

# Charting a Course to Energy Independence

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## Renewables and Energy Efficiency in the European Union and Austria

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# The Austrian Energy Agency in a nutshell



- Austria's national energy agency (\*1977)
- 90 employees, 8 Million € annual turnover, 50 members
- Independent Think Tank:  
from basic decision-making to implementation
- competence centre for energy, especially renewables and energy efficiency
- national, EU & international projects



# The European Union



- 27 member states
- 500 million citizens
- 3,7 toe/capita
- 9,2 t CO<sub>2</sub>/capita

## Austria

- 8,3 million citizens
- 4,1 toe/capita
- 8,8 t CO<sub>2</sub>/capita
- 0,34 kg CO<sub>2</sub>/2000\$

## US

- 300 million citizens
- 7,7 toe/capita
- 19 t CO<sub>2</sub>/capita
- 0,51 kg CO<sub>2</sub>/2000\$

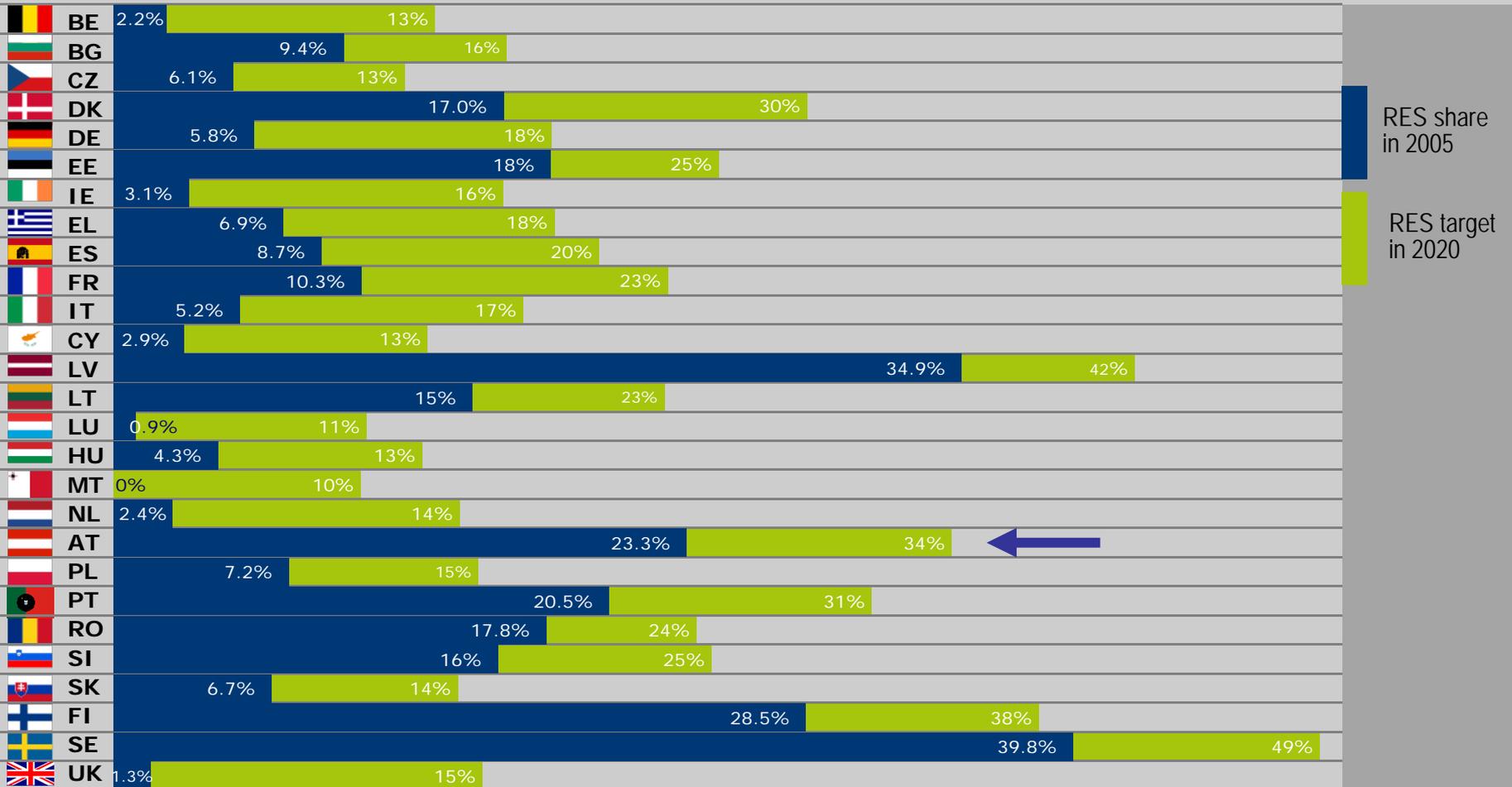


# European policy targets

- **20%** reduction of greenhouse gas emissions by 2020
- **20%** share of renewable energy by 2020 compared to about 9% today
- **20%** savings in “business as usual” primary energy consumption by 2020
- 10% share of bio-fuels in transport fuels by 2020



# Target sharing for 20% renewable energy



Quelle: Europäische Kommission  
2008; AWO 2008



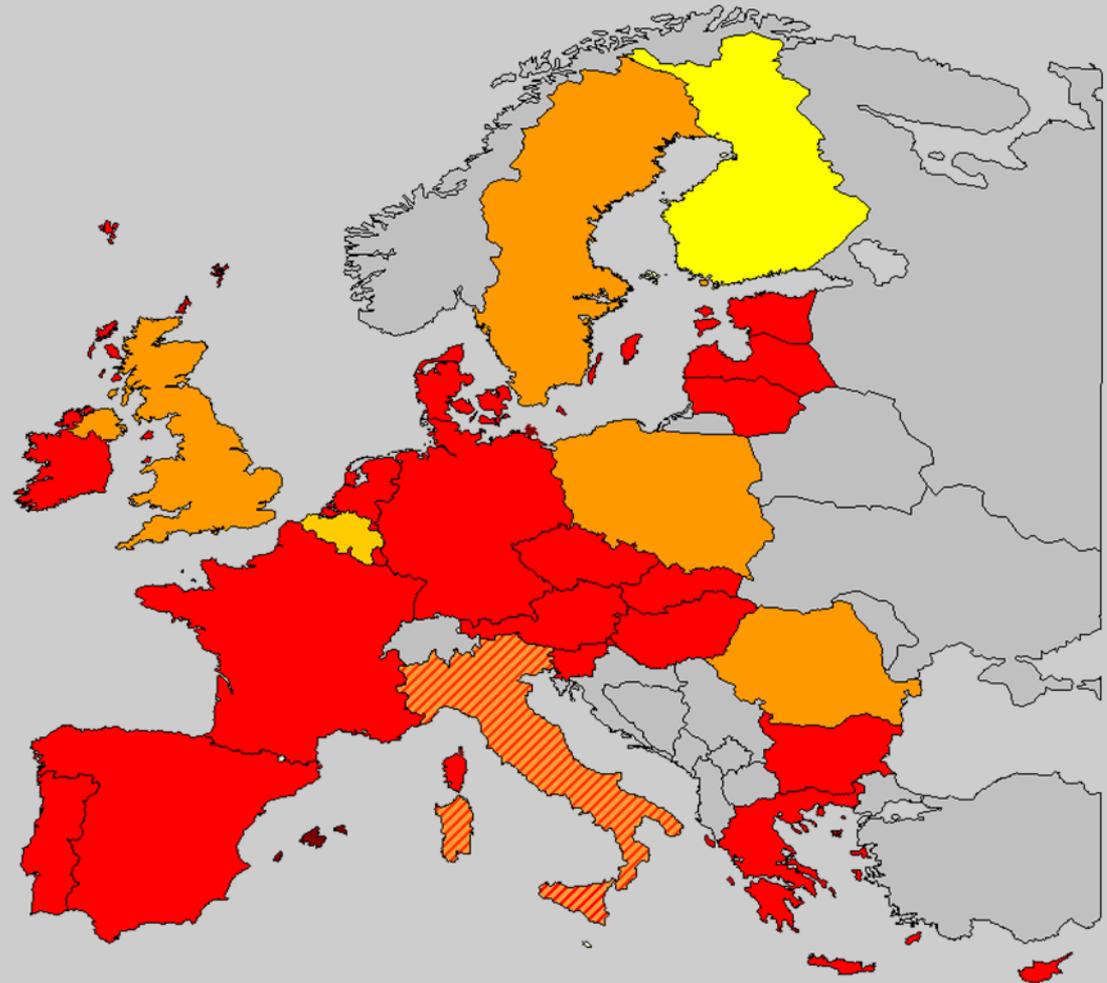
# Policy mix to achieve targets (1)

