

Analysis of the integration of heat and electricity prosumers into the existing energy system with the focus on solar technologies

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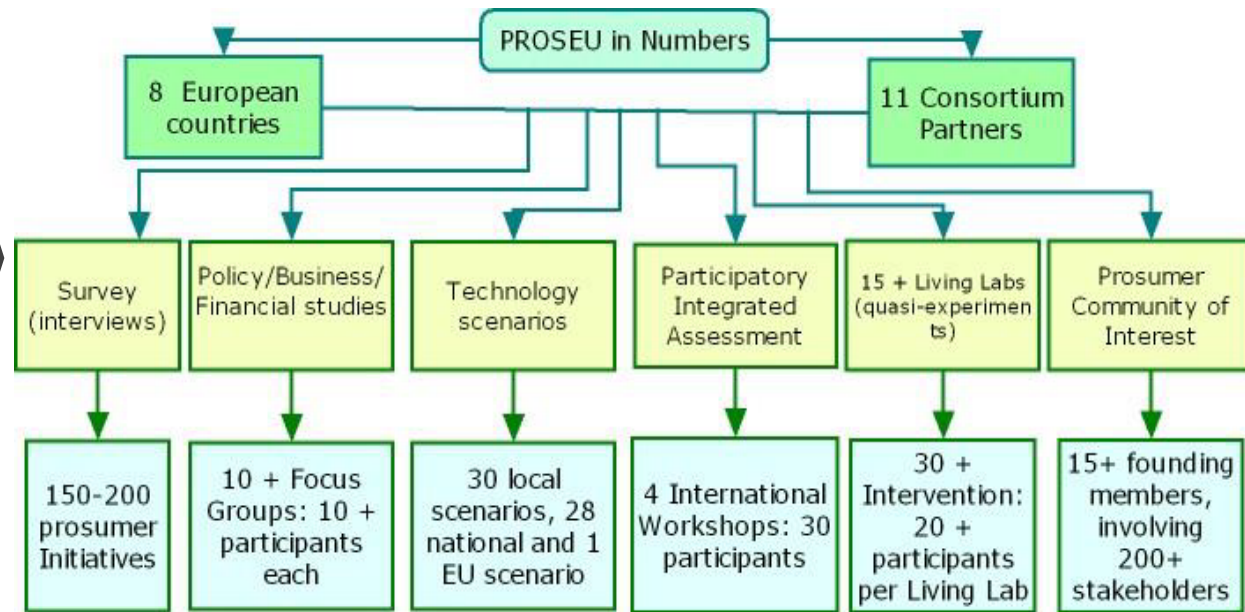
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CONTENT

- PROSEU project
- Case study
- Scenarios
- Results

PROSEU Project



- Determining what **incentive structures** will enable the **mainstreaming of RE prosumerism** and, in so doing, safeguarding citizen participation, inclusiveness and transparency in the **Energy Union**.

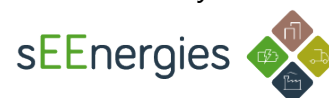


CASE STUDY

- Neighbourhood level case study – neighbourhood of Lanište in Zagreb
- 3214 inhabitants – 1202 households
- Heating demand 30 109 MWh
- Electricity demand 4 000 MWh



