

# EPBD and the Solar Mandate

Let's talk about it/heat !

Zero-Emissions Building Academy Webinar

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#HeatIsHalf



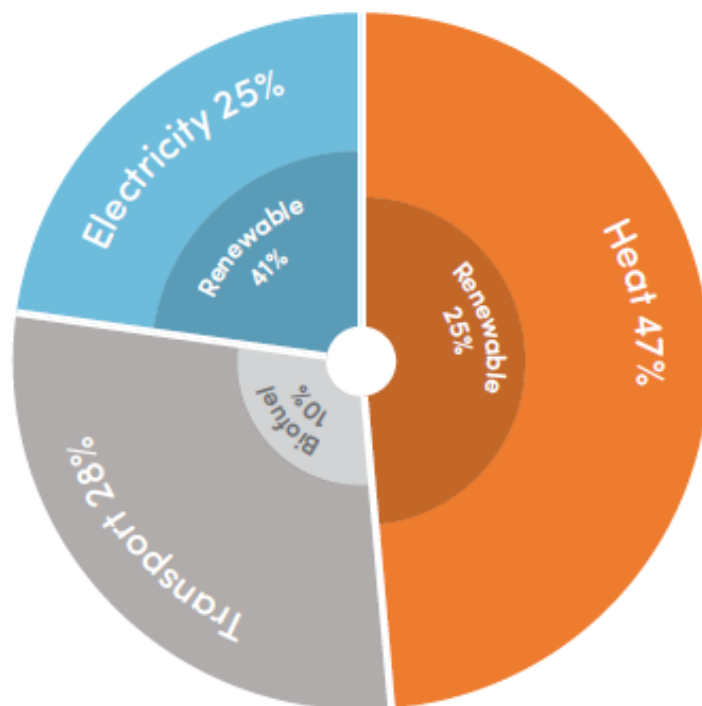
Representing the **full value chain** of the Solar Thermal (ST) sector since 30 years towards EU policy makers/influencers.



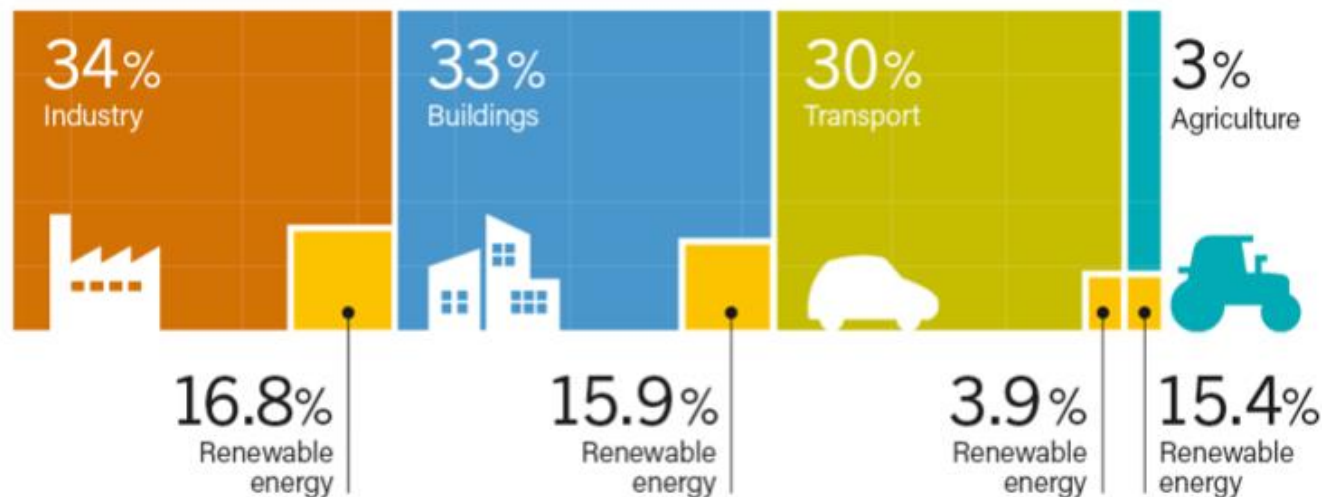
[Full list available here](#)

# HEAT IS HALF of our energy needs

Total final energy and total modern renewable energy share, by energy carrier, European data  
(Source: Eurostat for year 2022)



 Renewable Share of Total Final Energy Consumption, by Sector, 2021



↓  
**80% of energy needs = HEAT**

# CLEAN HEAT from different solar collectors

Non concentrated technologies ( $T^{\circ}\text{C} < 120\text{-}180^{\circ}\text{C}$ ):



Flat Plate (with single-axis tracker)



High-Vacuum Flat Plate



Evacuated Tube



Hybrid / PVT (Photovoltaic-Thermal)

