aiguasol

Subtask C-D3

Status report

- **Oriol Gavaldà**

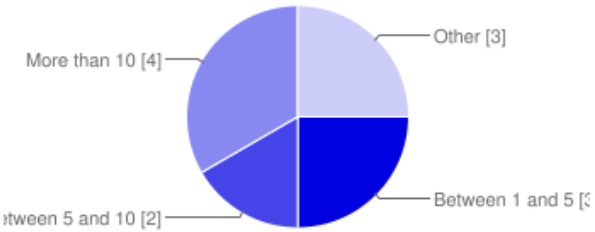
- *24th October 2011*

Subtask C-D3

- A questionnaire was sent around to all partners
- The results are summarised in the present presentation

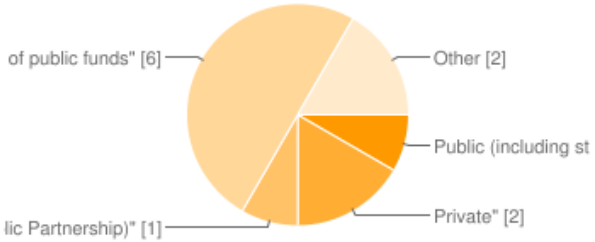
General data

How many solar thermal plants bigger than 1000 m2 have you designed?



Between 1 and 5	3	25%
Between 5 and 10	2	17%
More than 10	4	33%
Other	3	25%

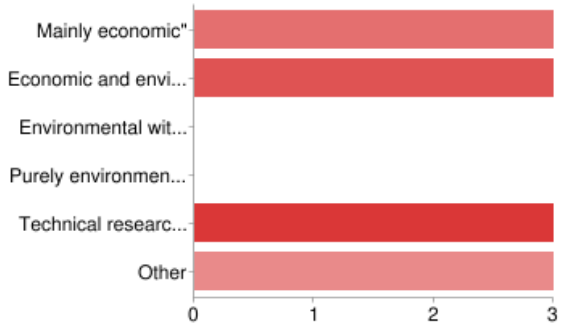
Please finish the sentence with the most adequate ending : "In most of the solar thermal plants we have designed, the developer was



Public (including state owned ESCOs)"	1	8%
Private"	2	17%
PPP (Private Public Partnership)"	1	8%
Private with help of public funds"	6	50%
Other	2	17%

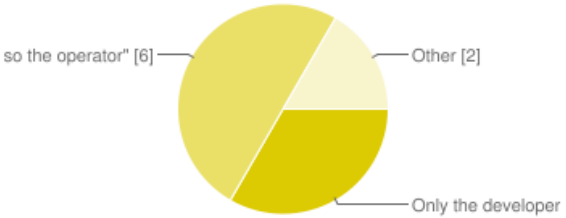
General data

Please finish the sentence with the most adequate ending : "In most of the solar thermal plants the most important indicators to move forward the installation were



Mainly economic"	3	25%
Economic and environmental"	3	25%
Environmental with a minimum IRR in the economic part"	0	0%
Purely environmental"	0	0%
Technical research (with environmental and economic criteria)"	3	25%
Other	3	25%

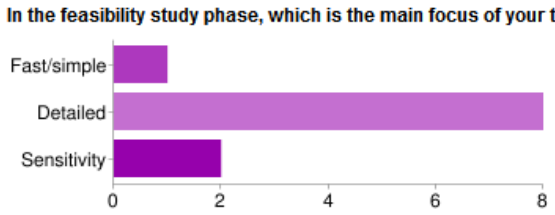
Please finish the sentence with the most adequate ending : "In most of the solar thermal plants the developer was



Only the developer, it was operated by someone else"	4	33%
Was also the operator"	6	50%
Other	2	17%

Feasibility tools

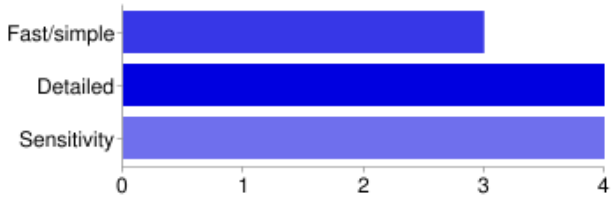
- Tool to be developed
  - 1 unclear question
  - 5 blank answers (unclear question?)
  - 6 simple and user friendly, but trustworthy (most mentioning TRNSYS)



