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JiQ

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Editor's Note - JIQ 20 years

Dear readers,

Catrinus Jepma
Chief editor JIQ

Few of you, I presume, have read the first issue of the *JIQ* which was published in Spring 1995. Now that *JIQ* celebrates its 20th anniversary, we dug into our archive (obviously a paper archive because we talk about 20 years ago) to find the first issue of *JIQ*. Meanwhile, a collector's item, I imagine.

What were the issues at that time? Going through the *JIQ* issue, it becomes clear that the main concern was to line up and inform various stakeholder 'circles' about 'Joint Implementation' (JI), which was a new concept at that time. JI made it possible to conduct mitigation activities elsewhere than on the territory of a country with commitments. With that, compliance could be based on certificates. It was hoped that JI would not only substantially reduce overall mitigation costs, but also increase the chances of success for the international climate negotiations under the COP. Early 1995, the first COP was about to start. At the same time, however, there were major concerns that misinformation, misinterpretation or misunderstanding of the JI concept, and what it would mean in real world circumstances, could kill or at least water down the potentially promising concept of certificate trading.

That was why the Netherlands Government, and specifically Bert Metz and Henk Merkus of the Ministry of Environment, asked the Joint Implementation Network (JIN) to set up *JIQ*. This decision was inspired by the so-called 'Groningen Statement on Joint Implementation' of 3 June 1994 reflecting the main conclusions of probably the first multi-stakeholder international JI conference. The Groningen Statement, among others, recommended "to explore the possibilities of (…) a JI newsletter and a network for the exchange of information on JI studies and projects." (I remember well the crucial role of Jan van Ettinger in drafting the Statement and supporting the early *JIQ* design).

I still remember how we (unintentionally) 'smuggled' some 10 boxes with about 1,000 copies of the first issue via a backdoor of the highly protected Berlin conference centre (without anyone of security services noticing), and how pleased we were to see COP-1 diplomats and others picking up and reading the *JIQ* that we spread around the various meeting places and corridors. We wonder whether the conference chair and then German Minister of Environment, Ms. Angela Merkel, had also taken the opportunity to skim through the new journal…

Looking back over the past 20 years, a lot has changed: we have seen how the Kyoto Protocol was adopted and its first commitment period expired, we have seen the EU-ETS develop and go through its first two phases, we have seen the explosion of CDM projects, we have seen 20 COPs struggling with all the details that need to be discussed to make the international climate regime work as reliably as possible and somehow acceptable for all, and we have seen the numerous initiatives everywhere in the world to support development and transfer of technologies for mitigation and adaptation. All in all, it has been an impressive change of both mind-set and action.

In this process, we have also seen that JI as a concept has survived miraculously well and still functions as an important mitigation policy concept, both internationally and nationally (see elsewhere in this issue for examples of regional climate funds in the Netherlands). Also, the early notion of JI that mitigation actions can only be successful if the interests of all partners are considered, has gained support via the notion that climate policies should be embedded in the overall sustainable development goals of nations. Obviously, JIQ has also evolved along with all the new developments and insights.

In this issue

Looking at the downside, however, we must also conclude that during the past 20 years, the classical JI concept has not generated serious penalties on emissions. Both under the Kyoto Protocol and the various (multi)national emissions trading schemes, credit/allowance/certificate prices have remained far too low to substantially trigger innovation. At the same time, the alternative penalty-based instrument, GHG taxation, has not (yet) seriously come off the ground. As a consequence, since the penalty sticks do not work, low carbon innovation relies on subsidy or transfer 'carrots'. The sad result is that while JI was designed to save costs, in reality the international climate regime strongly relies on costly support schemes.

During the next 20 years this will have to change. Let me finally thank you for all your interest, contributions and feedback during the last 20 years and most of all thank the editors and editorial board, and Wytze van der Gaast en Anna van der Gaast-Witkowska in particular, for their work.

Obviously, given the continuous interest in *JIQ* and many article contributions by readers to the magazine, we will go on.

Catrinus J. Jepma
(chief editor)

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Editorial note

Without doubt the first Conference of the Parties (CoP 1) in Berlin from 28 March through 7 April was the main JI-related event this year. Several thousands of public officials, private individuals (including two members of the *JIQ* editorial board who presented the magazine and handed out over 1200 copies of the first issue) and representatives of the media convened from various parts of the world to discuss or report on how to proceed with the UN Framework Convention on Climate Change (FCCC). Prior to CoP 1 many participants had expressed their scepticism about the feasibility of progress. After all, the results of INC XI had not given rise to great optimism; also with respect to JI the points of view expressed officially and unofficially seemed to differ so widely that according to some pessimists no *communis opinio* about a JI pilot phase would emerge during CoP 1.

However, looking back at Berlin, it is fair to say that a breakthrough has been achieved in various respects, not in the least that of JI. Indeed, one of the main results of CoP 1 - in addition to the acceptance of the 'Berlin Mandate' to establish by 1997 a Protocol to strengthen the FCCC for the period after 2000 - was the decision 'to establish a pilot phase for activities implemented jointly among Annex I Parties and, on a voluntary basis, with non-Annex Parties that so request.'

This result has not been achieved easily. One has to acknowledge that during a large-scale negotiating process such as the Berlin Conference all issues are interlinked. Moreover, one has to keep in mind that positions taken by countries are sometimes also based on tactics. Notwithstanding this, during the first part of the CoP 1 negotiations the divergent points of view on JI seemed almost unbridgeable. At first, the G-77 and China only seemed to accept JI projects between Annex I Parties, while others stressed the need to also open the possibility to carry out JI projects with non-Annex Parties. Moreover, many countries objected against credits falling to any Party as a result of GHG emission reductions or sequestration during the pilot phase from activities implemented jointly, whereas, *e.g.*, the US representatives stressed the important role of incentives also during the pilot phase.

However, in the course of CoP 1 it was as if the point of view that JI could ultimately provide a win-win situation for all participants increasingly gained adherence. Especially India, but also some other developing countries, has played a crucial role in achieving the present compromise. This consisted of: starting a JI pilot phase among Annex I Parties and, on a voluntary basis, with non-Annex Parties, under the conditions:

- that these activities are compatible with and supportive of national and development priorities;
- that the activities are accepted, approved or endorsed beforehand by the Parties' Governments; and
- that the environmental benefits to be expected as well as the financing of activities are additional.

In addition, it was decided that no credits shall accrue to any Party from JI activities during the pilot phase.

The pilot phase is essentially a learning process. It will have to demonstrate how the many conceptual and practical questions with regard to JI have to be answered when it comes to actual practice. The pilot phase should also make clear what the various Parties can gain from participating in JI projects. It is therefore that the Subsidiary Body for Scientific and Technological Advice (SUBSTA), in coordination with the Subsidiary Body on Implementation (SUBIM), is requested to establish a framework for reporting and to prepare a synthesis report for consideration by the CoP at its annual sessions. On the basis of this the CoP will before 2000 take decisions on the pilot phase and progression beyond that.

The bottomline of all this, however, is: how the various JI projects actually work; what new initiatives are being made; how the many small daily obstacles that by definition will characterize a test phase will be removed; and in what spirit the participants involved in JI activities are prepared to solve problems and provide answers to the questions. In addition, especially the dissemination of experiences and information among the various persons/institutions involved seems crucial to make the pilot phase a success: one has to learn from each other.

The information about JI activities we have collected and the enthusiasm and spirit we experience with our contacts have made us optimistic as far as the activities 'on the floor' are concerned. Now that the officials have given their green light, it looks like the show is on.

Catrinus J. Jepma
Chief Editor

For more information on articles where telephone numbers are not mentioned, please contact JIN.

