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Photo:

Warwick Manfrinato

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After Paris - Working after Talking

Editor's note

'Paris' was a success and the Paris Agreement has certainly given a boost to discussions about what to do next. At the same time, it has been acknowledged that the submitted climate action plans by over 160 countries (the intended nationally determined contributions) together are insufficient to achieve the goals agreed at Paris.

One of the concerns heard after 'Paris' was that while such meetings attract much attention for the climate issue, once the agreement has been made, life turns back to normal.

However, the 'Paris momentum' seems to have been kept. The Green Climate Fund has recently developed a strategy for allocating its funds, half of which will be spent on adaptation. The Technology Executive Committee, together the with UNEP-Danish Technical University Partnership, the Climate Technology Center and Network and the UNFCCC secetariat, prepared a draft guidebook to support developing countries in preparing Technology Action Plans (TAPs) for prioritised technologies for mitigation and adaptation (as part of the global Technology Needs Assessment, TNA, project). Such guidance was requested by the negotiators in Paris, and in February and March of this year, an advanced draft could already be tested at regional training workshops in Asia, Africa and Latin America.

At the same time, several practitioners are still considering what the Paris Agreement means for their business or activities. For example, does scope remain for funding carbon sequestration in forestry projects, how can the Clean Development Mechanism (CDM) be re-engineered to become a key policy instrument (again) for international climate collaboration, and what can be said about the future of the EU ETS? Some of these questions are addressed in this new issue of JIQ.

The JIQ editors

Revitalizing the EU ETS: in Search of Solutions

by Arnold Mulder*

On 4 February 2016 of this year, at the University of Groningen, Arnold Mulder successfully defended his PhD thesis titled 'CO_2 Emissions Trading in the EU: Models and Policy Applications'. The study brings out two elements in the current design of the European Union Emissions Trading Scheme (EU ETS) that have undermined its performance. First, the study shows that potential investors face a high level of investment uncertainty, especially for potential investors in technologies with high capital requirements and long construction lead times. This may prevent these investments to come off the ground. Second, the topic of policy interaction is dealt with and it is found that the performance of the EU ETS is seriously undermined via the interaction with 'parallel instruments'. Here, parallel instruments are other energy and climate instruments (such as subsidies) that operate in parallel to the EU ETS and also have an impact on the CO_2 emission levels of firms covered by the EU ETS. The study finds that adverse interaction with these parallel instruments is strong. In fact, the CO_2 price could double if interaction with parallel instruments were avoided.

The main objective of the PhD project was to obtain deeper insight into the performance drivers of the EU ETS. The ETS caps the cumulative emissions of over 12,000 installations in the EU. Via the emissions cap, the scheme puts a price tag on the act of emitting CO_2, which should stimulate firms to invest in low-emission technologies. However, since its introduction in 2005, such incentives have remained limited due to a low and volatile CO_2 price pattern. As a result, the ETS has not triggered the deployment and diffusion of low-emission technologies on a large scale.

What are the reasons for this, and will the ETS perform any better in the future? In order to answer these questions, a dynamic stochastic simulation model of the EU ETS was developed. With the model, drivers for demand for and supply of emission allowances were described, including possible strategies for firms to bank unused allowances. Based on a range of scenarios (using Monte Carlo analysis where a process is repeatedly simulated, each time with different starting conditions), the resulting investment and CO_2 price uncertainty was assessed over the years 2008-2030.

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Mitigate price risks in the EU ETS

In a case study, investment uncertainty faced by potential investors in Carbon Capture and Storage (CCS) was analysed. Potentially, as identified in the EU climate roadmap for a decarbonised European economy by 2050, CCS is an important option for reducing European CO_2 emissions. At the same time, it is also an expensive option with a long lead time. Therefore, its development crucially depends on the availability of credible economic incentives for deployment.

Based on the results, it is concluded that potential investors in CCS face considerable investment uncertainty under the EU ETS, which is driven by the uncertain economic growth developments until 2030. Should economic growth be strong, then prospects for CCS would be good as many investments would be required to remain below the emission cap. However, if economic growth is slow or moderate, the scope for CCS may well be negligible as little or no investments would be required to remain below the same emission cap.

Based on this finding, it is concluded that investors are likely to be hesitant to invest in CCS and other capital-intensive technologies with a long construction lead time. After all, before the permitting and construction phase is finished, the investment outlook for firms may have considerably changed. Such investment are, therefore, inherently risky if investors have to rely on the EU ETS as the key incentive mechanism.

Possible solutions to address this could be supply side restrictions, such as reductions in the amount of allowances that are supplied to the market. However, such restrictions do not mitigate allowance price uncertainty. In fact, reducing the number of allowances may increase investment uncertainty. For example, consider that many investors face limited investment uncertainty if the CO_2 price is expected to be volatile yet low on average (e.g., 5 euros on average). Many investors would conclude that conventional technologies remain more profitable and

continue investing in these. However, if the average price is expected to be volatile and higher on average, around the break-even point of many low-emission technologies, investors face a more difficult decision. Should they invest in a conventional technology, a low carbon alternative, postpone the decision, or maybe not invest at all? Investment uncertainty could thus increase if the average CO_2 price rises following a restriction in the supply of emission allowances.

An alternative policy measure to reduce investment uncertainty would be to introduce price floors and ceilings. Such a measure would give investors some support regarding long-term CO_2 price developments and aid them in planning investments going forward.