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SCENARIOS

- energyPRO modelling

Reference scenario

Scenario 1

Scenario 2

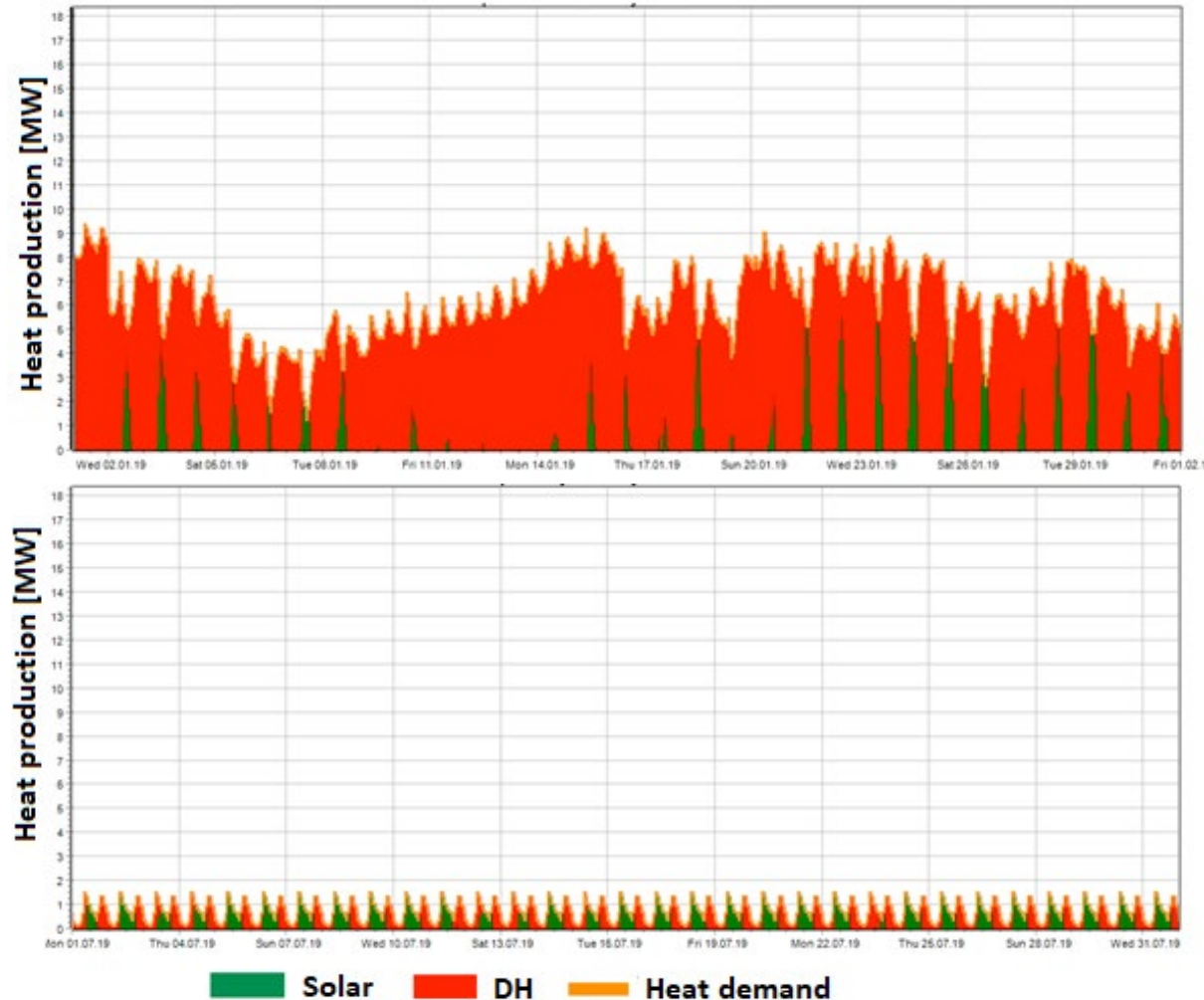
Heat	Electricity	Heat	Electricity	Heat	Electricity
Individual gas boilers	Grid	Solar collectors	Grid	Solar collectors	Grid
		District heating	Photovoltaic panels	District heating	Photovoltaic panels
				Thermal storage	