In this issue

GreenEcoNet Workshop Explores Options for "Greenovation" by SMEs

The EU-funded project GreenEcoNet aims at connecting small and medium sized enterprises for a green economy. As part of the project, a workshop was held in Berlin on 28 November 2014. It focused on challenges faced by SMEs when trying to green their business and how networking could help address these challenges. Most workshop participants represented German SME and sector-level 'multiplier' organisations. The workshop was co-organised and hosted by Ecologic Institute and the German Association of Engineers' centre for resource efficiency.

Greeneconet.eu

The workshop focussed on two main topics:

1. What barriers do SMEs face in going green(er) and what support would SMEs need in order to overcome these barriers?
2. How could online and offline networking support SMEs in assessing and overcoming these barriers?

These topics were introduced by eight speakers (see Box 1) who addressed aspects such as: acquisition to (eco)finance, role of research institutes and programmes in supporting SMEs for a greener economy, and the role of so-called 'multipliers' (*e.g.*, sector-levels organisation aiming at supporting multiple SMEs). The presentations also included several examples of case studies based on SME (supporting) practice in Germany (*e.g.*, Green Key project and the Modell Hohenlohe e.V.).

Peer-to-peer communication

In addition, the workshop facilitated detailed discussions about the topics. Participants identified lack of technical and managerial knowledge, skills and information, including the usability of new business models, as barriers for SMEs to adjust to a green(er) economy. For instance, new or adopted ways of doing business may not be known or staff may not be able to (easily) pursue new activities. Workshop participants identified the following underlying reasons for these barriers:

- As SMEs may not have the capacities to implement a longer term vision, and longer term benefits of greener business operations are often unclear. Moreover, many SMEs do not see "being green" as a priority as their main focus is on core business operations.
- The organisational structure and culture of an SME may limit the exchange of information between different departments, *e.g.*, between accounting, marketing and engineering.
- Another barrier relates to the question from where to obtain information and advice in order to become green(er). SMEs mostly use peer-to-peer communication from within the business community, but generally SMEs are reticent to share their knowledge for commercial and competition reasons. Of course, this varies among SMEs, as in some sectors people may be more willing to share than in others. Additionally, some SMEs which have greened their operations might want to share their case study in order to use it as a marketing instrument.
- Furthermore, SMEs may be reluctant to use external consulting as information source due to a lack of trust and perception of costly services with unclear business benefits from such services.
- Finally, both the lacking access to funding and the issue of high up-front investments costs versus long-term pay-back times negatively affects SMEs' ability to "greenovate".

Box 1. Invited speakers at GreenEcoNet Workshop, Berlin, 28 November 2014

- Sebastian Schmidt, VDI Resource Efficiency Centre, Germany
- Andreas Kunsleben, Effizienz-Agentur NRW, Germany
- Dr. Kai Morgenstern, RKW Kompetenzzentrum, Germany
- Dr. Alexander Van der Vooren, PBL, the Netherlands
- Robert Lorenz, Green Key Project, Germany
- Nicole Meier, Energy efficiency+ Roundtable, Germany
- Dr. Daniel de Graaf, PRESOURCE project, Germany
- Jan Christian Polania Giese, Thema1, Germany

Transformative change

In terms of drivers for greening of SME business activities and adjusting to a green(er) economy, workshop participants highlighted the following aspects:

- In the small business landscape there is preference for personal contact among SMEs and with sector-level organizations and multipliers. As a result, SMEs are usually more familiar with offline

networking based on trust. Therefore, an on-line networking platform such as GreenEcoNet, can help 'multipliers' filter information which they can communicate with SMEs in their networks.

- To support SMEs in identifying challenges and solutions, participants suggested setting up regional or local networks of SME managers and working groups. This could allow for developing a joint problem understanding and exploiting joint opportunities for problem articulation and support for problem solving.
- Workshop participants emphasised the importance of providing financial support to existing SMEs and to start-ups (the latter were considered to be able to deliver more on transformative changes than existing SMEs), on EU, national, regional and local levels.
- This should go hand in hand with supporting the internationalisation of SMEs, meaning that policy support could facilitate cross-border exchange and relations between SMEs or sectors. Participants explained that this calls for policy makers to improve (i) their understanding of the problems and challenges facing SMEs, (ii) to enhance their ability and (iii) willingness to influence policy support towards providing solutions sought to SMEs.
- Participants acknowledged that SMEs often simply respond to what is demanded by bigger companies in the value chain (for example, a car manufacturer who decides to only purchase parts if they were produced in a "green" way). Therefore, SMEs may face larger difficulties to be proactive in the economy and go much beyond incremental change to support transformative change.

The Berlin workshop followed up on a Workshop with SMEs and multipliers, which was held in Düren, Germany, on 26 November 2014, in order to discuss the needs and challenges of SMEs in a green(er) economy as regards business support, as well as offline and online networks (see Box 2 for a brief description).

Box 2. Brief description of SME workshop, Düpren, 26 November 2014

The workshop "Role and challenges of SMEs in a green(er) economy – Transnational networking as an opportunity for SMEs" was held in order to reach out to regional stakeholders in Germany. The event was co-organised by Effizienz-Agentur NRW (EFA) and mainly targeted SMEs from the paper industry in the Meuse-Rhine Euroregion. Kanzan, a Düren-based paper producer, graciously hosted the event, which brought together 22 participants from Germany, Belgium and the Netherlands. All presentations focused on SMEs and the green economy, and more particularly on the challenges for small business in order to become green, as well as the benefits they reap from that transition.

In addition to presentations and discussions, participants were split into three working groups to discuss respectively: (1) transnational exchange between SMEs, (2) resource efficiency in the paper industry and (3) the GreenEcoNet web platform for SMEs. Findings from the working groups can be found in the write-up of the workshop .

Way forward

Workshop participants acknowledged that SMEs are key drivers of macroeconomic development towards a greener economy, but due to barriers and knowledge gaps, the micro level optimisation needs of SMEs often prevent them from fully exploiting their driver potential.

In 2015, the GreenEcoNet project will continue collecting and inviting:

- Success stories of SMEs which have benefitted from a greener business.
- Tools to support SMEs in analysing, implementing and financing these.

Workshop participants, ©Ecologic Institute

"Climate Funds Accelerate Regional Energy Transition"

During 2014, first steps have been made towards a national market for voluntary carbon credits in the Netherlands. Among the actors in this process are three regional climate funds in the Netherlands, which have, since 2009/2010, invested, for their clients, in regional CO_2 emission reduction projects. JIQ spoke with Mr Robert van Lente (Klimaatfonds Haaglanden), Mr Ad Phernambucq (Zeeuws Klimaatfonds) and Ms Ieke Benschop (CO2Bank Utrecht) about their experiences, expectations for the future and motivation for collaboration under a Green Deal.

Organise markets for regional energy transition

The three regional climate funds were initiated or founded in 2009 and 2010 upon the initiative of regional private and public organisations with the objective to support CO_2 compensation activities. **Van Lente:** "The Platform Duurzaam Den Haag (platform for sustainability in The Hague, eds.) was the main initiator of Klimaatfonds Haaglanden. Members of the platform, companies and local government organisations from the Hague, wanted to compensate their emissions within their own region." "The aim of the Zeeuws Klimaatfonds was to organise a market for CO_2 compensation in the Province of Zeeland," says **Phernambucq**. "In Utrecht, a 'frontrunners network' formed the basis for the CO2Bank Utrecht," explains **Benschop**, "since February 2014, the bank has become an independent non-profit organisation".

The climate funds invest in regional projects, which are usually owned and managed by non-profit organisations. **Phernambucq**: "In 2010, Zeeuws Klimaatfonds started with investments in solar panels at residential dwellings and since then we have invested in projects with small and medium enterprises, farmers, schools and sports clubs. We pay them €20 per tonne CO_2 emission reduction achieved and also give advice and organise courses for project coordinators. Although CO_2 compensation is the main goal, we see the climate fund as an instrument for accelerating a regional energy transition."

