



Bringing Industrial Solar Heat to Market

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The **company** in 1 minute



Tech startup founded in 2016
Transportable Fresnel collector **FLT20**

+










Industry brach of SIMETRIA
Manufacturing process
Engineering & project commissioning

=



Joint-venture for the SME market
Spanish reference with 7 plants in
operation/construction

 In operation
 In construction
 In development

 Thermal oil
 Pressurized water
 Hot air
 Steam



 Thermal oil
225°C



 Hot air
350°C



 Pressurized water
120°C



Focus on the **SME** market





Traditional vs SME approach

Large company



Meat processing industry
(Valencia) Spain

SME



Annual thermal energy demand
Available surface

27,6 GWh
12.400 m²

1,34 GWh
1.790 m²

Fuel price
Decision process
Energy density
Market*

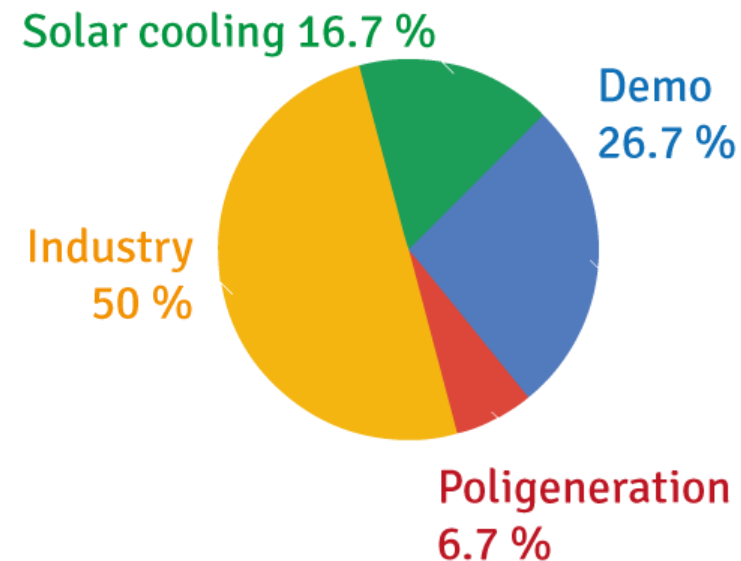
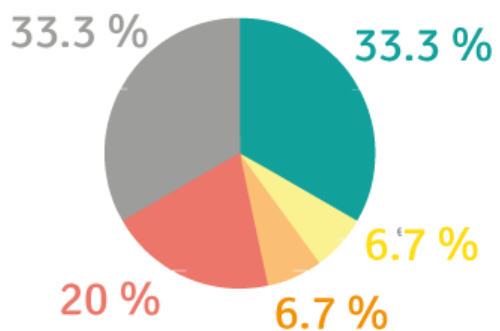
0.0187 €/kWh (NG)
> 3 decision makers
2.22 MWh/m²
0.9 %

0.059 €/kWh (Fueloil)
1 decision maker
0.748 MWh/m²
99,1 %



The situation in Spain

- In operation
- In construction
- No operation
- Dismantled
- Unknown ???



	with Dismantled	without Dismantled
Total refs:	30	24
Tot. Surf:	9259 m ²	3615 m ²
Avg. Surf:	462 m ²	200 m ²
Hot water:	22	20





