



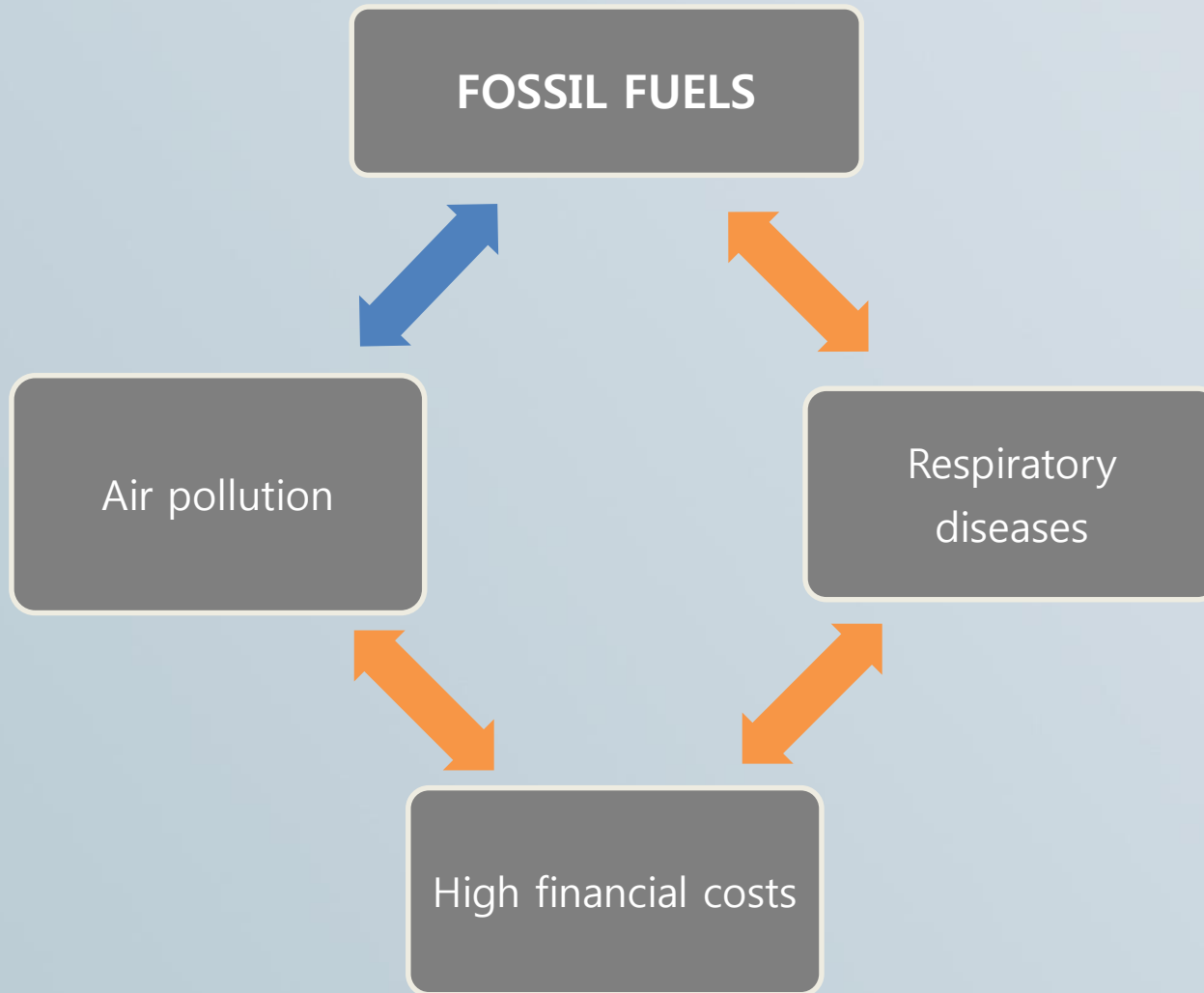
Municipality of Visoko – Case study



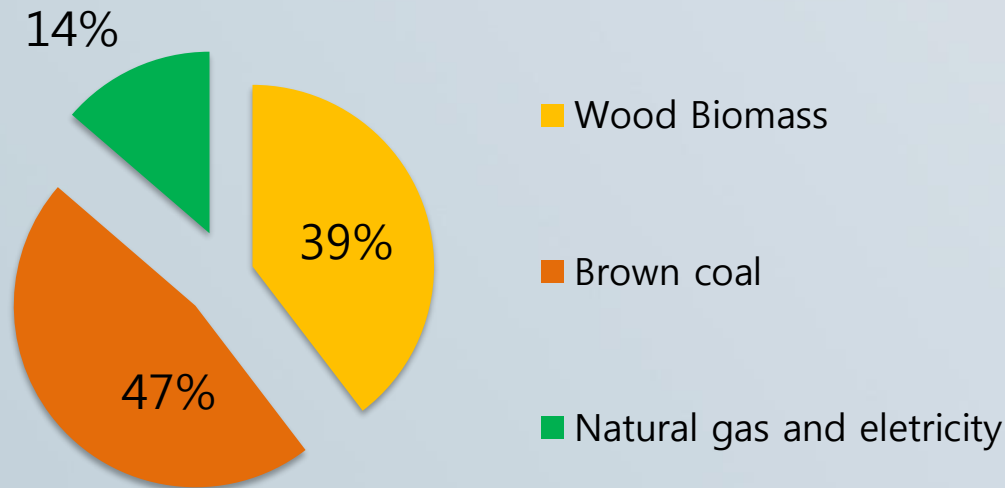
Marin Petrović



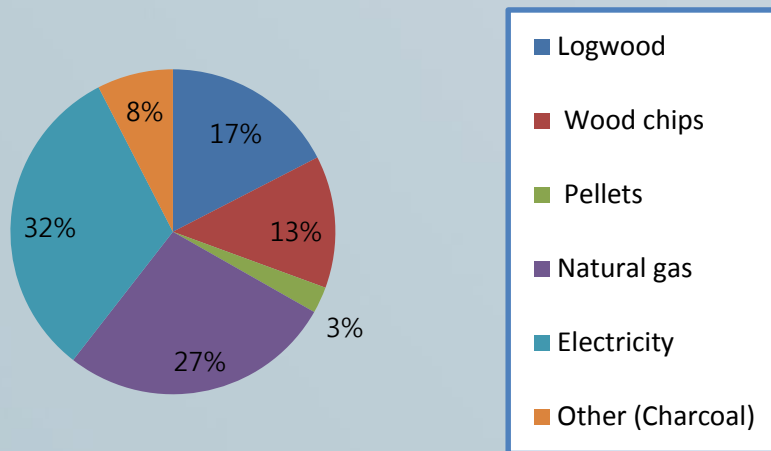
Problems in the heating sector in Visoko