Fast/simple	1	8%
Detailed	8	67%
Sensitivity	2	17%

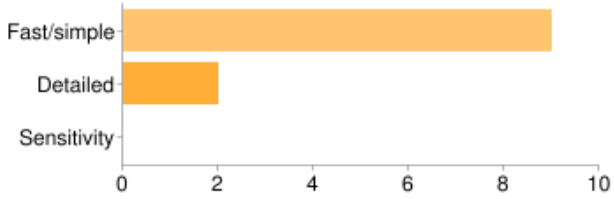
Feasibility tools

In the feasibility study phase, which is the main focus of your tools? - Economical analysis



Fast/simple	3	25%
Detailed	4	33%
Sensitivity	4	33%

In the feasibility study phase, which is the main focus of your tools? - Environmental analysis

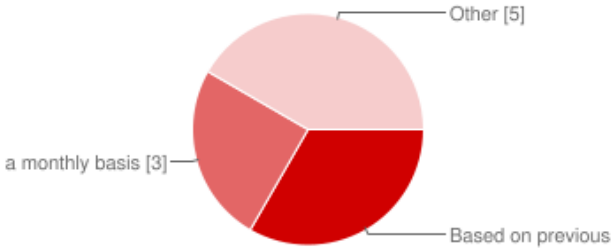


Fast/simple	9	75%
Detailed	2	17%
Sensitivity	0	0%

Feasibility tools

- Reference case considered
  - 4 gas boilers
  - 4 only mentioning fossil fuels, no transformation system
  - 1 gas CHP

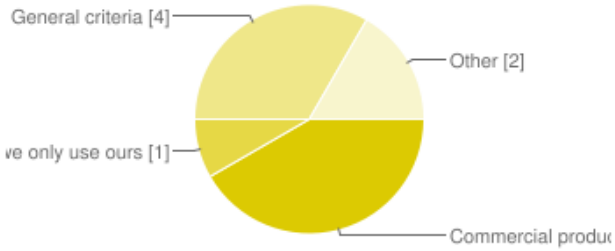
In the feasibility study phase, you analyse the demand, in most of the cases,



Based on previous experience and ratios	4	33%
Based on real data, on a monthly basis	3	25%
Other	5	42%

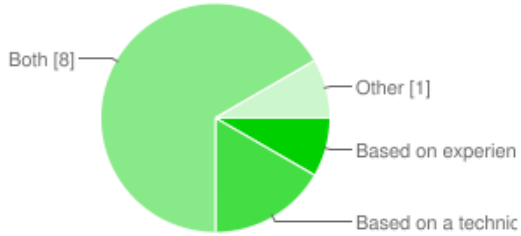
Feasibility tools

In the feasibility study phase, do you base your analysis on commercial products, or you evaluate the behaviour in general criteria? (type of collector, surface of solar thermal collector, volume of accumulation,...)



Commercial products, we evaluate various possibilities	**5**	42%
Commercial products, we are also manufacturers, we only use ours	**1**	8%
General criteria	**4**	33%
Other	**2**	17%

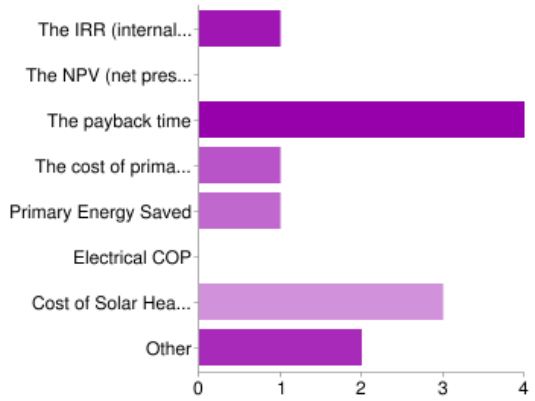
In the feasibility study phase, you design mainly



Based on experience and previously acquired ratios	**1**	8%
Based on a technical analysis for each of the cases	**2**	17%
Both	**8**	67%
Other	**1**	8%

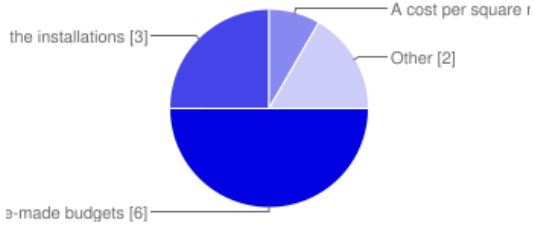
Feasibility tools

In the feasibility analysis phase, the main indicator of the studies is...



