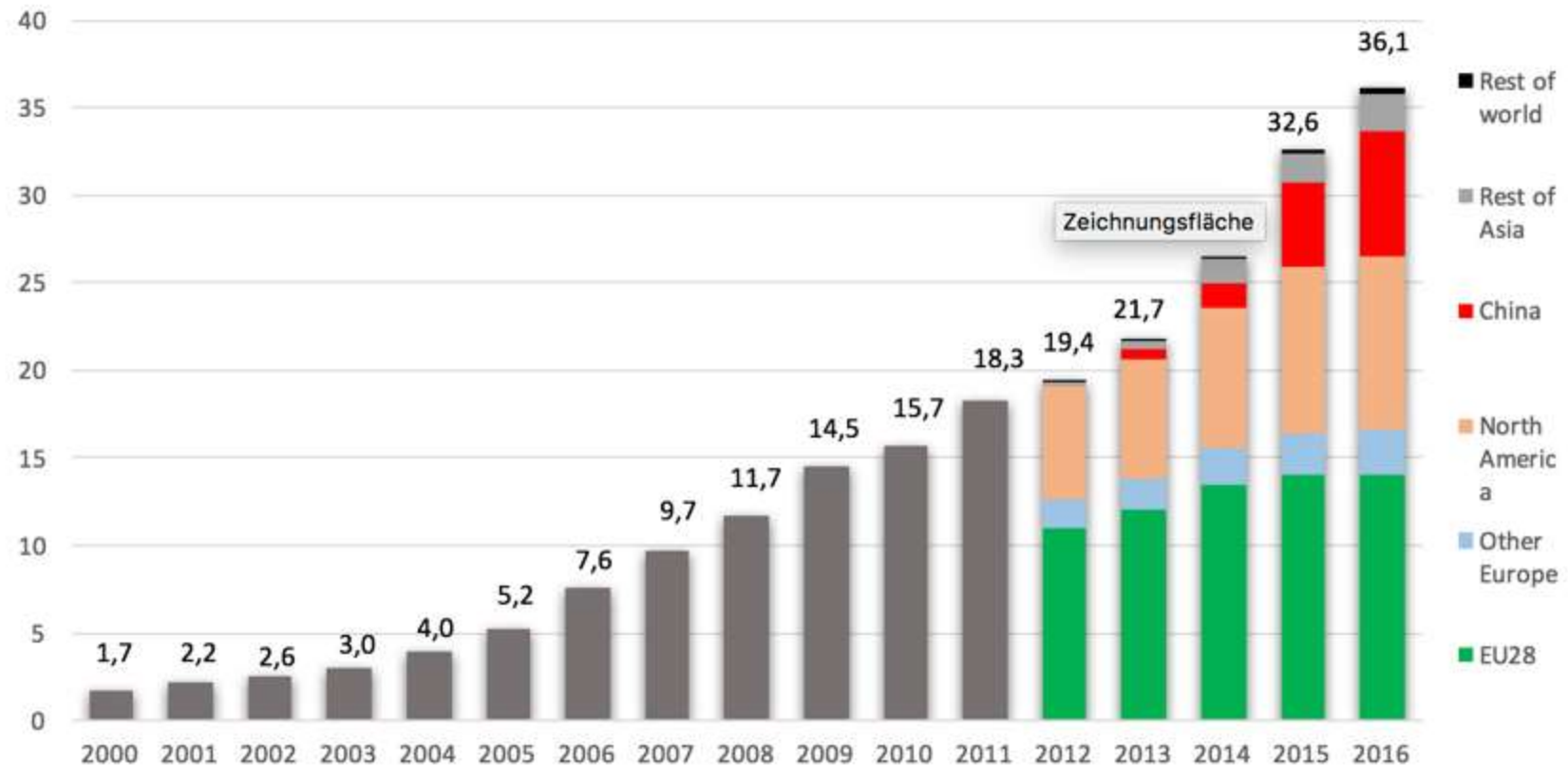


Woodpellets – international market development and trade

Christian Rakos

Worldwide pellet production (Mio.t)