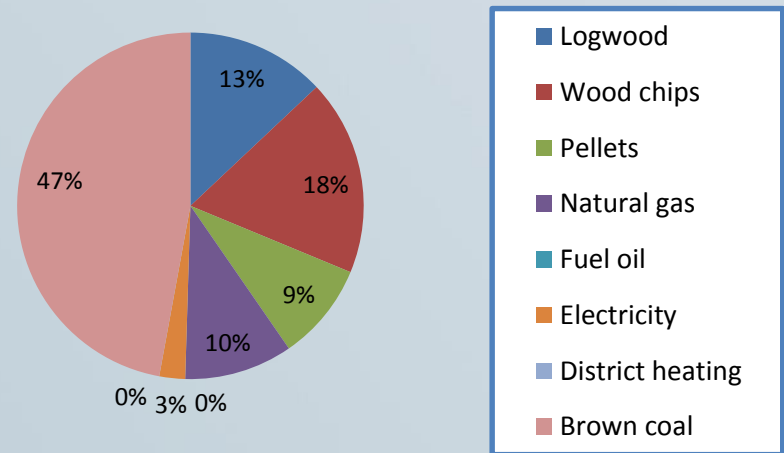
Problems in the heating sector in Visoko



Energy sources used for heating
(collective housing)



Energy sources used for heating
(individual housing)



