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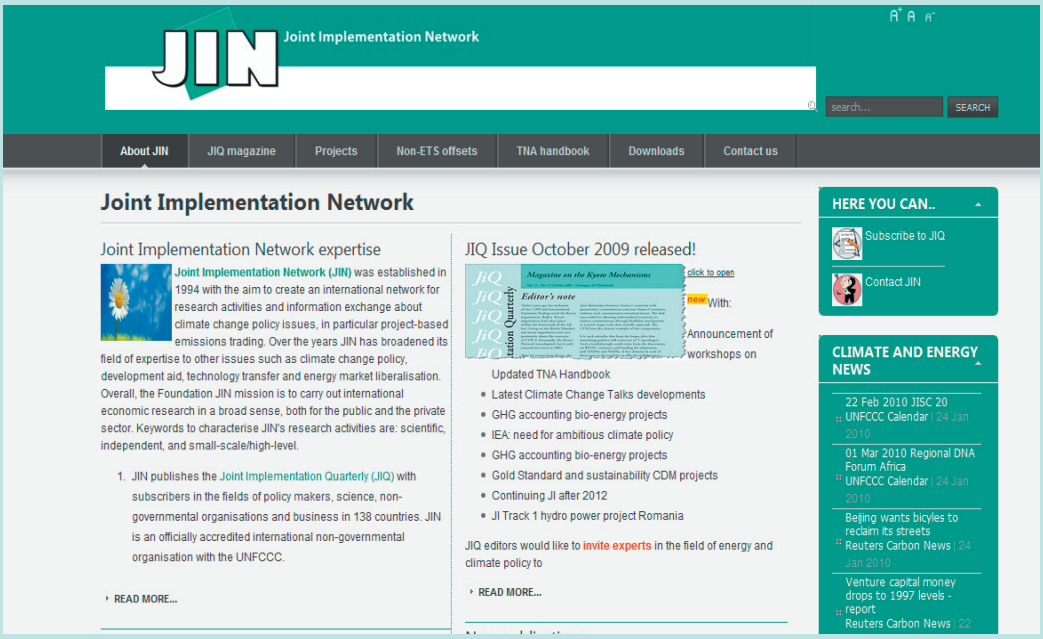

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JIN is proud to present it updated website www.jiqweb.org. The new website is a dynamic forum for exchange of information on issues concerning climate change and energy policy. The website now consists of several menus and news items, which are easy to track and download from. We provide an update of all recent JIN work, as well as international news on energy and climate policy from various sources.

In detail, the new menu items are:

a) Information on the general activities that JIN and its partners carry out;
b) A JIQ magazine section, where readers can subscribe to the newsletter, download all the past issues and track articles;
c) A section on projects in the fields of energy efficiency and climate policy that JIN has participated in, including downloadable reports;
d) A dedicated section on JIN's Non-ETS Offsets initiative to faciliate an EU-wide dialogue on projects reducing GHG emissions within the EU but outside ETS sectors. Readers can track updates on reports and legislation, while space is reserved for members that actively participate in the network of promoting and researching this concept;
e) JIN's involvement in the process of updating and testing the Technology Needs Assessment (TNA) Handbook under supervision of UNDP and the UNFCCC Secretariat. This section provides information on current updates and has a section reserved for TNA members;
f) A Downloads section, where readers can download all available reports and papers prepared by JIN, categorized as Climate Policy, Energy efficiency, and academic publications (on interactions of climate policy instruments, a detailed part attributed to White Certificates, and carbon leakage), and;
g) Direct contact information with JIN members.

We would like to invite you to visit our website at:

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We would like to invite you, given the dynamic form of the site, to provide us with any comments and suggestions to improve the readability and contents of the new JIN website.

On behalf of the the *JIQ* editors,

Vlasis Oikonomou

In this issue

Uncertainty Remains After Copenhagen

After two weeks of intense negotiations, the Copenhagen Climate Conference (COP15 & COP-MOP5) resulted in the Copenhagen Accord. The accord is not legally binding as the Parties did not reach consensus about the final text, but the COP took note of the text. This implies that its existence has been formally acknowledged and there is a mandate to follow up on its implementation.

This has led many to argue that the accord, although not legally binding, is at least politically binding. The main reason for concluding that was that the accord has been drafted by a small group of industrialized countries and emerging economies who, by accepting the text for submission to the COP, have given their political support to it.

However, as a consequence of the accord not being a formal COP decision, the several mechanisms proposed in the text (*e.g.* Copenhagen Green Climate Fund and Technology Mechanism) cannot be implemented yet and need to wait for the formal acceptance of the accord by the COP. The next COP session, planned for November – December this year in Mexico, is the next opportunity for that.

After the COP, many reports have been published on how the negotiations went, who said what and when, and what can be expected of the next steps in the process. The objective of the negotiations remains intact: to create a package which can guide policy makers during the periods following the first commitment period of the Kyoto Protocol. However, visions differ on how this objective can be achieved, what can be expected from countries before the 31 January deadline, whether the COP and the UNFCCC are suitable negotiation fora for such a complex global issue, and what are the implications for the international GHG emissions trading markets.

Country targets

The Copenhagen Accord contains a paragraph which invites industrialized countries to submit individual or joint quantified economy-wide emission targets for the year 2020. In addition, it states that "Non-Annex I Parties to the Convention will implement mitigation actions". Both industrialized and developing countries were requested to submit their targets and actions to the UNFCCC Secretariat by 31 January of this year. The Copenhagen Accord contains specific appendices with tables for that. Whether this deadline would be met by countries remained to be seen. According to the head of the UNFCCC Secretariat, Yvo de Boer, this deadline could be described as a soft deadline: "there's nothing deadly about it." On 1 February, 55 countries had submitted national pledges to cut and limit GHGs by 2020. These countries together account for 78% of global emissions from energy use.

