AEBIOM Statistical Report 2015

European Bioenergy Outlook

KEY 2015 FINDINGS

AEBIOM

EUROPEAN BIOMASS ASSOCIATION

Every year since its first release in 2007, AEBIOM Statistical Report – European Bioenergy Outlook has sought to provide EU stakeholders with a comprehensive overview of the latest market trends in bioheat, bioelectricity and biofuel sectors. The full report (more than 200 pages) gathers statistics, infographics and updated data on the latest developments of the European bioenergy industry. The report will help the industry, investors and policy makers to build strategies and make informed decisions.

For the first time, in 2015 the European Biomass Association (AEBIOM) has produced a summary version of the full report, the 'Key Findings' one (more than 25 pages), to sum up the key findings of bioenergy in Europe for a wider audience.

Key issues addressed

- Overview of the European energy system and the status of renewables and bioenergy
- Analysis of the feedstock situation: agriculture, forestry and waste
- Status on the use of biomass for heat, electricity and transport
- Original information on 4.000 bioenergy plants using wood chips in Europe
- Current status of progress towards 2020 targets: review of the National Renewable Energy Action Plans (NREAPs)
- Bioenergy socio-economic indicators
- Analysis of national support schemes for bioenergy
- Original statistics from the main actors in the pellet sector
- EN*plus* Certification statistics

How to get it

To order your copy of the Statistical Report, you can either connect to our website at www.aebiom.org - or simply scan the QR code below - and visit the **Library > Statistical Report 2015** section. You can also send an email to info@aebiom.org.

READERS' FEEDBACK
ON THE 2014 EDITION

"The graphs are really useful, they transport information. The best compilation of international pellet data I have ever seen."

"The content of the report met our expectations. The purchase of the report was definitely a useful investment for our organization."

"Thank you for this comprehensive report that I would recommend for the following themes: general overview of the EU energy system in the EU, biomass supply, biomass for heat and electricity, biogas and pellets."

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FOREST VALUE
INVESTMENT MANAGEMENT

Emerging Central European Bioenergy Fund

Building a Biomass Supply Chain


Supplying Renewable Energy...


...from Forest Residues...


...and Energy Crops

Forest Value Investment Management S.A. ("FVIM") manages an emerging Central European bioenergy fund (named Natural Resources Value Fund - "NRVF") establishing itself as a reference player in the production of biomass feedstock through operational excellence and the acquisition of forests and land.

For several years, NRVF has been managing close to 10,000 ha of forest and land in Western Romania. As reliable biomass supplier, it currently promotes biomass as the renewable energy source that will help Europe on its path towards a low-carbon economy. The objective is to build multiple property clusters that will each produce minimum 100,000 dry tons of biomass per year.

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The European Biomass Association (AEBIOM) is the common voice of the bioenergy sector with the aim to develop a sustainable bioenergy market based on fair business conditions.

AEBIOM is a non-profit Brussels-based international organisation founded in 1990 that brings together 30 national associations and around 90 companies from all over Europe – thus representing more than 4.000 indirect members including mainly companies and research centers.

Find out more about AEBIOM activities at: www.aebiom.org

Full members

Associated members

Forest and Biomass Services Belgium sa

AEBIOM Network

European Pellet Council (EPC)

The European Pellet Council (EPC) is an umbrella organisation of AEBIOM founded in 2010, aiming at representing the interests of the wood pellet sector and at ensuring its sustainable development at European level. EPC members are made up of 21 national pellet associations and related organisations, from 20 countries and 5 observing members. EPC's objective is to manage the transition of pellet from a niche product to a major energy commodity. To achieve this general purpose, EPC activities include an important participation to the standardisation and certification of pellet quality, communication and public affairs efforts, the development of key sectorial statistics and education and training seminars on issues of safety, quality and security of pellet supply. EPC also coordinates the ENplus quality certification and constantly adapts this system according to market needs. *www.pelletcouncil.eu*

European Industry of Pellet Suppliers (EIPS)

The European Industry of Pellet Suppliers (EIPS) is an umbrella organisation of AEBIOM founded in 2012, aiming at representing the interests of European companies focused on the wood pellet business. EIPS was created by the joint forces of the European industry of pellet producers, traders and other stakeholders involved in the supply chain in order to represent their interests in Brussels. Currently, EIPS represents 11 companies. EIPS' objective is to promote the use of pellets as energy carrier in Europe for the production of power and heat. In this respect, EIPS elaborates positions and expresses the views of pellets producers and their partners towards policy makers, media and other EU stakeholders on EU policy issues. EIPS is also a key platform at EU level to develop initiatives on common issues such as health and safety, regulatory compliance, standardization and certification of pellets, etc. *www.aebiom.org/activities/networks/eips/*

International Biomass Torrefaction Council (IBTC)

The International Biomass Torrefaction Council (IBTC) is an umbrella organisation of AEBIOM launched in 2012, aiming at building the first international platform for companies having common interests in the development of torrefied biomass markets. Currently, IBTC initiative is supported by more than 20 companies active worldwide. IBTC's objective is: to promote the use of torrefied biomass as an energy carrier and to assist the development of the torrefaction industry. In this respect, IBTC key activities are to undertake studies or projects, and to commonly voice its members' concerns to third parties to help to overcome barriers of market deployment. IBTC takes part in initiatives and projects dedicated to biomass torrefaction market development such as: collection of statistical data, standardization issues, certification of and permissions for the product, communication initiatives, matters related to health and safety. *www.biomasstorrefaction.org*

EUROPEAN PELLET COUNCIL

EUROPEAN INDUSTRY OF PELLET SUPPLIERS

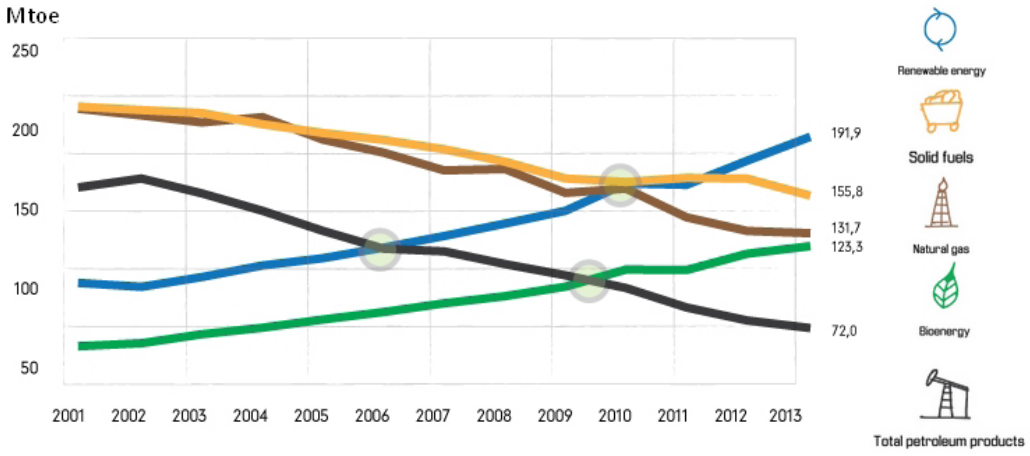
INTERNATIONAL BIOMASS TORREFACTION COUNCIL

Overview of the EU energy system

The indigenous energy production (mentioned as “Primary” in Eurostat) in EU28 countries is continuing to drop steadily, from 941 Mtoe in 2000 to 789 Mtoe in 2013. At the same time, the contribution of renewable energy sources (RES) almost doubled from 97 Mtoe in 2000 to almost 192 in 2013. That makes RES the most important indigenous energy source, more important than coal, gas or oil. The countries with the highest production of RES are Germany (33 Mtoe), Italy (23 Mtoe) and France (23 Mtoe).

Bioenergy represents two-thirds of Europe´s RES and the growth of bioenergy during the last five years in absolute terms was as important as the growth of all other renewable sources together (6,2 Mtoe per year).

EU28 Primary Energy Production by Fuel (in Mtoe)



Source: Eurostat

However, despite the decrease in total primary energy production, European energy consumption remains substantially higher than in the past, which makes Europe increasingly dependent on imports.

In 2013, the EU28 total gross inland consumption (energy consumed in EU28) reached 1.666 Mtoe. Contrary to the primary energy production fuel mix, oil consumption remains the most important energy source with 33,4%, followed by gas with 23,2%, solid fossil fuels 17,2%, nuclear 13,6% and renewables with almost 11,8%.

[1] Primary energy production refers to the indigenous production that is any kind of extraction of energy products from natural sources to a usable form.
[2] Gross inland consumption is the quantity of energy necessary to satisfy inland consumption of the geographical entity under consideration. It is calculated using the following formula: primary production + recovered products + imports +stock changes – exports – bunkers

Heinz Kopetz
President
World Bioenergy Association

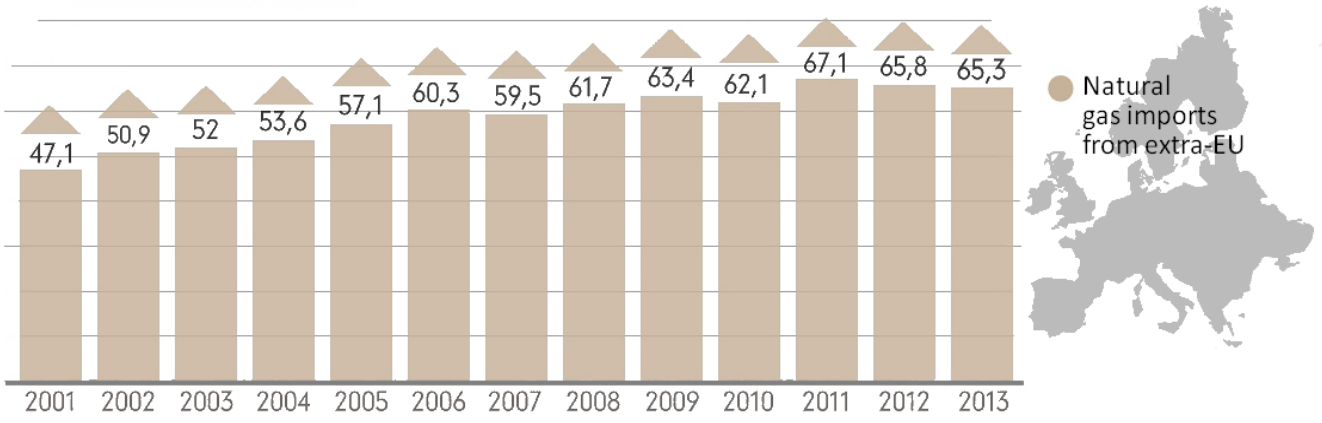
Biomass is by far the leading renewable energy source. Its contribution of 123 Mtoe to the energy supply (primary energy production) is almost as high as that of indigenous gas and higher than that of oil!

