important by most of the interviewees in providing a common starting point to anticipate the possible impact of proposed NAMAs. There are still some complexities that need to be taken care of.

National appropriateness of individual Non-Annex I in designing its NAMA is of utmost importance. Starting the discussion with emission reduction as the primary benefit may only work to a certain extent. Further NAMAs are primarily seen as more of policy based measures which raise the question of establishing causality between policy action and emission reductions achieved. This holds true in the case of sectors such as transport and buildings which are hoped to be tapped by means of NAMAs.

On the other hand, the question of making sustainable development which is both subjective and vague, as the priority objective may lead to scaling up of the problems faced on the sustainable development front under the CDM. It is therefore important to at least agree on a criterion that helps NAI to define their respective sustainable development as a way forward.

It is foreseen that private actors will play a greater role in enhancing mitigation by means of NAMAs. But, lack of clear incentives, lack of clarity on agreed definition of technology transfer, and as to who will provide finance for patents further limits the role of private players. There is also the question of sovereignty of technology provider that needs to be addressed.

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NAMAs and Carbon Markets: certain uncertainties

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The Clean Development Mechanism (CDM) has been the key tool in the creation of carbon market in the developing countries ever since the Kyoto Protocol came into force in 2005. As of July 1, 2011, a total of 6,416 CDM projects were included in the pipeline which is expected to generate 2.73 billion certified emissions reductions (CERs) by 2012¹. By 2012, the issuance of carbon credits would have reached a volume of 27.3 billion USD (at 10\$ per CER). Hence, the CDM has made a valuable contribution towards mitigating climate change in the developing countries. Further, it has also helped in enhancing human capacity and created institutional infrastructure in the developing countries hosting CDM projects. Given these benefits the CDM is considered to be one of the most innovative mechanisms of the Kyoto Protocol.

In spite of being touted as one of the most innovative mechanisms of the Kyoto Protocol, the CDM comes with its share of shortcomings. Many have raised issues of environmental integrity, technology transfer, unequal geographical distribution and complex governance procedures in the context

of CDM. This has led to increased discussions on it being complemented with other newer mechanisms. Essentially as a means to scale-up the mitigation efforts in the developing countries. Some recent examples of new market mechanisms include the establishment of sectoral targets, where ex-post credits may be awarded for over-achieving targets. The developing countries, however, fear the philosophy behind sectoral targets which is - increasing the coverage of sectors with time and finally including the entire economy into a global carbon market. A middle path in terms of the Programmes of Activities (PoAs) or Programmatic CDM (p-CDM) was subsequently devised by the CDM EB to overcome the issue.

Arguably, the p-CDM will reduce the transaction costs and expand its reach to micro project activities as it allows for grouping of many projects into one single PoA (unlike stand-alone CDM projects) that is required to be approved only once. After the approval, unlimited and unspecified number of individual projects could be included without the need for further approvals. Also, the local, regional or national policies which could not be a part of a CDM project

¹ UNEP Risoe Centre (2011), UNEP Risoe CDM/JI Pipeline Analysis. Available from: <http://cdmpipeline.org/> [Accessed: August 2, 2011]

could now be included under a PoA. The PoAs were introduced with the intent of lowering transaction costs and giving an enhanced ability to the LDCs or small island countries that are most vulnerable to climate change but lack the potential for a large-scale GHG mitigation project.

However, in spite of tackling some of the main shortcomings of a project-based mechanism, the PoAs have not been implemented widely; with only eight registered PoAs at present (CDM Pipeline, 2011). The reason for this is partly the complexity of grouping micro projects and partly because of the complex CDM EB regulations. This has also led to governance innovations with the emergence of new actors and mechanisms. Biermann (2010)² points out one such change - ‘*market players now are not the private sector but the government and the Parties*’. For, unlike the project based mechanism such as CDM, where the private entities develop and implement a project, the government will have to take a leading role in establishing mitigation efforts in the new regime.

The NAMAs were first introduced under the Bali Action Plan (BAP) and discussed thereafter as a potential new mechanism. The Copenhagen Accord and the Cancun Agreement provided a primary framework to structuralize the work on NAMAs. The underlying driver is to be able to enhance developing countries’ contribution to global emission reduction. However, the BAP does not and at the same time, undermines the principle of common but differentiated responsibilities (CBDR). The concept of NAMAs is surrounded with many ambiguities and uncertainties with different views amongst Parties on the scope and definition of NAMAs, means of implementation and ways to measure, report and verify (MRV) actions, combined with institutional arrangements for providing support and revealing outcomes. Evidently, such debates have become a barrier blocking the international negotiation process (McMachon and Moncel, 2009)³.