CO2Bank Utrecht has been active with solar panel-projects at schools. **Benschop**: "These projects also nicely link with educational activities." CO2Bank Utrecht has also started a programme for energy saving measures at sports clubs. "For that, we also collaborate with sports associations," says Benschop. Energy saving and climate measures at schools and sports clubs are also in the portfolio of Klimaatfonds Haaglanden. "Our projects are diverse," explains **Van Lente**: "We have invested in LEDs and solar panel projects at schools and sports clubs, but we also invest in innovative projects which are very close to the everyday life of citizens. For instance, with HTM (the public transport company in the Hague, eds.) we collaborate on promoting use of green gas in buses."

Motivation

Climate compensation is the main motivation of the participants in the climate funds. **Benschop** explains that among the first participants in the CO2Bank Utrecht was Mourik, which is a road construction company. Other early investors in the CO2Bank are the municipality Utrechtse Heuvelrug, and the Province of Utrecht. According to **Phernambucq**, among the participants in Zeeuws Klimaatfonds are the Province of Zeeland, a number of municipalities, companies, such as electricity producer DELTA, and some semi-governmental organisations in the areas of landscape and water management. With regard to the motivation of project beneficiaries, **Van Lente** provides an example of a LEDS distribution project in The Hague: "A while back we distributed around 20,000 LED lamps to households, 6 lamps per household maximum, and it was striking to see that especially in the lower-income city districts this action became popular. People realised that this was an opportunity to save money."

CO2 Bank Utrecht

CO2Bank Utrecht aims at helping public and private organisations to invest in CO_2 emission reduction and sustainable energy measures at sports clubs, associations and schools in the Province of Utrecht in the Netherlands. Among the investors in the CO2Bank Utrecht programme are Mourik (private construction company), Municipality Utrechtse Heuvelrug, and Province of Utrecht.

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Competition from low-price carbon credits

All three climate funds pay prices for CO_2 emission reductions which are higher than current voluntary carbon market prices. **Van Lente**: "The municipality of The Hague pays €20 per tonne CO_2 reduction to Klimaatfonds Haaglanden of which €15 must be invested in the actual projects." "Zeeuws Klimaatfonds receives €25 per tonne CO_2 compensation from our fund participants", explains Phernambucq, "and we invest €20 per tonne CO_2 in our selected projects."

Benschop: "In our price setting, we looked at other regional and local climate funds, such as Haaglanden and Zeeland, and decided to follow those prices. Higher prices were not feasible to ask from our investors and lower prices would not make a difference in terms of supporting innovative projects as they would not cover the real costs per tonne CO_2 emission reduction."

The funds based their prices on existing and expected EU ETS and voluntary carbon market prices during 2009-2010. **Phernambucq**: "When we started Zeeuws Klimaatfund in 2010, the expected EU ETS price was around €35 per allowance and the voluntary carbon market prices were around €15 per tonne. So, we considered €25 per tonne a reasonable price."

The funds acknowledge that it is increasingly difficult to explain their current prices to potential investors. **Van Lente**: "In general, we notice that our potential credit buyers are more hesitant nowadays to pay €20 per tonne. It is also an issue that local governments have lower budgets and have made improvements towards energy saving and climate neutrality themselves, which lowers their demand for our credits. Moreover, we regularly speak with larger companies who want to become climate-neutral through our projects, but that is something we cannot guarantee. Should we want that, we would need to use Gold Standard or Verified Carbon Standard, but these are simply too expensive for us, given the size of our projects."

Benschop and **Phernambucq** point at the increasing competition from low-price carbon credits which have been certified by Gold Standard and Verified Carbon Standard. **Benschop**: "Early investors in CO2Bank Utrecht could justify their investment as a token of corporate social responsibility, which they can still do. However, due to the credit market price developments, we notice that, nowadays, not everybody is willing to pay €20 for a carbon credit." **Phernambucq** adds: "In practice, 'dumping' of cheap carbon credits in the market results in dilemmas for potential investors. Managers responsible for energy transition issues may prefer investments in the regional climate funds because our projects support regional energy transition. However, their colleagues at the finance and purchase departments may prefer the cheaper carbon credits of, say, €6. We find this a disappointing development. Although the cheaper credits may carry Gold Standard or Verified Carbon Standard certificates, they have no connection with our regions and may, instead, be based on projects outside the country."

Klimaatfonds Haaglanden

Climate fund Haaglanden helps public and private organisations, as well as citizens, to compensate their emissions of CO_2. For that, the climate fund invests in regional emission reduction projects. Emission reductions achieved are annually verified by an external accountant. During 2009-2014, Klimaatfonds Haaglanden has reduced over 50,000 tonnes CO_2 emissions.

Haaglanden is a city region in the Netherlands, consisting of: The Hague, Zoetermeer, Westland, Delft, Leidschendam-Voorburg, Pijnacker-Nootdorp, Rijswijk, Wassenaar and Midden-Delfland.

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Why wouldn't we cooperate?

Recently, Klimaatfonds Haaglanden, Zeeuws Klimaatfonds and CO2Bank Utrecht have expressed interests in enhanced collaboration. There are a few reasons for that. First, as **Phernambucq** explains, "it is currently difficult to extend our group of credit buyers. Due to the economic crisis, organisations need to cut their budgets and this has led to a lower willingness to become climate neutral. Our response has been, among other things, to offer different ranges of compensation. For instance, a five star compensation means large-extent compensation of CO_2 emissions and fewer stars mean lower guaranteed compensation levels. But in general it is difficult to increase our market volumes."

Zeeuws klimaatfonds

The goal of the Zeeland Climate Fund is to support sustainable energy sources and CO_2 emission reductions in the Province of Zeeland in the Netherlands. The fund organises CO_2 compensation for companies, governments and regional organisations in Zeeland, by providing financial support to sustainable energy and CO_2 emission reduction projects in Zeeland. Currently, the fund has 30 participating organisations.

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Van Lente sees a similar issue for the Klimaatfonds Haaglanden: "on the one hand we have been successful as we have managed to increase climate change awareness among people and have created over 50,000 carbon credits since 2009, which is 5000 more than anticipated. For the future of Klimaatfonds Haaglanden, we could consider asking for subsidies, but that is unlikely to happen given present governmental budget cuts. We have explored compensating emissions of other municipalities outside the Haaglanden city region, but we have learned that municipalities prefer climate compensation measures within their own regions. Then, the only possible way forward for us is a domestic carbon credit market, where multiple buyers could invest in projects in our region."

For that, the three climate funds agree that collaboration between local and regional funds is important which is also a reason why they participate in talks on a Green Deal for a national Dutch carbon market. **Benschop**: "The main motivation for collaboration with other regional carbon market initiatives in the Netherlands is to support each other. As relatively small carbon credit programmes, we can easily be overwhelmed by programmes with a larger scale and perhaps international carbon market orientation. We need to ensure that the spotlights will also remain on us. In addition, we can collaborate on accounting methods for determining emission reductions of a project, how to deal with double counting issues. We hope that the Green Deal can help us with that."

Phernambucq sees collaboration with the other regional climate funds in the Netherlands as a step towards a more national standard for GHG emission reductions: "this supports the credibility of the credits for possible investors. We can jointly agree on the accounting rules for calculating emission reductions and how to deal with additionality and double counting issues. This would also help us protect the regional carbon markets as supporting instruments for regional energy transitions." "Collaboration would help us create a domestic market", adds **Van Lente**, "with a focus on supporting local or regional projects and where the same 'language' is spoken in terms of accounting of emission reductions so that we can keep projects simple, transparent, and acceptable. The bottom line is that existing local climate funds in the Netherlands are currently facing similar problems and are seeking solutions in similar directions. So, why wouldn't we cooperate?"