- CO2: mainly through emission trading system
  - ☐ covers 11.000 heavy energy consuming installations
- Renewables: binding targets for “effort sharing” of member states, renewable action plan
  - ☐ in the past main focus on eco-electricity (indicative targets) and biofuels
  - ☐ support with feed-in tariffs or quota/tradable green certificates



# Support mechanisms for eco-electricity

	<b>Tax incentives/ Investment grants</b>
	<b>Quota obligation with Tradable Green Certificates</b>
	<b>Feed- in tariffs</b>



Source: EWEA 2008

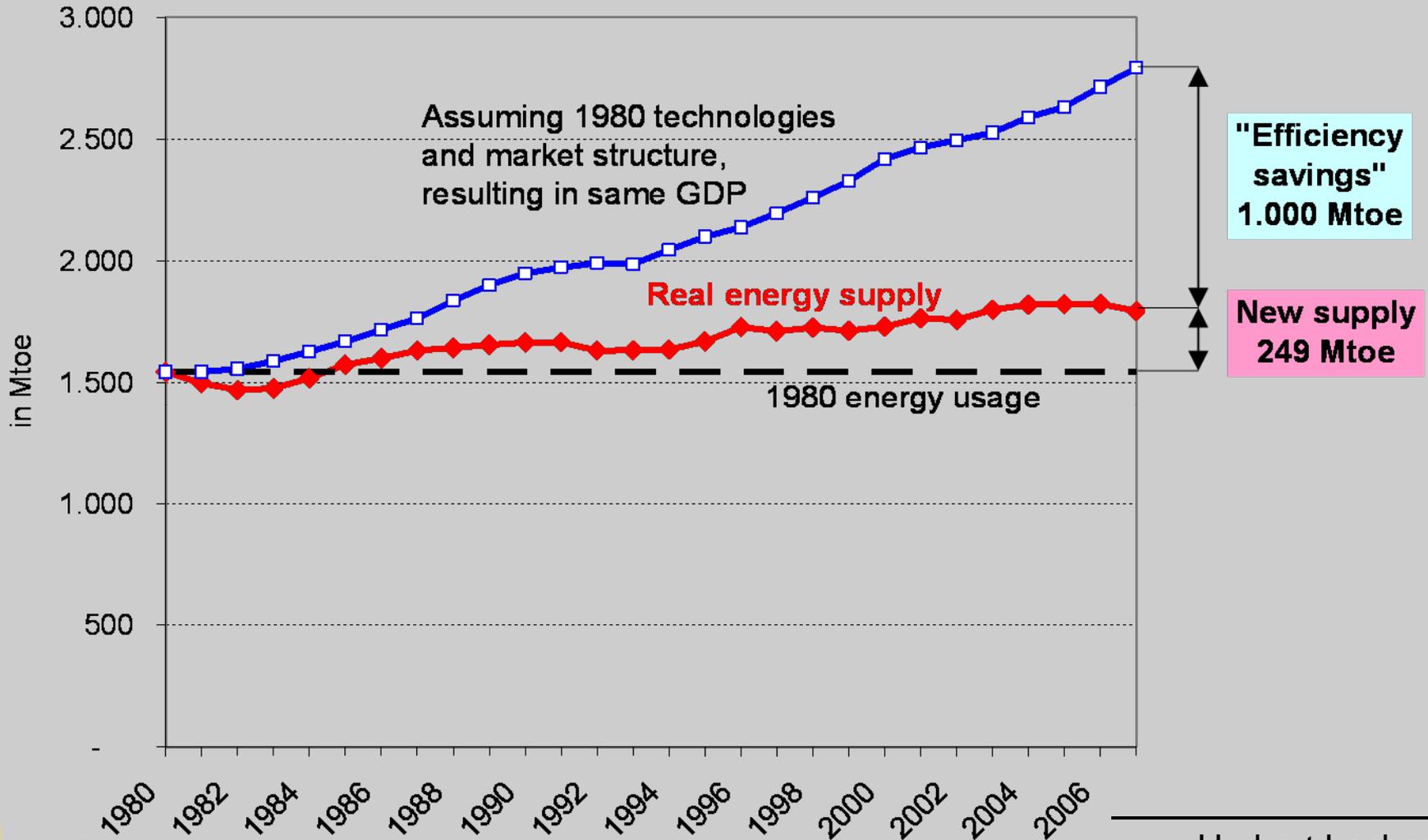


## Policy mix to achieve targets (2)

- Energy efficiency (directive)
  - ☐ indicative national targets, energy efficiency action plans (-9% until 2016)
  - ☐ several directives concerning
    - labelling
    - eco-design, requirements for boilers, lighting, ...
    - buildings (certificate)
    - combined heat & power
  - ☐ in few countries tradable white certificates
- multiple policies and market conditions