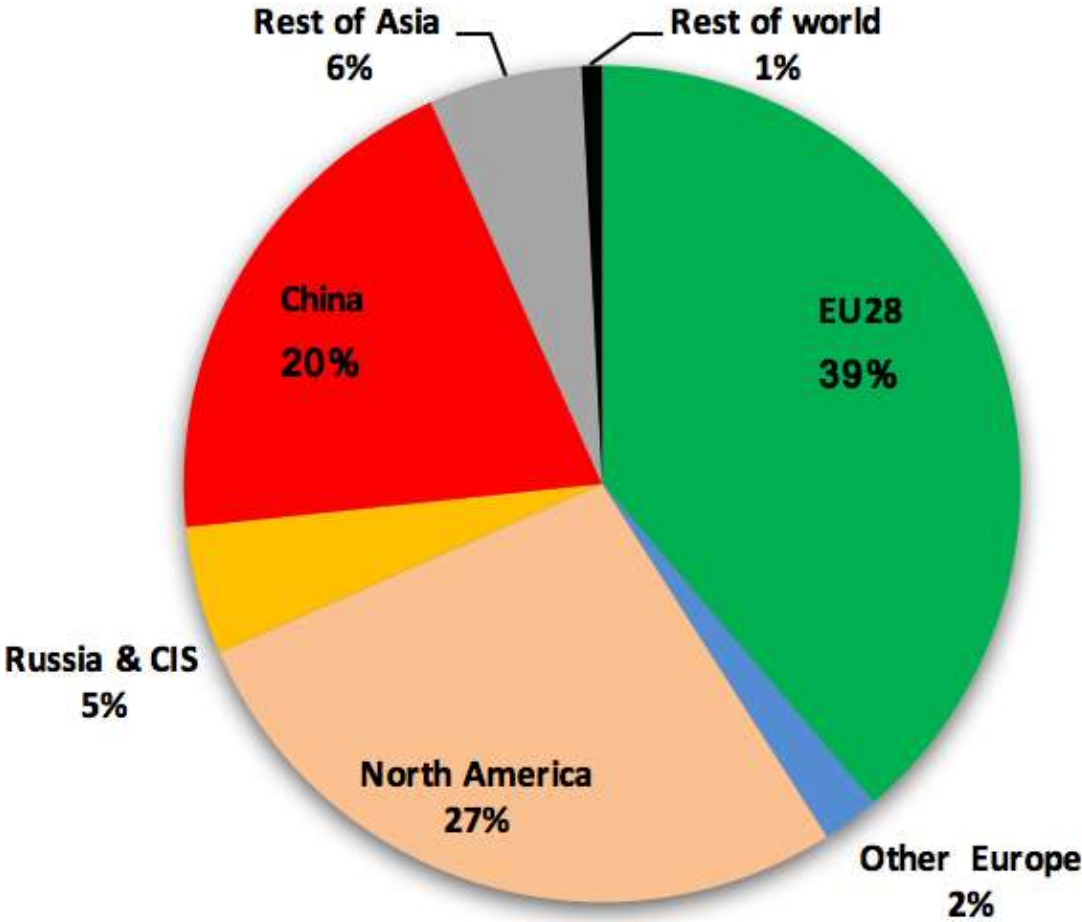
Source: EPC survey, 2017; IEA Bioenergy Task 40; FAO; CREIA

All graphics in this presentation are from the AEBIOM statistical report 2017

Why are pellets so successful?