Concentrated technologies  $T^{\circ}\text{C} < 400^{\circ}\text{C}$ :



Linear fresnel (concentrated solar heat)



Parabolic (concentrated solar heat)



- Certification standards in place since 20 years
- > 1150 certificates
- CEN scheme
- Transparent and open
- +300 stakeholders



# SOLAR THERMAL: Market Segments

## «Buildings»



**Residential**  
(houses, apartments)



**Tertiary/Commercial**  
(e.g. hotels, hospitals, leisure centers)

## «Large scale»



**District heating**  
(for cities, villages)



**Industrial**  
(eg. paper, food & drinks, textile, chemicals)

# SOLAR THERMAL: Market Developments

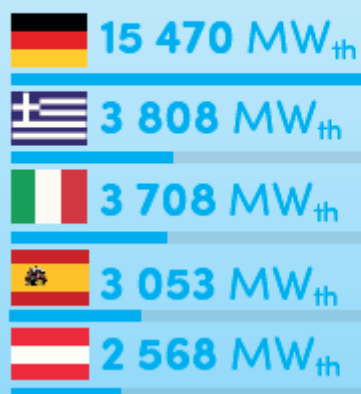
- Sales growing since 2018 (except pandemic)
- Total installed capacity growing for 3 decades

More than **10 million** rooftops in Europe are equipped with solar thermal & thermal storage

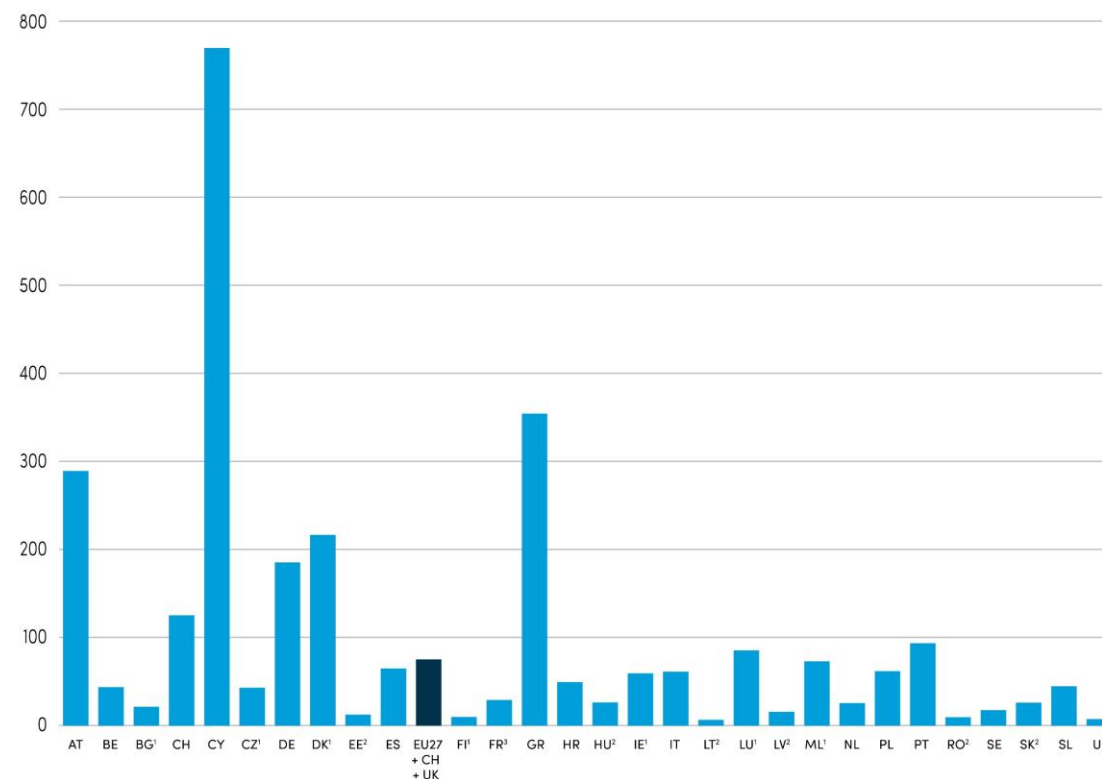
Total installed capacity in Europe (mainland): **40.5 GW<sub>th</sub>**

That's 58 million m<sup>2</sup> of collectors

Countries with the largest Solar Thermal installed capacity (in operation):



 **Use of Solar thermal per capita**  
in kW<sub>th</sub> per 1000 capita



<sup>1</sup> Based on the EurObserv'ER "Solar thermal and CSP Barometer" (2022).

<sup>2</sup> Solar Heat Europe estimations

<sup>3</sup> The figures shown here relate to Metropolitan France (mainland). As a reference, in 2021 the newly installed capacity in overseas departments is estimated to be around 60 MW<sub>th</sub> (86 000 m<sup>2</sup>).