Impact on ETS market price of policy interactions

A second topic addressed in the study was that of policy interaction. It was concluded that the performance of the EU ETS is seriously undermined through interactions with 'parallel instruments', which are other energy and climate instruments that operate in parallel to the EU ETS and also affect the CO_2 emission level of firms covered by the scheme. Two types of parallel instruments were distinguished: those targeting firms covered by the ETS (Type 1) and those targeting non-ETS sectors but with adverse impacts on the performance of the EU ETS (Type 2).

An example of a Type 1 parallel instrument would be the mandatory combustion of biomass in coal-fired ETS power plants. An example of a Type 2 parallel instrument would be a subsidy scheme or feed-in tariff for decentralised renewable electricity production. Investments triggered by parallel instruments would reduce the emissions of ETS installations, thereby reducing the demand for emission allowances, leading to a CO_2 price reduction. Subsequently, this could trigger other firms across the EU to postpone or reconsider their investments in low-carbon technologies.

In short, Type 1 and Type 2 would not offer any climate gain as any emission reduction is offset by higher emissions elsewhere in the EU given due to a lower CO_2 price. In the study, it is assessed to what extent the current EU ETS CO_2 price is affected by parallel instruments that are currently in place. To answer the above question, the model was extended by modelling the German electricity sector in a detailed manner. On top of economic uncertainty, other parameters were also modelled dynamically and stochastically to add additional realism to the simulation model, including fuel prices, the demand for electricity, as well as wind speeds and solar irradiation levels. For that, two German parallel instruments were focussed on: feed-in tariffs for renewables (FIT) and the nuclear power phase out (NPO).

The results showed that the German FIT and NPO trigger an ETS allowance price reduction of €5 by 2030 (or a 14% lower price compared to a scenario without FIT and NPO). For the EU as a whole, a similar, though stylised, simulation was performed, leading to the conclusion that all parallel instruments currently in place in Europe, are expected to lead to a 50% reduction of the allowance price by 2030 (€20, compared to €40 in a scenario without parallel instruments). Furthermore, in case of stagnating economic growth, a carbon price below €10 would remain probable even in 2030.

The adverse impact of parallel instruments on the performance of the EU ETS is, in any case, considerable. As a result, if policymakers want to improve the investment incentives for firms under the EU ETS, a reconsideration of the use of parallel instruments and targets (i.e., energy efficiency and renewables targets alongside an emissions reduction target) is advised. If policy makers would anyhow prefer to keep parallel instruments and targets alongside the ETS, adverse interaction could be limited via the introduction of a price floor and ceiling in the ETS, or alternatively a CO_2 tax. Finally, policy makers could consider the introduction of a cap on the use of parallel instruments. Although such a cap may be politically hard to establish in practice, it would stimulate national, local and regional governments in Europe to carefully select only those parallel instruments that offer the greatest local benefits and the least adverse impact on the EU ETS. In that manner, a more coherent and goal oriented policy mix could be organized.

Arnold Mulder receives his Ph.D diploma

The Clean Development Mechanism Re-Engineered....!

By Søren E. Lütken*

The Clean Development Mechanism (CDM) remains the only instrument that has been capable of delivering cash flow at scale to investments with emission reduction benefits in developing countries. Although cash flows have largely dried up, the need for earning operational premiums on assets with lower emission profiles than their traditional investment alternatives remains intact. This article discusses the limitation of the CDM thus far that most projects receive finance for realised emission reductions only once the carbon credits (CERs) were delivered (result-based financing), generally adding uncertainty to projects as these expected revenues have not been suitable as collateral when applying for bank loans. The aim of this article is to propose two solutions for more secure project finance conditions.

As with regular (project) investments, for a solid upfront financial structure, CDM project developers need to transform the value of future cash flows into present investment capital. For that, investors need to assess the likelihood of future cash flows taking place, before they can decide on whether to (attempt to) raise the required financing. Due to defaults, poor project performance and uncertainty in the earliest days of the CDM, it did not take long before buyers hard coded 'payment-on-delivery' into most Emissions Reduction Purchase Agreements (ERPA). Buyers of CERs thus were the first to implicitly express their distrust in the system, lumping all the system risk (on top of the project risk) on the developer. As a result, banks, most of which were local and not familiar with assessing CDM project risks, effectively never accepted ERPAs as collateral on projects' balance sheet.

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In all the visionary experimentalism that characterized the CDM, commercial and development lenders were implicitly supposed, but were never consulted to deliver their part of the deal by providing additional investment capital to CDM projects. They were expected to attach a value to an ERPA, but they seldom got the mandate from their internal fiduciary oversight to do so. Project developers therefore had to find financing for their investments, largely disregarding the prospective value of the CERs in the financing plan.

In this article a way to transform the CDM into a true climate finance instrument based on its prospective cash flow is proposed. For that, two elementary solutions to improving the CDM are offered:

1. a 're-engineered CDM' with a securitization model to allow the cash flows offered by ERPAs to function as a project finance instrument, and

2. a 'risk internalization device' that creates up-front securities and frontloads payments for emission reductions, enabling it to contribute to project financing and turns CERs into "receipts for payments" in a true 'results based finance' model.

Risk guarantee

The core requirement for banks to provide financing to a project is a strong likelihood that the project will produce a solid cash-flow which results in a financially viable investment. The past 10 years of operation of the CDM has accumulated a large information base of project characteristics and carbon emission factors. For example, a CDM wind turbine project has a significant probability that it will issue about 84% of the expected CERs. Similarly, a waste heat recovery CDM project is expected to deliver 79% of the expected CERs.

