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## Annual Report 2013

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**AIB**

association of issuing bodies

## NEWSLETTER 20

Vol 7 | Issue 1 | 15 May 2014

## SYNOPSIS OF ARTICLES

### Luxembourg's engagement in renewable energy

AIB members travel throughout Europe to hold their quarterly General Meetings (GM) and get an impression of all member states. The first GM in 2014 took place in Luxembourg: a tiny country with plenty of history and a lot of engagement in renewable energy.

### AIB Internals – Working Group Systems

Keep updated on the AIB teamwork: the third and last but not least in a series of interviews with the chairs of the AIB Working Groups that are an essential part of a well-functioning Association.

### How EECS works

Can't figure out what an EECS certificate is? Try this unusual approach...

### VAT fraud prevention

VAT fraud is a serious organised crime and Guarantees of Origin (GOs) have been identified by VAT fraudsters as another "virtual good". It is in AIB's interest to detect this criminal practice and actively support the prevention of VAT fraud.

Get a detailed explanation of how VAT fraud works and – even more important – read what you can and should do to prevent VAT fraud.

### Charge of VAT on GO trades

Get an overview with the short survey of AIB members and observers, regarding whether or not VAT is charged on GO trades.

### RE-DISS

One core objective of the EU-funded RE-DISS project is to support and spur exchanges of views between Competent Authorities on what are the best practices for a sound implementation of disclosure and GOs. The highly expert project team invites Competent Authorities to the next Domain workshop which will take place in Brussels on 24/25 June.

### CA-RES

The Concerted Action on the RES Directive (CA-RES) supports the transposition and implementation of the Directive (2009/28/EC). CA-RES Core Theme "Guarantees of origin and Disclosure" (CT 5) works in close contact with the AIB. In the week 19 to 23 May 2014 CA-RES and AIB hold their regular meetings co-located in Rome, Italy and invite each other to certain meetings.

### AIB members and social activities

Read about the "Rallye Aïcha des Gazelles", an extraordinary car race and its efforts to be sustainable in many dimensions.

### Statistics

The latest activity statistics, showing continued growth in the market.

## Newsflash

The electronic system for issuing Guarantees of Origin in the Czech Republic (so-called EZP) operated by OTE, a.s. (Czech Market Operator) was connected to the international Hub of the Association of Issuing Bodies (AIB) on 26 April 2014! This connection allows EZP account holders to import the GOs into the Czech Republic only, exports are not allowed yet.

The international code of the Czech GOs' registry is 8591824000007. You can find more information [here](#).

# Luxembourg's engagement in renewable energy

On 12 and 13 March 2014 the AIB General Meeting was held in the City of Luxembourg at the offices of [Institut Luxembourgeois de Régulation](#).

## Institut Luxembourgeois de Régulation (ILR)

The ILR is an independent authority in charge of regulation of electricity and natural gas markets, as well as of telecommunications, railways, airport taxes, postal services, and radio spectrum. Besides this, the ILR is also designated as the national competent authority for issuing guarantees of origin for electricity generated from renewable energy sources. In order to facilitate monitoring and to improve the reliability of the electricity disclosure system, and especially of its green attributes, the ILR decided to join the AIB in 2009. Following the membership of the AIB, the ILR adopted its first domain protocol and made available a platform for registration of production devices and handling of certificates.

## Guarantees of Origin system (GO-system)

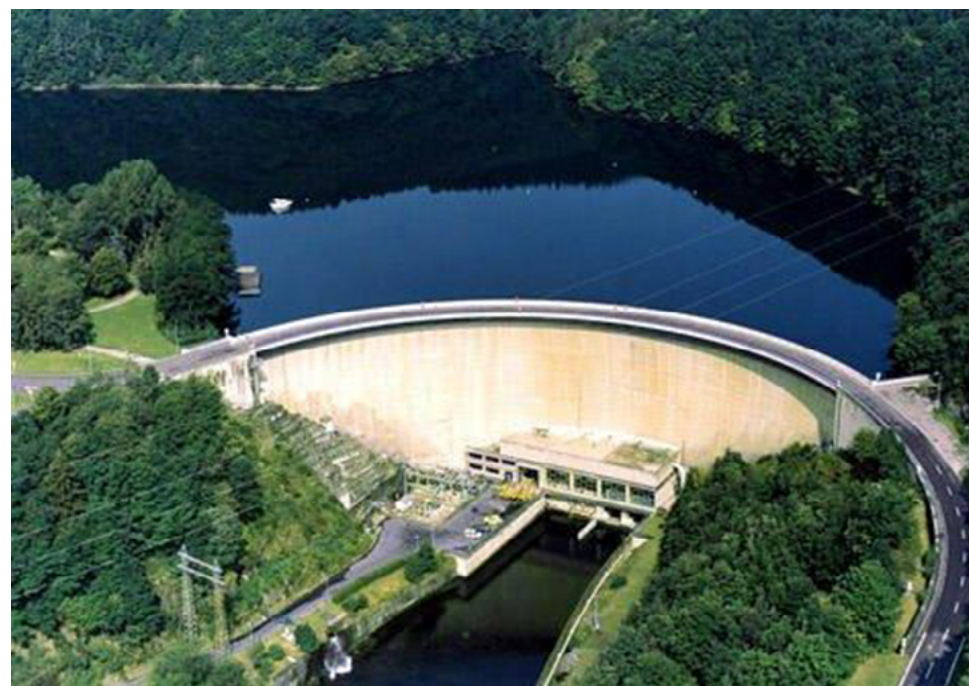
Since 2010, market players can open an account in the [registry](#) (operated through the Grexel System platform) and participate in the market for electronic certificates. At present, 5 market players are active

in the registry and 9 production devices with a total installed capacity of 24.7 MW are registered. Compared to more than 4,000 renewable production devices with a total capacity of 167 MW, these figures seem rather marginal. However, most of the renewable generation in Luxembourg is subject to a support system based on guaranteed feed-in tariffs and only devices that are not, or not any more, eligible for the feed-in tariff, are entitled to transfer guarantees of origin.

## Electricity Disclosure system

In July 2010 disclosure regulations entered into force defining a unique electricity label to be used by all suppliers in their disclosure information on the final bill for end consumers. The information on the label has to be approved by ILR, the national competent authority for disclosure. The label shows the mix of the product provided to the customer, the average mix of their supplier as well as the average national mix of all suppliers. Cancellations of certificates in the registry represent an easy and straightforward tool for electricity suppliers to prove the renewable origin of their electricity supply. In 2013, 2.8 million GOs (2.8 TWh) were cancelled in the registry, mainly GOs issued from Norwegian hydro power plants. Today, 100% of

the electricity supplied to low voltage consumers is disclosed as being generated from renewable energy sources, mainly through GO cancellations. However, renewable electricity generation only represents 4.7% (0.3 TWh) of the national consumption in Luxembourg.



# AIB Internals – Working Group Systems

*Katrien and Annie, could you tell me more about you as the co-chairs and the Working Group Systems (WGS)?*

**Katrien:** At VREG I work on the facilitation of the certificate market. That goes from an advisory role in legislative processes, over market monitoring to dealing with daily technical issues in certificate transfer. My task is to watch over the broad spectrum of needs which must be fulfilled in order to keep the certificate systems working and to improve the systems. I'm highly motivated to contribute - also outside my own country - to AIB's Working Group Systems and to offer the support needed for a well-functioning working group. I'm happy to share this task with Annie from CWaPE, who likes to get involved in the technical aspects and testing. The cooperation between us is very fruitful, as we both invest complementing qualities in the WGS and share the workload.

**Annie:** My role at CWaPE is to administrate the system managing the renewable energy certificates which include the GOs and our local support green certificates. I also plan the new developments and bug corrections to meet the needs of both internal and external users. We have about 100,000 users. Additionally, I am involved in the testing

of developments and operational matters. I am glad to work with Katrien who is well versed in the certificate market topic.

WGS is formed by highly qualified people who work every day to make the EECS certificate exchange possible in Europe. The efficiency of the AIB Hub is their priority.

*What are the highlights of 2013 and beginning 2014 and how do AIB members benefit from this work?*

The new version of the exchange format v70 was validated by the General Meeting in 2012 and implemented in 2013. In this version, certificates contain much more information on the electricity they represent, in an efficiently structured way.

In 2013, the first steps to develop a Central Account-holders Database were made. Members can only buy and sell certificates in other Domains if the sending registry 'knows' the account number of the receiver in the receiving registry. Currently these account numbers are exchanged manually; and the working time, spend by staff in all registries and the AIB to keep the lists of account holders from other registries updated, entails waiting time

for the market parties willing to start-up trades. The Account-holders Database offers registries the opportunity to keep the account holders lists updated automatically, and thereby eliminating waiting time for the market parties involved.

The list with Transfer Error Codes (Fact Sheet 18) was updated.

At the end of 2013, we started defining the Roles and Responsibilities within WGS, which were approved by the GM of March 2014. This induces transparency and helps growing towards an even more efficient way of working within WGS and within AIB.

We implement and test changes to the Hub. One of these is the "import-only" facility offered to OTE for the Czech Domain for a limited period of time, which was approved in March 2014.

*What are the most important tasks to be done in the near future?*

We continue to implement and test changes to the Hub to ensure qualitative certificate exchange. We will also implement the Account-holders' Database

in order to facilitate the exchange of the accounts' data between registries.

Further, we organize a closer follow-up on the Hub provider, and secure future service by contract negotiation.

WGS will also work out amendments to the SDO3 HubCom (Hub Users Compliance document) in order to avoid misinterpretation of Non-Governmental Certificates (NGC) and Independent Criteria Schemes (ICS's) and to add more clarity on Cogeneration certificates.



Katrien Verwimp,  
Belgium Flanders,  
VREG



Annie Desaulniers,  
Belgium Wallonia,  
CWAPE.



# How EECS works

If you still can't figure out what an EECS certificate is...

We're sitting on a park bench. It's a great day.

I have one apple with me. I give it to you. You now have one apple and I have none. That was simple, right?



Let's look closely at what happened:

My apple was physically put into your hand. You know it happened. I was there. You were there. You touched it. We didn't need a third person there to help us make the transfer. We didn't need to ask Uncle Yves (who's a famous judge) to sit with us on the bench and confirm that the apple went from me to you. The apple's yours! I can't give you another apple because I don't have any left. I can't control it anymore. The apple left my possession completely. You have full control over that apple now. You can give it to your friend if you want, and

then that friend can give it to his friend. And so on. So that's what an in-person exchange looks like. I guess it's really the same, whether I'm giving you a banana, a book or, say, a cent or a euro ... but I'm getting ahead of myself.