But biomass as well as all other renewables must further grow. By 2035 Europe should significantly reduce its CO_2 emissions and increase the share of renewables to comply with the 2°C target.

Overview of the EU energy system

According to Eurostat, the average EU's energy dependency in 2013 was 53,2%. 99,5% of the energy imports are fossil fuels, in other words, 87,4% of the oil 44,2% of the coal and 65,3 % of the natural gas that we consumed in Europe was imported. Russia alone accounted for about one third of the EU's total crude oil and natural gas imports. With this data, it is not surprising that 2014 crisis between Ukraine and Russia, made energy security a hot topic on the EU political agenda. Indeed, since the EU is still heavily depending on gas, we have no other choice than to rethink our energy system as a whole.

EU28 Energy Dependency on Natural Gas (in %)



Source: Eurostat

The EU's energy dependency contributes and will contribute not only to the weakening of the EU's geopolitical influence, but also to the fueling of dramatic GDP leakage, with the EU spending more than € 1 billion per day on importing fossil fuels, or around 4 % of its annual GDP.

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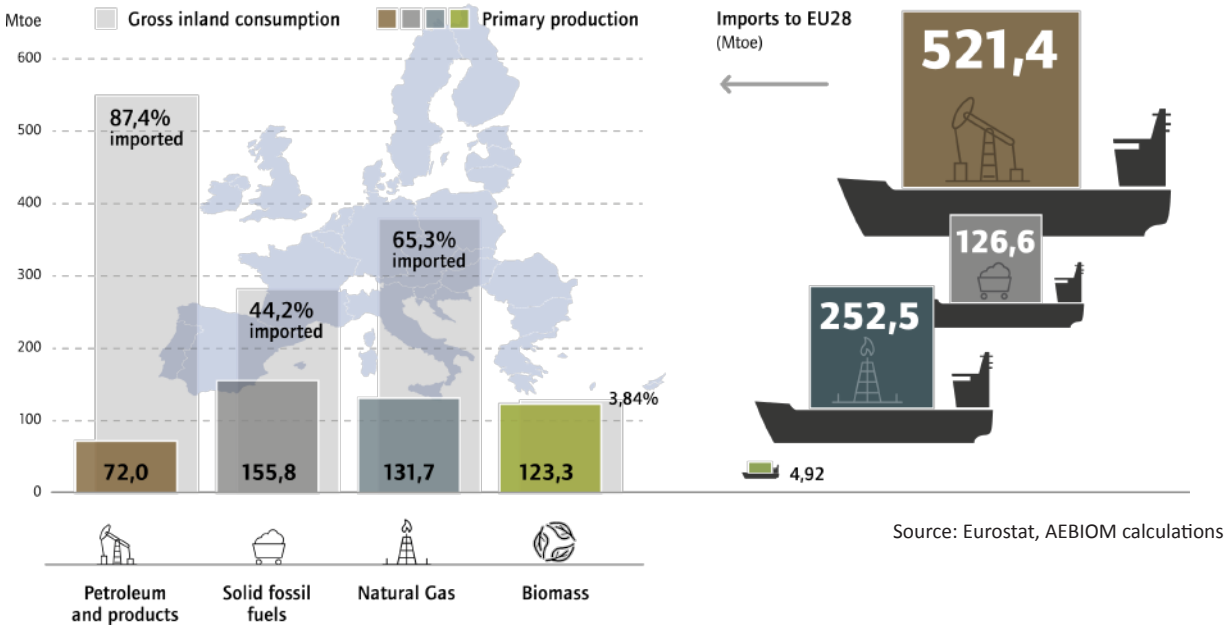
On the contrary, the increasing importance of biomass in the EU energy system is accompanied by a better use of EU's internal resources. Indeed, biomass imports represent today only 3,84% of the EU´s gross inland consumption of biomass.

[3] Energy dependence is calculated as net imports divided by the sum of gross inland energy consumption and maritime bunkers

European Energy Dependency



Source: Eurostat, AEBIOM calculations

In 2013, the share of energy from renewable sources in gross final consumption of energy reached 15% in Europe. This increase was noticed in all Member States, of which thirteen have at least doubled their share of renewables over the last 10 years.

The share of RES in gross final energy consumption is a key indicator to measure Member States' improvements in achieving one of EU's 2020 climate & energy objectives - i.e. 20% RES target.

Market penetration of renewables varies importantly among three energy sectors. RES accounts for 25,4% in the gross final consumption of electricity, 16,5% in heating and cooling and 5,4% in transport (in 2013).

POLICY NOTE — EU2030 climate and energy framework

In January 2014, the Commission published its vision on the EU 2030 climate and energy framework with new targets and measures to make the EU's economy and energy system more competitive, secure and sustainable. At a meeting on 23-24 October 2014, the European Council agreed on this framework and endorsed the following targets:

-a binding EU target of at least 40% lower greenhouse gas emissions by 2030, compared to 1990
-a target, binding at EU level (but not at national level), of at least 27% renewable energy consumption in 2030
- an indicative target at EU level of at least 27% improvement in energy efficiency in 2030

According to this decision, the renewable energy target will be binding only at EU level and Member States will not be committed by national targets. In this context, it is essential that the coming EU legislation on renewable energy sources (planned for end 2016) includes a robust and transparent governance system with a strong legal basis, which will be needed to provide a stable regulatory framework and attract investments in renewables by 2030. More information on the position of the EU bioenergy sector: see AEBIOM website. As far as biomass is concerned, it is expected to maintain its high contribution to renewable energy development and play an important role in reaching the EU 2030 target.

MORE POLICY INFORMATION IN THE FULL REPORT

The role of bioenergy

Kjell Andersson
Swedish Bioenergy Association
SVEBIO

Heating accounts for half of the energy use in Europe, and a major part of the greenhouse gas emissions. Yet, the incentives outside of ETS, the emission trading scheme, are very weak in most Member States. This is unfortunate, since the technologies for conversion from fossil fuels are available, and reduction of emissions in the residential sector has no negative effects on European competitiveness in world markets. Changing heating solutions from fossil fuels to renewable energy would only strengthen the European economy by reducing import dependence. It would also strengthen the local economies. District heating and cooling should be considered in all cities throughout Europe.

Bioenergy is by far the leading renewable energy source accounting for 61,2% of all RES energy consumed in Europe. Many European countries rely on bioenergy to achieve the 2020 RES target and the current proportion of bioenergy in the total renewable energy consumption even reached 91,4% in Estonia, 89,2% in Poland and 86,9% in Hungary and in Lithuania.

In 2013, the highest percentage contribution of biomass to the final national energy consumption was found in Latvia (31,9%), Finland (31,8%) and Sweden (31,6%).

Final energy consumption of bioenergy in 2013 was 105,1 Mtoe, almost double that of 2000. 74,6% of the biomass consumed today for energy purposes is used to produce heat (78,4 Mtoe), followed by bioelecticity with 13,5 Mtoe and biofuels for transport with 13,1 Mtoe. The largest part of biomass consumed in the heat sector goes to the residential market (53,0%) and industry (25,5%).

POLICY NOTE

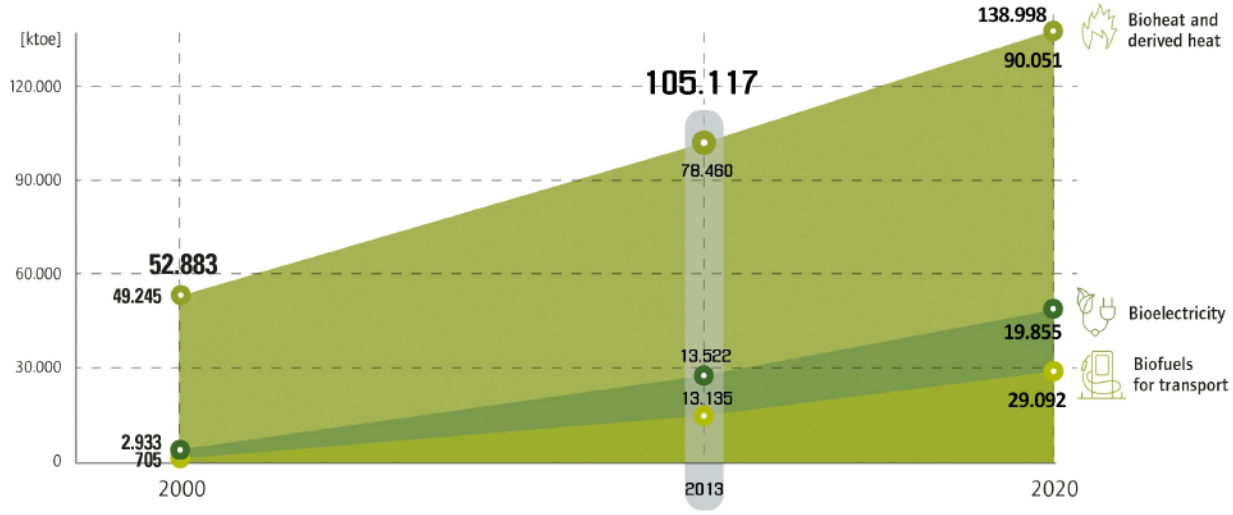
Heating and Cooling (H&C) strategy

In its Energy Union Communication (February 2015), the European Commission announced it will propose a strategy to facilitate investments in H&C. The strategy, foreseen for 2016, will analyse the H&C sector and provide recommendations to Member States. It will also feed the upcoming revisions of the energy performance of buildings directive (EPBD), energy efficiency directive (EED) as well as the new RES legislation. More information on the position of the EU bioenergy sector: see AEBIOM website.