In its Copenhagen De-Briefing report, *Climatico Analysis* has provided an overview of country and country bloc positions and emission reduction proposals submitted before and after Copenhagen.[1]

Of these countries several have presented proposals for medium term targets. The EU, for instance, has made clear in January of this year that it will stick with its lowest offer for reducing the bloc's GHG emissions by 2020. About a year and a half ago, the EU had stated that it would unilaterally reduce its GHG emissions by 20% by the year the 2020. It offered a reduction of 30% if other key emitting countries would also offer ambitious reduction targets at Copenhagen. According to analysts, quoted by *Reuters News*[2], this news will not have an impact on the prices on the EU ETS market, as the 20% reduction target is already priced into the market.

Another important signal came from the so-called BASIC group. On 24 January of this year, this group, with Brazil, South Africa, India and China, met in New Delhi and underscored their support to the Copenhagen Accord. It called on industrialized countries to pay in 2010 one third of the USD 30 billion offered at Copenhagen for adaptation in developing countries for the period 2010-2012. As of the year 2020, industrialized countries have promised to pay USD 100 billion per year for adaptation measures. BASIC countries offered establishing an independent fund themselves for developed countries most vulnerable to climate change.

BASIC countries have offered, in the form of official proposals and unconfirmed proposals, the following GHG emission reduction targets themselves:[1]

- Brazil: 36% emission reduction below business-as-usual by 2020;
- South Africa: 34% emission reduction below business-as-usual by 20;
- India: 20% reduction in the carbon intensity by 2020 compared to 2005 levels;
- China: 45% reduction in the carbon intensity by 2020 compared to 2005 levels.

[1] www.climaticoanalysis.org, pp.7-8.
[2] EU to stick with 20% climate offer in letter to UN, Thomson Reuters Communities, 22 January 2010.

Box 1. BoA-Merrill Lynch: 5.9% CO_2 emission rise in EU*

In a report presented on 25 January of this year, Bank of America-Merrill Lynch said that it expects the emissions of CO_2 in the EU to rise by 5.9% this year as a result of the economic recovery. According to the bank, total emissions within the EU ETS for the overall period 2008-2012 are likely to remain 166 million tonnes below the overall allocated emission permits to ETS installations. An important reason for this is the decrease in CO_2 emission of 9.5% during 2009 due to the economic slowdown.

In terms of the resulting price expectations, the bank does not foresee a significant price increase in the short term. Prices are unlikely to drop near zero as in the first ETS period, as surplus emission permits can be banked for use during the period 2012-2020. However, the bank has noted that there could be a downward pressure on prices due to present natural and coal price developments. With prices for natural gas falling and coal prices going up, the ETS theoretical market price for CO_2 emission permits that is needed to make switching from coal to natural gas economically attractive has fallen to almost zero.

* EU emissions to rise 5.9% in 2010 –BofA-Merrill Lynch; http://communities.thomsonreuters.com/carbon, 25 January 2010

The US climate position has remained uncertain since Copenhagen. Before the COP, the USA had proposed a 17% GHG emission reduction below 2005 level by 2020. This percentage had not been established domestically yet, but seemed a reasonable target as it was included in the bill that passed the House of Representative during 2009. In the Senate a similar climate bill has been discussed since the summer of last year, with a reduction target in line with the minus 17% target proposed by the Obama administration. However, the Senate did not pass the climate and energy bill before Copenhagen.

In January of this year, the prospects for the US climate and energy bill in the Senate have deteriorated as the Democrat party lost its 60-40 majority after a mid-term election in the State of Massachusetts. As a 60-40 majority is needed for the bill, its changes of acceptance have now become smaller. In a response, one of the authors of the bill, Senator Kerry, could already be seen working on compromise texts to make sure that the bill's impacts on employment will become positive instead of the often perceived negative impacts of climate policy measures on the economy. In addition, the bill would also allow expanded domestic oil and gas drilling and more federal aid to the nuclear power industry in the USA. In addition, should the climate bill with a cap-and-trade system and thus mandatory emission reduction and limitation targets not be feasible within the Senate, then observers expect that a narrower bill could be adopted with more direct support for low emission energy technologies, but without mandatory GHG emission reductions in the form of a cap-and-trade system.

Successful CDM discussion

Among the decisions taken at Copenhagen was one on the reform of the CDM. This decision contained the following elements with respect to project development and implementation:

- Countries which host less than 10 registered CDM projects can ask the CDM EB for a loan to cover the costs of development and validation of the PDD for new projects. This loan can be paid back after the first issuance of CERs from the projects.
- A more prominent role for the UNFCCC Secretariat in the technical assessment of CDM projects.
- Possibility of appeal against decisions by the DOEs and the CDM EB.
- Host country policies that give an advantage to technologies with low GHG emissions can be accepted under the CDM.
- Projects under validation or verification by a DOE which has lost its accreditation can still be submitted.
- The additionality tests for renewable energy projects with a capacity of less than 5 MW will be simplified. The same applies for energy efficiency projects with less than 20 GWh saving per year.

In addition, the COP/MOP has requested the CDM EB to "significantly improve transparency, consistency and impartiality in its work." The EB has also been requested to develop top-down methodologies to streamline the project cycle, reduce transaction costs, and therefore make project development more attractive for countries presently underrepresented in the CDM pipeline. The COP/MOP has also requested that the SBSTA develop standardized baselines for CDM projects so that GHG accounting processes of projects can be further streamlined.

No agreement was reached on the inclusion of Carbon Capture and Storage in the CDM. This issue will probably return on the agenda of COP16 or 17.

The Green Investment Scheme in the Czech Republic – Green Savings Programme

by Michaela Valentová*

As a result of the process of economic transition since the early 1990s, the Czech Republic has been able to stay below its Kyoto Protocol assigned amount of GHGs. This surplus can be traded with other industrialised countries. The revenues of such trades are spent domestically on energy saving programmes. This article describes how this has been organised.