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² Biermann, F. (2010), “Beyond the intergovernmental regime: recent trends in global carbon governance”, *Environmental Sustainability*, vol. 2

³ McMachon, H and R Moncel. 2009. Keeping Track: National Positions and Design Elements of an MRV Framework. WRI working paper. Wastington D.C.: World Resource Institute.

One of the issues discussed is that of linking NAMAs and carbon market. While there is a strong inclination by some to link the NAMAs to the global carbon market (as means of providing the necessary financial support and incentives in the developing countries and offsets to the developed countries), the use of NAMAs as an offset mechanism might lead to the failure of the carbon market (as the demand and supply of the offsets available will be skewed in the absence of stronger and ambitious commitments of the developed countries - an unlikely outcome). Emission reductions achieved from NAMA should therefore be regarded as net contribution from developing countries. While, public financing should be the main source of supporting NAMAs, it might not be able to meet the full needs and this is where carbon market could contribute. In case of any offset mechanism, the accounting principle should take care of ‘double counting’ of emissions reductions (for details see: Pahuja and Linner, 2010).

Given that both PoAs and NAMAs have mitigation at the core and both are/will be linked with carbon markets, p-CDM could arguably be scaled-up a NAMA registry. Scaling up a PoA to a NAMA has many benefits than conceptualizing something totally afresh. A scaled-up PoA would essentially be the result of bottom-up process while a new framework has the intent of being a top-down approach. It is also easy to implement existing procedures and guidelines. Also, scaling up a PoA would mean that existing CDM capacities are used. The NAMAs, built through the scaling-up of existing PoAs, should solve the issue of the liabilities of an erroneous CPA—a challenge in the present form of PoAs.

With the world now gearing up for the COP 17 at Durban, it would be interesting to see if a conclusive and robust framework for NAMAs could be achieved. Following the sooner than later approach, the best way would be to consolidate the existing mechanisms to give them a new form else the uncertainty would persist with the concept of the NAMAs.

Sectoral crediting and the implementation challenges

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Nearly all emission reduction credits till date have been the result of project-based Clean Development Mechanism (CDM), which has been criticized for various reasons including high transaction costs, difficulty in assessing it additionally on a project-by-project basis, and limited potential to bring about large-scale transformation. Moreover, from 2013, the European Union Emission Trading Scheme (EU ETS) will greatly limit reduction credits generated by CDM projects, which is expected to cause a decline in these projects.² In response to these factors, the discussion around sectoral approaches such as sectoral crediting has gained increasing prominence.

The sectoral approaches refer to a range of bottom-up and top-down emissions reduction activities that can be undertaken at a sector-level. They seek to involve developing countries in global mitigation efforts in a manner that recognizes their different circumstances and is aligned with their sustainable development priorities. Sectoral approaches have been categorized into various types ranging from sector-based policies, sectoral trading, and sectoral crediting to technology deployment and transnational sector cooperation.

Sectoral crediting, in particular, is envisaged as an approach where credits are issued for reducing emissions at the sector level in developing countries. Aggregated emission reductions below an established baseline – termed as crediting baseline – achieved by entities within the sector boundary over a pre-defined period of time, yield credits which can be sold for use by developed countries against their emission caps (Schneider, 2009; Baron et al, 2009). The baseline could be set below the business-as-usual (BAU) emissions level and only reductions beyond the crediting baseline would generate saleable credits.³ It

is seen as a voluntary and non-binding mechanism with no penalties applied if the sector fails to reduce emissions below the baseline level.

More recently, sectoral approaches have also been discussed as a kind of NAMA, which may encompass a wide range of climate-related actions, though a universally accepted definition does not exist as yet (CCAP, 2010). Sector-based NAMAs may also overlap with the sectoral approaches. Therefore, it is likely that sectoral crediting will play a significant role in the future climate regime – the final instrument could either emerge as a sub-set of NAMAs or as a market mechanism that complements other NAMAs.