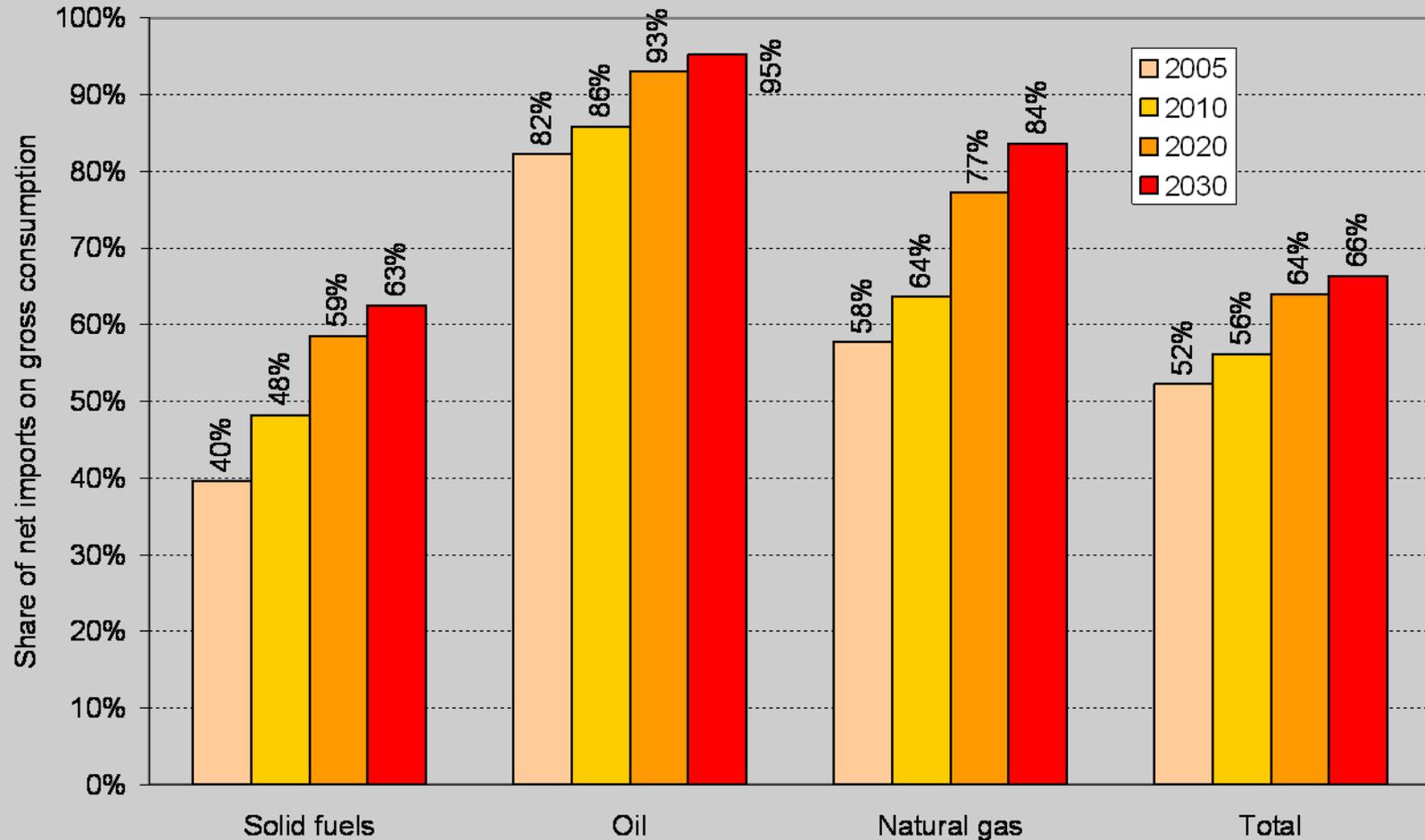


# The "efficiency contribution" in EU-27





# Energy security – an issue of common EU concern



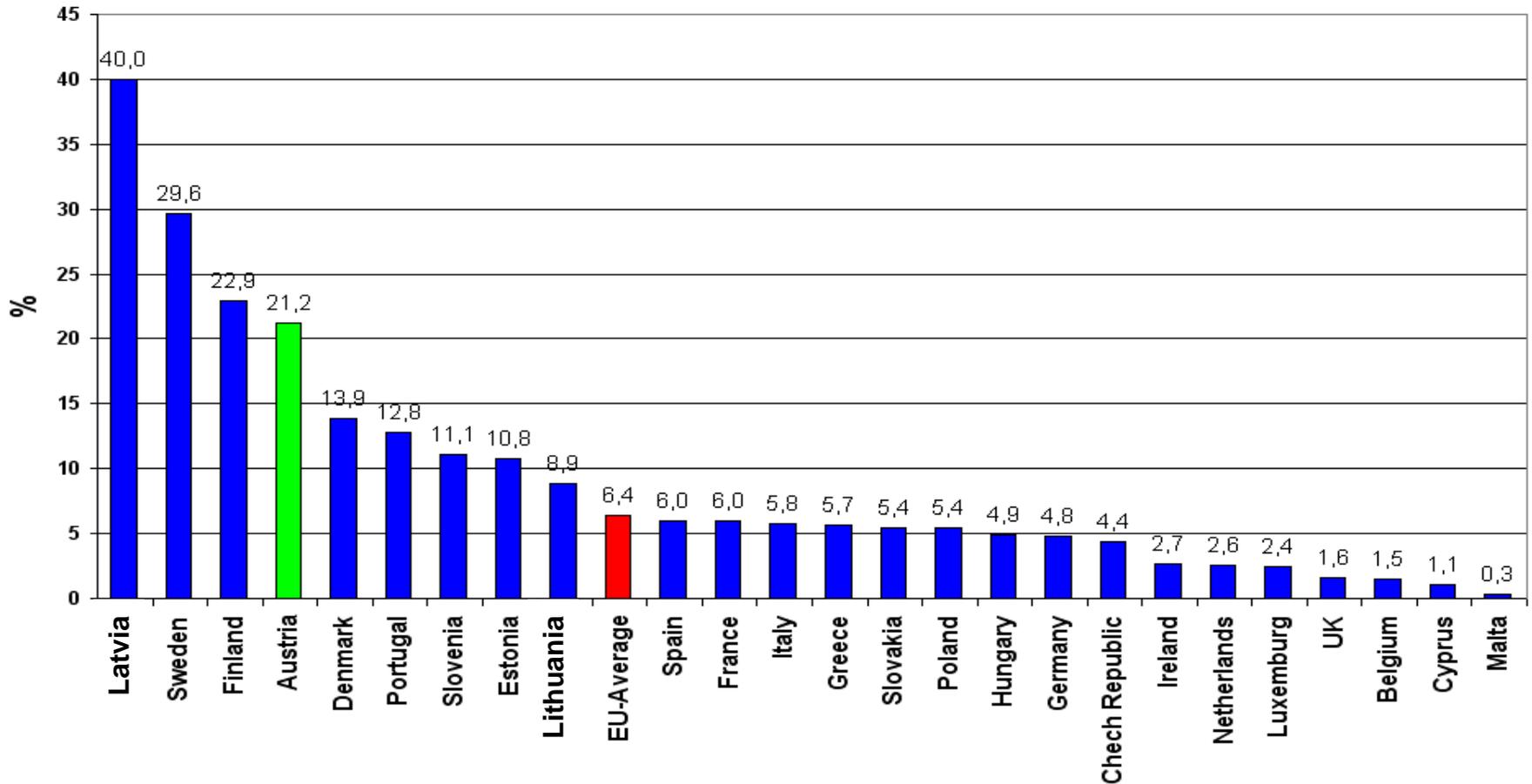


# EU - Energy security and solidarity action plan

- Infrastructure needs and the diversification of energy supplies
- External energy relations
- Oil & gas stocks and crisis response mechanism
- **Energy efficiency**
- Making the best use of EU's indigenous / **renewable resources**
- Vision 2050: high efficiency – low carbon

