

From the Editors - State and Perspectives of International Carbon Markets

Reduced prices for JI and CDM carbon credits and EU ETS allowances have limited the scope for project developers to value their GHG emission reduction investments through international carbon markets. At the same time, opportunities for attracting funding for such investments continue to exist. This article presents a general overview of such opportunities in the short and longer term. It also shows that markets and funding opportunities will become more diverse with, depending on project types, varying tradability and prices.

Since the mid-1990s, the main framework for carbon markets has been the UNFCCC and its Kyoto Protocol. This has been or is planned to be followed by several country or regional level initiatives for pricing GHG emissions, such as the EU ETS, the Regional Greenhouse Gas Initiative (USA), Western Climate Initiative (Canada, USA) and the New Zealand emissions trading scheme. Japan has initiated a Bilateral Offset Credit Mechanism (BOCM). In China, the municipalities of Beijing, Tianjin, Chongqing and Shenzhen and the provinces Hubei and Guangdong have developed plans for regional emissions trading schemes. In Australia a domestic CO₂ taxation scheme has become part of the 2012 Clean Energy Future Package legislation. In South Korea and Brazil national and sub-national emissions trading schemes are being planned.

Next to these 'compliance markets,' also markets have developed for

crediting voluntary GHG emission reduction actions (see box 1, next page). The voluntary carbon market has been diverse with, e.g., varying standards for accounting of carbon benefits. Nonetheless, voluntary carbon schemes have become a stable carbon market with improved standards.

Carbon market interlinkages

An important aspect of the current patchwork of carbon pricing initiatives is that they generally aim at establishing interlinkages with other emission trading or pricing systems. For instance, the Government of Australia has the objective to transform the country's CO₂ taxation scheme into a GHG trading scheme by 2015 and to link the scheme to the EU ETS from then on. As of 2018, EU ETS installations may also purchase Australian emission allowances on the Australian ETS market. In addition, most existing markets and market plans envisage links with GHG emission reduction projects outside the carbon market schemes (offsets).

Short-term carbon market perspectives

Despite these developments, current carbon market prices are relatively low and in the short run there are no indications of a strong price recovery. In light of that reality, what opportunities exist for investors in low carbon technology projects?¹

At a webinar on 3 July 2013, Adriaan Korthuis (ClimateFocus) explained that in the short term the main carbon markets will be the so-called compliance markets (Kyoto protocol, EU ETS, etc.), voluntary markets (e.g., VCS, Plan Vivo, etc.) and carbon funds (e.g., World Bank BioCarbon Fund, European Carbon Fund, KfW Entwicklungsbank Carbon Fund and NEFCO Carbon Fund).

The short-term options of compliance markets and carbon funds currently suffer from low prices, whereas demand and supply on the voluntary carbon market has remained more in balance, with generally higher credit prices than on the compliance markets. In practice, both compliance and voluntary markets show a differentiation in credit prices depending on the region where the emission reduction takes place and the type of project. For instance, the EU ETS has currently strongly limited links with the CDM under

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¹ The following sections have been inspired by a webinar given by Adriaan Korthuis (ClimateFocus) on 3 July of this year on: "How to sell your carbon credits in a difficult market". <http://www.climatefocus.com>. We are grateful for his comments on an earlier version of this article.

Box 1. Voluntary carbon market status and developments

On the voluntary carbon markets, prices have remained relatively stable, as they are not immediately linked to the EU and Kyoto carbon markets. In addition, improvements in GHG accounting and environmental integrity standards of voluntary market credits have generally enhanced the credibility of these markets.¹ As a result, prices are nowadays at levels around € 6 to € 8 per tonne CO₂, which is considerably higher than the current carbon credit and allowances prices on the ETS and under the Kyoto protocol. Demand on the voluntary markets (e.g. from organisations such as JetBlue, eBay, Google, Dell, Siemens initiatives, as well as organisations that aim at greening supply chains or branding their products as green or sustainable) is expected to grow to 200 or even 500 million credits by 2020 (from 100 million voluntary credits in 2012).² The USA is the country that hosts most of the buyers of voluntary carbon credits (43%), followed by the UK (26%) and Germany (13%). Most of the buyers are from the energy and wholesale/retail sectors (50% jointly). Generally, voluntary market transaction volumes are much lower than, for instance, CDM-based credit transactions and usually have a short term focus, while CDM-transactions could have a focus of even 21 years.

¹ Although there are examples of voluntary crediting schemes which collapsed due to poor understanding of the carbon accounting rules and consequences of sectoral policies for carbon credit potential.

² Ecosystem Market Place, 2013. Maneuvering the Mosaic - State of the Voluntary Carbon Markets 2013 < <http://www.forest-trends.org/vcm2013.php>>

the Kyoto Protocol, but has made an exemption for projects generated in least developed countries.

Another differentiation can be observed in terms of project types, with a particular focus on projects' contribution to sustainable development. In the current market, improved cook stove technology, forestry/afforestation, domestic biogas and other biomass-based projects receive relatively high prices. This sustainable development contribution impact is also reflected in the relative popularity of credits that have been accredited by the Gold Standard. According to Korthuis, CDM project developers would enhance the tradability of their credits if they added a Gold Standard label to their projects.

Medium term perspectives

A medium-term carbon market opportunity could be reducing emissions from deforestation and forest degradation (REDD+). For instance, projects that reduce the consumption of non-renewable biomass, such as household cooking projects, or programmes that incentivize biomass projects could become eligible for carbon credit trading. Presently, funding for REDD+ has become available through, for instance, the UN-REDD programme and the World Bank's Forest Carbon Partnership Facility. Therefore, in the medium term, overarching, national REDD+ programmes could be partly funded through carbon markets.

In the medium term, finance for low carbon investments may also be generated from processes under the UNFCCC such as nationally appropriate mitigation actions (NAMAs). However, NAMAs do not envisage carbon credit trading.

