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Annual Report 2013



AIB

association of issuing bodies



NEWSLETTER 22

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SYNOPSIS OF ARTICLES

Croatia

In September, the General Meeting was held in Split, which is located on the coast of Dalmatia, a province of Croatia. Split is the largest Dalmatian city, and is the second largest city in Croatia. The host was the Croatian Energy Market Operator Ltd. (HROTE) which is also the Issuing Body for the Croatian Domain. Read some facts about the status of renewables in Croatia.

Green Energy meetings in Split, Croatia

On 24-26 September 2014 the AIB, RECS International, Europex and RE-DISS got together in Split.

Several meetings and joint events took place at an impressive location with beautiful sea views and we were provided with excellent service by the hotel. The sea views, service and cooperation among attendees generated a very constructive working atmosphere.

Czech Republic

Learn more about renewable energy, Guarantees of Origin and the electricity disclosure system in the Czech Republic by reading this article and attending the fourth General Meeting of the AIB this year. It will be held in Prague, Czech Republic at the offices of one of the newest members of AIB: OTE a.s.

New Mission Statement for the AIB

Jan van der Lee (CertiQ, The Netherlands), chair of the AIB Board, presents the new Mission Statement for the AIB. A Mission Statement helps when looking at the question: what drives us? Why do we do what we do?

EKO-Sofia, a comic about the liberalized electricity market

EKOenergy published a 36-page comic strip about the electricity market, consumers' choice and buying renewable electricity. The comic strip has since been translated into 25 languages!

Statistics

The latest activity statistics, showing continued growth in the market and the effect of the introduction of new members.

Newsflash

New regulations on disclosure were just ratified in Croatia.

Elering has passed its connection tests, and is now connected to the AIB Hub as a full member.

Croatia hosts the latest GM in Split



The latest AIB General Meeting (GM) was held in Split, the largest Dalmatian city and the second largest city in Croatia, located on the coastline of Croatia. The city centre is under UNESCO protection as the old palace of Diocletian – from the fourth century – is unique in the world, and still preserves the ruins from that time. The host was the CROATIAN ENERGY MARKET OPERATOR Ltd. (HROTE) which is also the Issuing Body for the Croatian Domain. Croatia became a member of the AIB at the GM Rome in May this year.

HROTE was established in 2005 as the state-owned company which performs the activities necessary to organize the electricity and gas market as a public service under the supervision of the Croatian Energy Regulatory Agency. HROTE controls the system of financial incentives for renewable energy sources, high efficient cogeneration and bio fuels under the supervision of the Ministry of Economy.

Some facts about the status of renewables in Croatia follow:

Croatian Domain

HROTE is authorized to issue EECS Certificates under this Domain, relating to the EECS-GO product in combination with the Independent Criteria Scheme TÜV SÜD.

As stated above, HROTE runs the national feed-in tariff (FiT) support scheme, and currently the status of installed capacities of the plants which claim support for specific technologies are: wind 297 MW, solar photovoltaic 30 MW, biogas 11 MW, biomass 7.69 MW, sewage gas 2.5 MW, landfill gas 2 MW and hydropower 1.45 MW. According to the sub-laws for GOs, producers that are eligible under the national support scheme are exempted from the GO system.

However, in the structure of the electricity system in Croatia, hydropower plants account for more than 50 percent of all production.

HPP Velebit, hydro pumped power station.

Croatia is thus among the leading countries in energy production from renewable sources.

Today, 25 hydropower plants are in operation in Croatia; some of them are reservoir types, and some of them are natural flow types, grouped in three production areas, and owned and run by the national energy utility HEP-Generation. HEP-Generation generated in total 10,684 GWh of electricity in 2013. Hydro and thermal generation accounted for 8,054 GWh or 75.4% and 2,630 GWh or 24.6%, respectively. Compared to the 2013 planned generation, the total generation recorded was 27.7% higher, including 64% higher hydro and 24% lower thermal generation.

For all of HEP's hydro power plants, TÜV SÜD certificates (printed forms) have been issued for electricity production from renewable sources; and those in the North and West production areas have also received certificate for quality assurance (ISO 9001) and environmental protection (ISO 14001).

Croatian Disclosure Rule

Unfortunately, the membership status of HROTE is that it is a member with an open issue which had not been resolved before the GM, since Croatia has yet to approve and implement its disclosure rule, which keeps membership of HROTE under conditional approval.

The secondary legislation on disclosure will be included in the sub-laws on GOs. From January 2016, the regulation will make cancelled EECS-GO certificates the sole proof of the source of energy that will be eligible for disclosure approval. In the transitional period for TÜV SÜD practice (printed forms) in Croatia (during 2015), it will be permissible to use voluntary certificates, provided these have been issued for domestic electricity production. If a TÜV SÜD certificate is issued (or any other certificate) no GO can be issued for the same production.





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The competent body for disclosure is the Croatian Energy Regulatory Agency. The disclosure rule and the methodology for calculation of the residual mix is under the supervision of the Croatian Energy Regulatory Agency.

It is planned that the disclosure rule states that a supplier can claim to have supplied renewable electricity, only when cancelling GOs for its customers. Additionally, the supplier claims the electricity purchased from the feed-in system to its customers.

The residual mix for Croatia will be calculated according to the methodology presented in the RE-DISS Best Practice Recommendations. Since Croatia has electricity imports/exports with third

countries, ENTSO-e data will be used for determining net imports from certain countries.

Some basic facts on disclosure principles:

- Methodology implements the RE-DISS issuance based method for determining the final residual mix. Nearly all RE-DISS BPR for disclosure are implemented in the Methodology.
- The Croatian Feed-In support scheme is handled as a reliable tracking system by which each final customer receives an ideal portion of electricity from the Feed-In mix.
- HROTE is tasked to calculate and publish the Residual Mix. The calculation is to be done “in coordination” with other issuing/disclosure competent bodies (this interprets to using EAM).
- HROTE is tasked to check disclosure date of supplier in relation to DSO data from 2017 onward (starting for production in 2016).
- HROTE is tasked to publish annual reports on disclosure in Croatia.
- Suppliers must advertise origin in relation with our Methodology and use GOs as a basis for their products.
- Suppliers can use data from GOs to create specific products (location of power plant à country of origin product; date of plant commission à new production; etc.)



HPP Velebit, hydro pumped power station.

Velebit is a pump storage hydro power plant, situated on the Zrmanja River, 10 km upstream of Obrovac in Croatia.

Location: Zadar County, the powerhouse is situated by the Zrmanja River. | **Type:** pump storage/storage | **Total capacity:** 276/240 MW

GREEN ENERGY MEETINGS IN SPLIT, CROATIA



HPP Velebit, hydro pumped power station.

On 24-26 September 2014 the AIB, RECS International, Europex and RE-DISS got together in Split.

Several meetings and joint events took place at an impressive location with beautiful sea views and we were provided with excellent service by the hotel. Both sea-view and service generated a very constructive working atmosphere. In addition, all participants demonstrated co-operative behaviour.

- Europex held its meeting of the Working Group Environmental Markets,
- The AIB met for the regular Working Groups, Board and General Meeting, plus bilateral meetings with representatives from South Eastern European countries who also took the opportunity to attend the regular AIB meetings,
- RE-DISS offered a workshop for competent bodies and market parties and met bilaterally with representatives from South Eastern European countries,

- RECS International members attended the RE-DISS workshop and held their Advisory Group and Board Meetings, and
- From all organisations, members participated in the Open Markets Committee, the opportunity for market parties to raise any concerns that they may have in relation to the operation of EECs and the Hub.

One highlight of this get-together was the joint dinner event at the Radisson Blu hotel with around 60 guests from all organisations/projects. Around 20 people took the opportunity to visit one of the Croatian Hydro Power plants (the HPP Zakućac). Thanks to HROTE and the staff of the HPP for making this fascinating insight possible.

The following texts were written at the invitation of the AIB, to get an insight into each organisation's meetings and discussions.

AIB meeting with newcomers at Split GM

During organisation of the last General Meeting in Split, Workgroup External Affairs (WGEA) had the idea of introducing the AIB to potential observers from South East Europe or, as WGEA described them: "newcomers". The location was perfect for this event, given its proximity to the newcomers' offices.