Putting in place a robust sectoral crediting mechanism demands a thorough consideration of capacity and data challenges in countries that are likely to host projects under this approach, and want to be the front-runners and attract climate finance. Implementation of multi-sector schemes such as the EU ETS and India's Perform, Achieve and Trade (PAT) give an indication of the resources that may be needed for mobilizing. Data will be needed for two main purposes: to establish credible sector baselines; and to track progress and quantify reductions compared to the baseline (Fujiwara 2010). Methodologies and protocols will be required to measure emissions on a regular basis. Reporting and verification systems will need to be put in place to assess performance against the baseline. Capacity building efforts will be required to ensure that sufficient human resources exist to implement these protocols and systems effectively.

The main challenge in setting accurate sectoral baselines involves making reliable projections about future GHG emissions, which requires accurate, and often, long-term data. A number of factors can influence GHG emissions such as economic growth, production

¹ Views represented in the article are that of the author only and does not necessarily be the view of the organization that the author represent.

² Phase III of EU ETS will only allow the use of emission reduction credits from CDM projects either registered before 2012-end, or from those in least developed countries, or from countries with bilateral agreements with EU (Cundy and Mark Nicholls, 2011).

³ NAMAs have been categorized as unilateral, supported and crediting actions. Actions undertaken by developing countries without international support are categorized as unilateral NAMAs. Supported NAMAs include actions accomplished with financial support from developed countries or other donors. Actions where resulting emission reductions can be sold as credits in the carbon market are called crediting NAMAs.

curve, population growth, fuel prices, technological innovation, and lifestyle patterns, and objective data related to these will be needed to make projections (Schneider 2010). Data is also needed on emissions by sector, technological processes, technology uptake, and abatement potential (Fujiwara 2010).

Availability and quality of historical data present another challenge. In developing countries, data is either not available or is of uncertain quality. Plant-level data, which is required to assess mitigation options and potential, is even more difficult to obtain. Aggregated sector-level data is typically more easily available. In some countries and sectors, even if the data is collected, it may not be done in a coordinated manner and may not be comparable across countries/institutions. Efforts are needed to improve and harmonize the measurement and reporting systems, and thereby build capacity.

A transparent measurement, reporting and verification (MRV) system for emissions reduction is critical to build buyers' confidence and maintain the environmental integrity of the crediting mechanism. A system will need to be put in place to ensure that emissions credits generated are monitored and verified regularly. Monitoring could include regular audits to measure emission reductions and issue credits. These systems and capacity building efforts are approach neutral and as applicable to sectoral crediting implementation as to other sectoral approaches and market mechanisms.

Institutional and human capacity, to a certain degree, already exists in some countries in the form of voluntary GHG programmes, participation in regional initiatives, service providers for CDM such as verifiers and project developers, and energy auditors. In addition, some sectors, such as cement, are more advanced in terms of data collection systems and adoption of GHG measurement protocols by individual entities.⁴ In India, an extensive data collection and monitoring system is being put in place to track energy efficiency in key sectors and detailed baseline audits are being conducted (PAT Consultation Document 2011). South Africa has a similar institutional set-up for energy efficiency (Ward 2008). The capacity needs may be lower in these countries and sectors.

Both capacity building and data collection can commence even as international-level discussions in relation to sectoral approaches and NAMAs continue. Dealing with data and capacity challenges need not wait for sectoral crediting design issues to be resolved. Moreover, laying the foundation of a robust data system and capacity infrastructure will support the implementation of any market mechanism and/or NAMAs, not just the sectoral crediting approach. The data collection and capacity building efforts could also be supported through international financial support. Such efforts will increase confidence in the host country's ability to realize real, measurable and verifiable reductions.

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⁴ The Cement Sustainability Initiative has developed a sector-specific protocol to measure corporate GHG emissions and has also set up a global sector database containing a wealth of sector-specific information on energy use and emissions.

Brazil in perspective – a climate dispatch

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Brazil has very high priority and ambitious domestic and international goals. Domestically, economic growth and poverty reduction are the driving policy vectors. These policies have been translated into government programmes such as the Accelerated Growth Plan and Family Subsidies. Brazil’s international negotiating positions are heavily influenced by these domestic policies. In addition, Brazil has two specific international objectives which it pursues unceasingly: first, to gain a permanent seat on the United Nations Security Council and second, to be the world leader of non-OPEC oil resources which could very well lead to Brazil becoming a member of OPEC. New discoveries of petroleum in the deep-sea pre-salt layers off the Brazilian coast continue to be revealed. These priorities have had and will continue to have considerable impact on the climate change negotiations from a Brazilian perspective. Only in the last few years have environmental and climate issues risen from very low to middle range priority.