Finally, the development of domestic carbon credit markets (e.g., non-ETS projects selling credits on the EU ETS market) could result in enhanced carbon credit trading opportunities in the medium term.

Longer term perspectives

With respect to the longer term, the above funding opportunities could be enlarged, depending on what the post-2020 UNFCCC climate policy framework will look like. In addition, the Green Climate Fund (GCF) funding shall be spent on enhanced action on mitigation, adaptation, technology development and transfer and capacity building. Although this money has therefore not been earmarked for carbon credit trading, the GCF will provide opportunities to financially support low emission technology projects in developing countries.

Finally, next to the existing Kyoto flexibility mechanisms CDM and JI, a New Market Mechanism (NMM) will be developed.² It is still unclear though what the NMM will look like and whether and to what extent carbon credit trading will be enabled. Possibly, NMM could have a stronger focus on sector-level GHG emission reduction accounting and trading than JI and CDM have had.

Conclusion

Despite the ongoing carbon market development, perspectives for valuing GHG emission reductions through carbon markets remain bleak. Nonetheless, low carbon funding opportunities will continue to exist and new initiatives are being developed. In the short term, the main carbon market opportunities are the existing compliance and voluntary carbon trading markets. In the medium to longer term, new processes under the UNFCCC, such as NAMAs, REDD+ and NMM may provide additional funding opportunities for low emission technology investments.

² UNFCCC Decision 2/CP.17, para 83. <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>

International Workshop on Domestic Offset Schemes - Towards scattered ambitions?

The Swiss Foundation for Climate Protection and Carbon Offset (KliK), in collaboration with the Zurich Carbon Market Association (ZCMA), organised an international workshop on domestic offset schemes on 26 and 27 September 2013 in Zurich, Switzerland. The workshop title “Towards scattered ambitions?” indicates the fragmented reality of current domestic offset schemes. While the two multilateral flagship schemes, Clean Development Mechanism (CDM) and Joint Implementation (JI) under the UNFCCC, decline in importance, domestic initiatives to cap emissions with the possibility for offsetting GHG emissions are being established around the world. The contexts, methods and principles of these domestic offset schemes can differ considerably. The workshop aimed at understanding the different schemes, identifying common challenges and possibilities for co-existence of scattered domestic mitigation markets with a multilateral negotiation process.

Domestic offsets refer to the possibility for GHG emitters to offset emission reduction commitments through emission reduction projects within the same jurisdiction. For example, an installation with an emission reduction or limitation commitment under an emissions trading scheme (ETS) could purchase emission reduction credits from projects outside the scheme and count these against the commitments under the scheme.

At the workshop, the domestic offset schemes of Switzerland, California, France, Australia and Spain were presented. There is much variation in the approaches to domestic offsetting. Differences include the degree of stringency of requirements for measurement, reporting and verification (MRV), the design of the scheme as either a purchase programme or providing tradable offset credits, and the scale of the scheme. The schemes presented at the workshop are further discussed below.

Switzerland

The Swiss system of project-based offsetting was presented by Laurence Mortier of the Federal Office for the Environment, which is the regulator of the system. The revised CO₂ Act and Ordinance have entered into force on 1 January 2013 and set a target of 20% emission reduction compared to 1990 levels for 2020. There are various measures to reach this goal, such as a CO₂ levy and an ETS. The transportation system is exempted from the levy, and motor fuel importers need to compensate a part of their emissions. Emission reduction projects may be used to meet the commitments, but these projects must be within Switzerland.

Up to now, 55 of such domestic projects have been registered totalling up to 65,000 tCO₂-eq. emission reduction per year, of which 94% through bundles of projects related to biogas production and heat production from biomass.

Foundation KliK is responsible for domestically offsetting part of the CO₂ emissions resulting from the use of fossil motor fuels, equal to on average 5% of the CO₂ emissions caused by transport in Switzerland during 2013-2020, rising to 10% in 2020. The foundation carries out this responsibility on behalf of motor fuel importers that have a legal carbon offset obligation under the revised CO₂ Act and Ordinance.

Views on the opportunities for domestic offsetting diverge. The potential and baselines for domestic projects are influenced by existing policies, such as the carbon levy, a subsidy scheme for buildings (renewable heat and insulation), emission limits for new passenger cars and the ETS. As a result, many potential relatively low-cost offset opportunities in Switzerland have already been covered by other policies.

The managing director of KliK, Marco Berg, expects that only half of the required volume of 1.5 million domestic offsets will be available for purchase in 2020: “We will be paying the penalty rate for the rest because that will be cheaper than sourcing more offsets.” The penalty rate is set at CHF 160 or approximately 130 euros/tCO₂-eq., in addition to a replacement Certified Emission Reduction (CER) or Emission Reduction Unit (ERU) that fulfils the quality criteria of the CO₂ Ordinance.

California

Derik Broekhoff, vice president of policy at the Climate Action Reserve (CAR), delivered a presentation on domestic offsets under the cap-and-trade system of California. There has been a state-wide cap on GHG emissions since early 2013, starting with a cap for large industrial emitters only. From 2015 to 2020 the scheme will cover 85% of the state's GHG emissions. Up to 8% of compliance obligations can be fulfilled with domestic offsets (from the USA). California has defined standardised domestic offset protocols for selected project types using a top-down approach, with the establishment of additionality and baselines primarily based on standard assumptions and parameters. Eligible project types currently include forestry, urban tree planting, destruction of ozone-depleting substances and livestock methane capture and destruction. Other project types are being considered.

Several independent offset project registries, including CAR, support the implementation of the cap-and-trade programme by reviewing projects and issuing provisional offset credits. Buyers are liable for the validity of their offsets. If found invalid, the offset credit would be cancelled and the owner would need to replace the credit. This risk results in lower offset prices and the need to insure against invalid offsets.

France

The domestic offset scheme in France was explained by Benoît Leguet, head of research at CDC Climat. A governmental decree on domestic offsets was approved in 2007, using the track 1 process framework of JI. Initially, methodologies had been approved for the project categories heat, methane and hydrofluorocarbons (HFC). In addition, a methodology for afforestation and reforestation (A/R) projects was approved in 2012. 20 domestic projects have been approved in France until now.