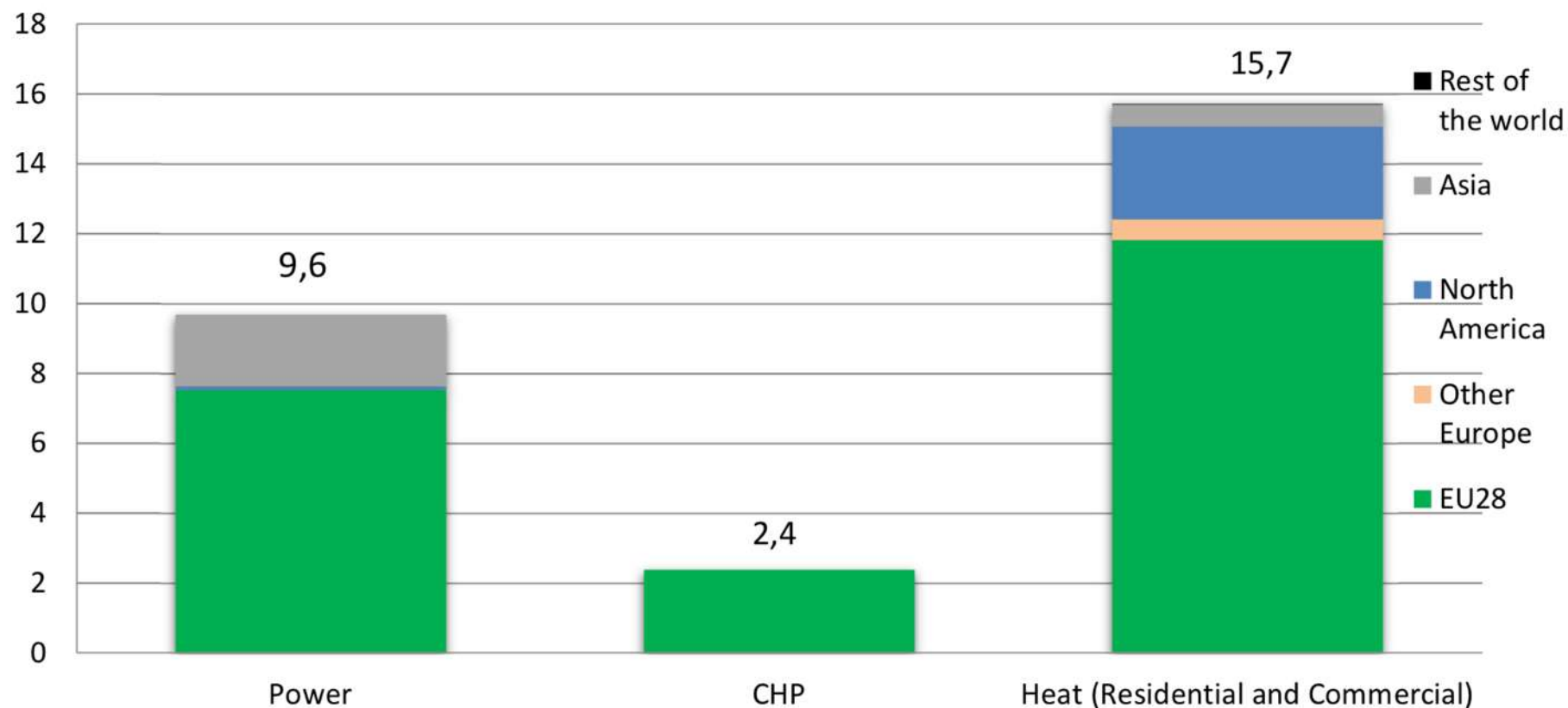
- » Pelletizing is the cheapest and most energy efficient way of converting biomass into a standardized high quality renewable fuel
- » Very flexible use for every scale of application
- » Clean combustion
- » Competitive fuel

Distribution of production



Source: EPC survey, 2017; IEA Bioenergy Task 40; FAO; CREIA

Use of pellets for different energy markets



Sources: EPC survey, 2017; Hawkins Wright

Note: Asia does not include China

Raw material used for European Pellet production





European/EU-28 wood pellet production

(in 2016, tonnes, %)

