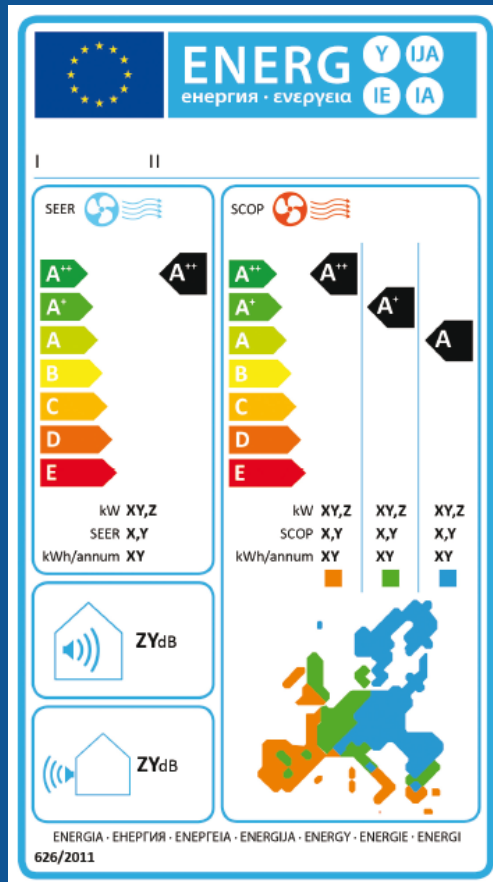


# EU policy on energy efficiency in cooling

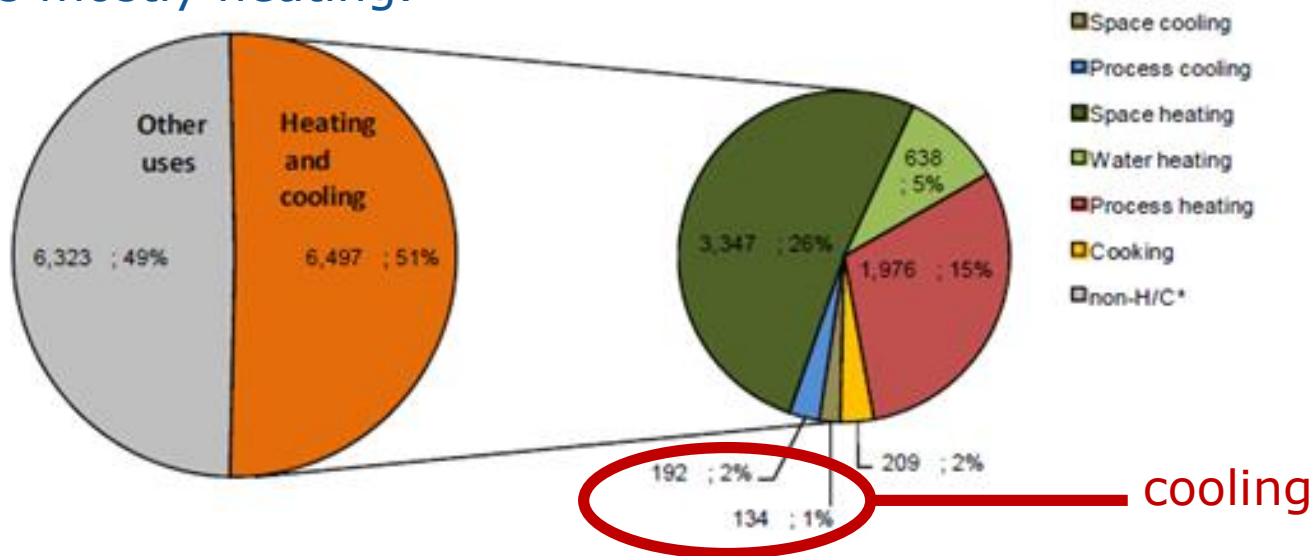


*Ewout Deurwarder*

**European Commission  
Directorate-General for Energy**

# Current cooling needs in the EU

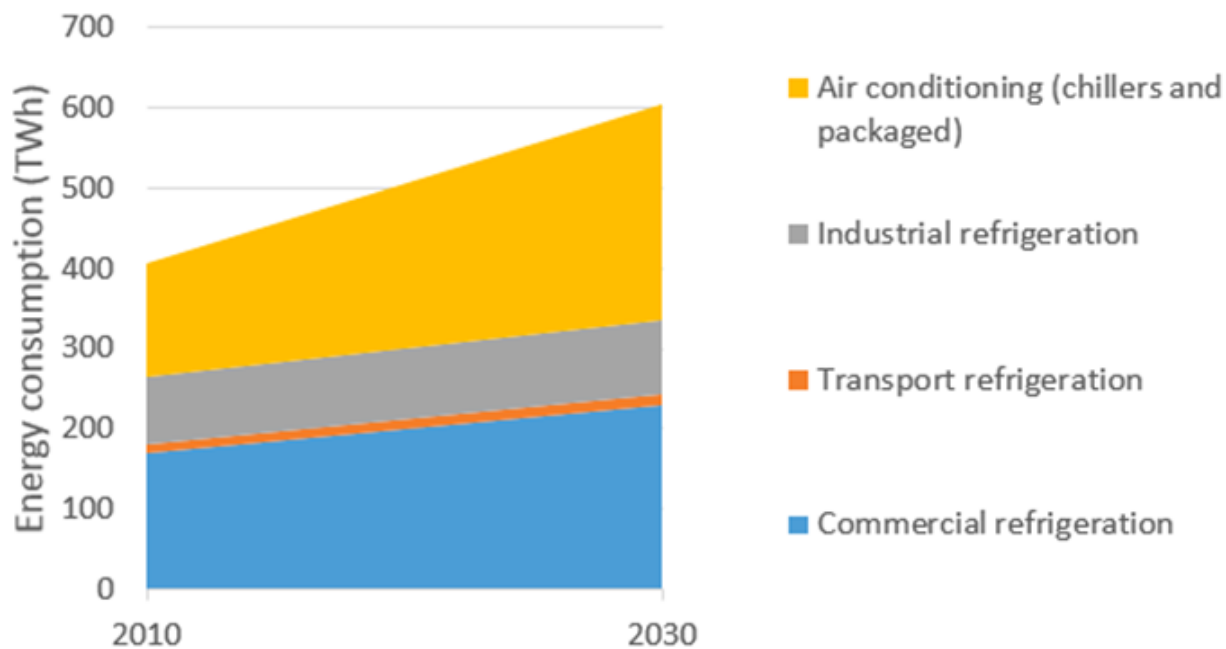
Heating and cooling accounts for half of the energy used in the EU  
 .. but it is mostly heating.



Final energy demand for EU28 by end-use for H/C in all sectors in 2012 [TWh]

# Increase in cooling demand

- Unlike for heating, demand for cooling is still growing
- Commercial and public buildings; also data centres and industry



# EU Policy

- Reduce needs (mostly heating): *Energy Performance of Buildings Directive (2010/31/EU), Energy Efficiency Directive (2012/27/EU)*
- Make equipment more efficient: *Ecodesign and Energy Labelling Directives (2009/125/EC and 2010/30/EU)*
- Explore societal cost-benefit of efficient technologies and follow-up with national policies: *Article 14 of the Energy Efficiency Directive*
- Increase share of renewables: *Renewable Energy Directive (2009/28/EC)*