# SOLAR THERMAL: Examples on buildings



Solar thermal thermosiphon systems for hot water in multi-family buildings, Greece

# SOLAR THERMAL: Examples on buildings



Solar thermal façade mounting for hot water and space heating on single-family house, Germany



# SOLAR THERMAL: Examples on buildings



Solar photovoltaic

Solar thermal

Solar thermal and solar photovoltaic sharing the roof of a leisure centre, Southeast England

# SOLAR THERMAL: Examples on buildings



Solar thermal

Solar photovoltaic

Solar thermal and solar photovoltaic sharing the roof of residential building, Slovenia

# SOLAR THERMAL: Examples on buildings



Solar thermal façade collectors on apartment building, Switzerland



# SOLAR THERMAL: Examples on buildings



Hybrid solar – PVT installation at the Barcelona Olympic Swimming Club, Spain



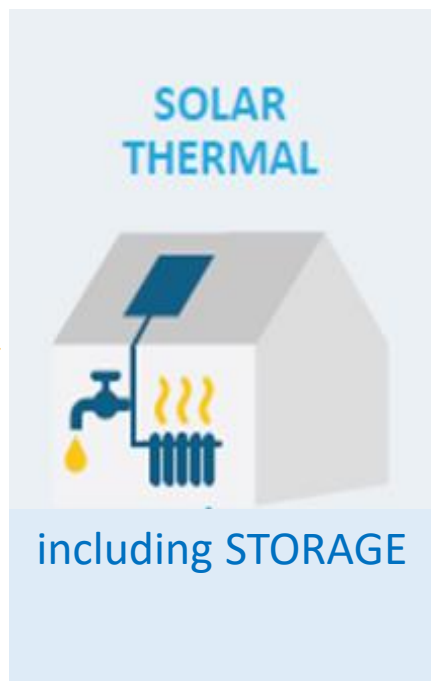
# SOLAR THERMAL: Examples on buildings



Hybrid solar – PVT installation on hotel roof, Spain.

# Solar Thermal: a **direct** heat supply which **can be combined** with all energy sources

ENERGY SAVINGS & EFFICIENCY



Fossil fuels  
(gas, oil)

Other direct renewable heat  
supplies  
(geothermal, biomass)

Other heat  
supplies  
(eg waste heat,  
biogas etc)

District heating networks

Heat pumps

Indirect  
renewable  
heat  
supplies  
(solar PV)

Other  
indirect  
heat  
supplies  
(electricity  
eg nuclear)



CLEAN &  
RENEWABLE

# HEAT





# A supportive EU regulatory framework, now to be implemented x 27 countries



## EU Fit for 55: An opportunity for Solar Thermal

Energy Efficiency Directive	Renewable Energy Directive	Energy Performance of Building Directive
Adopted 09/2023, into force 10/10/23	Adopted 10/2023, into force 20/11/23	Adoption upcoming (Q1 2024)
<b>11.7%</b> reduction of energy consumption by 2030 (vs 2020) (art. 4)	42.5% target for <b>RES in 2030</b> (art. 3) Binding target for <b>RES in H&amp;C</b> (art. 23)	<b>Solar Mandate</b> (art. 10), requiring that rooftops above a certain surface be equipped with solar technologies (photovoltaic, solar thermal or PVT) by specific dates as from Dec. 26
<b>National comprehensive assessments</b> for efficient Heating & Cooling (H&C) (art. 25)	Indicative <b>sub-sectoral targets</b> for: • buildings (art. 15a): 49% RES by 2030 • for industry, • and district heating (art., 22a, 24)	Minimum energy performance standards (MEPS)
<b>Mandatory H&amp;C plans for cities</b> above 45,000 inhabitants (art. 25)		Phase out financial incentives for stand-alone fossil boilers by 31/12/2024
<b>Efficient District Heating &amp; Cooling criteria</b> (art. 26) for new or substantially refurbished systems	Streamlined <b>permitting</b> procedures for renewable acceleration areas (art. 15c); and provisions for the installation of solar energy equipment and co-located energy assets (art. 16c)	One-stop-shops for the provision of information to citizens and relevant local actors

EU Emissions Trading System (ETS) 2023 revision including Buildings

On **NEW** public and  
non-residential  
buildings >250 m<sup>2</sup>



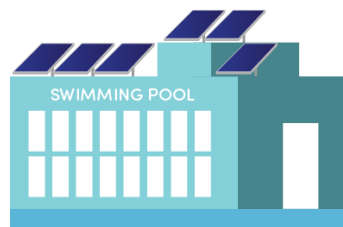
Dec 26

On **EXISTING**  
public buildings  
>2000 m<sup>2</sup> &  
non-residential  
buildings  
> 500 m<sup>2</sup>\*



