

## Double “Eureka” for Arab-Israeli energy company

Keep an eye on Yafa Energy as it uses a prestigious grant to further develop a solar fuel source for cash-strapped industrial countries.

By Rivka Borochoy



**Salih Manasra of Yafa Energy**

<http://www.flickr.com/photos/75061343@N02/8005960945/in/photostream>

Salih Manasra from Israel has had two “eureka” moments recently: First when he came up with a new way to create a solar-based fuel source specially suited for poor industrialized nations; and second when he won a prestigious European Union EUREKA (*Exceptional, Unconventional Research Enabling Knowledge Acceleration* <http://www.eurekanetwork.org/about>) grant for this innovation. He is also setting some firsts in Israel.

His four-person company, Yafa Energy, is the first Arab-Israeli firm to win the EU grant, awarded to him by Israel’s Prime Minister’s Office, and he hopes it will be the first Arab-run company to put energy into the hands of people who need it most.

Based on two decades of work innovating efficient car engines for companies such as GM and Opel, Yafa engineers developed a new way to collect energy from the sun using solar collector troughs developed with a partner in Germany.

The solar thermal energy is converted directly to steam to drive turbines in factories, or cool industrial processes, while additional energy derived from the system is turned into electric power that can be used by the factory or sold back to the grid.

The hybrid system aims to make a solar thermal system cost-effective, smart and capable of radically changing energy usage by manufacturers of traditional

commodities like cement, textiles and edibles. These industries tend to be based in poorer countries in hot climates, and consume more energy than high-tech industries.

“Keep in mind that the energy needs for industrial processes in these countries are most critical during the day when the sun is shining,” says Manasara.

“We are generating steam for industrial applications, and to date there is no electrical system that can compete with this; no photovoltaic panel that can collect enough heat to get to this level. Same with a diesel boiler. There is no equivalent to pure solar thermal.” [http://en.wikipedia.org/wiki/Solar\\_thermal\\_energy](http://en.wikipedia.org/wiki/Solar_thermal_energy)

Yafa intends to produce electricity based on a system called the organic Rankine cycle, already proven by Israeli energy pioneers in the 1960s [http://en.wikipedia.org/wiki/Ormat\\_Industries](http://en.wikipedia.org/wiki/Ormat_Industries).

### **World Bank eyes Yafa**

Yafa Energy, says Manasara, hopes to use its Arab team to crack into the Middle East market -- countries like Tunisia, Morocco, Algeria and Jordan. The company has already grabbed the attention of the World Bank’s International Financing Committee, which recognized the technology as a “product of major interest.” And it is involved in negotiations toward a commercial deal in Jordan, where solar thermal energy is recognized as a renewable energy priority.

“The company still faces strong challenges in allocating supplemental investment to complete product development and to bring it to market,” says Manasara.

In 2010 he joined forces with a couple of Arab-Israeli engineering peers from the Haifa area. He and one of his partners each spent a decade abroad, working on engine design.

“The decision to found the company came up following our work in inventing and pre-developing innovative and patentable products for the automotive and energy industry as well as for sensors and automation in general,” says Manasara.

Despite their limited financial resources and a weak Arab-Israeli infrastructure for investment, they were still able to register a patent, and then secure strategic and development partnerships with European industry partners.

They aim to have a prototype of the system up and running within one to two years and are eager to secure a \$1 million investment to create free energy from the sun.

Although he does have big dreams to make money at the enterprise, Manasara says that he is also motivated to save the planet and to be an inspiration for other

Arab-Israeli engineers and entrepreneurs. He has been invited by the Israeli high-tech community to talk about his vision toward that goal.

Beyond their “power for the people” solution, Yafa engineers are also working in stealth mode on a new kind of hybrid car based on a special type of super-capacitor. More on that will be revealed next year, they say.