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# How an Ancient Technology Could Revolutionize Wind Energy

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Click here to watch “The Saphonian – Illustration”: https://youtu.be/ml6hiN4nCDA

A bladeless wind energy convertor inspired by the sailing boats of Ancient Carthage is set to breeze past traditional turbines in terms of efficiency, according to its Tunisian developers.

A Tunisian start-up has taken inspiration from the sailing boats of Ancient Carthage to develop a bladeless, non-rotating wind energy convertor that is more efficient than traditional turbines as well as safer and quieter, according to the developers.

Tunis-based Saphon Energy says the aerodynamic bowl-shaped sail on its turbine is capable of capturing twice as much wind energy over the same swept area as a conventional turbine.

The designers, led by 37-year-old engineer Anis Aouini, looked to the old technology of sailing boats, as well as the movements of birds and fish for their design. They were inspired by the sailors of the ancient civilisation of Carthage, located close to the present-day Tunisian capital.

The bladeless design uses a non-rotational sail-shaped body combined with a wind converter that follows a figure of eight pattern in the air.

All wind turbines are subject to the Betz limit of capturing 59 percent of the energy from wind, but its developers say the Saphonian is quite capable of surpassing this limit because it is bladeless, making it far more efficient than traditional turbines.

Saphon Energy says the Saphonian will be able to convert wind to energy at around 80 percent. Its lower cost could make it an attractive source of off-grid energy in developing countries.

The tech company hopes to put this into practice with a partnership in India.

“This project that is planned for India consisting of 50 Saphonians producing 20 kilowatts of power, a total of one mega watt, will be a wind farm. This power produced in south India, could meet the demands of a small village of 1000 houses even if the energy will be directly injected to the general Indian electricity network. But it’s an approximation to ease the understanding for

viewers: it's about 1000 houses in India," Aouini told Reuters during a demonstration of the Saphonian in the Tunis suburb of Rouad.

Saphon Energy has attracted international attention for its innovative design. The Tunisian company won the 2015 Gulfstream Navigator Award, as well as funding, technical and software support from Microsoft.

The team's eco credentials landed the tech firm this support, according to regional director Leila Serhan.

"Obviously while we are building our cloud and building our 26 data centres that we have around the world, we are very particular in making sure that those data centres have zero emissions. Our offices, our campuses, mostly in the United States, but more and more around the world, are also zero emission campuses," she said at the unveiling of the latest industrial prototype in Rouad, Tunis on April 8.

The turbine is expected to cost less to produce than traditional versions, making it ideal for countries where many homes are not connected to a national power grid, said angel investor Kalid Qoreichi at the event in Rouad.

"Energy is such a critical part of any economic growth, of regional growth, of international growth and if a third world project like this can come up to stream with the way they have brought it about, I think it's fantastic. So quite frankly, these two things: first their own commitment, leaving professional jobs to come to it and secondly the fact that it would be a third world emerging market project built tested, tried and worked in the third world market," he said.

The bladeless design reduces the risks to birds and other wildlife, and produces far less noise, say the developers.

They hope to scale up the design of the latest prototype so that just one sail can generate a megawatt of energy.