MORE POLICY INFORMATION IN THE FULL REPORT

The role of bioenergy

Final energy consumption for Bioenergy (ktoe)



Source: Eurostat

Bioenergy has shown steady growth rates in the last years and it is expected keep on this path in the future. According to Member States projections, the consumption of biomass for energy should increase by at least 33 Mtoe by 2020. Heat is expected to remain the leading market for bioenergy. Considering that heat alone accounts for almost half of the final energy consumption in Europe, the role that biomass can play in the energy system is undoubtedly important.

Gustav Melin
President
AEBIOM, SVEBIO

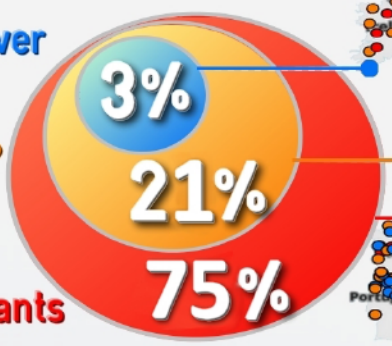
We have such a great potential in biofuels for cars and aviation. Yet development is slow compared to the urgency we have heading towards the two degree limit. Biofuels from first and second generation together with energy efficient cars can sustainably meet our transport needs. In 2013 biofuels were 4,6 per cent in road transport, it is a step on the way but far too little. We need higher mandatory blends of green alcohols and biodiesels in fossil gasoline and diesel but also the opportunity to continue to develop high blends as E85 and B100. We recommend to reconsider the earlier commission's proposal in the Energy Taxation Directive, where a carbon dioxide tax is suggested as the most efficient method to combat climate issues in the transport sector.

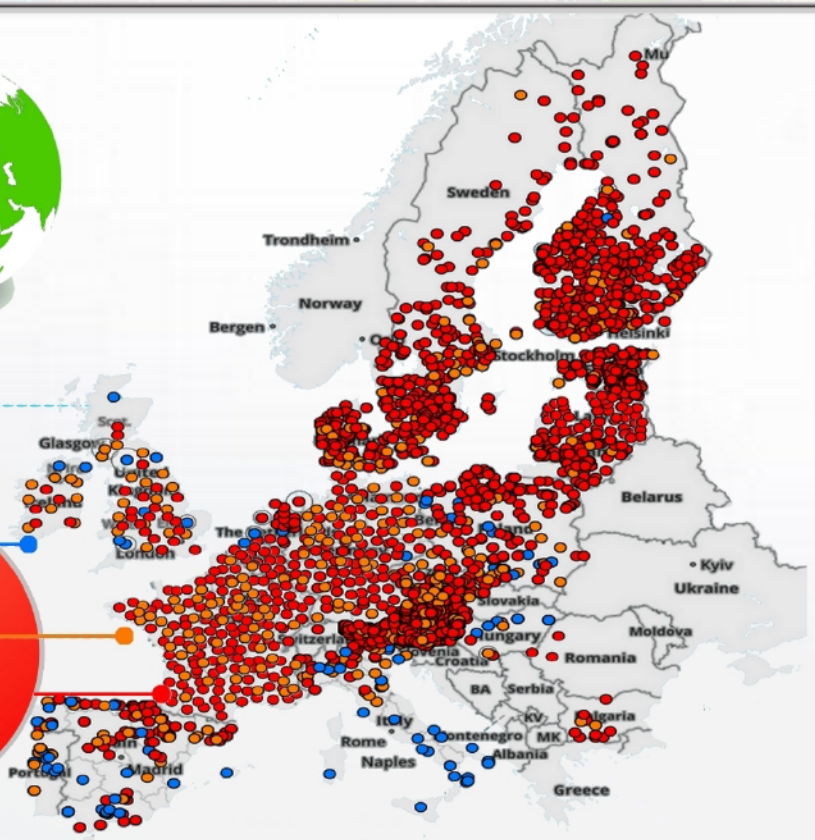
How are the wood chips used in Europe ?

BASIS Bioenergy.eu

3696

plants (> 1MW) using wood chips as fuel have been identified at EU28 level among them:





EU28 top 5 countries in number of plants using wood chips

1. France (>600)
2. Austria (>550)
3. Germany (>470)
4. Finland (>470)
5. Sweden (>310)

EU28 top 5 countries regarding their wood chips consumptions

1. Germany (11,5 Million odt/y)
2. Finland (9,4 Million odt/y)
3. France (7,4 Million odt/y)
4. Sweden (6,2 Million odt/y)
5. Poland (5,2 Million odt/y)

The average European plant size is:

HEAT 5 MW | CHP 45 MW | POWER 56 MW

The average European heat plant consumes over dry tonnes of wood per year **5357**

73,24% of all plants are between 1 and 10 MW* in Europe

(*fuel input)

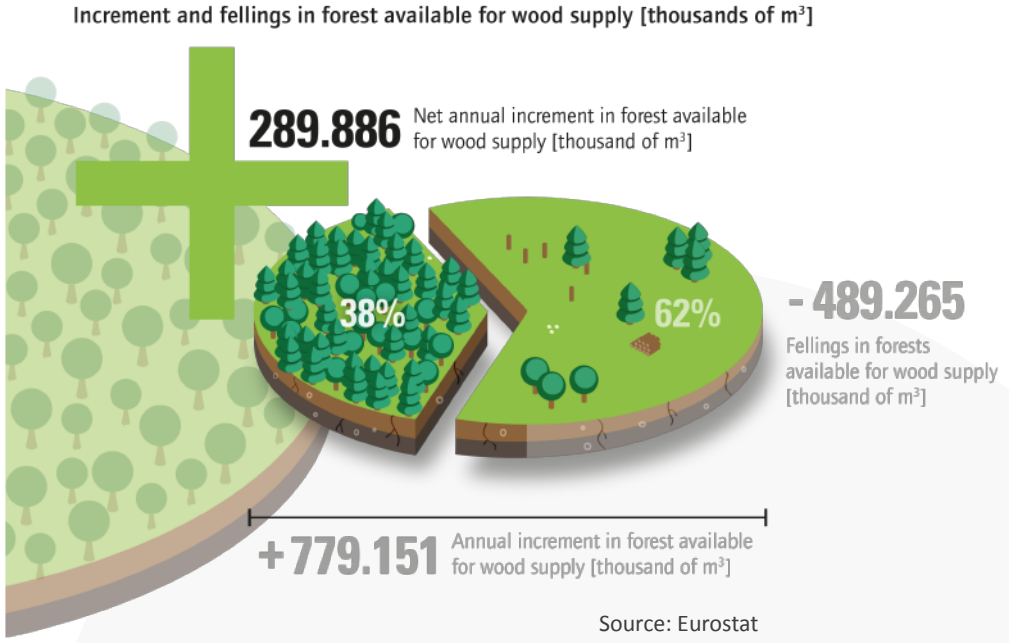
BASIS is a European project which aims at providing bioenergy developers, a comprehensive view on the sustainable supply and competition for wood for wood chips boilers at EU28, using intuitive maps. BASIS map agregates data on all installations above 1MW in a maximum of EU-28 Countries, their wood consumption as well as many other data. For more information: http://www.basisbioenergy.eu/

Co-funded by the Intelligent Energy Europe Programme of the European Union

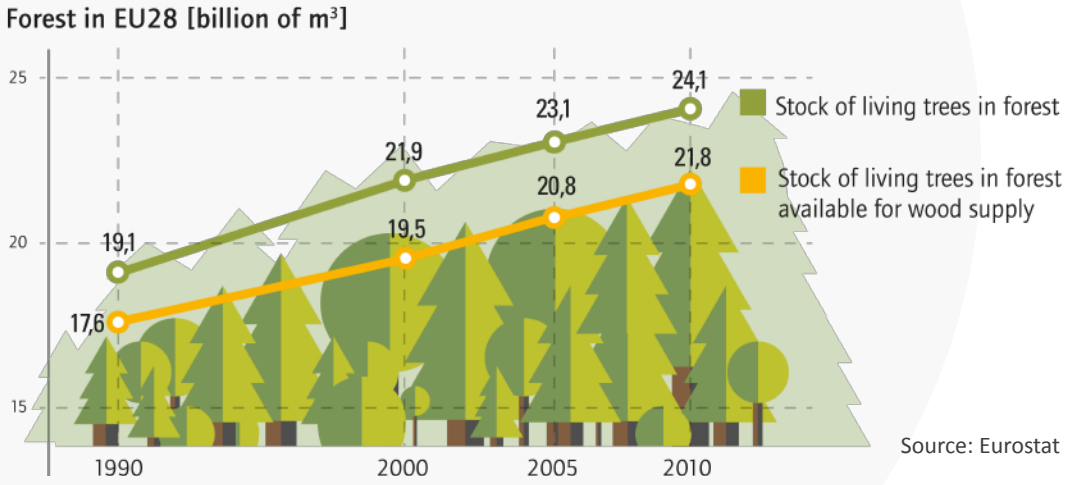
Biomass supply

About 70% of total bioenergy feedstock originates from forest and forest industries, while the rest is based on waste and agriculture. Different types of wood assortments are used for energy. The wood can be industry residues such as saw dust, bark, wood chips or black liquor to name a few. The wood used directly from forest is harvesting residues (tops and branches), and other low value wood. The amount of bioenergy generated based on wood could still be increased, as currently about only 62% of annual EU forest growth in areas available for wood supply is harvested. A higher harvesting rate would also lead to more residues available for bioenergy production, both from the forest and the wood working sector.