According to Leguet, domestic offsets should be regarded as one of many climate policy instruments. They may, as a matter of fact, complement and strengthen, but also compete with other policies, standards and regulations. Mixing domestic offsets with other economic tools, such as white certificates, proves to be difficult in practice, since it is not clear at which level additionality should then be assessed. Leguet stated that the value of domestic offsets is mainly its ability to serve as a search engine for innovation and cost effectiveness, and progressively allowing to expand the realm of the EU ETS or command-and-control regulations.

Australia

Killian Wentrup (Perspectives) described the existence of domestic offsetting in Australia in several forms since 2001. One of the examples he introduced was the Greenhouse Gas Abatement Scheme of the New South Wales state government (NSW GGAS). Even though he acknowledged that this scheme functioned as a market mechanism and influenced the national policy agenda, several weaknesses were pointed out. The main criticism towards the scheme has been its lack of clarity about additionality. For example in 2010, the New South Wales government claimed to have reduced 18 million tCO₂-eq. under GGAS, but only 0.7 million of these reductions have been recognised by the national government, as the additionality of the remaining part was unclear.

Australia's nationwide Carbon Pricing Mechanism (CPM) was launched in 2012 and covers approximately 60% of the country's carbon emissions. Domestic offsetting is possible through the Carbon Farming Initiative (CFI), covering emissions from the agriculture, forestry and land sectors. In the first year and a half of CFI's operation, seventy projects have been registered and 1.88 million carbon credits (so-called ACCUs) have

been issued. However, many of these projects are continuations from earlier schemes such as NSW GGAS. During the first phase of the scheme (until June 2014) a fixed price applies to the Australian Carbon Unit (ACU). The ACCUs trade freely, usually at a slight discount to the ACUs. As the ACU price will be market-determined in the second phase, and international credits may be used for up to 50% of an entity's liability, the price for offsetting credits is expected to decline. Due to political changes the future development of the Australian scheme is uncertain.

Spain

The practice of domestic projects in Spain was explained by Ismael Aznar Cano of the Ministry of Agriculture, Food and Environment. Verified emission reductions in non-ETS sectors (including residential, transport, non-ETS industry, agriculture and waste sectors) during the first four years of a project are purchased by the Spanish carbon fund FES-CO₂e. The verification of reductions is to be done by an independent entity, in a similar manner as is done for CDM or JI. The first call for project proposals in 2012 led to the selection of 37 pilot projects in all of the available sectors. By now, five projects have entered the next stage and are ready for the first verifications and associated payments.

The fixed price for emission reductions is currently set at 7 euros per tonne. This price may be adjusted in 2014, including differentiation per project category. In Spain, there is no market for GHG emission reductions and no relation with compliance needs, except for the national non-ETS target. The Spanish government, through the carbon fund, is the only buyer of these emission reductions. The scheme essentially is a subsidy on emission reductions, helping the government to fulfil its non-ETS target under EU legislation. Although there are positive first experiences with the scheme, and enthusiasm both within the government and from project developers, the initiatives are mostly small, which results in relatively high transaction costs.

Modalities for domestic offsets at EU level

Demand for carbon credits through domestic offsets widely varies per scheme. Opportunities for low cost offsets in the countries discussed above seem limited, as is shown for example by the expectation of Foundation KLIK that only half of the required offsets in Switzerland for the year 2020 can be achieved at a price below 130 euros.

From the workshop discussion it became clear that a domestic offsetting scheme can be designed in at least three different ways (see Figure 1). Coupling with an ETS means that supply and demand of offsets are market-driven, as is the case in the Australian carbon pricing mechanism and California's cap-and-trade programme. At the level of the EU, this would require

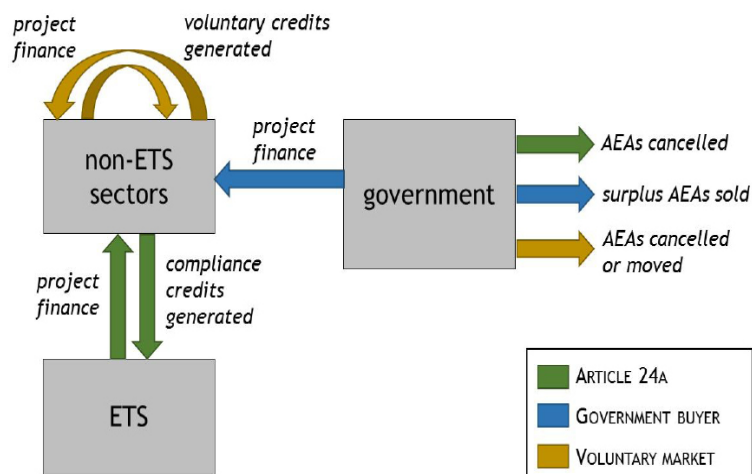


Figure 1. Three designs for domestic offsetting schemes

the use of article 24a of the EU ETS Directive. In this case, domestic projects in non-ETS sectors would be financed by capped market parties. Credits or allowances are generated, which can be used in the EU-ETS and the government cancels an equivalent amount of non-ETS annual emission allocations (AEAs).

Considering the current oversupply of allowances in the EU ETS with corresponding low prices (below 5 euros per allowance), there would be virtually no demand for offsetting. As a result, on a Europe-wide scale domestic offsets are likely to play a small part in efforts to cut GHG emissions, according to Bram Borkent of Dutch consultancy Ecofys: "Greenhouse gas targets in Europe provide little incentive for domestic offsets." Besides, the practical application of article 24a lacks further legislative instructions. In other cases, such as the California and Quebec ETSs, there is no oversupply of allowances and as a result sufficient supply of domestic offsets will be critical to limit costs for compliance parties.