The idea was supported by the AIB Board, and over summer WGEA started preparing for the meetings, providing interested parties with an invitation and information package. This consisted of the most important AIB documents, and a short introduction to electricity certification providing historical facts, a description of Guarantees of Origin and disclosure, and an example of the implementation of the GO system. This was written in Croatian, to help attendees to understand the concept and its terminology.

WGEA organised meetings where the representatives from the AIB Board and working groups met with potential members from Slovakia, Bosnia &

Herzegovina, Montenegro and Serbia. Individual meetings were held with people from each South East European country (2-3 representatives of each country, and 2-3 members from AIB at each meeting). After introductions from both sides, the AIB gave a short introduction to the Association and its working groups. One of the most important tasks of WGEA is to constantly work on the recruitment of potential new members and to "spread the story" about the AIB.

The outcome of the meeting was very positive for both sides, the newcomers showing interest in becoming AIB observers. Some of the delegates from these countries were excellently prepared, and familiar with the issues involved. The most important topic was the common problem of covering the cost of setting up a registry for their domains, and one solution might be to examine the possibility of neighbouring countries forming a single domain in order to share costs. However, a final question remains: when will the market for GOs be established in those countries?

RE-DISS activities in Split

Once again working in close collaboration, the AIB, RECS International and the RE-DISS project team organised back-to-back meetings in Split, Croatia on 25-26 September. On the 25th, in the morning, the RE-DISS and AIB teams met in turn with officials from Slovakia, Montenegro, Serbia and Republica Srpska to present the RE-DISS project; including recommendations and the EECS system respectively. While the RE-DISS team had already had several contacts with Slovakia, it was the first time that the project was introduced to official representatives of the other 3 domains.

All organisations are now included in further RE-DISS communication and will be able to follow the progress of the project.

In the afternoon, RE-DISS had invited electricity suppliers and other market players to a workshop dedicated to facilitate the communication of fuel mix and environmental aspects to end consumers. The main focus of the meeting was the disclosure guidelines document which the RE-DISS team had prepared for the suppliers. The document was distributed prior to the workshop and its main lines

were presented during the workshop. Based on the comments that were received, the document will be finalised during the autumn, and disseminated by RE-DISS. The project foresees a final presentation of the guidelines, which will take place by means of a webinar, within the next months. The team welcomes any further dissemination of the guidelines by market players and competent authorities as useful promotion of good practices.

The second topic that was discussed in the workshop concerned the relationship between electricity disclosure and carbon accounting. A background report was drafted by the project leader, Öko Institut, which analyses the rationale and options for CO₂ accounting in relation to electricity disclosure. The report was much discussed and the

RE-DISS team now has to agree on how to take the comments into account. The report will be discussed further in a meeting with NGOs, before being finalised.

The RE-DISS team thanks all participants attending the workshop!

The two documents are available on the [RE-DISS website](#) in the “Documents Downloads” section.

Diane Lescot and Dominik Seebach
from the RE-DISS project



Guarantees of Origin

A way forward from the fallacies of current support systems for renewable electricity

On 16th May 2014, EUROPEX, the association of European energy exchanges, published a position [paper](#) with the above title. Almost half a year later, a lot has happened. Foremost, two rulings by the European Court of Justice (Ålands Vindkraft and Essent Belgium) have effectively, at least for now, closed the door on a more market-oriented support system for renewable energy sources in electricity (RES-E). Yet the main conclusions of the paper still stand.

RES-E is (still) at the forefront of European energy policy and is ever more a force to be reckoned with. Unfortunately, a lasting consequence of the current implementation is distortion of the electricity

market, additional financial burdens for final consumers, and imposing additional risks to security of supply in the long run.

The Guarantees of Origin (GO) policy instrument offers a market-based solution to help solve current RES-E support dilemmas and to empower consumers. The evolving GO system could be strengthened by several additional measures.

First, national rules and regulations on GOs differ considerably, even though they are all based on a single European directive. This fragments the market; and so further standardization and harmonization is essential.

Second, the credibility of GOs might be strengthened, both by more closely matching the time of energy generation and the time when the GO is used (i.e. shortening the disclosure period); and by expanding the system to include all generation technology and fuel types, and thus making it a universal tool for fuel source disclosure.

Third, GO markets are Europe-wide, requiring the same level of security as EUA, gas and electricity markets.

There are some other developments which might signal a return to a market for RES-E, albeit probably on a longer time scale. The new EU state aid guidelines (for environmental aid) bring some market-friendly approaches, such as giving more emphasis to selling power through the market and balancing responsibilities. The cooperation mechanisms of the RES Directive could – if they are used more frequently – “trickle down” to cooperation

on company levels, and to a more market based approach.

EUROPEX believes that RES-E must be integrated into the market. Coupled electricity spot-markets and the progressive development of intra-day markets, which are clear priorities for EUROPEX, allow this integration to happen. Connecting markets brings liquidity, stability and efficiency, as demonstrated by a series of bilateral or multilateral market coupling activities by EUROPEX members, has reduced inefficiencies in cross-border capacity utilization.

We still believe this is the way forward.

Borut Rajer, Head of WG Environmental Market, Europex



Renewable Energy Certification in the Czech Republic

On 27th and 28th November 2014, the AIB General Meeting will be held in Prague at the offices of [OTE, a.s.](#)

Czech electricity and gas market operator (OTE, a.s.)

OTE, a.s., the Czech electricity and gas market operator, is a joint stock company established in 2001. OTE provides comprehensive services to individual electricity and gas market players, including organizing trading in the day-ahead electricity market (since 2002) and the

intra-day and block electricity markets (in later years). OTE has been the market operator of the gas market since 2010, including operation of the day-ahead gas market and the intraday gas market. OTE also administers the National Register of Greenhouse Gas Emissions.

Guarantees of Origin in the Czech Republic

Pursuant to the Act No. 162/2012 Coll. of 31 January 2012 on promoted energy sources, OTE is responsible for issuing Guarantees of

Origin (GOs) for electricity from renewable energy sources, based on producers' requests. For this purpose, OTE launched a new electronic registry of GOs (known as the EZP) in 2013. Following this launch, OTE joined the Association of Issuing Bodies (AIB) in November 2013; and the EZP system has been connected to the international system of this association (the AIB Hub) on 25th April 2014. This connection allows EZP account holders to import the GOs issued in EU Member States whose competent bodies are members of the AIB. Export of Czech GOs is not yet allowed, due to the absence of disclosure legislation in the Czech Republic.

The cooperation between OTE and the members of the AIB increases the transparency of the whole system of GOs in all phases of their life cycle - from their issuance to their cancellation, which proves the delivery of electricity to the final consumer.

Renewable energy in the Czech Republic

According to the Czech Ministry of Industry and Trade, renewable energy sources in the Czech Republic are considered to be all non-fossil and non-nuclear natural energy sources, i.e. hydropower, wind, solar, solid biomass, biogas, geothermal energy and liquid bio fuels.

Gross electricity production from renewable sources in 2013 accounted for 10.7% of the total domestic gross electricity generation. The share of the gross production of heat from renewable sources in the total production of thermal energy was around 9% in 2013.

Electricity Disclosure system

The biggest issue the Czech GO system is facing at the moment is the absence of detailed disclosure legislation. OTE, in cooperation with the Czech Ministry of Industry and Trade, is working on solving this by amending the relevant energy acts.

Les Království Dam and Hydro Power Station, © fotokate/fotolia.com



New mission statement for the AIB: “Guaranteeing the origin of European energy”

A common way of greeting a friend in the street is to say: “How do you do?” If you meet a new neighbour, a regular question that will pop up is: “What do you do for a living?” Also, if you look at companies, in their advertisements, annual reports and other publications, they tell you what they do and how they do it. “We sell cars, and they are fast and/or economical because of our new engine with fuel-saving valve technology.” Something like that.

They are missing an important point. It should start with **why** they do it. Once you know **the why, the how** and **the what** make much more sense¹. Apple’s mission is to challenge the status quo, Nokia’s motivation is connecting people. So, looking at the AIB: what drives us? **Why** do we do **what** we do?