## Back to apples!

Now, say I have one digital apple. Here, I'll give you my digital apple. Ah! Now it gets interesting.



How do you know that the digital apple which used to be mine is now yours, and only yours? Think about it for a second. It's more complicated, right? How do you know that I didn't send that apple to Uncle Yves as an email attachment first; or your friend Giorgio; or my friend Dave, too? Maybe I made a couple of copies of that digital apple on my computer. Maybe I put it up on the internet and one million people downloaded it.

As you see, this digital exchange is a bit of a problem. Sending digital apples doesn't look like sending physical apples. Some brainy computer scientists actually have a name for this problem: it's called the double-spending problem. But don't worry about it. All you need to know is that, it's confused them for quite some time and they've never solved it - until now.

But let's try to think of a solution on our own.

## Ledgers

Maybe these digital apples need to be tracked in a ledger.

This is a ledger.



A ledger is a book where you track all transactions—an accounting book. Since it is digital, it needs to live in its own world and have someone in charge of it. Say, just like World of Whatsit. The guys who created the online game have a “digital

ledger” of all the rare flaming fire swords that exist in their system. So, cool, someone like them could keep track of our digital apples. Great: we've solved it!

## Problems

There's a bit of a problem though:

1. What if some guy over at the software company created more? He could just add a couple of digital apples to his balance whenever he wants!
2. It's not exactly like when we were on the bench that one day. It was just you and me then. Going through the software company is like dragging Uncle Yves (a third-party) out of his courtroom (did I mention he's a famous judge?) for all our park bench transactions. How can I just hand over my digital apple to you, like, you know—the usual way? Is there any way to closely replicate our park bench, just you-and-me, transaction digitally? Seems kind of tough...

## The Solution

What if we gave access to this ledger to someone responsible in each national electricity industry in Europe? Instead of the ledger living on the software company's computer, it'll live in each national electricity industry's computers. All the digital apple transactions that have ever happened will be recorded in it. You can't cheat it. I can't send you digital apples I don't have, because then it wouldn't sync with everybody else's systems. It'd be a tough system to beat; and especially if it got really big. Plus it's controlled by sensible people, so I know >>

>> there's no one that can just decide to give himself more digital apples without being found out. The rules of the system were already defined at the beginning. And the code and rules are open-source - you know, like the software used in your mobile, or like Wikipedia. It's there for clever people to contribute to, maintain, secure, improve on, and check on.

Your national electricity industry could participate in this network too and update the ledger and make sure it all works. For going to the trouble of doing so, your competent body could create a digital apple as a reward for generating a unit of electricity. In fact, that's the only way that digital apples get into the system. When the digital apples are consumed, then they are taken out of the system. And if the digital apples have been in the ledger for a year, they go rotten and the system throws them away.

I simplified it quite a bit ... but that system I explained exists. It's called EECS. And those digital

apples are called "EECS certificates" within the system. Fancy!

So, did you see what happened? What does the public ledger enable?

1. The total number of apples is the same as the total number of units of electricity produced in Europe during the previous year, and we can be sure that the exact amount exists. Within the system, apples are limited (scarce); and the scarcer they are, the more valuable they are.
2. When I exchange an apple, I now know that the digital apple certifiably left my possession and is now completely yours. I used to be unable to say that about digital things. It will be updated and verified by the public ledger.
3. Because it's a public ledger, I didn't need Uncle Yves (third-party) to make sure I didn't cheat, or make extra copies for myself, or send apples twice, or thrice...

Within the system, exchanging a digital apple is now just like exchanging a physical one. It's now as good as seeing a physical apple leave my hand and drop into your pocket. And, just like on the park bench, the exchange only involved two people: you and me—we didn't need Uncle Yves there to make it valid. In other words, it behaves like a physical object. But you know what's cool? It's still digital. We can now deal with 1,000 apples, or 1 million apples. I can send it with a click of a button, and I could still drop it in your digital pocket if I was in Dublin and you were in Rome.

I can even make these digital apples carry other digital things! Well, they are digital, after all. Maybe I could attach some text on them - a digital note - or more important things; like where the apple tree is planted, how old it is, whether it was sprayed with pesticide, how often it is watered, whether fertiliser is used and, if so, was it organic ...

So this is great! How should we treat or value these "digital apples"? They're quite useful aren't

they? Well, a lot of people are arguing over it now. There's debate between this and that economic school, between politicians and between electricity market operators. Don't listen to all of them, though. Some people are smart, and others are misinformed. Some say the system is the only reliable way of tracking apples from tree to table, while others say it's actually a lot of hard work and far too complicated. Some say it's digital gold, some say it's a currency. Some people say it'll change the world, some say it's just a fad, others say you can use it for all sorts of things. I have my own opinion about it. That's a story for another time though. But now you know more about EECS certificates than most.

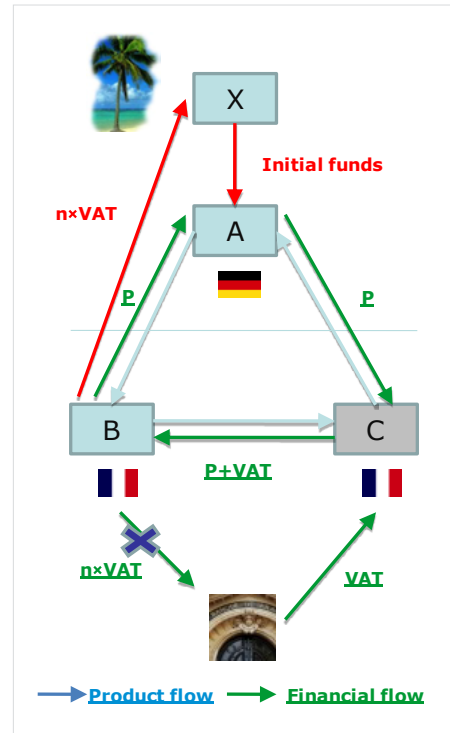
In case you are interested in getting more explanations about the principle of GOs: You can find a video made by ECOHZ [here](#).

# VAT Fraud risk in the GO industry

## What is VAT fraud?

VAT fraud is the most important EU criminal activity in terms of economic scale. Every year almost 200 billion euros are diverted from EU Member States according to a study published in September 2013, which is far beyond the estimated turnover of drug or human trafficking. Despite its amplitude, this phenomenon stays largely unknown – not only to the general public, but also the business sector.

A significant part of these amounts is disappearing through so-called “VAT carousels”, where criminal gangs create rings of shadow companies in order to steal public money. They continue to exploit one simple weakness of the European VAT rules that dates back to the opening of the borders in the early 90s, and that allows businesses to purchase without VAT from abroad and resell locally with VAT. The fraudsters pocket the VAT, and that is it. Their modus operandi is slightly more complex in order to erase money trails and dilute corporate responsibilities. It remains, however, roughly the same as described below.



## Step 1

- A company X registered outside the European Union (mostly tax havens or NCCT – non cooperative countries and territories), and creates two companies A and B both registered in a different EU country.
- The company X provides the initial funds to A to purchase goods.

## Step 2

- The company A sells the goods (without VAT) to the company B at a price P.
- The company B resells them to the company C in the same country at the price P + VAT (C can be either a criminal partner or a legitimate victim of the carousel fraud).
- The company C exports again goods to A at the price P.
- A, B and C repeat the import/export operations and, at every round, the company B is in credit of the VAT amount and C is debtor of the VAT amount.

## Step 3

- The company C regularly asks for the repayment of the VAT to the State.
- After a couple of months and n operations, the company B transfers the n x VAT amount to the company X and disappears (Missing Trader) without paying the VAT to the State, which becomes debtor of n x VAT.

By applying these schemes to the import/resale of goods which are both expensive and easy to transport, VAT fraudsters stole vast amount of money in the 90s - initially in metals, clothes, cars etc. The scale of the fraud increased significantly at the end of the 90s with the introduction of mobile phones and electronic equipment, which had for them the perfect value/volume ratio with standardised products and liquid markets. The mobile phone business sector has been totally infiltrated and disrupted by these fraudsters.

>>

## >> The Bluenext affair

Always looking for new opportunities, in 2008 fraudsters turned to the trading of CO<sub>2</sub> allowances, which were subject to VAT. By registering thousands of shadow companies in the carbon national registries (and especially the Danish registry, which had the lowest surveillance and legal requirements), they managed to steal – in less than one year – more than 5 billion euros.

Monthly CO<sub>2</sub> volumes on the Bluenext exchange were multiplied by a factor 40 during this period.

It has been asserted by further investigations that 90% of this volume increase was caused by VAT frauds. Individuals behind these frauds were

numerous, but were known fraudsters. Very few of them have been caught or judged. VAT fraud is serious organised crime. Numerous legitimate businesses that served as intermediaries to the fraudsters have also received huge fines in the range of tens of millions euros, and understood too late the dangers of this risky business.

### Looking for new virtual goods and guarantees of origins

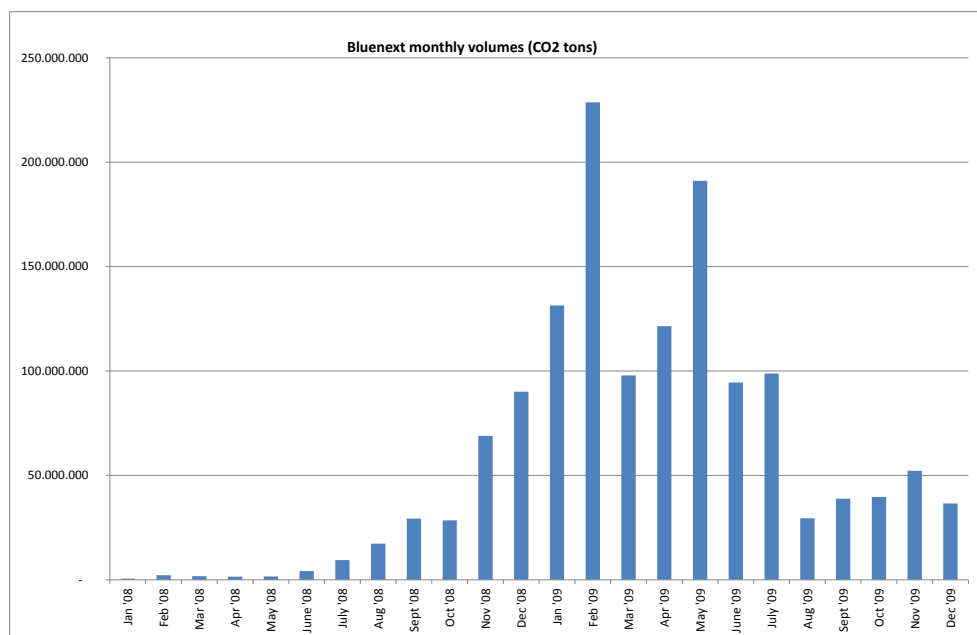
The CO<sub>2</sub> fraud was historical because, for the first time, fraudsters have found a virtual good, where imports and exports could be done in one click. After this fraud was stopped in 2009 by the EU urgently adopting the so-called “reverse charge” principle, fraudsters looked into other industries

that had these “virtual” titles subject to VAT. They immediately turned to the gas and power industry, but early measures were taken across all the value chain to slow down their penetration. In June 2013, their lobbying proved to be successful and two new directives were voted in Brussels that allow reverse charging in gas and power, but also potentially any new area targeted by VAT fraudsters.