In other schemes, demand is created through purchase programmes. A single buyer, be it the government (e.g., Spain) or an upstream offset body (e.g., Foundation KliK in Switzerland), pays a price for emission reductions. Trading is not the initial purpose of these schemes, even though it would be possible. The Spanish scheme can be regarded as a government subsidy on emission reductions. As the realised emission reductions will result in a surplus of AEAs, the government may sell this to other member states, or use it for own compliance. Since there is low demand for AEAs, a purchase programme is a costly option for governments as a significant share has to be paid from the treasury. Jürg Füssler, a consultant at Infrac, argued that for countries such as Switzerland and Spain domestic offset projects could act as a generator of innovation, being a 'search engine' for untapped abatement options in non-ETS sectors.

A third option, seen by Borkent as the most cost-effective, is the adoption of the voluntary market for domestic offsets. Just as in the case of coupling with an ETS, the emission reductions will be financed by the market. However, in this case no EU emission allowances (EUAs) are issued but the project developer creates voluntary credits, such as Gold Standard verified carbon credits.

To prevent double counting with governmental emission reduction targets, most standards require the cancellation of an equivalent amount of AEAs by the government. The government might require a minimum standard in order to prevent that AEAs are cancelled for fictitious or double-counted emission reduction.

With the voluntary credits being bought by a market party which carries out its business as usual, but aims to be carbon neutral for marketing reasons, this leads to a net reduction of emissions. While voluntary credit trading has long been affected by varying quality levels of the credits, workshop participants recognised that the quality of the voluntary crediting instruments has improved significantly during recent years. Instead, it was noted that those engaged in the voluntary markets (including potential buyers and governments) are often insufficiently familiar with these improvements and that this deserves attention.

Implementation and GHG accounting

The rules and procedures for measurement and calculations of a project's emission reductions are also varied. A main differentiation can be made between top-down and bottom-up approaches. In California a strict top-down methodology is applied, with the regulator having approved strict protocols. This includes standardised parameters and assumptions, including positive lists of *a priori* determined baselines and automatic additionality determination. In bottom-up processes, project developers typically propose specific methodologies for their own projects. In the

Spanish scheme, for example, emission reductions may be measured, reported and verified using methodologies inspired by CDM, JI and methodologies used for national GHG inventories.

In general, a trade-off is observed between stringency of methodologies on the one hand, and transaction costs on the other hand. Stringency is imperative to prevent situations where additionality of projects is brought into question afterwards, such as was the case of the NSW GGAS scheme in Australia. However, a regulator can enable and encourage additional emission reductions by allowing relaxed stringency. This will reduce the associated transaction costs and increase reduction potential. As Axel Michaelowa (Perspectives) pointed out: "Overly stringent approaches will choke off project development, while overly lax systems will lead to a lot of credits with doubtful characteristics."

Domestic offset schemes interact with other mitigation policies and measures. Climate policies may constrain the reach of offset schemes and this requires a transparent segregation of policy instruments according to recipients of funding and the attribution of claimed effects. Non-market climate policies, such as standards and regulations, can be mixed with domestic offsets easily. However, 'stacking' of several other economic tools leads to difficulties, as there needs to

be clarity about to which tool the reductions can be attributed and may therefore claim additionality.

Outlook

The three design options for domestic offsets all have their specific strengths and weaknesses. Coupling with an ETS provides flexibility for capped market parties to increase their emission allowances through domestic offsets. Considering the current state of the EU ETS, this option does not provide added value for Europe. Purchase programmes are good options for accelerating the learning curve of implementation aspects of domestic offset practices, towards a possible coupling with the EU ETS after 2020. The same applies to involvement of the voluntary market. However, while this reduces transaction costs, it may lead to quality problems. Based on the workshop discussions, it can be concluded that there is a long way to go for domestic offsets in order to become a significant instrument for global emission reductions, but in several countries domestic offsetting schemes have shown their potential as accelerator for innovation.

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Workshop presentation slides can be downloaded from: <http://www.zurich-cma.org/2013/10/01/international-workshop-on-domestic-offset-schemes/>.

GGBP Shares Initial Findings on Green Growth Policies, Financing Strategies and Public Private Collaboration

The Green Growth Best Practice (GGBP) initiative is undertaking an analysis of early experiences with green growth planning, analysis and implementation. With the results GGBP aims to inform design of green growth programmes. Currently, 75 authors are evaluating practices and lessons from cases of green growth programmes and strategies. The assessment will be completed in early 2014. Recently, GGBP released a first briefing paper with initial findings on best practices on green growth policies, financing strategies and public-private collaboration. These findings, which are undergoing peer review and further refinement and elaboration, are briefly summarised below.

Policy design and implementation

Green growth policies aim to achieve environmental sustainability quality at low cost, stimulate economic growth, and ultimately support human well-being. There is already emerging agreement on a suite of effective policies, many of which are economy-wide, while others require a focus on particular sectors. Although these policies could help achieve green

growth aims and provide signals for continuing investment in green innovation, they may also adversely affect stakeholders in terms of, e.g., different skill requirements and facing short-term costs of a green growth transition.

With a view to this, the GGBP evaluation has identified four broad features of successful green growth strategies:

1. Developing a synergistic portfolio of economy-wide and sector-specific policies across all major types of measures (e.g. regulations, financial incentives, innovation, capacity building, technical assistance and awareness).
2. Mainstreaming green growth into national policy to achieve coherent and integrated incentives.
3. Designing policies to enable transitions for those adversely affected by green growth transitions.
4. Developing institutional capacity to manage policy implementation, enforcement, and economic and social adjustment with strong governance systems.

The GGBP author team is currently investigating how governments are responding to these challenges of developing coherent policies, managing trade-offs and developing institutional capacity, and the portfolio of policies that they are developing.



Financing strategies

Estimates of incremental investment required for a green transition range from US\$1 – 2.5 trillion per year. Practitioners in government and the private sector have repeatedly expressed the challenges and blockages encountered in attracting this level of green investment, and greening broader investment flows. Governments have three broad levers that they can use to mobilize investments to achieve their green growth goals.