This statistical base can be used in a 'reverse engineering' of the approval process for the CDM combined with an 'issuance guarantee' for a certain amount of CERs. The guarantee is issued by the UNFCCC, which is in full control of CER issuance and thus should be a trusted party for the banks that are to accept the issuance guarantee as collateral for

loans. In this approach, all that is needed for granting such a CER issuance guarantee based on statistically derived expectation of CER issuance is a digital application that internalizes the complexity of the CDM. The user simply checks boxes and chooses from lists of options that reflect project characteristics, the level of detail depending on the statistical basis for differentiation. To provide the regulator (UNFCCC) with a control gate, a sliding scale 'conservativeness premium' on the amount of CERs guaranteed could be subtracted. That would take care of the environmental liability of projects that default on their core operations.

Receipt for payments

When banks offer to finance projects, they do so on the basis of thorough due diligence that, beyond the numbers and the expected internal rate of return, mostly look at risks and how these are covered. The only difference for a CDM project is that banks also have to assess the risk on the carbon revenues, which is what the above re-engineered CDM takes care of. In the second solution proposed here, a funder absorbs the carbon revenue risk, i.e., the CER (market) pricing risk, by offering to accept CERs as receipts for payments.

The bank (or other financing institution) provides the option for the project developer to repay part of the loan with CERs, using the automatised CER issuance procedure explained above. In this way CERs become a means of repaying loans issued in monetary currency on the basis of a predefined carbon price. It is a simple amortization structure which disburses funds upfront as a project-based construction loan. Part of the loan may be repaid with CERs, which are then cancelled (retired).

Such a receipt for payment scheme is not likely to be viable for private sector banks seeking sound return-to-risk-ratios, but it would be a useful delivery mechanism for finance provided through, e.g., the Green Climate Fund Private Sector Facility. The same model can be used for the provision of equity, where the dividends for the 'climate investor' would be paid in CERs, while the main investor(s) receive dividends in monetary currencies.

Conclusion

The two solutions for a re-engineered CDM presented in this article provide a way to ensure that GHG emission reductions of low carbon projects are rewarded through a steady cash flow supporting the operation of the asset. This is the prime virtue of the CDM and was supposed to be the way it should function. The challenge with the CDM is that it carries far too much uncertainty and risk for future CER cash flows to function as collateral when the project sponsor raises investment capital for the project. The solutions presented here deliver securitized cash flows upfront and can function separately or together.

The guarantee model can revitalize the carbon market if such be desired, whereas the receipt for payment loan model can function in the absence of a carbon market altogether in a receipt for payment (loan or equity) approach. With the gradual operationalization of the GCF, it is almost too obvious that a reengineering of the CDM could become one of its easiest and immediately realizable instruments.

New Project in Horizon 2020

PUBLENEF - Effective Energy Policies through Learning from Best Practice

Funded by the EU Horizon 2020 programme, the PUBLENEF project (Supporting PUBLic Authorities for Implementing Energy Efficiency Policies) aims at assisting EU Member States in energy efficiency policy making through learning from good practice of policy processes in the EU, including regional and local policies. PUBLENEF started on 1 February of this year, and will run for three years. The project is implemented by thirteen European partners (see Box 1).

Strategically, with a view to medium to longer term, PUBLENEF aims at improving the knowledge and capabilities of Member State policy makers to align the national incorporation of the EU Energy Efficiency Directive (including its Article 7) with the overarching EU energy efficiency targets for 2030. By doing so, the project supports that energy efficiency policy making takes place against a longer time horizon to support long term EU energy, environment, economic and security goals. PUBLENEF recognises that such strategic policy making cannot be limited to national

PUBLEnEf
energy efficiency policy support

policies, but must, for coherent policy mixes, also address knowledge needs of regional and local policy makers.

In order to achieve this longer term strategic objective, PUBLENEF consists of three main project stages. First, the project aims at assessing and learning from existing energy efficiency policy implementation practices in EU member states, regions and cities. In most member states, whilst frameworks for energy efficiency policies have been formulated by the national government, parts of such national programmes (in terms of implementation, financing and monitoring) are 'delegated' to lower public administration levels. This can be very effective, but practice shows that there still is a great potential for synergies for achieving energy efficiency goals more efficiently. Such synergies can be either horizontal from municipality to municipality or vertical from national to regional or local governments. Finding good practice examples of such energies and analysing these for wider application will be the main goal of PUBLENEF at this stage.

Second, PUBLENEF will support networking opportunities for public agencies at the national, regional and local level in Member States. The reasons for this project stage are that while Member States have set up national support actions for both regional and local authorities for energy efficiency policies, there is wide variety between these actions. Some programmes are quite advanced with tools, training and networking opportunities, while other support actions are more basic, partly due to resource limitations. Through networking activities, PUBLENEF can facilitate a knowledge exchange between the actions so that particularly basic support actions can become more elaborate.

Third, using the insights gained from assessing existing good policy practice and the enhanced networking, PUBLENEF will develop and adjust tools for public agencies to help them implement energy efficiency policies. During this stage, PUBLENEF will collect policy planning, communication, and other operational tools and prepare implementation guidance for each tool, including operational, financial and administrative aspects. With this guidance, policy makers will be helped to choose the most suitable tools for their country or region and design an implementation plan for each tool.

