



Enlarging Solar Thermal Systems in Multi-Family-Houses,  
Hotels, Public and Social Buildings in Europe

# Market and legislation for ST in Italy

## Focus on collective ST systems (CSTS)

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# Presentation layout

-  ST market in Italy
-  CSTS potential
-  Legislation framework
-  The near future

# ST market in Italy – Data

- ☀️ First reliable statistics in 2006 by Solarexpo
- ☀️ Quick and relevant feedbacks from companies



mostra e convegno internazionale  
su energie rinnovabili e generazione distribuita  
International Exhibition and Conference  
on Renewable Energy and Distributed Generation

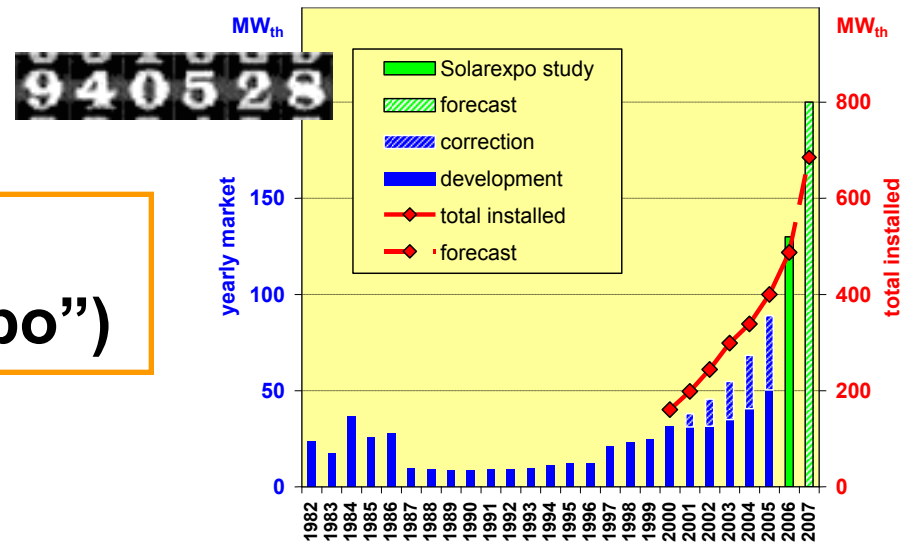


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# ST market in Italy – Data

[www.solarexpo.com](http://www.solarexpo.com)  
 (“Centro Studi Solarexpo”)



- ☀️ Market in 2006: 130 MW<sub>th</sub> (186.000 m<sup>2</sup>)
- ☀️ 1/4 from Italian products
- ☀️ Forecast for 2007: 200 MW<sub>th</sub> (54% growth)
- ☀️ Probable growth: 30-40% (250.000 m<sup>2</sup>)

