

# **The bioenergy market in various parts of Europe**

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## **proPellets Austria**

- » Funded 2005, 59 companies are member
- » Pellet manufacturers
- » Stove & furnace manufacturers
- » Equipment suppliers
- » Companies active in the value chain
- » Investors

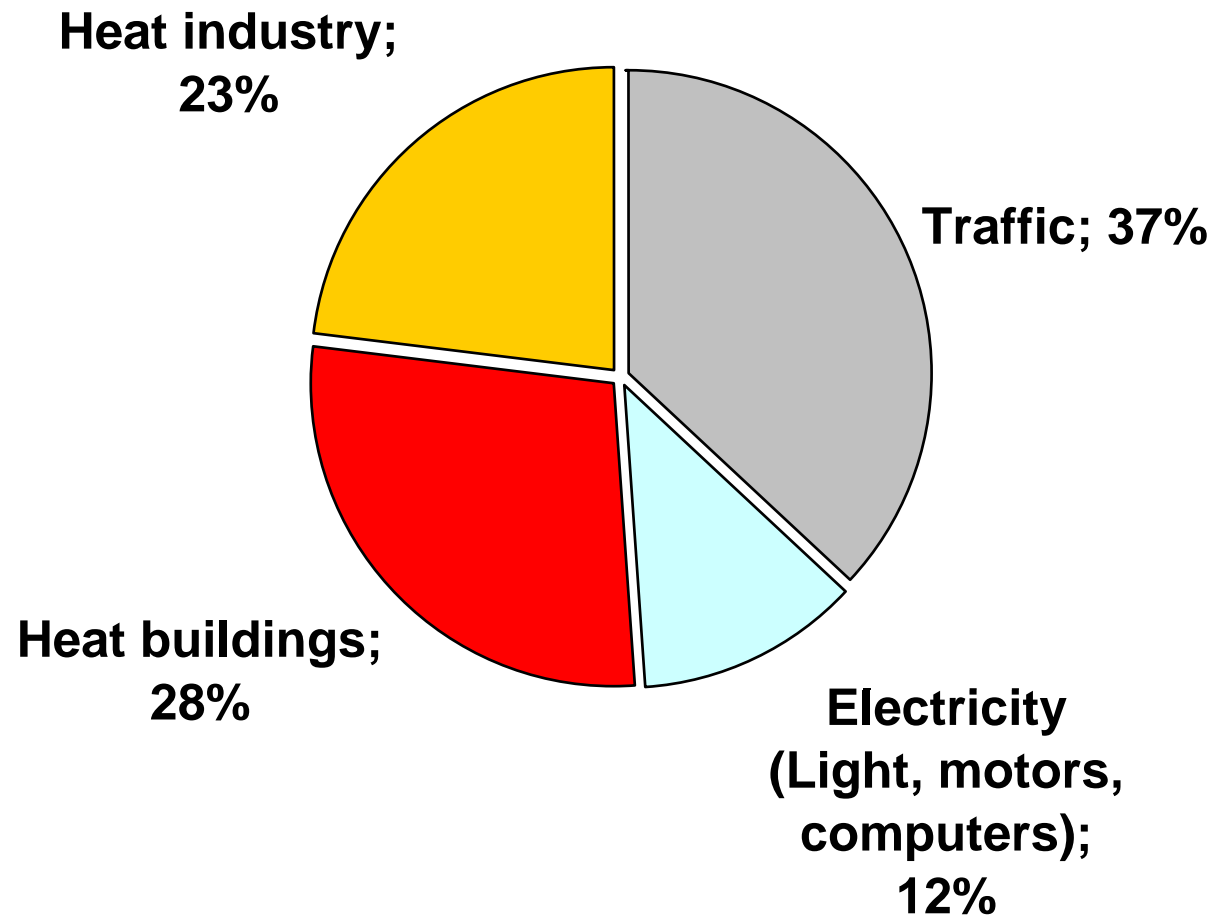
## Key activities

- » Public relations
- » Lobbying
- » Market monitoring
- » Networking with our members
- » International networking & facilitation of business contacts

