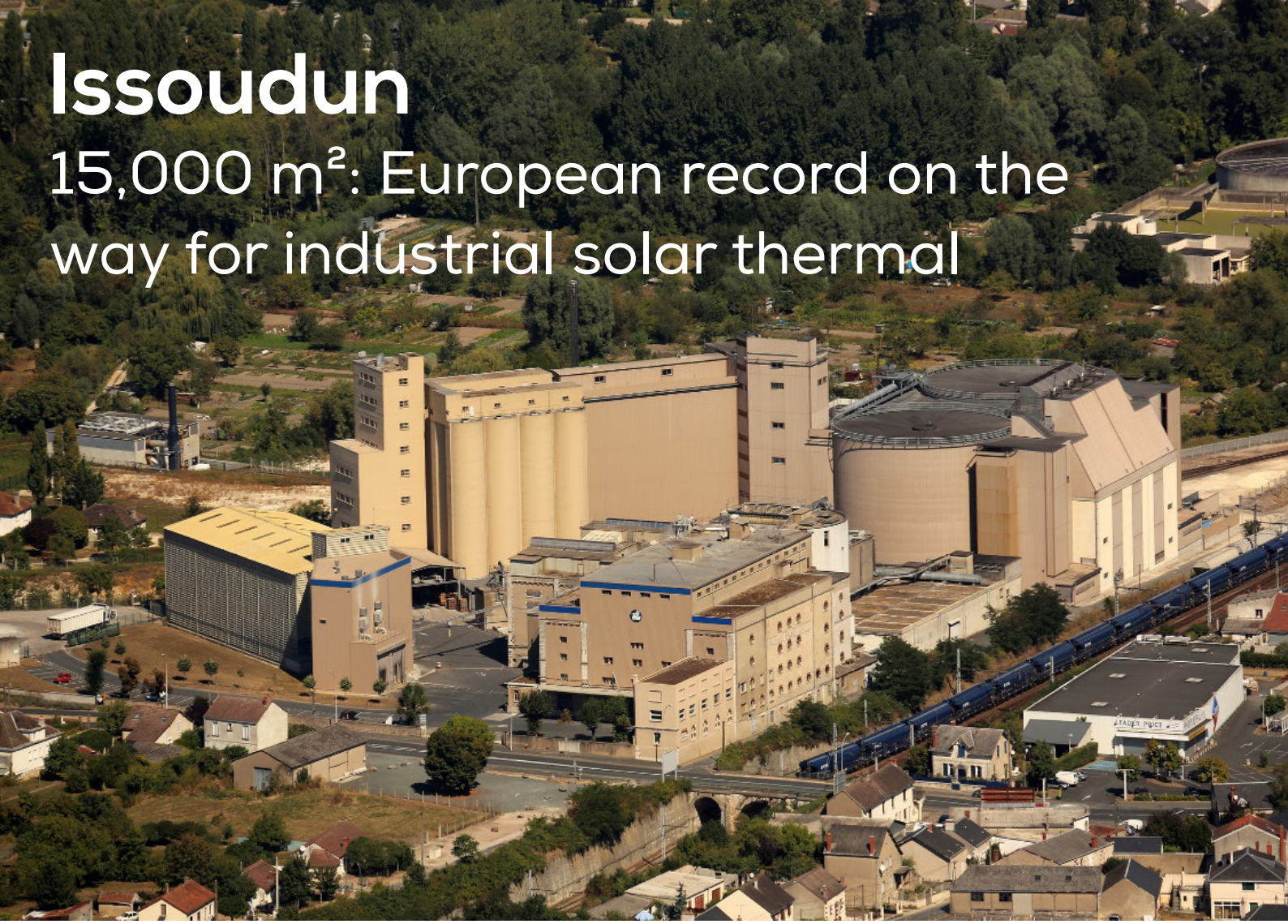
Issoudun

15,000 m²: European record on the way for industrial solar thermal



Initiated by Sunoptimo, the largest solar thermal plant in Europe will be set up in Issoudun, France.

The stakeholders active in renewable heat have been noticing it for a few years now: the solar thermal sector is regaining strength. After a dip in the late 2000s, the technology seems to be back on track and will most probably become one of the preferred way for heat production in the coming years.