Main challenges in the SME approach

Market

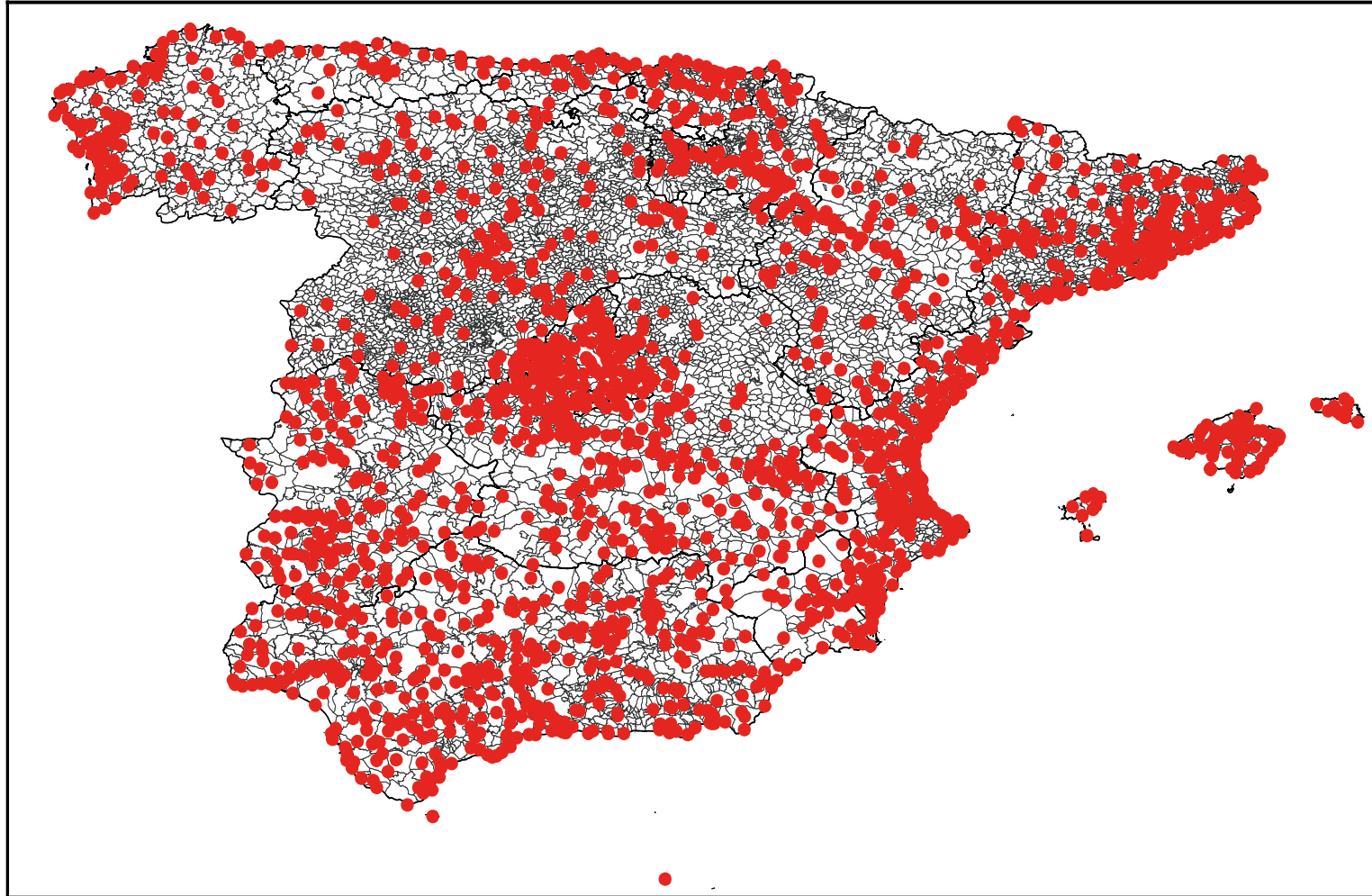
Extremely **atomized** market (In Spain +3M companies)
Very difficult to reach them