More than half of Brazil’s GHG emissions (about 55%) are from deforestation in the Amazon and Savannah (Cerrado). The main vectors of deforestation are cattle ranching and agriculture. Logging would be placed third. Brazil’s energy matrix includes a high share of hydroelectric power and an increasing use of biofuels.

There are, however, some areas of mitigation that must be questioned as they represent serious contradictions. On the one hand, Brazil, when associating with the Copenhagen Accord, made voluntary commitments (NAMAs) to reduce deforestation emissions in the Amazon and in the “cerrado” in the order of 668Mt carbon dioxide equivalent in 2020. On the other hand, it recently approved in the House of Representatives the revised forest law, which has a built-in potential to actually increase Brazil’s total emissions in 2009 of 1.7 billion tonnes of carbon dioxide equivalent by 15 times according to Brazilian scientists. This comes about because the new law severely reduces restrictions on protected forest areas such as river banks and hilly areas and opens a loophole for doing away with legal reserves of protected forests which were a central part of the original forest law. All of the other commitments

together would be but a drop in the bucket compared to the impact of deforestation under the new law.

Another worrisome aspect of Brazil’s emissions reduction commitments is the statement “...that the use of the clean development mechanism (CDM) established under the Kyoto Protocol would not be excluded.” Being that CDM is a mechanism under the Kyoto Protocol through which developed countries may finance greenhouse gas emission reduction or removal projects in developing countries, and receive credits for doing so which they may apply towards meeting mandatory limits on their own emissions, it would not be fair for Brazil to use these same emission reductions to meet its own goals. The same will then amount to double counting.

On the positive side it is important to mention herein that Brazil is one of the few countries that have internalized their voluntary Copenhagen commitments into the domestic legal structure at both federal and even in some states and capital cities.

The Brazilian position on MRV is subtle. Monitoring Brazilian policies, programmes and projects by anyone who speaks Portuguese is easy, accessible and relatively sound. To cite a few examples: environmental licensing documents are public and most can be followed on the internet; satellite photos of deforestation are available every month on the internet and air quality data in São Paulo can be tracked hourly. It is difficult to imagine that an international verification would be much more intensive. Brazil has stated that some form of MRV would be limited to projects financed by developed countries. However, as Brazil aspires to be a “big player” on the international scene, the choice has been to associate with other emerging powers such as the BASIC countries, a position that could change.

Two other very important issues for Brazil are “historical responsibilities” and sovereignty. Brazil will continue to insist on a carbon space for growth. Although Brazil’s ex-President Lula led the world to believe that the country would take on its climate targets independently and without any financial aid: *“Brazil did not come here to bargain. Our targets do not need external money. We will do with our resources, but we are willing to do a step more if we [have] success*

solving the problem that will serve, in the first place, the development of the developing countries.” In fact, Brazil has not abandoned the position that industrialized countries must do more before asking for sacrifices from developing countries.

Brazil has been very sensitive to issues of sovereignty. Periodic external movements to “internationalize” the Amazon, often advanced on the argument that the Amazon is too big for one country to take care of, create very strong reactions. In addition, there has been a historical position among Brazilian negotiators that by committing biodiversity and carbon sinks to international agreements, Brazil might be liable for runaway deforestation in the Amazon. Things have changed on that front for two reasons. First, Brazil has been able to demonstrate its capacity to reduce deforestation, notwithstanding the persisting threat of the new forest law. Second, public opinion has become

very favourable and sensitive towards environmental and climate issues. These factors could lead to a change in Brazil’s stand on international commitments and MRV, eventually leading to a split from the BASIC on these points.

Brazil has a strong scientific community and is a leader in a number of areas such as: bio-fuels, satellite monitoring, and climate modelling. These technologies have already been made available to other countries. As a result, Brazil will be in a privileged position in the climate negotiations with regards to technology transfer.

Brazil has so far managed to maintain a fine balance between the best of two worlds: on the one hand, a co-leader of the strong emerging economies BASIC and on the other as a champion of the developing countries – G77. It is a high risk position and not one that can be sustained for a long time.