A new impetus that starts to impact several sectors. The contribution of solar thermal energy for district heating was already well known, with the best example being the 157,000 m² solar thermal plant (the world's largest solar heating network in terms of surface area) in Silkeborg, Denmark. Today, the industry sector, where large amounts of heat are consumed every day, has all the characteristics that make the use of solar technology relevant. It is following this observation that **the largest European solar thermal project for an industry** will be emerging soon next to Issoudun's malthouse (Indre, France). As part of the Boortmalt Group, the site will be equipped by the end of 2019 with a solar thermal plant, enabling it to reduce its ecological footprint and generate significant savings.

A project that came from Belgium

It all started in 2016, during a meeting between Sunoptimo and Boortmalt. The Belgian company, specialized in designing and manufacturing large solar thermal systems, convinced the group of the benefits of solar heat for its activity. This is not the first time Sunoptimo has initiated this type of project in an industrial environment. Sunoptimo recently worked on the Merville solar plant (in the Hauts-de-France) and has also participated in what was then the largest French industrial solar thermal installation in Poitiers. Sunoptimo then brings together all the players and studies the integration of a solar thermal system on the site of the French-Swiss malthouse located in Issoudun. A feasibility study leads to the possibility of setting up a 15,000 m² field of solar thermal collectors, with containerized solar heating rooms (Opticube). Soon after, Sunoptimo passed the lead to **Kyotherm**, a Parisian third-party investor that finances large renewable heat projects.

In a nutshell...

15.000 m² solar

8,7 GWh per year

= CO_2 **200T CO2** avoided/year

Industrial solar thermal:

1st plant in Europe

3rd plant worldwide

The biggest heat need in the malthouse is required for oasting, a drying process that occurs during the production of malt. This essential step in the malting process consumes a lot of heat as it involves heating air gradually from 50 to 85 ° C.

The purpose of the unit will be to preheat the air required for the process. It is worth noting that the malthouse is not a complete beginner regarding ecological initiatives. In 2012, the company already decided to integrate a biomass boiler in its energy mix. Prior to that, a heat recovery system had been integrated to the process (hot air recycling and smoke recovery from boilers).

By adding solar thermal to those initial initiatives, up to 50% of the energy needs of the malthouse will soon be covered by renewable energies.

200 tons of CO2 avoided per year

The project is progressing well and should be finalized by the end of 2019. Once operational, the 15,000 m² facility will produce an annual 8.7 GWh of solar heat. This represents 200 tons of CO2 avoided each year.

Besides the record breaking aspect of the installation, the Issoudun project highlights the collaboration of various players in the renewable heat sector. In addition to Sunoptimo and Kyotherm, NewHeat and Dalkia are also an integral part of the project. Last but not least, the ADEME has been of great help (see opposite).

NewHeat, an expert in solar heat for industrial processes, is in charge of site management while Dalkia, an EDF subsidiary, will be in charge of integrating the solar thermal system into the existing process.

The solar thermal system (1 MW) that supplies the Lys Services company in Merville

Winner of the ADEME call for projects

The French Environment and Energy Management Agency has clearly seen the benefits offered by solar thermal technology and is providing financial support under the «Fond Chaleur».

Obviously, the malthouse project was thus given to them under the inititiative for «large solar thermal installations of the ADEME».

«We believe a lot in solar thermal for industrial processes»
Arnaud Leroy (ADEME).

By winning this call for projects, the installation in Issoudun is already a reference for solar thermal in the industry sector. The ADEME is pleased to help the Boortmalt group on this new adventure. Arnaud Leroy, the President and CEO of ADEME, stresses the importance of demonstrating that solar thermal technology works and is profitable, in addition to being environmental friendly.

The ADEME had already insisted on the need to trust solar thermal technology in the industrial sector, citing a lowering MWh cost for industrials, which demonstrates that competitiveness and attractiveness of solar thermal among other renwables. It is a free energy source, with a reliable and proven technology and a high efficiency.

With the support of the ADEME and knowing that heat represents 75% of the industrial energy needs, the chances are high this technology will be more and more present in the coming years.