Introduction

During the 1990s in the former Czechoslovakia and, as of 1993, in the Czech Republic a transformation process took place. Among the achievements was the closure of several heavy industry plants. This has resulted in a stong reduction in the emissions of GHG so that the Czech Republic is presently well ahead of its target in the Kyoto Protocol.

Under this protocol, the Czech Republic has a commitment to reduce its GHG emissions by 8% below 1990 levels (before the start of the transformation process). Presently, however, the country's GHG emissions are 24% lower than in 1990. As commitments in the Kyoto Protocol aredefined as tradable assigned amounts (i.e. the Czech assigned amount during the Kyoto Protocol's commitment period 2008-2012 is 92% of the 1990 GHG emissions), the Czech Republic can sell a surplus of 16%-points to other Annex I countries. This has been defined in the Kyoto Protocol as International Emission Trading (IET).

Presently, the size of the IET market is close to 100 million assigned amount units (AAUs; one AAU is 1 tonne CO2-eq.). While the Kyoto Protocol does not define specific conditions for IET, in practice it has often taken the shape of so-called Green Investment Schemes (GIS). Under GIS, the sale of assigned amont units is bound by rules so that the money received for excess AAUs is spent in a 'green' way, e.g., on energy efficiency programmes or development and transfer of low emission technologies.

GIS in the Czech Republic

In the Czech Republic, GIS transaction must directly lead to a GHG emission reduction in the country and money obtained through the sale of AAUs has to be spent by 2012. The accompanying amount of GHG emission reduction must be proven within the 15 years of the 'greening effort' under the GIS transaction. The AAUs sold are traded during the Kyoto Protocol commitment period of 2008-2012.[1] The definition of rules for GIS transactions, and thus the quality of such GHG emission reduction programmes, can differ strongly across countries.

The higher so called "greening" (i.e. the stronger the money from the GIS transaction is related to GHG emission reduction activities), the higher the chance that a country receives a higher price for the AAUs sold. This has become a very important aspect in the light of the most recent negotiations that the Czech Republic has held on GIS with Austria and Spain.

After months of negotiations, the first contract on AAU sale was signed between the Czech Republic and Japan in March 2009. A total amount of 40 million AAUs was sold under this contract. The negotiated price per AAU is not public.

After the negotiations with Japan, the Czech Republic launched the programme Green Savings. This programme is targeted at households and supports energy saving measures and use of renewable energy sources in apartment buildings, as well as in houses (see below).

In September 2009, a second contract was signed with Japan (company Mitsui & Co) and two weeks later, another two contracts were signed: one with Austria for the sale of 3.5 million AUUs and the second one with Spain to which the Czech Republic sold 5 million AAUs. The two sets of agreements were based on the Green Savings programme, thus proving the importance of preparing a good implementing programme. Currently, further negotiations are being held with, e.g., the World Bank and Switzerland, but also further sales to Japanese companies are being negotiated.

Thus far, the sale of Czech AAUs to other industrialised countries has resulted in a revenue to be spent under the Green Savings programme of

* SEVEn, The Energy Efficiency Center, email: michaela.valentova@svn.cz, www.svn.cz, with the kind contribution of Martin Fiala from the Department of climate change - Emission Trading Section of the Ministry of the Environment of the Czech Republic.

[1] The accounting date, however, is only in the mid 2014.

25 billion CZK (appr. EUR 960 million). How the money will be spent is described further below.

Green Savings Programme

The Czech *Green Savings* programme was launched in April 2009. It focuses on supporting renewable energy technologies in heating installations, as well as on investments in energy saving measures in reconstruction of existing building and in new buildings.

It is basically the first financial programme targeted at households (the other main financial sources, such as the *Operational programmes for Structural Funds,* are aimed at municipalities or enterprises). Given the amount of financial sources, it is also the first programme, under which the applicants are basically entitled to the subsidy, as long as they fulfill the eligibility criteria.

The programme supports quality insulation of houses and apartment buildings, the replacement of environment unfriendly heating for low-emission biomass-fired boilers and efficient heat pumps, installations of these sources in new low-energy buildings, as well as construction of new houses in the passive energy standard.

The *Green Savings* support has been set up so that the funds from AAUs can be used throughout the period from the programme's launch until 31 December 2012. Applications for subsidies will therefore be admitted until 30 June 2012 or until the programme funds have been fully used.

A subsidy may be requested from the *Green Savings* programme before or after implementing the measure, but support of measures completed before the programme's launch cannot be granted.

Basic Programme Structure

The programme is divided into three basic subsidy areas:

1. Energy savings in heating (under which complex or partial insulation is supported);
2. Construction in the passive energy standard; and
3. Use of renewable energy sources for heating and hot water preparation (under which the replacement of environmentally unfriendly heating with low-emission biomass-fired sources and efficient heat pumps, installation of low-emission biomass-fired sources and efficient heat pumps in new buildings and installation of solar-thermal collectors is supported).

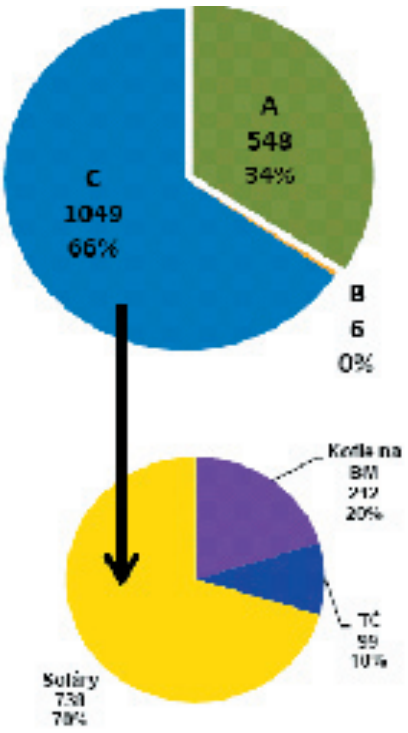

Figure 1. Structure (number and % share) of applications according to the type of measure

Source: Ministry of the Environment of the Czech Republic
Note: Green= insulation, blue= heating and hot water preparation, yellow= solar panels, violet = biomass boilers, dark blue = heat pumps

Furthermore, some combinations of measures are eligible for a subsidy bonus and also the project elaboration was refunded at the beginning of the programme.