## Focus of this presentation

- »» Use of bioenergy for heat production
- »» Use of upgraded biomass - pellets

## The heat market is the largest energy market



Final energy use in Austria, Statistik Austria 2009

Using biomass for heat is more economic and effective than for producing electricity only

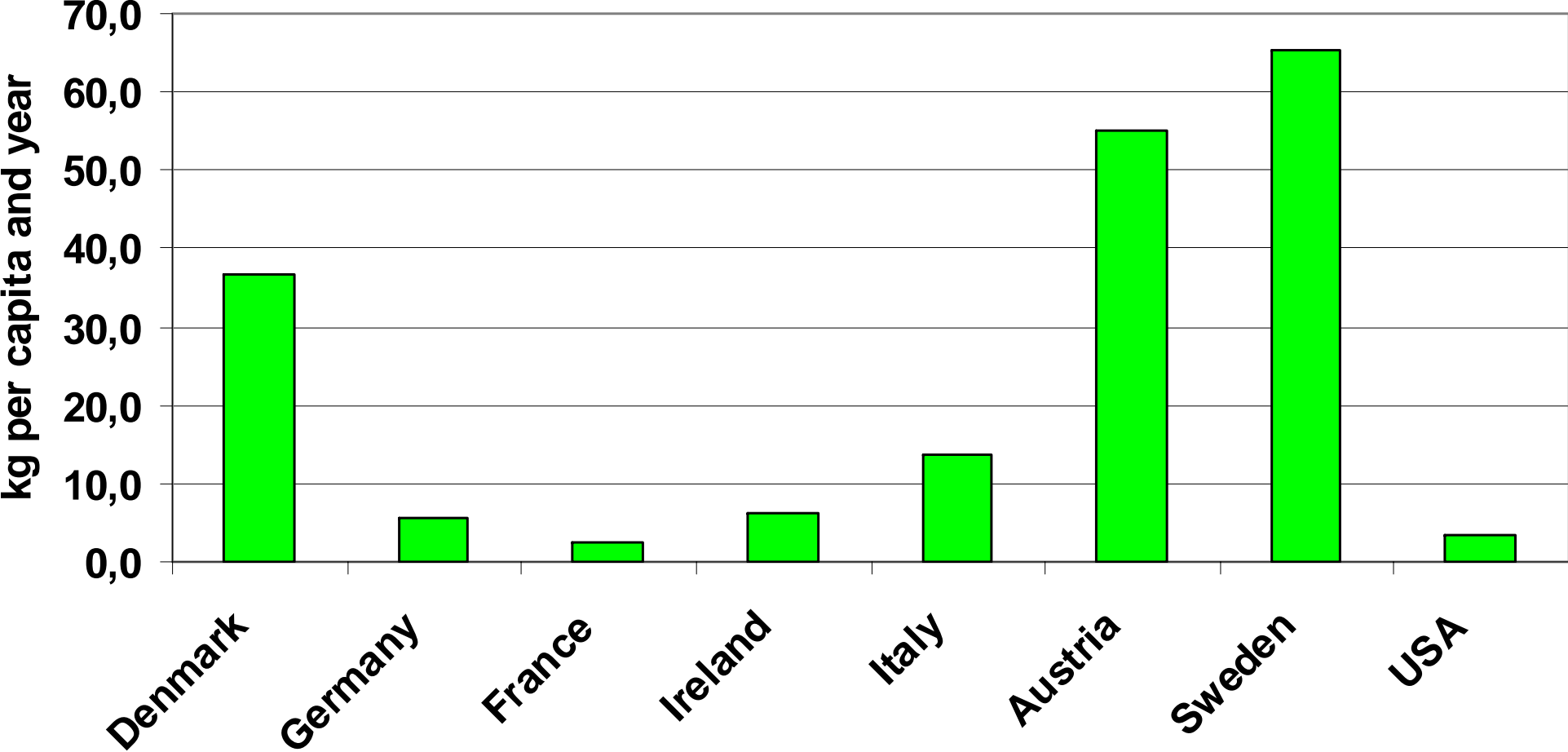
<b>using 100.000t of pellets over 15 years</b>	<b>residential heating ( stoves)</b>	<b>power production (cofiring)</b>
<b>No. of units</b>	<b>50.000</b>	<b>1</b>
<b>subsidy type</b>	<b>50% of investment, 1000€/unit</b>	<b>6 cent/kWh</b>
<b>subsidy required</b>	<b>50 Million €</b>	<b>176 Million €</b>
<b>savings for consumer (15 years)</b>	<b>191 Million €</b>	<b>0</b>
<b>gross final energy supplied</b>	<b>7.350 GWh</b>	<b>2.940 GWh</b>

