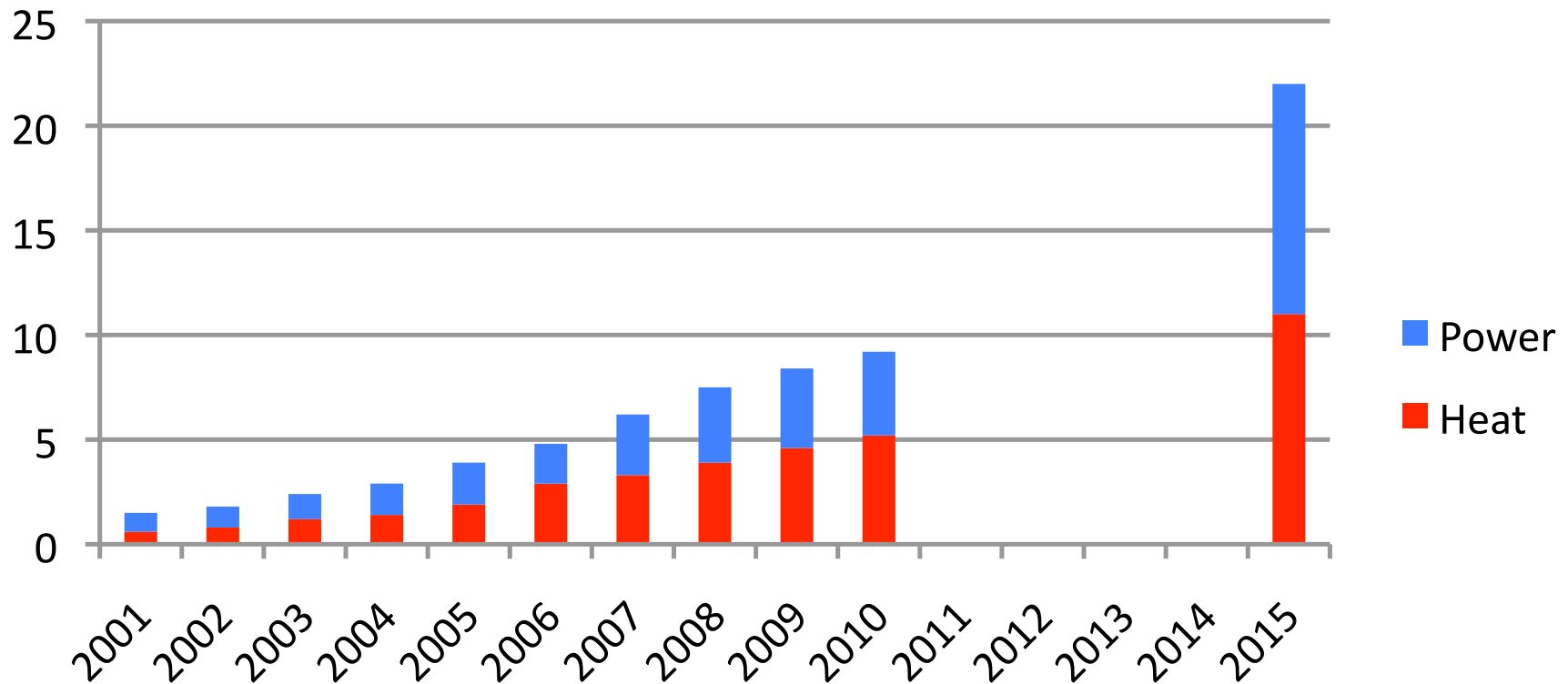


Wood pellets: supply and quality in Europe

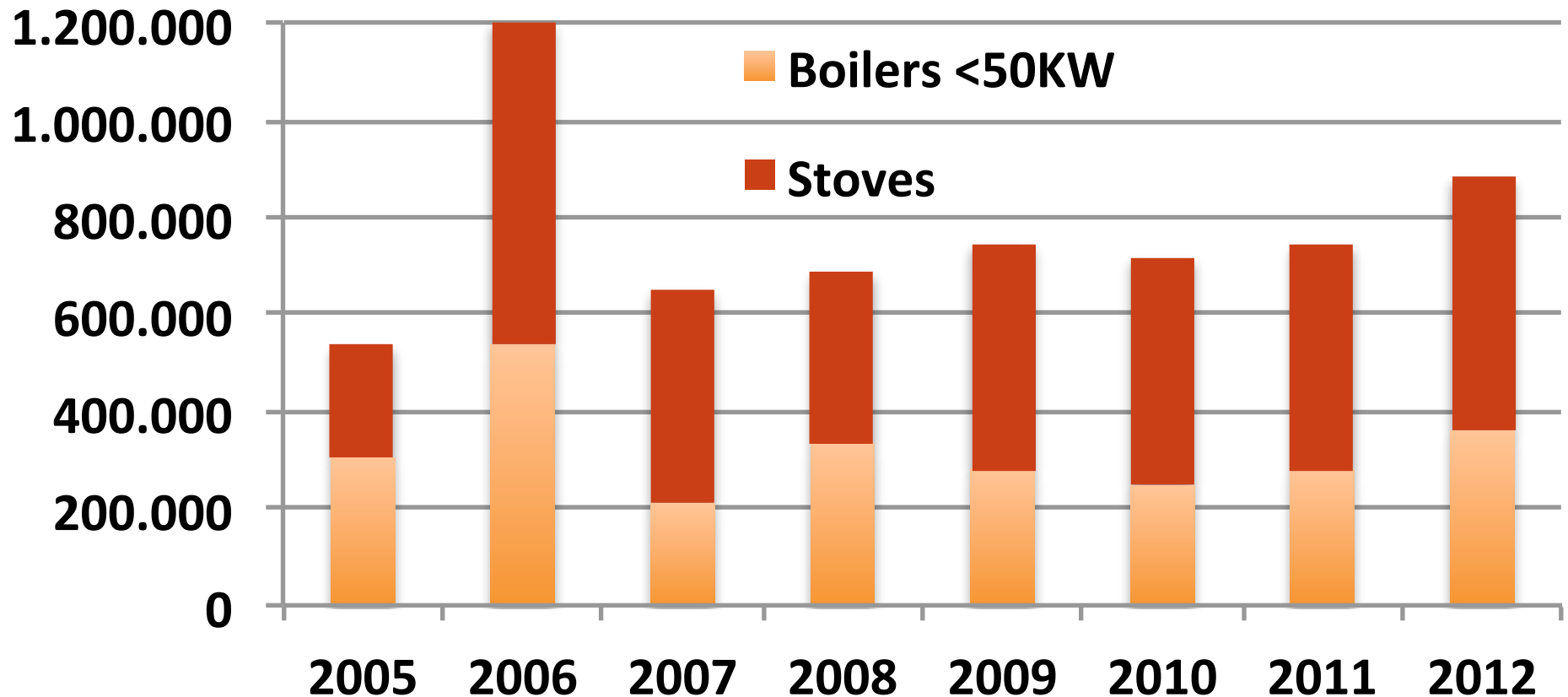
Christian Rakos

Pellets use in Europe grows at 20% p.a. and will exceed 20 Million tons by 2015

Development of pellet demand for heat and power production in Europe



Annual increase of pellet demand for domestic heating



Source: European Pellet Council, 2012

Wood pellet supply in Europe

- » Supply for heating markets in EU is based on local production from sawmill byproducts
- » Supply for power production is mainly based on imports from North America – both from sawmill byproducts and low grade pulpwood
- » Heat for drying of fiber usually supplied by bark combustion, electricity consumption equivalent to approx. 2% of the energy content of pellets

The critical role of pellet quality

- » Contaminations lead to immediate problems with combustion systems – slagging of ash
- » Low durability and high content of fines can lead to significant handling problems, higher emissions and system failure
- » Particularly bulk pellet supply is very sensitive to pellet quality