Figure 1 shows the division of subsidy requests under the *Green Savings* programme across the various measures thus far.

Who is eligible for the subsidy?

Applicants eligible for the subsidy are owners and builders of houses and apartment buildings, namely:

- Natural persons (the subsidized measure is only intended for households),
- Associations of apartment owners,
- Housing cooperatives,
- Cities, towns and municipalities (including municipal districts),
- Business entities, and/or
- other legal entities.

First results

At the end of November 2009, more than 1800 applications had been received by the managing

Table 1 Savings from the projects

Type of house	Heat savings (insulation)	Heat production from RES	CO_2 savings
	GWh/15 years	GWh/15 years	tonnes/15 years
Single family	111.2	97.1	174 128
Apartment	55.2	3.8	22 408
Total	166.4	100.9	196 536

Source: Ministry of the Environment of the Czech Republic

authority of the *Green Savings* programme. The total value of the processed applications (appr. 1600) amounts to over 245 million CZK (appr. 9.8 million EUR).

As shown in Table 1, most savings so far have accrued in single family houses. This is probably because applying for a subsidy for retrofitting a single family house is much easier than for a multiple-dwelling house. Consequently, 96% of applications have come from single family houses.

In total, the projects implemented under the *Green Savings* programme so far, will contribute to an CO_2 emission reduction of almost 200,000 tonnes during the 15 years of the lifetime of the measures.
As is shown in Table 2, the average payback time of projects is approximately 11 to 12 years. The exception is the use of renewable energy sources for apartment buildings where the payback period can be 27 years. The average cost of the measures per 1 GJ saved ranges between 360 and 430 CZK (appr. 14 to 16 EUR), with the exception again of RES in apartment buildings, where the average cost exceeds 900 CZK (almost 35 EUR per GJ).

Partnership – Green Savings for Energy Efficient Appliances

As a sub-programme of the main *Green Savings* programme, an information campaign promoting energy efficient appliances will be launched in spring 2010. Appliances are responsible for up to 50% of household energy consumption[2] and therefore it is more than rational, once the households undergo major energy efficiency measures, to also advise them on energy efficient appliances.

The criteria as well as the exact list of appliances under this *Partnership programme* are still under discussion.[3] The programme is not connected to any financial subsidy to the households. However, all the producers and other stakeholders have been addressed and are taking part in discussing the concrete form of the sub-programme.

courtesy: http://www.uspornespotrebice.cz

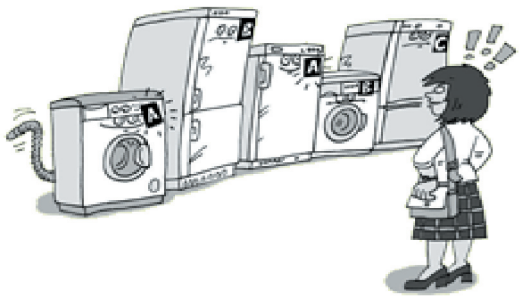

Table 2. Economic indicators of the projects

Type of house	Costs per unit of energy saved in insulation measures and low-emission heat production		Payback period for insulation measures and low-emission heat production	
	CZK/(GJ.15 years)		years	
	Insulation	Renewables	Insulation	Renewables
Single family	420,4	368,6	12,6	11,1
Apartment buiding	430,9	900,4	12,9	27,0
Total	423,9	388,9	12,7	11,7

Source: Ministry of the Environment of the Czech Republic

[2] Ruzicka, P. Partnership – Green Savings, available at http://www.uspornespotrebice.cz/sites/spotrebice.drupal.cz/files/3_R%C5%AF%C5%BEi%C4%8Dka_MZP.pdf
[3] SEVEn serves as one of the main advisors to the Ministry of the Environment on how to set the criteria, profiting from its long experience in promoting energy efficient appliances.

TNA Handbook Reviewed at Consultation Workshop

On 16 and 17 November 2009 UNDP and the JI Network (JIN) organized a workshop in Groningen (the Netherlands) to review the updated Handbook for Conducting Technology Needs Assessment for Climate Change (TNA handbook). The aim of the workshop was to discuss the structure of the handbook, the overall approach suggested and the steps proposed with a group of climate policy makers, practitioners, experts in climate, energy and development and people with experience in conducting TNAs (see Table 1). The TNA handbook had been presented by UNDP during the Climate Talks sessions of June 2009 in Bonn as an advanced document.

The Groningen workshop facilitated a discussion on the content of the updated TNA Handbook with a focus on:

- The step-by-step guide in the Handbook for prioritizing sectors and technologies in developing countries – both for mitigation and adaptation. This included an introduction to the TNA supporting tool TNAssess with a multi-criteria decision assessment tool.
- Ways to facilitate familiarization of country stakeholders with new technologies, including access to up-to-date information on technologies (performance, field experiences, costs, suppliers, *etc*). Supporting tools such as a proposed online technology database ('ClimateTechWiki') and on-line distant learning courses are to be discussed.
- Ways to assess technology barriers in countries, enabling frameworks and capacity building needs in countries.