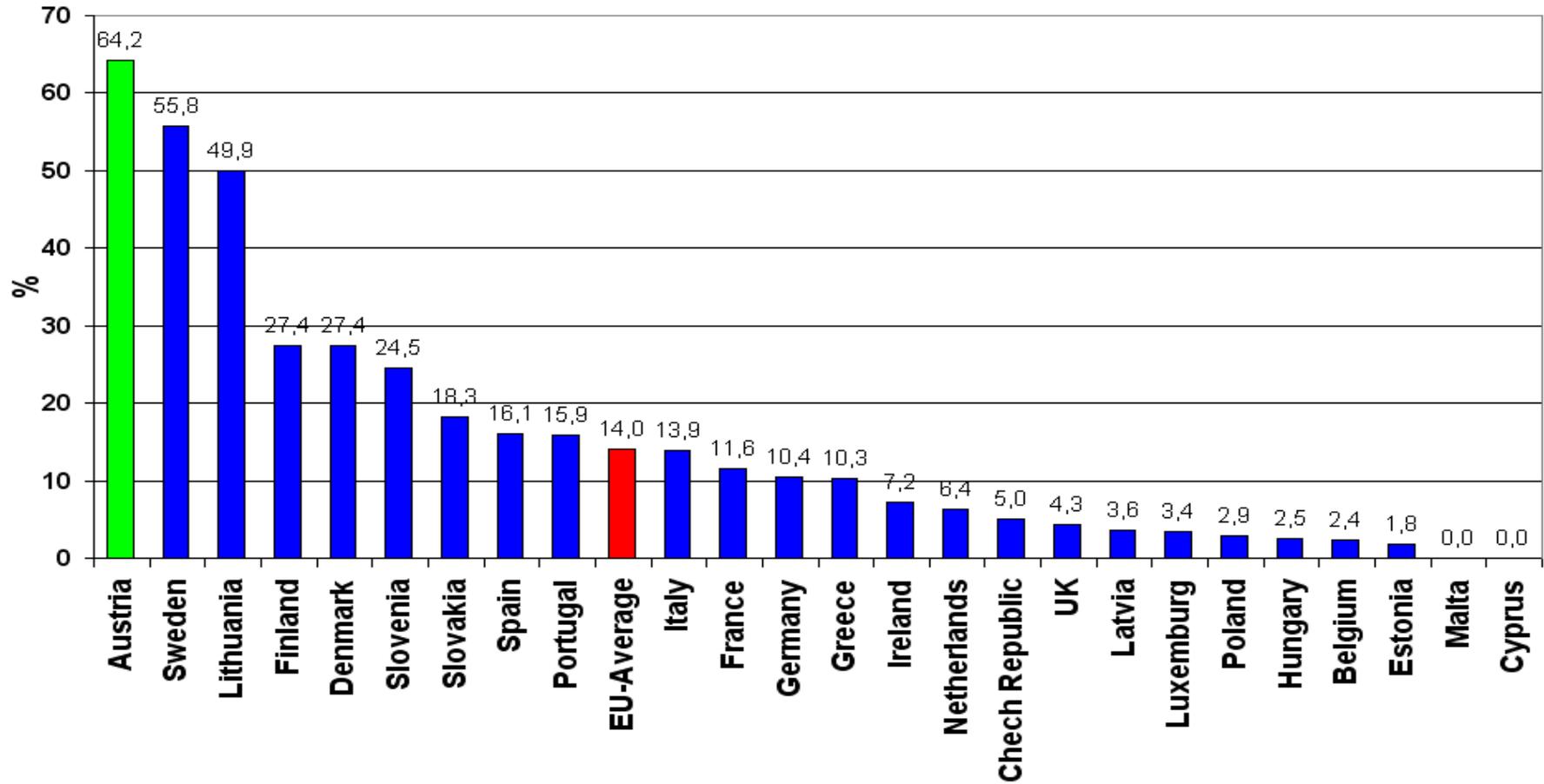


# Austria ranks fourth in share of renewables ...



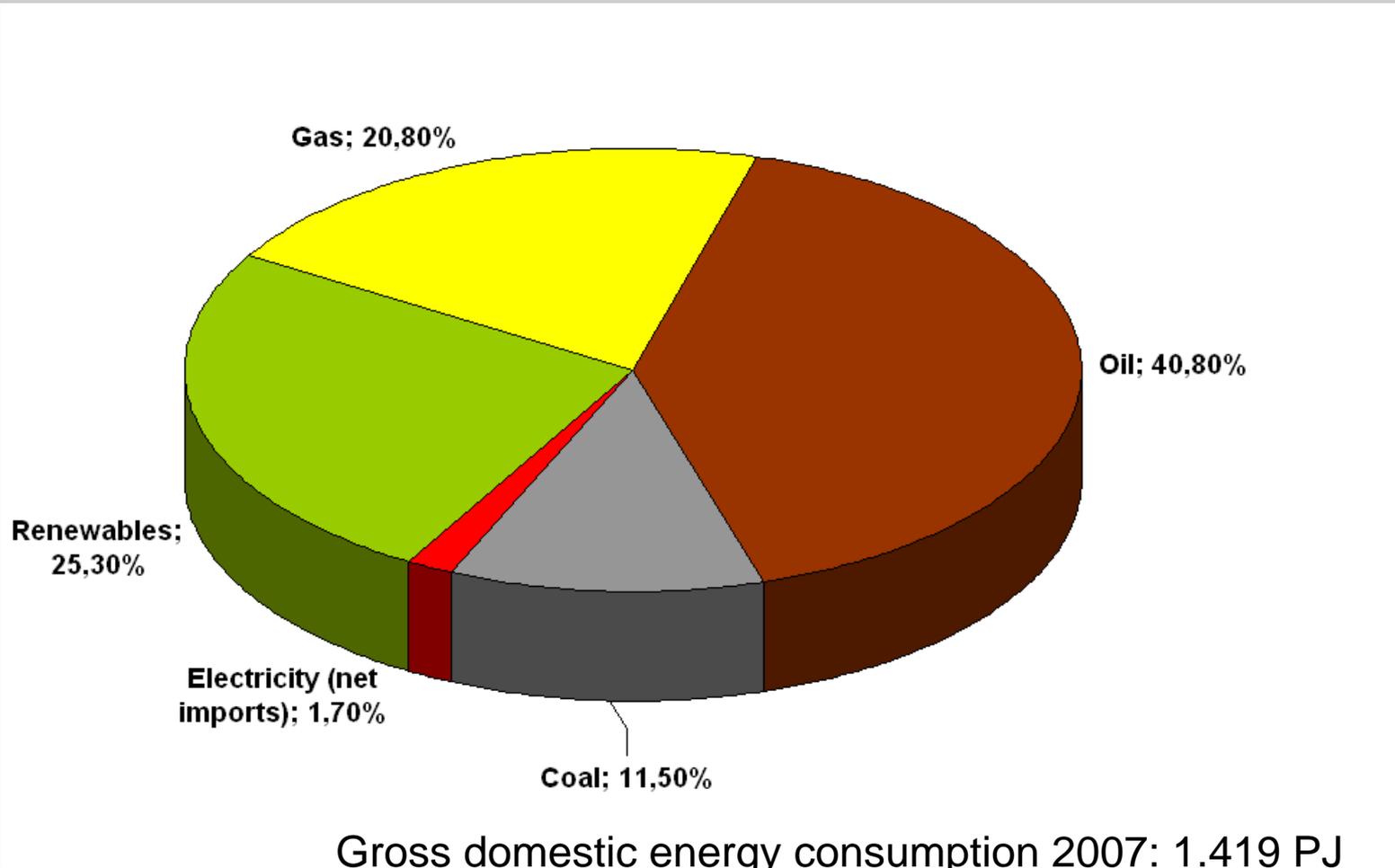


# ... and first in electricity from renewables