

## **Energy Efficiency, Not Power Lines**

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The benefits of energy efficiency are generally incremental: Save a kilowatt-hour...pay a little less money...remove a little pollution from the waste stream. But improving energy efficiency can often have a much more profound effect, as is the case in Santa Fe right now.

The electrical substation supplying power to Santa Fe and Las Vegas is nearing its capacity limits, and PNM has been holding discussions with the public to decide what to do about it. At the present rate of electrical load growth of two and a half percent per year this substation will reach its limit in 2004.

PNM proposes to solve this problem the same way it always has, by erecting a new power line or installing a generator near the substation. Either of these solutions would cost the ratepayers millions. When citizens suggested energy efficiency as a solution, PNM rejected the idea using Dick Cheney's rhetoric, calling it noble and virtuous but unrealistic as a viable means to address the problem.

In my experience energy efficiency is a highly viable alternative. Every commercial building I assess in the course of my work could realize a 25 percent or greater reduction in energy use. The efficiency improvement needed to obviate the power line is only 2.5 percent per year – one tenth of this amount.

We know that the peak load on the substation occurs on winter evenings. That means the load is caused by residential electric resistance heat. Retrofitting electric heating systems with more sensible, efficient, and economic systems could obviate the power line upgrade for decades to come. These retrofits would make fiscal sense even if there wasn't a multi-million dollar power line project hanging over our heads. The fact that we can save millions on the front end makes the argument for energy efficiency all the more compelling.

Many all-electric homes, known at the time as "Smart Homes", went up in New Mexico, and many of them are located in Eldorado. Having so many of these homes in one area provides a unique business opportunity for designing and implementing a retrofit "package" for Eldorado homeowners. If enough owners of all-electric homes express interest in upgrading their heating systems to a more economical alternative, the retrofits could likely be done under a community-wide performance contract. This would allow all of the upgrades to be made at no up-front cost to homeowners. The cost of each system could instead be paid out of the utility bill savings generated by the upgrade.

Improving the efficiency of homes in Eldorado is the first step in moving the community toward an environmentally sustainable energy infrastructure. From here the community could elect to form its own non-profit power cooperative, which would give it much greater buying power in the upcoming deregulated electricity market. This process would likely be facilitated by incorporating Eldorado as a town, giving it the right of condemnation over the power lines within the town limits. After taking the power lines at depreciated value, installation of highly efficient on-site generation would be easy, since PNM's ability to set punitive terms for interconnections would be greatly reduced. The final and most exciting step, after plenty of on-site generation has been installed within the community, comes next.

At the point at which enough generation has been installed to meet all of the electrical needs of the community, the wire connecting Eldorado to PNM's grid could be cut and Eldorado could stand alone as an electrical island. The implications of such an arrangement are profound, and the potential to bring economic and environmental benefits to the community should be the topic of much further discussion.

Coming together as a community to address environmental problems is nothing new to New Mexicans. In 1996, the mayors of both Santa Fe and Albuquerque signed resolutions under the "Cities for Climate Protection Campaign", pledging to take a leadership role in increasing energy efficiency and reducing greenhouse gas emissions from our cities. Up to this point a lack of financial resources has kept us from making the needed changes to clean up our energy infrastructure. Eldorado could set the example that leads the way, beginning with a community-wide energy performance contract to optimize its energy efficiency. Such a move would not only generate economic and environmental benefits for the community, it would set an example that sends a powerful message to PNM. *"It looks as if we won't be needing your new power line after all..."*