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ELECTRICITY

The Grid May Get A Whole Lot Smarter

Vital as it is, the electricity grid is “dumb.” Utilities must rely on tools that date back to the 1950s to match output from power plants with demand. “What the grid needs is a brain,” says Roland Schoettle, CEO and founder of Optimal Technologies. On May 20, Optimal introduced just that. A decade in development and supported by a recent investment from Goldman Sachs, it’s a soft-



ware tool that enables grid operators to instantaneously optimize power flows.

In one key test, data from a 2000 California blackout were fed into the program. In the experiment, no customers lost power. In fact, the tool was able to keep 100 MW in reserve. Tests also have shown the program can help energy planners make better decisions about where and when to add new generators to the grid. Such a product “is long overdue,” says Don Kondoleon, manager of strategic transmission planning at the California Energy Commission. —John Carey

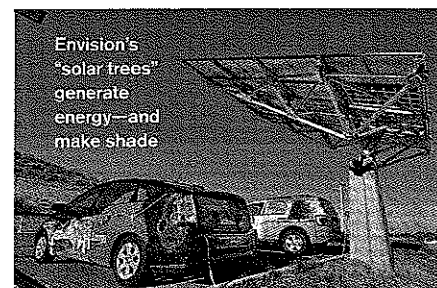


SOLAR ENERGY

Parking Lot Canopies That Pump Out Power

Add up all the asphalt parking lots surrounding the nation’s malls, offices, and commuter hubs, and there’s more than enough blacktop to pave over Connecticut. Envision Solar International hopes to transform those barren expanses into green-energy oases by creating forests of “solar trees.” Typically about 12 feet tall, each tree is capped with a nearly 1,000-square-foot canopy covered in solar cells.

Already built or being installed in a half-dozen California parking spots, Envision’s high-tech sun shades not only make the lots cooler and more comfort-



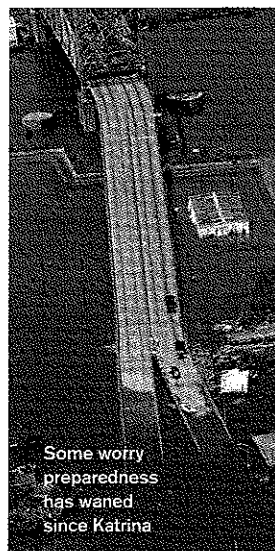
Envision’s “solar trees” generate energy—and make shade

able, they generate clean power for the owner of the lot. Placed in the parking area of a typical regional shopping mall, a grove of the square shades can generate up to half a megawatt of power, enough to light up about 500 homes. And since the parking lot owner agrees to buy the power generated by the trees over their lifetime, Envision can finance and install them with no additional charges to the owner. One day, the San Diego-based company hopes its solar structures will help fuel fleets of futuristic electric cars, as well.

HURRICANES

Storm Warning

Coastal dwellers take note: The National Oceanic & Atmospheric Administration predicts the coming storm season may be worse than usual, ushering in up to nine hurricanes. Yet because storm activity has been slightly below forecast levels in the two years since Katrina struck New Orleans, vulnerable communities may have grown complacent. And given ongoing migration to



Some worry preparedness has waned since Katrina

coastal zones, this year’s storms could cause more property damage than ever. About 53% of Americans now live in coastal counties, according to the National Research Council, but infrastructure planners have not factored in long-term climate change effects in these areas. Rising storm surges and ravaged wetlands mean coastal road and rail links, ports, and energy facilities are all likely to face higher storm-related repairs and upgrade costs, says the NRC.