

## APPENDIX III

### TVA/POWER DISTRIBUTORS ENERGY EFFICIENCY INITIATIVES

TVA has a strong track record in promoting and demonstrating the wise use of energy. TVA and power distributors have aggressively pursued such programs as part of its role as a leader in public power, and we are continuing to explore opportunities to expand energy conservation.

Among the most successful ways in which TVA leads the industry in the wise use of electricity is the *energy right*® Residential Program that was launched in 1996. By 2000, TVA achieved approximately 150 MW of peak load reduction Valley-wide through implementation of the *energy right* initiatives. These initiatives promote high-efficiency Heating, Ventilation, and Air Conditioning (HVAC) systems, better thermal envelopes, and other measures that save energy and reduce peak demand for Valley residents. These programs have benefited more than 100,000 residences in the past 5 years (see Table 1). The impacts from these programs are expected to grow steadily with continued annual participation.

In addition, the Direct Load Control Program provides approximately 50 MW of peak load reduction yearly through the cycling of residential water heaters and air conditioners by radio signal. This program offers homeowners incentives in return for allowing their appliances to be switched off remotely for short periods during peak loads. Such programs offer significant potential for energy management.

#### ***energy right*® Programs**

- ***energy right* Residential Heat Pump Retrofit Program** - promotes quality installations of higher efficiency heat pumps by members of the Quality Contractor Network.
- ***energy right* Residential New Homes Program** - promotes higher efficiency thermal envelope standards and quality construction in new homes and the installation of energy efficient heat pumps. Provides training for homebuilders and trade allies to ensure proper installation of energy efficiency measures.
- ***energy right* Residential Manufactured Homes Program** - program focuses on achieving improvements in the HVAC and thermal envelope components of manufactured housing. Program requires that the home be equipped with an energy efficient heat pump.
- ***energy right* Student Audit** - package presented to students to fill out and conduct home audit. Students return the audit through the school for analysis, and recommendations are made for energy-efficiency implementation measures.

Additional information on *energy right* Programs can be found at web site [www.energyright.com](http://www.energyright.com).

Another popular TVA/Power Distributor program offers energy services to businesses and industries. These services lower the customer's energy use, making the businesses more competitive and helping TVA reduce peak loads on its power system. MTEMC has enhanced this program by staffing key account representatives throughout its service territory. This energy services initiative provides technical expertise, project management support, and third-

party financing to assist commercial and industrial customers with energy efficiency upgrades and operational improvements.

TVA and Power Distributors also offer a variety of pricing options that give large energy users incentives to manage their electricity use. Through a combination of programs, we have successfully reduced energy consumption for hundreds of businesses and schools throughout the region. Additionally, TVA/Power Distributor support for geothermal heat pumps has been instrumental in implementing this technology in more than 100 schools in the Southeast. This includes schools in Williamson and Cannon Counties.

	<b>Units Installed</b>	<b>kW Demand Reduction</b>
Water Heaters	6167	0.0
New Manufactured Homes	219	670.1
Heat Pump Installations	1068	1153.4
Single Family New Homes	3210	6002.7
Multi-Family New Homes	3712	3526.4
School Self-Audit Program	1621	141.8
<b>Totals</b>	<b>15997</b>	<b>11494.4</b>
<i>energy right</i> Total		11.5 MW Reduction
Direct Load Control		9.6 MW Reduction
<b>Total, Current Programs</b>		<b>21.1 MW Reduction</b>

In Fiscal Year 2002 (FY02), Pacific Energy Associates (PEA) was contracted by TVA to assess a number of demand-side management options that could achieve up to 250 MW of peak demand reduction in a 2-year period. The assumptions and findings of this study were applied to the MTEMC service area in order to determine load reduction potential in the Bingham area. The following table includes the findings of the original study, as well as a percentage applied to the MTEMC service area based on the original assumptions of the study.

<b>Table 2. Findings of Pacific Energy Associates (PEA) Study and Percentage Applied to the MTEMC Service Area Based on Original Assumptions of the Study</b>			
	<b>Assumptions, PEA Study, TVA systemwide<sup>1</sup></b>	<b>Actual, MTEMC service area<sup>2</sup></b>	<b>% TVA Total in MTEMC area</b>
Residential Customers	3,547,242	123,446	3.48%
C&I <50 KW	558,749	15,179	2.72%
C&I >50 KW	62,796	2,063	3.29%
C&I >5,000 KW	476	3	.63%
	<b>Findings, PEA Study, TVA systemwide<sup>3</sup></b>	<b>Findings Applied to MTEMC area<sup>4</sup></b>	
Average MW	92	3.43	
Peak MW	187	6.68	

<sup>1</sup> Source: Total Valley distribution, June 2002; may be slightly higher than numbers reported to PEA

<sup>2</sup> Source: 2002 TVPPA Membership Directory; data compiled in October 2001 distributor survey

<sup>3</sup> Data from actual Pacific Energy Associates Report FY02

<sup>4</sup> Applied using percentage of actual customers

*In Concert With The Environment*<sup>®</sup> (in partnership with Nexus Energyguide) is a comprehensive environmental and energy education program directed to middle school and junior high school students. Student participants receive an energy survey to complete for their households. The results indicate the home's estimated annual and monthly energy usage by appliance and give a number of energy, environmental, and water recommendations for the student and their family to implement. Approximately 23,000 home energy surveys have been completed through this schools-based program since 1998.