in EU



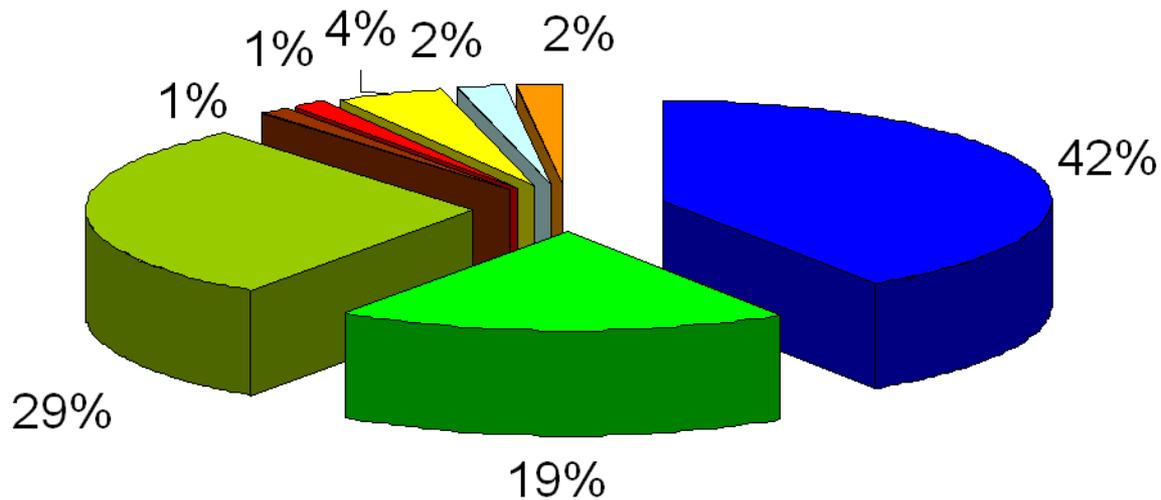


# Austria's energy consumption





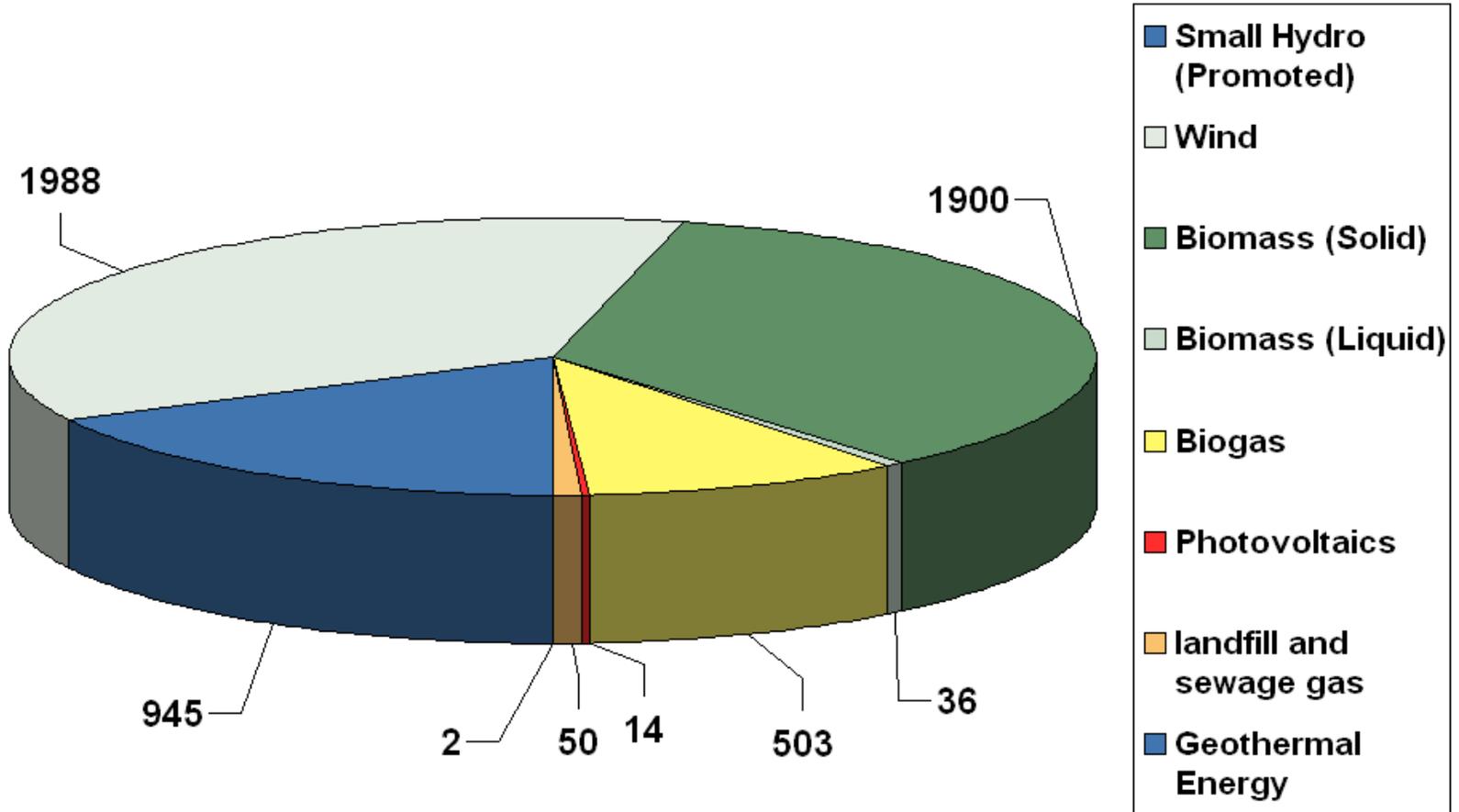
# Structure of renewable energy consumption