Wood chips is one of the most important biomass fuels in Europe. The European project Basis Bioenergy, coordinated by AEBIOM, has collected information on almost 4.000 European woodchip-using bioenergy plants bigger than 1 MW. Bioenergy plants (with info on its capacity, wood consumption, etc.) are shown in a map which provides an overall picture of the European consumption of wood chips. In addition to wood chips consumption, the interactive map also provides information on the wood supply potential and sustainability.



Source: Eurostat



Source: Eurostat

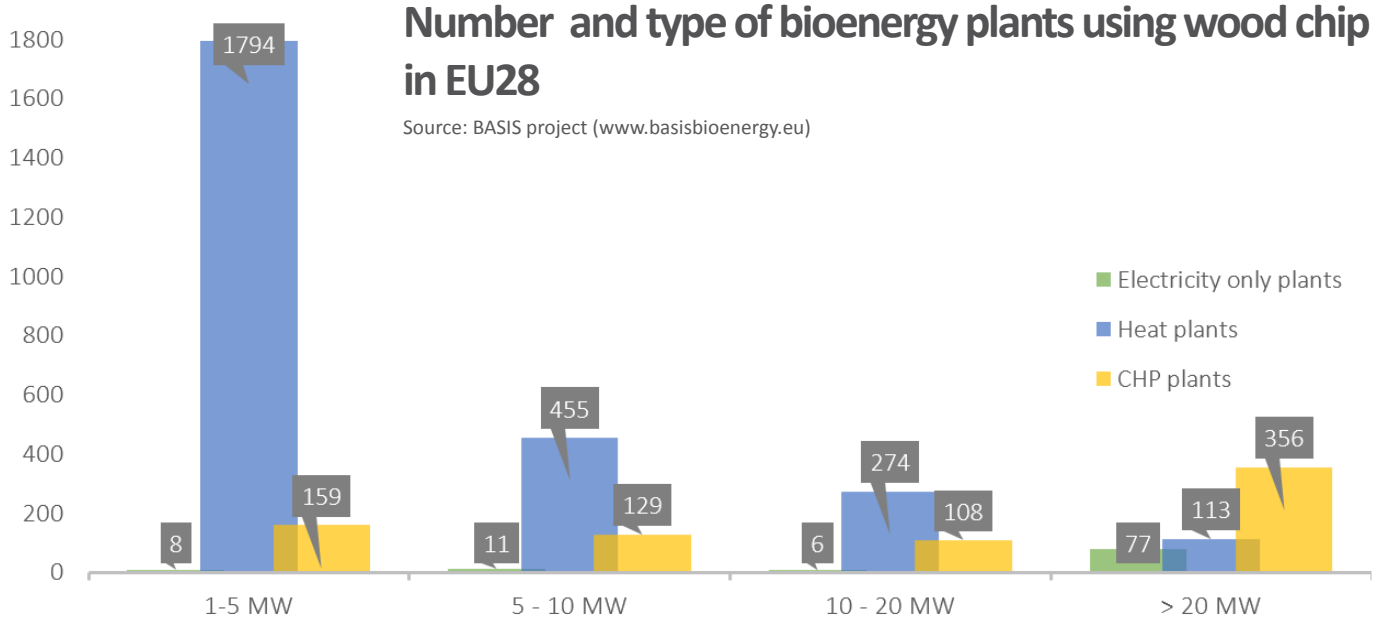
Biomass supply

Bioenergy generated from agricultural land is mainly transportation biofuels and biogas, though straw and cellulosic energy crops are also used in direct combustion. About 2% of EU cereal crops are used for ethanol production, the rest accounting for other industrial uses, food and feed. The case is different for biodiesel, using almost 40% of vegetable oil consumed in Europe. Recently the share of non-food residues (or 2nd generation) has started to increase in the production of advanced biofuels.

Waste can also be treated so that energy is recovered. Municipal waste can be incinerated for energy recovery and biogas can be produced from sewage sludges, tackling the issue of waste management and creating energy simultaneously. About 13% of total EU bioenergy is based on renewable wastes.

Number and type of bioenergy plants using wood chip in EU28

Source: BASIS project (www.basisbioenergy.eu)



POLICY NOTE

Sustainability

In its communication on the EU 2030 climate and energy framework (January 2014), the Commission indicated that "An improved biomass policy will also be necessary to maximise the resource efficient use of biomass in order to deliver robust and verifiable greenhouse gas savings and to allow for fair competition between the various uses of biomass resources (...). This should also encompass the sustainable use of land, the sustainable management of forests in line with the EU's forest strategy and address indirect land use effects as with biofuels".

It its Communication on Energy Union (February 2015), the Commission indicates that it will propose a new Renewable Energy Package in 2016-2017 which will include a new policy for sustainable biomass and biofuels as well as legislation to ensure that the 2030 EU target is met cost-effectively.

These two statements show that the Commission is willing to take new actions on biomass sustainability. Over the last years, AEBIOM has been calling for an EU harmonized biomass sustainability policy.

When it comes more particularly to sustainable forest management, the recent report of the ad-hoc Working Group under the Standing Forestry Committee on Sustainable Forest Management Criteria and Indicators is providing inputs to the discussion on biomass sustainability.

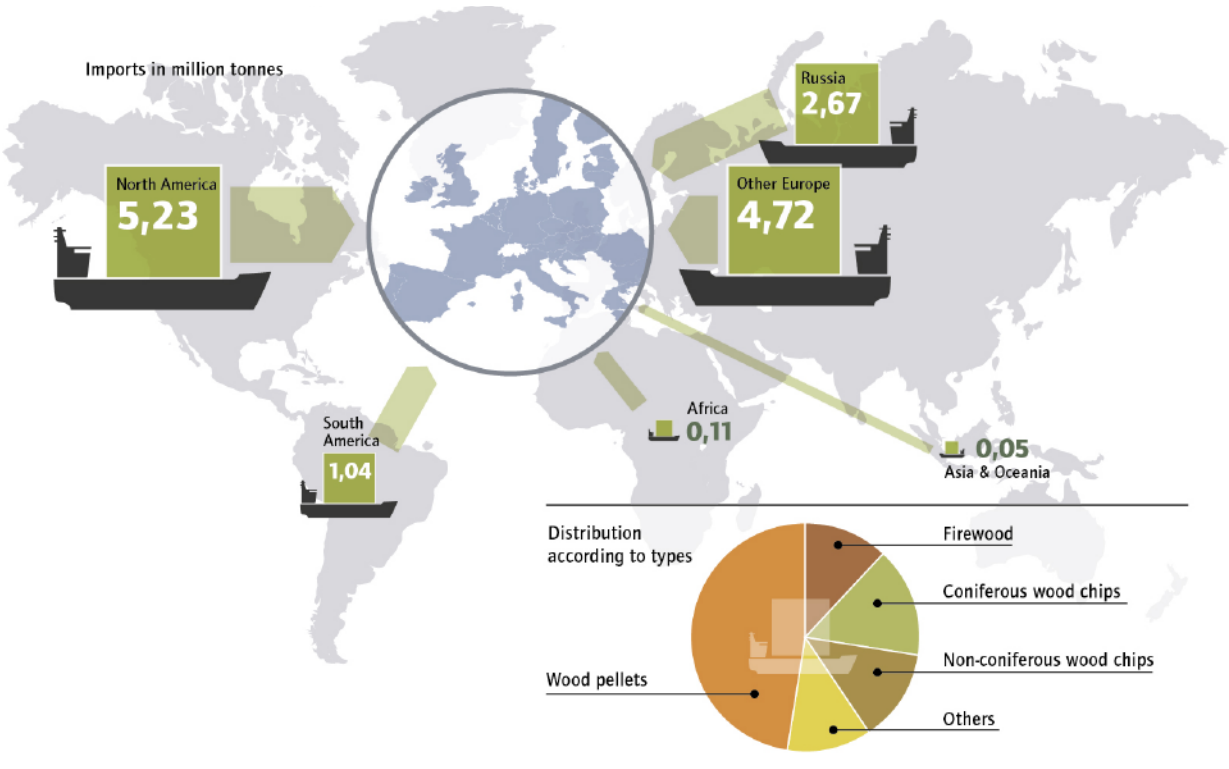
MORE POLICY INFORMATION IN THE FULL REPORT

Biomass supply

Bioenergy is mainly an EU domestic fuel. Imports represent only 3,84% of the gross inland consumption of bioenergy, half of them are solid wood fuels. Most of imported wood fuels are wood pellets followed by wood chips, and firewood. The majority of imports comes from North America (37,9%), Russia (19,3%) and other European countries (34,1%).

Bioenergy is a local energy source as imports represent only 3,84% of EU's gross inland consumption.

EU wood fuel imports in 2014



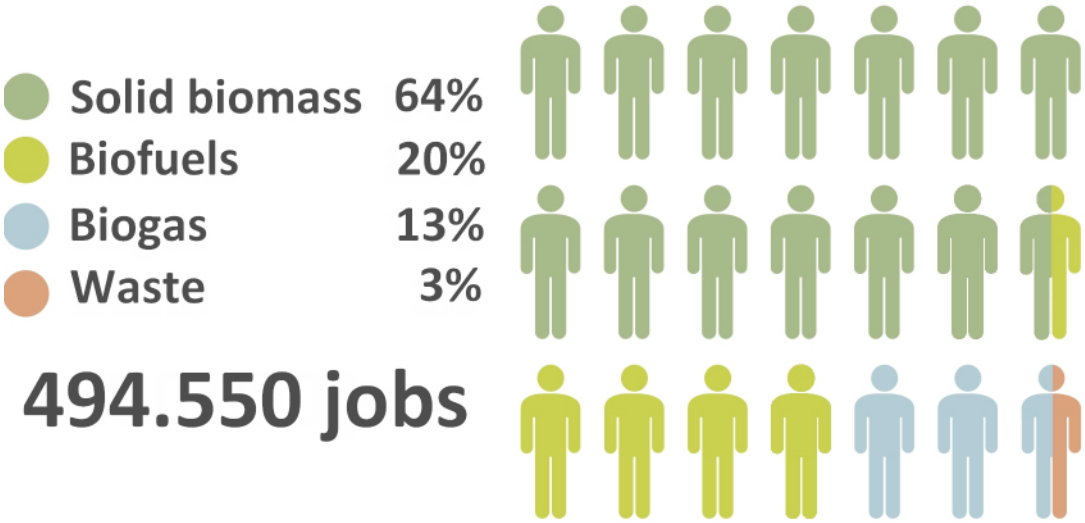
Source: UNcomtrade

Socio-economic benefits of Bioenergy

In addition to reducing greenhouse gas emissions and decreasing energy dependency, it should be mentioned that bioenergy also generates economic activity and employment in Europe. Previous studies have already shown that the labor required to produce electricity from biomass in Europe is 3 to 6 times higher than for fossil fuels.