Phernambucq adds that collaboration could also strengthen the regional carbon market base: "we would like to see more regional climate funds emerge in the Netherlands which connect to and support initiatives by citizens. This is what the Green Deal can support, as it can comprehend carbon standards which can be applied by all regional funds."

Regional actions can inspire climate negotiators

Finally, when asked how they see the developments with climate policy negotiations at the COPs, V**an Lente**, **Phernambucq** and **Benschop** welcome the increased negotiation focus on embedding climate measures in countries' development agendas. Or, as **Van Lente** puts it: "I hope that local actions, in terms of awareness building and showing people that doing something about climate can also be financially attractive, can inspire negotiators. Our examples could show how climate measures can be embedded in people's everyday life, which is a principle that should not differ much from trying to embed climate policies in national and international economic agendas."

However, they also express concern that the focus on voluntary actions only, without national emission reduction goals, may complicate efforts to price CO_2 emissions. **Benschop**: "In case of a future international climate agreement without national emission reduction goals, it may be more difficult to price emissions of greenhouse gases. That may also negatively affect development of local or regional carbon markets." **Phernambucq**: "the most important is that low-emission energy transition processes need structure, they need to be organised well and there needs to be a sense of urgency. If a new climate agreement would reflect a need for urgent action, then that could be positive, also for regional transition initiatives, such as ours."

"Certification of Woody Biomass for Energy should Built further Sustainable Forest Certification"

On 28 November 2014, at the University of Utrecht, Richard Sikkema defended his PhD thesis on 'Forests: Future Fibre and Fuel Values'. The thesis focused on: sustainable procurement of virgin and waste fibres, following the latest EU developments; mobilisation of woody biomass of energy, related to future supplies and logistics; and GHG emission reduction potentials and strategies, anticipating an international agreement on harvested wood products. After the defence, JIQ spoke with Dr Sikkema about the main recommendations from his research.

JIQ: The focus of the PhD thesis is on the EU's future renewable energy demand in 2020 and 2030, with an emphasis on the woody biomass use for power and heat production. What are your main conclusions on that?

Richard Sikkema: I have considered several scenarios for development of demand and supply of woody biomass for energy within the EU. For instance, if we take the year 2020, we can conclude from projections in the NREAPs (EU Member State's National Renewable Energy Action Plans, eds.) that for meeting renewable energy demand for electricity, heat and transport, 335 million tonnes of solid biomass will be needed. It seems that 175 million tonnes can be supplied from woody biomass production within the EU using business-as-usual techniques.

With new techniques, additional woody biomass could be mobilised within Europe and the scenarios that I have consulted show different projections for that. Nevertheless, the amount of woody biomass that can be produced within the EU for meeting renewable energy demand in 2020 will not be enough. Therefore, EU Member States together will need to import over 50 million tonnes of woody biomass per year from outside the EU.

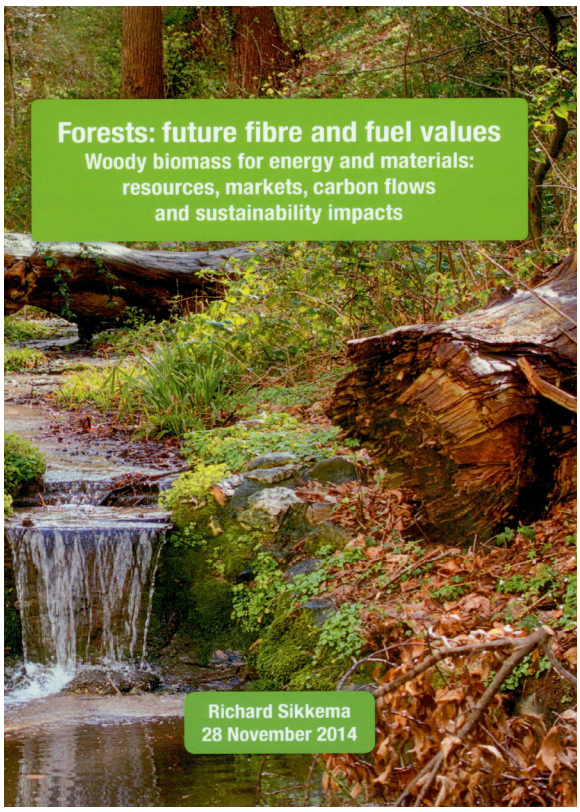
In my research, I have explored the potential to increase woody biomass production within the EU and to work towards a situation of becoming self-sufficient in this respect. I cannot say whether this will be possible in the near future, but there is much to gain. For instance, if we consider harvesting techniques that are being used in the Nordic countries for optimising woody biomass production, I think we could still make considerable improvements in the rest of Europe.

Possible techniques for that are: improved forest maintenance, utilising opportunities for sustainably harvesting extra trees and left-over biomass in forests and using residual heat in the woody biomass value chain. My feeling is that current renewable energy scenarios insufficiently take this extra potential into consideration.

JIQ: The EU would like to become less dependent on imports of fossil fuels. To what extent could woody biomass for energy contribute to that ambition?

Richard Sikkema: For a lower dependency on fossil fuels, we would first need to enhance energy efficiency so that less energy is needed per economic activity. At the same time, we need to accelerate a switch from fossil fuels to renewable energy sources, which is, among others, reflected by the new goals for renewable energy by 2030 (27% of energy produced from renewable energy sources, eds.). In this process, woody biomass can play an important role, next to solar, hydro and wind energy, as well as, for instance, agricultural biomass.

As explained, I have concluded in my research that import of wood for energy production will continue to be necessary. These imports can be spread across a number of countries, including US and Canada, Belarus, Russia, but probably in the future also countries in the southern hemisphere (like Brazil). With woody biomass imports, the import dependency of a few countries, such as with fossil fuel supply, will probably be much less.



JIQ: In the PhD thesis, you identify woody biomass certification as a pressing issue. Could you explain this issue in relation to import for woody biomass for energy purposes?

Richard Sikkema: In my thesis, I explain that voluntary certification of sustainable forestry management is a cornerstone of the EU's sustainable wood supply. With sustainability schemes and standards, a range of unwanted social, economic and environmental impacts from wood production are tried to be prevented. However, certification procedures are generally complex and discussions easily become very technical with elaborations on mass balance, what percentage of wood pellets needs to be certified, *etc*.

My recommendation is that woody biomass for energy certification schemes should try to learn from experience with existing sustainable forest management certification schemes, such as FSC and PEFC (Forest Stewardship Council and the Programme for Endorsement of Forest Certification, eds.). To this experience, accounting procedures for carbon sequestration in woody biomass would need to be added. The latter is important as, currently, there are rules for accounting of forest carbon sequestration in newly established forests used for carbon credits (like WWF's Gold Standard, and the Voluntary Carbon Standard).

In general, the main bottleneck is the deviation between existing certification systems and systems that we would like to have for woody biomass, including with GHG accounting. Currently, 70 per cent of imported woody biomass needs to be from certified wood, but a lot of imported wood is from non-certified US forests. Moreover, non-certified wood must be subject to dedicated risk assessments. This is in line with the US Lacey Act and the EU timber Regulation, which aim to prevent illegal harvesting worldwide. As such, one needs to be able to trace wood back to its origin and proof of harvest permits. Currently, certification schemes take a position that minimum 70 percent of wood needs to be sourced from certified forests and for maximum of 30 per cent remaining wood fibres a risk analysis is carried out, but this latter is less stringent due to lesser criteria.

JIQ: The study contains an interesting discussion on so-called cascading of use of wood, with a particular focus on how wood can best be used in several stages for maximising the GHG abatement of wood and wood products. How would this GHG-oriented cascading differ from an optimisation on monetary revenues or on sustainability criteria?