# Green electricity generation

2008 (promoted, in GWh)





# Example

## “Austrian Wind Power“ company

- 100% owned by regional electricity supplier
- in Austria: 138 installations, 240 MW, 500 GWh
- fully integrated in electric supply system
- international activities, mainly CEE





# Example of eco-electricity from biomass

- Power plant in the City of Vienna
- investment  
52 Mio. €  
66 MW heat load,  
15 MW/25 MW<sub>el</sub>  
CHP/condensing mode
- Fuel demand  
600.000 m<sup>3</sup>/year  
190.000 t/year resp.
- only material  
directly from the  
woods





# Example of district heat production from biomass

- 500 kW - 30 MW
- distribution with hot water pipes
- modern flue gas cleaning
- since 1980 more than 1.000 plants > 100 kW, 1.200 MW total heat load
- mostly based on local initiatives
- Investment subsidies 30 %





# Distribution of biomass heating and CHP plants

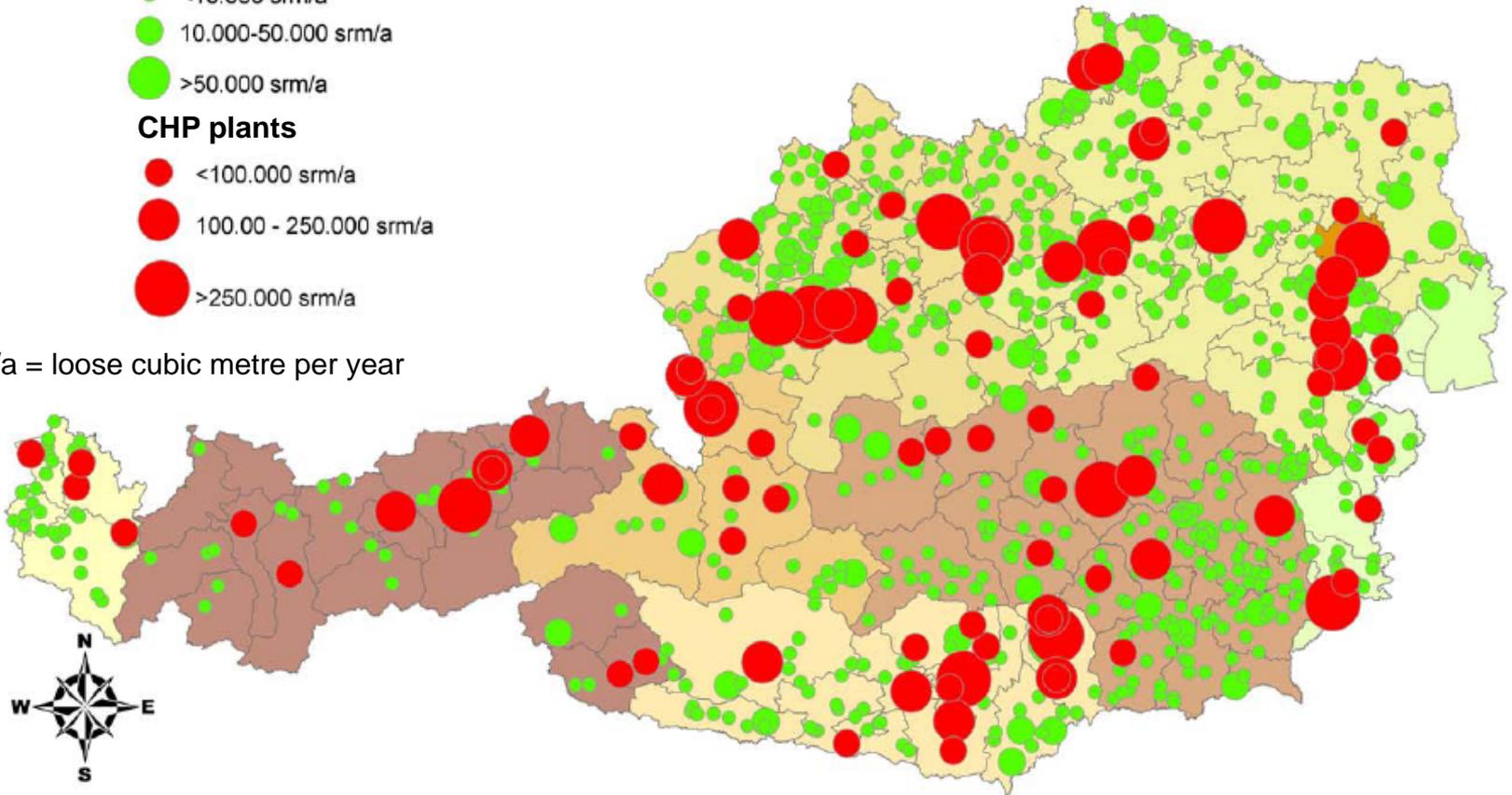
## heating plants

-  <10.000 srm/a
-  10.000-50.000 srm/a
-  >50.000 srm/a

## CHP plants

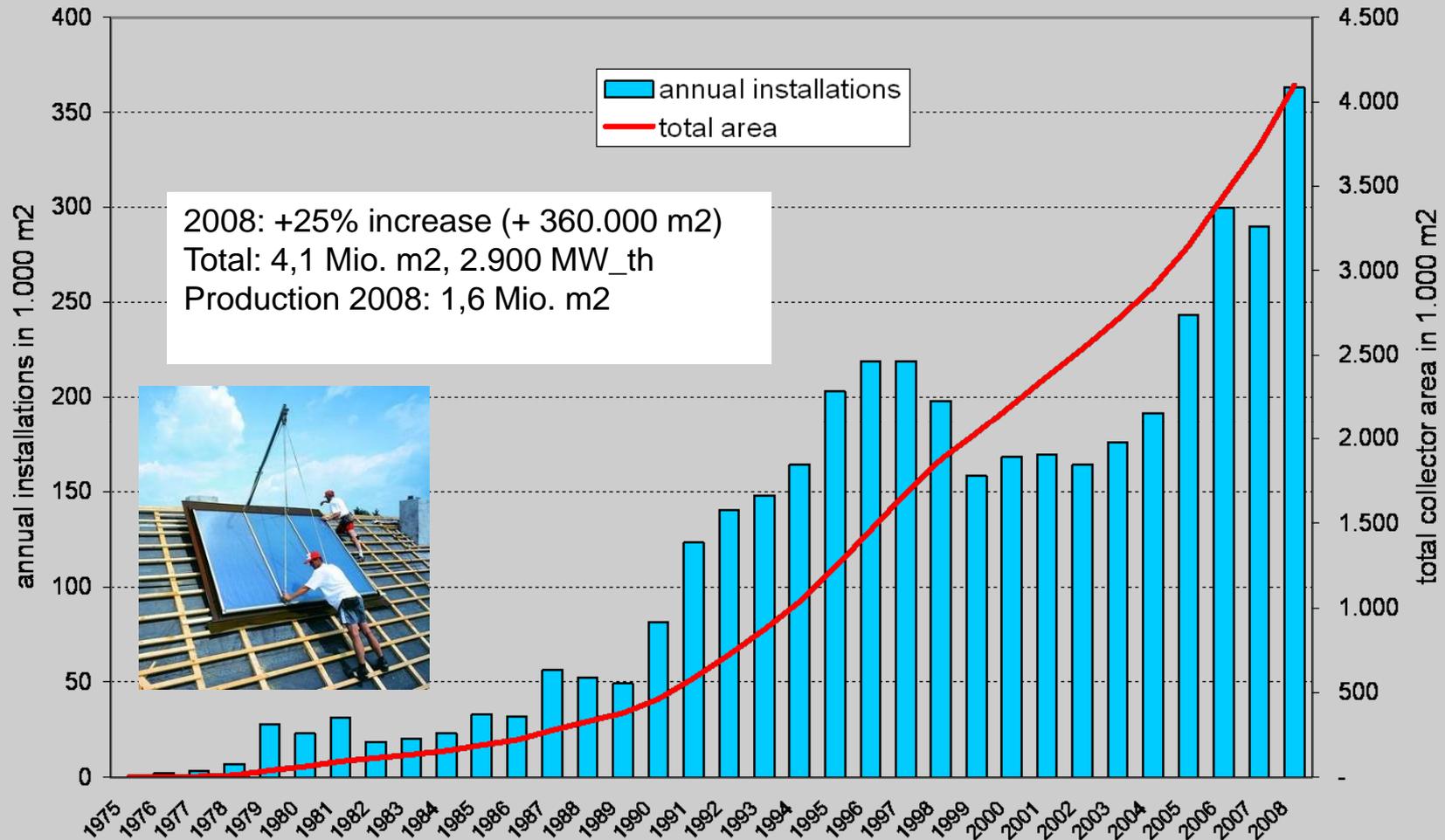
-  <100.000 srm/a
-  100.00 - 250.000 srm/a
-  >250.000 srm/a