Pellet quality certification

- » Introduced by the industry first in Austria 15 years ago to manage quality problems
- » Instead of testing every delivered batch of pellets the pellet plant and the quality management of the plant is evaluated by an independent auditor annually
- » Certification has almost eliminated quality issues

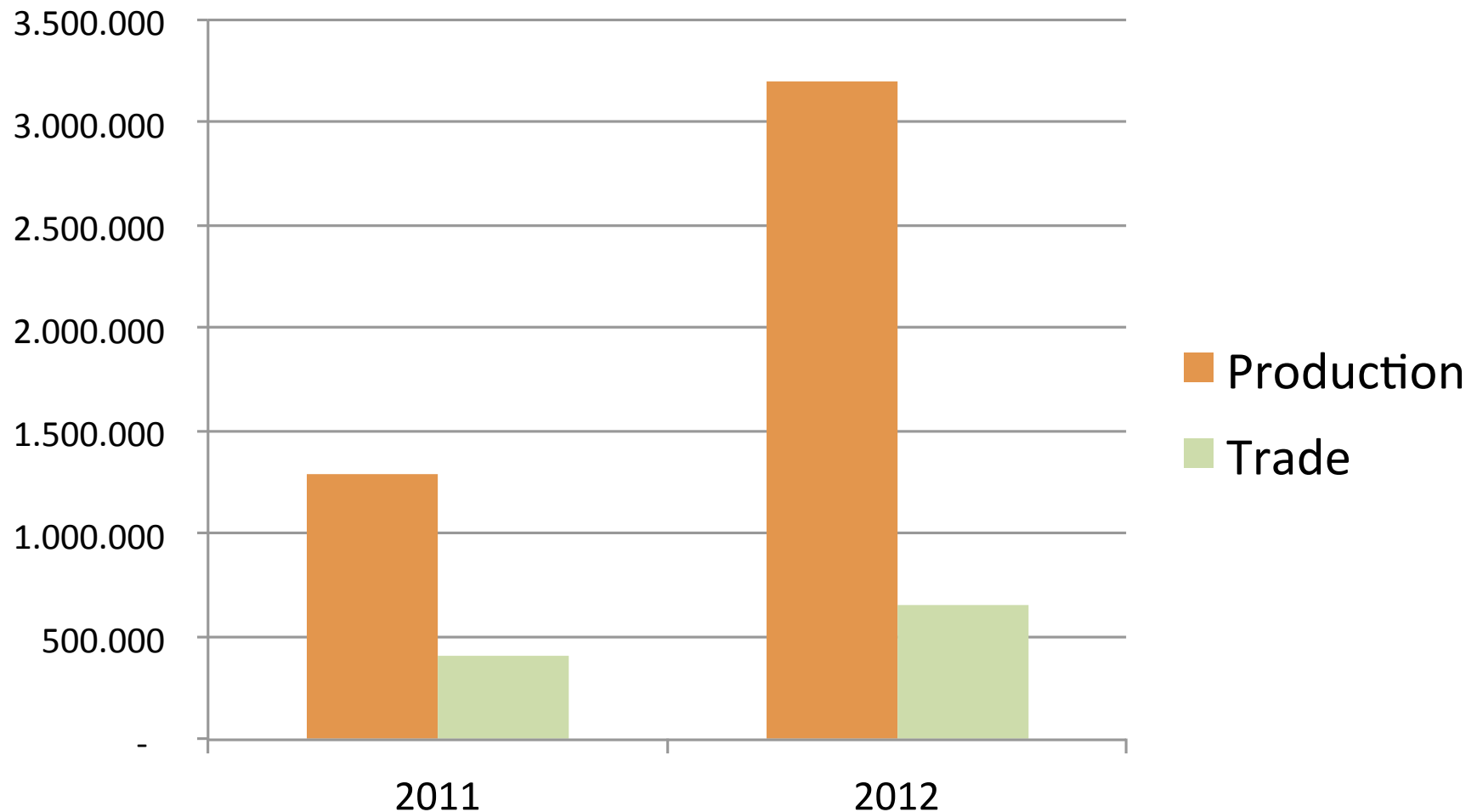
The ENplus quality certification

- » In the past several different national certification systems were in place for pellet quality
- » 2010 the European Pellet council introduced ENplus as a system based on the standard EN 14931-2 for EU wide use

