



European Pellet Market Update

Pellet Use for Heating

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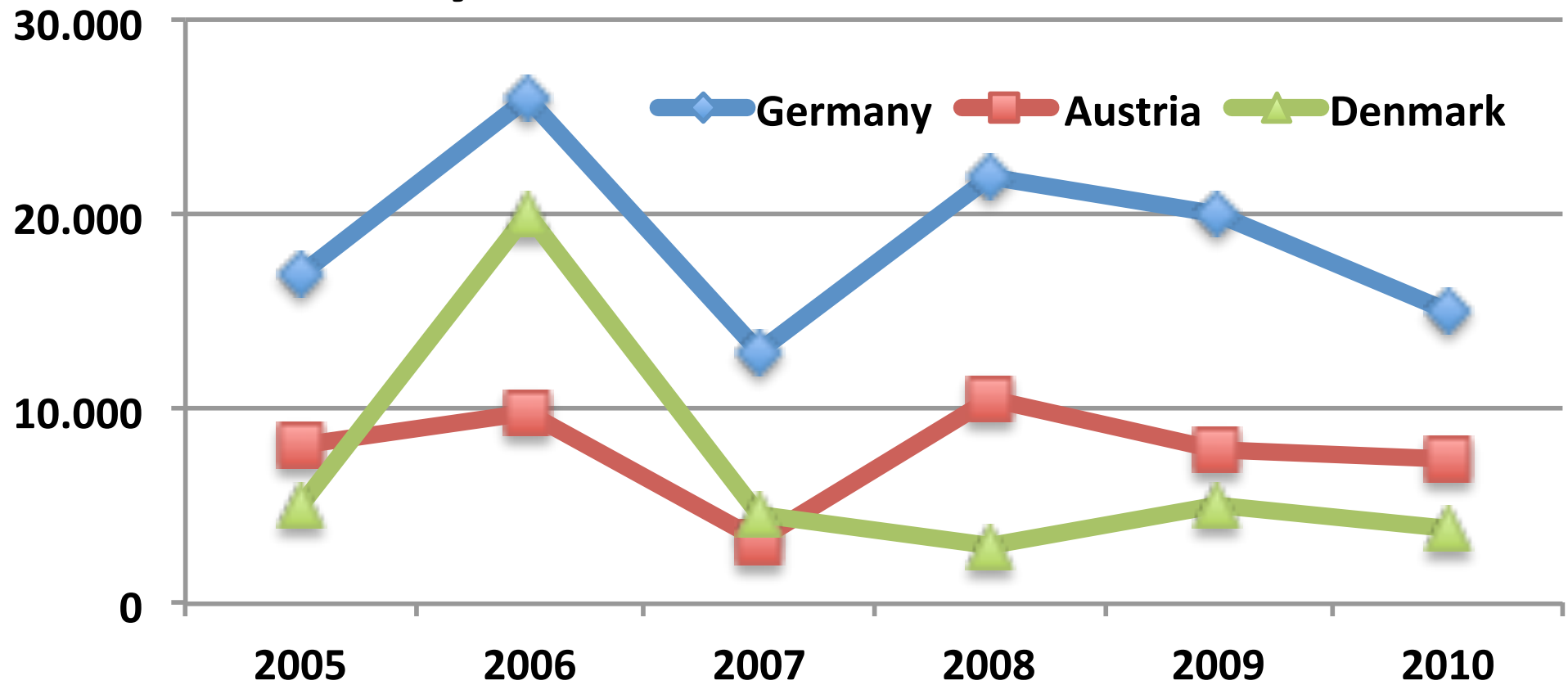
What is the European Pellet Council ?

- » International umbrella organization founded 2011
- » Legally part of AEBIOM, European Biomass Association
- » Members are national pellet associations including PFI, BTECH, USIPA and WPAC
- » Purpose: international networking, lobbying in Brussels, promotion of ENplus certification

European markets for heating with pellets are extremely diverse !

- » Markets in deliberate decline (e.g. small scale heating Sweden)
- » Booming markets (e.g. Greece!)
- » Markets dominated by stoves (e.g. Italy)
- » Markets dominated by furnaces (Germany, Austria)
- » Mixed markets (France, Spain, UK...)