Project area of Visoko municipality

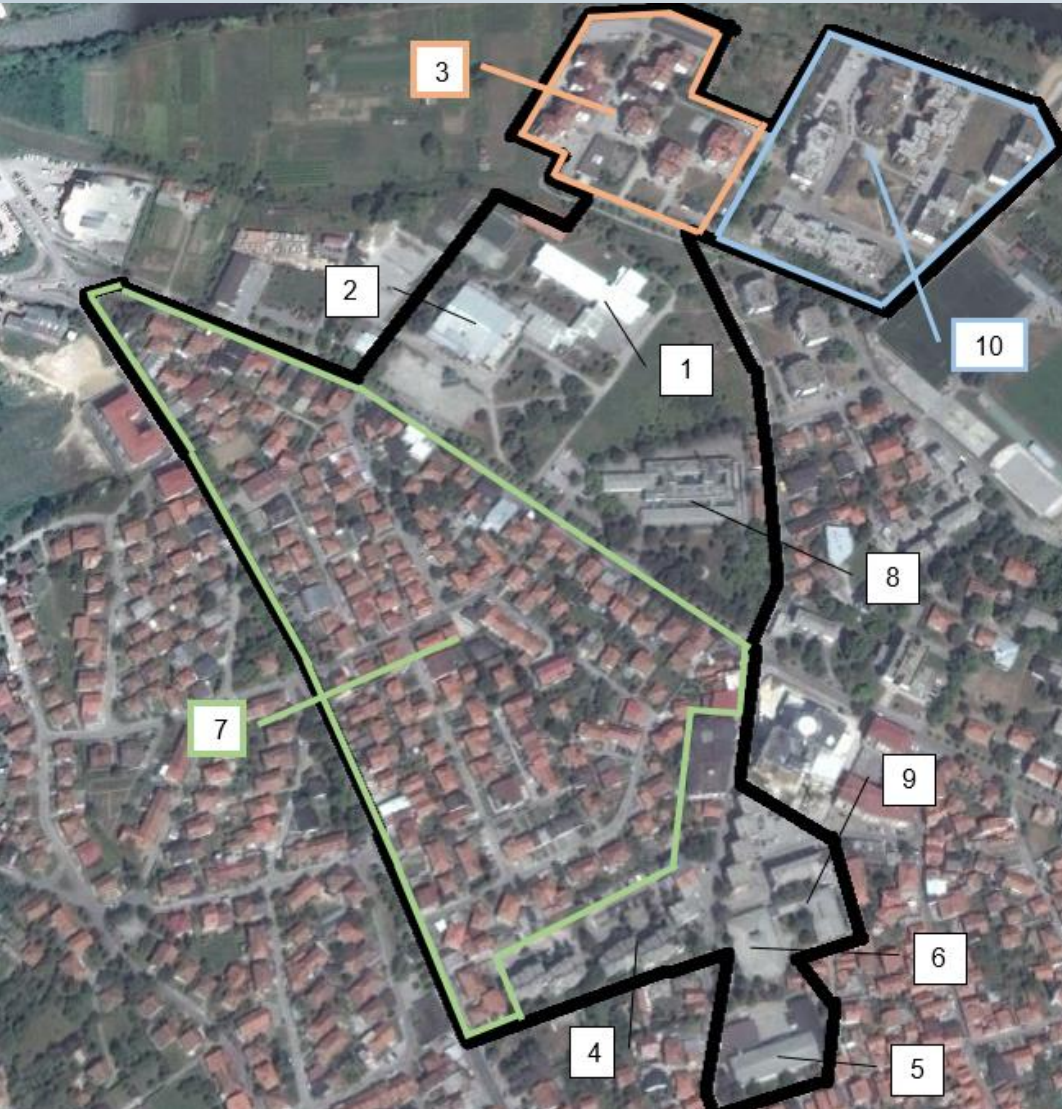
CoolHeating project:

- Heat production: 98 GWh
- CO2 reduction: 27.806 t


Name or type of building

1	Secondary school "Hazim Šabanović"
2	Sports centre "Mladost"
3	Collective housing facilities – LUKE 1
4	Collective housing facilities „Dahirovac“
5	Primary school „Safvet beg Bašagić“ and Music school „Avdo Smajlović“
6	Crèche
7	Individual housing facilities „H. Voda“
8	Medical centre
9	Social work centre
10	Collective housing facilities - LUKE 2

• Total conditioned area: 91,000 m²



Project area of Visoko municipality



Number	Name or type of building	Heated area [m ²]	Specific heat demand for space heating and hot water [kWh/m ² /a]	Demand for heating and hot water preparation [kWh/a]
1	Secondary school "Hazim Šabanović"	5.047	242	1.222.163
2	Sports centre "Mladost"	3.350	347	1.162.738
3	Collective housing facilities – LUKE 1	12.510	180	2.251.800
4	Collective housing facilities „Dahirovac“	12.000	180	2.160.000
5	Primary and Music school	3.027	180	544.860
6	Crèche	1065	180	191.700
7	Individual housing facilities „Hadžijina voda“	37.585	220	8.268.700
8	Medical centre	4895	180	682.654
9	Social work centre	390	200	78.000
10	Collective housing facilities - LUKE 2	12.000	200	2.400.000



Secondary school „Hazim Šabanović“



Year of construction: 1983
Conditioned area: 5,047 m²
Energy efficiency measures:
PVC windows and doors, 10 cm EPS @ NE
Fuel consumption: 50,000 m³ – natural gas
Annual heating costs: 25,000 EUR



Secondary school „Hazim Šabanović“

- Energy efficiency rating: *F (242 kWh/m² before 10 cm EPS @ NE)*
- Current needs: *1,200 MWh/a*
- Roof surface: *≈ 2,400 m²*



South



Sports centre "Mladost"

Year of construction: 1984
Conditioned area: 3,340 m²
Energy efficiency measures: none
Fuel consumption: 22,000 m³ of natural gas
old boiler out of use

Building connected to Secondary school heating system, periodical use.