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Box 1. PUBLENEF consortium

JIN Climate and Sustainability (coordinator), the Netherlands

Center for Renewable Energy Sources and Saving (CRES), Greece

Polish National Energy Conservation Agency (KAPE), Poland

Research Centre for Energy, Environment and Technology (CIEMAT), Spain

Centre for Monitoring Business Activities in the Energy Sector and Investments (CEI), Croatia

Association of Bulgarian Energy Agencies (ABEA), Bulgaria

OÖ Energiesparverband (ESV), Austria

Italian National Agency for New Technologies, Energy, and Sustainable Economic Development (ENEA), Italy

European Federation of Agencies and Regions for Energy and the Environment (FEDARENE), Belgium

Energy Cities, France

Tipperary Energy Agency (TEA), Ireland

ARENE - Île-de-France (ARENE), France

Local Energy Agency Bucharest (AEEPM), Romania

Final Event BIOTEAM Project on District Heating and Biogas

On 16 February of this year, the EU co-funded BIOTEAM project organised its final event. The morning session (10:30 to 13:15) focused on supporting sustainable district heating in EU Member states. The afternoon session (12:45 – 17:00) discussed the role of biogas in the European Circular Economy. In total, about 100 participants attended both sessions.

Support sustainable district heating system development in EU

The EU's Heating and Cooling strategy[1], publicly announced on the same day of BIOTEAM event, provides a framework for better integrating efficient heating and cooling into existing energy policies. Its focus is on: i) minimising energy leakage from buildings, ii) maximising the efficiency and sustainability of heating and cooling systems, iii) supporting efficiency in industry, and iv) integrating heating and cooling with the electricity system. The strategy builds on the availability of existing smart technological solutions and intends to jump-start a new integrated approach for heating/cooling as part of the ongoing review of relevant EU policies in the field of demand side management, energy efficiency and renewable energy.

The relevance of this approach for EU's energy system cannot be understated. Today, heating and cooling is the largest EU's energy sector, totalling 50% (550 Mtoe) of final energy consumption. As shown in Figure 1, district heating (in orange) represents 9% of the EU's heating consumption. 40% of district heating is produced from natural gas, 29% from coal and 16% from biomass. For the final BIOTEAM event, district heating was chosen as a key topic because of the potentially large role for renewables, including biomass, in producing it, its ability to provide cheap (thermal) energy storage in smart communities, and not least for its potential to tap into dense stakeholder networks in urbanised areas. Moreover, district heating is relevant for both local and international environmental issues, such as reducing local air pollutants and greenhouse gas emissions. The BIOTEAM event particularly focussed on factors which hamper further development of sustainable district heating systems.

Due to lack of investments in some European regions and unfavourable price developments in some EU Member States, consumers' perception of district heating has become less positive. This has been enhanced by aspects such as monopolistic positions of district heating suppliers towards connected end-users, potentially high heat prices (in absence of sound regulatory frameworks), high network costs for new systems, and the potential switching costs for customers.

The presentations at the BIOTEAM event clearly showed that the regulatory framework for district heating across Europe is highly diverse. **Daniele Russolillo** (Fondazione per l'Ambiente – Turin School of Local Regulation) presented the challenges for the Italian energy agency. The agency is in charge of the regulation of district heating services, which is

"District Heating is mainly a policy and implementation problem, not a technology one"

David Connolly, HeatRoadMapEurope 2050

[1] https://ec.europa.eu/energy/en/news/commission-proposes-new-rules-gas-and-heating-and-cooling-strategy

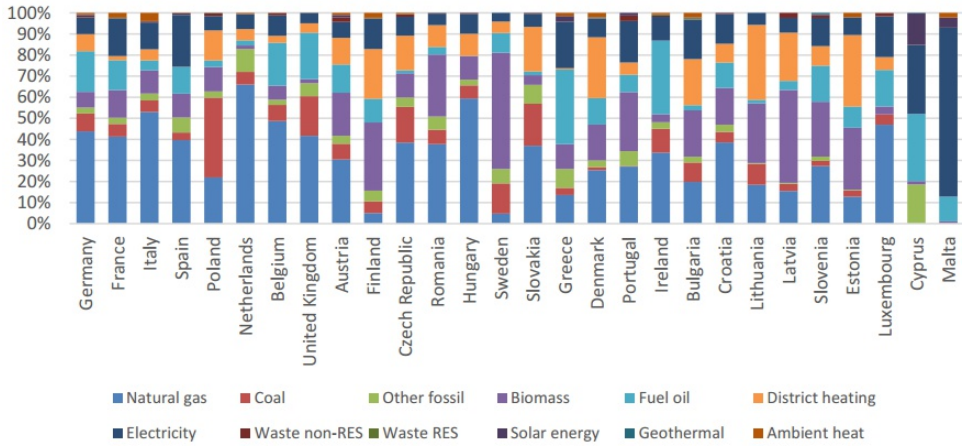

Figure 1. Final energy consumption in the EU, 2012 – EC COM(2016) 51 final, 16.2.2016

organized through concession schemes at the municipal level. **Kaija Hakala** (Natural Resources Institute Finland) explained how recent district heat price increases have 'pushed' Finnish users towards the use of heat-pumps, geothermal, and other 'off-grid' solutions. **Vita Tilvikiene** (Lithuanian Research Centre for Agriculture and Forestry) illustrated the robust price control regulation in Lithuania.

"Internalization of district heating environmental benefits could dramatically change heat price perspectives"

Ingo Wagner, EuroHeat&Power

The regulatory challenges for district heating are linked to the need of a 'new market model' and a more integrated policy framework. The EU's heating and cooling strategy is an important first step in this process. **Eise Spijker** (JIN Climate and Sustainability) showed that in the Netherlands the economics of the entire value chain of low emission district heating systems is under pressure and that for example innovative finance is needed for heat grid investments. Also other regions in Europe face significant challenges for a deep decarbonisation of district heating. In the case of Poland, **Andrzej Szajner** (Baltic Energy Conservation Agency) focused on the policy paradigm shift that is needed to eventually phase-out coal, which covers 75% of DH primary energy in Poland.