First, governments (in their function of national budget authority) will need to consider a range of financial measures that are appropriate to local conditions, flexible and responsive to the nature of transition. Although these measures are likely to be different for each country, common lessons emerging from green growth financing strategies are:

1. Green growth budget allocation has the greatest impact where it is mainstreamed across the economy, through the leadership of ministries of Finance and Planning, linkage to national targets, and integration with wider budget processes.
2. Governments can tap fiscal revenues to establish green funds or provide green support for catalysing private investment, particularly at the early stage of the project cycle.
3. Public green infrastructure investments and plans, and public procurement can be important tools for delivering finance for a green transition.
4. Regionally coordinated infrastructure support and other financial policies can be helpful in achieving large-scale transformation.

Second, for mobilizing private sector green growth market initiatives, it is important to improve risk adjusted returns for private investment. This can be achieved through targeted risk mitigation measures such as financial mechanisms and instruments that use public finance to reduce costs and risks for private investors. In addition, a strong dialogue and partnerships with the financial sector are needed in order to understand risk profiles and develop a portfolio of complementary policies, evolving through learning. Also required are long-term, transparent and legal frameworks for attracting investors, particularly providers of long-term finance. Finally, instruments will be required for tackling differing barriers and risks to investment.

Third, international financial cooperation can strengthen the availability of financial resources for green growth. This cooperation can work in the direction of cooperation between international

financial institutions to support capacity development (esp. in developing countries), build confidence of other investors and attract different sources of capital for green growth, as well as in the direction of coordination between international and local sources of finance. The latter is considered important practice for aligning resources with national green growth objectives.

Public-private collaboration

Green growth practice has shown that public and private collaboration, if done well, can be a powerful mechanism to overcome market and governance failures to support green growth. Key areas that have seen the development of public-private collaboration are in spurring innovation, creating green markets, natural resource management, enhance resource efficiency, supporting green and resilient infrastructure, and overcoming information problems through transparency and disclosure.

The case studies examined by the GGBP initiative have demonstrated the high value that public funding and support can have if it unleashes entrepreneurship in the private sector. Jointly, public and private actors can find unexpected solutions and unleash the power of collective innovation. These partnerships can have strong impacts when they influence other programs and measures, whether by governments or business.

Green growth practice has also made clear that broad and extensive stakeholder engagement is crucial and that this supports having a shared vision and clearly articulated goals. In this respect it is important to underline that public and private partners may derive different benefits from the collaboration and that collaboration may even involve risks to participants and can be costly. Another initial finding is that governance of public-private partnerships is critical to their success. This includes the commitments, roles and responsibilities of participants and means for collective decision making.

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BIOTEAM Website Guide for Sustainable Biomass Pathways

In an earlier issue of JIQ (April of this year), the project “Optimizing Pathways and Market Systems for Enhanced Competitiveness of Sustainable Bio-Energy and Technologies in Europe” (BIOTEAM) was introduced. The aim of BIOTEAM is to help public and private stakeholders gain better insights on how bioenergy markets work and what can be done to enhance the competitiveness and sustainability of biomass-to-energy pathways in different Member States.

BIOTEAM is co-funded by the EU Intelligent Energy Europe programme and focuses on six EU Member States: Finland, Germany, Italy, Lithuania, Poland and the Netherlands. The project website <http://sustainable-biomass.eu> presents BIOTEAM updates and aims to strengthen information exchange on sustainable biomass processes within the EU.

In short, the BIOTEAM project contains four key activities which are supported by the project website:

- **Pathways:** Analysing the sustainability of biomass-to-energy pathways in different country contexts;
- **Policy:** Assessing the impact of policy instruments on the sustainable use of biomass;
- **Systems:** Enhancing our understanding of the impact of market system dynamics on the sustainable use of biomass through system mapping; and
- **Optimisation:** Providing tools and guidance that enable public and private stakeholder to strike an (optimized) balance between economic, social and environmental impacts associated with the use of biomass for energy purposes.

Get engaged

The BIOTEAM consortium openly invites public and private stakeholders to become actively involved in this project. Interested stakeholders can access the website, which contains the landing page **Get Engaged**. Here, bio-energy stakeholders can find different options to join the BIOTEAM network and/or expert review panels and collaborate with BIOTEAM partners on promoting the rational and sustainable use of biomass.

Share your bioenergy actions with BIOTEAM

The BIOTEAM consortium has recently developed a new methodology for assessing the sustainability of bioenergy pathways. This methodology will be used during the next months for a first assessment of a limited number of biomass-to-energy pathways, focussing on liquids, solids and gases. In order to successfully complete these pathway assessments, the BIOTEAM consortium is very keen to learn more about the sustainability impact/performance of existing bioenergy activities. For that, readers are kindly invited to share their bioenergy activities with the BIOTEAM consortium.

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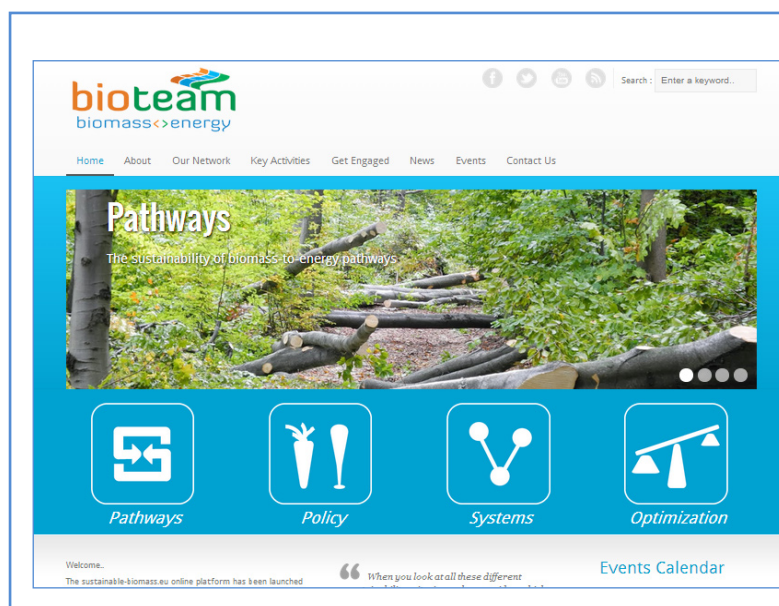
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<http://sustainable-biomass.eu>



Welcome

The <http://sustainable-biomass.eu> online platform has been set up to support the BIOTEAM consortium to interact with the European biomass-to-energy community. BIOTEAM will use this platform to interact with public and private bio-energy stakeholders and to share the project results with the EU community. The overarching goal is to promote the sustainable and rational use of biomass resources.