*2016 EU Strategy for Heating and Cooling (COM(2016)51):*

- *First comprehensive overview of the sector*
- *Contributed to ongoing updates of above legislation: more emphasis on heating and cooling*

# Ecodesign and energy labelling

Minimum energy efficiency requirements for:

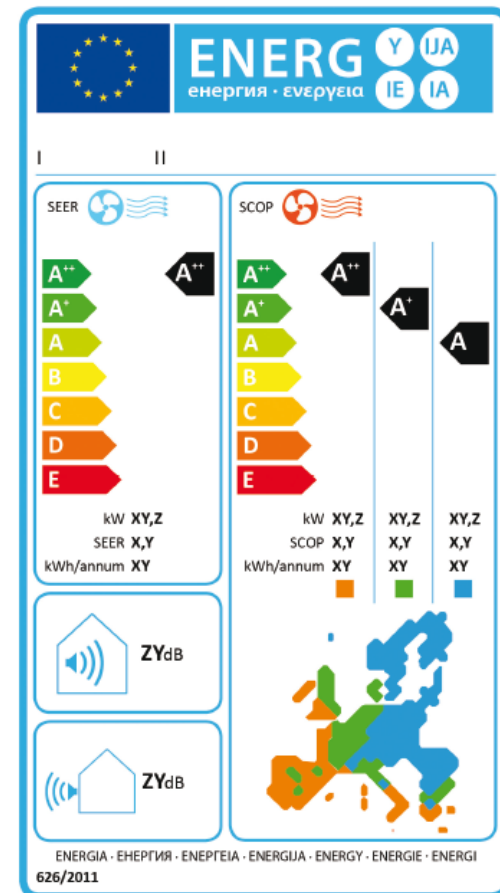
- Air conditioners
- Professional refrigerated storage cabinets, blast cabinets, condensing units, process chillers
- Cooling products; high-temp. process chillers

Energy labels for:

- Air conditioners
- Professional refrigerated storage cabinets

*Under consideration:*

- *Commercial display refrigeration (supermarket cabinets, beverage coolers, vending machines, ..)*
- *Refrigerated containers*





# Comprehensive assessments

## Article 14 of the Energy Efficiency Directive

Each EU Member State:

- Forecasts heating and cooling demand
- Maps heat and cool demand and surplus
- Establishes technical potential for efficient heating and cooling
- Assesses (societal) cost benefit of efficient heating & cooling options
- Follows up with dedicated policies if potential is identified.