Our industry is unfortunately among the next targets of these fraudsters, as guarantees of origin are virtual goods that are subject to VAT. Companies with a VAT fraud profile have already entered some of the registries, and signs of fraud in the GO industry have already been detected by law-enforcement units.

- **Surveillance:** as registry operators, we need to monitor transfer activities, both within our registries (VAT fraud in the GO does not necessitate import/export between registries), and between registries. Volumes of transactions need to be analysed and be justified by the size of the GO business of considered companies. GOs with identical numbers circling within a registry or between registries are also signs of potential VAT frauds.

AIB has recently joined the “Group of 10” European energy associations that have been lobbying authorities to adopt reverse charging of VAT. Adopting reverse charging in the GO industry remains the ultimate solution if fraud increases.



### What can we do as AIB members?

As AIB members we have a key role in the prevention of fraud:

- **KYC and Scoring:** Registries proved to be the weakest point in the CO<sub>2</sub> fraud. No controls were applied, and thousands of fraudulent companies entered the sector. Know-your-Customer and scoring will definitely help in analysing prospects, and requesting minimal identification documents will deter most criminal applicants.
- **Communication with law enforcement authorities:** establishing contact with the local tax investigation or custom authorities is a good way to obtain operational support and also report suspicious cases.
- **Information of account holders:** most legitimate account holders are probably unaware of the VAT fraud risk in the GO industry. AIB members can inform them about this risk.

This article was written by an AIB-member.

Thank you!

# Charge of VAT on GO trades

The following table is the result of a short survey of AIB members and observers, regarding whether or not VAT is charged on GO trades – in general this seems to be the case, although it is by no means clear in all countries, and the legal basis for making such charges is sometimes unclear.

The next issue of the AIB Newsletter will contain another survey of members and observers, this time identifying the competent bodies responsible for issuing guarantees of origin (GOs) for

renewable energy (RES), and for high-efficiency cogeneration (HEC), as the two are not always the same. It will also highlight whether separate electronic documents are issued for each type of GO (RES and HEC), or whether a single electronic document conveys both types of GO.”

Clear rules apply
The information is either unclear, or originates from a market participant
Unknown

Country	VAT charged on GO trades?
AT	VAT is charged on GO sales
BE	VAT is charged on sale of GOs (except for very small turnovers)
CH	As of 1st July 2010, the following rules are applied: <ul style="list-style-type: none"> <li>• No VAT is charged on a sale of GOs only (to avoid VAT fraud)</li> <li>• VAT is charged on a sale of GOs including the supply of electricity (bundle)</li> </ul>
CY	GOs are not yet traded in Cyprus
CZ	Regular VAT is charged on domestic trades. No VAT is charged on international trades due to the EC Directive 2006 on reverse charging.
DE	VAT is charged on GO sales
DK	GOs are subject to VAT, but are not subject to the rules of the reverse charge mechanism. Energinet.dk invoices VAT on charges for issuing and administering the GO system. If issuing to EU account holders, Energinet.dk invoices according to the rules on reverse charging; and if issuing to account holders in non-EU countries, then Energinet.dk invoices without VAT
EE	Not known
ES	Not known

Country	VAT charged on GO trades?												
FI	VAT is charged on GO sales												
FR	VAT is charged on GO sales												
GR	There are currently no trade transactions of GO in Greece												
HR	We do not know if VAT will be charged on the sale of GOs in Croatia												
IE	SEMO would not have sight of the sale arrangements, as by law the issuing body is not allowed to be involved in trading. However, a market party said that VAT is charged if the buyer is in the same country – so if GOs are sold between Irish account holders, then VAT is charged; but if an Irish account holder buys from (e.g.) another EU country, then VAT is not charged (although they are informed of the VAT number of the seller so they can confirm that it is VAT registered).												
IS	VAT is charged on GO sales. However, exports of goods and services are exempt from VAT under the tax code so international GO sales are VAT exempt. Landsnet charges VAT for the issue of GOs.												
IT	<u>Account-holder VAT charging</u> <table border="0"> <tr> <td>Italian GO account holder with VAT number</td> <td>Yes (22%)</td> </tr> <tr> <td>Italian GO account holder without VAT number</td> <td>Yes (22%)</td> </tr> <tr> <td>Italian GO trader “frequent exporter” (article 8 DPR 633/72)</td> <td>No</td> </tr> <tr> <td>EU/Non-European GO account’s holder with VAT number</td> <td>No</td> </tr> <tr> <td>EU GO account’s holder without VAT number</td> <td>Yes (22%)</td> </tr> <tr> <td>Non-European account’s holder without VAT number</td> <td>No</td> </tr> </table> <p>These rules will shortly be updated.</p>	Italian GO account holder with VAT number	Yes (22%)	Italian GO account holder without VAT number	Yes (22%)	Italian GO trader “frequent exporter” (article 8 DPR 633/72)	No	EU/Non-European GO account’s holder with VAT number	No	EU GO account’s holder without VAT number	Yes (22%)	Non-European account’s holder without VAT number	No
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EU/Non-European GO account’s holder with VAT number	No												
EU GO account’s holder without VAT number	Yes (22%)												
Non-European account’s holder without VAT number	No												
LU	Traders say they charge 6% VAT to end consumers, but VAT does not apply to purchases of GOs from other countries. VAT on energy prices is always 6% in Luxembourg.												
ME	There is currently no GO trade in Montenegro, and no information whether VAT will be charged												
NL	VAT is charged on GO sales												
NO	VAT is charged on GO sales												
PT	Not known												
SE	VAT is charged on GO sales												
SI	VAT is charged on GO sales												
UK	Not clear. VAT inspectorate does not know												



## News from RE-DISS

The RE-DISS team continues to collaborate closely with Competent Authorities (CAs). In the last workshop in September, representatives from domains were able to comment on the RE-DISS proposals regarding several topics: integration of recommendations on independent guarantee of origin (GO) consumers in the Best Practice Recommendations (BPR) document, development of energy source disclosure categories, fine tuning of the Residual Mix calculation methodology, criteria for acceptance of foreign GOs...

In January, the team sent out country spreadsheets to CAs responsible for GOs and/or disclosure. They were asked to fulfil/amend these according to the latest developments in the national GO systems and disclosure regulations. These spreadsheets were the basis for elaborating/ updating the RE-DISS country profiles which are available on the [website](#) and which were sent for validation to all CAs.

In April, CAs were sent data collection templates where they were asked to indicate figures related to exchanges, cancellations and expiries of GOs for year 2013. As a result, the RE-DISS team will calculate the national residual mixes for 2013 in time for disclosure calculations that have to be published on 1st July.

CAs were also invited to participate in a consultation prepared on different options concerning how information should be disclosed to end

consumers – as opposed to the tracking of information: which additional information to disclose, compared with that which is mandatory according to Directive 2009/72, where to disclose it, and in what format... The results of this open consultation (which closed on 7th May) will be presented in the next Domain workshop on 25th June.

The RE-DISS II project has recently focused on surveying the recognition criteria, if any, that CAs apply to foreign GOs. It appears that (with the exception of Austria) no other Domain has listed precise criteria. The team has proposed a series of draft recognition criteria in a report that is available on the RE-DISS website, and is now working on how to evaluate – for a given Domain – whether these criteria are fulfilled. A checklist will be drafted to facilitate assessment.

The team has also produced a report establishing what approaches are currently followed to disclose environmental indicators (different approaches to handle environmental indicators for electricity disclosure, available on the [website](#)). The report compares values for CO<sub>2</sub> emissions following different methodologies used (Direct emissions vs. LCA), notably concerning electricity from biomass. It also deals with the practices related to the disclosure of radioactive waste. A further work item will be to agree which harmonisation methodology to promote through the RE-DISS BPR.

## Concerted Action for the Renewable Energy Sources Directive (CA-RES)

In June 2009, the EU Renewable Energy Sources (RES) Directive (2009/28/EC) on the promotion of the use of RES entered into force, establishing a common framework for the use of Renewable Energy within the European Union.

The Concerted Action on the RES Directive (CA-RES) supports the transposition and implementation of the Directive and the achievement of the national targets; and in August 2013 it entered its second phase (CA-RES II), which will continue until 2016. Partners and participants are nominated organisations from all 28 EU Member States plus Norway and Iceland.

In CA-RES II, participating countries exchange experience and best practices, participate in a cross-learning process and develop common approaches; and one of its seven core themes relates to stimulating participating countries to further harmonise the implementation of Guarantees of Origin and Disclosure. Important topics are the ongoing process of connecting all member states to a harmonised implementation of GOs, facilitating international exchange of information for disclosure purposes and preventing double counting, as well as strengthening the internal market for GOs for the benefit of all stakeholders.

One of the targets of Core Theme 5 (CT 5) is to develop an inventory of the problems that participating countries experience, so promoting an efficient implementation that is coherent at

European level, prevents double counting and market distortion, and contributes to the finalisation of the internal energy market.

One of the major challenges that AIB faces concerns the interpretation of the RES Directive, and in particular those provisions which are unclear or can be construed in different ways, or which might conflict with existing national electricity markets; and those areas where the Directive is silent.

Therefore the CA-RES Core Theme “Guarantees of origin and Disclosure” has created the concept of a ‘Policy Advice Group’ (PAG) that works in close contact with the AIB on the development of a roadmap to link all Member States, including resolving differences of interpretation. The use of the AIB’s infrastructure will help to avoid conflicting standards and support matching infrastructures across Europe.

CT 5 has reacted by creating the concept of a ‘Policy Advice Group’ (PAG), and AIB is now working with CT 5 to implement this concept.

In the week 19 to 23 May 2014 CA-RES and AIB hold their regular meetings co-located in Rome, Italy and invite each other to certain meetings.