RESULTS

- **Scenario 1**

Heat production

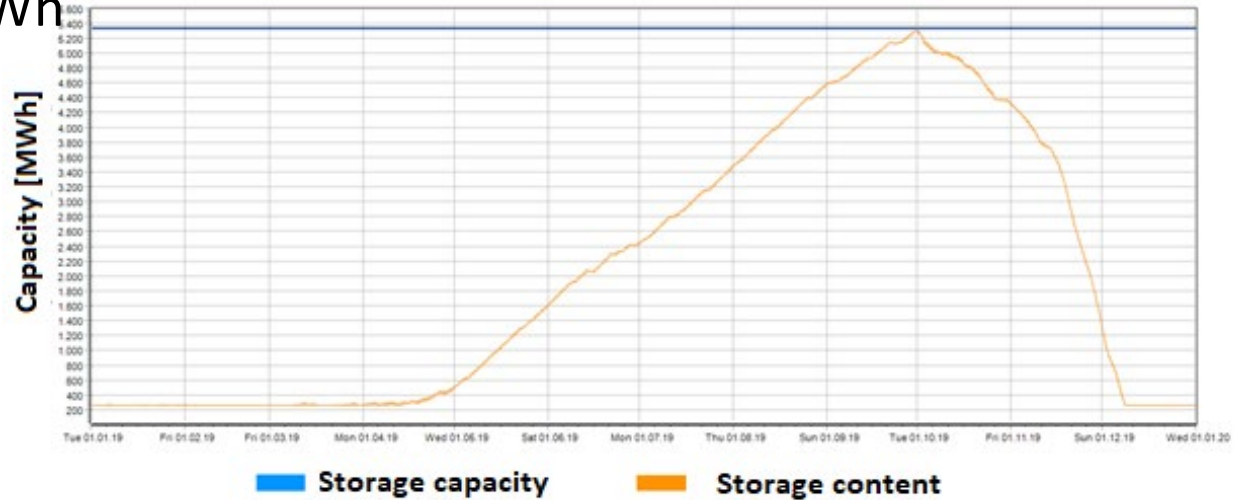
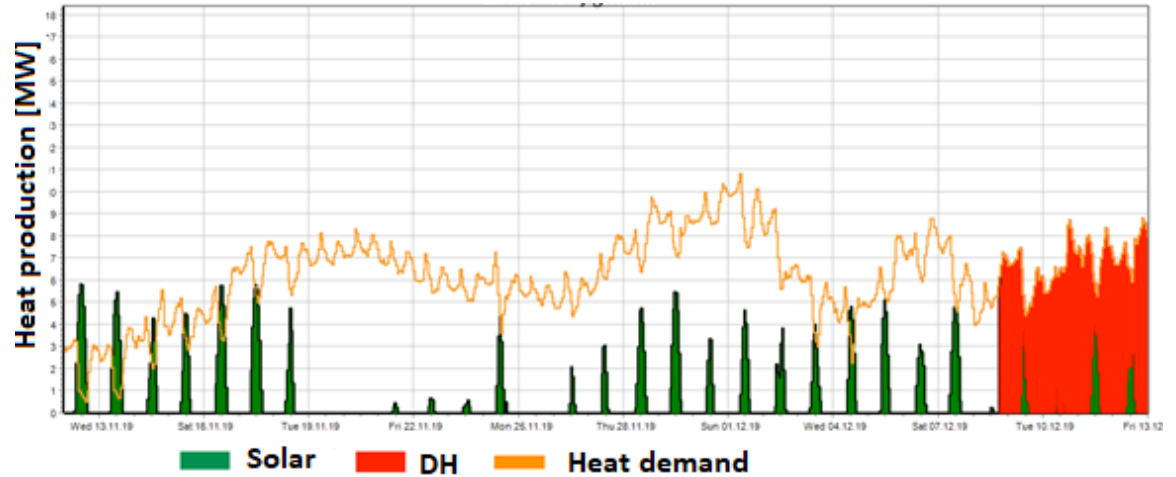
- Solar thermal 3.9 GWh
- DH 26.2 GWh (87%)