"cooling is the weakest part of the analysis"

Available at:

<http://ec.europa.eu/energy/en/topics/energy-efficiency/cogeneration-heat-and-power>

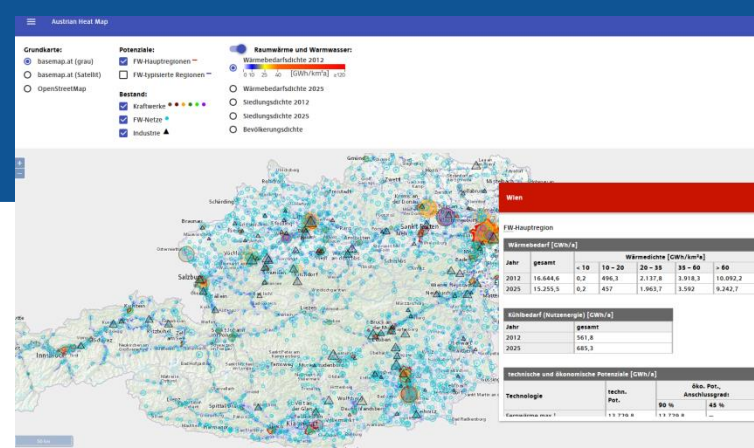


Table 3.1 ENPV of alternative scenarios of individual solutions in Nicosia (mill.EUR<sub>2013</sub>)

	Electricity Resistance heaters	Electricity Heat Pumps	Electricity Split unit- Heat Pumps	Gas oil CHP	Light fuel oil CHP	LPG CHP	Solid biomass CHP	Solid biomass Efficient boilers	Solar Solar panels
<b>Residential</b>									
Apartments	-599	-189	499	-2054	-1907	-2335	-170	-156	-92
Row	-221	48	211	-560	-512	-652	-66	-55	92
Single	-268	47	276	-767	-783	-889	-101	-80	89
<b>Service</b>									
Airports	0	0	0	0	0	0	0	0	0
Catering	-37	-12	19	-125	-116	-141	-26	-19	-8
Healthcare	-63	37	64	-183	-166	-216	-19	-13	49
Hotels	-16	3	8	-98	-91	-110	-23	-16	-8
Offices	-201	-112	111	-851	-796	-955	-84	-64	-112
Other	-65	-32	51	-310	-290	-350	-29	-22	-28
Schools	-20	1	42	-137	-127	-157	-16	-12	3
Shopping	-69	-91	58	-530	-699	-588	-35	-29	-109
<b>ENPV</b>	<b>-1559</b>	<b>-221</b>	<b>1338</b>	<b>-5615</b>	<b>-5287</b>	<b>-6393</b>	<b>-569</b>	<b>-465</b>	<b>-126</b>

# Supporting



# innovation



Support to heating and cooling under FP7, IEE and Horizon 2020 programmes

Cooling projects:



Type of Action	EU funding
Research and Innovation (H2020 2014-2015 Energy Efficiency)	EUR 40.1 million
Research and Innovation (H2020 2014-2015 Low Carbon Energy/Renewables)	EUR 29.3 million
Innovation (H2020 2014-2015 Low Carbon Energy/Renewables)	EUR 18.3 million
Smart Cities (FP7 Call 2012,2013)	EUR 41.6 million <sup>1</sup>
Market uptake (IEE Calls 2012,2013, H2020 2014,2015 Energy Efficiency)	EUR 15.6 million
Market uptake (H2020 2014-2015 Low Carbon Energy/Renewables)	EUR 5.3 million
Technical assistance and innovative financing (IEE Calls 2011-2013, H2020 2014,2015)	EUR 5.6 million
SME Instrument (H2020 2014-2015 Phase 1 and 2)	EUR 10.3 million
<b>Total*</b>	<b>EUR 166.1 million</b>
<i>Smart Cities and Communities (H2020 Calls 2014-2015)</i>	<i>EUR 174.1 million</i>

Summary of EC funding in the area of heating and cooling including the following: Horizon 2020 Calls 2014/2015, Smart Cities FP7 Calls 2012/2013, IEE Calls 2011/2012/2013. \* Note that the total excludes the Horizon 2020 Smart Cities and Communities Calls 2014, 2015 as only a fraction of the activities are related to heating and cooling.

# Energy efficiency in cooling in EU

Energy use for cooling in EU small in comparison with heating

.. but growing – unlike for heating

EU energy efficiency policy for heating in place and undergoing update

Cooling part of the policy, but little specific policy yet. Data on cooling less good than on heating.