# AIB Members and Social Activities

Members of AIB are drawn from energy certificate system administrators across Europe. The staff of the AIB member organisations divide their working time to allow contributing to a well functioning AIB and sometimes even more: some member organisations encourage its employees to get involved in challenging adventures with a charitable purpose. With this newsletter we introduce Aude Filippi and Marie L’Hermite, two colleagues from Powernext, the French member of the AIB, who decided to participate in an amazing adventure: the “Rallye Aïcha des Gazelles”. Aude and Marie give us their feedback on this very special experience.



**Q: What is the “Rallye Aïcha des Gazelles”?**  
The “Rallye Aïcha des Gazelles” is the only 100% female rally, totally off-road in the Moroccan desert, with no GPS, and with only very old maps and a compass. The rally has now become an institution: this was the 24th time the adventure has been organised! 320 women from 33 different countries participated in this sporting challenge, and about 400 people including journalists organised and supervised the whole competition. The whole adventure lasts two weeks, including the travel to go from Paris to Morocco.

**Q: Why did you want to get involved in such a challenge?**  
First, we wanted to take up an amazing challenge in which we knew we would leave our comfort zone and learn a lot about ourselves in extreme conditions. It was also absolutely key for us to achieve this experience for a good cause which would give meaning to our adventure. By participating in the Rally, we supported the charitable organisation “Cœur de Gazelles” which provides medical care and access to education for Moroccan people living in the desert. We also represented the association “Face Au Monde”, a humanitarian association which enables many children to have surgery in France for serious facial traumas for which they cannot get treatment in their home country.

Another reason for our participation was that the goal of the rally is not to drive as fast as possible: the objective is to reach the pre-defined check points along the course, travelling the least number of kilometres. This has two effects: first, non-professional drivers can participate – like us! Moreover, this limits carbon dioxide emissions and the environmental effect of the competition. All the carbon dioxide emissions were offset, and the Rally has an “ISO 14001:2004” certification of Environmental Management.

**Q: How did Powernext support you?**  
Powernext supported us throughout the rally experience. To participate in this project, we had to find a lot of sponsors: Powernext was the first and the biggest one and helped us to find other sponsors through its partnerships. One of the key partners



supporting us was Trimane, an IT services company specialising in information systems, which provides Powernext IT specialist consultants. Powernext wants to encourage its employees to get involved in challenging adventures with a charitable purpose, and so it created an internal annual challenge to fund the best projects proposed by its employees. During the competition, the whole company was behind us: it was possible to follow our route in real-time on the rally website, thanks to a satellite tracking system. We could not receive messages during the day (we had no phone and no GPS), but when we were returning to the bivouac we could read their encouraging e-mails, which heartened us when we most needed it. This experiment brought us two much closer, but also reinforced the links we already had with our colleagues.

**Q: How was the rally? Do you have anecdotes to tell?**  
The adventure exceeded all our expectations. The physical effort was tough: we had to get up at >>

>> 4.00 AM every morning and prepare our car to be ready on the starting lines at 6.00 AM, and then we had to concentrate all day long, either on driving or on navigation, usually until 9.00 PM. We were exhausted, but the rushes of adrenaline kept us awake. Driving in the desert was more difficult and dangerous than expected: the first day, we spent four hours shoveling sand out of the car, and we nearly overturned our vehicle! We then quickly learnt very special techniques for crossing the dunes, in order to avoid such situations. Navigation was not a piece of cake either! We remember once, totally lost in the “Oued du Draa”, we could not decide which way to choose as we were surrounded by mountains or dry rivers. But also the landscapes were even more magical than we imagined, and there existed an indescribable solidarity between gazelles and we felt emotions we never felt before! Moreover, seeing the work of the association “Coeur de Gazelles” moved us a lot and made us realize how unique this experience was.



### About Pownext

Pownext is the French Issuing Body from 1st May 2013, which joined the AIB in July 2013. Pownext is a private company which also runs an exchange in gas and electricity. We like to describe our company as an institutional start-up: our activities are regulated a lot by energy and financial regulators, but we still work in a very entrepreneurial atmosphere, trying to react quickly to our clients' and employees' needs. Pownext developed, in-house and from scratch, its entire registry software; and puts all of its energy into making the renewable tracking system in France ever more reliable.

# Statistics

## Methodology

### Frequency of reporting

Statistical data is collected and reported quarterly. Where available, data has been collected for all months since 2000, as this permits a high level of reconciliation between individual and total figures.

### Data items recorded

Data is collected for each domain and month, and relates to single energy sources or groups of energy sources. For each domain / month / source the following is recorded:

- a. **By production date:** issued, expired and cancelled - this lets the market know how many certificates of each vintage are available for trade, so informing price setting.
- b. **By transaction date:** transferred within domain, imported, exported, expired and cancelled - this helps in judging the level of market activity, and making certificate expiry dates visible. Furthermore, pricing and trading strategy are disclosed; this enables the AIB to calculate its membership fees.

### Energy source codes

The list of codes has been prepared by reference to the codes used by all registries, and member preferences. EECS Rules Fact Sheet 5 provides the definitive list of energy source codes, aggregating reported codes into higher-level codes where codes: are **inactive** (e.g. hydro and wave power will be aggregated until such time as wave power becomes more widely used); are **unknown** (e.g. sold renewable fuel may be used where conversion between codes has resulted in the original code becoming unknown); are **not demanded** by the market (e.g. orimulsion is simply reported as "Fossil").

### Analysis

Where possible, the statistical reports will provide a disclaimer explaining shortcomings in the data. This might include domains that do not provide certain items of data, and those that have not contributed to the latest report. The value of publishing data which contains such shortcomings is felt to outweigh the absence of such data.

Some items may solely be useful at a pan-European level (e.g. domains will not know if the certificates they issued and exported have been cancelled). Hence it will be possible to know the length of the market across Europe, but not necessarily for certificates issued in a specific country.

Certificates withdrawn by the issuer (perhaps those issued in the wrong quantities or for the wrong technology) are statistically insignificant, and have therefore been ignored.

### General

All certificates are 1MWh. As metering data is the basis for issuing certificates, there is always some delay in gaining accurate statistics for the corresponding data for a specific month, so the most recent quarter's issuing activity will always be understated and consequently this information should be treated with caution.

Statistics for certificates issued in a specific month are not presented, as the value of this data is not clear. In general, "issued by transaction date" will be similar to, but slightly later than, "issued by production date", due to the inevitable delays in processing meter data. Currently, close to 100% of the certificates for energy produced in a month will be issued within the following 6 months.

## Explanatory notes to statistics

### Date of collection of data

These statistics were completed on 5<sup>th</sup> May 2014 and based on statistics gathered either from statistics published AIB member websites, or where such data is not available, from data provided to the AIB by individual members. The data itself was provided on the following days:

Country	Collected	Source
Belgium		
Brussels	23 Apr 2014	spreadsheet provided by issuing body
Flanders	15 Apr 2014	spreadsheet provided by issuing body
Wallonia	16 Apr 2014	spreadsheet provided by issuing body
Czech Republic	23 Apr 2014	spreadsheet provided by issuing body
Denmark	02 May 2014	website
Finland	02 May 2014	website
France	22 Apr 2014	spreadsheet provided by issuing body
Germany	23 Apr 2014	website
Iceland	29 Apr 2014	website
Italy	05 May 2014	spreadsheet provided by issuing body
Luxembourg	29 Apr 2014	website cmo.grexel.com
Netherlands	14 Apr 2014	spreadsheet provided by issuing body
Norway	02 May 2014	website
Portugal	01 May 2014	website
Slovenia	10 Jan 2012	Data will be published when other market parties commence trading.
Spain	01 May 2014	website
Sweden	02 May 2014	website
Switzerland	03 May 2014	website

### Aggregation of data

In some cases detailed data has been aggregated. For instance “manure” also refers to “pig manure”, and “fossil” also contains “unknown source”. Further, unspecified renewable energy contains that which originates from technology codes To5000000 (combustion) and To7000000 (known).

### Completeness of data

The Grexel registries (DE [Oeko-Institut], DK, FI, IS, LU, NO and SE) provide all required information, and have done so for a number of months. However, information from these domains relating to periods prior to the adoption of this version of the registry is not always available. For instance, the previous registries did not record the quantity of cancellations by production date that had taken place during the life of these registries.

The LogActiv registries (ES and PT) do not currently provide facilities for the expiry of certificates.

The Atos registries (AT and CH) and the “on demand” registries (BEF, FR, IT and NL) do not currently provide expiry data.

The difference between total exports and imports is the result of absences in the information gathered, and due to exports to Belgium needing to be accepted by the importer, introducing delay in registering the transaction (and which is potentially treated differently by different registries).

### Change to pie-charts

The basis of the pie-charts has changed since the last statistics report: in the past, issued certificate referred to those certificates issued for electricity produced in a year, but cancellation referred to certificates cancelled in a year, regardless of when the associated electricity was produced. Now, both refer to the date of production of the associated electricity.

Further, to clarify the charts, only contributions of 1% or greater are shown.

### Statistical report

During the first quarter of 2014, market activity has continued to increase, as has the use of guarantees of origin (GOs<sup>1</sup>) for disclosure purposes.

Now that GOs expire after a year, it is noticeable that such expiries have decreased as the market recognises that it has a limited period in which to gain a value from its GOs, and cancels them before they expire.

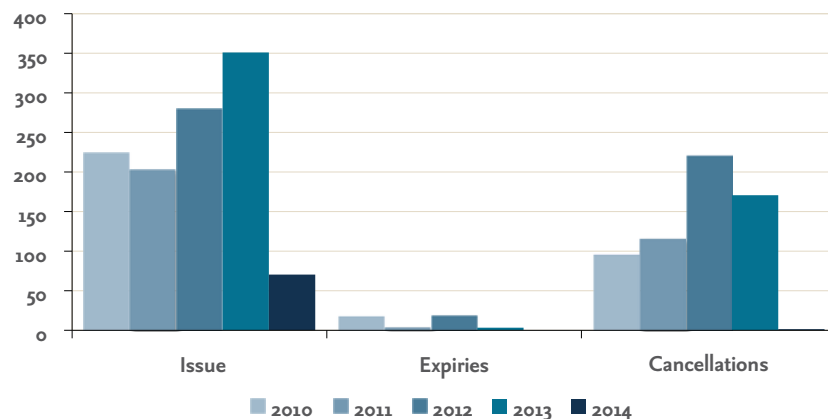
These graphs illustrate activity in two ways:

1. Activity by production date shows the quantity of certificates issued, expired and cancelled which relate to **electricity produced in a given year**; and indicates those which either remain on the market or are otherwise unaccounted for.
2. Activity by transaction date shows the quantity of certificates **actually** issued, transferred within that country or region, transferred internationally, expired and cancelled in a given year.