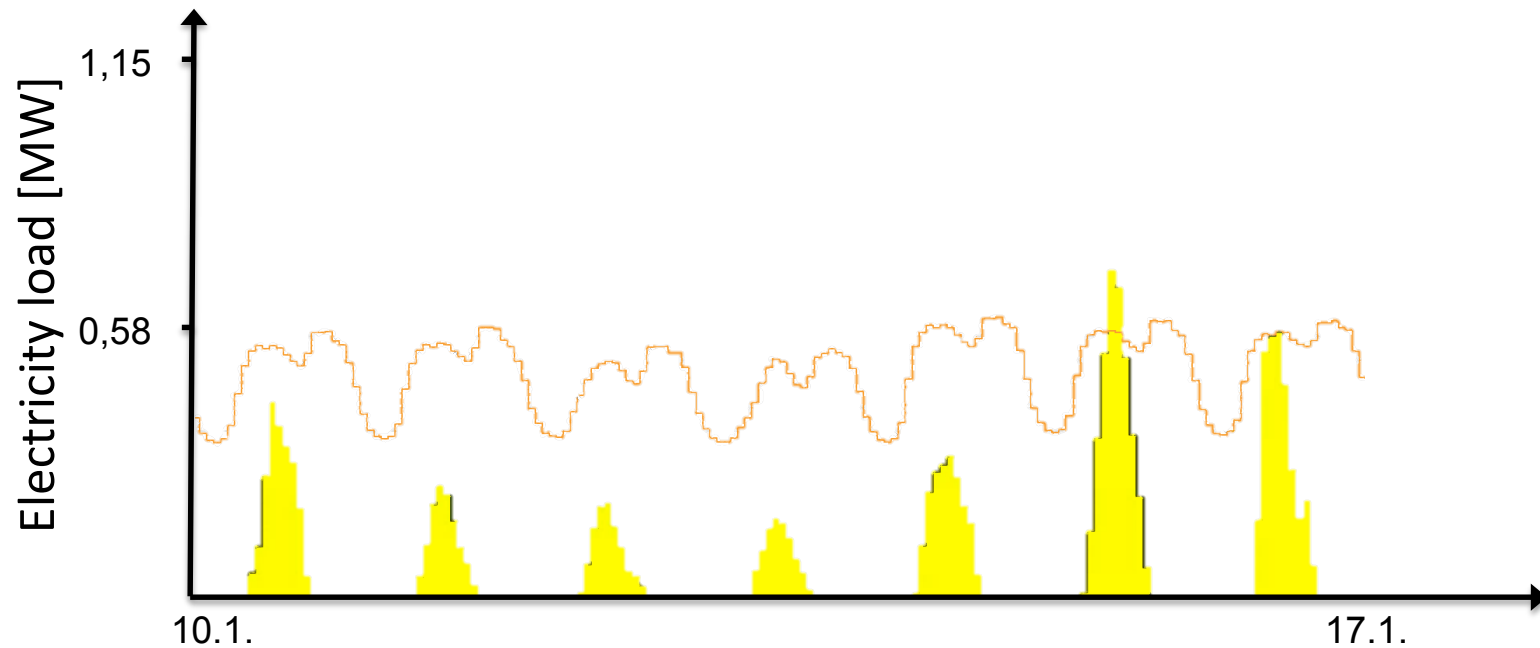
• **Scenario 2**

Heat production

- Solar thermal 12.4 GWh
- DH 17.7 GWh (59%)



- **Scenario 1&2**



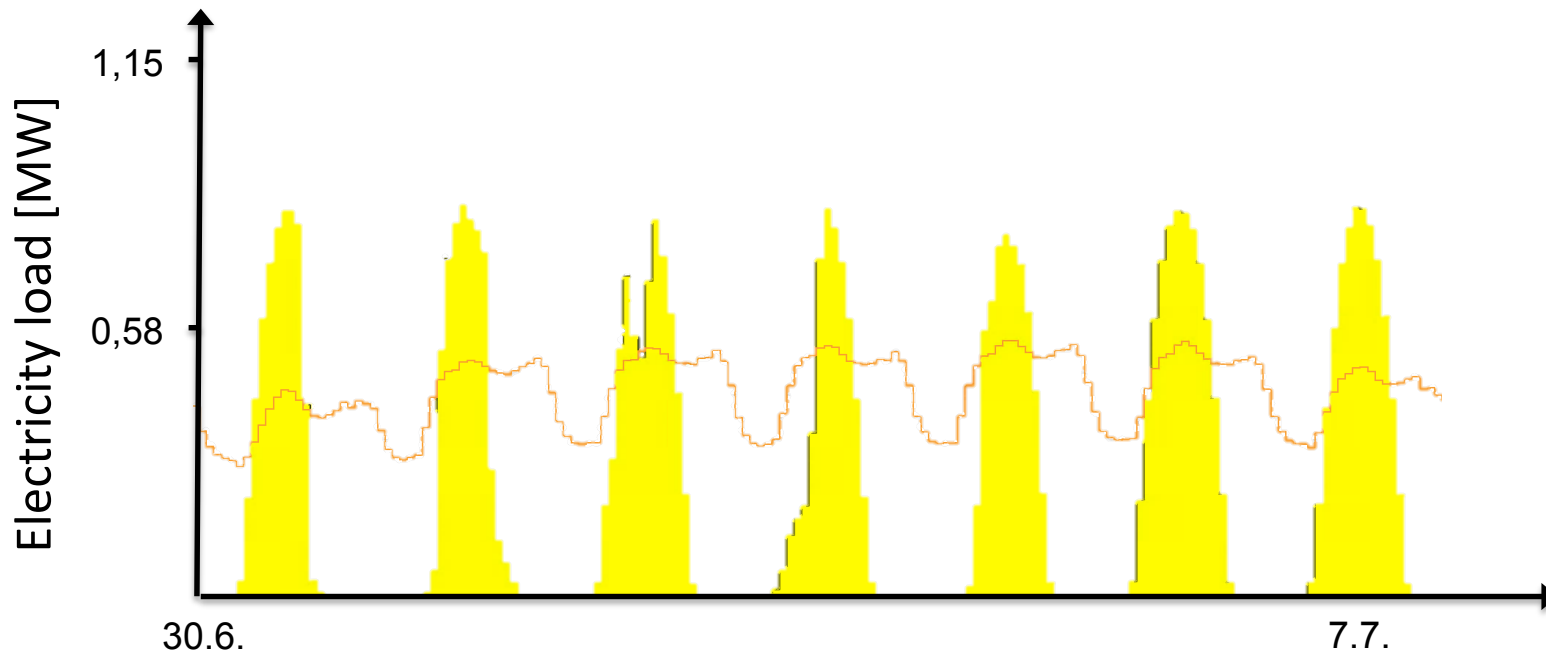
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- **Scenario 1&2**