EU28 Job distribution in the Bioenergy sector in 2013 (%)

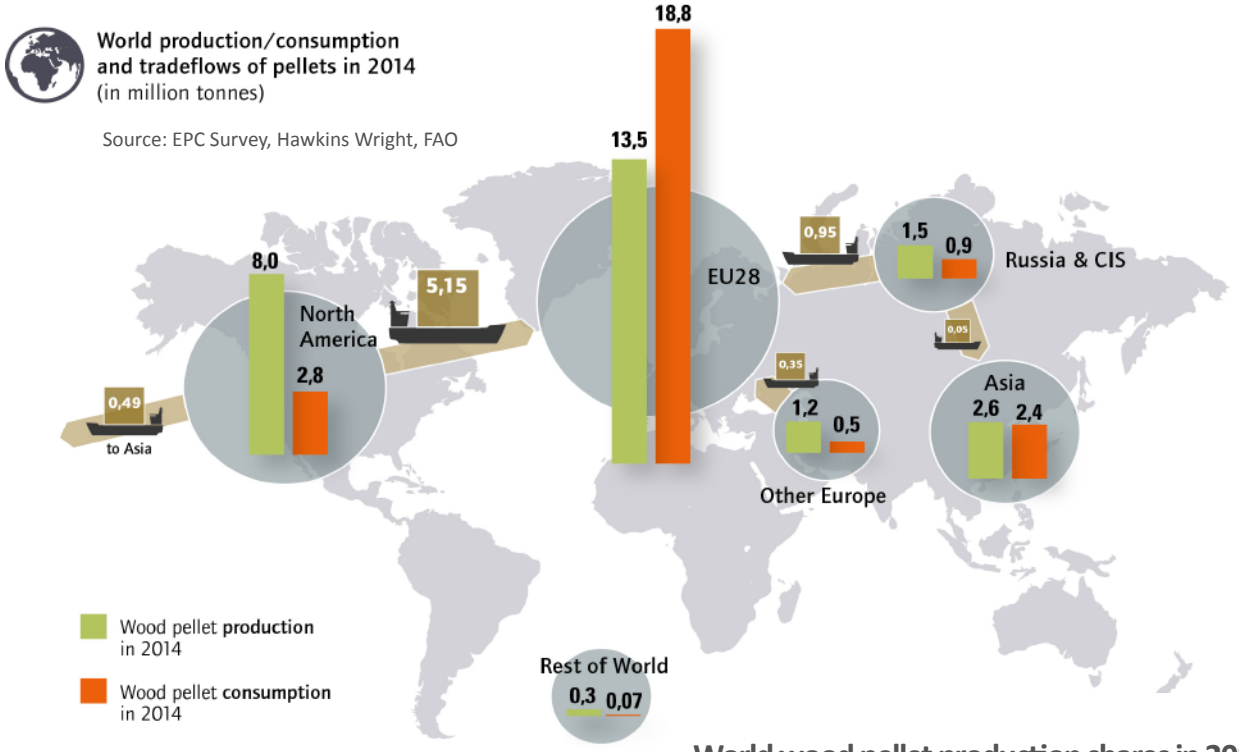
Source: 14th EurObserv'er Report on the State of Renewable Energies in Europe



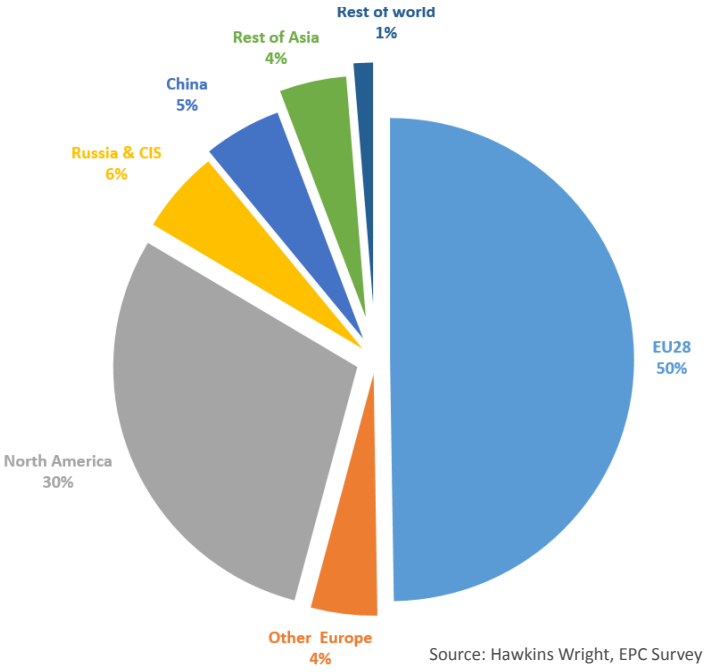
Employment potential in bioenergy is superior compared with other renewable and non-renewable energy technologies due to the additional elements of feedstock production, supply, handling and logistics, supporting the economic strength of rural areas throughout Europe. According to EuObserv´ER the number of jobs in the bioenergy sector in 2013 amounted to 494.550 people and the added value was estimated at 56 billion euros.

EU in the global pellet sector

With 13,5 million tonnes of wood pellet produced in 2014, EU is the largest producer in the world amounting to around 50% of the global world production. EU production has shown a continuous expansion over the years with a growth of 35% from 2010 to 2014 and of 11% from 2013 to 2014. As the EU production is mainly dedicated to the heat market, the sector has been impacted by the general slowdown of the EU heating market, which is mainly due to the mild winter and others factors such as the low price of heating oil, the competition with other technologies and the contracting sales of pellet heating appliances.



World wood pellet production shares in 2014 (in %)



Source: Hawkins Wright, EPC Survey

Alan Sherrard
Editor-in-Chief
Bioenergy International

Whist only a "teenager" as an industrial sector, the global wood pellet industry is a remarkable biomass success story, thus far. With 2014 production output estimated at just over 27 million tonnes, the sector almost showed a seven-fold increase over the last decade.

THE COMPLETE ARTICLE OF ALAN SHERRARD IS AVAILABLE IN AEBIOM STATISTICAL REPORT 2015

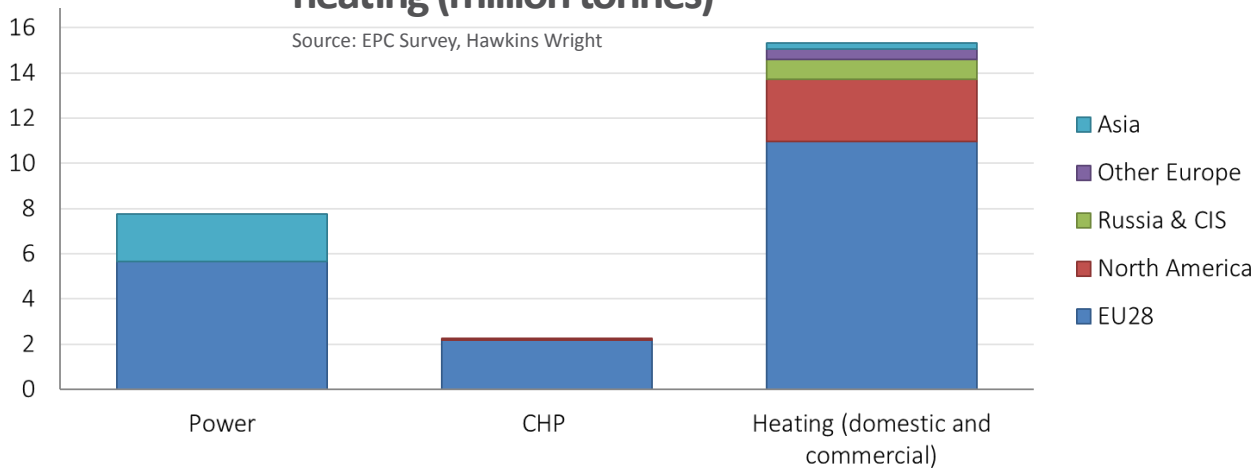
EU in the global pellet sector

Responsible for around 74 % of the world's wood pellet consumption, with 18,8 million tonnes, the EU remains a massive pellet consumer. The growth of EU pellets consumption has only shown an increase below 1% from 2013 to 2014. This is due to the limited expansion of the use of pellets for heat mainly because of the mild winter, while the industrial use of pellets has decreased due to a consumption reduction in Belgium and the Netherlands. With more than 2,5 million tonnes, the US pellet consumption is quite high. As a result, the US is one of the two extra-EU countries to be part of the 10 largest world pellet users.

The Asian market, Japan and South Korea in particular, is growing and has rapidly become a significant pellet user. South Korea used 1,9 million tonnes in 2014 while the consumption in 2012 was below 200.000 tonnes, placing it in the global top 10 consumers in 2014.