**But it is much easier to organise 1 power plant to use pellets than 50.000 consumers to buy pellet stoves**

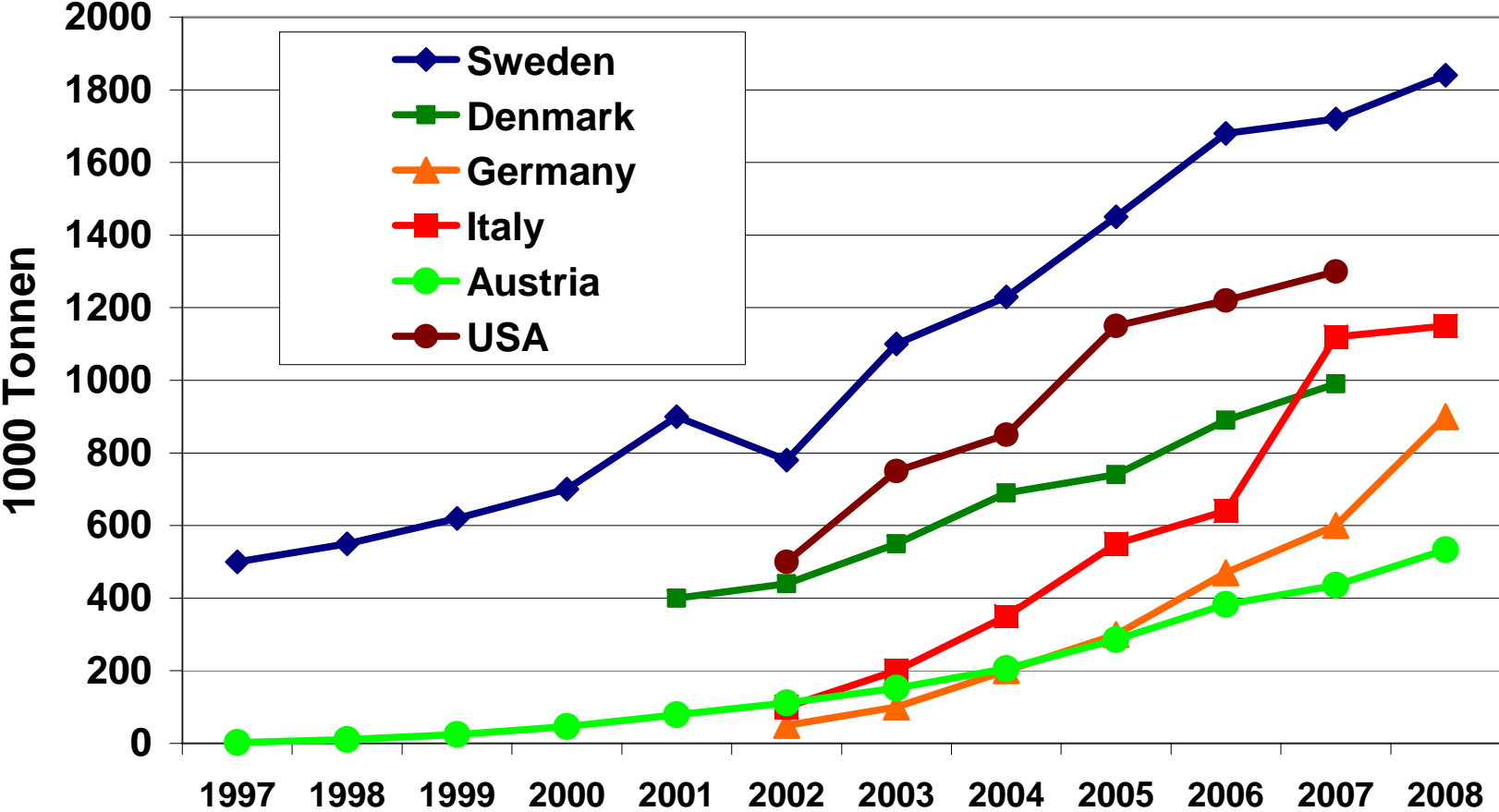
## European markets for bioenergy show a great variety