Richard Sikkema: In terms of optimising revenues in 'euros', the choice is easy. First, use virgin wood for production for beams and furniture results in the highest economic revenues. Subsidy schemes to stimulate use of wood, including virgin wood, for energy purposes would be less beneficial economically and could even harm the forest industries. When, later on during its life time, the wood comes 'free' again as waste wood, for instance, when discarding furniture, it could be collected for other use, such as other wood products or energy production. But, honestly, this wood recycling practice is rather limited at the moment, especially when compared to collection and recycling of waste paper.

From a sustainability perspective, the main benefit of cascading is that it increases efficient use of resources. Using virgin wood for other wood products or purposes, instead of burning it for energy production, is much more efficient. However, current practice with imported woody biomass in the form of wood pellets is that these pellets are produced from fresh, certified wood. The thing is that pellets are generally not produced from waste wood, even though this is also sustainable and would be more efficient. Technically, producing pellets from waste wood is possible, but current waste legislation does not support this as restrictions on the international cross border transport of waste wood are larger than for using virgin wood.

JIQ: Stepping a bit aside of the thesis topic, we are curious, given your knowledge of forestry practices, how you assess the role and potential of forestry and woody biomass projects under JI and the CDM under the Kyoto Protocol.

Richard Sikkema: I have checked the UN databases with CDM projects and it struck me that there are very few forestry projects under the CDM. My impression is that this is largely due to the complex rules under the CDM for sink enhancement projects, in particularly when dealing with leakage (risk that an avoided deforestation is relocated to another area, eds.), as well as limited acceptance of forestry-based carbon credits under trading schemes, such as the EU ETS. Perhaps a good approach could be to step away from project-level accounting procedures for CDM forestry project and rely more on country-level accounting and certification procedures.

There are no CDM projects in the area of harvested wood products, which is not a surprise as there were no accounting methodologies for such projects. Since 'Durban' (COP 17, 2011, eds.) there are accounting rules for carbon sequestration in harvested wood products. I do not know if that will lead to many CDM projects in this area, though.

Such accounting rules for harvested wood products can also be useful within Europe. It has struck me that, in Europe, we have default emission or emission reduction factors for heat and power production, but not for products used for construction purposes. It could be that lobbying by other economic sectors, where substitutes for wood products are made, have prevented such default factors. After all, clearly knowing their climate benefits would make wood products more attractive within climate and sustainability policies than for instance steel, concrete and other wood replacing products.

One aspect related to accounting of CO_2 which I have discussed in my study, and which relates to Kyoto Protocol commitments and accounting issues, is that, when burning biomass, the CO_2 emissions are included in the inventory of the country where this takes place. The CO_2 sequestration related to building up forests for woody biomass are accounted for in the GHG inventory of the country where the forest is located. When both countries participate in an international agreement, such as the Kyoto Protocol, then this nicely reflects the biomass GHG neutrality. However, in the Kyoto Protocol, an importing country, such as an EU Member State, can have its biomass-related emissions covered by the protocol, while the exporting country, such as USA, may not be a Party to the protocol. In that case, GHG-neutrality of a woody biomass set is not reflected by Kyoto Protocol inventories. Therefore, in my research, I recommend a stronger reflection of this accounting aspect in the National Communications of the UNFCCC.

JIQ: Finally, from your personal perspective as an expert on forestry and woody biomass, what recommendations could you make towards climate policy negotiations?

Richard Sikkema: I would make three recommendations. First, concerning sustainability of woody biomass, I would recommend that we build further on existing certification schemes for sustainable forest management. They should be extended with adequate monitoring of carbon in the forests on an aggregated, relatively easy monitoring level (per country or per forest region). The GHG accounting aspects of the entire wood supply chain, starting from the forest harvest, could be dealt with via separate GHG calculation tools. Second, I recommend a cascading sequence which stimulates the most efficient use of wood as a resource and which implies that carbon sequestration benefits of using wood for harvested wood products is accounted for.

Also the GHG reducing effects of using waste wood for recycling in wood based panels or for energy production should get more attention. Third, I recommend supporting small forest owners in boreal and temperate (mild climate) areas so that funding becomes available for certifying their forests and wood products and their market position can be enhanced. Note that currently up to 69% of the managed forest areas in the EU, up to 27% in North America and up to 5% in Russia are certified. In Europe, the certification of well-managed, but small forest areas is relatively expensive for their (mostly) private forest owners.

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** opinions expressed in this interview are personal views of the interviewee and are related to the PhD research at Utrecht University*

Dutch Feasibility Study: Profit from Peatlands

Peatlands are areas which have arisen from a continuous accumulation of organic matter. As a result, peatlands serve as natural sinks of CO_2. However, in the Netherlands, peatland areas decrease by approximately 2% per year due to peat oxidation and other causes of land subsidence (resulting in a 55% peatland area reduction in almost 60 years). As a result, sequestered carbon in peatlands is released into the atmosphere. A possible solution to halt this process is to increase the water level in peatlands. Recently, the Dutch Federation for Nature and Environment (Groningen office) presented a feasibility study for different options for restoring peatlands at multiple locations in the Netherlands. A particular aspect of the study was how and to what extent the economic feasibility of peatland investment options could be enhanced through (voluntary) carbon credit markets.

In the Netherlands, most peatlands can be found in the Western provinces and in the North. These extremely fertile areas are mostly used for cattle breeding, but in the Northern provinces of Groningen and Drenthe also for arable farming. In total, 223,000 ha of peatland in the Netherlands is used for agricultural activities. For that, the water level in peatland areas is kept below natural levels. As a consequence, however, peatland reacts with oxygen which leads to oxidation of peat and results in a land reduction of 1 to 3 cm per year.

In order to adapt to this situation, for agricultural production, the water level needs to be further regulated, which accelerates the process of peatland degradation. From a climate perspective, the drying up of the top layer of peatlands results in a release of carbon and corresponding emission of CO_2 in the Netherlands of 4.2 million tonnes per year (4% of the total Dutch GHG emissions).

The study Valuta voor Veen (profit from peatland) explores how the degradation of peatlands could be slowed down or halted by increasing the water levels back to more natural ones. Potential advantages of such investments are development of new and robust ecosystems, improved quality of soil water, (agricultural) economic services, reduction of carbon emissions and possibly even creation of additional carbon sinks.

Obviously, increasing the water level in peatlands will have consequences for existing users of the areas, in particular farmers, so that peatland restoration may not be in their short term interest. An increased water level will lead to a lower intensity of cultivation of the lands with a corresponding lower revenue per hectare. Moreover, lack of funding and lack of clarity about responsibilities for peatland restoration could be an important barrier. With respect to the financial aspects, the study conducts feasibility assessments of multiple options for peatland restoration investments. A particular research question was how the GHG emission reduction and sequestration benefits can be valued in (voluntary) carbon markets and how this could improve the financial feasibility of peatland projects in the Netherlands.