# ST market in Italy – Large vs. small

☀️ CSTS market share: 2 5%

☀️ Market growth of 25% in the last 7 years

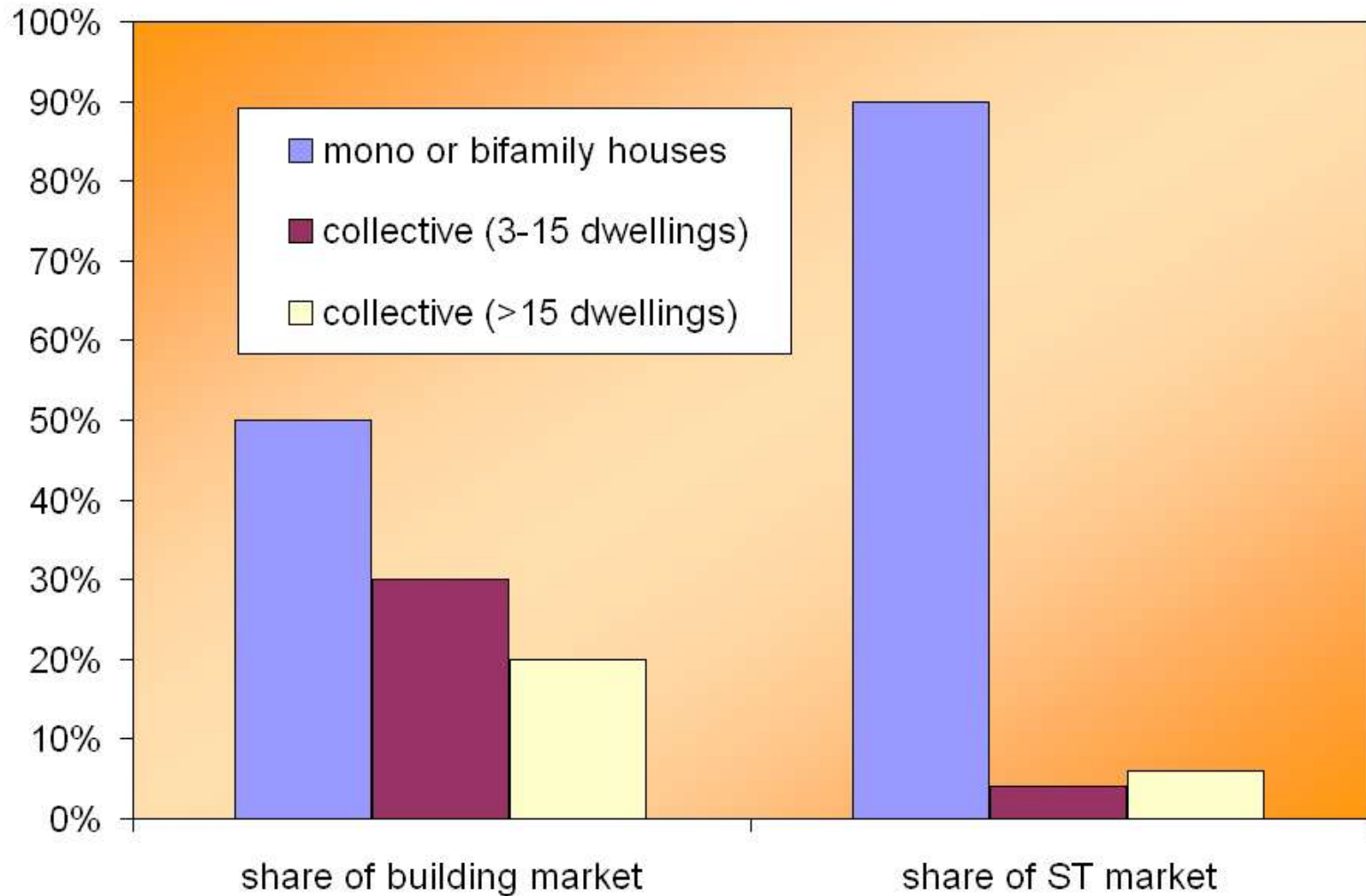


**vs.**



Source: Ecosol

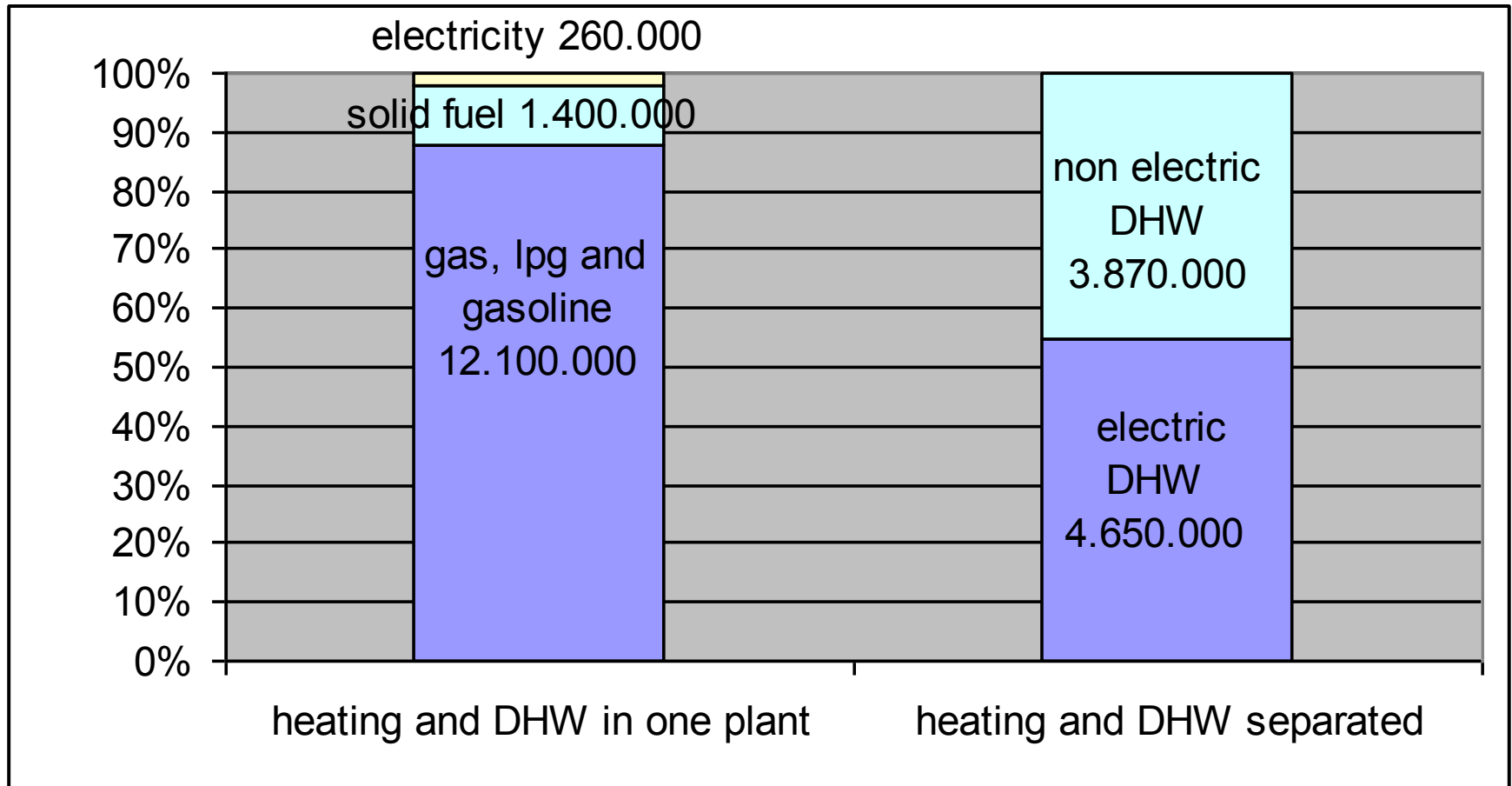
# ST market in Italy – Large vs. small



# CSTS potential – Solarge analysis

<b>Multi family housing</b>	<ul style="list-style-type: none"><li>■ <b>21.5 million dwellings</b>, mostly being one family houses</li><li>■ 3.95 million dwellings built between 1961-1981</li><li>■ DHW: <b>autonomous heating systems very common</b> (e. g. boilers); rarely centralized DHW systems and district heating</li><li>■ Space heating: centralized systems widely spread</li><li>■ Trend towards autonomous heating plants, especially in social housing sector</li><li>■ <b>High refurbishment rate</b>: after 1991, more than 720,000 buildings refurbished</li></ul>
<b>Hotels</b>	<ul style="list-style-type: none"><li>■ Almost <b>33,500 hotels</b> (1.9 million beds; occupancy rate: 44 %)</li><li>■ <b>Centralized heating</b> by gas for DHW and space heating</li><li>■ <b>In the south also autonomous systems</b>; on the islands electric DHW</li></ul>