- » Types of technologies used
- » Stage of development
- » Policy framework
- » Intensity of bioenergy use

**per capita use of pellets as fuel  
for residential heating**

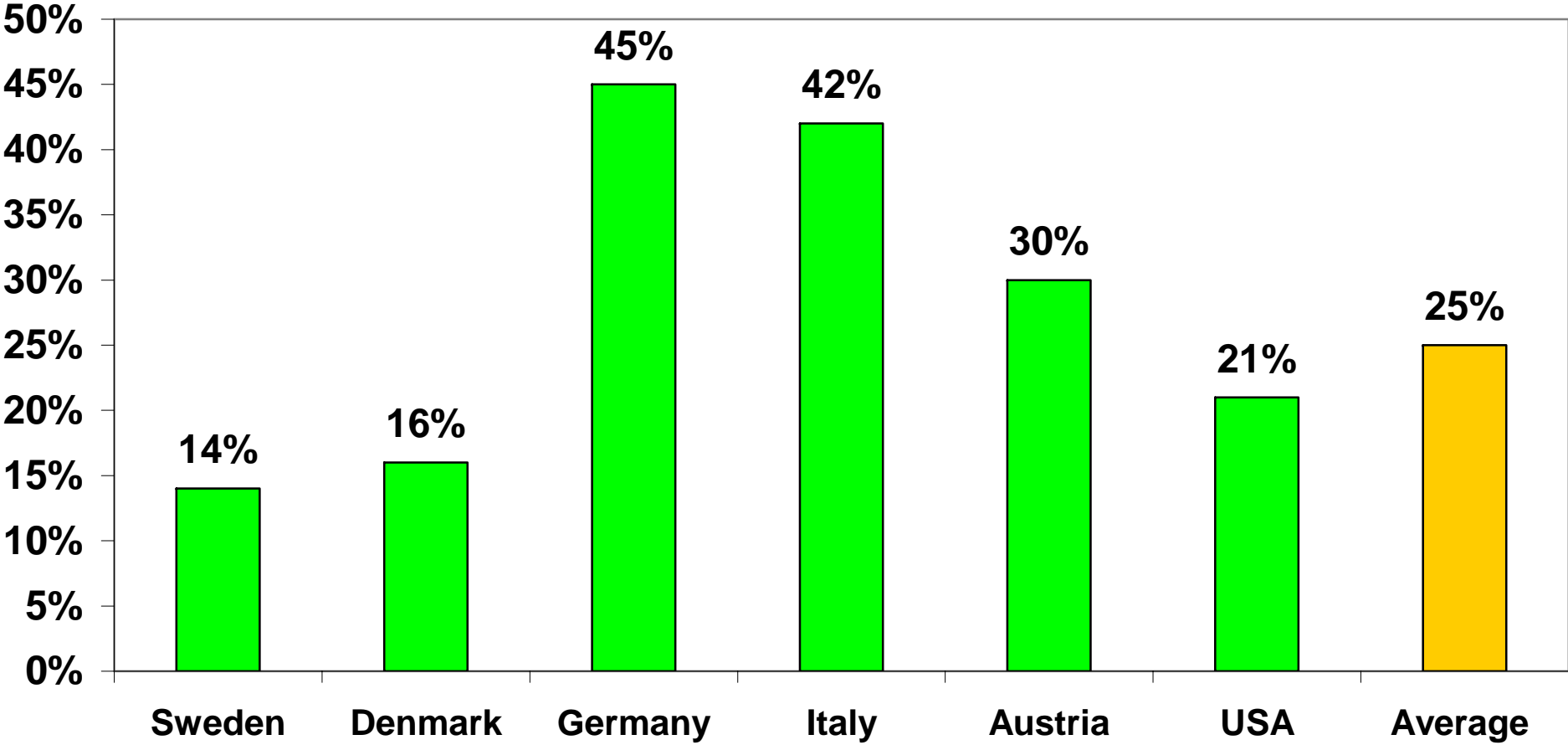


# Pellet demand in the most important markets



Quellen. PIR, FORCE, DEPV, AIEL, proPellets 2009

**Average growth rate of pellet demand**



Quellen. PIR, FORCE, DEPV, AIEL, proPellets 2009

**Anually sold number of domestic pellet heating systems (2008)**

- » Italy: 170.000 pellet stoves
- » USA: 140.000 pellet stoves
- » Germany: 22.000 pellet boilers
- » Austria: 11.000 pellet boilers

## Most commonly used in Sweden: pellet burners

- » Used to retrofit for existing oil boilers
- » Wide range of power
- » Low costs
- » High maintenance requirement
- » Lower efficiency



## Austria: dedicated pellet boilers

- » automatic fuel feeding, ignition and cleaning of heat exchangers
- » Ash removal 1-4 times per heating season
- » > 90% efficiency & extremely low emissions
- » High costs (10.000€)



## State of the art pellet stove with backboiler

- » Hot water for central heating & tap water
- » Automatic cleaning of heat exchangers
- » Automatic ash densification
- » Automatic fuel feed from bulk storage
- » 94% efficiency,



## Italy: Pellet stoves – room heaters

- » Automatic operation
- » Electric ignition
- » Continuous heat
- » Can have high efficiency
- » Relatively low investment (approx. 2000€)