Pellet boiler markets: Germany, Austria, Denmark



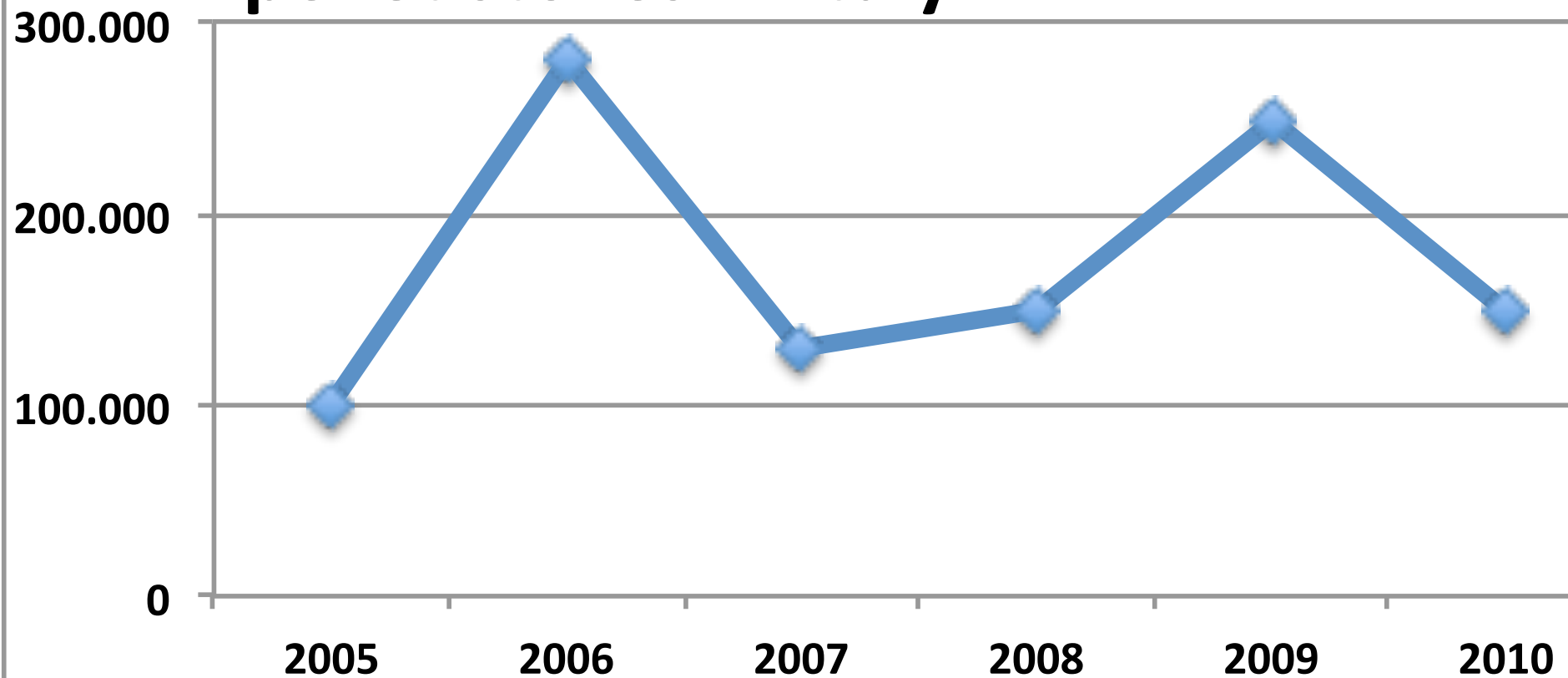
Source: European Pellet Council, 2011

Annually installed pellet boilers in the EU



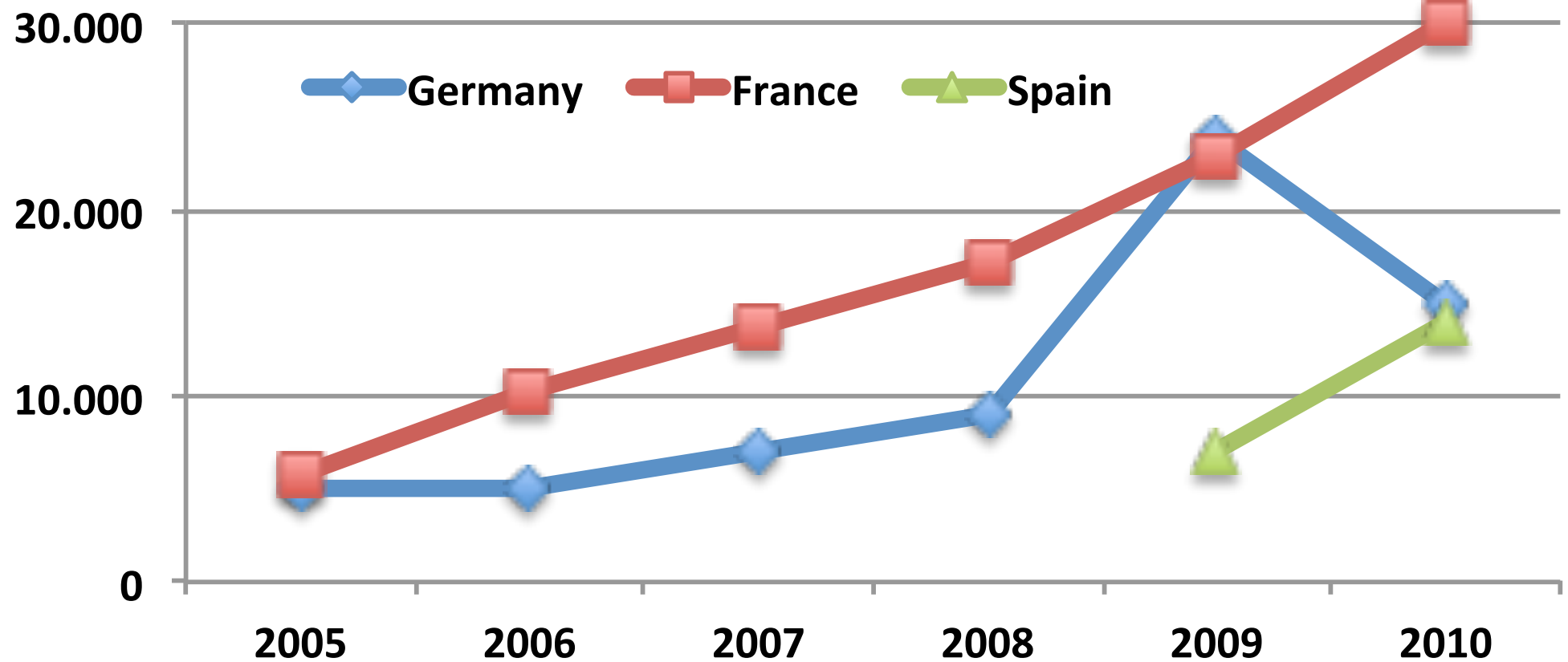
Source: European Pellet Council, 2011: This graph includes data from Austria, Belgium, Denmark, France, Finland, Germany, Ireland, Italy, Spain, Sweden and Switzerland