# CSTS potential – Solarge analysis

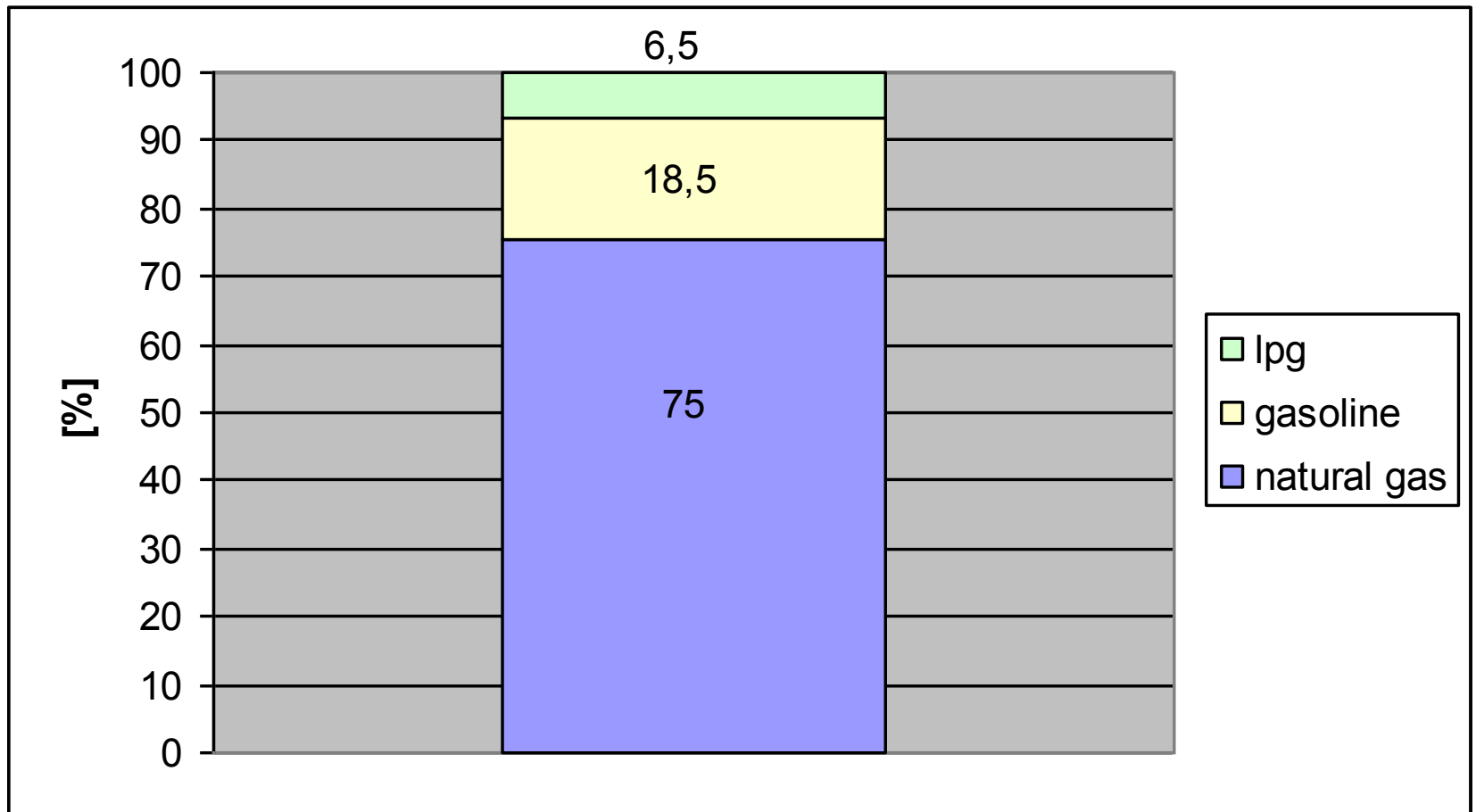


Share of different types of fuels in DHW preparation of Italian apartments

Source: ISTAT, 2001



# CSTS potential – Solarge analysis



Share of different types of fuels in space heating plants of Italian apartments

Source: ENEA, 2004


# CSTS potential – Solarge analysis

<b>Conclusion housing sector</b>	<ul style="list-style-type: none"><li>■ Large share of dwellings situated in MFH with high refurbishment rate</li><li>■ However, mostly autonomous heating systems and privately owned flats</li><li>■ Installation of CSTS hindered by technical and decisional problems</li><li>■ Target group: <b>housing associations and building companies</b></li></ul>
<b>Conclusion hotel sector</b>	<ul style="list-style-type: none"><li>■ <b>Hotels in the south</b> more and more interested in solar thermal plants</li><li>■ High technical potential for solar thermal</li><li>■ However, moderate development due to subsidized energy prices by hotel owners, assuming short payback times for investments</li></ul>

# Legislation framework



 Mandatory targets for 2020

 50% renewable heat obligation in new buildings and refurbishment

 55% tax reduction for ST in existing buildings



# Legislation framework



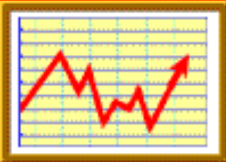
☀️ “White Certificates”: [www.autorita.energia.it](http://www.autorita.energia.it)

☀️ National support schemes for Public Bodies (50-65%): [www.minambiente.it](http://www.minambiente.it)

