



Sustainable Peri-Urban framework
for Climate Neutral development

SOLUTIONS PROVIDER

Absolicon T160 solar thermal process-heat system for Athenian Brewery GR02 Thessaloniki



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General Information

Solution Name

Absolicon T160 solar thermal process-heat system for Athenian Brewery GR02 Thessaloniki

Solution Type

Technical Hardware

Solution Owner

Absolicon Solar Collector AB, with Athenian Brewery GR02 as Living Lab host and implementation site.

TRL Level

Starting TRL 8-9 - Target TRL 9 in industrial Living Lab operation.

Challenge solved

Target Pain Point

The solution removes a key barrier to industrial decarbonisation at AB Thessaloniki: malthouse air-heating demand is currently supplied by natural gas, creating Scope 1 emissions, fossil-fuel exposure and a hard-to-abate process-heat load. The installation demonstrates how brewery process heat can be partly replaced by on-site renewable thermal energy while fitting into existing hot-water/heat-exchanger infrastructure.

The Innovation

Core Functionality

- Parabolic-trough Absolicon T160 solar collectors generate renewable thermal energy for malthouse air heating.
- The roof-layout screenshot shows approximately 877 m2 of roof area with space for 48 collectors; the wider AB brief references a 370 kW / 528 m2 aperture-area configuration with 96 collectors.
- Solar field supply/return conditions are designed around 90/45 C, with thermal storage high/low temperature of 90/50 C and operating pressure of 3 bar g.

- Conceptual integration uses solar pre-heating before the existing heat exchanger, with thermal energy storage, pumps, pressurisation and a Solar Central / heat-exchanger interface.
- Performance can be monitored through Absolicon remote monitoring and SPURUP digital tools for energy, emissions and Living Lab decision support.

Beyond State of the Art

The solution goes beyond a conventional boiler-efficiency measure by directly substituting fossil process heat with measured solar thermal energy in an operating brewery. It combines commercially proven collector hardware with Living Lab validation, stakeholder engagement, Local Green Deal development and replicable integration data for other breweries and food-and-beverage industrial sites. Its value is not only the collector field, but the verified process integration pathway: rooftop/site fit, hydraulic connection, storage logic, operating set-points and quantified Scope 1 reduction.

ROOF AREA 877 M2

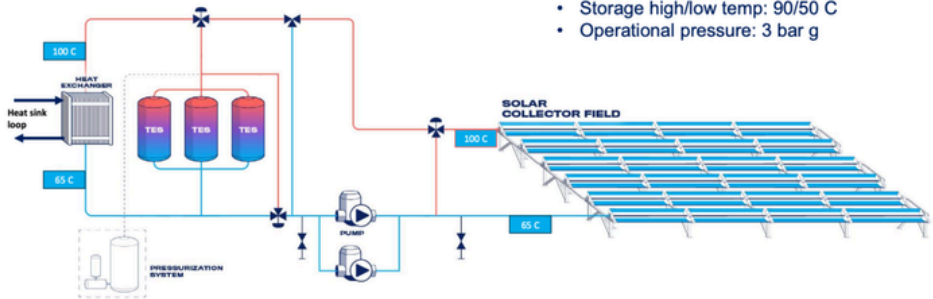


48 solar collectors can be installed



CONCEPTUAL INTEGRATION (SOLAR SIDE)

(PRE-HEATING BEFORE EXISTING HX)



Conceptual integration: solar pre-heating before the existing heat exchanger;
90/45 C solar field, 90/50 C storage, 3 bar g.



User value - Benefits

01

Reduced Scope 1 emissions: the AB / Absolicon brief estimates approximately 474 MWh/year of solar heat, displacing around 47,400 m³/year of natural gas and reducing approximately 85-90 tCO₂eq/year at GR02.

02

Lower fossil-fuel dependency and transition risk: renewable heat covers part of the malthouse thermal load and contributes about 1,706,400 MJ/year against the 2025 GR02 thermal baseline of 63,819,610 MJ/year.

03

Replication and evidence value: the demonstrator produces technical, financial and emissions-performance evidence that can support Local Green Deals, future brewery roll-outs, permitting discussions and adoption by other peri-urban industrial energy users.

Implementation and validation

Living Lab

Living Lab 1 - Thessaloniki, Greece: Athenian Brewery GR02 Solar Thermal Process Heat Living Lab, with the Municipality of Thessaloniki and the Regional Development Fund of Central Macedonia as core city/regional governance partners.

Replication Potential

Other cities and industrial sites can adopt the solution by screening suitable roof or ground area, matching process-heat demand to collector output, integrating solar pre-heating before existing heat exchangers, adding thermal storage where useful, and using SPURUP monitoring / stakeholder tools to quantify energy, GHG and Local Green Deal impacts. The most direct replication route is other breweries, maltings and food-and-beverage facilities with 65-90 C heat demand and available collector area.

SPURUP

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