The IRR (internal rate of return)	**1**	8%
The NPV (net present value)	**0**	0%
The payback time	**4**	33%
The cost of primary energy savings	**1**	8%
Primary Energy Saved	**1**	8%
Electrical COP	**0**	0%
Cost of Solar Heat : Annual Expenses (loans and operation/maintenance cost) /Annual Solar Production	**3**	25%
Other	**2**	17%

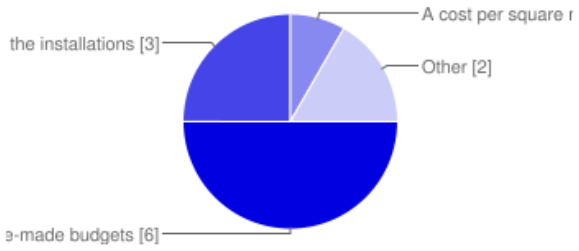
In the feasibility study phase, as for investment costs, you use



Real pre-made budgets	**6**	50%
Analytical functions of costs of the different elements of the installations	**3**	25%
A cost per square meter of collector	**1**	8%
Other	**2**	17%

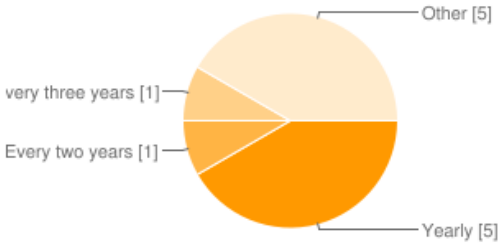
Feasibility tools

In the feasibility study phase, as for investment costs, you use



Real pre-made budgets	**6**	50%
Analytical functions of costs of the different elements of the installations	**3**	25%
A cost per square meter of collector	**1**	8%
Other	**2**	17%

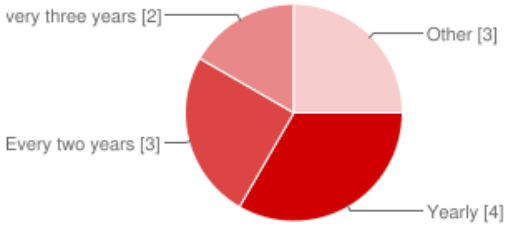
How often do you analyse the used ratios or costs?



Yearly	**5**	42%
Every two years	**1**	8%
Every three years	**1**	8%
Other	**5**	42%

Feasibility tools

In the feasibility study phase, how often do you actualise the operational costs?



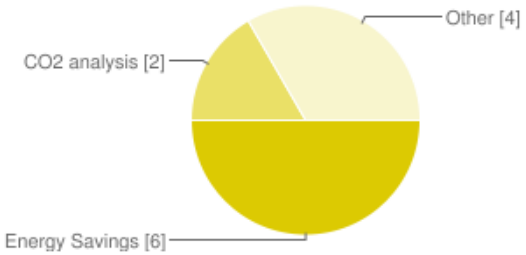
Yearly	4	33%
Every two years	3	25%
Every three years	2	17%
Other	3	25%

- Increase in energy prices considered
  - Very disperse answers (from 3 to 12%)
- Sensitivity analyses
  - Not too much consideration
  - No use of a common tool (only R one partner)

Feasibility tools

- Database of all installations, with technical data
  - Everyone agrees
  - Two existing databases:
    - www.solar-district-heating.eu
    - http://www.solarthermie2000plus.de/
  - One answer mentioning that problems should be explained as well

The environmental indicators you use for the evaluation of your system are based on...



Primary Energy Savings	6	50%
CO2 analysis	2	17%
Other	4	33%

Partners who replied

Ritter XL Solar
LOGSTOR
University of Stuttgart, Institute of Thermodynamics and Thermal Engineering
Solites
Chemnitz University of Technology/Professorship Technical Thermodynamics
Politecnico di Milano
IREC
Energie Solaire SA
SOLID
PlanEnergi
AIGUASOL

Main considerations, after the results

- A simplified tool, easy to use, is seen as necessary
- Most of the partners, though, tend to think this tool must be technically trustworthy (a lot think it has to be TRNSYS based)
- Some effort should be done in the agreement in economic hypotheses and necessary sensitivity analyses in the economic part
- Conclusions to be discussed in the meeting!!!

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