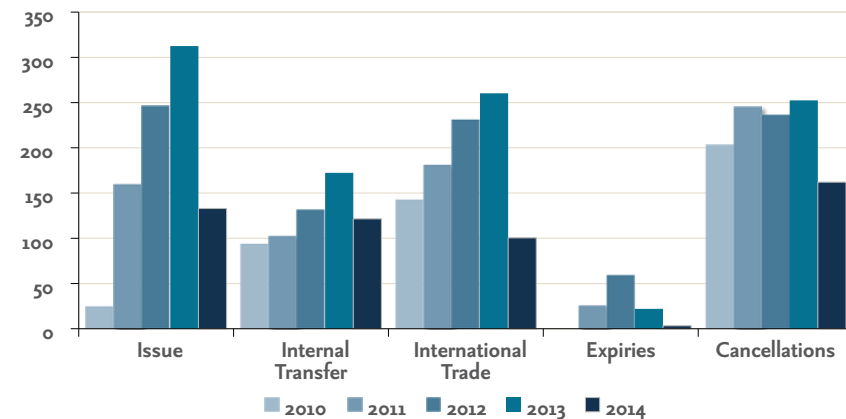
Issue, transfer and cancellation continue to increase, and further growth is expected as further countries are connected to the Hub, and as member countries (recently Italy) replace RECS certificates with GOs. We also anticipate Croatia connecting to the Hub at the end of May 2014, and membership applications continue to be processed for Cyprus and Estonia. Furthermore, contact continues with interested parties in Poland, Hungary and Ireland.

<sup>1</sup> Note that this includes the few remaining RECS certificates (these will cease to be issued from the end of this year, and will expire at the end of 2015).

Annual EECS transactions by production date (TWh)



Annual EECS transactions by transaction date (TWh)





It is also interesting to see how the market has developed since its inception, in 2001. Here, the dips in issuing (in 2011) were caused by low reservoir level due to low rainfall; while market reaction to the introduction of expiry shows, with market parties now seeking to gain a value from their GOs rather than letting them expire. Note that issuing tends to be 20% understated over the past quarter, as metering data is processed.

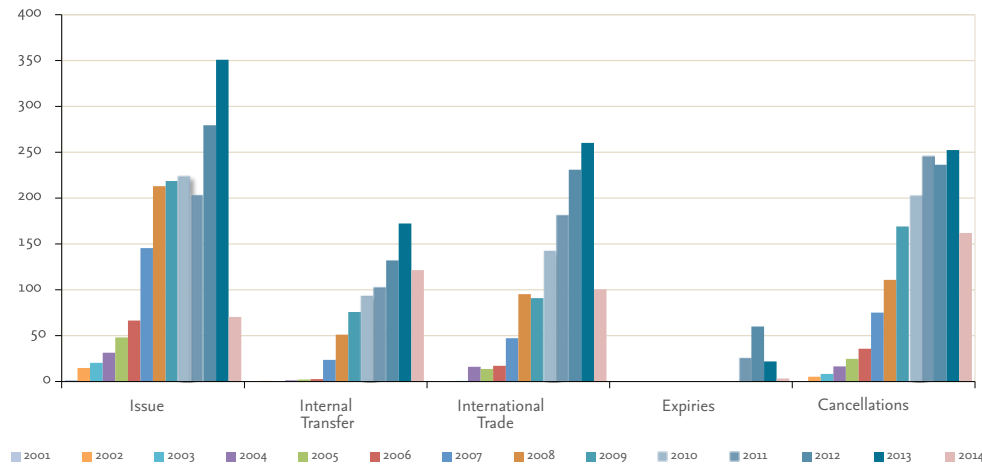
The monthly discrepancy between exports and imports is due to not all transfers being instantaneous, and hence trades which commence in one month can complete the following month.

Netherlands and Finland are the main importers. Some countries figure in both exports and imports, suggesting trading activity.

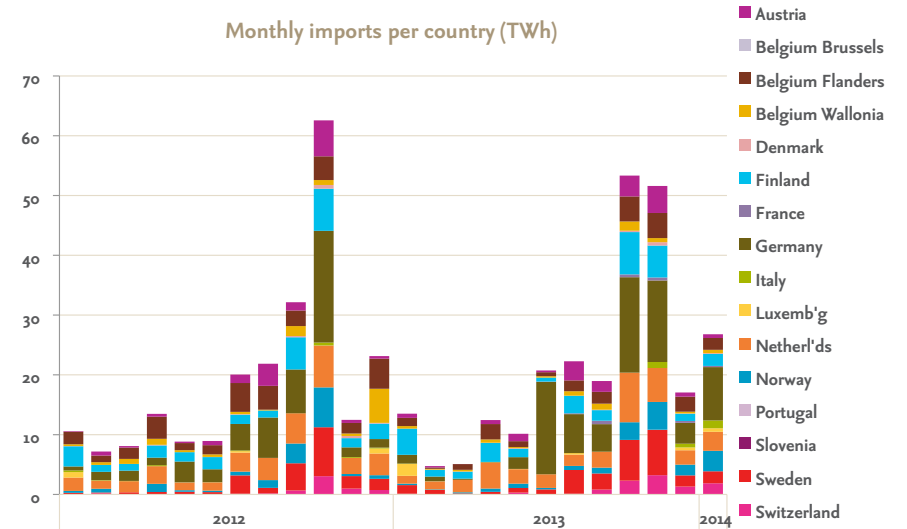
Limited trade still exists in the form of the cancellation of certificates in one country for use in another: the EECS Rules only permit this where transfer is technically impossible.

Norway, Sweden, Finland, Belgium and Austria continue to be the major exporters; while Germany, Sweden, Norway, Belgium,

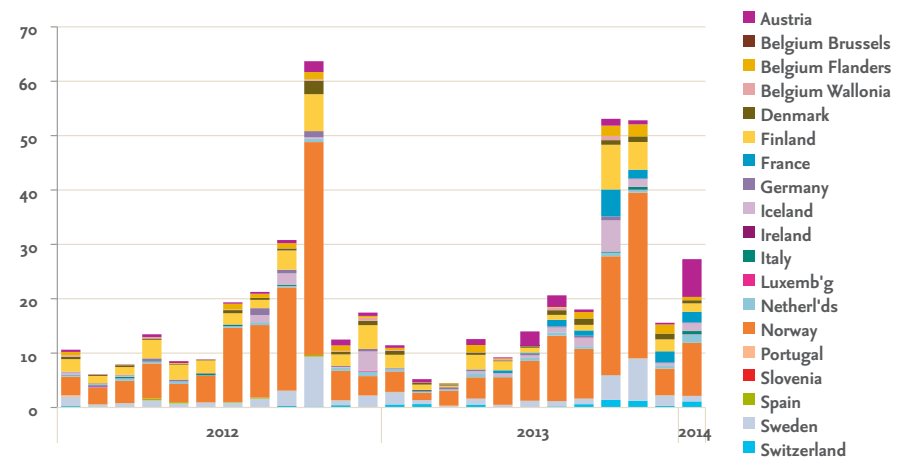
Annual EECS transactions by transaction data (TWh)



Monthly imports per country (TWh)



Monthly exports per country (TWh)



These charts show the large role that the Nordic region has in this market, and the interest in renewable products elsewhere in Europe.

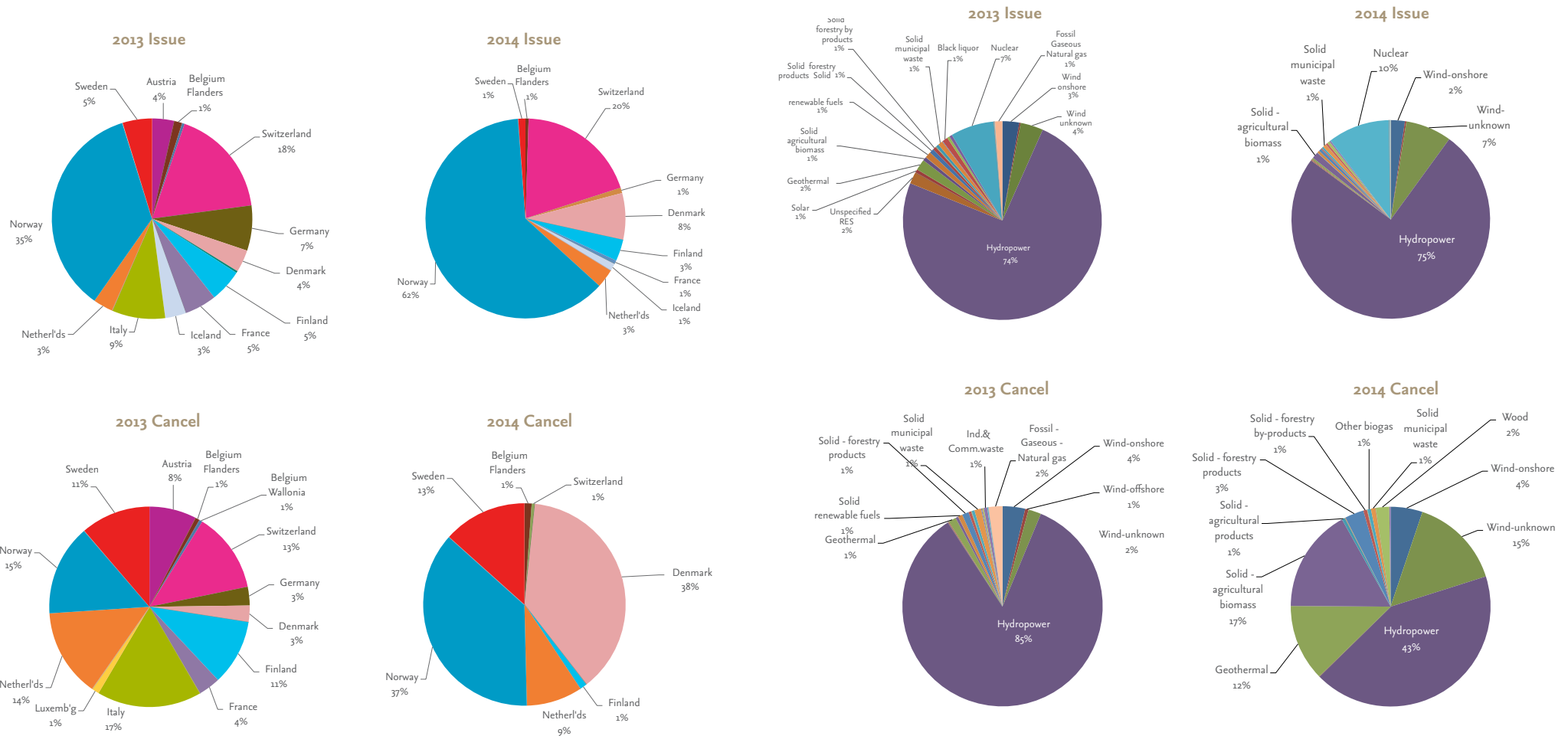
UBA has now taken over from Oeko-Institut as administrator of German EECS certificates, the handover concluding at the end of 2013. Note that AIB has agreed commercial terms with UBA, such that UBA can use the AIB Hub as a non-member. Also, Italy is now issuing GOs under EECS.