Our Why

Key values for the AIB are trust and transparency. End users need access to trustworthy information on the origin of energy if they are to make an informed choice concerning the energy they consume. Energy which originates from a market that is operating internationally. Energy that comes from power that is generated all over Europe, wherever the source is available. Wind power from Scandinavia, and Solar from Southern Europe are just a few examples. The AIB adds value to that European energy market by providing the infrastructure to let the information flow through the chain – from production to consumption. End users all over Europe must be able to trust that information. That is our why.

How

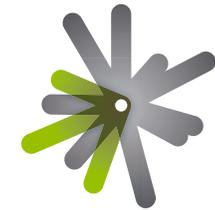
Next question is then: how do we give shape to that ambition? By enabling the recognition and exchange of Guarantees of Origin between our members, i.e. the issuers of Guarantees of Origin across Europe. For that, we focus our strategy on standardisation and reliability. By standardising the Guarantee of Origin, we ensure that the exchanged information is coherent and unambiguous. All over Europe we have a common understanding of the information carried on a Guarantee of Origin. That information must be reliable, and therefore AIB enforces the necessary checks and balances, and guards the linkage with disclosure, in the countries connected to the AIB.

What

Standardisation and reliability have benefitted greatly from the EECS² standard that the AIB has developed over the last few years. That is our touchstone. And we will develop that touchstone further in the forthcoming years, to integrate topics inter-related with the origin of energy – such as carbon emissions, and energy efficiency.

Guarantees of Origin that match the EECS² standard can be used reliably all over Europe. Therefore, we have developed our AIB HUB communication service. With that HUB service, our members can efficiently exchange Guarantees of Origin between connected registries instead of setting up separate interfaces with many countries, each with its own, different standards. Seeing that a growing number of countries are implementing Guarantee of Origin systems, the

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Competencies >>
Core values >>

Mission statement

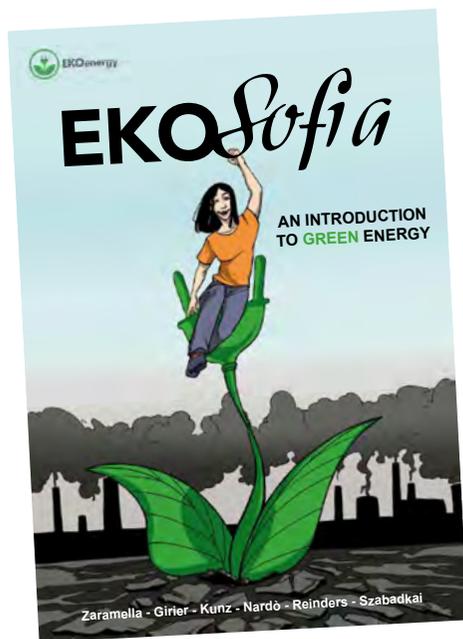
“AIB - guaranteeing the origin of European energy”

AIB welcomes many new countries into its Association. Members – recently joined and long-time members alike – find synergy in the exchange of best practices.

AIB business is about good bookkeeping. That is not boring, that is something to be proud of. Why? Because to end-users in Europe – great and small – we are guaranteeing the origin of the energy they consume.

¹ See Simon Sinek’s contribution to TEDx talks on youtube, called the Golden Circle.

² EECS² stands for the European Energy Certificate System.



These scenes are taken from the German, Greek, English and Lithuanian translations.

Always wanted to have more fun when learning about GOs and green energy? EKO-Sofia, a comic about the liberalized electricity market

In September, EKOenergy published a 36-page comic strip about the electricity market, consumers' choice and buying renewable electricity. The comic strip has since been translated into 20 languages, including smaller languages such as Basque and Lithuanian. More language versions are expected in the coming weeks.

The story starts when the omnipotent Fossilias plans to build a new coal power plant on Barton Meadows. But Fossilias isn't the only one interested in the area: SunBeam wants to build a wind farm

there instead. The SunBeam proposal gets unexpected help when Sofia and her friends get the idea of promoting renewable energy.

Sofia soon discovers that this isn't just an issue for politicians: on the open market, consumers can choose which company they support and what electricity they buy. She learns about product differentiation, Guarantees of Origin and – of course – EKOenergy. Once she understands the options, it isn't long before she starts a "Switch to EKOenergy campaign".

How will the townspeople respond? And what will be the outcome of the campaign? You can read all this in the comic strip "EKO-Sofia, An Introduction to Green Energy".

The script, the drawings and the translations have been realized by over 50 volunteers from more than 25 countries. You can download the results [here](#).

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:

- 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.
- 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 further informs pricing and trading strategy; and also enables 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 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 27th October 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
Austria	21 Oct 2014	website
Belgium		
Brussels	27 Oct 2014	spreadsheet provided by issuing body
Flanders	02 Oct 2014	spreadsheet provided by issuing body
Wallonia	23 Oct 2014	spreadsheet provided by issuing body
Czech Republic	22 Oct 2014	spreadsheet provided by issuing body
Denmark	17 Oct 2014	website
Finland	20 Oct 2014	website
France	22 Oct 2014	spreadsheet provided by issuing body
Germany	17 Oct 2014	website
Iceland	17 Oct 2014	website
Italy	22 Oct 2014	spreadsheet provided by issuing body
Luxembourg	17 Oct 2014	website
Netherlands	14 Oct 2014	spreadsheet provided by issuing body
Norway	19 Oct 2014	website
Portugal	22 Oct 2014	website
Slovenia	10 Jan 2012	Data will be published when other market parties commence trading
Spain	22 Oct 2014	website
Sweden	18 Oct 2014	website
Switzerland	20 Oct 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 (DK, FI, IS, LU, NO and SE) provide all required information, and have done 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; and the Austrian registry does 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 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 make the charts more clear, only contributions of 1% or greater are shown.

Statistical report

During the third quarter of 2014, market activity continued to increase, as has the use of guarantees of origin (GOs¹) for disclosure purposes.

Expiries continue to decrease as the market recognises that it has a limited period – one year – in which to gain a value from its GOs and cancels them before they expire.

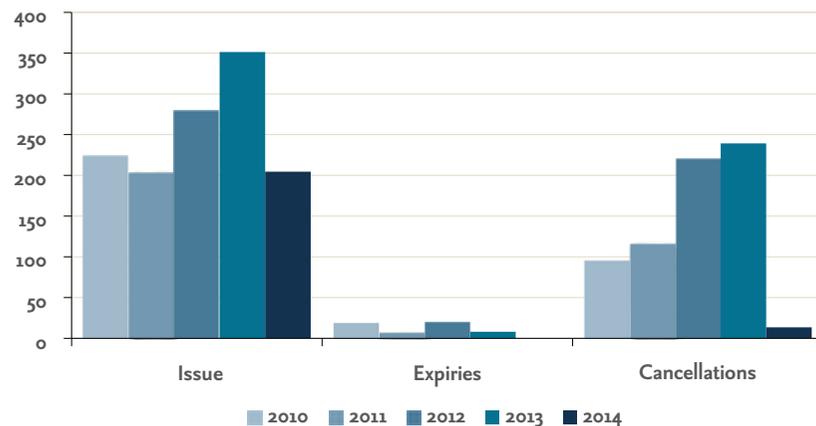
¹ Note that this includes the few remaining RECS certificates (these will cease to be issued from the end of this year, and they will all expire at the end of 2015).