Two scenarios

The feasibility study considers two scenarios:

1. **Agriculture scenario**: partial restoration of the peatland with continuation of its use for agricultural purposes. In this scenario, drainage pipes are used to enable irrigation of the soil during dry periods and drainage during periods of heavy rainfall. This is illustrated by Figure 1. In this scenario, use for agricultural purposes is likely to be less intensive with lower agricultural production. At the same time, costly water level adjustments as in the business-as-usual situation can be avoided. A climate benefit of this option is that it reduces release of carbon through peat oxidation, which would otherwise have taken place.
2. **Nature development scenario:** development of rewetted peatland through cancellation of

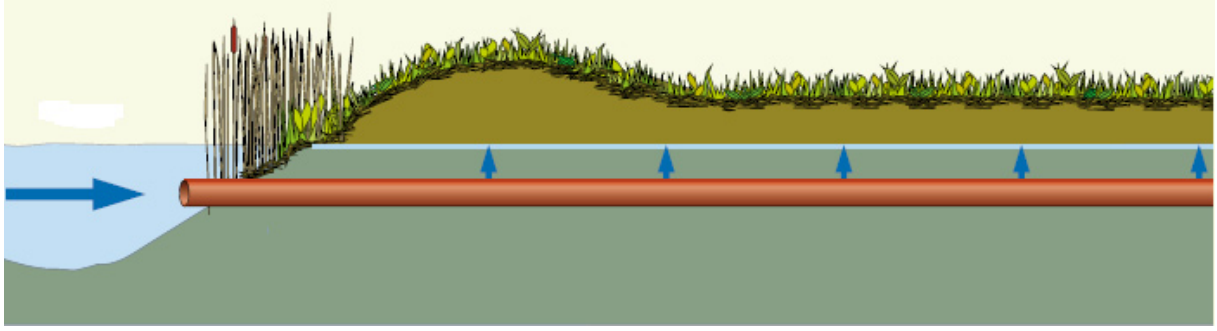

Figure 1. Drainage pipe helps to regulate water level for reduced oxidation of peat with continuous use of land for agricultural purposes.

Table 1. Overview of simulation case studies

	Case study	Change in water level (cm)	Eventual water level (cm from mowing field)
Agriculture scenario	1a. Arable farming with drainage	80	-60
	1b. Livestock breeding with drainage	10	-50
	1c. Intensive livestock breeding with drainage	40	-20
Nature scenario	2a. Arable farming -> rewetted peatlands	140	0
	2b. Livestock breeding -> rewetted peatlands	45	0
	2c. Livestock breeding -> rewetted peatlands	60	0

agricultural activities and increase of water level towards the mowing field. In this scenario, the halting of peat oxidation prevents land subsidence, so that costly investments in reducing the water level can be avoided. Climate benefits from this scenario are: reduced release of carbon, additional sequestration of carbon if rewetting of peatland results in new layers of peat, and extra adaptation capacity as rewetted peatlands could function as water buffers in case of higher water levels (sea, rivers).

For each scenario, three hypothetical simulations have been conducted for existing peatland areas in the Netherlands, based on different assumptions in terms of: 1. Use of the land, 2. Extent to which water level is increased, 3. Eventually resulting peatland water level. Table 1 shows the assumptions for each simulation.

Figure 2 shows the main results of the study in terms of reduction/sequestration of GHG emissions in the scenario simulations. It can be concluded from the study that simulation 2a (increasing the water level by 140 cm all the way to the mowing field) results in the strongest climate mitigation effect. It is noted that this projected emission reduction in CO_2-eq. is a net reduction figure as it combines an emission reduction of 72.9 tonnes per year as a result of the prevention of peatland oxidation and an increase in the emissions of methane of 6.05 tonnes per year due to rotting of plants with a higher water level.

Pay-back period

With help of a pay-back model, for each case study simulation, net revenues are calculated and the pay-back time estimated. Key information incorporated in these calculations are: annual GHG emission reductions and their possible price ranges in different markets (based on current ETS prices and ETS price projections), transaction costs for all investment activities, and investment and maintenance costs (expressed in euro per year).

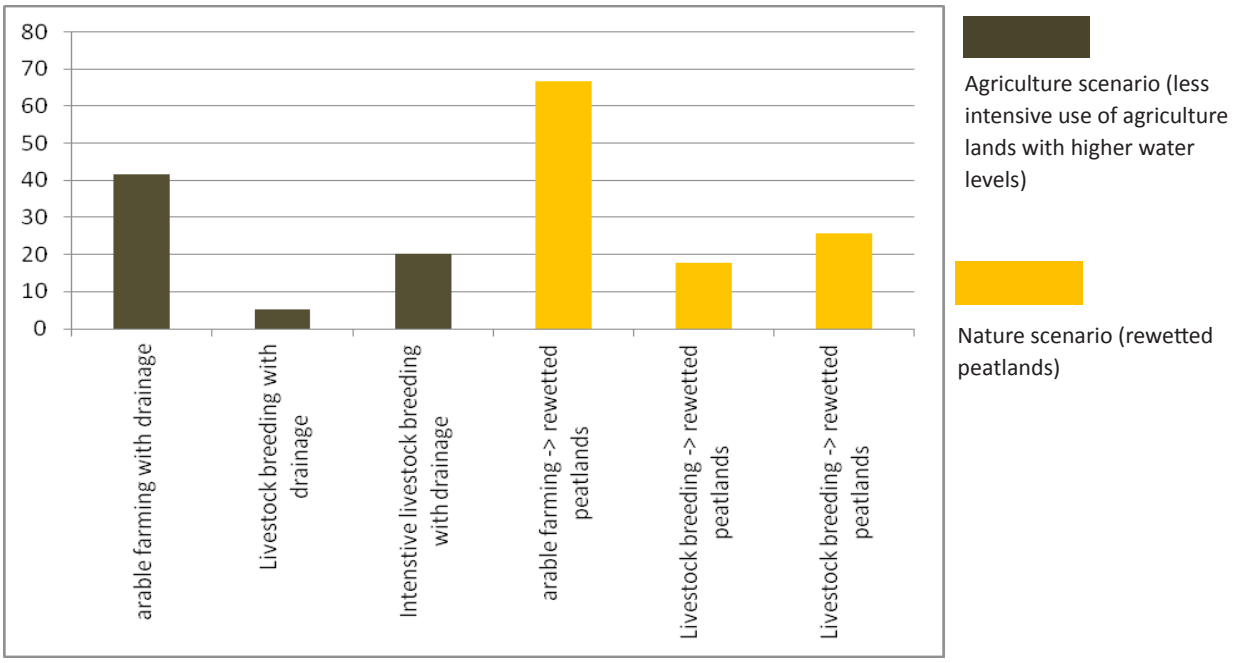

Figure 2. Summary of CO_2-eq. effects of the simulations under the two scenarios

Table 2. Pay-back time of simulation case studies

	Case study	Change in water level (cm)	Cumulative net reduction of CO_2-eq . (up to 2030)	Pay-back time (years)
Agriculture scenario	1a. Arable farming with drainage	80	708	7 - 11
	1b. Livestock breeding with drainage	10	89	> 20
	1c. Intensive livestock breeding with drainage	40	343	12 - 14
Nature scenario	2a. Arable farming -> rewetted peatlands	140	1136	> 20
	2b. Livestock breeding -> rewetted peatlands	45	303	> 20
	2c. Livestock breeding -> rewetted peatlands	60	436	> 20

The study concludes, with consideration of the value of carbon credits, that the pay-back time for investments in the agriculture scenario (arable farming with drainage) could be 7 years. The scenario with the highest (carbon and ecologic) revenues would be the one with the highest increase of the water level (rewetted peatlands), but as this option requires relatively high investments (due to the required purchase of lands from farmers as these lands will no longer be used for agriculture), its pay-back time is much longer (over 20 years). Table 2 presents an overview of pay-back times for each simulation case study.

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Box 1. Example of cost-benefit calculation rewetting peatland simulation

Measure (simulation case study 2b)	Increase water level to mowing field level (combined with ecologic improvement)
Carbon credit market	Voluntary carbon market + benefits from ecologic improvement
Area size	600 ha
Increase in water level	45 cm
Costs	
Purchase of peatland	€ 23,000 / ha
Cultivation of peatland	€ 7,500 / ha
Transaction costs carbon credits	€ 6.50 / ha / year
Benefits	
2015	€ 568 / ha / year
2030	€ 1069 / ha / year

Policy Harmonisation in the EU Renewable Energy Market

Lessons from a Dutch-German case study on biomethane

In line with the further development of the EU's internal energy market, the institutional environment for renewable energy requires further harmonisation. This is needed, so that the overall costs of achieving renewable energy and climate targets can be reduced. The history of renewable energy policy making has resulted in a patchwork of national renewable energy policies in EU Member States. Several of those policies are criticised as they are considered to cause market distortions. In April 2014, the European Commission published new state aid guidelines to address this challenge.[1]

This article explores what impacts can occur if and when EU Member States fully harmonise their institutional frameworks. Institutional harmonisation (or institutional convergence) goes beyond the idea of harmonising individual policy instruments, as it also addresses the harmonisation of auxiliary policies. The article is based on an institutional convergence analysis that has been performed in the INTERREG IVa project 'A European level playing field for biogas/biomethane' (see Box 1).