srm/a = loose cubic metre per year



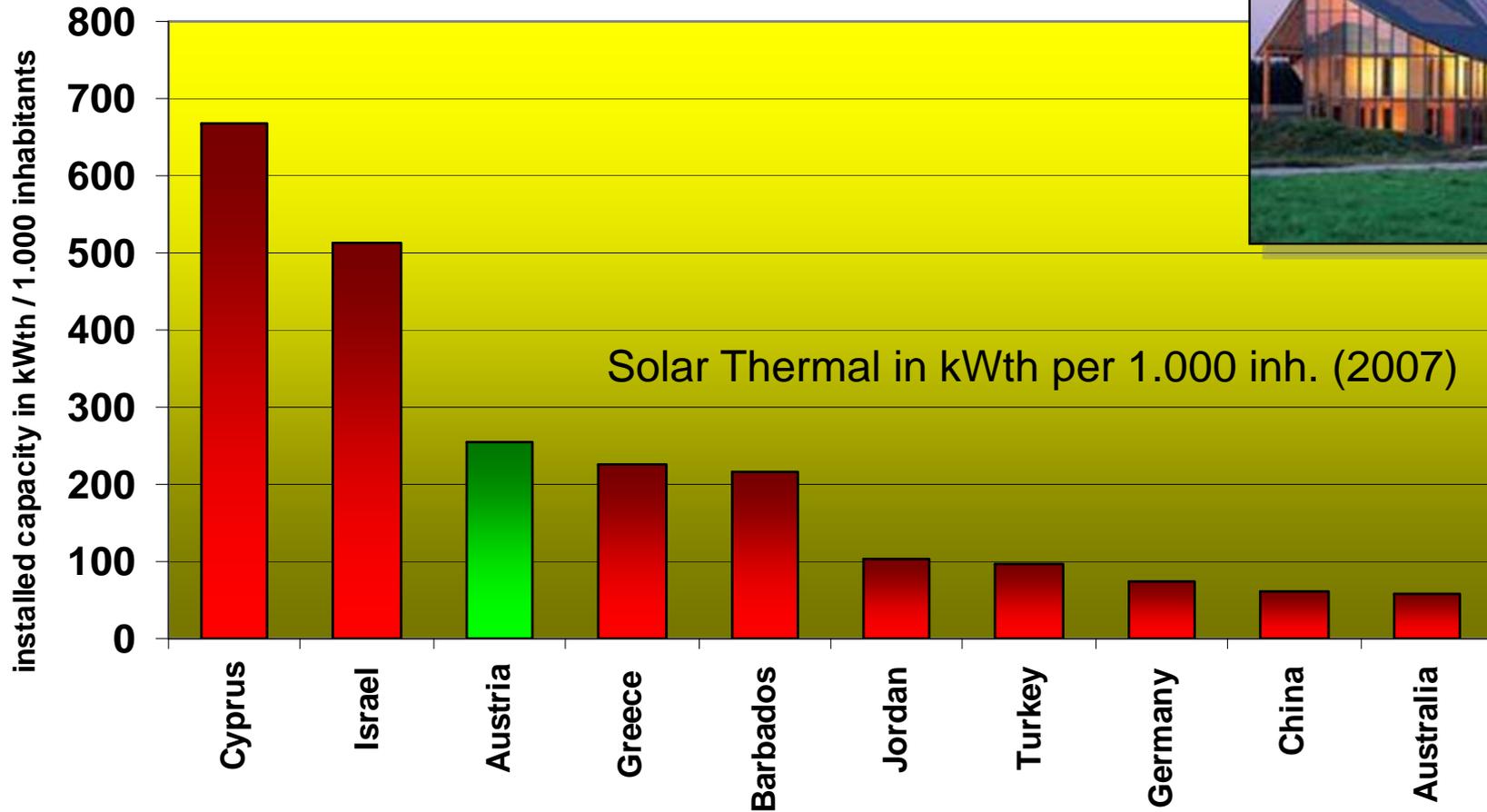


# Success story solar hot water production





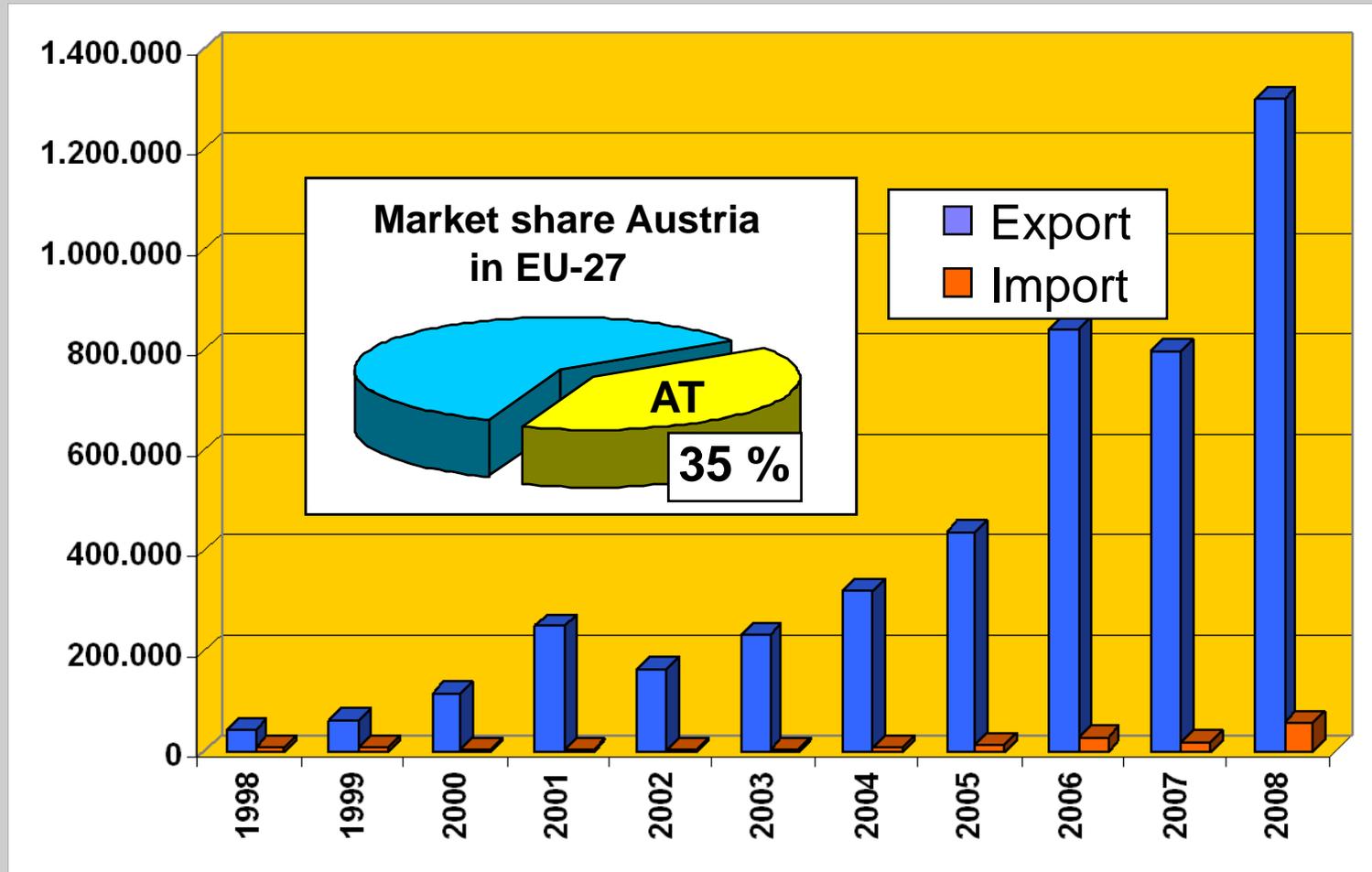
# Austria worldwide on top





# Austria as leading solar export country

exported and imported  
collector area [m<sup>2</sup>]





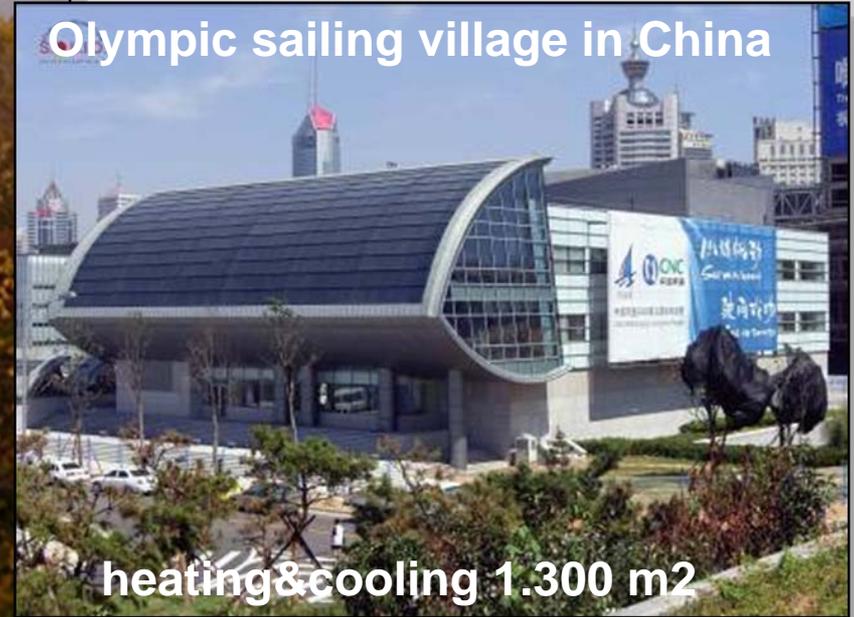
# “Solar from Austria” in Europe and beyond