These graphs illustrate activity in two ways:

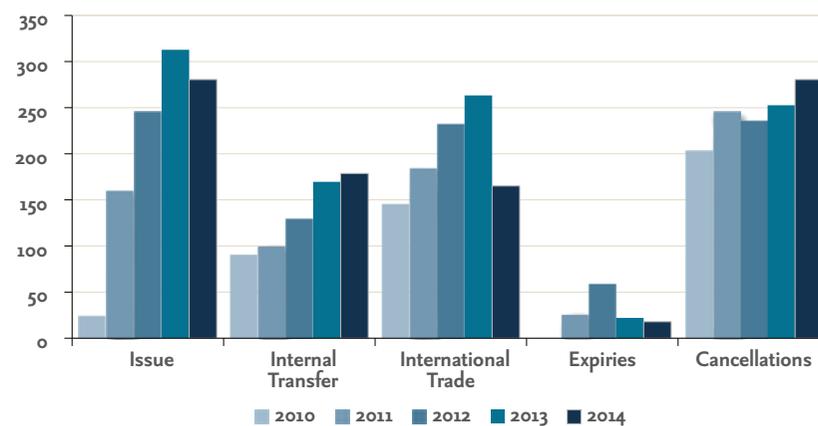
- Activity by production date** – this shows the quantity of GOs issued, expired and cancelled which relate to **electricity produced in a given year**; and indicates those which either remain on the market or are otherwise unaccounted for.
- Activity by transaction date** – this shows the quantity of 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 continue to replace RECS certificates with GOs – the last issuers of RECS certificates (at the end of 2014) will be Spain and Portugal: Spain will cease transferring RECS certificates at this point; while Portugal will continue to transfer them until the end of 2015. Croatia and Cyprus are awaiting changes to their disclosure regulations, and it is hoped that they will connect to the Hub soon; while Estonia is putting the finishing touches to its own interconnection with the Hub and will commence issuing and transferring EECS certificates soon. In Finland, Finextra will replace Grexel as issuing body from the end of the year. Furthermore, contact continues with interested parties in Greece, Poland, Hungary, Ireland, Slovakia, Spain, the United Kingdom, Serbia, Bosnia and Herzegovina and Montenegro.

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. Note that the issuing statistics are now based on transactions dates, whereas previous newsletters used the production dates for these.

Here, market reaction to the introduction of expiry shows that market parties are seeking to gain a value from their GOs rather than letting them expire. Cancellation is already more than the levels of the previous three years; and demonstrating the increased use of GOs for purposes of selling products for differentiated energy sources. Note that issuing tends to be 20% understated over the past quarter, due to delays in capturing metering data.

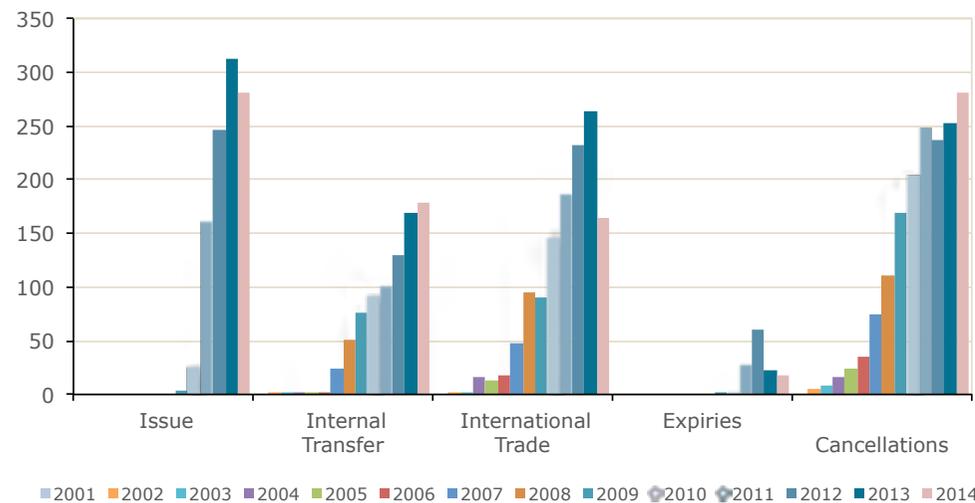
The monthly discrepancy between exports and imports is due to not all transfers being instantaneous, so hence trades which commence in one month can complete the following month; however, the general shape of the import and export graphs is similar.

Norway, Sweden, Finland and Austria continue to be the major exporters, closely followed by France and Belgium; while Germany, Netherlands, Sweden, Norway and Belgium are the main importers. Some countries figure in both exports and imports, suggesting trading activity. There are still trades where certificates are cancelled in one country for use in another: these are known as “ex-domain cancellations (EDCs)”. The EECS Rules only permit this where transfer is technically impossible, so this does not (or should not) occur between member countries.

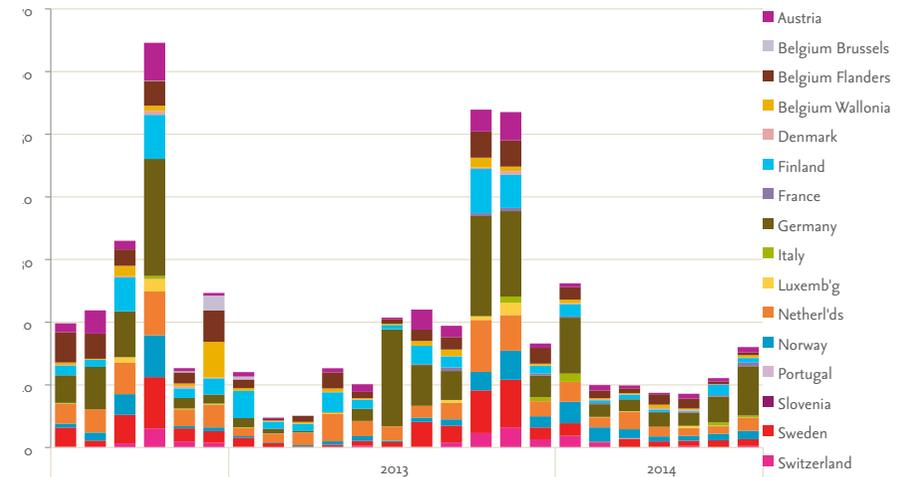
EDCs can and do occur between member countries and non-member countries; and AIB is currently seeking to quantify the size of this market sector, and to agree with market parties whether such information can be published without compromising their activity and trading positions.

EDCs may also occur where the account holder either does not reveal (or perhaps conceals) the country for which GOs are being cancelled: this is a matter for individual competent bodies.

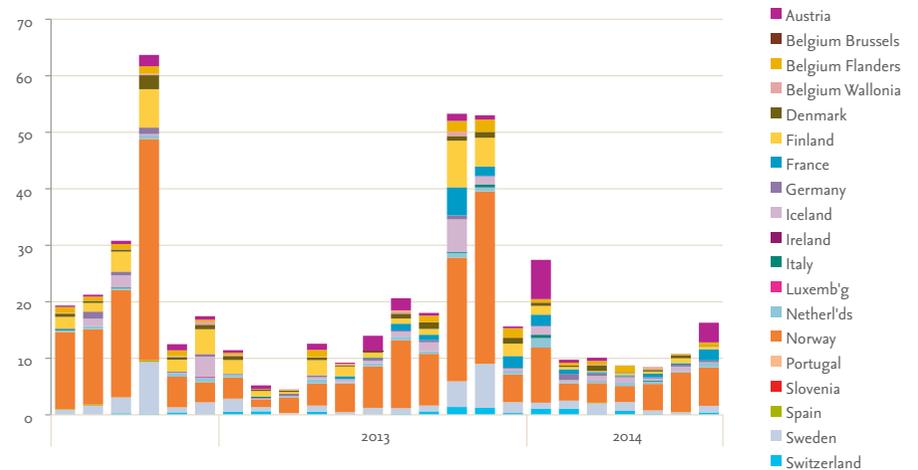
Annual EECS transactions by transaction date (TWh)



Monthly imports per country (TWh)



Monthly exports per country (TWh)



The following graphs are based on specific “vintages” of certificate (i.e. associated with electricity produced in a particular year), and show the final destination of GOs associated with electricity produced by each member country in a year.