Annually sold pellet stoves in Italy



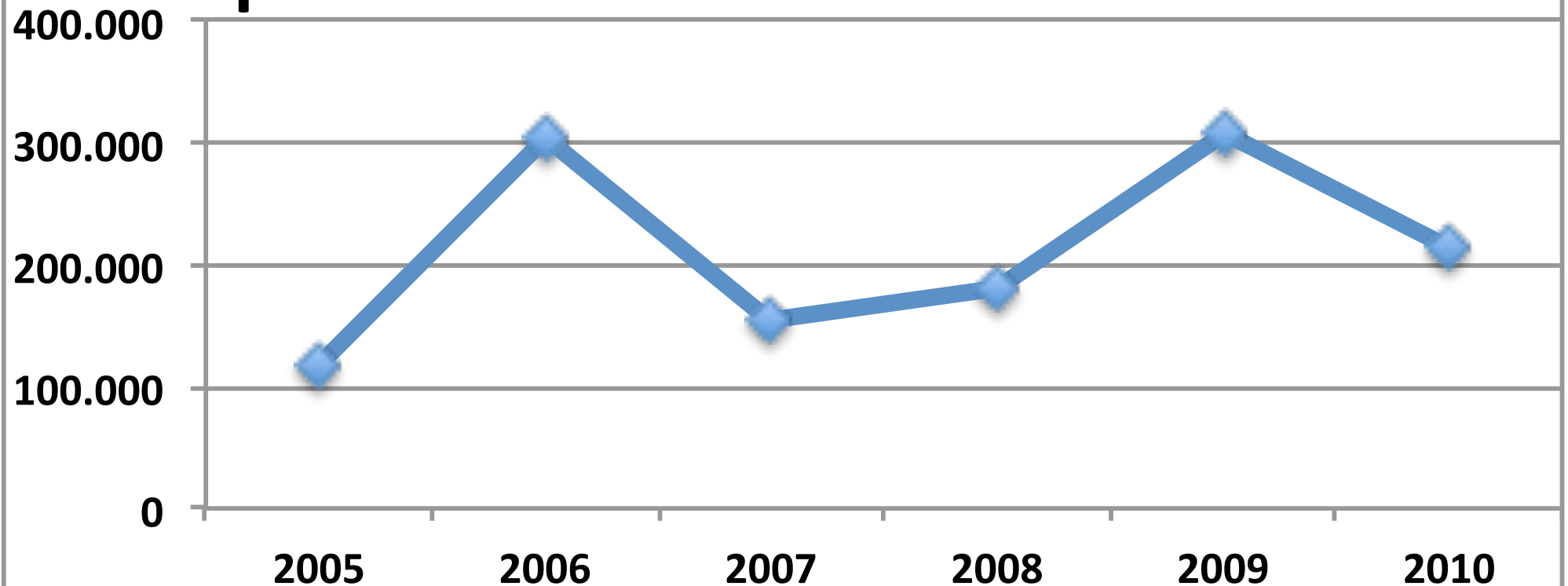
Source: European Pellet Council, 2011

Pellet Stoves: Germany, France and Spain



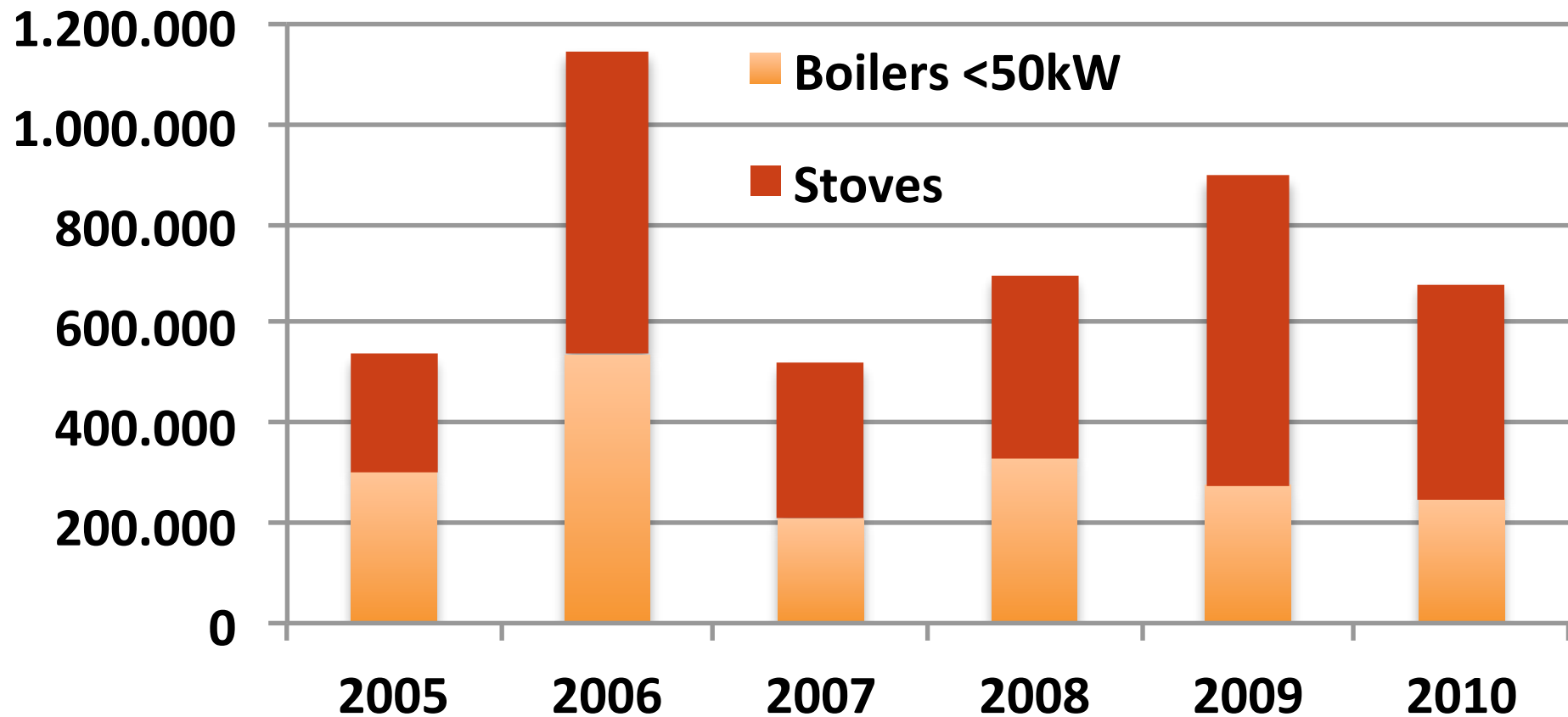
Source: European Pellet Council, 2011

Annually sold pellet stoves in the EU



Source: European Pellet Council, 2011: This graph includes data from Austria, Belgium, Denmark, France, Finland, Germany, Ireland, Italy, Spain, Sweden and Switzerland

