

# Sun blocking blackouts

**A US-based firm claims to have a solution for blackouts using switches and electrical circuits that integrate solar and electrical power.**

**A**nand Rangarajan claims his company's technology has the potential to limit power blackouts and can also reduce pollution, helping save billions in energy expenses.

Dr Rangarajan and his colleague, Thomas McNulty, have invented a system for switching to backup solar power within seconds of a power failure. In June this year, Dr Rangarajan, executive vice president of the WorldWater Corporation, a solar-energy technology company in the US, and Mr McNulty, its director of engineering, received a patent for the idea.

Dr Rangarajan says that the new technology can sense the power has gone down and reconfigure the pumps and the solar panels instantly without any operator intervention.

The technology was developed first not for urban New Yorkers but for the farmers of California. As the state economy was saddled with an energy crisis a couple of years ago, farmers in California have been facing blackouts at the hardest times. It happens when days are hot and dry, and crops desperately need irrigation by electrically-powered systems.

Dr Rangarajan and Mr McNulty hold a patent for a box that combines

switches and electrical circuits, which makes possible a supply integration between solar and electrical power. When the power grid is supplying electricity normally, the box routes excess power to the utility. If the power grid goes down, the box shuts off its connection with the utility, reconfigures voltages and routes electricity back to the irrigation system.

This allows current to keep flowing, but not along the power grid, which for safety needs must not have any current moving on it while it is being repaired.

This same system, says WorldWater's founder and chief executive, Quentin Kelly, can be modified for use by companies as different as shopping centres and utilities. This technology could be critical in helping reduce loads on grids during peak power utility. However, this may not happen immediately, as utilities are never the change agents of technology.

Those who will adopt it quickly are water and sewage plants such as New York City's pumping stations, which dumped 490 million gallons of untreated sewage into waterways in the recent blackout. Dr Rangarajan said that this could have



been prevented from happening using their solar technology. Water and waste utilities should be all the more interested in buying solar backup systems. Unlike an investment in diesel-powered generators, he said, the solar technology ultimately pays for itself. This is because the solar power generated can be used to run the plant or sold back to the utility in a system known as 'net metering.'

Dr Rangarajan said that up to 80 per cent of a typical water utility's expenses go towards paying electric bills. He claims that his solar system provides a green backup system as well as savings on energy bills. That is why it is ideal for developing countries.