Read all about the BIOTEAM initiative and its key activities on this website and get engaged!

GreenEcoNet: Connecting SMEs for a Green Economy

The European Commission (EC), to further contribute to the Rio+20 agenda, undertakes a range of activities to accelerate the transition towards a green economy. An important goal of these activities is to assist business communities in greening their operations. This requires a clear understanding of green business opportunities and associated barriers, as well as of how to plan, design and operationalize greening of businesses. The Green Economy Network (GreenEcoNet) project, established within the EU FP7 programme, aims at spreading green business practices among European enterprises, with a particular focus on small and medium-sized enterprises (SME).



Figure 1. the Green Economy Network created

GreenEcoNet enables communication between business, EU and Member State policy makers and research communication to strengthen dialogues on green economy and SME issues.

GreenEcoNet, which was established in June of this year by a consortium of six European organisations (see Box 1), aims to enhance familiarity with enterprises demonstrating best-in-class green practice, thereby enhancing the learning potential from proven practices. For that, GreenEcoNet will build a network and develop the first European wide online platform to strengthen dialogues within the private sector, as well as between the private sector, EU and Member State policy makers and the research community on issues related to green economy and SMEs (see Figure 1). Within the network and through the platform, SME practitioners can learn from practitioners in similar contexts or in different country and sector contexts.

The networking process will involve best-in-class SMEs and the wider business community through their networks, as well as policy makers and academic research institutions. The information currently

available in literature and in business environments will be gathered and elaborated with leading experts in research and business communities to pursue all the knowledge on the topic. In addition, the GreenEcoNet platform will encourage SMEs to share their experience with other SMEs, thereby creating enhanced SME business contacts and community building.

Dialogues involving SME and policy stakeholders will take place in the form of events such as thematic workshops, training and conferences, publications, the creation or enhancement of tools and instruments (see box 2), and a framework for best practices in green economy. A global community of businesses, corporate and SME decision makers, policy makers and researchers will be gathered together on the subject of green economy practices, enablers of green economy and on how to address and overcome soft and hard barriers to a green economy. The outcome of

Box 1. The GreenEcoNet consortium

The GreenEcoNet consortium involves globally recognised independent research bodies focusing on sustainable development, and a multi-stakeholder network of organisations working on the transition to a green economy:

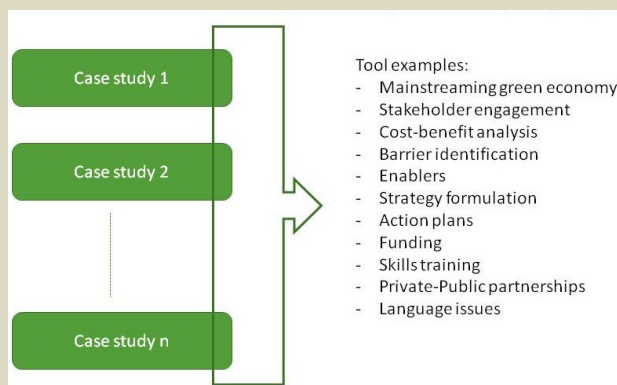
- Stockholm Environment Institute - York centre (UK, project co-ordinator)
- University of Piraeus Research Centre (UPRC, Greece)
- Centre of European Policy Studies (CEPS, Belgium)
- Joint Implementation Network (JIN, the Netherlands)
- Green Economy Coalition (GEC, UK)
- Ecologic Institute (Germany)



Website: <http://www.greeneconet.eu>
 Twitter: #GreenEcoNet
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Box 2. GreenEcoNet toolbox

The GreenEcoNet platform will bring together a wide range of proven practice with greening SME business operations. This practice will cover activities such as developing a green vision by SMEs, identifying green business options, identifying barriers and enablers, and formulating a green business action plan. Tools used for these activities will be presented on the GreenEcoNet platform as part of the case study presentations. In addition, the GreenEcoNet team will perform a meta-analysis across the case studies with the goal to produce a toolbox for SMEs which aim at utilizing green business opportunities.



these discussions and all other activities involving the platform stakeholders will be available on the online website of the platform.

The 'best-in-class green practice' will be posted on the GreenEcoNet platform as online case studies showing why a green business practice was undertaken and how this was done in terms of planning, design, and operation. In order to optimise learning from proven practice, a user-friendly navigation system will support the search for specific themes, items, locations, etc.

The GreenEcoNet web platform

The online platform will be the focal point of the whole dialogue among GreenEcoNet stakeholders. It will not only be an organised repository of the material produced and collected by the network, but it will also serve the purpose of enhancing the network beyond its physical dimension (meetings, calendar, workshops), by promoting and consolidating a virtual forum among all concerned parties. To this end, the online GreenEcoNet platform will be organised so as to host solicited and unsolicited comments, suggestions, and criticisms, notably in reaction to the various

publications that will be regularly posted on the site. The web platform will, overall, be seamlessly integrated into social networking platforms, to reach out to the widest possible audience.