Annual increase of pellet demand for domestic heating

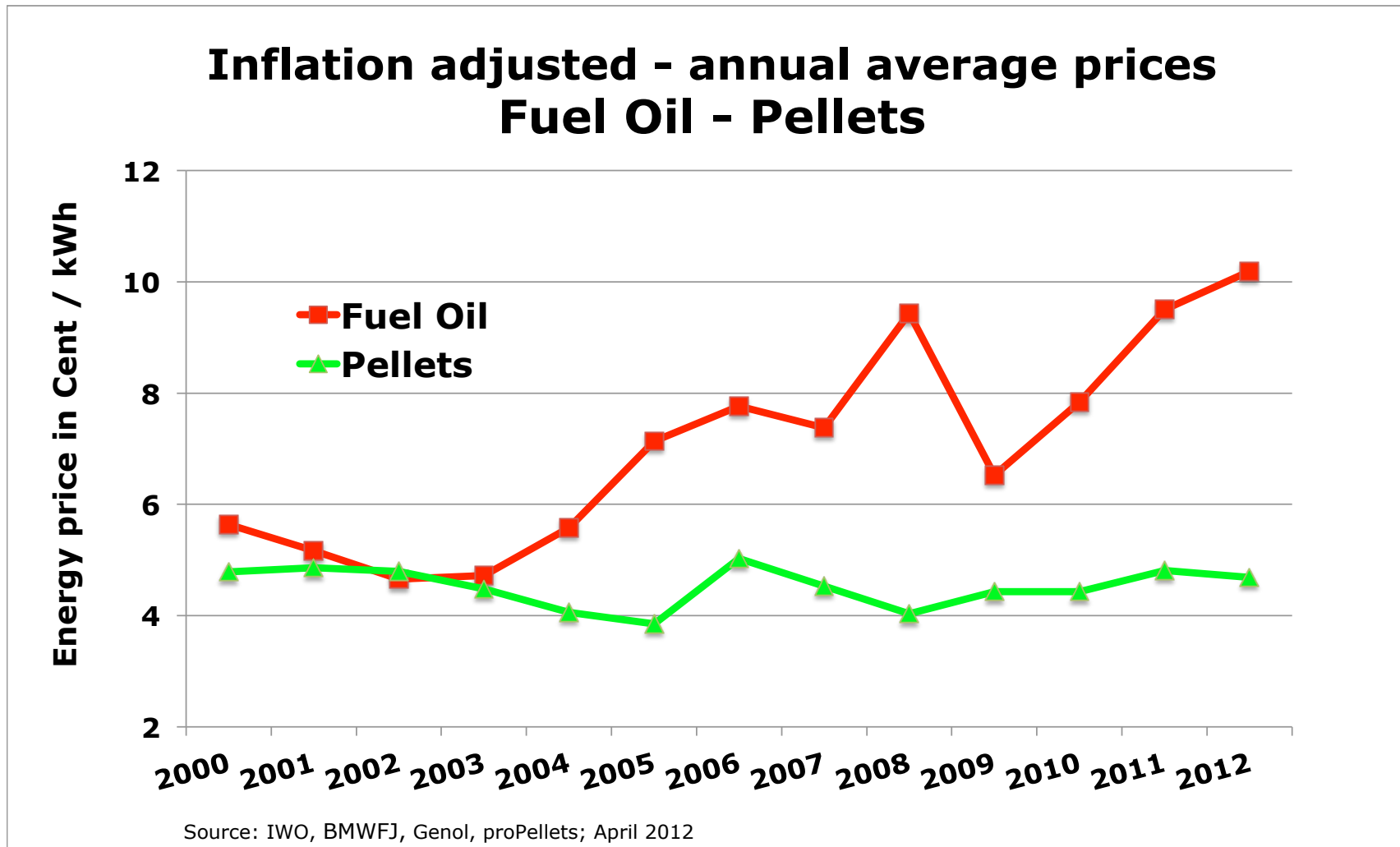


Source: European Pellet Council, 2011

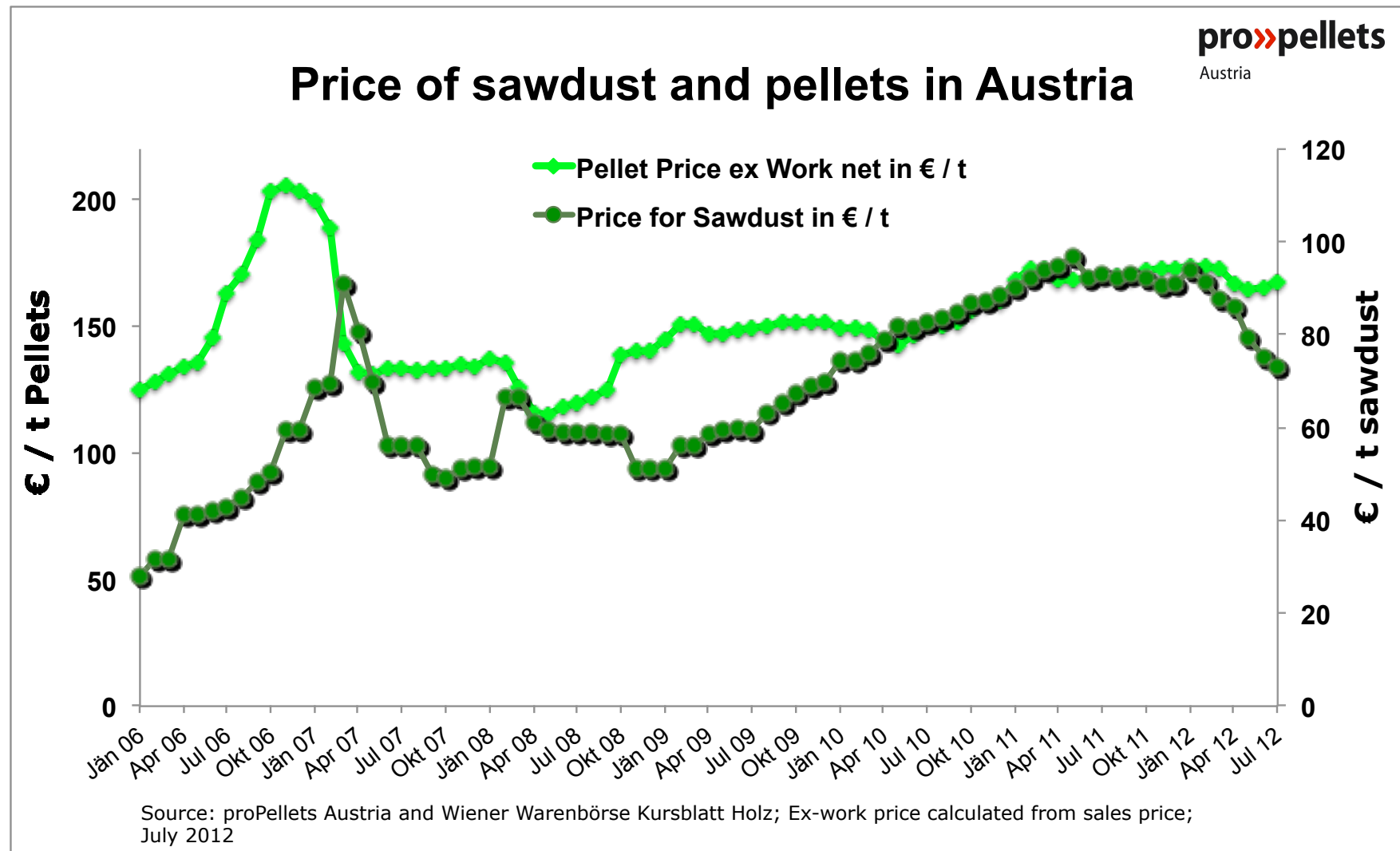