It is too early yet to compare the difference between issuing and cancellation activity in 2013 and 2014 - note that the following graphs are based on specific "vintages" of certificate (i.e. associated with electricity produced in a particular year).

So far, the contribution of the various fuel sources remains broadly similar to last year: for renewables, hydropower remains by far the prevalent renewable energy source, followed by wind and then biomass.

Certificates for fossil and nuclear are increasingly being issued, as countries increasingly certify all sources of energy, and not just renewable energy.

The rather marked differences between cancellations in 2013 and 2014 are currently unexplained.

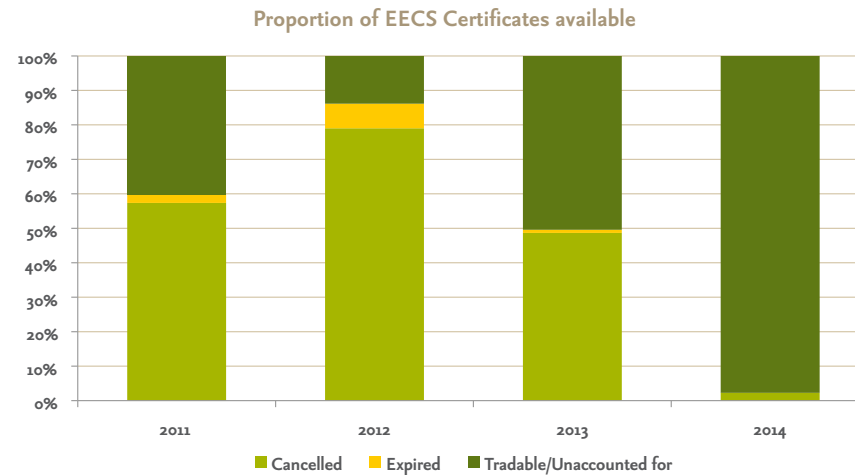
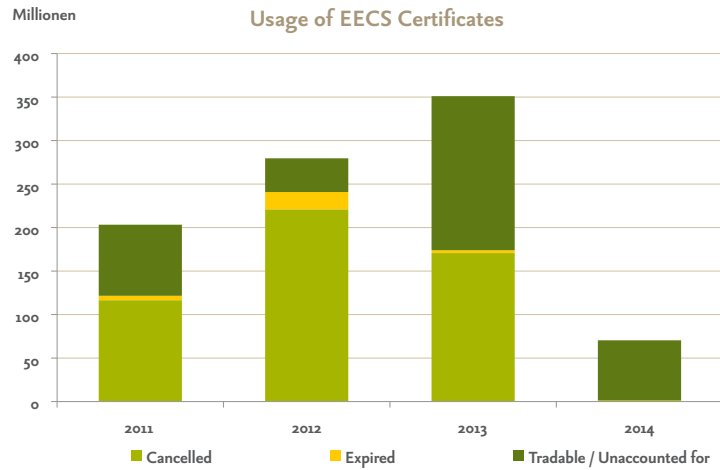


Comparing the status of different vintages of EECS certificate, we can see what has happened to the certificates that were issued for energy produced in the last four years - that is, whether the certificates have:

- been cancelled as evidence of supply;
- expired due to it being more than one year since the associated energy was produced (as required by Directive 2009/28/EC); or
- whether their whereabouts is unknown. This may mean that they remain available for trade, but it could also be that they have been transferred to a registry that does not currently report expiry and cancellation by the date of production.

Two graphs are shown. In the first, actual numbers of certificate are given; while the second illustrates the proportion of certificates in each category.

The picture is becoming clearer as more and more registries support expiry.



The following tables display the raw data by domain at a yearly level. Aggregated totals are given for the period since records began (2000); and for the period from January 2012 until the date of collection of the data (during May 2014– but note that not all registries can provide the required information upon request – see also “Explanatory notes to statistics” in this statistical report).

### ISSUING, TRADE & REDEMPTION FOR ALL FUELS

	TOTAL : 2001 TO 2014										2012 TO 2014									
	PRODUCTION			TRANSACTION							PRODUCTION			TRANSACTION						
	ISSUE	EXPIRE	CANCEL	ISSUE	TRANSFER	EXPORT	IMPORT	EXPIRE	CANCEL	ISSUE	EXPIRE	CANCEL	ISSUE	TRANSFER	EXPORT	IMPORT	EXPIRE	CANCEL		
Austria	35.337.228		44.895.481	38.275.451	71.200.195	48.510.106	94.451.519		77.355.721	18.650.159		28.626.690	20.917.992	44.122.124	25.636.580	38.688.121		39.115.619		
Belgium Brussels	10.794				12.910.414	14.800			14.010.608					6.817.201	14.800			7.990.988		
Belgium Flanders	20.597.182	967.164	10.881.542	16.673.928	56.040.488	19.238.372	166.793.368	3.866.029	119.969.451	9.228.498	607.603	4.199.717	10.021.583	27.316.266	16.548.681	66.680.880	3.596.937	35.980.855		
Belg & Lux RECS	113.390						2.031.496		2.048.355											
Belgium Wallonia	6.502.240	1.881	2.267.931		16.913.636	9.356.683	58.660.787	381.042	41.420.993	2.464.869	1.881	2.267.931		10.357.207	4.816.083	24.549.335	381.042	18.901.101		
Belgium	27.223.606	969.045	13.149.473	16.673.928	85.864.538	28.609.855	227.485.651	4.247.071	177.449.407	11.693.367	609.484	6.467.648	10.021.583	44.490.674	21.379.564	91.230.215	3.977.979	62.872.944		
Switzerland	112.213.954		52.647.549	113.690.439	102.015	15.500.484	29.144.785		76.910.460	108.384.339		52.647.549	113.690.439		10.529.910	19.660.729		71.310.850		
Czech Republic				600.655	541.506			3.751	654.198				600.655	541.506			3.751	654.198		
Germany	31.639.377		137.715.692	24.297.634	122.494.877	16.112.137	251.778.432		204.860.161	29.905.238		54.543.070	24.297.634	94.900.594	9.771.317	143.681.813		122.429.292		
Denmark	48.177.349	4.173.569	12.310.719	38.377.909	14.705.444	30.763.442	9.361.172	4.173.569	14.137.164	27.854.405	1.361.792	7.941.860	29.170.180	11.200.516	18.450.622	5.017.328	1.753.497	10.239.065		
Spain	14.156.547				2.905.558		5.250.404		42.889	4.554.175				2.905.558		2.183.075		42.886		
Finland	123.930.519	233.614	64.565.634	62.396.259	45.366.349	169.396.982	149.078.573	233.614	80.022.344	36.610.785	233.614	31.422.422	39.460.470	31.009.228	76.655.709	83.734.402	233.614	48.645.420		
France	67.838.935	12.068.227	19.714.933	45.151.600	11.039.900	15.568.205	20.272.802	15.973.510	66.853.568	41.206.281	12.264.453	15.855.499	45.151.600	2.849.292	8.081.618	1.418.025	15.846.478	29.383.180		
Ireland	162.414					10.001														
Iceland	21.925.559	962.276	322.013	21.925.559	998.587	21.411.603	968.443	962.276	322.013	20.849.578	934.272	322.013	21.925.559	998.587	21.411.603	968.443	962.276	322.013		
Italy	86.417.146	1.434.278	28.841.476	30.395.649	69.477.098	12.001.392	13.603.802	962.641	84.240.477	31.453.984	1.434.278	28.841.476	30.395.649	54.212.702	5.918.799	8.127.735	962.641	46.709.157		
Luxembourg	39.030		6.569.253	39.030	3.631.790	734.800	8.735.318		6.569.253	38.655		4.920.047	38.696	3.625.763	688.054	7.587.909		5.868.029		
Netherlands	89.198.999	2.321.625	72.432.398		62.724.066	18.476.043	200.960.960	2.321.630	246.970.672	25.038.562	1.516.988	70.799.434		23.563.067	12.532.120	83.873.613	2.321.630	85.978.817		
Norway	877.980.379	56.686.779	71.426.542	401.931.708	276.236.187	629.470.935	72.768.863	56.686.779	208.735.986	303.849.079	4.265.578	48.623.115	308.610.188	106.303.482	298.101.020	45.224.646	56.686.779	67.259.134		
Portugal	1.282.052		81.041	303.916		1.052.256	91.942		145.617	326.826		81.041	303.916		507.865	88.847		101.079		
Sweden	347.531.347	26.511.364	118.570.369	83.497.805	17.709.519	138.636.678	120.183.164	26.511.364	295.419.251	40.573.525	822.760	41.921.646	44.047.409	8.100.488	54.031.160	62.502.580	2.570.499	59.067.998		
Slovenia	4.002.666					668.004	117.018		1.927.200											
UK	90.158																			
TOTAL	1.889.147.265	105.360.777	643.242.573	880.463.100	782.092.071	1.152.173.327	1.199.045.333	112.076.205	1.549.117.080	700.988.958	23.443.219	393.013.510	691.537.528	425.918.023	565.879.016	591.847.292	85.319.144	650.873.394		