Innovation lab

On 29 November of this year, during the European SMEs Week 2013 (25 - 30 November, Brussels), the GreenEcoNet consortium will host a one-day event to present the networking initiative to SME stakeholders and other practitioners. The event will take the shape of an 'innovation lab' with the GreenEcoNet consortium presenting the structure and functionalities of the planned GreenEcoNet platform to SME stakeholders and inviting them to feedback their views and inputs for the further development of the platform. The platform is planned to become fully operational during late spring 2014.

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GreenEcoNet
Connecting SMEs for a green economy

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GreenEcoNet is a consortium of six leading research networks specialising in green economy transitions.

We have come together in a three year project to accelerate the uptake of green business practices across Europe.

Together we will launch the first European-

News

24 - 25 July: GreenEcoNet consortium partners meet in Brussels to launch a three year strategy and action plan.

1 June: A three year project, GreenEcoNet, funded by the European Commission and bringing together leading research networks from Europe and beyond is now underway.

More news

#greeneconet

Roberto RINALDI @r0brin 11 Oct
#GreenEcoNet Business must understand that the climate cannot wait @EurActiv bit.ly/17k3YET #IPCCAR5 #adaptation #risk

Roberto RINALDI @r0brin 11 Oct
Are you an SME who's trying to reduce its environmental impact? Please share your experience with us at goo.gl/FWrfjk #GreenEcoNet

Carbon Market Data, 2013. ETS Aviation Company Rankings 2012. <<http://www.carbonmarketdata.com>>

This report presents the 2012 rankings of airline companies included in the EU ETS. Ryanair, Lufthansa and Easyjet were the three biggest CO₂ emitters of the EU aviation emissions trading scheme during the year 2012. These figures include only intra-EU flights, as the European Commission, under the pressure of mainly the US, China and Russia, decided in November 2012 to suspend intercontinental flights from the scheme for one year. The paper also presents the amount of surrendered JI and CDM credits under the EU ETS by airline companies.

Ecosystem Market Place, 2013. Maneuvering the Mosaic - State of the Voluntary Carbon Markets 2013 <<http://www.forest-trends.org/vcm2013.php>>

This report describes how voluntary demand developments for carbon offsetting grew 4% in 2012 (USD 523 million to offset 101 million metric tonnes GHG). According to the paper, the European private sector, including regulated energy utilities, was the market's biggest voluntary buyer – seeing demand grow 34% to 43.4 million tonnes of offsets. In the USA, corporations, ranging from The Walt Disney Company to Chevrolet, offset more emissions than buyers in any other single country at 28.7 million tonnes. A little over a third of offsets purchased by US buyers (9.7 million tonnes) were obtained for future use in California's emerging cap-and-trade program.

Field, 2013. Facing the facts and finding a way forward. <<http://www.field.org.uk/papers/the-2013-2015-review-challenges-and-questions>>

This paper considers challenges and questions for the UNFCCC's 2013-2015 review, which will include considering strengthening the global 2 °C goal. The paper explains how the review could be very important and serve as a springboard for a new climate agreement, but also that it faces challenges. Countries may need to consider creative approaches to find ways forward in areas where there are disagreements. Several Parties have referred to a possible "2015 package", which would include a new agreement and related decisions.

According to the paper, exploring different ways of including the review outcome in such a package could help Parties to find ways around problematic questions. How outcomes are framed and the form they are presented in may make a considerable difference to how acceptable they are to Parties. The paper also addresses the issue of how much emphasis the review will place on the adequacy of the global goal (is 2°C enough to limit climate change to a safe level?) and how much on progress towards the goal (are countries doing enough to reach the goal?).

Finally, the paper argues that information related to adaptation and to loss and damage will need to be taken into account in the 2013-2015 review. Questions related to adaptation and to loss and damage may also arise as a consequence of the review and whatever appropriate action the COP decides to take.

Frieden, D., A. Tuerk and D. Steiner, 2013. Cooperation mechanisms of the EU renewable energy directive and flexible mechanisms of the Kyoto Protocol: comparison and lessons learnt, Joanneum Research, Graz, Austria. <http://ress400.joanneum.at/IEFDownloads/Files/Cooperation_vs_Kyoto_mechanisms.zip>

This working paper discusses similarities and differences between the cooperation mechanisms of the EU renewable energy directive (RES directive) and the flexibility mechanisms of the Kyoto Protocol. The cooperation mechanisms allow the (virtual) trade of renewable energy and were introduced with the RES directive to provide Member States with greater flexibility to achieve their national targets for RES. A similar kind of flexibility is known from the flexibility mechanisms of the Kyoto Protocol. Lessons learned from the Kyoto mechanisms may allow conclusions to be drawn on the design and implementation of the renewable energy cooperation mechanisms.

The paper argues, a.o., that it is not possible to directly transfer past experiences with the Kyoto mechanisms to the capability of specific nations to make use of the renewable energy cooperation mechanisms. A comparison of specific features, such as the mechanism type (transfer, project-based, support scheme), price building and specific barriers can, however, help anticipate the possible dynamics and challenges of the cooperation mechanisms.

Jotzo, F., D. de Boer and H. Kater, 2013. China Carbon Pricing Survey 2013.

<<http://ideas.repec.org/p/een/ccepwp/1305.html>> This paper summarises results from the inaugural China Carbon Pricing Survey. The survey elicited expectations about the future of China's carbon price from China-based experts on carbon pricing and carbon markets during July to September 2013. The results indicate confidence that all seven of China's pilot schemes will be under way by 2015, with prices rising over time and having an effect on investment decisions, although there is significant uncertainty about price levels.

The paper argues that there is strong confidence that China will proceed to introduce national emissions trading, probably in conjunction with a carbon tax. Carbon price levels are expected to rise, in time exceeding those currently prevailing in the EU ETS. A large majority of respondents expect that China's

2020 emissions intensity target will be achieved or surpassed, and almost all expect further targets to be adopted in 2025 and 2030, possibly in the form of absolute limits on emissions.

