

# THE CASE FOR RENEWABLE ENERGY

By Tad Mason, Vice President, TSS Consultants

The news regarding California's energy dilemma is getting ever more intriguing. The California Power Exchange has been disbanded, two out of the three largest investor-owned utilities are on the verge of bankruptcy, and Governor Davis is signing up long-term power purchase agreements. In the meantime rolling blackouts have abated, but clearly, we are not yet out of the woods.

Currently the state is consuming between 27,000 and 33,000 megawatts of electricity to keep the lights on. For a variety of reasons, the Independent System Operator (ISO) is having a dickens of a time fulfilling this demand. One fact is quite certain and many people do not fully understand the gravity of this: we are not yet in the peak electrical demand period. Fluctuating with the weather, this period usually runs from May through October. During these six months, demand for electricity may reach 50,000 megawatts.

Clearly, we need to conserve our energy usage and we need additional, dependable power generation facilities. In the past decade, only about 600 megawatts of new power has been brought "on line" within the borders of California. Not only is there a lack of investment in new plants, existing plants are older, less efficient units with some 60 percent being in service for over 30 years. These older units are less efficient, are prone to unscheduled outages (i.e., downtime), and are less environmentally friendly because many are equipped with outdated emissions control devices.

Between seven and eight new power generation plants are planned to come on line in the next two years, almost all of which are fired on natural gas. The plants are efficient producers of electricity and can be brought on line rather quickly once the permitting process is complete. **However, natural gas is a finite resource (fossil fuel), must be piped in (new pipelines), produces CO2 and NOX emissions (contributes to global warming) and has more than tripled in price in the last year (\$).** The New York Mercantile Exchange has quoted spot gas futures to have increased over 200 percent in the past year.

According to the California Energy Commission, over 23 percent of in-state power generation is fired on natural gas. By 2005, this figure is predicted to rise to 40 percent. How do we get the gas to the plants? Will the current or planned gas transmission (pipeline) infrastructure meet this almost doubling of demand? What is the delivered cost of natural gas in both financial and environmental terms? We are facing a complex set of challenges, possibly catastrophic. Yet Californians are experienced in dealing with natural and societal catastrophes and have proven themselves to be a resourceful and resilient lot. Perhaps these words will prove prophetic:

*"Out of chaos comes opportunity."*

Californians have a clear opportunity to set a course to energy independence by utilizing reliable, affordable and renewable energy sources. The state of California needs a new energy policy, one that supports the long-term development of renewable energy sources: wind, solar, geothermal and biomass. While all of the renewable sources have distinct advantages, biomass (utilizing wood waste to produce electricity) deserves special consideration. In the early 1990's, over 60 biomass-fired plants were operating in California with an output exceeding 750 megawatts. Due to a variety of factors, including concern over the long-term viability of these plants in a deregulated electricity market, there are now only 33 plants with a combined output of just over 600 megawatts.

The benefits of biomass utilization for power are considerable. Fully one third of California is forested. Millions of these forested acres now have unnaturally high concentrations of small trees and brush (biomass). Unfortunately we know what can happen when these dense forests explode into wildfire. Last summer much of the West (over 7 million acres total) experienced firsthand the catastrophic impacts of wildfire. These blackened acres will take decades to recover and the rural communities that relied on forest-based revenues may never fully recover.

A number of studies have been conducted regarding the unnatural accumulation of vegetation. Recently the U.S. Forest Service issued a report, "The Cohesive Strategy," that noted:

*" the most extensive and serious problem related to the health of national forests in the interior West is the over-accumulation of vegetation, which has caused an increasing number of large, intense, uncontrollable, and catastrophically destructive wildfires. ...."*

We know that biomass removal using forest-thinning techniques can efficiently and effectively remove the unnatural fuels, improve forest health, protect rural communities, improve sensitive species habitat, restore entire watersheds and create jobs. When all 60 biomass plants were operating, it is estimated that well over 60,000 acres of forest were being thinned annually in California.

Some would advocate that prescribed fire should be used exclusively for treatment of forest fuels. The U.S. Forest Service's "Sierra Nevada Forest Plan Amendment" advocates extensive use of prescribed fire. **Biomass recovery and utilization for power generation offers numerous advantages over prescribed fire, including considerably fewer air emissions, jobs in rural communities, and utilization of a renewable resource (biomass) for the generation of power.** By supporting the development of new and currently operating biomass plants, we can begin to address the current energy dilemma with a clean, renewable alternative.

As California's legislature considers options to address energy policy, hard targets should include:

- setting a renewable energy portfolio standard that mandates the state's total energy portfolio be comprised of at least 25 percent renewables (wind, solar, geothermal and biomass) by 2005.
- providing energy tax credits for development of renewable energy projects.
- providing tax incentives to forest landowners that proactively treat forest fuels through removal of biomass that is then used for power generation.
- encouraging utilities to enter into long-term power purchase agreements with renewable energy plants at rates that take into account the societal benefits offered (for example, biomass: improved forest health, clean sustainable energy, reduced open burning, reduced waste to landfills) at rates that allow the plants to operate at a profit.

As one famous California native, Walt Disney, so eloquently noted:

*"It's kind of fun to do the impossible."*

Yes, we can do this.

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