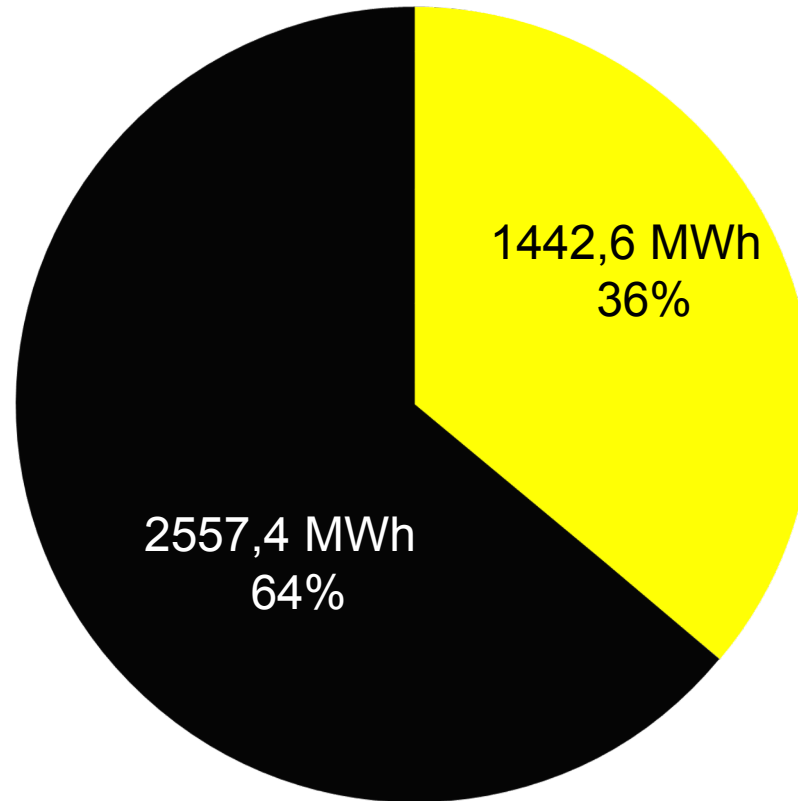
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452 MWh sold to the grid



 PV panels  Grid

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Economic indicators

	Reference	Scenario 1	Scenario 2
Investment [HRK]	3 069 740	3 447 405	4 998 059
O&M costs [HRK]	1 835 755	578 206	681 449
Cost of electricity [HRK]	3 096 271	1 757 903	1 757 903
Cost of natural gas [HRK]	9 467 389	-	-
Cost of heat from DH [HRK]	-	5 413 215	3 671 559
Income from PV panels [HRK]	-	176 319	176 319
Total annual costs [kn]	17 469 155	11 020 410	10 932 651



Environmental indicators

	Reference	Scenario 1	Scenario 2
Natural gas [tCO ₂]	6835,14	-	-
Electricity [tCO ₂]	1504	961,58	961,58
DH [tCO ₂]	-	6718	4560,33
Total [tCO ₂]	8339,14	7679,58	5521,91

Thank you for your attention!



PROSEU website: <https://proseu.eu/>

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