Product

In medium and small projects,
Engineering & **fixed costs** become significant



SOLATOM's approach to bring CSH to market



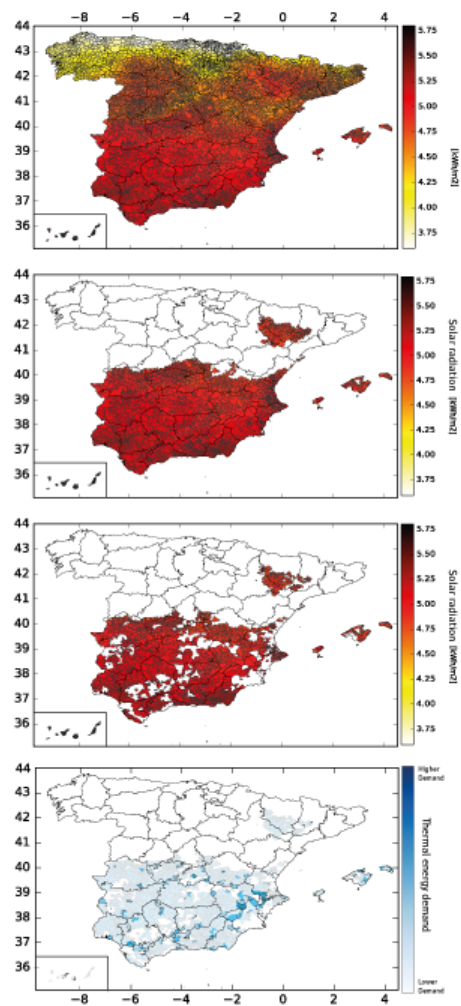


SOLATOM's approach to bring CSH to market





Case-by-case approach for assessing the market



PABLO - Probabilistic Algorithm for Better Lead acquisition

PHASE 1 - Municipality resolution

$X = 8142$

Example for textile industry

100%

57%

43%

4,8%

$X' \subseteq X$

PHASE 2 - Industry resolution

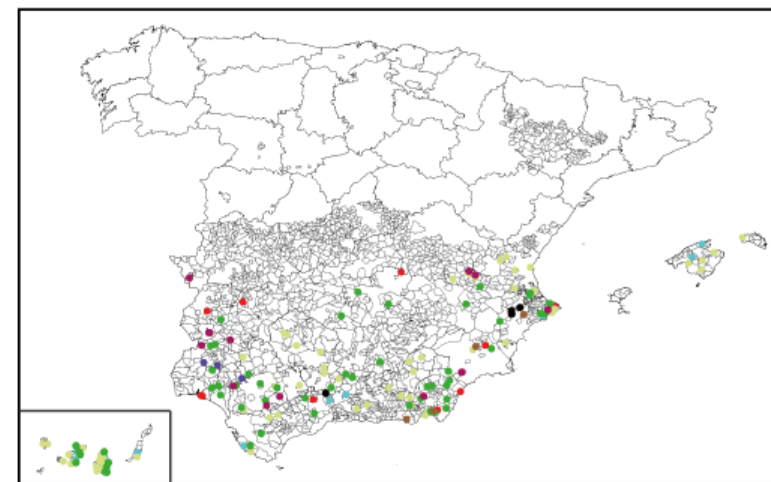
$Y_{X'}$

100%

43%

26%

$Y_{X'}$



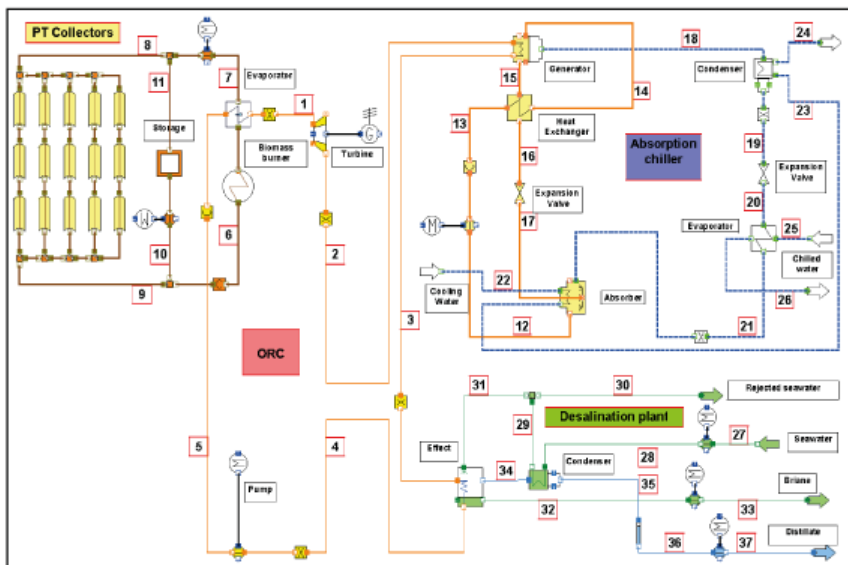
- Mining (3)
- Chemical (14)
- Sewage TP (62)
- Laundries (21)
- Food&Bev (42)
- Agro (15)
- Textile (5)
- Paper (4)