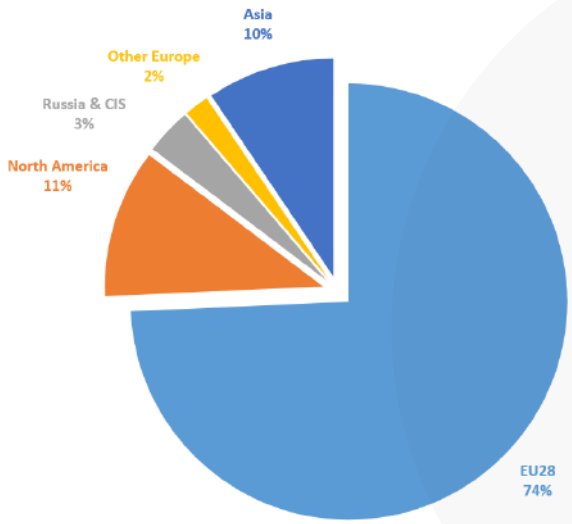
World wood pellet demand in 2014 - power, CHP and heating (million tonnes)

Source: EPC Survey, Hawkins Wright



Distribution of world wood pellet consumption in 2014 (in %)

Source: Hawkins Wright, EPC Survey

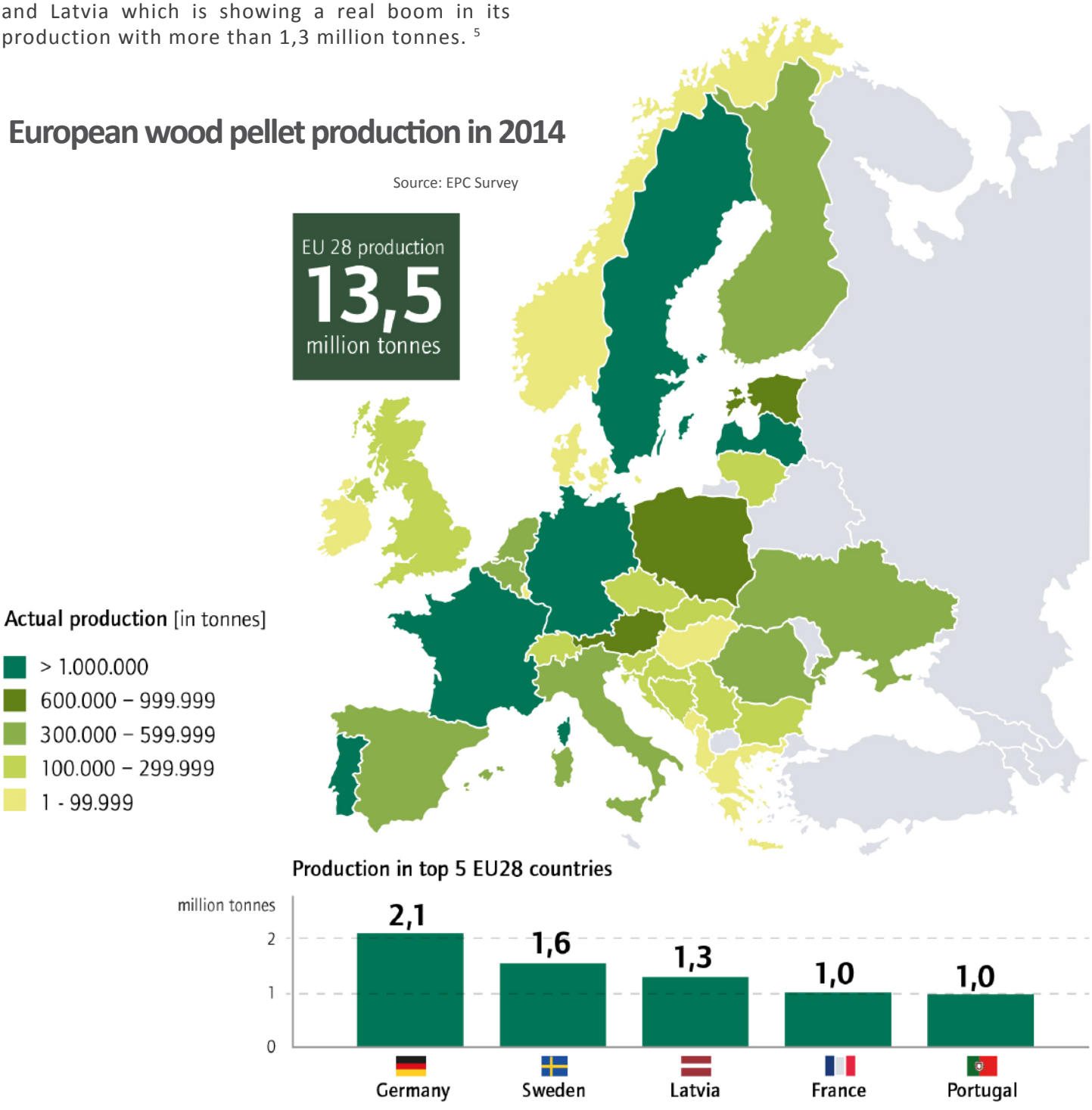


EU pellet production

The development of the EU pellet production differs significantly from country to country. Germany remains the biggest producer with 2,1 million tonnes produced in 2014, followed by Sweden with nearly 1,6 million tonnes and Latvia which is showing a real boom in its production with more than 1,3 million tonnes. [5]

European wood pellet production in 2014

Source: EPC Survey

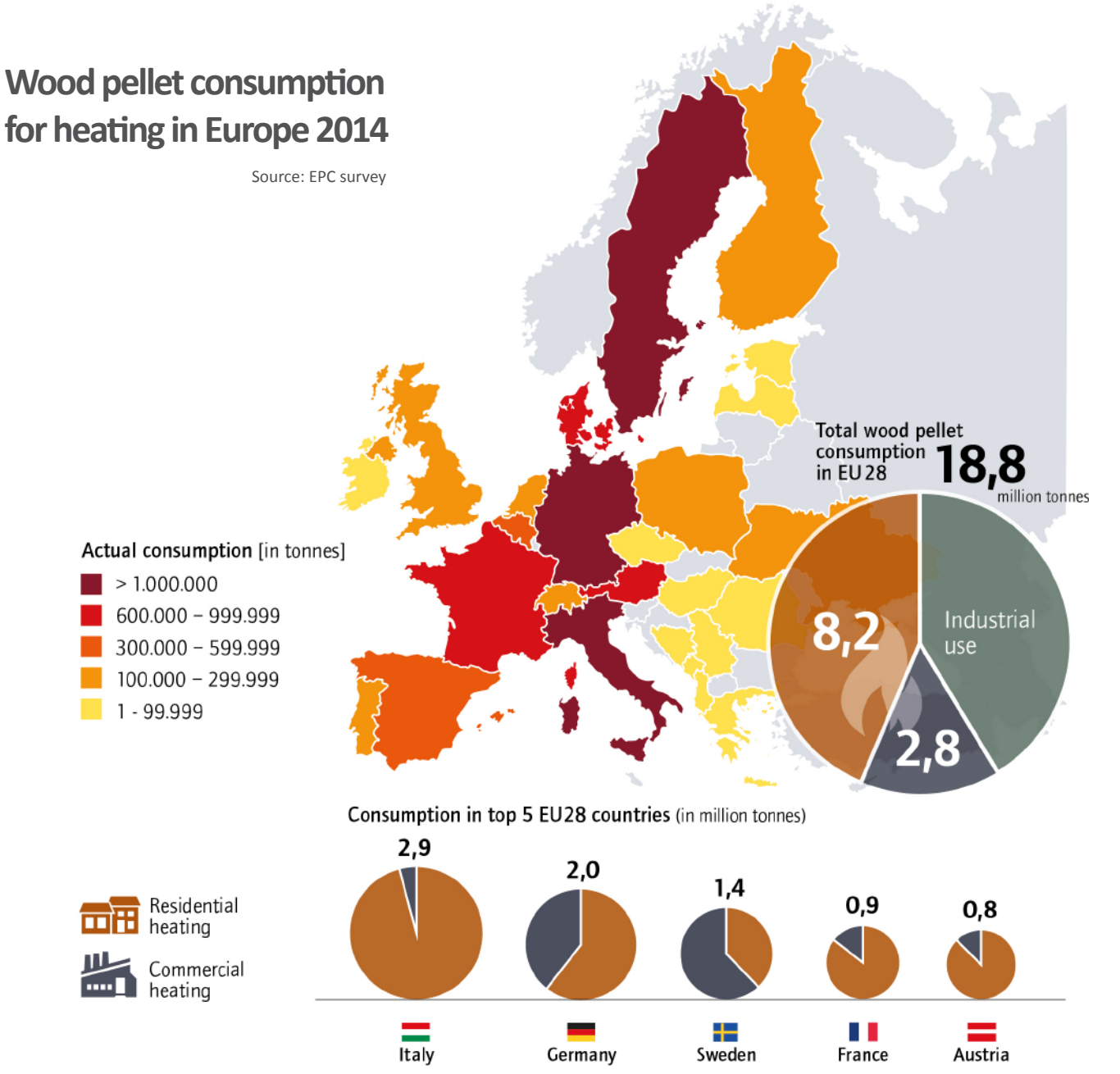


Production in top 5 EU28 countries

[5] A complete analysis country per country is available in AEBIOM Statistical Report 2015

Pellet for heat in the EU

The use of pellet for producing heat (domestic and commercial) remains a strong sector in EU showing a continuous expansion over the years with 25 % growth from 2011 to 2014. While the EU pellet for power market is relying on the policy framework, the EU pellet heat market, which is rarely supported by any scheme has shown to be stronger and more reliable. Unfortunately, the mild winter highlighted that this market is extremely weather-dependant. As a consequence the growth from 2013 to 2014 has been limited to 1 %. Some other factors have also affected the market development such as the very low price of fossil fuels (especially heating oil) and the competition with other heating technologies. [6]