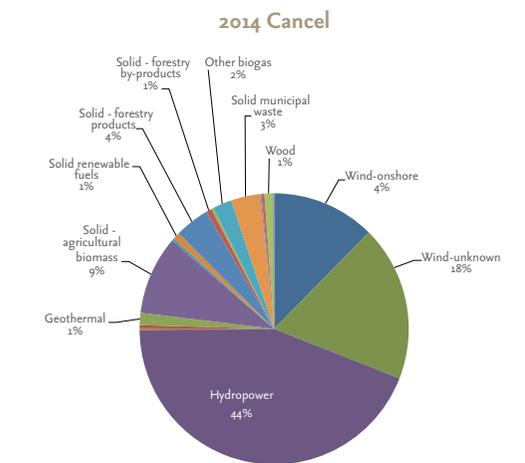
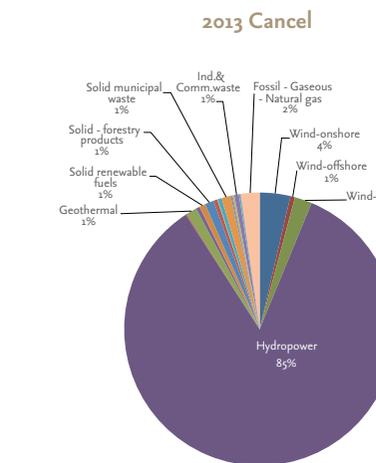
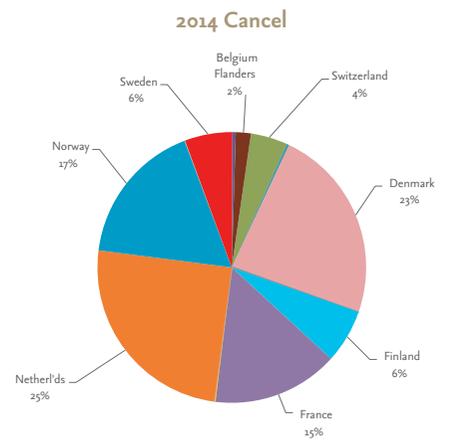
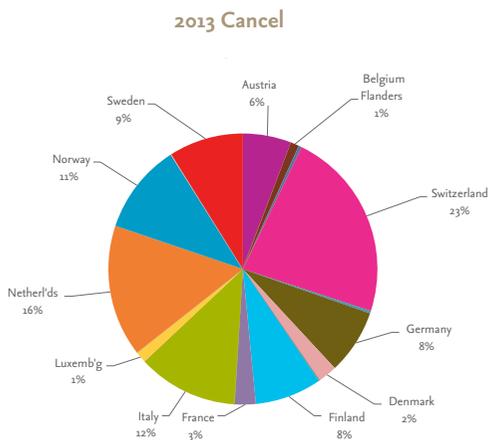
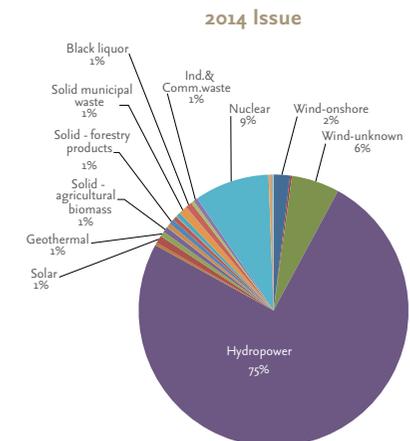
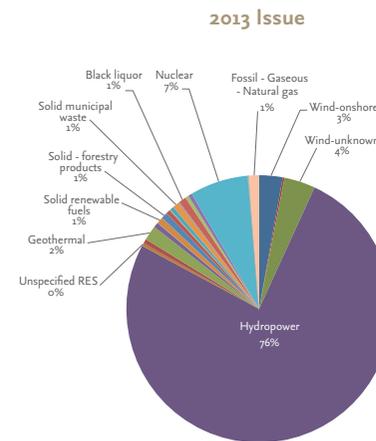
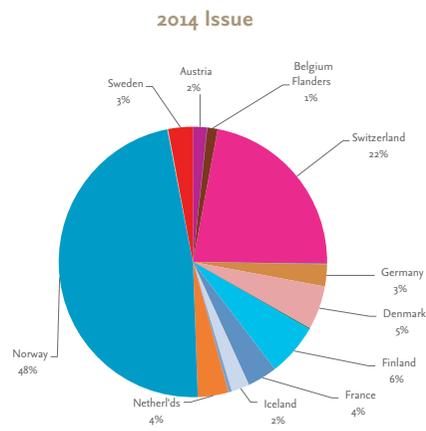
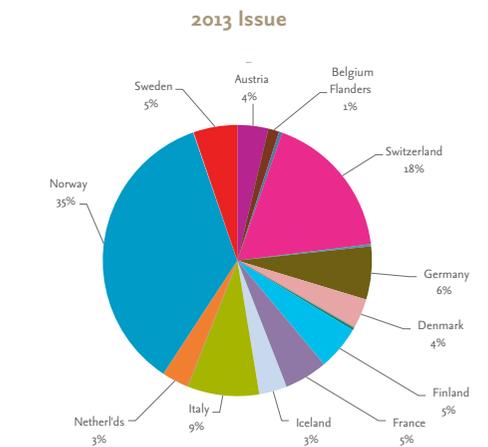
It is still a little early to compare 2013 with 2014 – breakdowns by country and fuel source can really only be usefully done at year end. However, it does seem that Denmark has vastly increased the number of GOs it cancels.

Note that Finnish law and regulation changed so that instead of GOs having infinite life but only being able to be used for the first year of their existence; they now expire one year after production of the associated electricity. This has led to the expiry of all GOs which are more than one year old – in practice, this has meant that GOs have been expired for electricity produced from 2004 until spring 2013.

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 presumably due to the large increase in cancellation in Denmark, which produces wind predominantly.



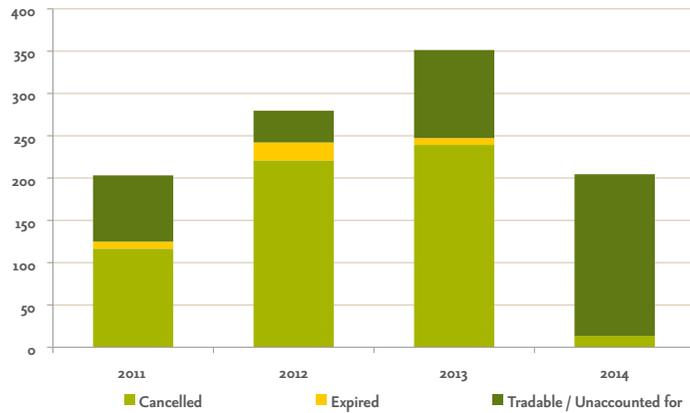
Comparing the status of different vintages of EECS certificate, we can see what has happened to the certificates that were issued for energy produced in the last four years - that is, whether the certificates have:

- 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 certificates 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.