Annual heating costs: 13,500 EUR
(gas + electricity)



Average temperature < 5°C



OUT OF USE



Sports centre "Mladost"

- Energy performance certificate
- Energy efficiency rating: **G** (347 kWh/m²)
- Current needs: **1,200 MWh/a**
- Roof surface: 3,078 m²

	Mjesto	Visoko		
	Vlasnik/Investitor/Korisnik	Općina Visoko		
ZA NOVE OBJEKTE	Izvođač			
	Godina izgradnje			
KATEGORIJA ZA NESTAMBENE OBJEKTE	$E_p = Q_{H,nd,ref} / A_k$	kWh/m ² a	PRORAČUN 340	ALTERNATIVNO
	A+	≤ 15		
	A	≤ 45		
	B	≤ 95		
	C	≤ 135		
	D	≤ 180		
	E	≤ 225		
	F	≤ 270		
	G	>270		



Sports centre "Mladost"



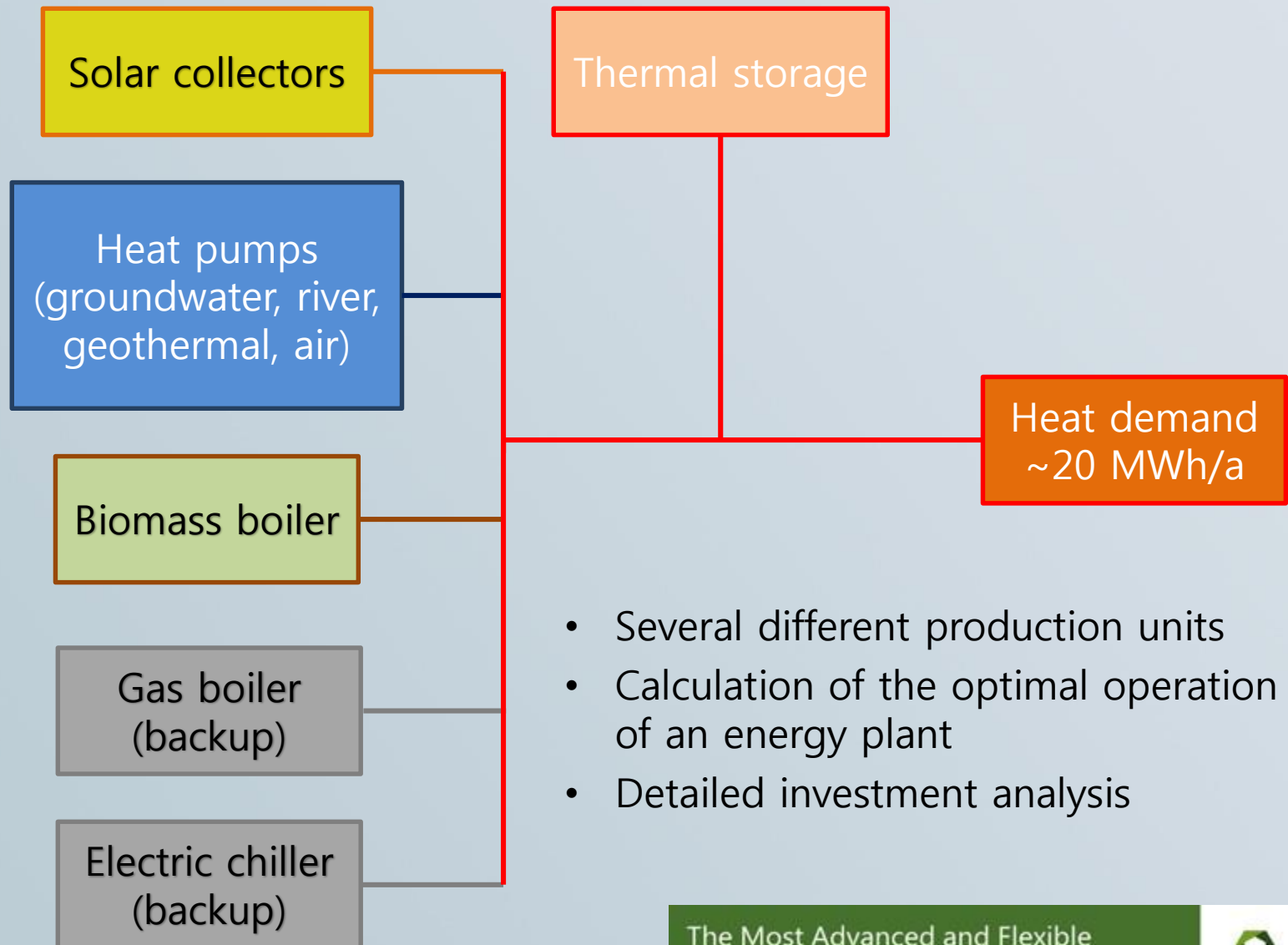
Medical Centre



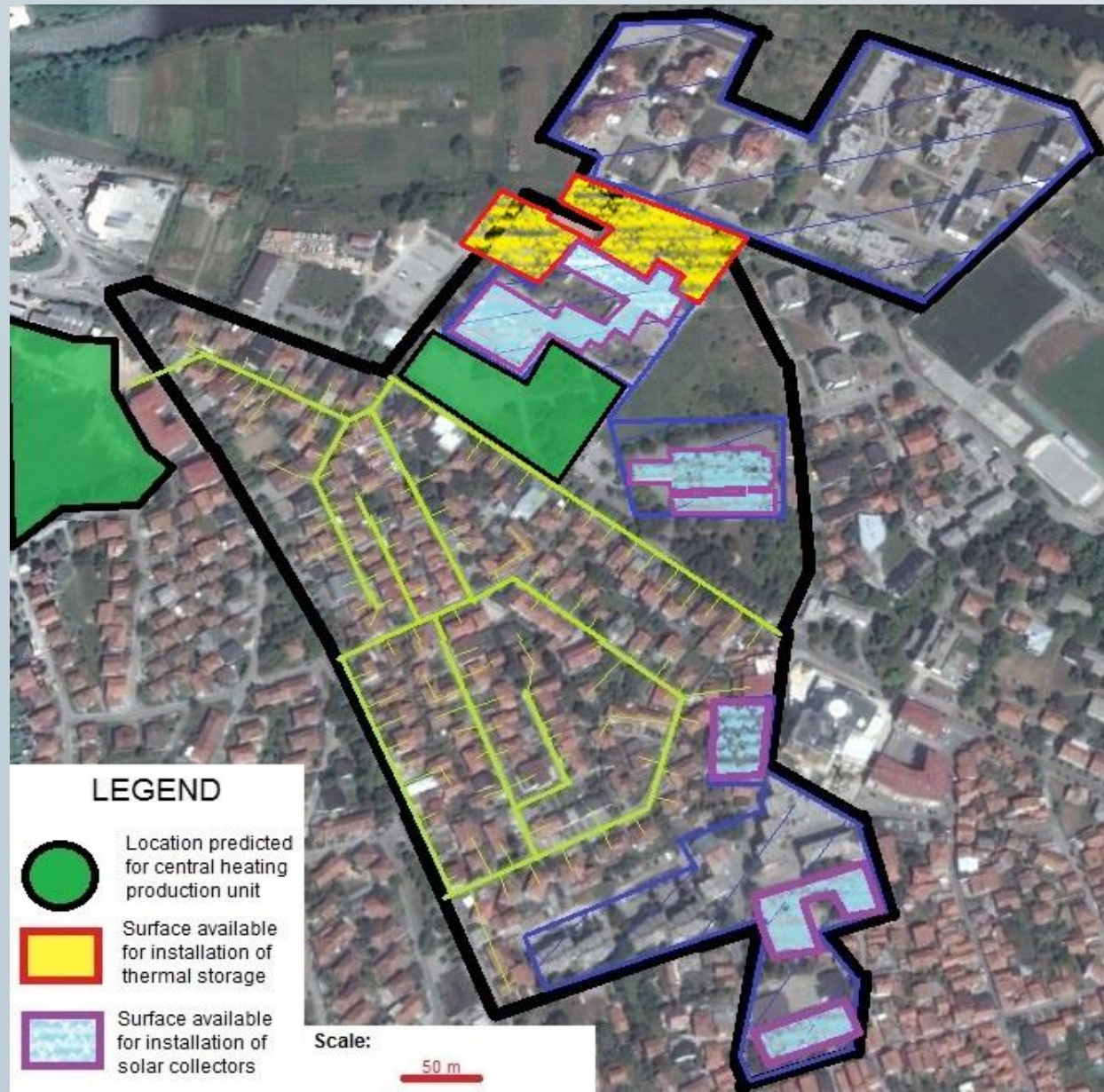
Represents of collective housing buildings



Technical concept (solution)



Potential locations for solar collectors, thermal storages and heating plants





... because we all need cleaner environment!