Measurement, Assessment, and Evaluation (MAE) Systems for Domestic NAMAs in China

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The ultimate objective of MAE is to ensure meaningful outcomes from mitigation actions undertaken by countries. The key to an effective MAE system is to carefully define what is being measured, functions of the system and the incentives for MAE. In China, MAE systems traditionally have been referred to as monitoring, assessment and evaluation (MAE) systems and this terminology will be used here to describe the Chinese domestic MAE system.

Currently, domestic systems for climate related policy and measures monitor a variety of data sets. Some examples can be found in Fig 1.

Energy Intensity target:	• Energy consumption (MTCE/Unit GDP)
Energy standards:	• Energy per physical unit of output
Energy labelling:	• Energy use during product operation
Renewable energy:	• Percentage of renewables in total output

Fig 1 Domestic MRV system for NAMAs

A recent paper on mitigation actions in China outlines which data sets are used in monitoring, assessing and evaluating over forty different policies and measures in China. Energy consumption, or energy use, is often used as a proxy for GHG emission data as energy use accounts for more than three-quarters of China’s GHG emissions. Fig 2 and 3 show the monitoring system for one of these policies, the reduction of energy intensity, in China and the data sets employed to measure progress against this energy intensity target.

The data sets differ from policy to policy. To evaluate progress towards, for example, an energy conservation target, other indicators are also used (See Fig 2). An MAE system will therefore be measuring one major metric. For example in the case of energy conservation this will be the reduction rate in energy intensity. However, the measures to implement this policy will require a lot of other metrics to be employed in order to measure progress against this policy. Implementation of laws and regulations and economic structure adjustment may be taken as an example.

The functions of an MAE system include: generating data on a range of policies and measures and helping in identifying the metrics required to measure progress against these goals. Therefore, this paper reveals that the functions of a domestic MAE system shall include¹ the following:

1. *Measuring overall progress through national-level data.*
The national level is the level at which countries' mitigation commitments can be compared and their commitment to an international climate regime evaluated. Measurement at the national level is also essential for the country's own purposes in considering and prioritizing energy and climate policy in the context of overall macro-economic policy.
2. *Measuring the impact of specific programmes or players.* A domestic MAE system provides the data needed for energy and climate policy-makers to track progress towards specific policy goals. In China, this includes measuring at the sub-national level, since China allocates provincial and local quotas. It also includes sectoral or company-level

reporting to enforcement bodies (to the extent that enforcement occurs at those levels). Finally, it includes programmatic data metrics collected to assess the progress of specific energy or climate programmes.

3. *Providing data that can be disseminated (public transparency) and that can be used to promote accountability.* The transparency and accountability functions can occur at all levels, from national to local.

These functions are applicable to both energy and climate data and information systems generally. The above functions are strong incentives at the national level to create a robust MRV system, and it is for this reason that China has a long history of national-level energy accounting. The reliability of this data, i.e., energy consumption and percentage of renewable, has increased significantly, especially in recent years, after new systems were put in place to implement the energy intensity target under the 11th Five Year Plan (2006-2010). As noted by observers of climate policy