Development in the last two years

- » Renewed growth in some markets due to high oil prices: e.g. Germany, Austria (2012: + 30%)
- » Impacts of economic crisis: Italy (2012: -20% ?), Greece (sharp increase !)

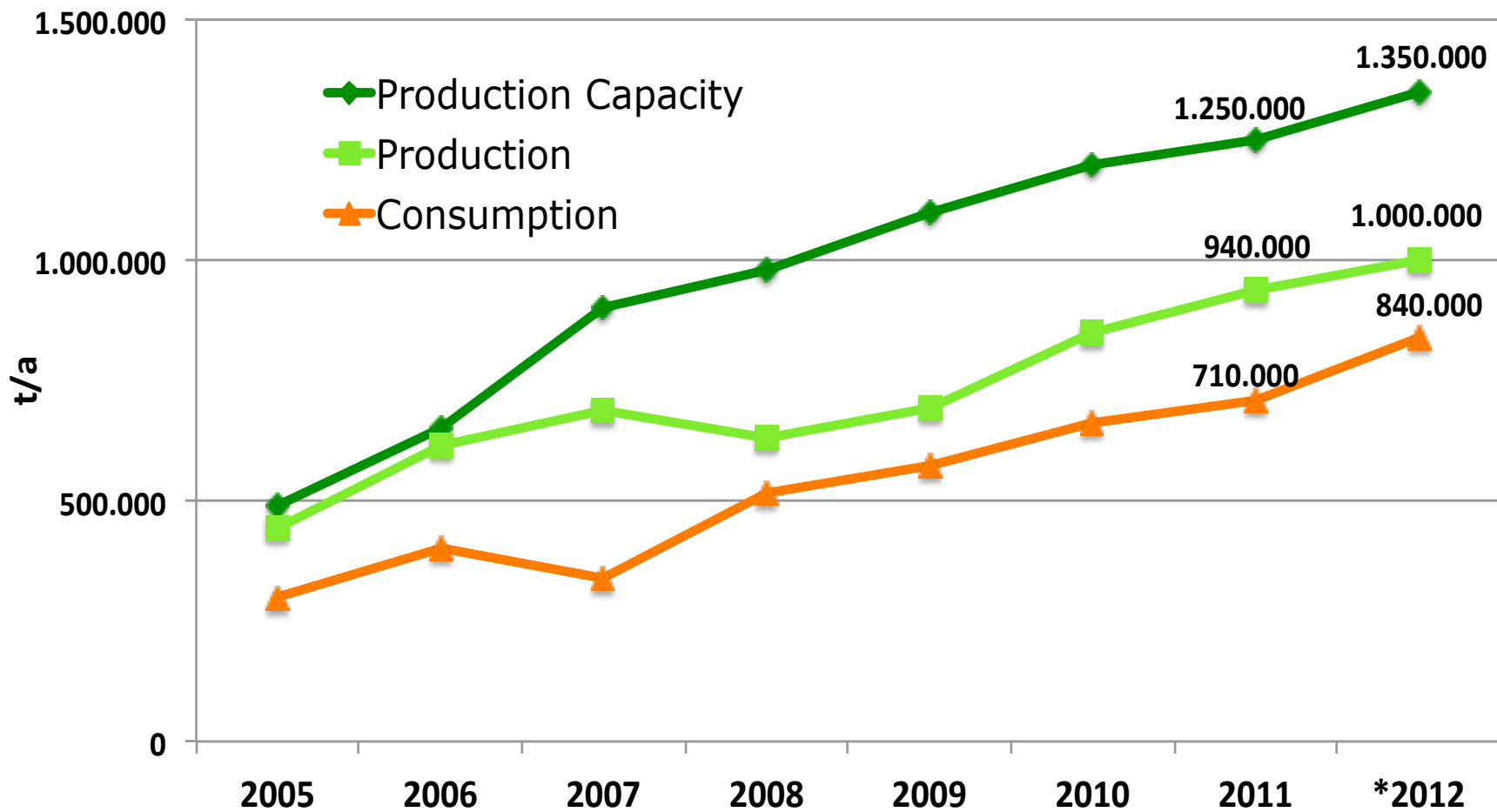
Good for consumers – difficult for producers: stable prices