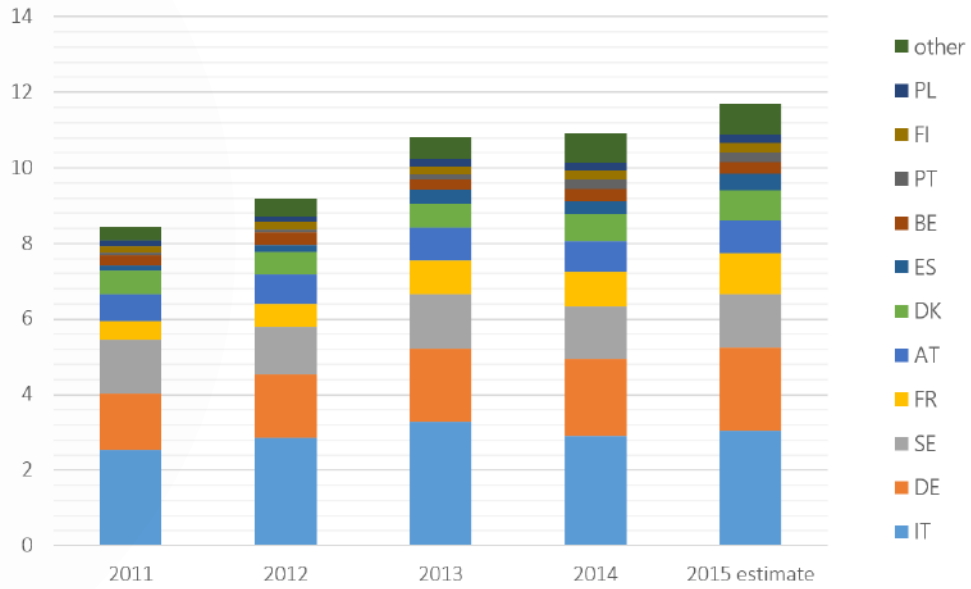


[6] A COMPLETE ANALYSIS COUNTRY PER COUNTRY IS AVAILABLE ON AEBIOM STATISTICAL REPORT 2015

Pellet for heat in the EU

Beside the general trend, the market evolution differs greatly from country to country. Indeed, some markets are hardly impacted by the unfavourable market conditions while other countries have shown a growth during the same period. Italy remains the world's largest user of pellet for domestic heat with nearly 2,9 million tonnes but showing a decrease for the first time in the last years. Germany is the second largest EU pellet consumer for heat followed by Sweden.

Evolution of EU wood pellet consumption for heating excluding CHP (million tonnes)



Source: EPC Survey

Christian Rakos
President
European Pellet Council

In 2014, markets for domestic and commercial heating with pellets have generated an estimated consumption of 11 million tonnes. Heat markets have now exceeded industrial pellet use which is estimated to reach 7,8 million tonnes this year by a significant margin.

THE COMPLETE ARTICLE OF CHRISTIAN RAKOS IS AVAILABLE IN THE AEBIOM STATISTICAL REPORT 2015

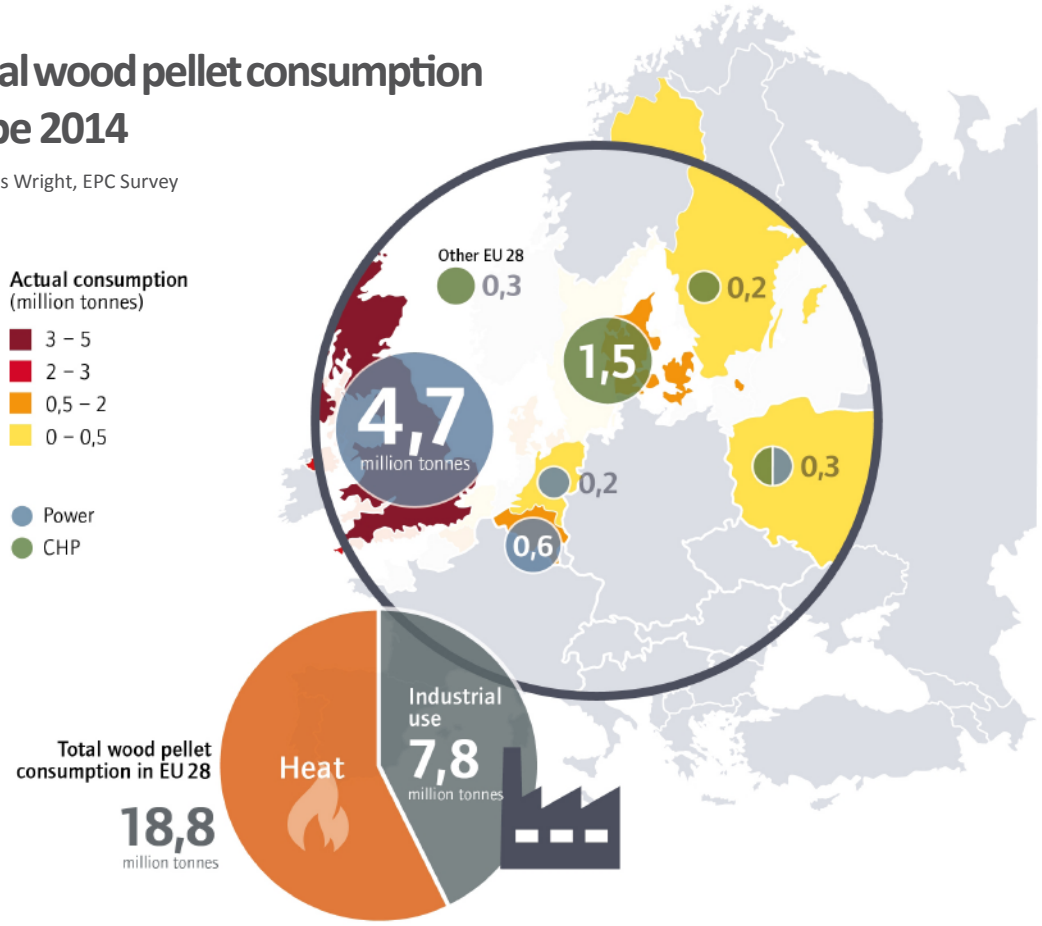
Industrial use of pellet in the EU

The industrial wood pellets use, defined as the pellets used by electricity generators and by utility-scale CHP plants, has decreased 1,6% from the year before in EU.

This diminution demonstrates a certain fragility of this sector which is entirely relying on national policy frameworks.

Industrial wood pellet consumption in Europe 2014

Source: Hawkins Wright, EPC Survey



John Bingham
Director
Hawkins Wright Ltd

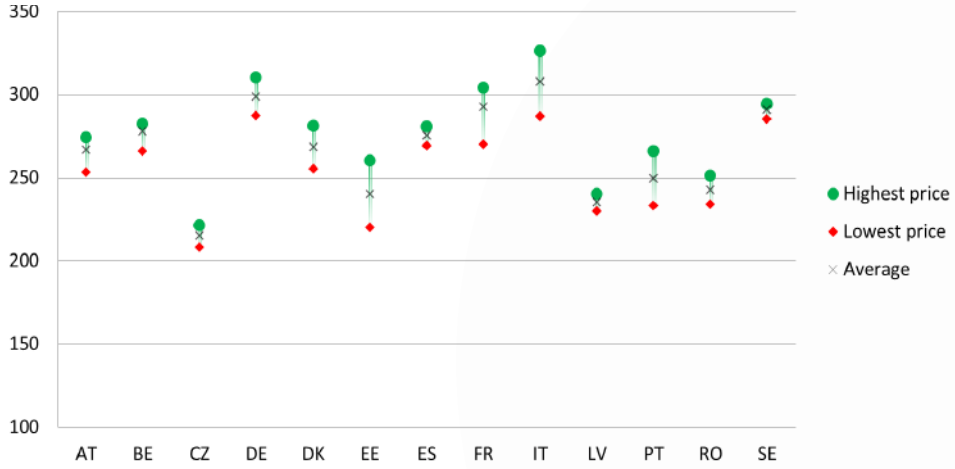
The drop in consumption in 2014 was principally due to a decline in demand in two countries, Belgium and the Netherlands. Elsewhere, in Denmark for example and in the United Kingdom particularly, the consumption of industrial wood pellets continued to grow strongly.

THE COMPLETE ARTICLE OF JOHN BINGHAM IS AVAILABLE IN THE AEBIOM STATISTICAL REPORT 2015

Pellet price

The unfavourable conditions initiated with the mild winter 2013-2014 have occurred again with having a second pretty warm winter in 2014-2015. This situation has created a drop in pellet use and some consequent overstocks. As a consequence, the price reduction of domestic pellets occurring in each spring has been more severe for some countries.

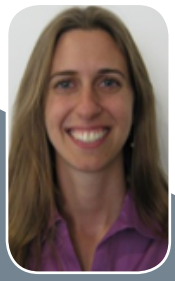
Variation of bagged wood pellet prices between July 2014 and June 2015 (€/t) *



** VAT included. Retailer price 1 pallet (€/t)*
Source: EPC Survey

Argus cif ARA wood pellet index ($/t)