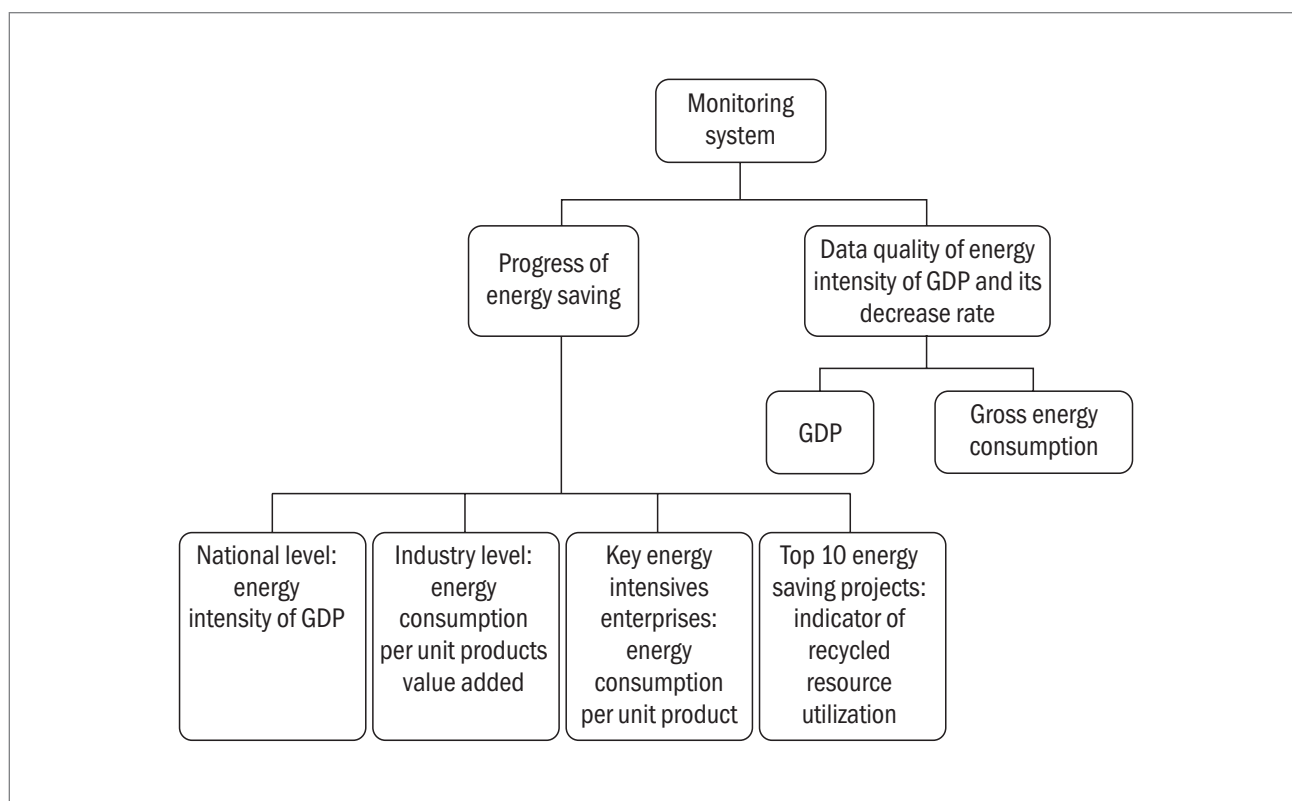


Fig 2 MAE system for domestic NAMAs

¹ Deborah Seligsohn. Testimony before the Congressional-Executive Commission on China: Measuring, Monitoring and Reporting Energy and Climate Data. World Resources Institute. April 1, 2010. Available online at: <http://www.wri.org/>