Handbook structure and steps

As explained in more detail in the June 2009 issue of *JIQ*[1] the updated TNA Handbook follows a step-by-step approach to identifying priority technologies for mitigation and adaptation in developing countries and to exploring activities to accelerate their development and transfer. As a first step, a country's TNA team, which co-ordinates the TNA process under the supervision of the responsible Ministry, works together with a group of country stakeholders to identify the country's development priorities. These priorities are identified in light of possible economic, demographic and climate change trends and help obtain a common view on where the country should be in the short and medium to long term. Next, sectors are identified which have the highest GHG emissions or which are vulnerable to climatic changes. Strategic sectors are subsequently defined as those where the largest benefits can be achieved in terms of

Table 1. Organisations present at TNA Handbook consultation and review meeting

UNDP	USA
UNEP - risoe	Denmark
World Bank	USA
ECN	the Netherlands
University of Edinburgh	UK
JIN	the Netherlands
SenterNovem	the Netherlands
Kunming University of Science and Technology	China
Ministry of Economic Affairs	the Netherlands
UNFCCC Secretariat	Germany
Ghana Environmental Protection Agency	Ghana
Caricom Climate Change Centre	Belize
Institute of Technological Research, National Center for Research	Sudan
TERI	India
Asian Institute of Technology	Thailand
REEEP	Austria
Catalyze	UK
rural area development programme nepal	Nepal
Macedonian Academy of Sciences and Arts	Macedonia
UNEP-DTIE	France
Fortune Valley Asset Management	Nigeria

[1] http://www.jiqweb.org/images/stories/JIQmagazine/2009Jul.pdf

Meeting venue: Hampshire Plaza - Groningen

GHG emission reduction/reduction of vulnerability and meeting development priorities.

Obviously, as was further worked out with participants at the consultation and review workshop in Groningen, should a developing country already have identified its development priorities and/or strategic sectors in such documents as poverty reduction strategy papers, 5-year National Plans, sector policies, countries' National Communications to the UNFCCC, and country profiles prepared in co-operation with UNDP and the World Bank, then some of these steps can be skipped. The handbook will offer clear guidance for the TNA team and stakeholders on this.

For each of the priority sectors:

- possible technologies are identified from online databases, networks and country documents, followed by a process of
- familiarizing stakeholders with unknown technologies, so that
- a long list of technologies results categorized in terms of scale of application and availability in the short, medium to long-term.

These technologies are subsequently assessed through multi-criteria workshops, consisting of:

1. Determination of the assessment framework including assessment criteria,
2. Conducting assessment of technologies based on their
   - Contribution to development goals
   - Potential of GHG emission reductions / reduction of climate change vulnerability
   - Costs (*e.g.* investment and operational and maintenance costs, internal rate of return).
3. Producing assessment of the overall performance of each technology on the criteria.

Final decisions are made by conducting sensitivity analyses at participatory workshops and decide on the prioritization of technologies for strategic sectors.

Next, the TNA Handbook takes these technologies for a further analysis on what activities are needed in the country to accelerate the development and transfer of the priority technologies. Obviously, these activities differ depending on whether the

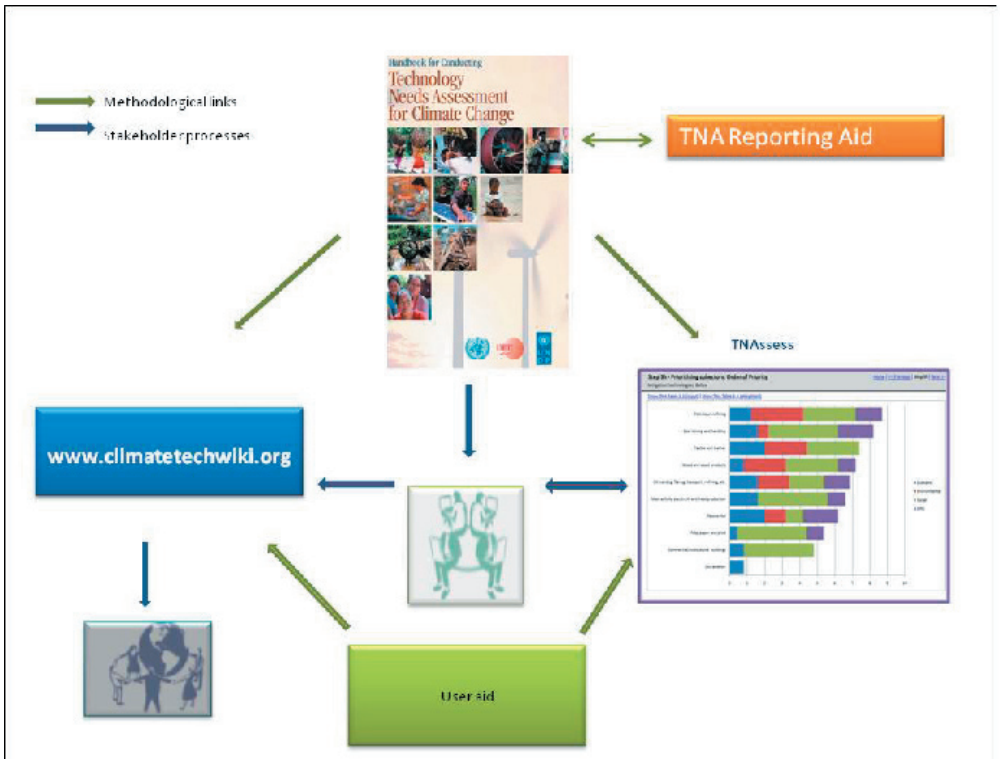

Figure 1. Overview of interaction TNA Handbook and its supporting tools

technology is in an R&D, deployment or diffusion stage. The result of this step are recommended actions to develop and transfer technologies which could serve as a basis for country strategies focusing on low emission development.

Supporting tools

In order to support the steps in the TNA handbook, supporting tools are being developed to make the conduct of a technology needs assessment easier and more practical, by providing logically intuitive and visually-presented sequential steps that help facilitate informed decision making processes in an easy-to-follow manner. The following three products compose the supporting tools:

- **TNAssess**, a tool to facilitate and smoothen technology prioritisation processes, using Multi Criteria Decision Making analysis
- **ClimateTechWiki**, a web-based digital platform that hosts detailed information on technology options for mitigation and adaptation, and
- **UserAid materials**, a set of materials that explain, in a non-technical manner, how to conduct a technology needs assessment, including how to use tools such as TNAssess and ClimateTeckWiki.