Cost of raw material has increased significantly – declining revenues until recently



Pelletdata Austria: Production Capacity, Production und Consumption



Source: proPellets Austria; March 2012

Policy framework for pellet market development

- » Very positive at the EU level!
- » Binding targets for renewable energy use for every member state by 2020
- » Requirements based on net final final energy – **heat has equal value as electricity!**
- » Much cheaper option to achieve targets via heat
- » BUT: opportunity neglected by most policy makers!

Why do European policy makers always focus on electricity and do not pay attention to the heat market?

- » Popular misconception energy is about electricity
- » Electricity market can be addressed easily by regulation without affecting public budgets
- » Heat market is much more complex to deal with
- » Policies to develop renewable heat markets would need dedicated public budgets

Other issues for European Markets

- » Air pollution by fine dust is a widespread problem
- » Wood burning important source of fine dust
- » Low emissions of pellet equipment are not well known
- » Disinformation policy of heating oil lobby
- » Trend towards strict emission limits by regulatory bodies

**Technology development:
strong focus for most market participants!**

- » Constant improvements in emission performance
- » Air staging
- » Lambda sond & electronic air flow controll
- » Computational Fluid Dynamics simulations of combustion chamber
- » Air tight construction, balanced flue
- » Lowest dust emission values achieved: 0,4 g per hour

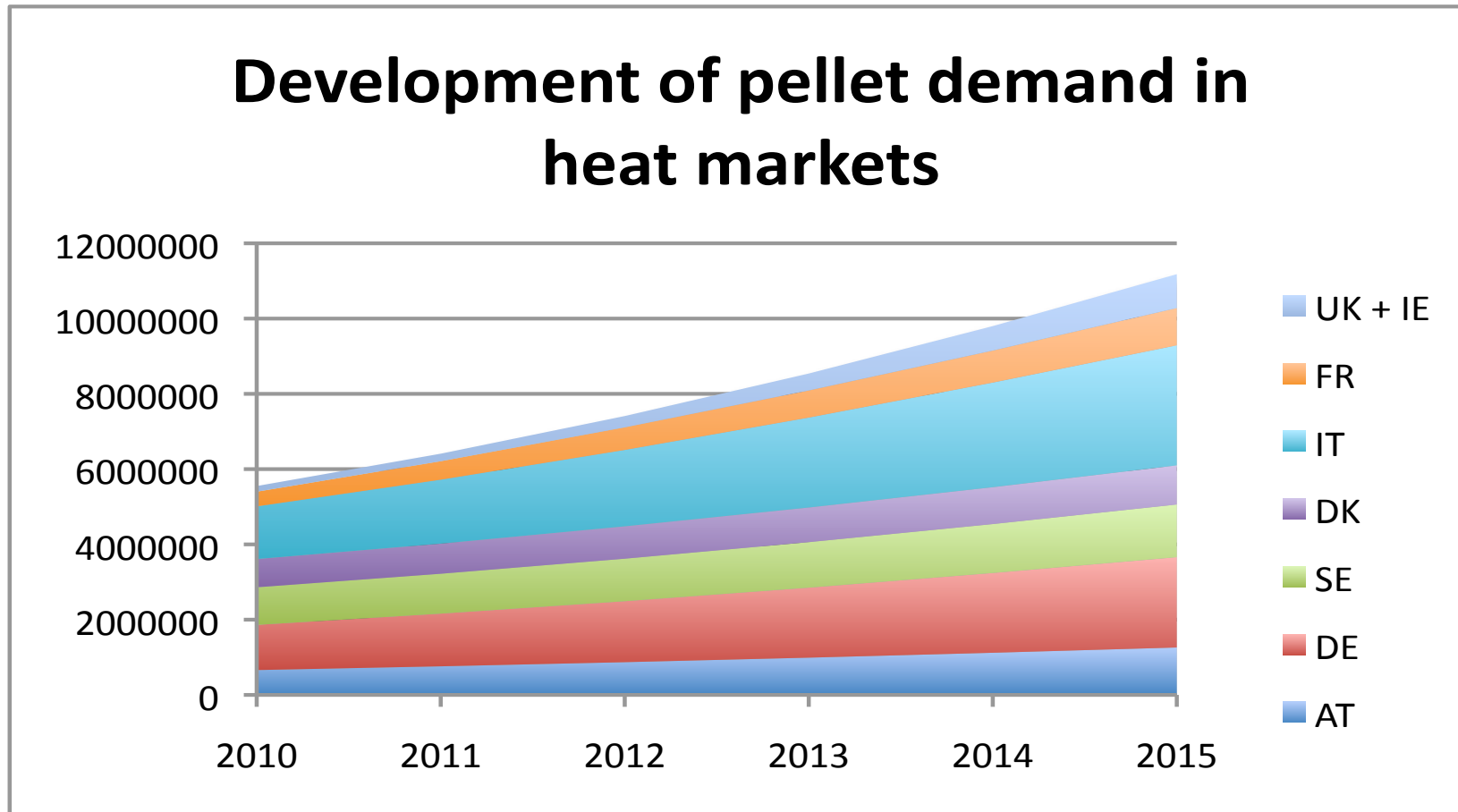
Pellet quality certification: ENplus becoming universal standard