Source:Argus

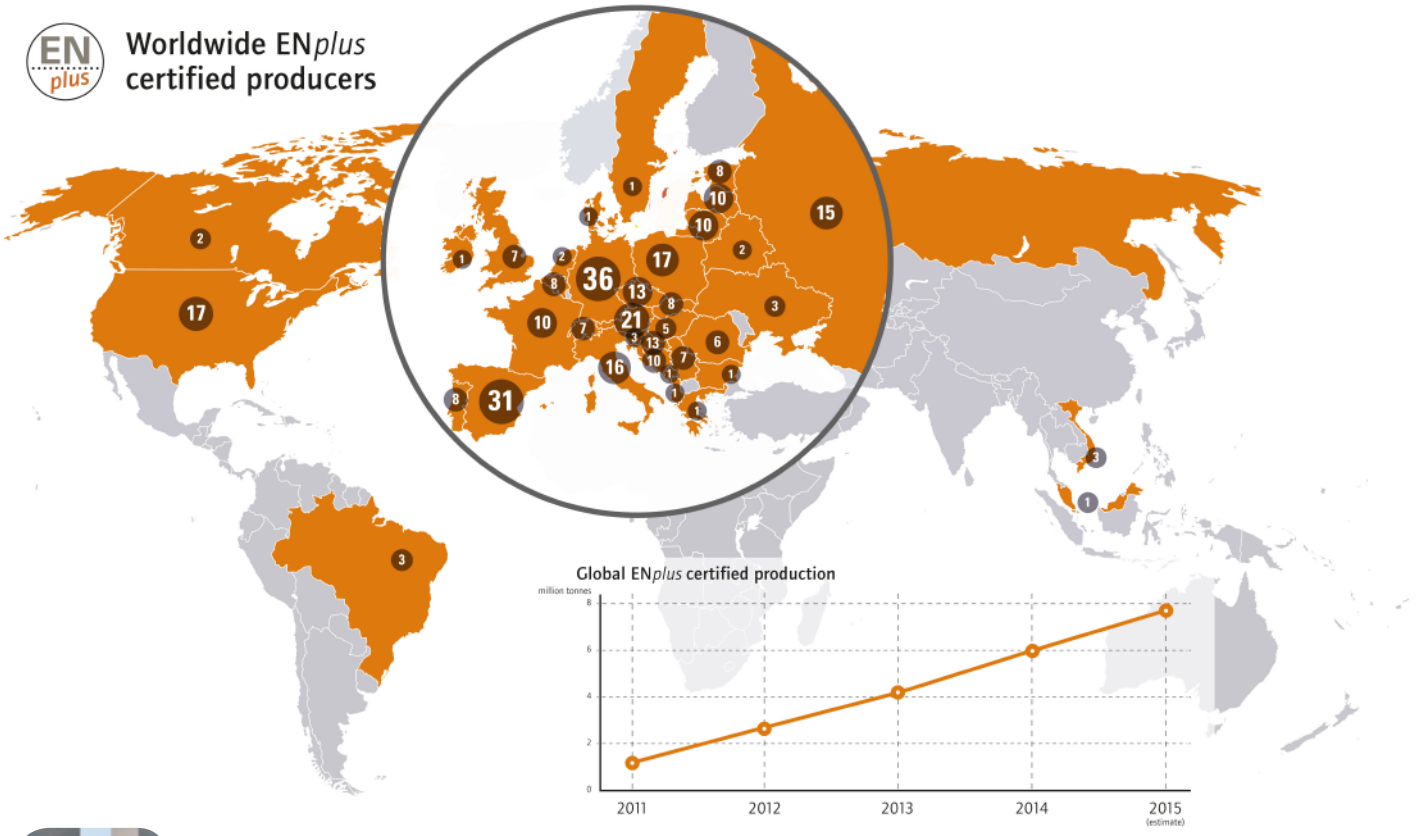


Jessica Dell
Editor
Argus Biomass Markets

The Argus spot cif ARA wood pellet dollar-denominated price has fallen by roughly 9% since 1 January 2015. We have seen fluctuations in the last year because of power plants coming off line, owing to a fire or other incident, or coming on line, backed by renewable subsidies. But an even bigger driver over the past year has been currency moves. The price falls that we have seen this year are in part a consequence of continued euro weakness, dragging dollar prices down.

Latest developments of ENplus certification

The success of ENplus coincides with the rapid growth of the European and World pellet sector, which saw an important increase over the years. With this fast development the need for a harmonised high pellet quality, trusted certification system was apparent. With the launch of the certification system, the ENplus pellet market assisted to a fast expansion and it is now estimated to reach a bit more than 7,7 million tonnes in 2015. This would result in a growth of approximately 1,7 tonnes comparing with 2014 figures in terms of certified production volume.



Source: EPC

Johan Granath
Senior Vice President Bioenergy
Ekman

The International wood pellet market a unique example of good self-regulation

Over the past decade, global wood pellet production has increased tenfold and been transformed from a very local niche industry into a truly global market. Ekman & Co is proud to be a part of an industry that has managed to self-regulate on several fronts at the same time with the creation of National and a European pellet association and the development of certifications scheme as ENplus and SBP to ensure that our customers can be certain about the quality and sustainability of the wood pellets they buy.

We complete the puzzle.

At Imerys, we understand that burning biomass can be puzzling. Slagging, fouling and corrosion, which results from burning biomass, can cause significant damage to the overall boiler operations. Maximizing boiler capacity, maintaining heat rate, reducing maintenance and unplanned outages and increasing electricity generation are only a few of the challenges facing power plant operations.

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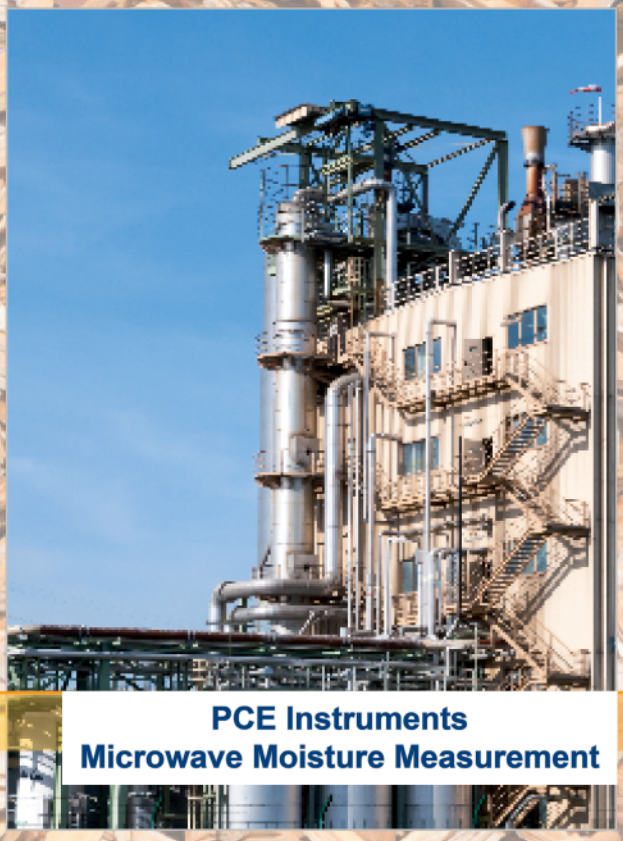

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RECP
Africa-EU Renewable Energy Cooperation Programme

Africa-EU Energy Partnership

Africa-EU Renewable Energy Cooperation Programme
Creating opportunities for renewable energy

Information Note

RECP FINANCE FACILITATOR

The RECP Finance Facilitator (FF) supports meso-scale renewable energy projects in Sub-Saharan Africa. It enhances project quality and makes connections between project developers seeking financing and financiers seeking viable projects.

The RECP FF is funded and ready to deploy, a tender for a qualified service provider is currently in preparation. As a key element of the RECP, it complements existing development finance instruments by reducing risks as well as transaction costs, and by contributing to build a pipeline of viable projects.

The Challenge

The RECP aims at supporting meso-scale renewable energy projects in the range of ~0.5 – 50 MW (approx. 1-100m EUR) undertaken by private sector in Sub-Sahara Africa, such as on-grid solar, biogas, wind or mini-hydro projects, or also off-grid projects such as renewable / hybrid mini-grids.

Such projects pose challenges for financiers, in terms of ticket size and risks (e.g. political, regulatory or off-taker risks etc.). Furthermore, the quality of project documentation and their presentation to prospective financiers is at times inadequate.

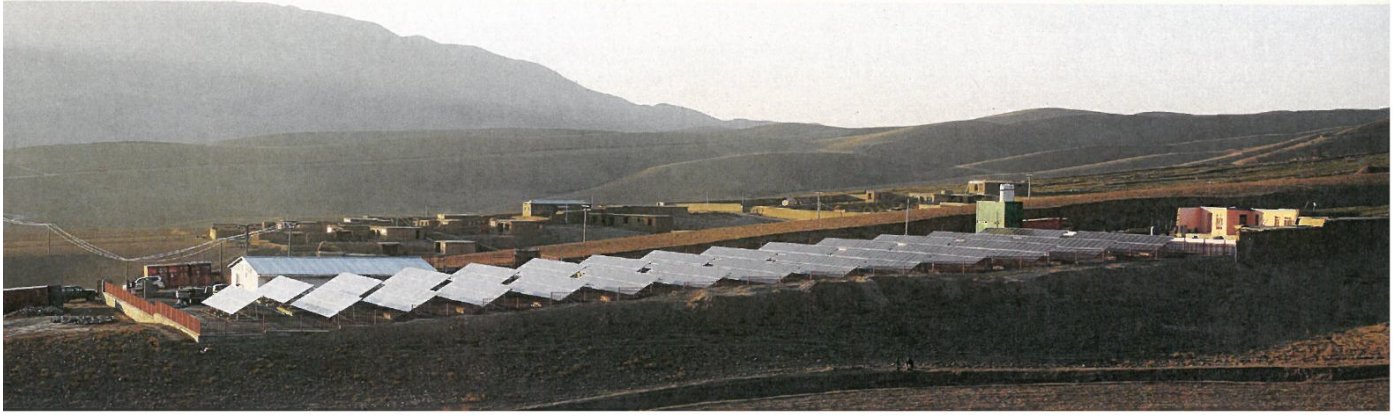
As a result, transactions costs for financiers are high, and the numbers of attractive projects in the pipeline remains low. Project developers on the other hand are faced with a vast amount of potential financing opportunities, many of which have specific modalities, resulting in inefficiencies and high transaction costs in project development.

The RECP Solution

The Finance Facilitator addresses both perspectives by enhancing project quality and thereby improving the project pipeline and reducing risk, and by linking project developers with financiers. It will deliver through a lean and competent implementation setup, a transparent access point, and an à la carte portfolio of services:

- Online Database of available financing instruments for project developers
- Structuring Support advising on essential aspects of business case and financial model
- Project Development Support providing guidance on the necessary steps of project development and ensure completeness and sufficient quality
- Access to Finance Support identifying appropriate financing (or project preparation support) options for specific projects and to align project documentation with the respective requirements
- Transaction Support assisting project developers on key issues with regards to the various transaction documents for the regulatory, financial, technical and commercial aspects.

Since the technical and financial requirements of each project are different, the RECP FF will deploy flexibly and adapt to the project-specific requirements. Equally, the requirements of financing instruments differ. The RECP FF thus supports the match-making of projects with appropriate financing mechanisms, and tailors the support to the corresponding requirements. The RECP FF currently does not envisage providing direct "hard" inputs to project development, such as grants for (pre)feasibility studies, although this is under consideration for later phases.



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