Usage of EECS Certificates



Proportion of EECS Certificates available



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 October 2014 – although 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	39.342.905		45.794.240	42.281.127	73.895.932	52.748.236	98.537.805		78.254.480	22.655.836		29.525.449	24.923.668	46.817.861	29.874.710	42.774.407		40.014.378	
Belgium Brussels	86.193		51.746		2.848.213	14.800	10.889.986		14.786.820	75.399		51.746		2.847.332	14.800	4.797.654		8.767.200	
Belgium Flanders	22.832.402	967.387	12.376.927	18.918.672	57.384.807	22.380.484	172.586.994	5.311.802	126.107.296	11.463.718	607.826	5.695.102	12.266.327	28.660.585	19.690.793	72.474.506	5.042.710	42.118.700	
Belg & Lux RECS	113.390						2.031.496		2.048.355										
Belgium Wallonia	6.518.782	5.706	2.267.931		18.460.675	9.732.317	60.138.019	533.675	42.033.621	2.481.411	5.706	2.267.931		11.904.246	5.191.717	26.026.567	533.675	19.513.729	
Belgium	29.550.767	973.093	14.696.604	18.918.672	78.693.695	32.127.601	245.646.495	5.845.477	184.976.092	14.020.528	613.532	8.014.779	12.266.327	43.412.163	24.897.310	103.298.727	5.576.385	70.399.629	
Switzerland	144.072.726		85.663.740	145.549.187	102.015	17.243.415	30.310.764		109.643.077	140.243.111		85.663.740	145.549.187		12.272.841	20.826.708		104.043.467	
Czech Republic	1.004.275	83.393	759.038	979.885	942.590			26.832	756.383	1.004.275	83.393	759.038	979.885	942.590			26.832	756.383	
Germany	33.111.954	3.153.162	151.119.692	33.439.289	142.317.150	18.751.213	272.193.522	3.034.739	246.849.955	31.377.815	3.153.162	67.947.070	33.439.289	114.722.867	12.410.393	164.096.903	3.034.739	164.419.086	
Denmark	53.723.287	4.538.032	16.104.485	43.928.597	16.875.342	33.042.034	10.153.683	4.538.032	17.930.930	33.403.045	1.724.207	11.735.626	34.720.868	13.370.414	20.729.214	5.809.839	2.117.960	14.032.831	
Spain	14.416.441			3.165.452		5.372.545	54.379		6.543.588	4.814.069			3.165.452		2.305.216	54.376		916.599	
Finland	134.267.269	7.608.901	66.554.770	72.728.332	51.932.258	172.130.468	152.882.363	7.608.901	82.011.480	46.947.535	1.762.386	33.411.558	49.792.543	37.575.137	79.389.195	87.538.192	7.608.901	50.634.556	
France	74.716.703	12.068.227	21.561.341	53.950.672	12.228.775	19.684.015	21.522.474	16.569.153	69.659.250	48.084.049	12.068.227	17.898.133	53.950.672	4.038.167	17.851.643	3.675.633	16.569.153	35.564.845	
Croatia																			
Ireland	162.414					10.001													
Iceland	25.544.546	964.135	322.993	25.544.546	1.006.587	24.801.927	968.443	964.135	322.993	24.468.565	936.131	322.993	25.544.546	1.006.587	24.801.927	968.443	964.135	322.993	
Italy	87.279.963	1.434.278	28.841.737	32.027.566	70.771.261	12.263.092	14.508.019	1.581.010	84.559.352	32.316.801	1.434.278	28.841.737	32.027.566	55.506.865	6.180.499	9.031.952	1.581.010	47.028.032	
Luxembourg	53.428		7.775.209	53.428	3.828.729	749.853	9.223.955		7.775.209	53.053		6.126.003	53.094	3.822.702	703.107	8.076.546		7.073.985	
Netherlands	94.729.475	2.518.887	88.988.490	9.193.617	66.848.653	21.614.207	211.452.143	2.518.892	263.526.764	30.578.529	1.713.070	87.355.526	9.193.617	27.687.654	15.670.284	94.364.796	2.518.892	102.534.909	
Norway	931.462.437	57.147.627	73.976.849	455.413.766	291.213.919	661.295.687	79.660.925	57.147.627	211.286.293	357.331.137	4.726.426	51.173.422	362.092.246	121.281.214	326.132.927	52.116.708	57.147.627	69.809.441	
Portugal	1.455.576		200.800	477.440		1.052.256	215.380		265.376	500.350		200.800	477.440		507.865	212.285		220.838	
Sweden	354.592.042	26.712.088	121.298.519	90.558.500	17.986.946	146.277.737	126.108.664	26.712.088	298.147.401	47.634.220	1.023.484	44.649.796	51.108.104	8.377.915	61.672.219	68.428.080	2.771.223	61.796.148	
Slovenia	4.002.666					668.004	117.018		1.927.200										
UK	90.158																		
TOTAL	2.023.579.032	117.201.823	723.658.507	1.028.210.076	828.643.852	1.219.832.291	1.273.556.032	126.546.886	1.664.435.823	835.432.918	29.238.296	473.625.670	839.284.504	478.562.136	635.399.350	661.273.595	99.916.857	769.568.120	

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	3.450.414		12.450	11.431.234	13.334.554	12.769.050	10.801.122		12.338.275	13.068.735		13.909.412	10.825.631	14.745.634	12.630.681	18.553.127		18.242.139
Belgium Brussels	75.399		51.746		2.840.849				2.782.754					6.483	14.800	3.027.602		4.565.928
Belgium Flanders	2.527.089		245.939	3.796.487	3.774.826	7.732.639	14.809.057	1.740.530	5.918.645	4.597.128	225	2.431.509	4.079.570	13.895.543	7.819.054	25.529.945	2.342.472	13.574.919
Belg & Lux RECS																		
Belgium Wallonia	23.594	5.706			2.851.212	384.593	3.024.105	162.851	1.301.008	1.439.826		879.712		5.941.627	2.926.263	12.018.684	99.058	7.778.621
Belgium	2.626.082	5.706	297.685	3.796.487	9.466.887	8.117.232	17.833.162	1.903.381	10.002.407	6.036.954	225	3.311.221	4.079.570	19.843.653	10.760.117	40.576.231	2.441.530	25.919.468
Switzerland	45.458.978		593.694	51.680.905		5.507.544	8.400.756		53.791.353	61.953.245		54.558.567	59.654.011		4.760.297	8.702.008		31.409.100
Czech Republic	127.761		39.968	735.012	721.108			26.832	752.476	876.514	83.393	719.070	244.873	221.482				3.907
Germany	5.404.141		5.737	14.924.936	43.497.870	3.060.168	46.440.725	3.034.739	71.435.049	22.238.902	3.153.162	18.517.988	14.120.829	50.351.497	4.316.324	68.753.794		49.933.678
Denmark	10.767.828		3.138.822	12.834.021	6.796.546	5.227.985	1.717.552	830.872	7.274.158	12.822.482	784.502	5.740.308	12.688.731	3.487.452	8.787.604	1.708.800	935.196	3.998.285
Spain	259.894			579.886		191.881	34.376			1.016.763			1.798.712		398.197	20.000		
Finland	12.782.475		869.996	18.339.672	12.994.753	11.968.967	12.783.365	7.608.901	18.904.453	18.535.856	515.017	19.178.221	15.717.142	14.406.465	32.329.412	34.824.563		17.025.211
France	7.324.065		2.042.634	14.475.921	1.880.761	9.770.025	2.257.608	722.675	6.181.665	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
Croatia																		
Ireland																		
Iceland	4.460.781		980	7.121.459	25.747	6.974.197	18.000	25.315	70.228	11.790.581	25.315	69.268	13.053.886	980.840	13.480.834	650.432	938.820	252.765
Italy	862.817		261	18.091.548	43.540.056	1.383.853	3.839.181	1.581.010	31.010.432	30.395.649	1.434.278	28.801.727	13.936.018	6.248.711	408.579	871.957		3.202.298
Luxembourg	31.176		19.000	40.317	1.615.711	150.629	2.532.211		3.317.580	21.519		3.294.741	12.384	1.811.387	274.518	3.478.411		2.820.272
Netherlands	7.503.481		3.361.502	9.193.617	6.543.877	5.499.050	21.754.999	665.492	27.658.128	11.347.369	468.674	37.629.820		10.298.612	6.353.822	39.835.326	1.410.862	39.956.079
Norway	97.185.190		2.328.153	102.946.712	36.602.807	76.208.067	19.026.102	1.087.597	22.688.653	124.449.952	1.074.964	25.892.021	127.795.093	40.803.982	115.385.368	14.325.296	3.676.163	24.747.403
Portugal	173.524		6.179	186.341			155.321		165.274	189.409		167.736	204.667		95.000	1.357		31.676
Sweden	6.064.354		763.196	14.043.377	1.647.127	19.760.293	17.521.362	384.050	14.886.779	18.471.049	330.177	21.395.632	18.981.572	4.346.221	24.637.619	29.774.900	684.547	24.529.141
Slovenia																		
UK																		
TOTAL	204.482.961	5.706	13.480.257	280.421.445	178.667.804	166.588.941	165.115.842	17.870.864	280.476.910	351.385.859	7.996.739	239.250.950	312.732.379	169.589.913	242.494.864	263.326.227	22.028.313	252.647.415