The interaction of the handbook and the tools is shown in Figure 1.

Road ahead

Following the workshop discussions the TNA Handbook will be further developed from an advanced to a final document which will be presented by UNDP at the 32nd session of the UNFCCC Convention subsidiary bodies in Bonn in May - June 2010.

For further information, please contact:
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CLEAN - A New Low Emission Assistance Network

Global progress in tackling climate change requires the active engagement of both developed and developing countries, including concerted efforts to strengthen developing country capacity. In recognition of this need, an increasing number of international institutions are providing support to developing countries for low greenhouse gas (GHG) emission assessments and plans.

In November 2009, some of the leading international technical institutions assisting developing countries with such low GHG assessments and strategies (Box 1), agreed to work together to strengthen methods and delivery of assistance establishing the Coordinated Low Emission Assistance Network (CLEAN). An important reason for this initiative was the growing portfolio of work in these areas, such as technology needs assessments (TNAs), design of low carbon development plans, development and transfer of low-GHG emission technologies, and establishment of online technology databases. It was felt that there would be value in coordinating this work and in sharing tools and experiences.

Box 1. CLEAN members are:

- US National Renewable Energy Laboratory (NREL),
- Joint Implementation Network (JIN),
- United Nations Industrial Development Organization (UNIDO),
- United Nations Environment Programme (UNEP),
- German Society for Technical Cooperation (GTZ),
- German Aerospace Center (DLR),
- Renewable Energy Policy Network for the 21st Century (REN21),
- Netherlands Energy Research Foundation (ECN),
- Risoe National Lab, and
- the International Energy Agency (IEA).

The International Atomic Energy Agency (IAEA) has also recently joined this network.

CLEAN welcomes the participation of other international technical organizations in order to present a more diversified perspective on clean development issues.

The main objective of CLEAN is to promote the use of consistent and shared principles and approaches for support of developing countries in preparation and implementation of low GHG emission plans and strategies. Through such a coordinated use of knowledge and activities it improves the ability for organizations to implement, either jointly or in parallel, all aspects of low-emission strategies, and learn from each other's

experiences. This greater attention to coordination will help ensure that low GHG strategies remain country-driven and focused on benefits to developing countries.

After an initial meeting in Paris on 23 November 2009, the CLEAN members communicate primarily through telephone conferences.

Common action

Within the CLEAN network, partners aim to coordinate their work to ensure that national and international resources are efficiently used, objectives and priorities of the host countries are addressed, and capacity in core national institutions are strengthened. This involves sharing and collaborating on the development of methods and tools, delivery of training, and expert technical assistance to developing countries. CLEAN also aims at establishing networks with international business and investment groups, donor programs, and NGOs that can be sources of support for implementation of developing country plans.

The CLEAN members have a broad range of expertise and knowledge and can therefore support many aspects of the process of development and transfer of low emission technologies and formulation of strategies for these technologies within developing countries. Examples of such elements are:

1. Technical assistance to "transfer the process" to development partners, including capacity building with a lasting expertise in developing country institutes.
2. Coordinated training and expert assistance to developing countries with analysis of low carbon technology options and development benefits and methods for preparing and implementing technology strategies and plans.
3. Virtual mechanisms for training, expert assistance, and sharing of approaches and best practices to complement in-person forums and assistance.
4. Learning and sharing of experiences and approaches among countries, including methodologies such as the TNA Handbook and tools among partners.
5. Engagement of regional institutions in delivery of technical assistance to tap and build regional expertise.

Support to low-emission strategy formulation

Among CLEAN's principles is the idea that low emission development plans should start with a clear definition of national development goals and should identify how low carbon technologies and measures can best achieve these goals. CLEAN supports broad stakeholder engagement in the countries concerned—a range of government departments, the private sector, and NGOs to help promote ownership by the host countries, both over the process, and of the ultimate product. CLEAN also aims to facilitate coordinated engagement of international public and private sector organizations to provide support for priority country programs. For more information please visit:

openei.org/wiki/CLEAN.

If your organization is interested in CLEAN participation please contact:

Sadie Cox at the
U.S. National Renewable Energy Laboratory at
Sadie.Cox@nrel.gov.

Evaluating CDM Distribution Using an International Trade Framework*

by Haifeng Wang**, Jeremy Firestone***

Background

The fast growth of Clean Development Mechanism (CDM) and its positive and negative attributes have been well documented. Recent years have witnessed explosive growth of the CDM. The number of CDM projects for validation and registration has grown exponentially and developing countries (so-called non-Annex I countries) becoming involved in the CDM grew from 8 in 2000 to more than 50 in 2008[1]. As a result, the issuance of the Certified Emission Reductions (CERs), the CDM currency, will total 2.2 billion by the end of Kyoto Protocol's compliance period in 2012[2].

However, from the time it was created, the CDM has been at the center of controversy. The CDM has been criticized by some for creating new credits outside developed (Annex I) countries. Among other criticisms, both host and credit countries have been focused on low-hanging fruit such as destruction of HFC-23, a potent greenhouse gas (GHG), rather than projects that promote long-term economic development for local communities. The CDM also appears to have failed to engage most developing countries, and in particular, least developed countries, in a meaningful way. In addition, there appears to be imbalances in the distribution of CDM projects[3]. In the beginning of the CDM, India accounted for a significant share of projects. Later, China began to dominate the CDM market, and to date, it has hosted more than 50% of all CDM projects in terms of CERs. China, India, Brazil, and Mexico together accounted for between 60% and 80% of all projects in years 2004-2008. Some interesting questions therefore arise. Why are there such differences among host countries? Is such a distribution reasonable? Which factors can be attributed to the differences? If the international community desires changes to the CDM, which policies might it consider putting into place?