The platform discussion helped to gather insights from key district heating stakeholders representing operators (**EuroHeat&Power**), municipalities (**CEEP**) and academic research (**HeatRoadMap Europe 2050**). The main lesson learnt was that the range of incentives for local district heating stakeholders need to be aligned and that, even with strongh competition from natural gas, sustainable district heating is possible and desirable, especially when considering the large volumes of heat currently being wasted. The

"DH infrastructure financing is key for the local public sector where barriers are relevant"

Beatrix Wiedmer, CEEP Energy Task Force

policy and implementation challenges are formidable, but low emission district heating holds great development potential.

Removing barriers for biogas in a circular agro-economy

The biogas event built upon the strategic package on the Circular Economy, which was recently adopted by the European Commission.[2] The strategy aims at extracting the maximum value from primary and secondary raw materials by fostering the efficient use of resources, such as biomass. Agriculture is a key sector for further developing the Circular Economy. The sector is accustomed to biomass cascading and is driven to use resources efficiently. Biogas production fits in the Circular Agro-Economy not only as an option to increase the production of renewable energy, but also has the potential to contribute to reduce GHG and other emissions, while enabling the recycling of valuable nutrients, like phosphates, for soil fertilisation.

One of the key observations at the event was that for sustained future expansion of the biogas sector, not only continued renewable energy support is needed, also recycling and re-use of soil nutrients and the production of organic fertilizers from digestate needs

"Environmental benefits [of organic fertilizer production] are not monetized."

Chris Thornton, European Sustainable Phosphorus Platform

[2] http://ec.europa.eu/environment/circular-economy/index_en.htm

to be promoted. This requires a more integrated and coherent approach from policy making in the area of renewable energy, fertilizers and the environment (air, climate, water, soil).

"An integrated approach for anaerobic digestion is needed, by linking the Circular Economy with the Energy Union."

Nicolas de la Vega, European Biogas Association

With several EU countries putting more emphasis on enhancing the cost-efficiency of their renewable energy support schemes, a stable future role for biogas in the renewable energy portfolio's is not automatically ensured. In several EU countries, due to barriers, re-use or disposal of digestate are a cost-factor for biogas. Market actors are well aware that 'integrated investment projects', to produce organic fertilizers in combination with biogas hold great synergy potential. However, conditions for such investments are challenging within most policy and market environments where not all delivered products and (environmental) services are 'valorised'.

As a result of regulatory inconsistencies, policy and economic barriers several BIOTEAM countries reported unexploited biomass resource potential. **Taija Sinkko** (Natural Resources Institute Finland) indicated remaining potential for using grasses in Finland, while **Vita Tilvikiene** (Lithuanian Research Centre for Agriculture and Forestry) mentioned that, due to continued decline in livestock, there is an increasing agricultural potential for cultivating energy crops in Finland. **Eise Spijker** (JIN) highlighted the large domestic potential of using animal manure for biogas production in the Netherlands. The three speakers referred to the unfavourable economic prospects of exploiting these resources for biogas production under current support regimes.

Lars Lauven (University of Göttingen) discussed the issue of optimum plant capacities and considered the cost-effectiveness of different capacities in Germany. He observed large deviations between theoretically optimal and actual biogas plant capacities, indicating that capacities and input materials are largely dependent on the subsidy regime in place. He also concluded that handling and processing of digestate can significantly influence the economics of biogas, but that this depends on local circumstances regarding the use of (processed) digestates as fertilizer.

"The general public perception of bioenergy from biomass creates an uncertain climate for investments."

Ms. Dominique Dejonckheere, COPA*COGECA

Most speakers recognised that in addition to several regulatory issues related to organic fertilizer production and use, also the economics of organic fertilizers need to improve. Moreover, the environmental services delivered from the integrated production of biogas and organic fertilizers are not yet valued in current support structures. **Daniele Russolillo** (Fondazione per l'Ambiente – Turin School of Local Regulation) indicated that in anticipation of national (and EU) law the Piedmont Region in Italy published a Decree with "Guidelines for the classification of digestate as by-product." **Eise Spijker** (JIN Climate and Sustainability) pointed out the significant methane emission reduction potential of manure digestion that is currently not financially rewarded in the Dutch feed-in support scheme (SDE+).

During the platform discussion two main items were discussed. First and foremost, there is a direct need to develop quality standards, and ensure quality control and traceability of organic fertilizers. Second, a more coherent and integrated policy framework for the Circular Economy is needed. The elements of such a framework are all present, such as the EU's renewable energy directive, fertilizer regulations, air quality policy and the Circular Economy package. There was a common understanding that the various relevant policy elements are currently not yet at the right level of coherence and sometimes can even send the wrong signal to the market. The events key conclusion was that the challenge of building a 'Circular Economy Proof' policy framework is ahead of us!

REDD Plus – Good Bye to Private Sector Conservation?

by Michael Dutschke & Warwick Manfrinato*

Worldwide, there are approximately 200 privately funded projects for Reducing Emissions from Deforestation and Degradation (REDD+), producing voluntary emission reductions, which they hoped could be accounted for under a future commitment period. Will these projects now be dismantled? On the contrary, the authors pledge for upscaling of these scattered activities into a powerful rural development network.

For José Ximenes,[1] 11 December 2015, the day of the Paris Agreement, marked a black day. Literally the night before, the Brazilian government had disallowed any carbon trading for the country's 55 early REDD+ activities. Now, subnational activities are no longer in the text of the Agreement, and soon enough, the project's carbon buyers withdrew.