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	68.200.706	921.852	21.502.372	12.045.164	39.975.640	23.484.486	38.555.360	1.423.254	65.565.992	19.374.375	637.087	18.695.499	10.996.709	20.978.466	5.433.888	14.163.779	1.400.832	28.734.816
	Wind - offshore	5.391.713	441.115	2.859.456	545.044	3.650.208	1.141.440	5.697.036	512.439	6.854.913	2.021.879	336.794	2.769.838	545.044	2.340.999	959.247	5.544.790	512.439	4.596.838
	Wind - unknown	45.981.338	5.270.538	17.777.616	45.919.871	19.815.640	38.082.992	19.592.975	5.457.639	18.170.089	35.187.175	1.392.482	13.448.740	35.886.082	17.948.604	31.025.253	17.804.812	3.859.989	16.142.761
		119.573.757	6.633.505	42.139.444	58.510.079	63.441.488	62.708.918	63.845.371	7.393.332	90.590.994	56.583.429	2.366.363	34.914.077	47.427.835	41.268.069	37.418.388	37.513.381	5.773.260	49.474.415
Hydro/marine																			
		1.612.294.594	89.047.359	588.838.985	827.138.716	682.435.469	1.106.639.189	1.144.881.656	96.055.190	1.354.457.211	662.940.368	22.870.169	376.130.367	683.778.118	389.150.509	567.419.737	584.249.408	86.848.108	639.346.082
	Unspecified mechanical/other	9.901	34.220	175.064	9.901	12.112	8.200	5.894.396	726	5.816.433	9.901	34.220	8.221	9.901	11.231	8.200	1.772	726	2.221
	Unspecified renewable energy	2.017.688	667.669	704.251	2.198.028	884.728	647.740	8.330.881	564.495	817.406	2.017.688	667.658	703.808	2.198.028	884.728	647.740	8.330.881	564.495	817.406
	Unspecified heat																		
	Solar	5.541.807	685.086	1.037.183	5.357.281	734.793	173.585	165.389	2.311.568	1.247.926	5.055.229	559.169	757.808	5.030.737	508.083	134.297	134.537	2.282.312	1.051.606
	Geothermal	15.137.878	38.657	4.499.780	9.415.231	6.752.638	8.099.235	8.784.840	52.760	12.491.714	9.179.908	38.606	4.499.780	9.415.231	6.540.136	8.099.235	8.784.840	52.760	10.020.876
Other		22.707.274	1.425.632	6.416.278	16.980.441	8.384.271	8.928.760	23.175.506	2.929.549	20.373.479	16.262.726	1.299.653	5.969.617	16.653.897	7.944.178	8.889.472	17.252.030	2.900.293	11.892.109
	Solid - agricultural biomass (inc. energy crops)	6.393.010	256.815	3.417.832	4.088.398	1.287.415	3.833.156	4.106.641	258.474	5.113.783	4.136.569	248.193	3.413.288	3.797.566	255.449	3.131.808	3.391.506	258.474	4.107.422
	Solid - agricultural products	532.892	36.795	270.996	276.936	118.360	166.876	188.067	46.755	231.336	375.416	33.273	164.746	276.367	114.345	99.910	110.639	46.755	222.663
	Solid - renewable fuels (inc. For&Ag bp & w)	54.436.521	2.076.202	7.479.782	9.366.199	26.164.703	18.234.982	17.984.924	1.357.560	48.134.402	5.419.821	948.099	4.583.765	5.405.476	6.926.728	2.037.978	2.006.537	1.268.111	6.844.372
	Solid - forestry products	5.768.451	190.504	4.237.902	3.507.601	4.885.198	2.606.099	2.365.670	225.307	5.309.017	5.330.235	150.516	4.180.526	3.434.330	4.885.198	2.487.058	2.280.276	225.307	5.304.017
	Solid - forestry by-products & waste	8.760.772	405.158	1.956.950	3.580.633	3.733.920	2.430.305	2.156.131	506.964	4.557.015	5.561.712	325.211	1.879.663	3.265.821	3.616.952	2.045.627	1.940.485	506.964	4.557.015
	Gas - landfill	3.919.671	49.519	724.004	616.528	2.606.892	216.408	237.495	75.901	2.806.238	555.835	28.901	351.336	436.432	623.568	92.477	104.835	70.917	714.709
	Gas - sewage	213.683	1.946	27.622	186.012	4.410	4.246	4.340	2.119	49.808	176.817	1.946	27.518	186.012	4.410	853	947	2.119	14.123
	Gas - other biogas	7.048.950	370.470	3.122.839	3.304.812	3.319.767	1.182.108	1.227.247	494.042	5.040.329	4.020.969	222.844	2.479.857	2.640.261	1.818.346	1.056.433	1.100.198	437.717	2.926.871
	Solid - municipal biogenic waste	20.212.194	891.851	5.871.089	4.853.463	7.671.486	5.592.583	5.815.687	1.011.368	15.385.802	8.032.350	429.226	4.829.738	4.081.869	4.160.355	4.343.655	4.646.150	786.081	7.302.589
	Liquid - renewable fuels (inc. Mun.waste)	462.083	11.811	421.220	444.698	801.780	472.590	1.202.887	341.303	1.160.324	459.388	6.822	363.803	444.698	801.780	472.590	1.202.887	341.303	1.160.324
	Liquid - black liquor	5.502.112	89.607	3.194.701	5.501.907	1.149.896	1.162.684	525.634	89.607	3.224.675	5.008.103	89.607	3.194.675	5.501.907	1.149.896	1.162.684	525.634	89.607	3.224.675
	Solid - unspecified wood	2.637.506	138.893	1.671.607	2.665.301	1.105.996	1.071.441	1.075.062	138.893	1.761.433	2.637.506	138.893	1.671.607	2.665.301	1.105.996	1.071.441	1.075.062	138.893	1.761.433
	Solid - industrial & commercial waste	17.048.600	147.292	4.546.559	6.498.098	10.688.908	2.166.624	2.317.980	186.696	13.380.415	4.766.208	46.784	2.439.013	4.641.695	3.892.464	1.253.919	1.427.888	185.789	3.694.680
	Biomass	132.936.445	4.666.863	36.943.103	44.890.586	63.538.731	39.140.103	39.207.765	4.734.989	106.154.577	46.480.929	2.670.315	29.579.535	36.777.735	29.355.487	19.256.433	19.813.044	4.358.037	41.834.893
RENEWABLE		1.887.512.070	101.773.359	674.337.810	947.519.822	817.799.959	1.217.416.969	1.271.110.298	111.113.060	1.571.576.261	782.267.452	29.206.500	446.593.596	784.637.585	467.718.243	632.984.030	658.827.863	99.879.698	742.547.499
NUCLEAR		124.509.634	15.416.133	42.984.814	69.320.002		56.821	56.821	15.416.818	86.546.993	43.276.665	19.466	20.712.191	43.276.667		56.819	56.819	20.151	20.711.692
	Unknown	1.002.598	720	87.842	9.206	497.631	689.006	33.430	720	81.482	998.958	720	87.842	9.206	497.631	689.006	33.430	720	77.842
	Solid - Unknown																		
	Solid - Hard coal	76			440.105			440.000			76			440.105			440.000		
	Solid - Brown coal	67			67						67			67					
	Solid - Peat																		
	Solid - Municipal solid waste	761.035		143.058	761.036			5.897		143.058	761.035		143.058	761.036			5.897		143.058
	Solid - Industrial and commercial waste	111.492	11.608	69.563	134.577		6.369	6.360	14.015	52.441	111.492	11.608	69.563	134.577		6.369	6.360	14.015	52.441
	Liquid - Unknown	1.853		1.853	1.853					1.853	1.853		1.853	1.853					1.853
	Liquid - Crude oil																		
	Liquid - Natural gas				325.135									325.135					
	Liquid - Petroleum products	64.933		889	64.931					889	64.933		889	64.931					889
	Gaseous - Unknown	2			18.076		2		2.270	167	2			18.076		2		2.270	167
	Gaseous - Natural gas	9.615.272	3	6.032.678	9.615.266	10.346.262	1.663.124	1.903.126	3	6.032.679	7.950.385	2	6.016.678	9.615.266	10.346.262	1.663.124	1.903.126	3	6.032.679
	Gaseous - Coal-derived gas																		
	Gaseous - Petroleum products																		
	Gaseous - Municipal gas plant																		
	Gaseous - Process gas																		
	Heat - unknown							100									100		
	Heat - Process heat																		
FOSSIL		11.557.328	12.331	6.335.883	11.370.252	10.843.893	2.358.501	2.388.913	17.008	6.312.569	9.888.801	12.330	6.319.883	11.370.252	10.843.893	2.358.501	2.388.913	17.008	6.308.929
	TOTAL	2.023.579.032	117.201.823	723.658.507	1.028.210.076	828.643.852	1.219.832.291	1.273.556.032	126.546.886	1.664.435.823	835.432.918	29.238.296	473.625.670	839.284.504	478.562.136	635.399.350	661.273.595	99.916.857	769.568.122