CDM in International Trade

In essence, the country-to-country transactions in CDM are similar to global trade. Credit countries (Annex I) purchase emission permits from host countries (non-Annex I). In buying a permit in a host country, a credit country avoids reducing emissions in its own country, which generally would require higher costs. This is a classic example of comparative advantage. In other words, host countries export permits, which are generated by CDM projects in their countries. Credit countries import such permits, which results in them not having to reduce emissions in their own countries.

Gravity theory provides an empirical framework to evaluate factors that may influence the country-to-country transaction. In its simplest form, the gravity equation states that larger countries will likely trade more with each other, and countries that are more similar in relative size also will trade more. The model also places importance on trade cost. If trade cost between two countries is lower, then countries will tend to trade more with each other. Trade cost may be influenced by many factors in host countries such as natural endowment, infrastructure, international business experience, bureaucrat efficiency, and expertise in the good to be traded.

Here, we apply the gravity model to CDM trade and hypothesize that countries with more GHG emissions will be more likely to make use of the CDM mechanism to reduce GHGs. This assumption is supported by empirical observation, as there is a positive correlation between domestic GHG emissions and CDM involvement.

Findings

Using country-to-country CDM trade data in 2007 and the gravity model in international trade, the relationship among CDM trade, domestic emissions

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* This is a summary of the paper Wang H, Firestone J, The analysis of country-to-country CDM permit trading using the gravity model in international trade, Energy for Sustainable Development (2010),doi:10.1016/j.esd.2009.12.003.

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[1] CDMpipleline http://www.cdmpipeline.org/overview.htm

[2] Karakosta, C., H. Doukas, and J. Psarras, 2009. Directing clean development mechanism towards developing countries' sustainable development priorities. Energy for Sustainable Development. 13, 77-84.

[3] Haya, B., 2007. Failed Mechanism: How the CDM is Subsidizing Hydro Developers and Harming the Kyoto Protocol: International Rivers.

in Annex I countries and non-Annex I countries, and trade cost are investigated using a linear regression model, with the natural log of the permits purchased by each credit country in each host country. Results confirm that domestic GHG emissions of both host and credit countries are the primary factors for CDM project distributions. More domestic emissions in both host and credit countries lead to more CDM trade between them.

The high volume of GHGs in Annex I countries may incentivize those countries to buy offsets from non-Annex I countries, because it would be more cost-effective than reducing their own domestic emissions. Those non-Annex I countries with more GHG emissions may feel the urgency to reduce their carbon footprint or see the opportunity to reduce their GHG emissions by attracting foreign investment. Although cost-effective CDM opportunities likely exist in small countries as well, the high volume GHG emissions in larger countries probably mean lower marginal abatement cost. The positive relationship between domestic GHG emission and CDM projects partly explains why some big developing countries such as China and India have attracted a large number of the CDM projects.

Trade cost plays a pivotal role in CDM trade, too. Host and credit countries tend to trade more CDM permits when the trade cost is small. Many factors influence the trade cost in the CDM. CDM projects may exhibit economies of scale given their large transaction costs, including registration fees and verification fees, and time between project conception and completion. The average fee per CER issued for CDM projects is much lower for large projects than smaller ones. In other words, host countries can reduce their transaction costs as a percentage of total costs expended on a project by increasing the project's size. This situation will continue unless policies are developed to reduce small-scale project trade costs.

The degree to which a developing country is open to international trade also is an important factor in CDM trade. If a developing country is more heavily engaged in international trade, and has more experience in international business, it may be more willing to attract and initiate CDM projects. Having more experience in international trade has the added benefit in that other countries will be more familiar with its business environment, rules, culture and bureaucracy. Each of these factors may facilitate CDM trade. Not surprisingly therefore, host countries that have benefitted most from the CDM are already active players in international business.

Appropriate infrastructure in host countries can reduce trade cost and increase CDM trade. Some CDM projects such as hydropower depend on good infrastructure to be effective. Infrastructure such as a better road and rail network, a high-quality airport, and stable internet access is helpful to facilitate CDM investment and bring down trade cost. Better infrastructure in large developing countries makes these countries (*e.g.* China) particularly attractive destinations for CDM investment. Thus, to the extent it is deemed desirable to facilitate more CDM investment in least developing countries, assistance in infrastructure improvements is one means to do so.

Some other host country factors also may play an important role in reducing CDM trade cost, such as the bureaucrat efficiency and the expertise related to the CDM, although they seem less important than the other considerations already mentioned. A pro-business bureaucrat may facilitate the process of CDM, save valuable time, and reduce trade cost. Trained specialists are also needed for a CDM project to be conducted properly. Technical support and oversees development assistance for developing countries are likely important, too. Lacking expertise in the CDM is one of major impediments to small developing countries making use of CDM to reduce their domestic GHG.

Conclusion

In sum, large developing countries usually have large domestic GHG emissions, favourable natural endowment, rich experience in international business, better infrastructure, higher bureaucrat efficiency, and more expertise in CDM investment, all of which tend to lead to greater CDM investment in those countries. To allocate more CDM to small countries, especially least developed countries, there will need to be multi-dimensional policies that not only subsidize small-scale CDM projects in those countries but also focus on capacity building. Upgrading infrastructure, more international exchange, and technical assistance all can help those countries garner more CDM projects and hence developed country investment.

Reports

Carbon Finance, 2010. 10 Years of Experience in Carbon Finance, Insights from working with carbon markets for development and global greenhouse gas mitigation, Carbon Finance at the World Bank, http://wbcarbonfinance.org/

This report describes the 10 years of experience in project development, GHG accounting procedures, carbon market trading of Carbon Finance at the World Bank. It desribes the changing international context for climate change policy and impacts on the carbon markets. It describes and explains the development of the Carbon Finance portfolio of projects. Examples of suggestions made in the report for improvement of the Kyoto flexibility mechanisms are: since projects have a long time horizon, there should be more clarity about the role of the CDM in future climate policy regimes; rethinking about the additionality concept as it is considered by the report a continuous challenge to deal with due to its subjective nature.

