

POWER FROM THE DESERT

Israel is a very sunny land with very little rainfall. Israeli scientists understand the potential of generating power from the sun. They have also found ways of supplying the land with drinkable water by removing salt from seawater. Israel's new technologies promise an even brighter future for the entire world.

DESERT FLOWER SUN STATIONS

The Israeli company AORA started generating solar power in Israel in 2009. The AORA Tulip Tower uses mirrors called heliostats to reflect sunlight onto a "bulb" at the top of the tower. Concentrated heat from the mirrors causes the air inside the bulb to heat to very high temperatures. That ultra-hot air is then piped to a **turbine** to generate electricity. Tulip's revolutionary concept allows the system to operate in any weather, even at night. At night, when there's no sunlight, the system can generate electricity using fuels such as natural gas or diesel. Tulip Tower can even run in hybrid mode on cloudy days – sunlight and fuel work together to generate full power.

In 2012, AORA launched Europe's first air turbine solar power station in Almeria, Spain.

➤ The AORA solar tower was designed as a flower in a desert, to symbolize harmony and balance with nature.



SUNNY ISRAEL

☆ The most promising source of electricity is the power of the Sun. The sun shines in the Middle East at least 330 days a year. Israeli scientists have invented many different ways to turn **solar energy** into electricity.

✓ Israel is a world leader in the use of solar hot water systems. Ninety percent of homes in Israel have solar-powered water heaters on their roofs.



FLOATING SUN STATIONS

Using energy from the Sun often requires solar panels that take up lots of land. Israel's Solaris Synergy has designed solar energy **grids** that can float on water. The grid is constructed of lightweight plastic and fiberglass. It can float on any freshwater, saltwater, or wastewater surface.



▲ This solar-on-water system also works as a water reservoir cover that helps reduce evaporation and protects the water source.

ISRAEL LEADS THE WAY IN MAKING SALTWATER SWEET

Having very little rainfall but plenty of seawater led Israelis to explore ways of turning salt water into drinking water. This process is called desalination. Desalination removes salts and minerals from salt water.

More than two thirds of the world is covered in water, but more than 90 percent of it is salt water. Israel has developed desalination solutions that are changing the world. Besides watering its own agricultural industry, Israel manufactured China's largest desalination plant and smaller ones on Caribbean islands. Many countries find themselves in need of desalination solutions, and Israel is there to help.



▲ The president of Arava Power, Yosef Abramowitz (standing second left) and a group of Negev desert Bedouin leaders visit Israel's first solar field, Ketura Sun.

SOLAR FIELDS IN NEGEV

Arava Power is an Israeli company that builds **solar fields** in the Negev desert. Lots of sunshine and unused land make the desert a perfect place for generating solar power. The company also works with the nomadic Bedouin tribes who live in the Negev. The solar fields built on their lands are bringing prosperity and new opportunities to Bedouin communities.

◀ Israel's first solar field, located at Kibbutz Ketura in Israel's Arava Valley.