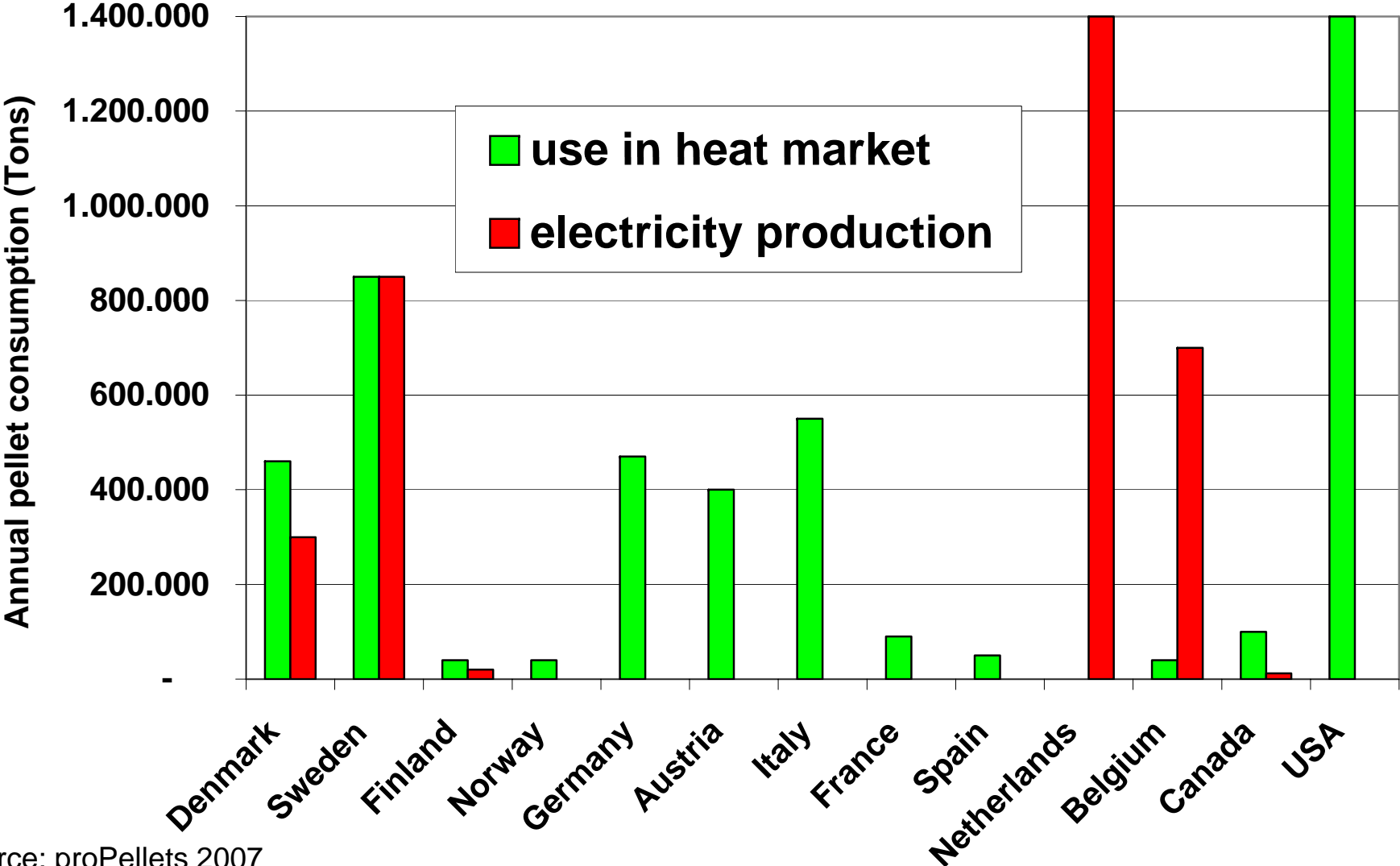
**Technologies for commercial and industrial use:  
Scandinavia, Germany, Austria**