European production

16,6

million tonnes in 2016

EU-28 production

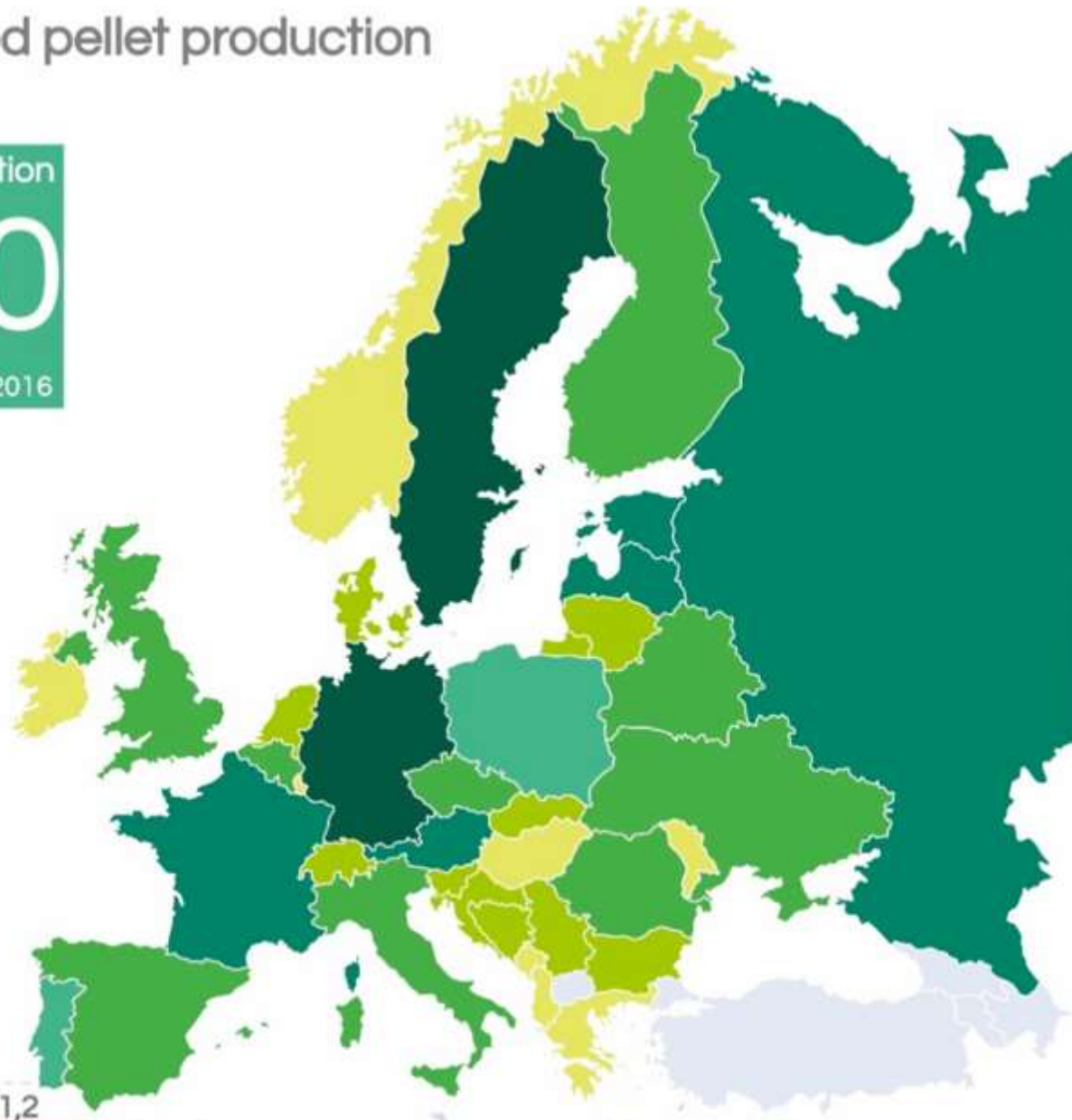
14,0

million tonnes in 2016

Actual production
(in tonnes)



Source: EPC Survey



Production in top 5
EU-28 countries in 2016





EU-28 wood pellet consumption for heating (in 2016, tonnes, %)