In the Sao Paulo office of the Amazon-based operation, José is showing us maps, pictures and heaps of paperwork. "What have we gone through!", he asserts, "since 2011, we have had consultants produce a management plan, a baseline study, social and environmental studies, FSC and carbon auditors looked into every detail of our operation. We have gained support from local NGOs, the community and the local administration. After hundreds of thousands of dollars-worth certification, it turns out, it all has been in vain".

Only half a year ago, due diligence by a group of 10 experts on behalf of an international investor found the project to be truly additional, because Improved Forest Management in the Amazon is still losing out in the competition against illegal timber. Ximenes: "Without carbon sales, we will likely have to close down the shop and give up the fight against the cattle mafia."

Historically, private-sector forest conservation has been a marginal process in the tropics. Even in

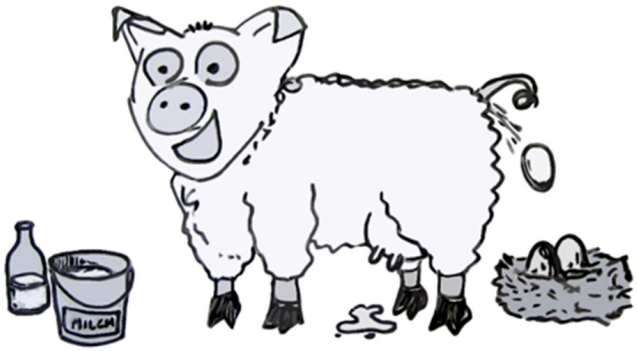

Figure 1. REDD+ serving all purposes of rural development (courtesy of Pixelrausch, en-wiktionary.org).

managed private land, there is considerable non-compliance, combined with bribery, double use of documentation and a host of semi-legal options, due to the notorious lack of enforcement capacity of local authorities.

Forestry in climate negotiations

It was at COP 9 back in Milan in 2003, when a strong representation of Island countries opened a discussion in plenary and NGOs from the main tropical forest nations in a side event proposed options to insert standing forests in the climate regime.

This set the scene for a 12-year struggle for a mechanism that would be inclusive, effective, address all kinds of safeguards, improve governance, be public and privately funded, and would not water down Annex I commitments. In one word, what Germans call the "egg-laying wool-milk-sow".

Mainly Brazil insisted that any emission reductions verified under the mechanism would not be traded in carbon markets, which is why it was negotiated outside the Kyoto Protocol track. Thus, a gap between market views and government control mechanisms broke open among different stakeholders.

With the aim of nevertheless leveraging private finance, in early 2007, a group of observers to the climate negotiations submitted a proposal that would facilitate early action by private investors in REDD+, the so-called 'Nested Approach'. The basic idea was to create "forest conservation islands" (nests) within national boundaries that used third-party monitoring, reporting and verification services to generate carbon

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[1] Name changed; the project has been made anonymous.

Figure 2. Side event at COP-9 on position of forestry in international climate policy regime, Milan, 2003.

Photo: Warwick Manfrinato.

offsets. These would partially be provided to the government as a mandatory reserve for later use under the Convention, while the remainder could be sold to private-sector investors. This way, private finance would be attracted, while creating capacities to deal with conservation projects at subnational level, with a view on integrating these projects into a national policy framework later on.

The Nested Approach quickly found its way into most national REDD+ Readiness processes funded by the World Bank's FCPF and UN-REDD. The California Climate Action Registry has developed rules for nesting, and the VCS launched its "Jurisdictional and Nested REDD+" Standard in 2012. However, in December 2015, REDD+ was codified in Article 5 of the Paris Agreements, but subnational approaches, the basis for the nests, were no longer supported.

Today, the question remains: What will happen to the around 200 privately funded REDD+ projects in tropical countries? They have undergone painful and costly procedures to prove additionality, established reference emission levels, designed and implemented monitoring plans, accounted for leakage and created permanence risk buffers, carrying out stakeholder processes and built local capacities, trusting to convert their voluntary carbon credits into emission allowances under a future climate regime.

Under some national legislations, these emission reductions may still qualify under a domestic accounting system, albeit with limited market liquidity. For the 55 Brazilian projects, even this sheet anchor was removed by the presidential decree ruling out any private REDD+ project emission reductions to be used for compliance purposes. This defrauds not only private investors, but also project participants and communities in truly additional project situations like José's, whose project activities do not yet generate sufficient internal return through alternative land use. As a result, land users will most certainly revert into unsustainable use of forests, a backfire result to much of the good efforts of Brazilian civil-society organizations.

Non-carbon motivations for private landscape protection

Without the possibility to market carbon credits from REDD+ projects, non-carbon motivations need to be explored to make projects financially viable. The most successful REDD+ projects feature a combination of different modalities targeting the improvement of rural livelihoods, including energy production and demand-side measures. It has been interesting to see how for the first time private enterprises had to care about something like landscape integration, in order to comply with the complex safeguards in certification rules and modalities.

There are basically three, partially overlapping, motivations for the private sector to continue investing in conservation in terms of rural development projects:

1. Corporate Social Responsibility.

2. Marketing of goods and services to evoke the value of nature to clients.

3. Systematic land remediation as a way to increase the land value, such as improving natural resource management.

Photo: Warwick Manfrinato

There is an alliance of large multinationals (The Forest Dialogue), including Nestlé, Coca-Cola, l'Oreal and Unilever, claiming that the provision of their consumables is deforestation-free. They generate a demand for certification for their providers, equivalent to type 3 above. Organic cotton has become a strong policy of companies such as C&A, one of the largest conglomerates in the apparel sector. This has influenced numerous other companies in the fashion industry, including luxury brands.