## ISSUING, TRADE & REDEMPTION FOR ALL FUELS

	2014									2013								
	PRODUCTION			TRANSACTION						PRODUCTION			TRANSACTION					
	ISSUE	EXPIRE	CANCEL	ISSUE	TRANSFER	EXPORT	IMPORT	EXPIRE	CANCEL	ISSUE	EXPIRE	CANCEL	ISSUE	TRANSFER	EXPORT	IMPORT	EXPIRE	CANCEL
Austria	20			7.425.558	10.638.817	8.530.920	6.714.836		11.439.516	12.513.452		13.023.103	10.825.631	14.745.634	12.630.681	18.553.127		18.242.139
Belgium Brussels					2.013.064				2.006.542					3.034.085	14.800			4.565.928
Belgium Flanders	354.582		16.115	1.550.202	2.430.507	4.590.527	9.015.431	294.757		4.534.415	2	1.165.948	4.081.111	13.895.543	7.819.054	25.529.945	2.342.472	13.355.719
Belg & Lux RECS																		
Belgium Wallonia	7.052	1.881			1.304.173	8.959	1.546.873	10.218	688.380	1.439.826		879.712		5.941.627	2.926.263	12.018.684	99.058	7.778.621
Belgium	361.634	1.881	16.115	1.550.202	5.747.744	4.599.486	10.562.304	304.975	2.694.922	5.974.241	2	2.045.660	4.081.111	22.871.255	10.760.117	37.548.629	2.441.530	25.700.268
Switzerland	13.732.174		7.268	19.822.119		3.764.613	7.234.777		21.058.736	61.821.419		22.128.802	59.654.049		4.760.297	8.702.008		31.409.100
Czech Republic				600.655	541.506			3.751	654.198									
Germany	618.183			5.783.281	23.675.597	421.092	26.025.635		29.445.255	25.552.283		5.119.725	14.120.829	50.351.497	4.316.324	68.753.794		49.933.678
Denmark	5.305.397		529.399	7.283.333	4.626.648	2.949.393	925.041	466.409	3.480.392	12.739.217	425.031	4.555.965	12.688.731	3.487.452	8.787.604	1.708.800	935.196	3.998.285
Spain				319.992		69.740	22.886			1.016.763			1.798.712		398.197	20.000		
Finland	2.445.725		16.221	8.007.599	6.428.844	9.235.481	8.979.575	233.614	16.915.317	18.535.856	231.568	18.042.860	15.717.142	14.406.465	32.329.412	34.824.563		17.025.211
France	446.297	196.226		5.676.849	691.886					18.170.880	127.032	6.065.218	19.619.260	2.043.977	7.876.492	1.250.025	11.941.195	10.575.993
Ireland																		
Iceland	841.794			3.502.472	17.747	3.583.873	18.000	23.456	69.248	11.790.581	23.456	69.268	13.053.886	980.840	13.480.834	650.432	938.820	252.765
Italy				16.459.631	42.245.893	1.122.153	2.934.964	962.641	30.691.557	30.395.649	1.434.278	28.801.727	13.936.018	6.248.711	408.579	871.957		3.202.298
Luxembourg	16.778			25.919	1.418.772	135.576	2.043.574		2.111.624	21.519		2.108.094	12.384	1.811.387	274.518	3.478.411		2.820.272
Netherlands	2.118.062		124.829		2.419.290	2.536.068	11.263.816	468.230	11.102.036	11.165.268	287.265	24.310.401		10.298.612	6.178.640	39.835.326	1.410.862	39.956.079
Norway	43.703.132		517.523	49.464.654	21.625.075	48.176.160	12.134.040	626.749	20.138.346	124.449.952	614.116	25.152.344	127.795.093	40.803.982	115.385.368	14.325.296	3.676.163	24.747.403
Portugal				12.817			33.240		45.515	189.409		54.156	204.667		95.000			31.676
Sweden	813.208		186.876	6.982.682	1.369.700	12.119.234	11.595.862	183.326	12.158.629	16.661.500	129.453	19.243.802	18.981.572	4.346.221	24.637.619	29.774.900	684.547	24.529.141
Slovenia																		
UK																		
<b>TOTAL</b>	<b>70.402.404</b>	<b>198.107</b>	<b>1.398.231</b>	<b>132.917.763</b>	<b>121.447.519</b>	<b>97.243.789</b>	<b>100.488.550</b>	<b>3.273.151</b>	<b>162.005.291</b>	<b>350.997.989</b>	<b>3.272.201</b>	<b>170.721.125</b>	<b>312.489.085</b>	<b>172.396.033</b>	<b>242.319.682</b>	<b>260.297.268</b>	<b>22.028.313</b>	<b>252.424.308</b>

Similar to the “by country” data above, the following tables display the raw data by technology at a yearly level.

See also the AIB website at [Statistics](#) for Excel spreadsheets in both Excel 2003 and Excel 2010 formats, containing the detailed data since records began, summarised by year; and also by month.



ISSUING, TRADE & REDEMPTION FOR ALL COUNTRIES																			
		TOTAL : 2001 to 2014									TOTAL : 2012 to 2014								
		PRODUCTION			TRANSACTION						PRODUCTION			TRANSACTION					
		ISSUE	EXPIRE	CANCEL	ISSUE	TRANSFER	EXPORT	IMPORT	EXPIRE	CANCEL	ISSUE	EXPIRE	CANCEL	ISSUE	TRANSFER	EXPORT	IMPORT	EXPIRE	CANCEL
Wind	Wind - onshore	65,369,389	858,495	16,293,278	6,770,978	37,139,966	21,425,155	35,927,003	1,083,013	59,848,755	16,543,020	574,830	13,486,405	5,722,523	18,112,387	3,804,627	11,565,827	1,060,591	23,017,579
	Wind - offshore	5,103,113	357,810	1,981,030		3,223,539	1,050,522	4,628,770	429,134	5,385,288	1,733,256	253,489	1,891,412		1,914,330	873,331	4,476,524	429,134	3,127,213
	Wind - unknown	39,240,158	4,279,467	14,016,285	39,182,650	16,408,217	33,984,489	16,810,026	4,438,037	14,195,843	28,443,293	1,008,386	9,687,409	29,148,861	14,541,181	26,926,750	15,021,863	2,840,387	12,168,515
		109,712,660	5,495,772	32,290,593	45,953,628	56,771,722	56,460,166	57,365,799	5,950,184	79,429,886	46,719,569	1,836,705	25,065,226	34,871,384	34,567,898	31,604,708	31,064,214	4,330,112	38,313,307
Hydro/marine																			
		1,506,140,227	81,437,052	540,091,110	719,212,242	640,927,856	1,049,723,528	1,087,561,372	86,577,639	1,273,068,536	556,786,012	19,452,215	327,382,492	575,851,644	347,545,032	513,807,599	527,026,988	77,370,557	557,957,407
	Unspecified mechanical/other	8,470	32	167,292	8,470	5,901,637	5,119	1,772	2,732	5,814,661	8,470	32	449	8,470	8,132	5,119	1,772	2,732	449
	Unspecified renewable energy	6,868,729	11	133,055	988,668	543,938	199,813	8,069,415	11	246,276	6,868,729		132,612	988,668	543,938	199,813	8,069,415	11	246,276
	Unspecified heat																		
	Solar	3,785,474	674,692	794,454	3,610,173	653,455	73,261	64,284	1,133,116	947,043	3,298,284	548,866	515,079	3,283,629	426,745	33,973	33,432	1,103,860	750,723
Other	Geothermal	14,091,019	28,250	4,429,337	8,320,276	6,663,786	6,634,235	7,137,994	33,505	11,824,674	8,133,049	28,199	4,429,337	8,320,276	6,451,284	6,634,235	7,137,994	33,505	9,353,836
		24,753,692	702,985	5,524,138	12,927,587	13,762,816	6,912,428	15,273,465	1,169,364	18,832,654	18,308,532	577,097	5,077,477	12,601,043	7,430,099	6,873,140	15,242,613	1,140,108	10,351,284
	Solid - agricultural biomass (inc. energy crops)	5,823,628	232,523	2,116,293	3,458,751	1,261,192	3,771,458	3,762,037	232,520	3,828,666	3,567,187	227,773	2,111,749	3,167,919	228,522	3,070,110	3,047,606	232,520	2,822,305
	Solid - agricultural products	427,204	32,517	206,743	176,832	69,300	165,445	186,578	37,271	163,780	269,728	30,051	100,493	176,263	65,285	98,479	109,150	37,271	155,107
	Solid - renewable fuels (inc. For&Ag bp & w)	54,506,503	141,985	6,228,419	8,091,160	25,419,123	17,747,840	17,766,709	189,715	46,904,490	5,489,803	32,627	3,332,402	4,130,437	6,111,341	1,605,086	1,858,129	100,266	5,614,460
	Solid - forestry products	4,723,378	147,539	3,529,489	2,298,165	3,937,981	2,399,464	2,142,822	195,280	4,565,290	4,285,162	114,664	3,472,113	2,224,894	3,937,981	2,280,423	2,057,428	195,280	4,560,290
	Solid - forestry by-products & waste	7,814,276	239,245	1,576,607	2,501,213	3,518,335	2,382,788	1,960,969	316,744	4,004,636	4,615,216	167,349	1,499,320	2,186,401	3,401,367	1,998,110	1,745,323	316,744	4,004,636
	Gas - landfill	3,810,608	44,071	555,356	473,952	2,477,310	209,207	229,439	60,038	2,589,910	446,772	23,656	182,688	293,856	493,058	85,276	97,707	55,054	498,381
	Gas - sewage	163,203	803	21,750	125,497	4,182	4,246	4,340	803	43,941	126,340	803	21,646	125,497	4,182	853	947	803	8,256
	Gas - other biogas	6,178,639	353,292	2,384,144	2,201,716	3,029,145	1,064,095	1,098,700	399,326	4,212,849	3,150,614	205,744	1,741,162	1,537,165	1,527,724	938,420	971,651	343,001	2,099,391
	Solid - municipal biogenic waste	18,426,507	845,661	4,640,862	2,457,824	7,200,709	5,158,422	5,447,849	917,802	14,176,392	6,237,875	393,126	3,599,511	1,686,230	3,689,578	3,909,494	4,278,312	692,515	6,093,179
	Liquid - renewable fuels (inc. Mun.waste)	425,238	11,204	370,972	270,958	946,884	372,209	814,839	334,034	1,102,689	422,543	6,215	313,555	270,958	946,884	372,209	814,839	334,034	1,102,689
	Liquid - black liquor	4,152,115		3,026,323	4,151,910	987,896	1,061,850	374,770		3,056,297	3,658,106		3,026,297	4,151,910	987,896	1,061,850	374,770		3,056,297
	Solid - unspecified wood	2,172,775	121,936	1,505,077	2,172,155	886,941	763,095	762,869	118,278	1,594,917	2,172,775	121,936	1,505,077	2,172,155	886,941	763,095	762,869	118,278	1,594,917
	Solid - industrial & commercial waste	16,150,054	138,834	4,063,936	5,599,552	10,486,815	2,062,109	2,169,210	157,172	12,875,373	3,867,662	38,341	1,956,390	3,743,149	3,690,371	1,149,404	1,279,118	156,265	3,189,638
	Biomass	124,774,128	2,309,610	30,225,971	33,979,685	60,225,813	37,162,229	36,721,131	2,958,983	99,119,230	38,309,783	1,362,285	22,862,403	25,866,834	25,971,130	17,332,809	17,397,849	2,582,031	34,799,546
RENEWABLE		1,765,380,707	89,945,419	608,131,812	812,073,142	771,688,207	1,150,258,350	1,196,921,767	96,656,170	1,470,450,306	660,123,896	23,228,302	380,387,598	649,190,905	415,514,159	569,618,256	590,731,664	85,422,808	641,421,544
NUCLEAR																			
		113,317,551	15,403,747	29,104,592	58,127,918		56,821	56,821	15,403,747	72,666,774	32,084,582	7,080	6,831,969	32,084,583		56,819	56,819	7,080	6,831,473
	Unknown	237,434	3	87,498	9,206	57,602	188,661	33,430	3	81,138	233,794	3	87,498	9,206	57,602	188,661	33,430	3	77,498
	Solid - Unknown																		
	Solid - Hard coal	76			76						76			76					
	Solid - Brown coal	67			67						67			67					
	Solid - Peat																		
	Solid - Municipal solid waste	493,689		50,000	493,690					50,000	493,689		50,000	493,690					50,000
	Solid - Industrial and commercial waste	87,427	11,608	27,379	110,512		6,369	6,360	14,015	27,380	87,427	11,608	27,379	110,512		6,369	6,360	14,015	27,380
	Liquid - Unknown	1,853		1,853	1,853					1,853	1,853		1,853	1,853					1,853
	Liquid - Crude oil																		
	Liquid - Natural gas																		
	Liquid - Petroleum products	51,333		38	51,436					40	51,333		38	51,436					40
	Gaseous - Unknown	2			18,076		2		2,270	167	2			18,076		2		2,270	167
	Gaseous - Natural gas	9,577,126		5,839,401	9,577,124	10,346,262	1,663,124	2,026,855		5,839,422	7,912,239		5,823,401	9,577,124	10,346,262	1,663,124	2,026,855		5,839,422
	Gaseous - Coal-derived gas																		
	Gaseous - Petroleum products																		
	Gaseous - Municipal gas plant																		
	Gaseous - Process gas																		
	Heat - unknown							100									100		
	Heat - Process heat																		
FOSSIL		10,449,007	11,611	6,006,169	10,262,040	10,403,864	1,858,156	2,066,745	16,288	6,000,000	8,780,480	11,611	5,990,169	10,262,040	10,403,864	1,858,156	2,066,745	16,288	5,996,360
	TOTAL	1,889,147,265	105,360,777	643,242,573	880,463,100	782,092,071	1,152,173,327	1,199,045,333	112,076,205	1,549,117,080	700,988,958	23,246,993	393,209,736	691,537,528	425,918,023	571,533,231	592,855,228	85,446,176	654,249,377