EU-28 consumption

13,4

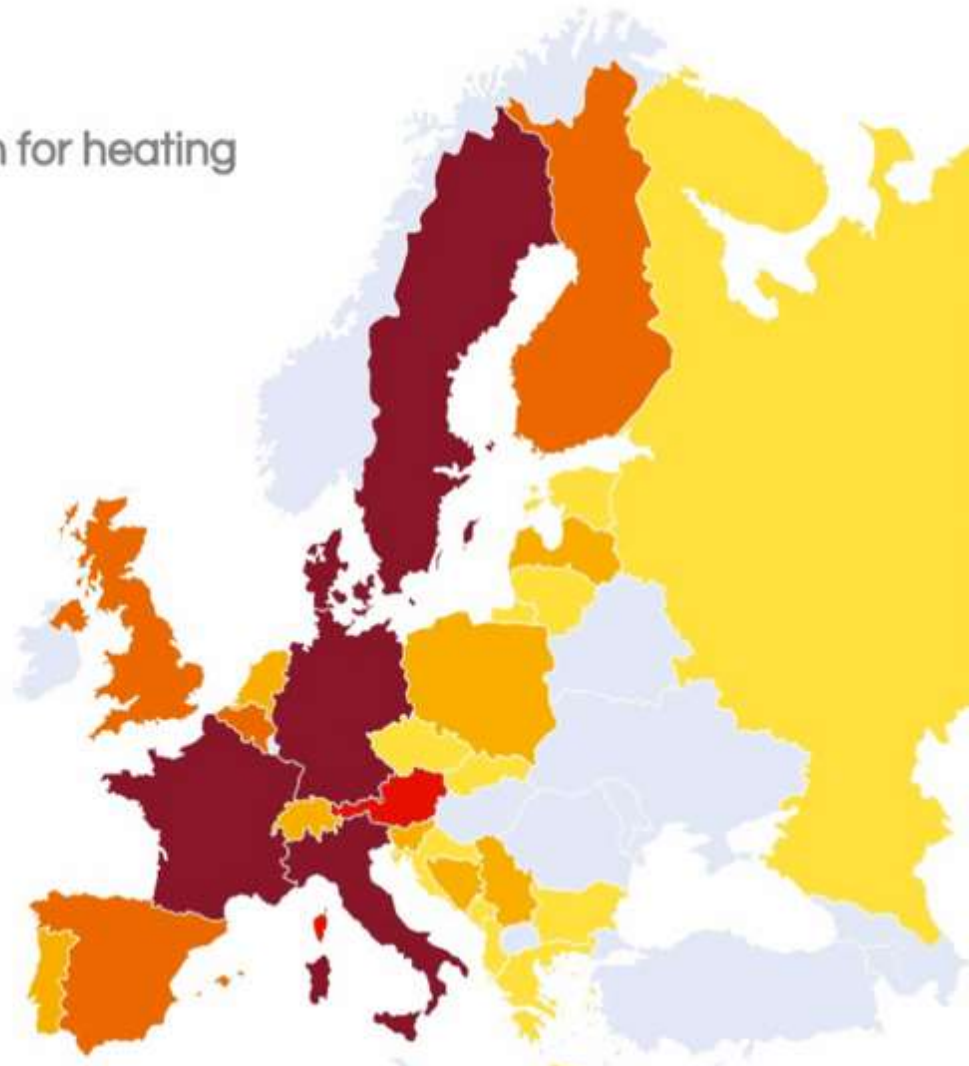
million tonnes in 2016

EU-28 pellet consumption for heating increased by **9,5%** between 2015 and 2016.

Actual consumption
(in tonnes)

- > 1.000.000
- < 1.000.000
- < 600.000
- < 300.000
- < 100.000

Source: EPC Survey



Consumption in top 5 EU-28 countries in 2015



⚡ European wood pellet consumption for power

(in 2016, tonnes,%)