**Boilers for  
commercial use: up  
to 1000 kW**

**Pellets are also  
used in coal fired  
power plants > 1000  
MW to replace part  
of the coal**



# Pellet markets for heat and power



Source: proPellets 2007

## What can we learn from this variety ?

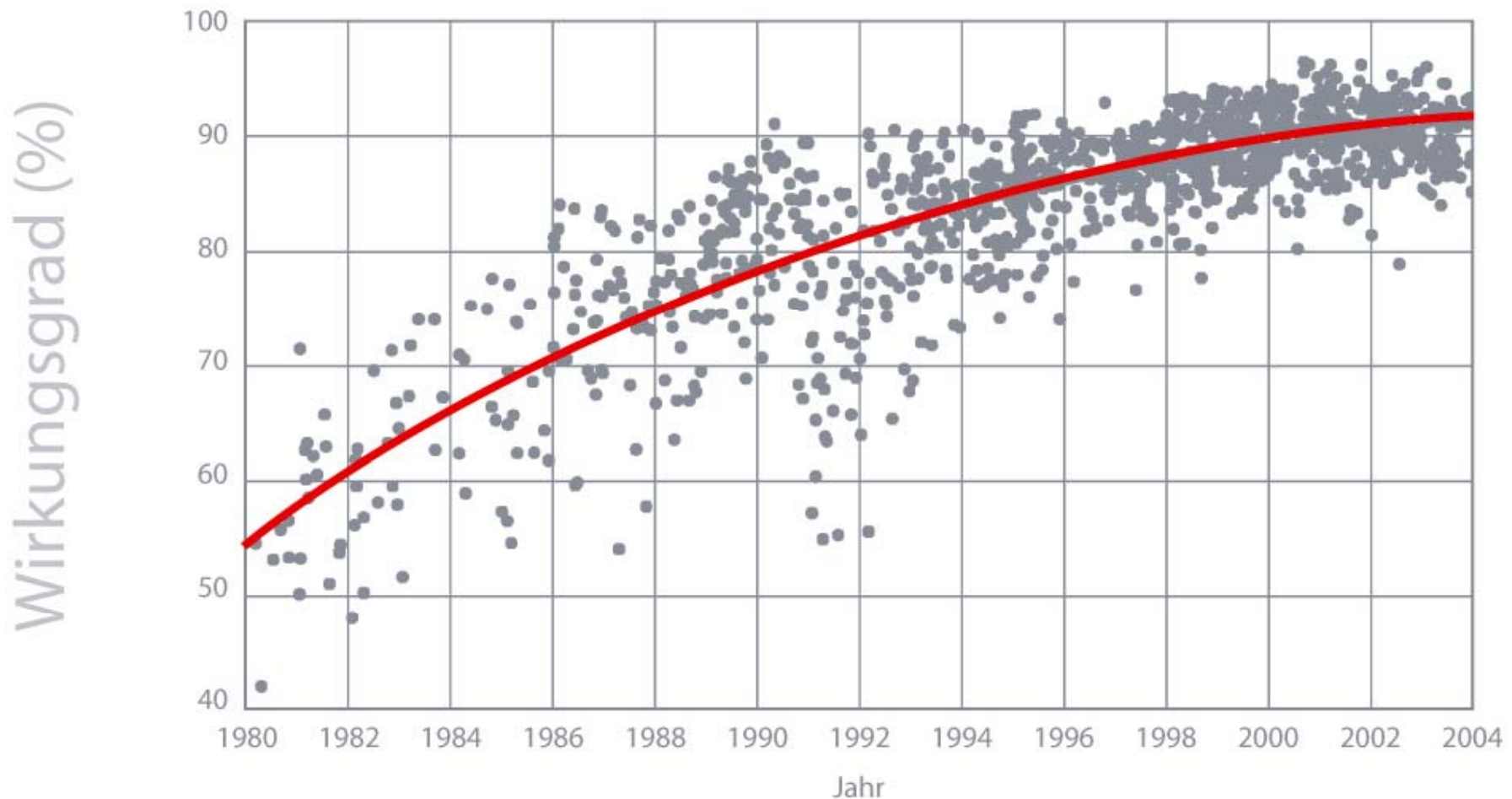
- » Policy matters
- » Bioenergy use needs to adapt to local climate, heating habits etc.
- » The market potential is very large – in all markets

