

ENERGY

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RENEWABLE
ENERGY
EUROPE EDITION

PIERO ABBATE,
FOUNDER & CEO

**TVP
SOLAR**

**REPLACING
FOSSIL FUELS
WITH A GREENER
ALTERNATIVE**

\$15



From its cloud-piercing skyscrapers to the highly innovative underground steam systems, New York City has stood witness to several revolutionary changes since the 17th century. In fact, back in 1888, after a horrific blizzard destroyed Manhattan's overhead electricity and steam network, the city was rebuilt by builders who placed steam lines and electricity cables adjacent to each other to bring power, heat, and electricity to the heart of NYC. Today, over a century later, district heating networks that run underground have become a mainstay across Europe, North America, and is massively accelerating in China. However, the thermal energy required to produce this heat is primarily generated through the combustion of natural gas, which substantially increases the carbon footprint.

In a bid to change this status-quo and revolutionise the industrial applications of solar energy, Switzerland-based TVP Solar has developed a high-tech solar thermal technology that provides a stable, secure, and affordable carbon-free energy source. "With our proprietary technology, we offer a greener alternative for thermal processes, enabling industries to minimise a third of the world's CO₂ emissions," says Piero Abbate, founder and CEO of TVP Solar.

Ushering an Era of De-Carbonised Industrial Processes

TVP Solar's portfolio comprises high-vacuum insulated equipment specially designed for industrial processes, district heating, air conditioning, and oil processing, among others. The company has developed its heating solution to provide cheaper and cleaner heat, eliminating the usage of traditional combustible fuels such as natural gas, diesel, LPG, biofuel, and more. At the same time, TVP Solar's AC solution can drive

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WITH OUR PROPRIETARY TECHNOLOGY, WE OFFER A GREENER ALTERNATIVE FOR THERMAL PROCESSES, ENABLING INDUSTRIES TO MINIMISE A THIRD OF THE WORLD'S CO₂ EMISSIONS

single and double-stage absorption chillers to supply sustainable cooling for industries and private facilities.

To drive environmentally-conscious heat processing across the oil and gas value chain, TVP has developed its oil processing solutions, offering oil and gas firms a way to prevent cannibalization of their product. At the heart of TVP Solar's product success is its latest MT Power v4 solar thermal collector, built to aid its clients in realising their commercial and industrial applications (65°C to 180°C) affordably and sustainably. In addition to developing these solutions, TVP Solar also operates as a turnkey, large-scale solar field supplier of engineering, procurement, and construction services.

Revolutionising Thermal Energy Generation

In pursuit of delivering on its mission to replace fuels with a cheaper and carbon-free alternative for thermal

processes, the company has spent years recognising the prevalent inefficiencies and drawbacks of traditional solar thermal panel usage across industries. As a result, after years of arduous research and engineering, TVP Solar has developed an innovative high-vacuum, flat solar thermal panel, which, unlike traditional solar thermal equipment, provides continuous, efficient, and long-lasting energy. "Our patented vacuum insulation technology eliminates heat loss due to convection in the panel, retaining maximum sunlight and achieving certified unrivalled performance," extols Abbate. TVP Solar's panels have a self-regenerating getter pump that removes any molecules permeating into the panel during operations, thereby maintaining vacuum integrity and unchanged performance over 20+ years, unique in the industry.

Further discussing the core competencies of his product, Abbate

draws parallels between TVP Solar technology and Thomas Edison's light bulb, hinting at their effort to create an industry-wide disruption of the same magnitude. Another key comparison between the two inventions is the pioneering glass-to-metal seal that is critical in both Edison's light bulb and TVP's panels. Owing to its fully inorganic and flexible glass-metal seal and leading-edge self-regenerating getter pump, TVP's solar panels also prevent degradation of performance over time, as the technology eliminates any possibilities of oxidation on components. This design feature allows TVP to supply up to 200°C heat consistently for over 20 years, while reducing maintenance and repair costs. "Our reliable and high-performance panel consistently delivers thermal energy with no production degradation over its lifetime, thus delivering the lowest thermal prices," states Abbate. TVP Solar generates clean thermal energy from the sun at less than 25

EUR/MWh, beating liquid fuel prices and achieving parity with industrial natural gas tariffs.

The Go-To Partner for Innovative Solar-Thermal Applications

Owing to its revolutionary technology and unparalleled performance, TVP Solar has ignited numerous client success stories across multiple sectors, including utilities, oil and gas, manufacturing, pharmaceutical, food and beverages, and more. Additionally, as the overall energy arena shifts to de-carbonising their processes, the company has been assisting leading oil companies like Saudi Aramco. TVP Solar's clients like beverage companies Martini & Rossi and PepsiCo can also cut their CO₂ emissions and installation carbon footprint, thereby meeting their Corporate Social Responsibility (CSR) and Environmental Social Governance (ESG) targets efficiently. On the energy front, TVP Solar is currently collaborating with top European district heating network utilities such as SIG, A2A, CCIAG, and leveraging its unique ability to provide continuous and efficient heat distribution even in winter months and sub-zero temperatures.

Traditionally, if heating of 70°C is required across a district, a higher temperature (90°C or higher) must be achieved to account for heat loss and inefficiencies caused during distribution "Our district heat solutions make us the only company that is capable of generating and maintaining the heat required to warm buildings even in sub-zero climates," adds Abbate.

Building a Greener Future

These technological milestones have been achieved over 12 years of research and development in designing, developing, and patenting their proprietary Thermal Vacuum

Power Charged™ technology.

During this decade-long journey, since its inception in 2008, the company has developed a patent portfolio made of 10 internationally granted patent families with extensions across 170 national filings. By using its comprehensive patents, TVP Solar aims to replace conventional fossil fuel applications in industrial heating and cooling with a cheaper

itself of a noteworthy winning streak of four prestigious international awards and four grant programs under the EU, all of which exemplify the company's status as a game-changer in the renewable energy sector.

As modern-day manufacturing plants and production lines still rely on steam distribution networks that utilise conventional fuels for the generation of thermal energy, TVP



WE ALREADY
SUPPLY HEAT AT
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and cleaner alternative. Today, the company has grown its operations and sales pipeline to 10 countries and over 50 million EUR. TVP Solar is an ISO-certified and proven solar thermal solution provider with several in-field deployments, effectively addressing application-specific requirements, all the while producing massive energy output irrespective of the regional climate condition. TVP Solar prides

Solar's technology offers a utilitarian avenue for the de-carbonisation of age-old energy production methodologies. Concurrently, to expand its technological disruption, TVP Solar is developing additional green products for a wider range of temperatures/applications. And, even as the world slowly comes to grips with the impacts of climate change, the company's proprietary solution is set to assist the business landscape in its efforts to move to a greener future.

In his conclusive remarks, Abbate reiterates the ethos of his company, "We continuously strive towards achieving our ESG mission of beating fossil fuel with our super-performing, high-vacuum flat solar thermal technology and usher in the era of cheaper, carbon-free industrial thermal processes." **EC**

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*The annual listing of 10 companies that are at the forefront of providing
Renewable Energy solutions and transforming businesses*