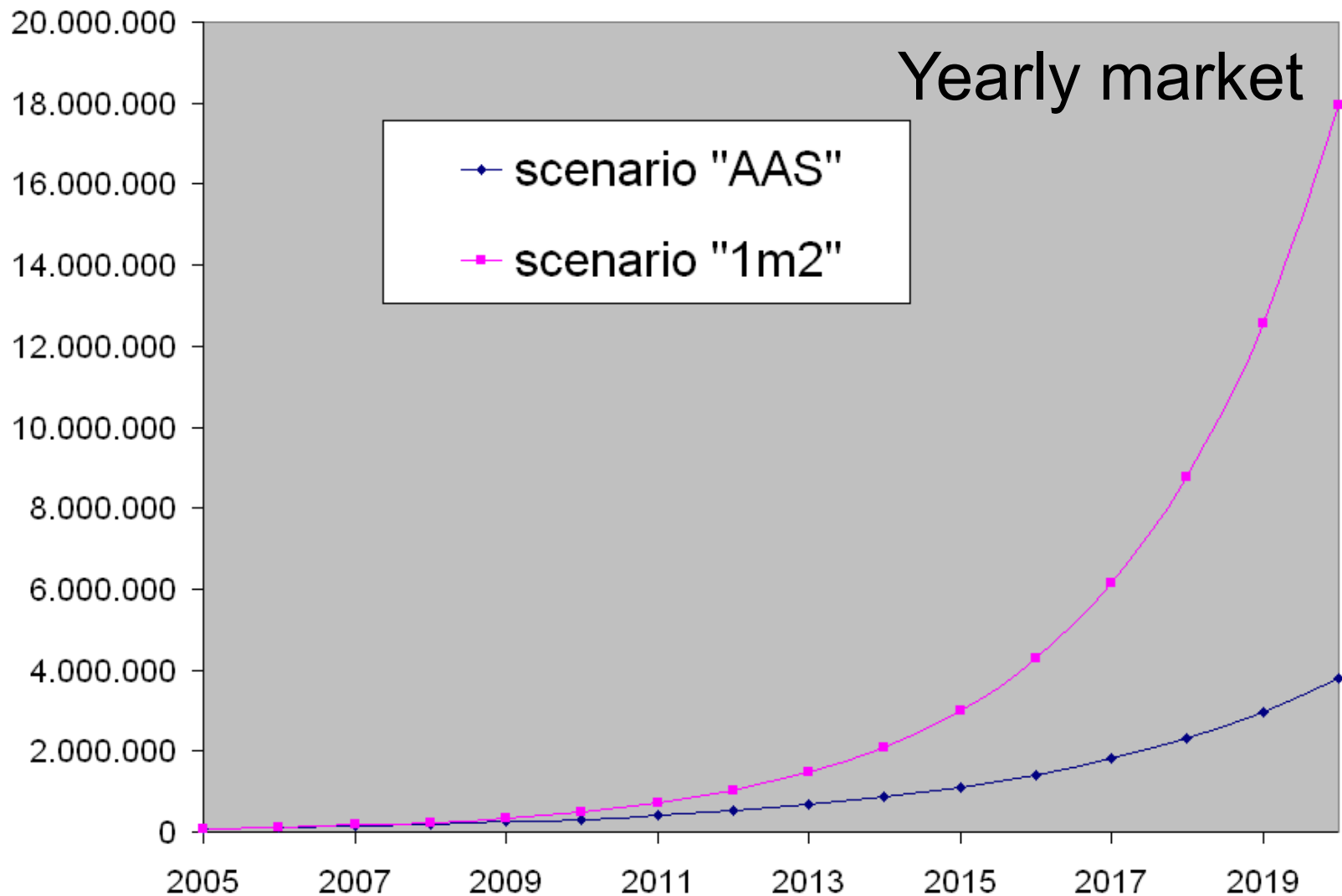
☀️ Local support schemes for ST: [www.fonti-rinnovabili.it](http://www.fonti-rinnovabili.it)