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	4.004.368		1.679.087	8.639.254	9.064.295	2.345.147	4.265.834	574.316	10.767.269	10.050.296	492.993	10.346.023	1.652.992	7.238.156	1.560.203	5.436.189	321.898	9.220.139
	Wind - offshore	462.919			545.044	654.967	129.186	2.308.642	141.461	1.903.635	770.473	117.786	1.661.710		1.003.656	577.215	2.133.121	304.839	1.385.150
	Wind - unknown	11.730.600		2.491.733	14.619.726	8.997.032	9.249.851	5.215.077	1.373.547	8.187.981	13.297.296	662.960	6.641.402	11.258.362	4.941.879	10.723.287	5.867.925	716.006	5.212.874
		16.197.887		4.170.820	23.804.024	18.716.294	11.724.184	11.789.553	2.089.324	20.858.885	24.118.065	1.273.739	18.649.135	12.911.354	13.183.691	12.860.705	13.437.235	1.342.743	15.818.163
Hydro/marine		153.506.168	5.706	5.924.149	207.648.515	146.477.585	145.420.417	144.249.810	11.629.077	217.389.662	266.898.713	4.431.874	175.115.770	253.518.267	137.923.240	215.218.150	226.148.874	18.476.516	213.647.255
	Unspecified mechanical/other	3.607			4.242	4.673	6.428		726	2.100	6.294	726	8.221	5.659	6.558	1.772	1.772		121
	Unspecified renewable energy	711.006		25.917	1.621.708	458.254	522.931	226.804	564.484	593.445	1.306.682	667.658	567.594	576.320	342.397	116.621	7.857.055		102.905
	Unspecified heat																		
	Solar	1.813.088		47.725	1.923.265	344.502	131.782	131.806	1.211.545	578.888	1.895.719	51.655	460.365	1.790.450	54.730	1.650	1.905	976.733	304.523
	Geothermal	1.247.336		197.954	4.740.063	4.989.268	3.294.947	3.394.847	33.556	3.746.153	6.239.285	19.453	3.899.081	4.212.219	1.535.737	4.531.288	5.116.993	19.204	3.135.657
Other		3.775.037		271.596	8.289.278	5.796.697	3.956.088	3.753.457	1.810.311	4.920.586	9.447.980	739.492	4.935.261	6.584.648	1.939.422	4.651.331	12.977.725	995.937	3.543.206
	Solid - agricultural biomass (inc. energy crops)	1.300.843		1.266.613	1.549.708	13.489	580.612	625.713	37.545	2.613.556	2.129.871	31.458	1.864.156	2.200.498	142.396	2.415.783	2.641.866	216.439	1.113.601
	Solid - agricultural products	130.448		41.039	148.635	47.401	2.661	2.661	21.845	121.958	117.263	8.306	101.678	118.604	42.700	73.299	71.614	18.181	36.423
	Solid - renewable fuels (inc. For&Ag bp & w)	1.016.571		115.317	2.808.017	1.201.688	669.873	426.066	1.181.353	1.711.125	2.775.310	933.841	2.027.238	1.192.911	2.290.999	415.002	644.207	11.907	1.820.909
	Solid - forestry products	1.231.203		556.875	1.719.828	1.339.440	369.421	369.421	67.470	1.506.294	2.620.321	64.777	2.170.183	862.530	2.420.043	973.052	792.786	130.610	2.672.514
	Solid - forestry by-products & waste	1.051.652		90.041	1.687.658	797.035	228.720	344.110	293.935	1.615.763	1.887.024	226.275	1.306.266	881.691	981.471	765.282	803.081	101.246	1.149.434
	Gas - landfill	106.847		36.314	251.746	249.745	7.274	7.274	21.477	249.498	314.822	9.486	237.833	140.307	178.047	33.380	25.412	22.855	191.785
	Gas - sewage	48.802		1.994	74.064	4.316			2.119	9.601	71.411	1.946	8.372	59.087	94	198	292		3.418
	Gas - other biogas	1.073.735		308.635	1.360.946	641.773	262.966	262.965	157.205	1.157.184	1.677.304	45.440	1.272.356	780.745	671.428	547.775	638.366	201.187	1.197.383
	Solid - municipal biogenic waste	2.035.106		471.724	2.685.439	973.729	1.450.753	1.444.856	291.706	2.143.790	2.965.142	102.832	2.457.266	693.339	2.152.138	1.863.742	2.082.972	387.951	2.751.178
	Liquid - renewable fuels (inc. Mun.waste)	51.331		20.754	227.074	341.232	229.754	229.821	7.543	430.583	319.856	5.035	293.659	192.124	288.312	129.648	382.837	18.170	354.733
	Liquid - black liquor	1.581.980		48.726	3.473.540	438.051	418.653	299.826	89.607	2.906.535	3.148.436	425	3.011.863	1.384.054	37.996	178.227	174.808		223.745
	Solid - unspecified wood	752.582		132.688	1.127.772	462.277	481.690	481.699	89.366	1.223.629	1.414.212	82.371	1.254.648	1.413.584	643.091	579.751	583.363	49.527	527.804
	Solid - industrial & commercial waste	1.036.529		17.075	1.420.523	506.434	228.137	265.791	60.108	888.179	1.714.177	19.257	1.011.954	1.715.629	1.203.225	402.084	537.539	38.758	1.383.975
	Biomass	11.417.629		3.107.795	18.534.950	7.016.610	4.930.514	4.760.203	2.321.279	16.577.695	21.155.149	1.531.449	17.017.472	11.635.103	11.051.940	8.377.223	9.379.143	1.196.831	13.426.902
RENEWABLE		184.896.721	5.706	13.474.360	258.276.767	178.007.186	166.031.203	164.553.023	17.849.991	259.746.828	321.619.907	7.976.554	215.717.638	284.649.372	164.098.293	241.107.409	261.942.977	22.012.027	246.435.526
NUCLEAR		18.360.332			20.844.959		56.819	56.819	20.151	20.159.692	24.916.333	19.466	20.711.693	22.431.708					552.000
	Unknown	765.164				440.716	500.908		719	55.994	227.766	717	56.352	4.082	56.915	178.098	3.893	1	21.848
	Solid - Unknown																		
	Solid - Hard coal				440.029			440.000			76			76					
	Solid - Brown coal										67			67					
	Solid - Peat																		
	Solid - Municipal solid waste	343.161		5.897	392.151			5.897		143.058	375.563		137.161	349.375					
	Solid - Industrial and commercial waste	35.841			40.082		9			48.267	57.818		65.389	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				325.135														
	Liquid - Petroleum products	19.904			22.240					889	23.415		889	42.691					
	Gaseous - Unknown				2		2				2			18.074				2.270	167
	Gaseous - Natural gas	61.838			80.080	219.902		60.003	3	320.329	4.163.059	2	2.559.975	5.141.652	5.434.705	1.202.997	1.372.997		5.633.700
	Gaseous - Coal-derived gas																		
	Gaseous - Petroleum products																		
	Gaseous - Municipal gas plant																		
	Gaseous - Process gas																		
	Heat - unknown							100											
	Heat - Process heat																		
FOSSIL		1.225.908		5.897	1.299.719	660.618	500.919	506.000	722	570.390	4.849.619	719	2.821.619	5.651.299	5.491.620	1.387.455	1.383.250	16.286	5.659.889
TOTAL		204.482.961	5.706	13.480.257	280.421.445	178.667.804	166.588.941	165.115.842	17.870.864	280.476.910	351.385.859	7.996.739	239.250.950	312.732.379	169.589.913	242.494.864	263.326.227	22.028.313	252.647.411

Forthcoming events

2015

29 January	Brussels, Belgium	CEER annual Conference
6 March	Paris, France	AIB General Meeting
12-13 March	London, UK	Citizens Energy Forum (TBC)
29-30 April	Oslo, Norway	RECS Market Meeting
May/June	tbd	AIB General Meeting
29-30 June	Berlin, Germany	European Conference on Green Power Markets
28 September	Brussels, Belgium	CEER Customer Conference (TBC)

We hope you had a successful 2014,
and wish you all the best for 2015.

This year, more stars were connected to the AIB's
inter-registry Hub, and next year the AIB will continue
to guarantee the origin of increasing amounts
of European energy.