The cotton industry alone represents over 30 million hectares globally. Consumers are increasingly becoming aware of cotton's intricate land use competition with forests. Brazil is the fifth largest producer of cotton and most of the production area expands to the savanna region of central Brazil, with direct impact in the tropical forests in both biomes of Cerrado and Amazonian, the region's largest carbon stocks and responsible for the water dynamics of the continent.

Other options for non-carbon motivates to support REDD+ projects are sponsorships of projects by companies for CSR purposes or developing financial products by banks which are 'greened' by making investments in REDD+ projects (e.g., green savings account or a Rainforest Credit Card). Also, the tourism sector could be a potential source of funding non-carbon benefits of REDD+ projects, such as through hotels that offer to change linnen every two days instead of daily and donate the savings for charity. For their direct link to the surrounding environment and visitors' high willingness to pay, the acceptance by the client to participate in the recuperation of conservation payment costs of the tourist enterprise is high.

While the door to accessing the carbon market for REDD+ has been slammed with the Paris Agreement, commodity purchasers and institutional investors are increasingly setting landscape-based criteria that resemble REDD+ guidelines and safeguards. Yet there is a disconnect between early REDD+ and private sector preferences. Today's early REDD+ activities are:

- too much forest and carbon focused,
- under-financed through their dependence on the voluntary carbon market, and
- too scattered and unorganized to attract commercial funding.

However, early REDD+ projects, with all the initial obstacles they had to overcome, are best poised to become rural landscape development cells.

The challenge now is to scale up, instead of down. A network of landscape development cells has the potential to spread the risk for investors, while generating political support for national-scale REDD+ policies and measures. It is up to bilateral and multilateral funding to harness the dynamics and the liquidity of the private sector by co-sponsoring the active integration of existing projects into their surrounding landscapes. The Green Climate Fund, UN-REDD and other public donors now have the chance to support the private sector in standing firm to the existing subnational REDD+ projects, taking advantage of their experience and local support, and of the national REDD+ framework.

Now it is up to bilateral and multilateral funding to harness the dynamics and the liquidity of the private sector. By co-sponsoring the active integration of existing projects into their surrounding landscapes, the Green Climate Fund, UN-REDD and other public donors now have the chance to support the private sector in standing firm to the existing subnational REDD+ projects and taking advantage of their experience and local support.

In an effort to widen the focus, a privately sponsored think tank initiative has developed the Brazilian Ecosystem Service Matrix (http://brazil.forest-trends.org). The Rainforest Business School at the Sao Paulo University is currently seeking sponsors for the integration of Brazilian early REDD+ projects into a joint platform able to address the capital market. If they succeed in a timely manner, projects such as Jose Ximenes' and the local communities, who put their hope for a better life in them, may have their year long efforts finally compensated.

Reports

Dimantchev, E. and S. Scholset, 2016. WHITE PAPER - EU Climate Ambition: Falling Short of Long-term Targets?, ThomsonReuters.

The EU is divided over whether to make changes to its climate targets following the Paris Agreement. According to the European Commission, the EU's target to cut emissions by at least 40 percent by 2030 is in line with the Paris Agreement. This is because, the Commission states, the 40 percent target places the EU on track for an 80 percent reduction by 2050, which the EU has defined as its domestic contribution to the 2°C goal. However, the authors find that the 40 percent target keeps the EU off track towards its 80 percent target. Moreover, the post-2020 EU ETS legislation proposed puts off efforts to reduce emissions and relies on uncertain technological improvements to help the EU deliver its 80 percent target.

Hermwille, L., 2016. Offsetting for International Aviation: The State of Play of Market-Based Measures under ICAO, Wuppertal Institut fuer Klima, Umwelt, Energie, Wuppertal, Germany.

Emissions from international aviation are bound to increase dramatically over the next decades. The International Civil Aviation Organisation (ICAO) has committed to cap the growth of net emission from the international aviation sector after 2020 (Carbon Neutral Growth Goal). A basket of measures shall contribute to achieving this goal, but these measures will not suffice to achieve ICAO's goal. ICAO has therefore decided to develop a global market-based measure by means of which excess emissions can be offset through certified emission reductions on the ground. This paper focusses on the proposed market-based mechanism in the light of the CDM experience and derives recommendations for ICAO's proposed mechanism.

Kreibich, N. and W. Obergassel, 2016. Carbon Markets After Paris How to Account for the Transfer of Mitigation Results?, JIKO Policy Paper.

In this paper it is argued that instead of a uniform formula for all countries, the Paris Agreements allows Parties to autonomously define their nationally determined contributions (NDCs), resulting in a large diversity with significant challenges for emissions accounting.

These challenges are further increased when Parties with different types of contributions participate in the transfer of emission units. Parties with very different types of INDCs have expressed their willingness to do so, mainly under future market-based mechanisms. This raises the following questions: How should these transfers be accounted for and what requirements (opt-in provisions) should be established to allow Parties to participate in the transfer of emission units in order to ensure environmental integrity?

In the paper these questions are analysed by first looking at GHG accounting frameworks, their functions and elements more generally. The functioning of such a system is then illustrated by presenting the provisions of the Kyoto Protocol's accounting framework. From there, the authors briefly present the diversity of the INDCs that have been submitted so far. Based on the overview of INDCs, different types of contributions are analysed regarding their compatibility with unit transfer and potential risk to environmental integrity in form of double counting.

Lütken, S.E., 2016. The Clean Development Mechanism Re-engineered…!, Low Carbon Development Programme UNEP DTU Partnership, Low Carbon Development Working Paper Series, No.12.