EU-28 consumption

8,3

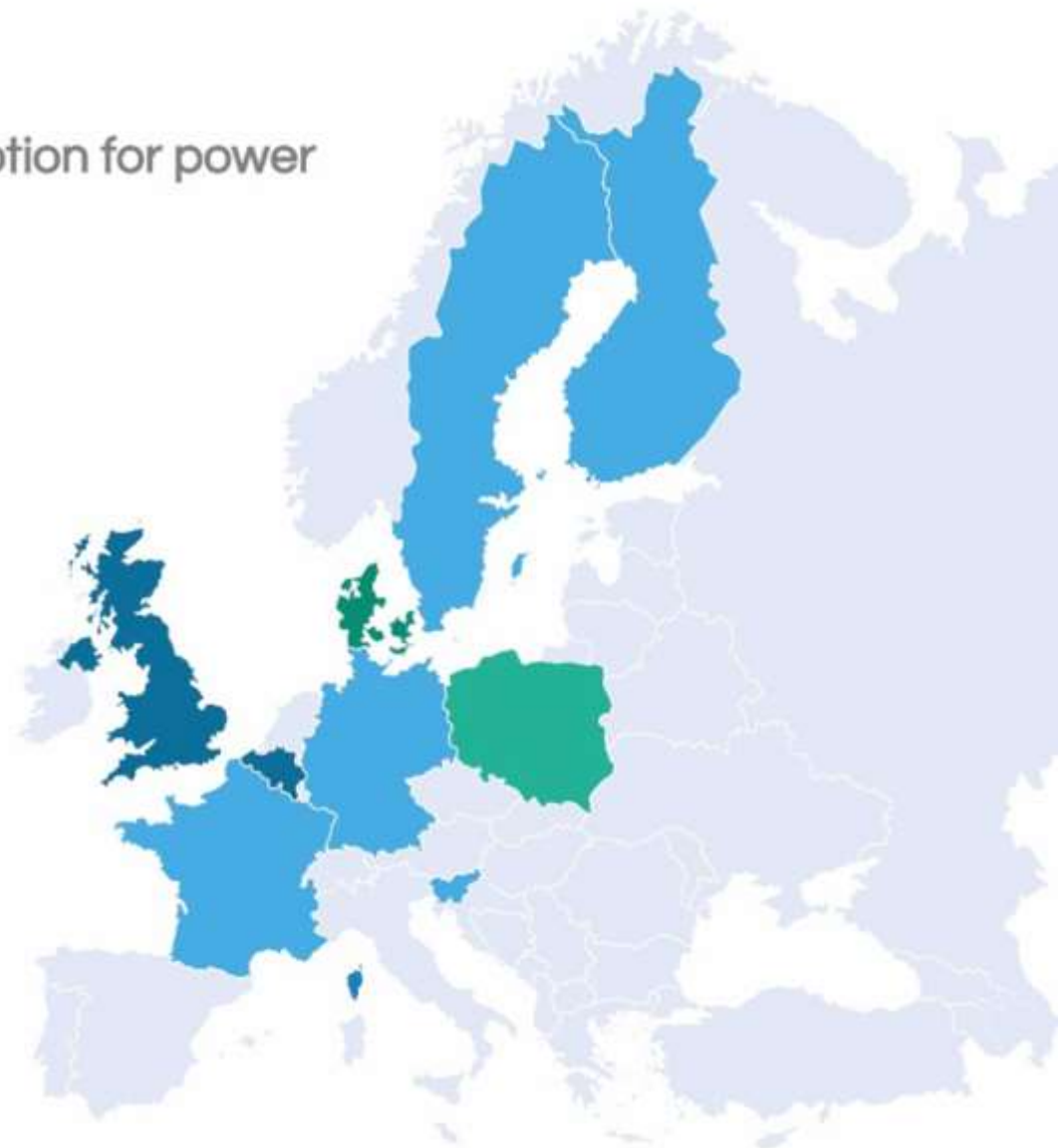
million tonnes in 2016

EU-28 pellet consumption for power generation increased by **-3,1%** between 2015 and 2016.

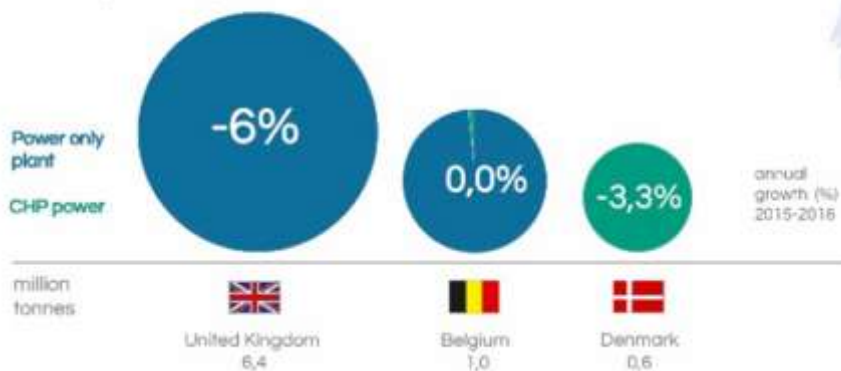
Actual consumption (in tonnes)

