



# EU INDUSTRY WEEK 2021

**#EUIndustryWeek**



# CHEAPER THAN ELECTRIFICATION

*How **solar heat** will replace oil and gas in the **EU industrial sector***

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# CASE STUDY FOR SHIP IN ITALY

GUGLIELMO CIONI

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# Dual Use Solar Thermal for Process Industry



**Steam Generation – Summer  
Space Heating – Winter**



**'Martini & Rossi' factory - Torino - Italy**

SHIP2FAIR project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 792276.

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# Solar Process Heat at M&R: Overview

**Context:** Demonstration site under the H2020 **SHIP2FAIR** project

**Solar thermal technology:** High Vacuum Flat Panels (HVFPs)

**Site & Location:** Alcoholic beverage plant – Pessione, Turin, Italy

**Global Horizontal Irradiance:** 1332 kWh/m<sup>2</sup>

**Installation:** Rooftop

**Collector surface:** 596 m<sup>2</sup>

**Installed Power:** 327 kWp

**Energy production:** 349,403 kWh/y (586 kWh/m<sup>2</sup>/y)

**Configuration:** Oct-Mar: Hot water. Operating T: 90°C (outlet)  
Apr-Sep: Steam. Operating T: 170°C (outlet)

**Installation completed:** Dec 2020; **Commissioning:** Feb 2021





# M&R solar system: Expected performance



**Martini & Rossi - Italy**

Fuel savings:

48.579 m<sup>3</sup>/year

Solar system efficiency:

45 % (average)



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# M&R solar system: construction

1



Rooftop surface preparation

2



Beams for substructure

5



Indirect steam generator

3



Substructure for panel installation

4



Solar field installation completed





**TVP SOLAR**



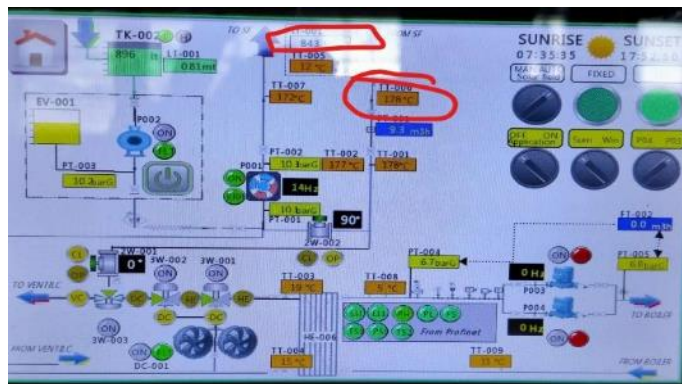
5

A large industrial cooling tower with two large fans, situated outdoors near a body of water. The cooling tower is a large, rectangular structure with two large, circular fans on the front. It is surrounded by various pipes, valves, and other industrial equipment. In the background, there is a body of water and some industrial structures.

3



4



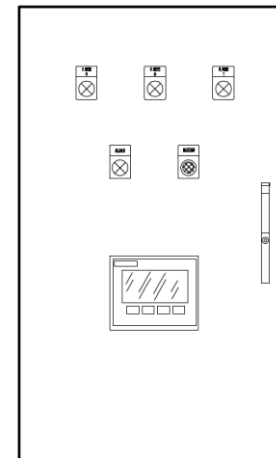


## Control & monitoring system of the solar field:

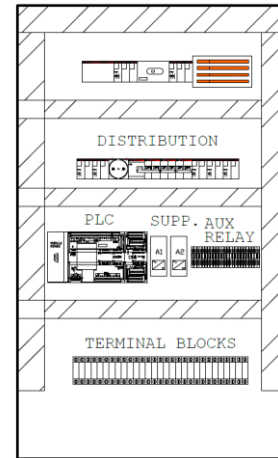
- ❖ To achieve a stable and desired setpoint despite fluctuations in solar radiation
- ❖ To optimise solar system operation for maximum heat generation meeting thermal demand
- ❖ To monitor performance and key operational parameters of the solar system

## Options for system configuration:

- ❖ **Pre-set:** Oct-Mar: Hot water. Operating T 90°C (outlet)  
Apr-Sep: Steam. Operating T 170°C (outlet)
- ❖ **Advanced:** Dynamically adjusting configuration based on weather forecast



**A** CONTROL CABINET  
EXTERNAL VIEW



**B** CONTROL CABINET  
INTERNAL VIEW





# Thank You



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supports **#solariseheat!**

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