

Solar District Heat – Switzerland

Services Industriels de Genève - *Geneva*

Commissioning Date	Jan 2021
# TVP Panels	400
Panel Gross Area	800 m ²
Mounting	elevated platform
Application	district heat retrofit
Thermal Peak Power	546 kW
TVP Production	539 MWh/yr
Delivery Temp	90°C
Return Temp	75°C
Savings: natural gas	66'123 m³/yr
Savings: CO₂	131 ton/yr
Cost of Heat	62 CHF/MWh



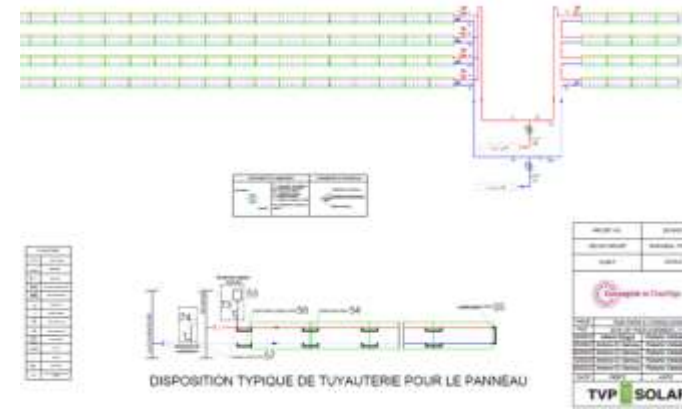
Sunlight (GHI)	1'293 kWh/m ² /yr
TVP Performance	673 kWh/m²/yr
Avg. Efficiency	53.3 %
Operating Hours	Daytime
Storage	none
Client Motivation	CO ₂ reduction energy cost saving

Solar District Heat – France



Compagnie de Chauffage de Grenoble (CCIAG) - *Grenoble*

Commissioning Date	Dec. 2022
# TVP Panels	88
Panel Area	176 m ²
Mounting	Rooftop
Application	DH booster retrofit
Thermal Peak Power	120 kW _{th}
TVP Production*	128 MWh/yr
Delivery Temp	85°C
Return Temp	72°C
Savings: natural gas	15'700 m³/yr
Savings: CO₂	31 ton/yr
Cost of Heat	40 EUR/MWh



Sunlight (GHI)	1'433 kWh/m ² /yr
TVP Performance	727 kWh/m²/yr
Avg. Efficiency	54 %
Operating Hours	Daytime
Storage	none
Client Motivation	innovation

-- UNDER CONSTRUCTION --
*Expected Production

Solar District Heat – Netherlands



Zonthermiepark / Warmtestad - Groningen

Commissioning Date	Dec 2023
# TVP Panels	24'000
Panel Area	48'000 m ²
Mounting	ground-mount
Application	district heat retrofit
Thermal Peak Power	37 MW _{th}
TVP Production*	25'000 MWh/yr
Delivery Temp	93°C
Return Temp	69°C
Savings: natural gas	3'067'000 m³/yr
Savings: CO₂	6'100 ton/yr
Cost of Heat	40 EUR/MWh



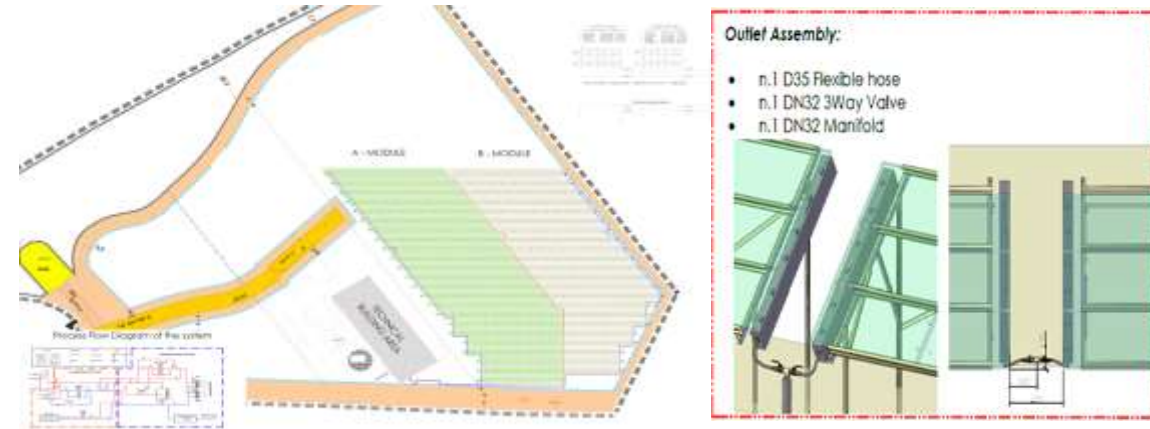
Sunlight (GHI)	994 kWh/m ² /yr
TVP Performance	520 kWh/m²/yr
Avg. Efficiency	52 %
Operating Hours	Daytime
Storage	6'000 m ³ water
Client Motivation	CO ₂ reduction
	energy cost saving

-- UNDER CONSTRUCTION --
*Expected Production

Solar District Heat – Germany

Stadtwerke Sondershausen- *Sondershausen*

Commissioning Date	April 2023
# TVP Panels	3'043
Panel Area	6'086 m ²
Mounting	ground-mount
Application	district heat retrofit
Thermal Peak Power	4 MW _{th}
TVP Production*	3'000 MWh/yr
Delivery Temp	93°C
Return Temp	69°C
Savings: natural gas	368'000 m³/yr
Savings: CO₂	732 ton/yr
Cost of Heat	50 EUR/MWh



Sunlight (GHI)	1'056 kWh/m ² /yr
TVP Performance	520 kWh/m²/yr
Avg. Efficiency	51 %
Operating Hours	Daytime
Storage	1'000 m ³ water
Client Motivation	CO ₂ reduction
	energy cost saving

-- UNDER CONSTRUCTION --
*Expected Production