Home for old people  
in Czech Republic



Campingground  
in Germany

Olympic sailing village in China



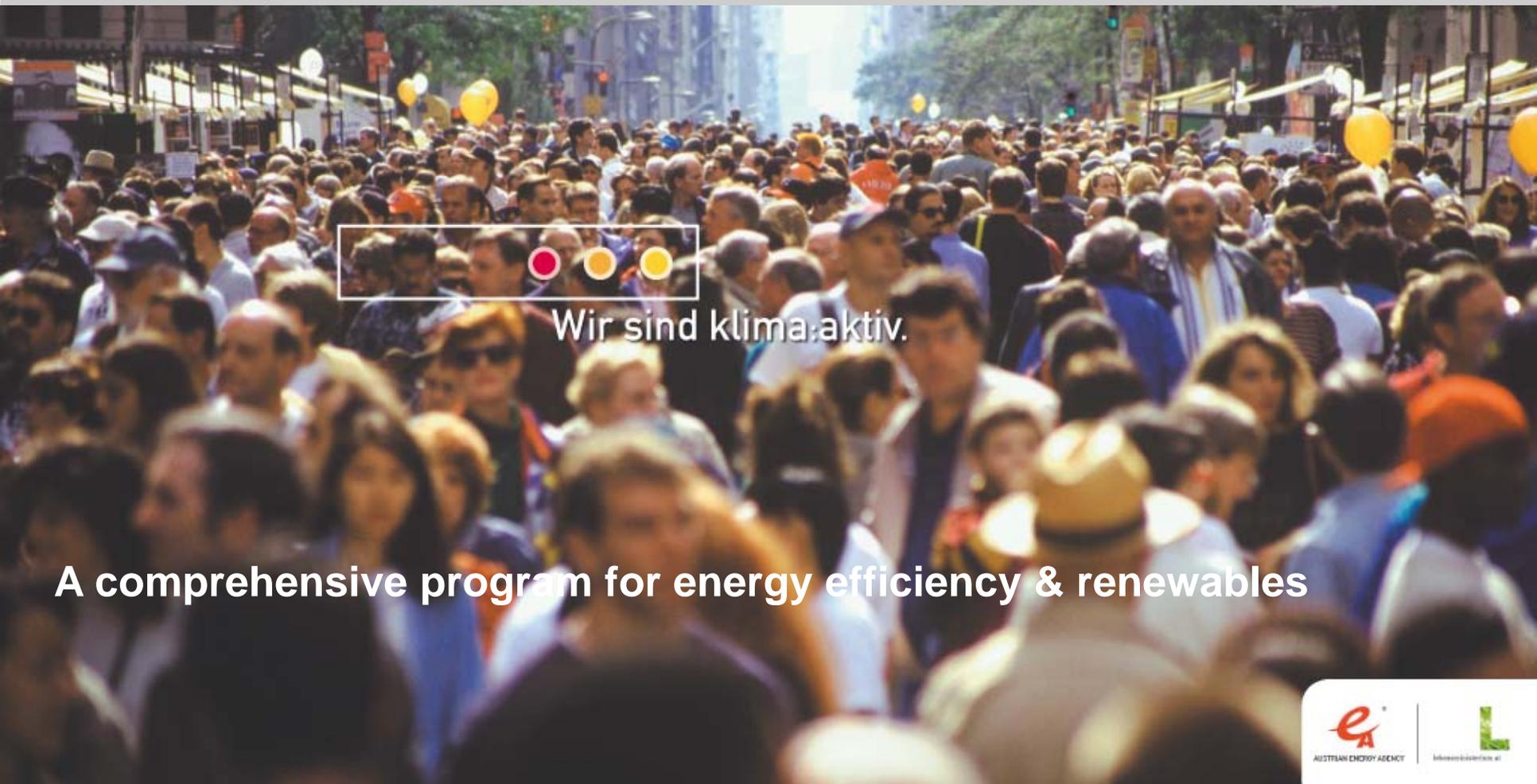
heating & cooling 1.300 m<sup>2</sup>



klima:aktiv



# Austrian Climate Initiative



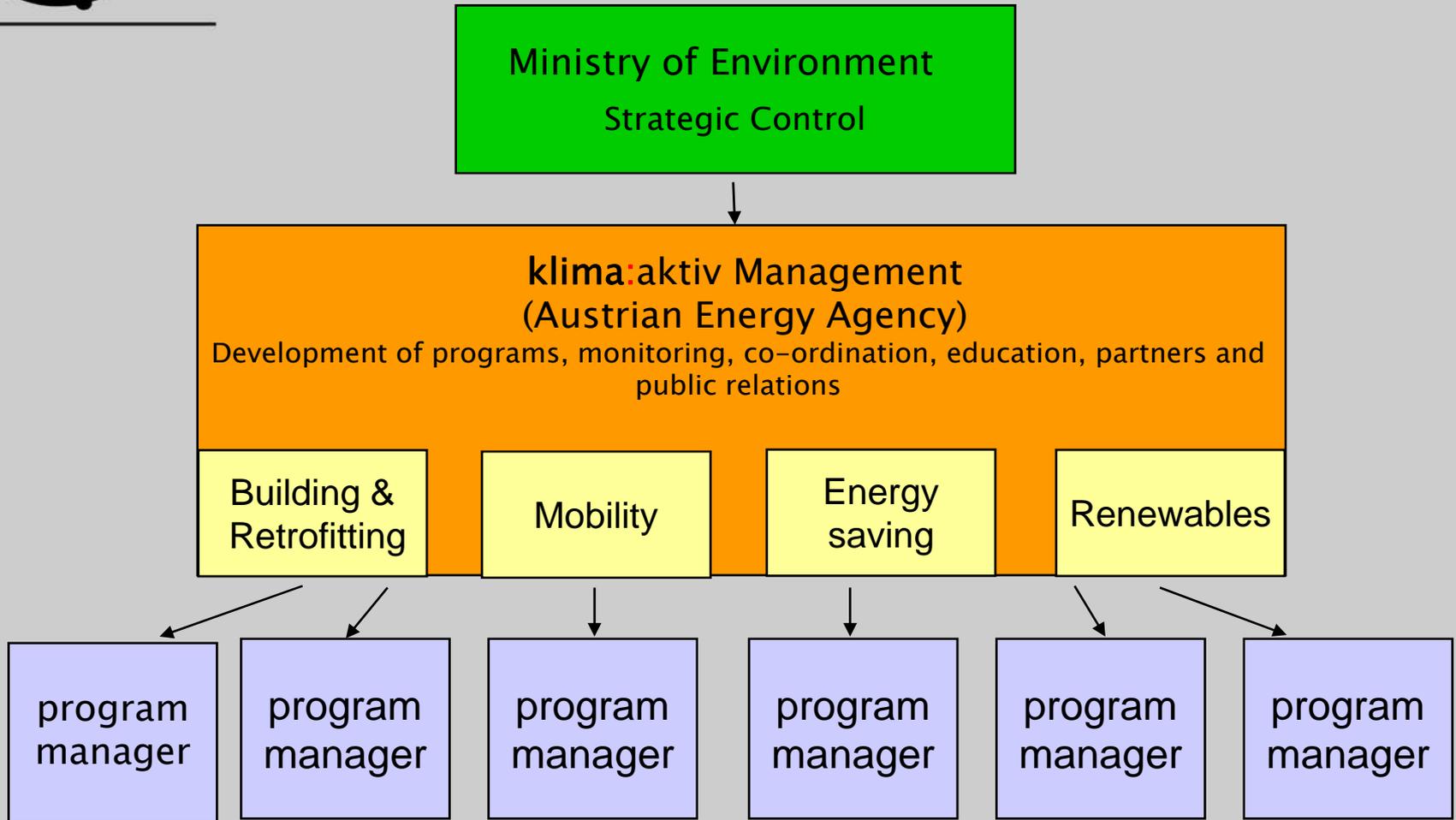
Wir sind klima:aktiv.

A comprehensive program for energy efficiency & renewables





# Structure of





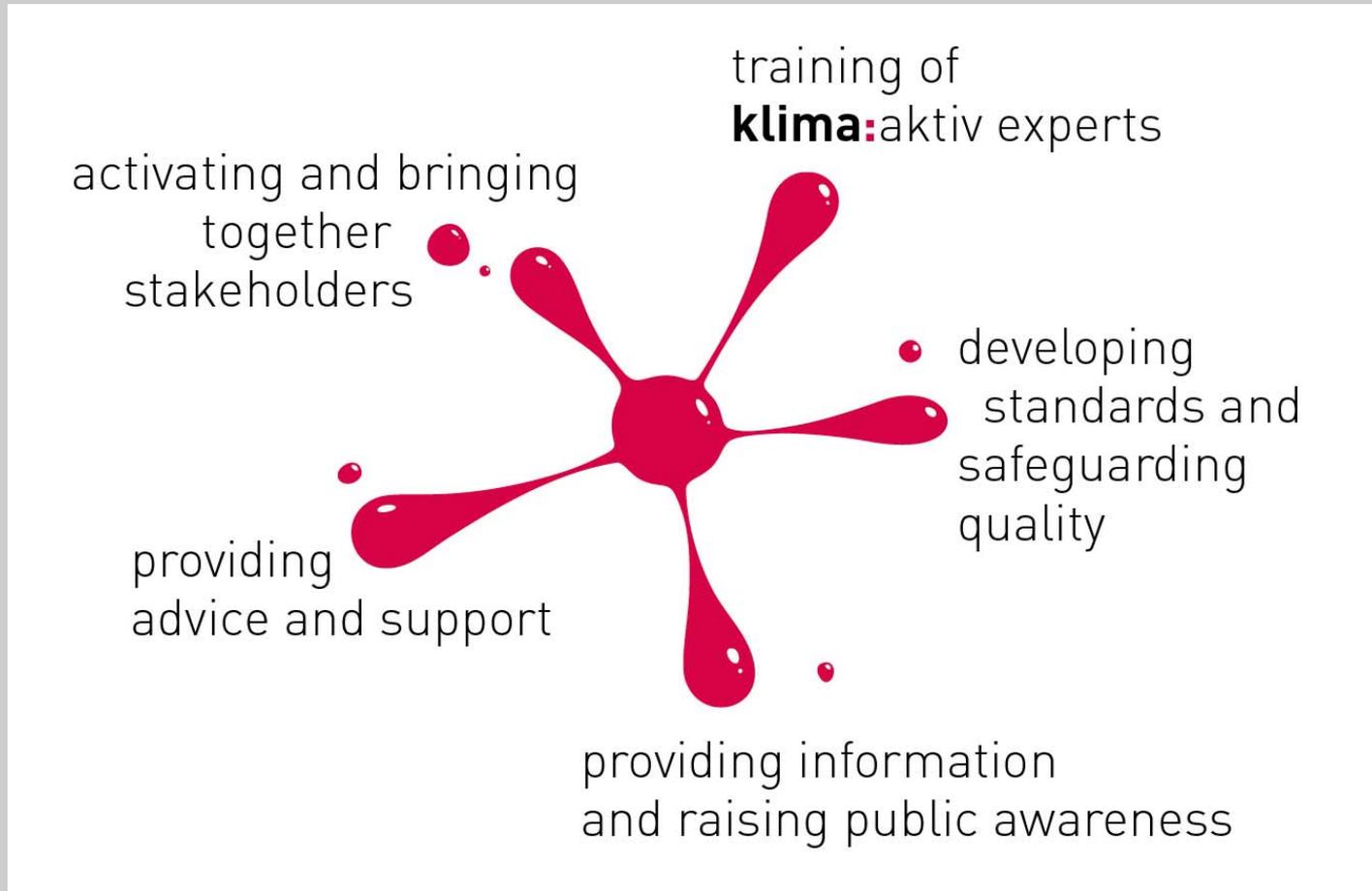
klima:aktiv



- initiative of Ministry of Environment
- part of the Austrian climate protection strategy
- umbrella for all soft measures
- strengthens and complements existing initiatives
- klima:aktiv objectives
  - ☐ reduce greenhouse gas emission at low cost
  - ☐ increase market shares of climate protecting products and services
  - ☐ bring main stakeholders to support the common goals
  - ☐ contribute to an innovative Austrian economy



# Activities of **klima:aktiv**





klima:aktiv



# – Successes so far

- educate klima:aktiv professionals
  - ☐ 3.000 klima:aktiv professionals, plumbers, planners
- activate and network market partners
  - ☐ > 250 business partners communicate klima:aktiv to their clients
- inform and encourage to change
  - ☐ online-service: building and retrofitting, appliances (top products), energy saving, subsidies, ecodriving, cycling
  - ☐ 2,5 Mio contacts in events, through mailings, ...
  - ☐ campaigns (e.g. with chimney sweepers, newspapers)
- set standards and safeguard quality
  - ☐ klima:aktiv standard for buildings, qm-heat plants (+10% efficiency), renewables
- advise and support
  - ☐ Mobility management, energy checks for buildings, production processes



# For more information

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