**Critical issues for realising this  
large market potential**

## A lot of learning has to take place

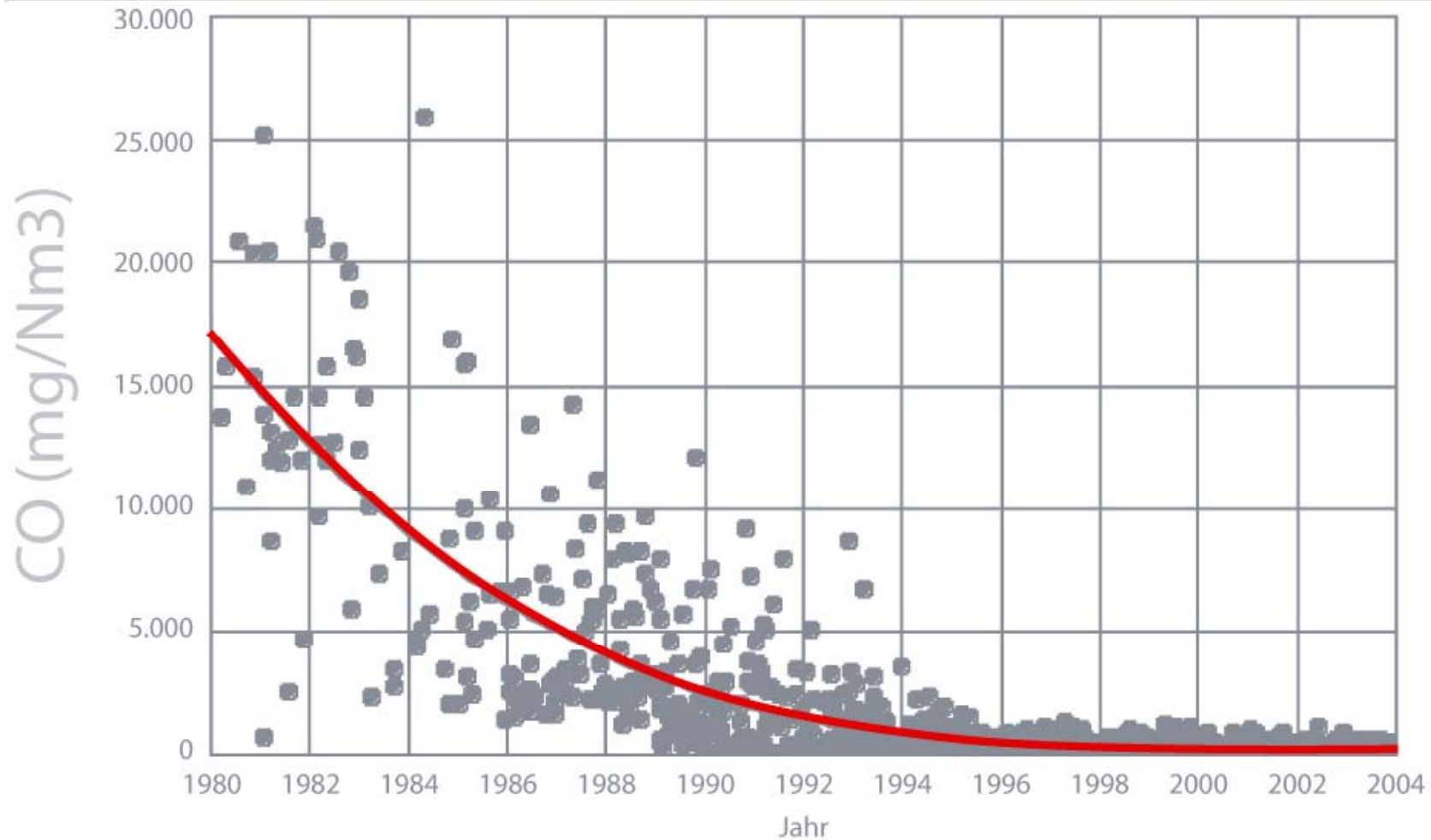
- » Technology development
- » related services: installers, architects, planners

Average efficiency of wood boilers in Austria increased from 50% in 1980 to 93% in 2004



Wirkungsgrad von österreichischen Holzfeuerungen gemessen an der Bundesanstalt für Landtechnik Wieselburg (BLT), 2005

## Emissions from wood boilers – down by a factor of 1000



Entwicklung der Emissionen von österreichischen Holzfeuerungen, gemessen an der Bundesanstalt für Landtechnik Wieselburg (BLT), 2005

## Observations regarding learning

- » **Learning takes time**
- » Fundamental reason for cooperation across the atlantic!
- » **Learning needs feedback**
- » R&D adressing quality problems
- » tests by consumer protection organisations

**» If a new technology is introduced many actors have to learn**

- Installers
- Planners
- Architects
- Home builders
- Policy makers
- Journalists
- .....

## Quality is critical over the entire chain of services

- » Consumers expect quality, reliability & comfort
- » pellet production: clear standards, effective certification systems
- » Delivery
- » Storage
- » Combustion & ash management
- » Heat distribution & control

## Supply security – another fundamental issue

- » Lack of feeling of responsibility
- » prisoners dilemma
- » can industry manage secure supply or is public intervention needed?
- » raw material constraints

## Communication

- » Dilemma of critical mass
- » important role of cooperation
- » active branch organisations

## Conclusions

- » Pellet use for heating offers very exciting business opportunities
- » The market for replacing fuel oil for heating is vast
- » The complexities of developing this market are considerable
- » The best chances for developing this market can be created by a commitment to work together and make it happen!

**Thank you for your attention !**

Wir sind

**pro»pellets**