The Clean Development Mechanism (CDM) remains the only instrument that has been capable of delivering cash flow at scale to investments with emissions reduction benefits in developing countries. Although cash flows have largely dried up, the need for earning operational premiums on assets with lower emission profiles than their traditional investment alternatives remains intact. This article discusses the limitation of the CDM thus far that most projects receive finance for realised emission reductions once the carbon credits (CERs) were delivered (results-based financing), which has generally added uncertainty to projects as these expected revenues are less suitable as collateral when applying for bank loans. In this article two solutions for more secure project finance conditions are proposed.

Marcu, A., M. Elkerbout and W. Stoefs, 2016. 2016 State of the EU ETS Report, Centre for European Policy Studies (CEPS) Carbon Market Forum, Brussels, Belgium.

The EU ETS has passed its first decade of operation and has proven to be an inspiration for those that promote carbon markets. As a market, the EU ETS is functioning reasonably well, even in the face of many of the liquidity providers exiting the market. Volumes have been down back to below 2009 levels. The make-up, and behaviour, of the market participants tend to amplify its downturns, while its seasonality will sometimes amplify its volatility. However, it must be a concern that the 2020 milestone target does not seem to be in line with the EU longer-term goal of 80-95% by 2050, and has a low probability of delivery, even at the lower end of that range. Also, current objectives are aligned with a 2ºC target, and do not seem to take into account the Paris Agreement (PA) call to "pursue efforts to limit to 1.5ºC". The EU ETS is making a difference in establishing a price for carbon and incentivizing, through its resilience, and direction towards increased scarcity, significant corporate shadow prices. However, EUA prices at current levels cannot trigger operational, or medium-to-long term change, which is triggered by other, costlier measures, which have other additional objectives, such as renewable energy policies. The need to find mechanisms to incentivize innovation must be a significant concern.

Michaelowa, A. and K. Michaelowa (2015). Do Rapidly Developing Countries Take up New Responsibilities for Climate Change Mitigation?, Climatic Change 133(3).

A significant number of countries classified as "developing" during the negotiation of the UNFCCC in the early 1990s have experienced rapid economic growth and increase of greenhouse gas emissions since then. We assess whether governments of such countries are considering taking up responsibility for emissions mitigation in the context of the UNFCCC's principle of common but differentiated responsibility (CBDR). While an expansion of mitigation responsibility to Non-Annex I countries has been strongly opposed by overarching groups such as the G77, we find that countries such as South Africa and Indonesia have clearly supported binding commitments. Other countries like China and Singapore oppose binding commitments but increasingly engage in domestic mitigation action. Moreover, China has pledged a significant amount of climate finance. Even in the countries of the Gulf Cooperation Council, which adamantly refuse mitigation commitments, some mitigation action seems to emerge. We thus foresee that countries will increasingly adopt differentiated positions regarding their responsibility for mitigation. This could provide new dynamics in international climate negotiations.

Mulder, A.J., 2016. CO2 Emissions Trading in the EU- Models and Policy Applications.

This PhD thesis is based on two main pillars. First, the analysis of whether the current design of the ETS provides potential investors with enough market confidence to justify investments in expensive technologies for mitigation is carried out. Second, several policy instruments are considered which directly and indirectly lead to CO2 emission reductions at the sites of firms covered by the ETS. Should such interactions become too strong, the ETS may even become redundant.

Swartz, J. (2016), China's National Emissions Trading System: Implications for Carbon Markets and Trade, Climate and Energy, ICTSD Global Platform on Climate Change, Trade and Sustainable Energy, International Emissions Trading Association (IETA).

China's introduction of a national ETS, scheduled for 2017, is an important development in the expanding carbon market landscape. It sends a powerful signal about China's mitigation commitment and support for carbon markets. As the largest emitter of greenhouse gases and a key player in world trade, China's move to a nation-wide ETS can have significant implications for the future of carbon markets around the world.

This paper explores the implications of a national ETS in China for carbon market developments globally and the potential formation of "carbon market clubs". It examines how the presence of a Chinese ETS may affect competitiveness and carbon leakage concerns in other countries, and, related to that, the further uptake and ambition of carbon markets.

The paper also discusses the design of China's national ETS. It identifies key challenges and makes recommendations for designing and running an effective ETS that may be linked with other schemes in the future. The author further explores the potential for plurilateral carbon market clubs, both with and without China's participation.

JIQ Meeting Planner

21 April 2016, Brussels, Belgium

Final conference POLIMP project - The Future of EU Climate Policy after Paris; AGENDA and to REGISTER, contact: http://polimp.eu

4-5 May 2016, Johannesburg, South Africa

Leveraging Services Potential for Inclusive and Sustainable Economic Growth, contact: http://www.ictsd.org/themes/services/events/leveraging-services-potential-for-inclusive-and-sustainable-economic-growth-1

16-26 May 2016, Bonn, Germany

Bonn Climate Change Conference – May 2016, contact: http://unfccc.int

26 May 2016, Brussels, Belgium

GreenEcoNet Final Conference ''Moving towards a circular economy: Challenges and opportunities for SMEs", contact: https://www.ceps.eu/events/moving-towards-circular-economy-challenges-and-opportunities-smes

28-30 June 2016, Kigali, Rwanda

Africa Carbon Forum 2016 - Promoting Cooperative Climate Action in Africa, contact: http://africacarbonforum.com

26-27 September 2016, Oxford, UK

International Conference on Fossil Fuel Supply & Climate Change Policy, organised by Stockholm Environment Institute, CICERO, University of East Finland, Australian National University, ERC-University of Cape Town, SSEE-University of Oxford, contact: 2016conf@sei-international.org

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 non-governmental organisations, and staff of international organisations involved in climate policy negotiations and operationalisation of climate policy instruments.

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