Dec 27

On **EXISTING**  
public buildings  
> 750 m<sup>2</sup>



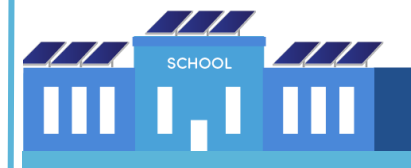
Dec 28

On **NEW** residential  
buildings  
  
On **NEW** roofed  
carparks adjacent  
to buildings

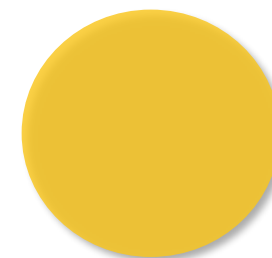


Dec 29

On public  
buildings  
> 250 m<sup>2</sup>

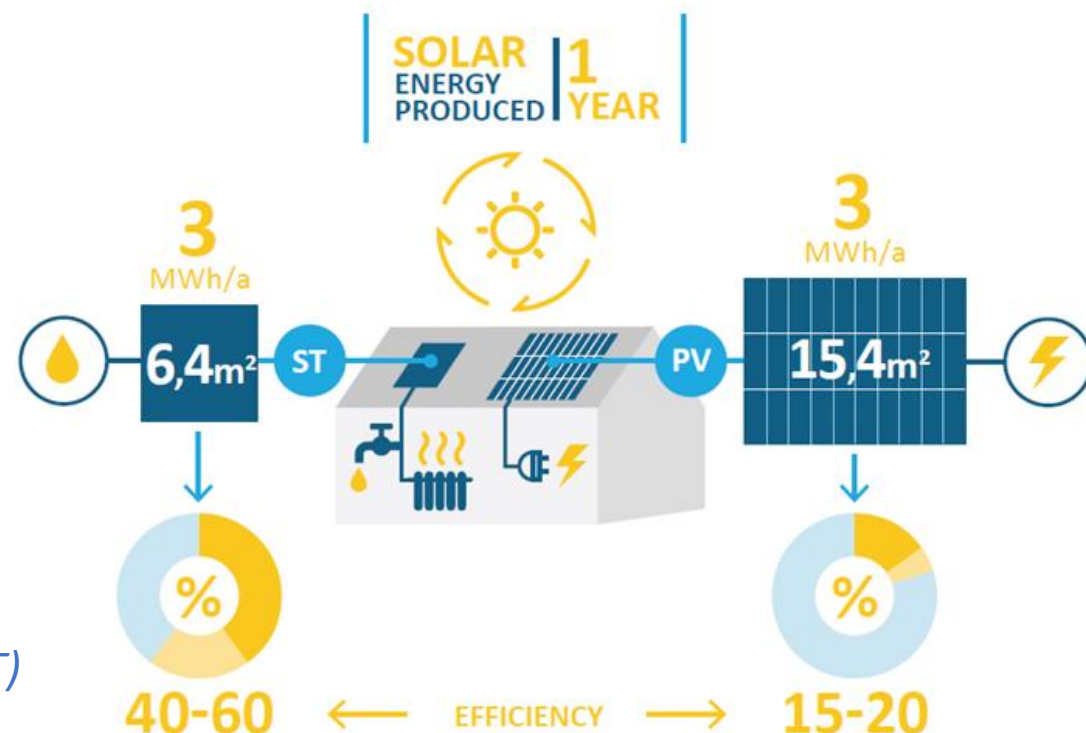


Dec 30



## EPBD guidelines/Solar Mandate:

- This is a mandate for BOTH photovoltaics & thermal, incl ST and PVT
- Fair national frameworks to be used when drafting their national transposition such as:
  - ✓ **“Energy produced”** (per available area) rather than (just) the rooftop area  
⇒ *e.g.: 30 watts per m<sup>2</sup> of rooftop are available*
  - ✓ **Heat and/or electricity generation**  
⇒ *Allow combined use of rooftop, including hybrid panels (PVT)*
- Stakeholder consultations
- Flanking measures, incentives and monitoring





## Solar Thermal: Off grid, decentralised, efficiency booster, hybridising with heat pumps



Excessive load on the grid



A more balanced approach

Thermal Energy  
Storage

## Solar Thermal:

- Has definitely its role in the **heat decarbonisation agenda**
- Current legislative package = clear opportunity => **Implementation is critical**
- **Fair treatment** of all technologies is key – Fair competition
- **Awareness** is key – Work with all partners, one-stop-shops etc
- **Enabling conditions** to support the adoption of the most efficient/suitable solutions (finances, skills)
- **All Renewable Energy Sources are needed!**



**Thank you - Contact us!**



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