The project focussed on the Netherlands and Germany as case study countries, and aimed to provide insights in what it takes to create an efficient and effective internal market by means of institutional convergence. One of the key findings is that any form of policy harmonisation should not be limited to isolated policy instruments but should cover the wider institutional framework. The researchers argue that without an integrated institutional convergence strategy, the effectiveness and efficiency gains of policy harmonisation could be entirely offset by a series of negative side-effects resulting from remaining institutional differences.

Fragmented biomethane policy framework in the EU

Many EU Member States use a feed-in premium or tariff scheme for renewable energy support. Both the Netherlands and Germany have a feed-in support scheme that also specifically stimulates biomethane production. Other policy instruments with an impact on biomethane activities covered in the research project include: biomethane injection into the natural gas network, feed-in of renewable energy into the electricity grid, administrative biofuel trade in the transport sector, sustainability certification, and guarantees of origin. The project has identified several key differences between the institutional frameworks for biomethane in the Netherlands and Germany (see article in the *JIQ* issue of July 2014[2]).

Maintaining the current patchwork of national policy frameworks is at odds with the general principles of a competitive market where a level playing field is needed. Given that in the current situation there is a great risk of inefficient spending of public resources (*e.g.*, in the form of fiscal and subsidy competition), two scenarios of full institutional convergence of the biomethane frameworks were analysed. In one scenario the Netherlands fully adopts the German institutional framework, including for example the grid connection regime and the German EEG scheme, and in the other scenario vice versa.

The convergence analysis serves to explore what basic conditions need to be met in order to fully reap the benefits of a level playing field. Aside from the positive impacts of institutional convergence (*i.e.*, level playing field, competitive and efficient market), any strategy aiming for institutional reform also has potential negative side-effects. Specifically for the Dutch-German case study on biomethane three different impact categories have been identified:

1. Improved market efficiency: gains from trade and competition.
2. Distributional impacts: impact of redistribution of tasks, responsibilities, costs, funds, *etc*.
3. Transitional impacts: costs related to (not) compensating 'old' regime stakeholders.

1 http://europa.eu/rapid/press-release_IP-14-400_en.htm

2 JIQ, vol. 20, no. 2, pp. 11-13; http://jiqweb.org

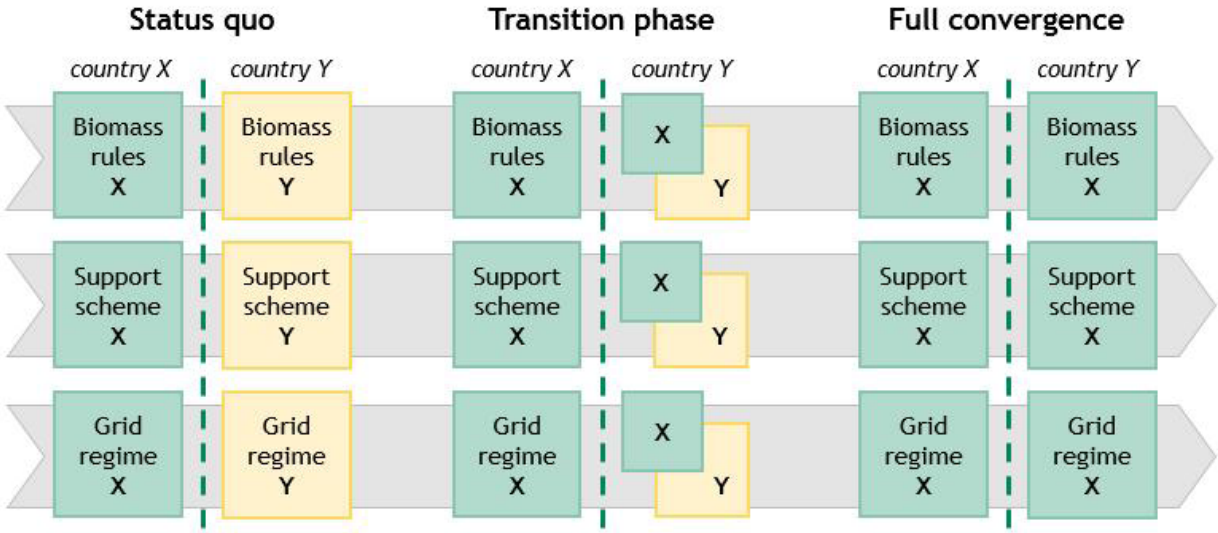

Figure 1. Convergence scenario whereby 'country Y' takes over the policy framework of 'country X'. *During a transition phase, the old policies are still applicable to existing facilities, while new facilities are already subject to the new (harmonised) policies.*

Improved market efficiency

National differences in taxation and subsidy policies can result in unfair competition and inefficient public spending. In addition, there can be non-financial institutional competition, driven by (subtle) differences in regulations, norms and standards. Differences in gas grid access rules, protocols, and environmental standards all have the potential to distort the market. As a result, there will be an increasing need to harmonise and streamline institutional frameworks.

Institutional convergence is a complex process, because it generally affects several interrelated economic activities, and touches several different policy areas (*e.g.*, waste, agricultural policies can affect biomass supply, feed-in, fiscal and grid connection regimes affect biomethane producers, and renewable quota obligations affect biomethane suppliers and/or end-users).

Institutional convergence therefore is not a simple process of each EU Member State adopting exactly the same feed-in regime for biomethane (or renewable electricity), but also requires a minimum level of convergence of the gas grid access regime, and the norms and standards for biomass use, *etc*. Any institutional convergence strategy should apply a more holistic approach and not simply pick individual instruments and consider them in isolation.

Distributional impacts

Another identified impact of institutional convergence relates to any changes in the allocation of costs, funds, tasks and responsibilities. As institutions change, certain biomethane stakeholders are directly and indirectly affected in a positive or negative manner:

- **Investment burden for gas grid connections**: The division of investment and operational responsibilities and costs between the biomethane producer and the network operator. In the German situation the grid operator takes a significantly larger share of this burden, and therefore institutional convergence would shift accordingly in one of the countries.
- **Balancing responsibilities for biomethane producers**: An interesting difference between the Netherlands and Germany relates to the balancing period applicable to producers injecting biomethane into the gas grid. The balancing periods are 1 hour and 1 year, respectively. A longer balancing period effectively means that biomethane can be (temporarily) stored in the gas grid for a longer period of time. As a result, a producer/supplier can better optimise its portfolio by selling the biomethane at the right moment within the given timeframe.
- **Funding mechanism for support schemes**: The collection of funds for (feed-in) support schemes is different in both countries. Full convergence means that another fund collection method will apply, resulting in a different distribution of costs. Such a change also alters the cost burden for energy intensive industries, SMEs or households, which could affect their economic or competitive position.
- **Project development risk profile**: The basic design of feed-in support schemes have significant implications for projects' risk profiles. Not only the duration of support is important, but also the conditions under which the funding is granted. Considering that the project development cycle of a biomethane facility is similar in both countries, the German EEG scheme provides a project developer full certainty regarding future income (unlimited budget), while in the Netherlands the project developer has to compete for funding under a limited budget. Not

Box 1. Project background

The research project 'A level playing field for the European biogas and green gas markets' focuses on the possibilities for cross-border trading of biomethane and associated certificates. The national differences between biomethane pathways in the Netherlands and Germany have been examined as case studies, along with their impacts on competition.