Source: Ambiente Italia



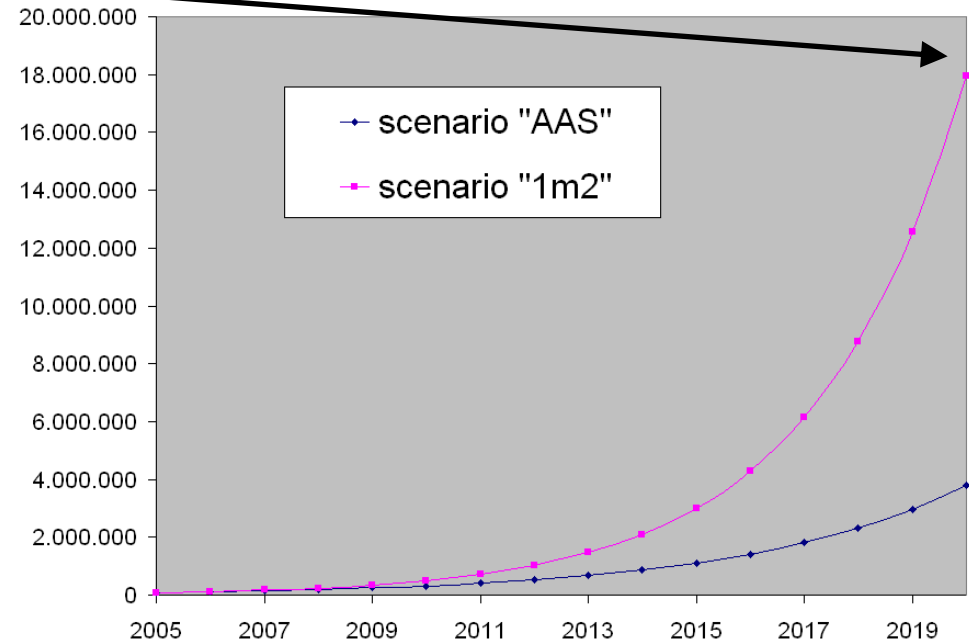
# The near future – Goals



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# The near future – Goals

How to get there?



**Large ST plants are needed!**

# The near future – On the way...



- ☀️ 50% renewable heat obligation
- ☀️ National support schemes for Public Bodies
- ☀️ Specific schemes for ST in SMEs (e.g. Ministry of Environment, Torino, Puglia)
- ☀️ System standardisation
- ☀️ Built examples



Source: Ecosol

# System standardisation – Examples

Superficie collettore e grado di copertura solare			75 m <sup>2</sup>	100 m <sup>2</sup>	100 m <sup>2</sup>	150 m <sup>2</sup>	150 m <sup>2</sup>	200 m <sup>2</sup>
Europa centrale	Fabbisogno di acqua calda san.	l	5000/7500	7500/8000	10000/12000	12500/15000	15000/20000	20000/25000
	Grado di copertura solare	%	42/35	42/40	35/31	41/35	36/28	35/30
Europa meridionale	Fabbisogno di acqua calda san.	l	5000/7500*	7500/8000	10000/12000	12500/15000	15000/20000	20000/25000
	Grado di copertura solare	%	68/60	68/62	58/51	66/57	60/46	57/50

Source: <http://italia.sonnenkraft.com>

Source: <http://www.costruzionisolari.it>

<i>Capacità boiler [litri]</i>	<i>Dimensioni Solar System</i>		
	<i>Altezza [mm]</i>	<i>Larghezza [mm]</i>	<i>Profondità [mm]</i>
200	1420	710	1000
300	1930	710	1000
500	1930	860	1150
800	2065	1060	1350
1000	2360	1060	1350
1500	2435	1270	1600

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# Built examples

*95.2 kW (136 m<sup>2</sup>) – Hot water*

Source: [www.idaltermo.it](http://www.idaltermo.it)



*112 kW (160 m<sup>2</sup>) – Heating & Cooling*

Source: [www.kloben.it](http://www.kloben.it)



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# Built examples

322.5 kW (475 m<sup>2</sup>) – Hot water for spa

Source: [www.idaltermo.it](http://www.idaltermo.it)



# Built examples

56 kW (80 m<sup>2</sup>) – Hot water for washing plastic boxes

Source: [www.kloben.it](http://www.kloben.it)




BOX 3416



# The near future – Needs



 **Building regulation:** clear, simple and verifiable rules for solar

 **Tax reduction**

 avoid “stop and go” effects (2008-2010)

 simplification of the bureaucratic procedure (no building energy certificate needed)

 **Permitting:** simplification of the bureaucratic procedure

# The near future – Needs



 **System standardisation:** keep on developing...

 **Collaboration with housing associations:** awareness of building enterprises and building owners (partially done in SOLARGE project)

 **Training of all actors:** planners & designers, installers & plumbers

# The near future – CSTS goals



Goal for 2020: **15% share of CSTS**, which means:

 **AAS: 330 MW market in 2020**

 **1 m<sup>2</sup>: 1,600 MW market in 2020**

[www.ambienteitalia.it/solare.htm](http://www.ambienteitalia.it/solare.htm)



[www.assolterm.it](http://www.assolterm.it)



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THANK YOU!

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