- > 1.000.000
- < 1.000.000
- < 500.000
- < 100.000

Source: EPC Survey



Consumption in top 5 EU-28 countries in 2016

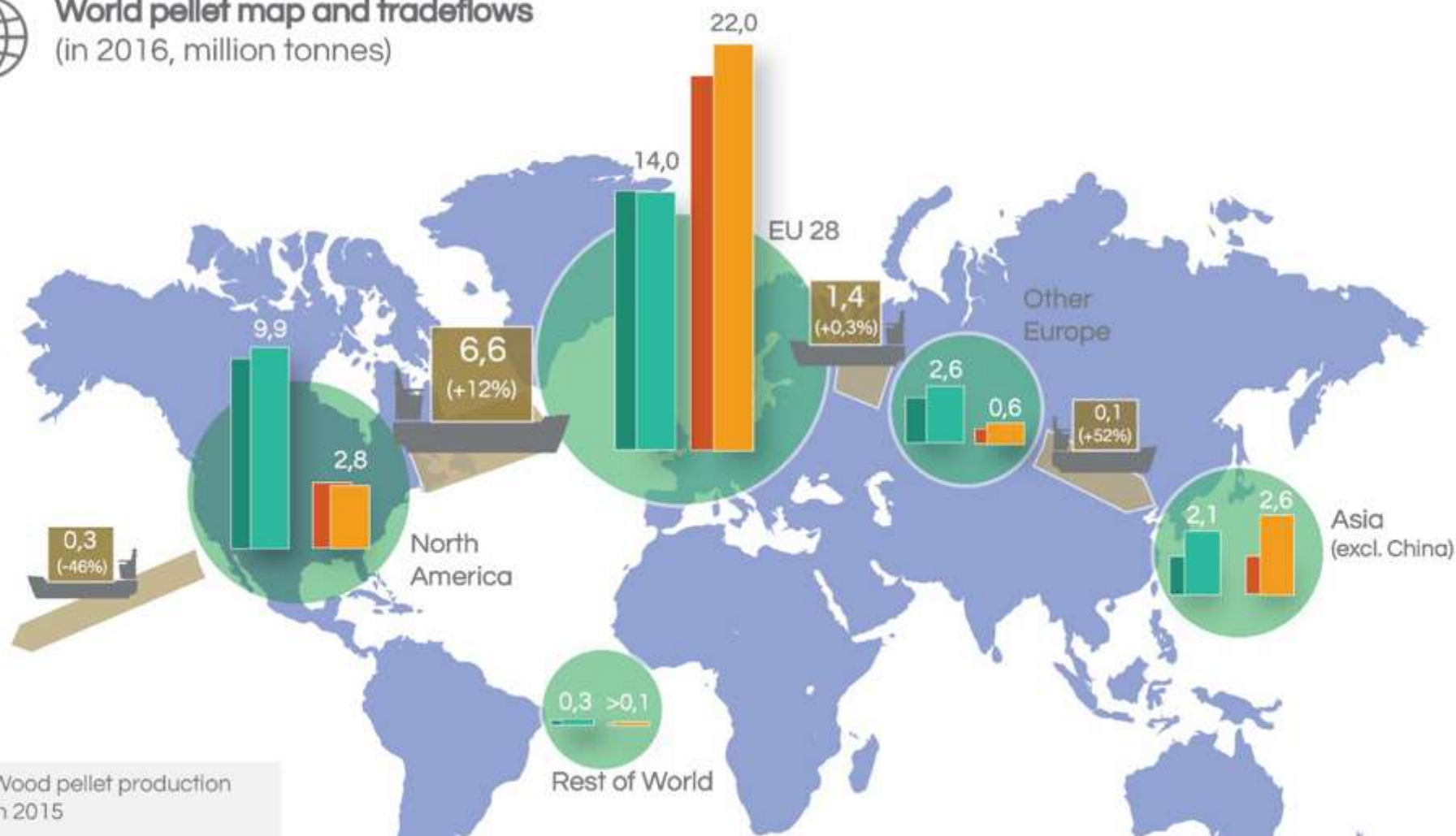


International trade with pellets

- » Currently international trade is focussed on pellets for use in power plants
- » “Premium pellets“ used for domestic and commercial heating are mostly supplied locally but trade is gaining importance
- » Pellet quality is a key issue for trade. For premium quality the ENplus certification is a precondition for tradeability of pellets



World pellet map and trade flows (in 2016, million tonnes)



- Wood pellet production in 2015
- Wood pellet production in 2016
- Wood pellet consumption in 2015
- Wood pellet consumption in 2016



AEBIOM
STATISTICAL
REPORT
2017



EUROPEAN PELLET
COUNCIL
AN AEBIOM NETWORK

Which trade routes will gain importance?

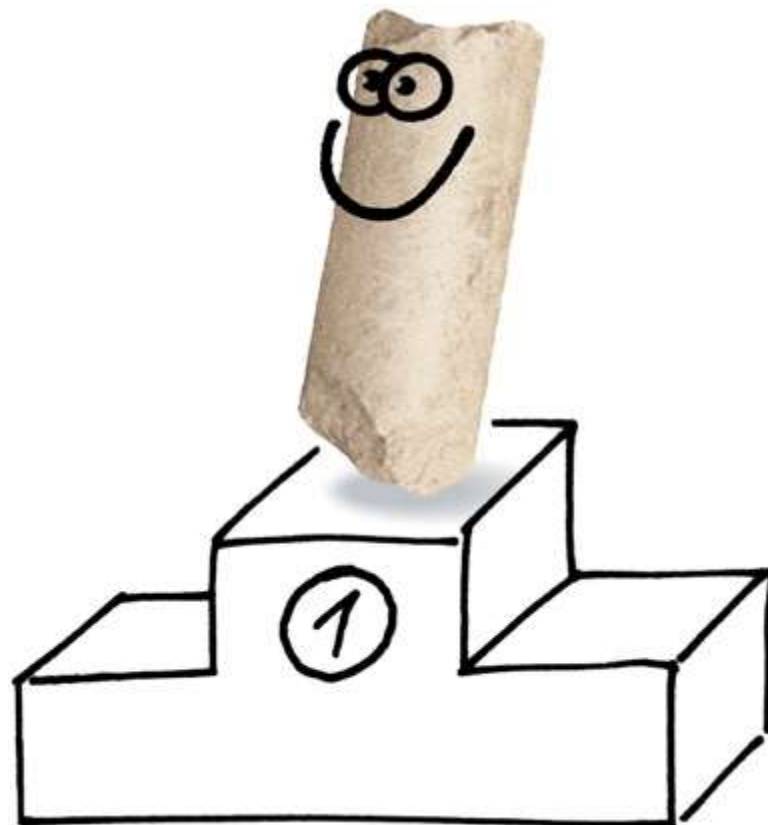
- » North America to Asia: Canada has increased production in 18 months by 50% - new capacity goes to Korea and Japan
- » Russia to Asia: Russia has huge forest resources and will probably also deliver large volumes to China
- » Brazil to Europe: bagasse (sugar cane)
- » Russia and Eastern Europe to central Europe

Most recent developments

- »» Industrial pellet use will almost double in Europe within the next 5 years
- »» The use of pellets for residential heating is advancing very fast in several countries of Eastern Europe such as Poland, Czech republic, and several Balkan countries
- »» Very rapid increase of bioenergy use in Ukraine (mainly based on agricultural residues)
- »» Very rapid development of pellet use in China

Other important trends

- » As demand for pellets is growing fast power plants and industrial users will start to use non wood pellets more extensively
- » Wood pellets will be increasingly used for residential heating
- » The increased use of agricultural raw materials will require significant research in combustion technology and flue gas treatment – Austria offers partnership!



Thank you for your attention!