Michaelowa, A., 2012. Can New Market Mechanisms Mobilize Emissions Reductions from the Private Sector? University of Zurich, Perspectives GmbH, Harvard Project on Climate Agreements, Discussion Paper ES 12-1.

http://belfercenter.ksg.harvard.edu/publication/22496/can_new_market_mechanisms_mobilize_emissions_reductions_from_the_private_sector.html

The paper argues that new market mechanisms (NMM) face a number of challenges. Under a sectoral mechanism with a no-lose target, emitters reducing emissions cannot be sure that their efforts will not be invalidated by other emitters who increase their GHG emissions above the baseline level. Setting baselines for sectoral emissions and policy implementation is notoriously difficult, especially if having to be negotiated politically. Competition with existing mechanisms is likely to be fierce.

The paper then discusses a number of options for implementation of NMM which contain sufficient incentives for action while observing environmental integrity of the scheme(s). Given the problems in achieving an incentive-compatible design of NMM, the paper argues that the current project-based mechanisms should be retained for sectors with large emitters or replaced by sectoral trading. Sectoral crediting would be appropriate for sectors with widely-dispersed emitters, such as transportation, where government policies provide better incentives than project-based mechanisms. Policy-based crediting could be used for households, waste, and parts of the power sector.

Phillips, G., 2013. Technical Brief: Kick-Starting the Clean Development Mechanism, Part 2, Sindicatum Sustainable Resources. <http://www.sindicatum.com/technical-brief-kick-starting-the-clean-development-mechanism-part-2/>

This brief discusses how the New Market Mechanism could learn from the experiences of the CDM and use some of its infrastructure. For example, existing CDM baseline methodologies and standardized baselines could be used to allocate allowances to facilities participating in a sectoral Emissions Trading Schemes under the New Market Mechanism. If the allowances were held on a registry, and cancelled against annual verified emissions, the remaining allowances would be available for international transfer.

The author explains how this approach combines the best aspects of the Clean Development Mechanism

(CDM) and Joint Implementation (JI) and, depending on the allocation process, would deliver real permanent and additional emission reductions. The problem that the author addresses is how to ensure that the allocation process goes beyond “business as usual” and helps host countries deliver on net mitigation. For that the authors proposes an extension to the concept of ‘supplementarity’ as applied in the Kyoto Protocol.

Promethium Carbon, 2013. Carbon Pricing Scenarios. <http://www.promethium.co.za/resources-and-information/carbon-pricing-scenarios-2/>

This briefing paper presents observations on the status and development of global carbon pricing, both in terms of market and non-market measures. The analysis focuses on a relatively recent phenomenon of development and cooperation amongst localised carbon initiatives as an important driver for curbing GHG emissions.

The paper commences with an overview of prospects and implications of developments at UNFCCC level giving context to the suite of options that could support future demand for emission reductions. In a second step, it describes how the emerging pathways of localised carbon pricing (trading and taxation) may lead towards market-linked emission reduction demand in the future.

Upston-Hooper, K. and J. Swartz, 2013. Emissions Trading in Kazakhstan: Challenges and Issues of Developing an Emissions Trading Scheme, CCLR 1/13 – Adaptation and Mitigation in the International Climate Regime. <http://www.lexxion.de/de/verlagsprogramm-shop/details/3521>

This article is based on a Workshop sponsored by the European Bank of Reconstruction and Development and held in Astana on 20 June 2013. In 2012, Kazakhstan began to create a domestic emissions trading system (ETS), which has led to a pilot phase commencing in January of this year. The article explains how the ETS will help the country achieve its goal of reducing GHG emissions 7% below 1990 levels by 2020, and to claim the title of being the first Asian nation to undertake an economy-wide cap on its emissions. Prior to the implementation of an ETS, Kazakhstan had put in place a policy to reduce energy consumption per unit of GDP by 15 % by 2015 and 25 % by 2020. Kazakhstan is now a signatory to the Kyoto Protocol, with an inscription in Annex B for a GHG reduction of 5% below baseline levels by 2020.

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
ADP	Ad Hoc Working Group on the Durban Platform for Enhanced Action
Annex A	Kyoto Protocol Annex with 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 listed in Annex I to the UNFCCC; countries not included in Annex I are called Non-Annex I Parties
Annex II Parties	OECD countries (listed in Annex II to the UNFCCC)
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
COP-MOP	COP serving as Meeting of the Kyoto Protocol Parties
DOE	Designated Operational Entity
DNA	Designated National Authority
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
JI	Joint Implementation
JISC	Joint Implementation Supervisory Committee
LCDS / LEDS	Low carbon (or emission) development strategy
LULUCF	Land Use, Land-Use Change and Forestry
NAMA	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Programmes
PDD	Project Design Document
REDD	Reducing emissions from deforestation and forest degradation in developing countries
SBSTA	Subsidiary Body for Scientific and Technological Advice
SBI	Subsidiary Body for Implementation
TNA	Technology Needs Assessment
UNFCCC	UN Framework Convention on Climate Change

JIQ Meeting Planner

30 October 2013, Brussels, Belgium

Workshop on FP 7 Project APRAISE case study results
Contact: Vlasis Oikonomou, JIN, e-mail: vlasis@jiqweb.org

16-17 November 2013, Warsaw, Poland

World Climate Summit
Contact: contact@wclimate.com

11-22 November 2013, Warsaw, Poland

Warsaw Climate Change Conference
Contact: http://unfccc.int/meetings/warsaw_nov_2013/meeting/7649.php

19-20 November 2013, Groningen, the Netherlands

Energy Convention 2013
Contact: info@energyacademy.org

4-6 December 2013, Lima, Peru

Second annual Latin America and Caribbean (LAC) LEDS Regional Workshop (in conjunction with Interclima during 4-6 of December, 2013)
Contact: <http://en.openei.org/wiki/LEDSP/events>

4-6 June 2014, Beijing, China

International Energy Workshop 2014
Contact: e-mail: info@internationalenergyworkshop.org;
website: <http://internationalenergyworkshop.org>