The project consortium consists of JIN Climate and Sustainability (the Netherlands), Jacobs University Bremen (Germany) and the University of Oldenburg (Germany). The project is part of the 'Groen Gas - Grünes Gas' programme, in which 63 governments, research institutes and businesses work together on 18 research projects that aim to solve bottlenecks in the value chain of biogas and biomethane in the Netherlands and Germany. The programme is co-funded within the framework of the INTERREG IV A programme Deutschland-Nederland.

being sure about obtaining a subsidy in the future entails an additional risk for project developers and external financers.

The above examples show that apparent subtle regime differences can have a negative impact on the overall efficiency of the internal market.

Transitional impacts

During the transitional phase the switch from one regime to another occurs. In general, any institutional change can affect the existing rights that stakeholders have under the 'old' regime. The key question is: how would a regime change affect the different stakeholder groups, both those subject to the 'old' regime and 'new' regime?

Resolving this transition issue requires careful consideration of costs and benefits linked to the vested interests of the relevant stakeholders that are most likely to 'lose'. In order to protect the interests of existing stakeholders that are competing with stakeholders under the new regime, one could opt for one of the following transition strategies:

- **Shock transition**: in a quick transition the 'losers' of the regime change could obtain a one-off compensation. A shock transition requires a fast, coordinated and comprehensive institutional reform.
- **Gradual transition**: the 'old regime' is slowly phased out, and no compensatory measures are taken. In the case of institutional convergence, the institutional regimes of two or more countries will converge step by step following a strategy.

It should be noted that the transition costs associated with institutional convergence can pose a significant (political) barrier to such regime changes and therefore should not be ignored in the process.

Conclusions

The ambition for a more efficient internal market for renewable energies, and the desire to make renewable energy policies more cost-effective has to be supported by a robust planning and strategy on institutional convergence. Such strategies should not only focus on harmonising individual policy instruments, but should also include the broader relevant institutional framework in order to avoid any undesirable (or unexpected) distributional and transitional impacts.

A follow-up article in *JIQ* (the April 2015 issue) will consider institutional convergence within a context where national renewable energy and climate targets persist, and it will question if domestically oriented and controlled feed-in support schemes are likely to persist as a preferred support instrument for renewables in an internal market where increasing levels of cross-border trade and competition are needed to increase the market efficiency.

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Held, A., M. Ragwitz, G. Resch, L. Liebmann, F. Genoese, 2014. Issue Paper No. 2: Implementing the EU 2030 Climate and Energy Framework – a closer look at renewables and opportunities for an Energy Union http://towards2030.eu/news/issue-paper-no-2-implementing-eu-2030-climate-and-energy-framework-–-closer-look-renewables-and

On 23/24 October 2014 the European Council decided on a new set of targets for 2030 by adopting the "2030 Climate and Energy Policy Framework." The framework decided raises several practical questions that need to be addressed in the upcoming legislative process, specifically regarding renewables. The main issues revolve around the need for dedicated support for reaching the renewables target, how to ensure a legally binding character of the EU-target in the absence of binding national commitments and how to share the overall 27% target among individual entities such as single EU member states or groups of EU member states. The aim of this policy brief is to provide a first analysis of the above-mentioned issues and to offer policy recommendations based on our findings.

Sandbag, 2015. EU Power Emissions Fell by more than 8% in 2014, blog, http://www.sandbag.org.uk/blog/

EU power sector emissions fell by 8% in 2014, whilst electricity consumption fell by 2.7%, which is far more than would be expected just from the mild year alone. The fall in electricity consumption was despite real GDP growth of 1.3%, and adds weight to the idea that the historic link between GDP and electricity consumption no longer exists in the same way. The report analyses reasons for these observed trends. It also explains while electricity generation based on coal fell during 2014.

Shishlov, I. and V. Bellassen, 2014. Review of Monitoring Uncertainty Requirements in the CDM, Working paper n°16 – CDC Climat Research and INRA. http://www.cdcclimat.com/Review-of-monitoring-uncertainty-1818.html

This article analyzes monitoring uncertainty requirements for carbon offset projects with a particular focus on the trade-off between monitoring stringency and cost. To this end, the article reviews existing literature, scrutinize both overarching monitoring guidelines and the 10 most-used methodologies, and finally we analyze four case studies.

The article concludes that there is a natural trade-off between the stringency and the cost of monitoring, which, if not addressed properly, may become a major barrier for the implementation of offset projects in some sectors. The article demonstrates that this trade-off has not been systematically addressed in the overarching CDM guidelines and that there are only limited incentives to reduce monitoring uncertainty. Some methodologies and calculation tools, as well as some other offset standards, however, do incorporate provisions for a trade-off between monitoring costs and stringency. These provisions may take the form of discounting emissions reductions based on the level of monitoring uncertainty, or more implicitly, through allowing a project developer to choose between monitoring a given parameter and using a conservative default value.

The paper's findings support the introduction of an uncertainty standard under the CDM for more comprehensive, yet cost-efficient, accounting for monitoring uncertainty in carbon offset projects.

Sikkema, R., A.P.C. Faaij, T. Ranta, J. Heinimo, Y.Y. Gerasimov , T. Karjalainen and G.J. Nabuurs, 2014. Mobilization of Biomass for Energy from Boreal Forests in Finland & Russia under Present Sustainable Forest Management Certification and New Sustainability Requirements for Solid Biofuels, Biomass & Bioenergy 71 (2014): 23-36

Forest biomass is one of the main contributors to the EU's renewable energy target of 20% gross final energy consumption in 2020. Following the Renewable Energy Directive, new sustainability principles are launched by the European energy sector, such as the Sustainable Biomass Partnership (SBP). The aim of our study is the investigation of the quantitative impacts from the SBP principles for forest biomass for energy only. The study deploys a bottom up method that quantifies the supplies and the costs from log harvest until forest chip delivery at a domestic consumer.

Skjaereth, J.B., 2014. Implementing EU Climate and Energy Policies in Poland: From Europeanization to Polonization? , FNI Report 8/2014, Fridtjof Nansens Institut, ISBN 978-82-7613-683-8, jbs@fni.no

This report examines Poland's implementation of the EU climate and energy policy package to attain 2020 goals. Because unanimity is required on new long-term climate and energy policy goals, the relationship between the EU and Poland is crucial.

The first observation is that there have been significant implementation problems concerning the ETS, RES and CCS Directives. Second, implementation challenges arise from EU adaptation pressure and 'misfit' with national policies, negotiating position and energy mix. Domestic politics have also proved important: the consistency in governmental prioritization of coal, opposition to climate policy by state-owned energy groups and privileged access to decision making for these groups. Moreover, lack of willingness, ability and opportunities at the national level to transform the linking of various policies and issues that promoted EU level agreement has made Poland increasingly resistant to long-term EU policies.

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

5 February 2015, Brussels, Belgium
ENSPOL FP7 workshop on Article 7 of the Energy Efficiency Directive
Contact: Vlasis Oikonomou, e-mail: vlasis@jiqweb.org
http://enspol.eu

11 February 2015, Brussels, Belgium
Third POLIMP (FP7 project) stakeholder worskhop
Contact: Vlasis Oikonomou, e-mail: vlasis@jiqweb.org
http://polimp.eu

8 - 13 February 2015, Geneva, Switzerland
Geneva Climate Change Conference, 8th part of ADP
Contact: http://unfccc.int

1 - 11 June 2015, Bonn, Germany
Bonn Climate Change Conference June 2015
Contact: http://unfccc.int

30 November - 11 December 2015, Paris, France
COP-21, COP-MOP-11
Contact: http://unfccc.int