ISSUING, TRADE & REDEMPTION FOR ALL COUNTRIES																			
		2014								2013									
		PRODUCTION			TRANSACTION					PRODUCTION			TRANSACTION						
		ISSUE	EXPIRE	CANCEL	ISSUE	TRANSFER	EXPORT	IMPORT	EXPIRE	CANCEL	ISSUE	EXPIRE	CANCEL	ISSUE	TRANSFER	EXPORT	IMPORT	EXPIRE	CANCEL
Wind	Wind - onshore	1.606.413		82.295	3.377.071	5.825.010	765.886	2.224.818	234.075	5.057.840	9.602.968	431.400	6.733.721	1.640.989	7.597.810	1.510.203	4.892.805	321.898	9.212.331
	Wind - offshore	173.706				136.402	43.270	1.332.272	58.156	434.010	770.317	34.481	783.284		1.003.656	577.215	2.133.121	304.839	1.385.150
	Wind - unknown	5.271.439		238.315	7.882.505	5.589.609	5.151.348	2.432.128	353.945	4.213.735	13.015.519	343.081	5.133.489	11.258.362	4.941.879	10.723.287	5.867.925	716.006	5.212.874
		7.051.558		320.610	11.259.576	11.551.021	5.960.504	5.989.218	646.176	9.705.585	23.388.804	808.962	12.650.494	12.899.351	13.543.345	12.810.705	12.893.851	1.342.743	15.810.355
Hydro/marine		52.893.599	1.881	678.264	99.861.596	101.365.602	91.917.745	90.663.713	2.151.526	136.184.692	261.356.973	2.032.091	131.614.089	253.378.712	140.027.058	215.108.684	223.915.239	18.476.516	213.463.550
	Unspecified mechanical/other	2.176			2.811	1.574	3.347			2.732	328	6.294	32	449	5.659	6.558	1.772	1.772	121
	Unspecified renewable energy	72.992			412.348	32.802	75.004	50.000			22.315	6.795.737		22.315	576.320	342.696	116.621	7.856.756	102.905
	Unspecified heat																		
	Solar	79.559		729	176.412	262.403	31.458	31.462	33.093	279.151	1.871.601	42.025	264.632	1.790.195	55.253	1.650	1.382	976.733	303.377
	Geothermal	200.477		197.954	3.645.108	4.818.570	1.829.947	1.829.847	14.301	3.079.113	6.239.285	9.046	3.828.638	4.212.219	1.617.583	4.531.288	5.035.147	19.204	3.135.657
Other		355.204		198.683	4.236.679	5.115.349	1.939.756	1.911.309	50.126	3.380.907	14.912.917	51.103	4.116.034	6.584.393	2.022.090	4.651.331	12.895.057	995.937	3.542.060
	Solid - agricultural biomass (inc. energy crops)	750.583		267.768	938.059	4.455	518.914	281.813	11.591	1.328.439	2.110.722	11.083	1.561.462	2.182.500	124.503	2.415.783	2.641.866	216.439	1.113.601
	Solid - agricultural products	35.574		8.179	51.440	1.250	1.230	1.172	12.361	54.402	106.449	5.482	70.285	115.695	39.791	73.299	71.614	18.181	36.423
	Solid - renewable fuels (inc. For&Ag bp & w)	277.974		1.593	1.532.978	386.301	237.090	277.658	13.508	481.481	3.583.734	20.397	889.599	1.192.911	2.290.999	414.893	644.207	11.907	1.820.641
	Solid - forestry products	296.841		49.036	582.582	464.413	162.786	146.573	37.443	763.364	2.509.065	36.788	1.969.609	790.340	2.347.853	973.052	792.786	130.610	2.671.717
	Solid - forestry by-products & waste	122.650		9.321	608.238	437.012	181.203	293.386	103.715	1.063.384	1.869.530	100.558	1.006.643	881.691	998.265	765.282	786.287	101.246	1.149.434
	Gas - landfill	7.527		1.034	109.170	119.235	73	146	5.614	33.367	304.999	4.876	104.465	140.307	178.047	33.380	25.412	22.855	191.588
	Gas - sewage	2.952		292	26.032	4.088			803	3.734	67.455	803	4.202	46.604	94	198	292		3.418
	Gas - other biogas	210.177		8.960	256.309	346.535	160.560	139.034	62.489	343.705	1.658.597	32.731	833.336	782.286	671.428	532.168	638.366	201.187	1.183.382
	Solid - municipal biogenic waste	387.102		12.045	277.317	431.287	1.016.592	1.148.683	198.140	939.897	2.818.796	72.037	1.686.718	705.822	2.223.803	1.863.742	2.011.307	387.951	2.745.661
	Liquid - renewable fuels (inc. Mun.waste)	14.826			53.334	199.383	129.373	128.726	274	372.948	319.355	5.035	264.165	192.124	530.210	129.648	140.939	18.170	354.733
	Liquid - black liquor	231.983		337	2.123.543	276.051	317.819	148.962		2.738.157	3.148.436		2.891.874	1.384.054	37.996	178.227	174.808		223.745
	Solid - unspecified wood	290.577		34.896	634.653	243.249	173.344	169.506	68.751	1.057.113	1.411.486	72.037	1.185.910	1.413.557	643.064	579.751	583.363	49.527	527.804
	Solid - industrial & commercial waste	159.388		3.439	521.980	281.699	123.622	139.666	30.584	392.827	1.692.772	11.138	542.967	1.715.626	1.225.867	402.084	514.894	38.758	1.374.285
	Biomass	2.788.154		396.900	7.715.635	3.194.958	3.022.606	2.875.325	545.273	9.572.818	21.601.396	372.965	13.011.235	11.543.517	11.311.920	8.361.507	9.026.141	1.196.831	13.396.432
RENEWABLE		63.088.515	1.881	1.594.457	123.073.486	121.226.930	102.840.611	101.439.565	3.393.101	158.844.002	321.260.090	3.265.121	161.391.852	284.405.973	166.904.413	240.932.227	258.730.288	22.012.027	246.212.397
NUCLEAR		7.168.249			9.652.875		56.819	56.819	7.080	6.279.473	24.916.333	7.080	6.831.471	22.431.708					552.000
	Unknown					687	563		2	55.650	227.766		56.008	4.082	56.915	178.098	3.893	1	21.848
	Solid - Unknown																		
	Solid - Hard coal											76		76					
	Solid - Brown coal											67		67					
	Solid - Peat																		
	Solid - Municipal solid waste	103.600			124.805					50.000	347.778		50.000	349.375					
	Solid - Industrial and commercial waste	11.776			16.017		9			23.206	57.818		23.205	93.429		6.360	6.360	14.015	4.174
	Liquid - Unknown									1.853	1.853		1.853	1.853					
	Liquid - Crude oil																		
	Liquid - Natural gas																		
	Liquid - Petroleum products	6.304			8.640					40	23.415		38	42.796					
	Gaseous - Unknown				2		2				2			18.074				2.270	167
	Gaseous - Natural gas	23.960			41.938	219.902		2		127.050	4.162.791		2.366.698	5.141.652	5.434.705	1.202.997	1.556.727		5.633.722
	Gaseous - Coal-derived gas																		
	Gaseous - Petroleum products																		
	Gaseous - Municipal gas plant																		
	Gaseous - Process gas																		
	Heat - unknown								100										
	Heat - Process heat																		
FOSSIL		145.640			191.402	220.589	574	102	2	257.799	4.821.566		2.497.802	5.651.404	5.491.620	1.387.455	1.566.980	16.286	5.659.911
	TOTAL	70.402.404	1.881	1.594.457	132.917.763	121.447.519	102.898.004	101.496.486	3.400.183	165.381.274	350.997.989	3.272.201	170.721.125	312.489.085	172.396.033	242.319.682	260.297.268	22.028.313	252.424.308

## Forthcoming events

2014

20-22 May	Rome, Italy	CA-RES
22-23 May	Rome, Italy	AIB General Meeting
24-26 June	Brussels, Belgium	RE-DISS Domain Workshop and Advisory Group
25 Sept	Split, Croatia	Open Markets Committee
25 Sept	Split, Croatia	RE-DISS workshop with energy stakeholders
25-26 Sept	Split, Croatia	AIB General Meeting
25-26 Sept	Split, Croatia	RECS International meetings
27-28 Nov	Prague, Czech Republic	AIB General Meeting