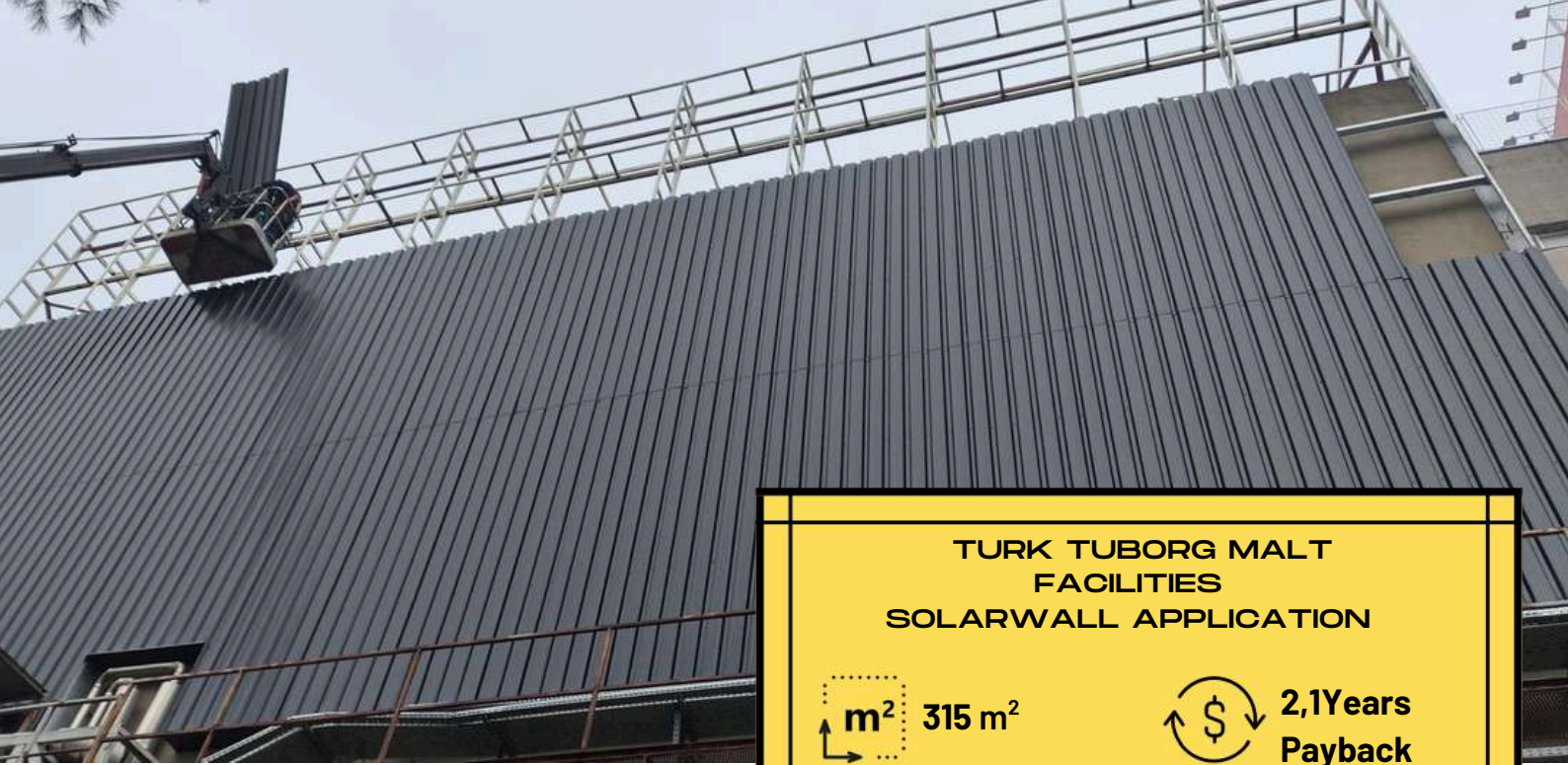




TURK TUBORG MALT FACILITIES SOLARWALL APPLICATION

 **315 m²**

 **2,1Years
Payback**

 **311.3
tons**

 **46,675m³/h
Heated Air**

Turk Tuborg Malt Facility, Izmir, Turkey FACILITIES SOLARWALL APPLICATION

Turk Tuborg, one of the leading companies in the beverage industry in Turkey, integrated SolarWall Technology into its facilities to enhance energy efficiency and sustainability. Prior to the installation, traditional heating systems were utilized to maintain optimal conditions in the malt drying process. Replacing this less efficient approach, a SolarWall system utilizing 50% fresh air was installed. As a result of collaborative efforts between Turk Tuborg and SolarWall engineers, the facility now benefits from one of the world's most efficient renewable energy technologies, ensuring consistent performance and minimal maintenance for up to 40 years.

Project Information

Company	TURK TUBORG AS
City	Izmir
Application Type	Facade Application
Total Area	315 m2
Project Year	2024
Yearly Carbon Reduction	311 tCO ₂ /y
Average Savings	30%

Project Summary

The system was designed to meet the high thermal demands of the malt drying process using SolarWall TSC (Transpired Solar Collector) panels. The SolarWall system operates continuously, ensuring maximum thermal performance within 18 hours of daily operation, 7 days a week, and simultaneously supply preheated air to two malt drying processes.

The total air flow capacity of the system is 46,675 m³/h, which is efficiently heated using solar energy. The system is engineered to achieve a maximum outlet temperature of 100°C, with an average air temperature of 63.5°C, ensuring consistent and efficient drying performance.

This sustainable solution is designed to significantly reduce natural gas consumption and CO₂ emissions, while contributing to operational cost savings and supporting Turk Tuborg's commitment to environmental responsibility.

System Components Roles

The SolarWall system at Turk Tuborg utilizes SW100 model panels (RAL 9005) to capture solar energy and preheat incoming air through micro-perforations. The system includes a stable framework, an automated control system for real-time airflow and temperature adjustments, and measurement devices to monitor air speed, temperature, and pressure.

Key components include Summer Bypass Dampers for utilizing direct fresh air during high-temperature periods and Proportional Dampers for automatically regulating airflow based on real-time temperature data. The entire system is monitored via an online Energy Management System, ensuring consistent performance and tracking energy savings.

System Components

- 315 m² SolarWall SW100 Panels (Aluminum alloy, RAL 9005 color)
- 4 Temperature Sensors, 2 Summer Bypass Dampers
- 2 Proportional Control Dampers
- Automation and Measurement Systems
- Energy Management System



RESULT

With a set temperature of 63.5°C, the SolarWall system at Turk Tuborg achieves an average annual natural gas savings of 1,722,945 kWh, thanks to the solar-heated air. The system investment is expected to pay back in just 2.1 years. Alongside these savings, the system prevents an average of 311.3 tons of CO₂ emissions annually, which is roughly equivalent to the CO₂ emissions from the consumption of 130,741 liters of gasoline.