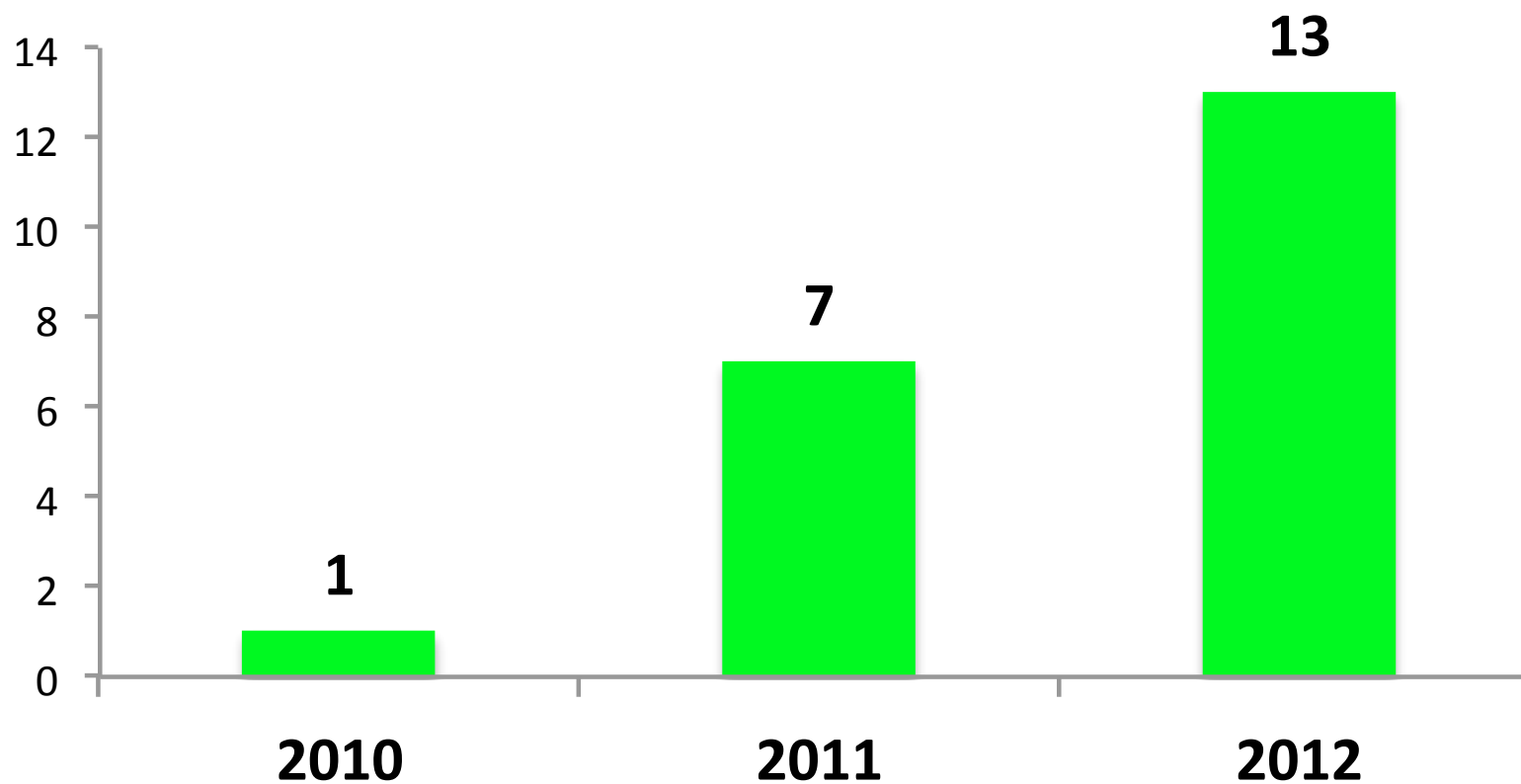


ENplus became a huge success: after 3 years 50% of EU production is certified

ENplus production and trade



Countries with ENplus certified producers



Key features of ENpus

- » Certification of production and trade
- » Only accredited certifying bodies
- » Auditor trainings and continued education
- » Test labs must be accredited
- » ENplus handbook states detailed requirements
- » Strict protection against fraud



Requirements for certification

- » Annual audit of the production plant
- » Audits of traders
- » Pellets must conform with EN14961-2
- » Requirements for documentary samples of all deliveries

Management of ENplus

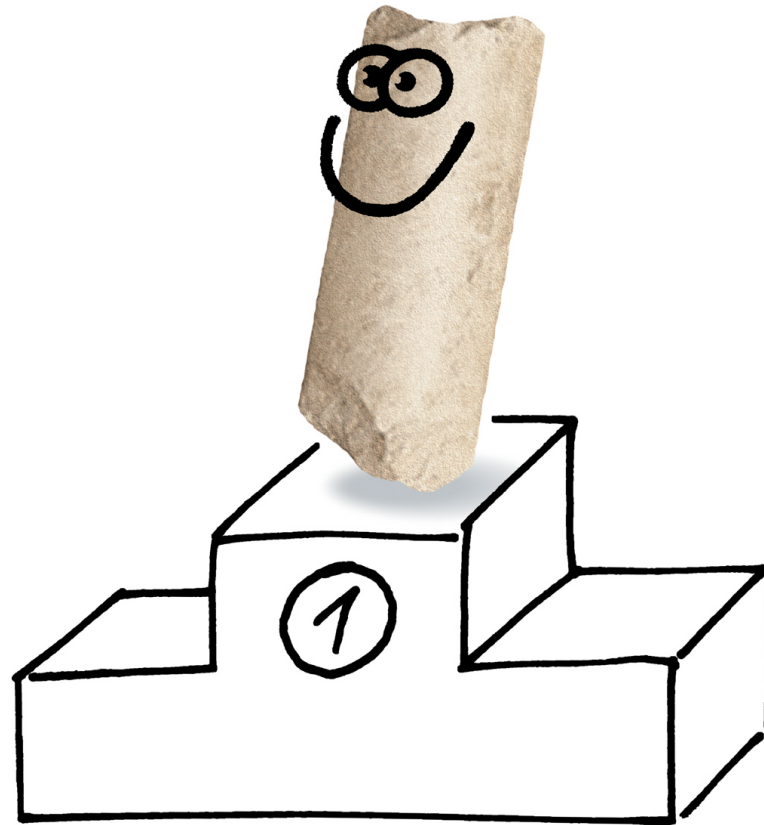
- » European Pellet Council: updates quality requirements of the handbook, organizes trainings for auditors, manages certification in countries without Pellet Association
- » National Pellet Associations: manage the scheme locally – promote it, follow up quality issues, protect the system against abuse

Why does the system work so effectively ?

- » Consumers and traders require certification
- » If producers abuse the system and produce e.g. contaminated product they immediately lose certification – big impact on business
- » System of storing samples of delivered product allow to trace back non conformities
- » It is fairly easy for an experienced auditor to tell if a plant is able to produce consistent quality

Next steps

- » Integration of sustainability criteria into the certification system – based on forest certification
- » Extension of the certification system to industrial pellets
- » Harmonized certification is improving tradeability of product – increased security of supply
- » **ISO standard for pellets is close to being completed – could be common base for US and European pellet markets! Lets try to establish harmonized certification!**



Thank you for your attention!