Chagas, Th., C. Streck, and M. von Unger, 2010. International Offsets in the Context of U.S. Climate Legislation, Carbon Trading and Energy Finance Committee Newsletter, Vol. 1, No. 1, January 2010.

This article summarises the offset provisions in the U.S. Climate Bills of the House of Representatives and the Senate. It pays particular attention to the international offset provisions in the two Bills and compares those with the CDM. The article concludes by arguing in favour of a harmonized, credible standard for international offsets.

ClimateWorks Foundation and European Climate Foundation, 2009. Finding Solutions for Clean Technology Transfer, Briefing Paper, Project Catalyst, December 2009.

This paper focuses on development and transfer of clean technologies and addresses all stages of the technology development cycle: from research and development to the commercial application of the technology. The paper discusses how, within the context of the UNFCCC and ongoing negotiations, clean technologies can be widely deployed in developing countries so that they can contribute to climate-related objectives such as mitigation and adaptation and contribute to assisting developing countries in achieving a low GHG emission growth.

The paper recommends: 1. financial support to developing countries in terms of incremental cost financing and capacity building; 2. the establishment of regional centers of innovation and joint R&D centers; 3. the establishment of an investment facilitation and insurance body is supported; 4. removal of investment barriers; and 5. tools for sharing intellectual property.

Climatico, 2010. Copenhagen De-Briefing - An Analysis of COP15 for Long-term Cooperation, www.climaticoanalysis.org, January 2010.

This report begins with a discussion of the dynamics between developing and developed countries that have influenced the debates at COP15. This is then followed with a description of the financial mechanisms, requirement for short and long-term funds, and problems with the current institutional arrangements. Furthermore, some of the mechanisms are highlighted that are in place to help countries mitigate climate change and that were under discussion in Copenhagen. In particular, the paper focuses on: technology transfer; Reducing Emissions for Deforestation in Developing Countries (REDD); the CDM and JI. Finally, the paper discusses the Copenhagen Accord and analyses the Accord's potential effect on future negotiations.

Green Resources, 2010, A Forestry CDM/VCS Case Study from Tanzania, 23 January 2010, www.greenresources.no.

Green Resources is developing a Voluntary Carbon Standard (VCS) project in Mapanda/Uchindele, Tanzania and a CDM project in Idete, Tanzania. The Mapanda/Uchindele project is the first reforestation project in the world to be validated and registered according to the VCS standard. The PDD for the CDM project is about to be completed. This study describes the project and some of the advantages, opportunities and pitfalls around reforestation projects. Reforestation is critical to the future of CDM in Africa and to the success of REDD and this issue is discussed in detail in the study.

The **Joint Implementation Quarterly** is an independent magazine with background information about the Kyoto mechanisms, emissions trading, and other climate policy issues. *JIQ* is of special interest to policy makers, representatives from business, science and NGOs, and staff of international organisations involved in climate policy negotiations and operationalisation of climate policy instruments.

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Abbreviations

AAU	Assigned Amount Unit
Annex A	Kyoto Protocol Annex listing GHGs and sector/source categories
Annex B	Annex to the Kyoto Protocol listing the quantified emission limitation or reduction commitment per Party
Annex I Parties	Industrialised countries (OECD, Central and Eastern European Countries, listed in Annex I to the UNFCCC)
Annex II Parties	OECD countries (listed in Annex II to the UNFCCC)
non-Annex I Parties	Developing countries
CCS	Carbon Dioxide Capture and Storage
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction (Article 12 Kyoto Protocol)
COP	Conference of the Parties to the UNFCCC
DOE	Designated Operational Entity
DNA	Designated National Authority
EGTT	Expert Group on Technology Transfer
ERPA	Emission Reduction Purchase Agreement
ERU	Emission Reduction Unit (Article 6 Kyoto Protocol)
EU ETS	European Union Emissions Trading Scheme
EUA	European Union Allowance (under the EU ETS)
GHG	Greenhouse Gas
IET	International Emissions Trading
ITL	International Transaction Log
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
KP	Kyoto Protocol
LULUCF	Land Use, Land-Use Change and Forestry
MethPanel	Methodology Panel to the CDM Executive Board
MOP	Meeting of the Parties to the Kyoto Protocol
PIN	Project Information Note
PDD	Project Design Document
SBSTA	UNFCCC Subsidiary Body for Scientific and Technological Advice
SBI	UNFCCC Subsidiary Body for Implementation
TNA	Technology Needs Assessment
UNFCCC	UN Framework Convention on Climate Change

JIQ Meeting Planner

8-12 February 2010, Bonn, Germany
52nd meeting of the CDM Executive Board (EB 52)
Contact: http://unfccc.int/meetings/unfccc_calendar/items/2655.php

24-25 February 2010, Jakarta, Indonesia
Emission Markets Indonesia 2010 – a two day Exhibition and interactive seminar organized by tCO2e India.
Contact: http://www.tco2eindia.com/brochure/

22-24 February 2010, Bonn, Germany
Joint Implementation Supervisory Committee (JISC 20)
Contact: http://unfccc.int/meetings/unfccc_calendar/items/2655.php

2-4 March 2010, Amsterdam, the Netherlands
Carbon Market Insights 2010
Contact: www.pointcarbon.com/events/conferences/cmi2010/

31 May – 11 June 2010, Bonn, Germany
32nd session of the UNFCCC Convention subsidiary bodies
Contact: http://unfccc.int/meetings/unfccc_calendar/items/2655.php

29 November - 10 December 2010, Mexico
16th Conference of the Parties (COP 16)/ 6th Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 6)
Contact: http://unfccc.int/meetings/unfccc_calendar/items/2655.php