How to study **400 industries** in 5 months

Large industry approach

>4200 €

2 weeks

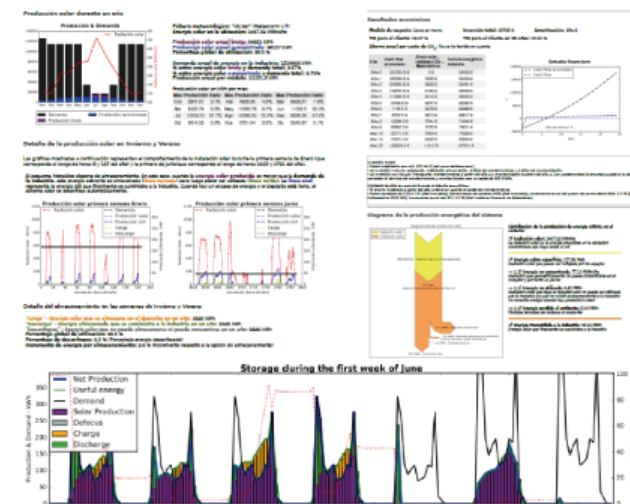


SME approach



Free

30 seconds





Fast assessment of feasibility

<https://github.com/mfrasquet>

1819 simulations

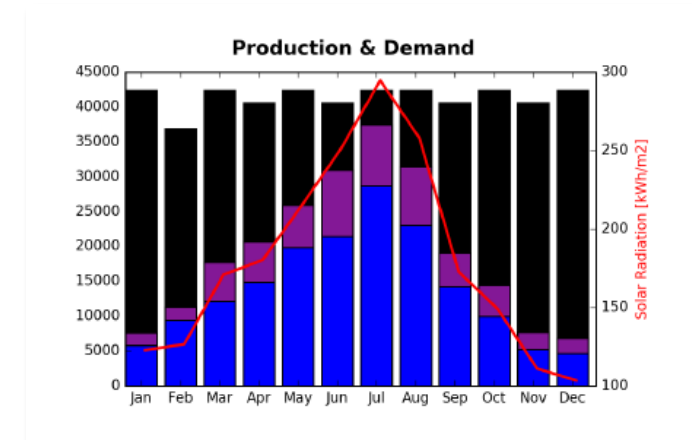
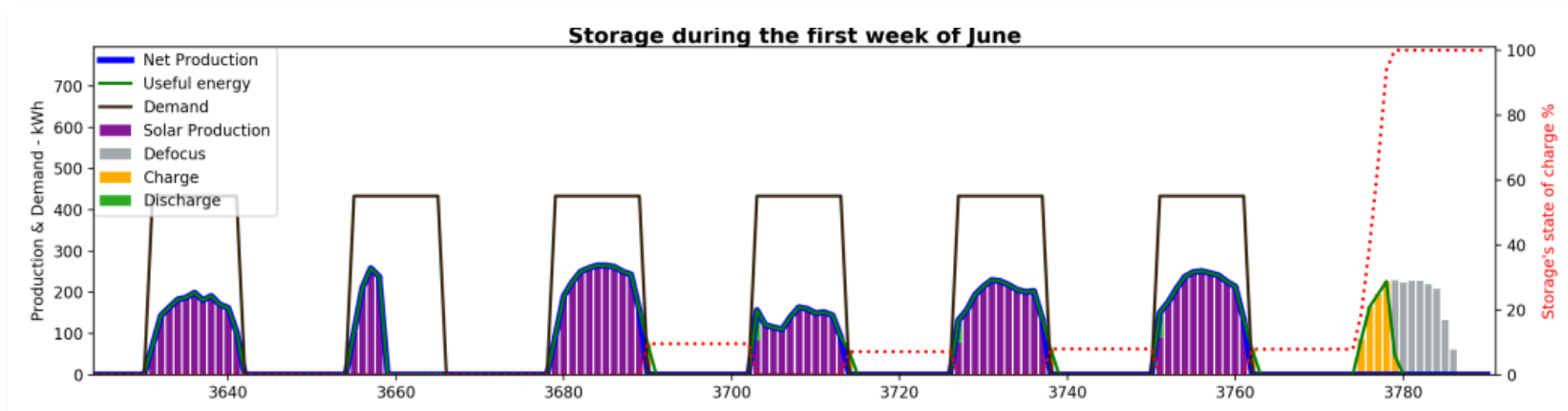
ReSPI
www.resspi.com



Open-source online calculator for CSH

Python 3

139 users (18 countries)





How to make SME projects **cost-competitive**

Large industry approach

In-situ ad-hoc construction



SME approach

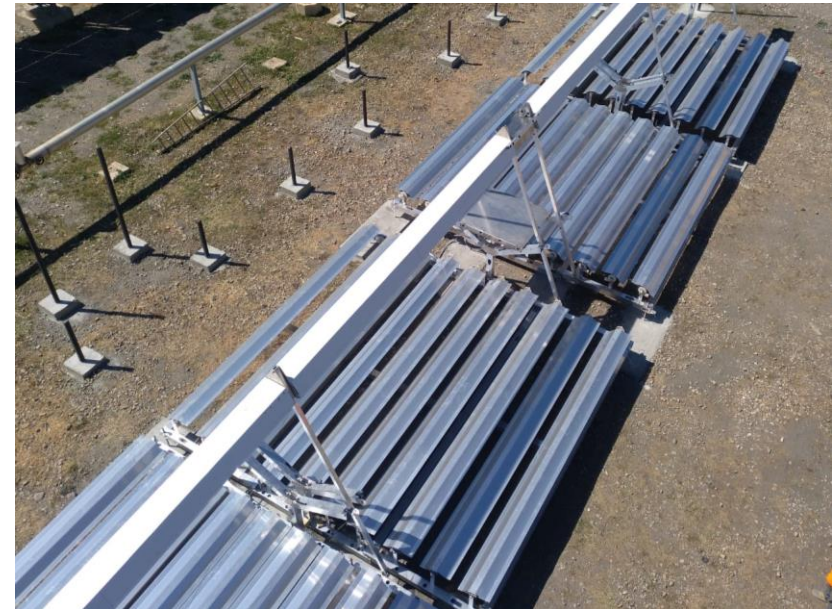


Pre-assembled standard modules



ref: Soltigua 2014 - InSun project

Pre-assembled units - fast deployment





Pre-assembled units - fast deployment



Pre-assembled units - fast deployment



Standard **solar module**



Self-calibrated



Fast deployment



Standard **BOP in rack**

Have **fun**, and enjoy the **sun**!! Thank you



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www.calorsolar.es