- » 80% market penetration within 1-2 years in key markets (Germany, Austria)
- » Very successful in emerging markets: e.g. UK, Spain, Portugal
- » Unsuccessful only in Scandinavia
- » Next steps: extension to industrial pellets, inclusion of sustainability criteria

How does ENplus work ?

- » Based on EN 14961-2 standard
- » Upcoming ISO standard ISO/DIS 17225-2
- » 1 Audit per year, includes sampling and testing of pellets (1 full analysis per year)
- » Low technical costs
- » License fee of 10-20 cent/t paid to national pellet association

Where do we go from here? Projected pellet demand in a business as usual scenario

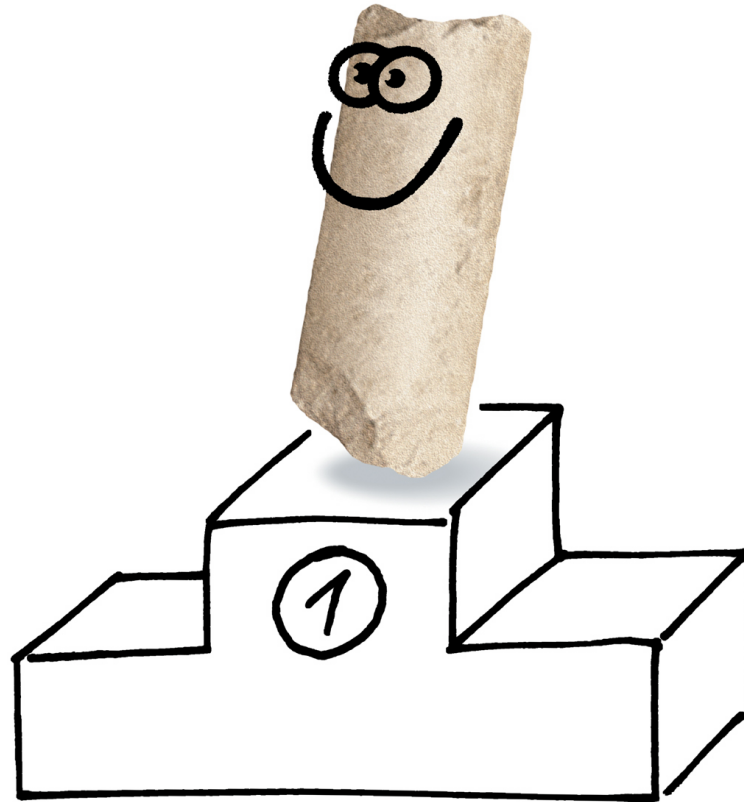


Estimated growth rate of boiler / stove sales: 10%, except UK: 40%

Source: proPellets, DEPV, AIEL, PIR, SNPGB, Force

Could we see a pellet boom in Europe?

- » YES ! Key driver is the oil price!
- » Payback time for commercial heating with pellets:
3-4 years
- » Savings of a household compared to heating oil:
up to 1500€ per year
- » If oil prices move further up there could be a land
slide effect!



Thank you for your attention!

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