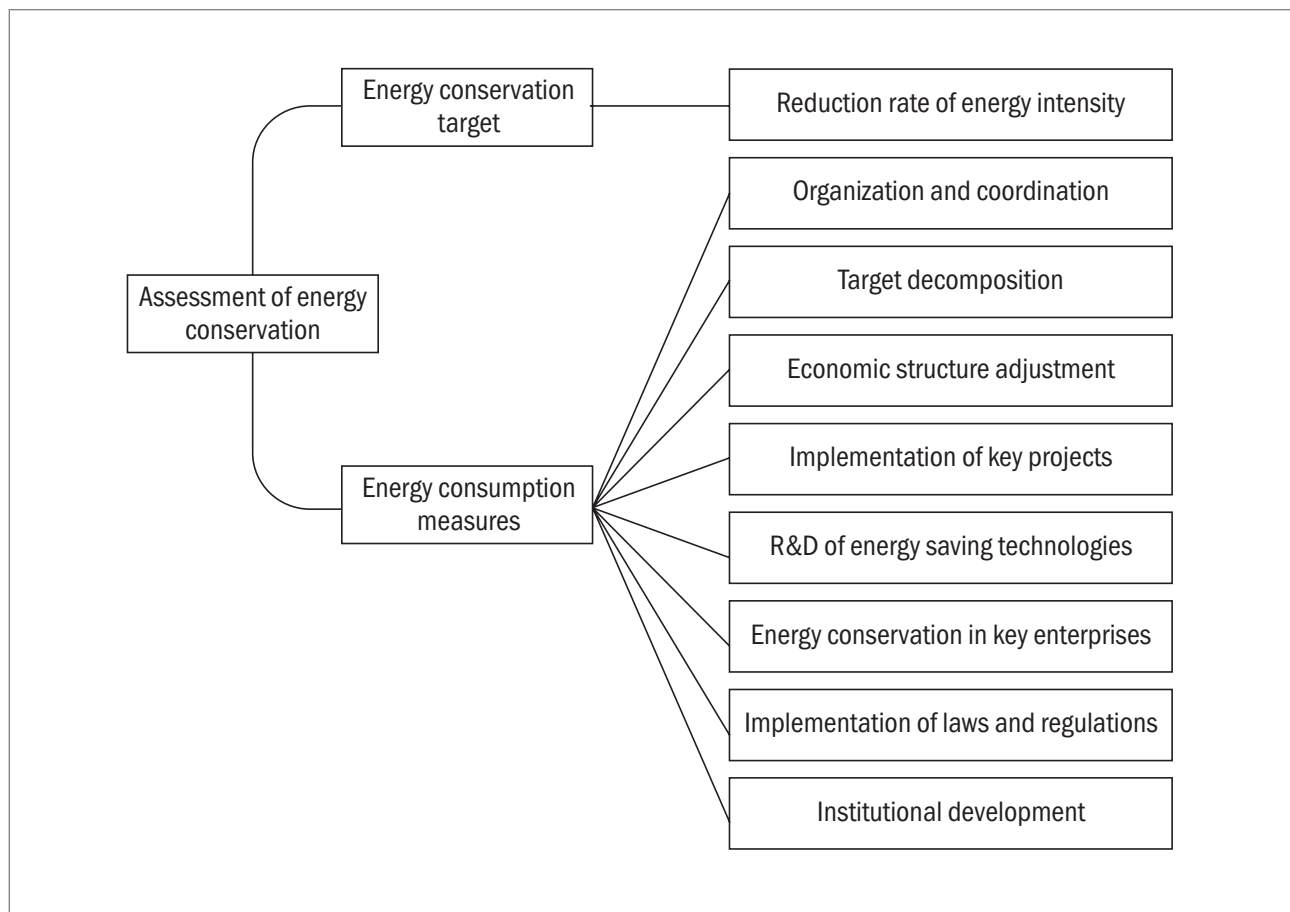


Fig 3 Performance evaluation system of domestic NAMAs

in China, the GHG emissions accounting is relatively new, dating back to 1994. China is actively improving its emissions accounting systems in this regard. It recently made a voluntary commitment to reduce GHG intensity, and is trying to utilize the recent data improvements in its energy information systems to support its GHG data collection and analysis. The emissions accounting system also has overarching implications on the market-based mechanism for emissions reduction. China may shift from the current command-and-control regime to market-based policies and measures to improve cost effectiveness and efficiency. Emissions accounting systems also provide a basis for enforcement of such a mechanism.

Further developments have occurred in China which have improved the collection of energy related data. There are a number of reasons for the

improvements, according to research undertaken on the mitigation actions in China². One is that China has a comprehensive system for tracking large energy users. China tracks down large factories and power plants that produce the bulk of its energy-related emissions (energy use accounts for some three-quarters of China's greenhouse gas emissions) because these facilities are among the easiest places to achieve major energy savings. These have played a major role in China's priority effort to improve energy intensity.

Another is that the more developed Eastern provinces that use the bulk of China's energy, and which are very important provinces in terms of China's economic output, import most of their energy. And, anything that crosses a political boundary in China is easier to document and track.

² Fei Teng, Yu Wand, Alun Gu Ruina Xu, Hilary McMahon, Deborah Seligsohn Mitigation Actions in China: Measurement, Reporting and Verification. WRI Working Paper on behalf of E3G. Washington, DC: World Resources Institute. June 2008. Available online at: <http://www.wri.org>.

Third, because national-level data is aggregated from a number of often independent sources, ranging from individual firms to local and provincial governments, statisticians at the National Bureau of Statistics are able to cross-check and correct the numbers.

As a result of these improvements, there is at hand in China a much improved system for data collection and the disclosure of information related

to energy use and emissions, as well as percentage of renewables.

In short, China has identified the essential functions of an MAE system, and, with the support of other developments, has met some success in implementing these systems. It should be noted that exogenous factors have also played a key role in improving these systems. However, there is much progress that still remains to be made.



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