

# TVA turns to saving energy

Third of three articles

By Penny Wright  
special writer

The American instinct for independence and self-sufficiency is alive — at least, that is what the Tennessee Valley Authority is banking on.

Nowhere in the 1982 World's Fair at Knoxville, Tenn., is the effort to encourage energy independence more evident than at the TVA pavilion, called The Valley Adventure.

While other exhibits show the need for weaning consumers from their "fuehish" diets, TVA gets down to the specifics of how to do it.

**THE PAVILION** itself is an example of energy frugality.

Two river barges, which normally navigate the valley waterways transporting heavy construction equipment to TVA project sites, have been specially outfitted from TVA inventories for the exhibit.

Moored on the Tennessee River at the south end of the fair site, the barges are cooled naturally by river breezes and ceiling fans. As an added touch, one barge carries a roof-mounted panel of photovoltaic cells. The cells generate electricity directly from sunlight, allowing the exhibit to be partially self-sufficient in electrical usage.

Inside, the displays bear a strong "we can do it" flavor. Appealing graphics and walk-through model reveal the story of a partnership between TVA and the people of the valley region. It is a tale of success in land reclamation, flood control and economic development.

Now, nearly 50 years after its formation, the partnership confronts a new problem: dwindling energy supplies. The answer: Conservation and renewable energy applications are high on the list.

**TVA SHOWS** some possibilities with a display of homemade and commercial devices, including a solar wall collector, a breadbox water heater, and wood-framed greenhouse.

Many gadgets are simple energy-savers that can be built with off-the-shelf materials and are well within the capabilities of most do-it-yourselfers. Best of all, free construction and installation plans are available.

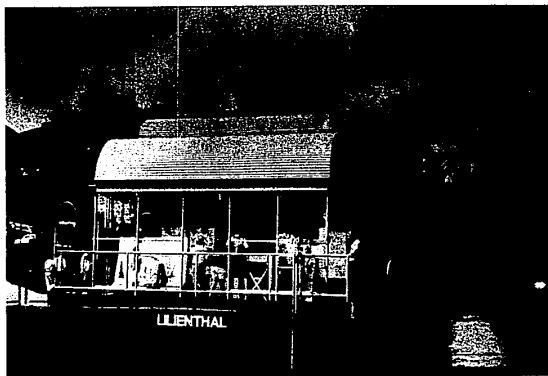
This strong appeal for energy independence might surprise those who look upon TVA as a big "daddy" dispensing beautiful favors in the form of cheap electric rates to multiple users. The facts, as they relate to energy production, are otherwise.

Most TVA programs — flood control, navigational and recreational development — are financed primarily by congressional appropriations and have been since TVA was created as a federal agency in 1933.

**THE ELECTRIC** power production program is different. Here, TVA is required to be financially self-supporting.

Because 45 percent of TVA consumers heat their homes with electricity (compared to 16 percent nationally), the utility is concerned about supply and also the need to avoid building expensive new generating plants. In response, TVA has decided to encourage innovation and belt-tightening throughout the system.

More than 100 TVA-designed and constructed solar homes, bearing medium-to-low price tags, will be available to consumers over the next few years. Each house is expected to save from 2,400 to 7,300 kilowatt hours of electricity annually.



TVA barge "Lilienthal" is naturally cooled by breezes and taps the sun for energy.

Additionally, customers wishing to tap into the sun in their existing homes are encouraged with the help of low- or no-interest loans for solar domestic water heaters and wood-burning stoves.

In the area of conservation, free home energy audits are offered, along with loans for weatherization materials and heat-pump purchases.

**TVA IS** looking at its own operations, too. Energy audits of all TVA buildings are being conducted, and a total of 67 solar systems has been authorized.

During 1983, the two display barges — Lilienthal and Morgan — will travel the length of the Tennessee and Cumberland rivers, stopping at communities along the way to celebrate the 50-year relationship of TVA with the people of the valley.

At the same time, the exhibit will be sowing seeds for the next 50 years.

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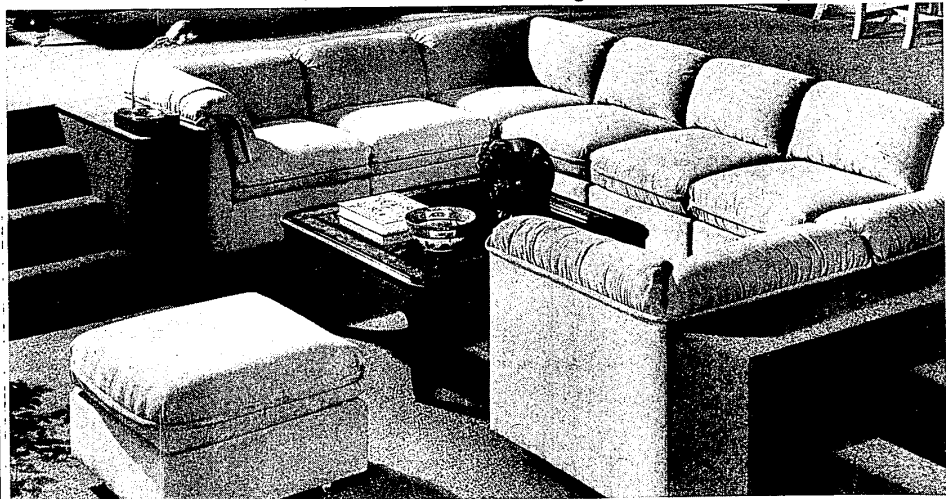
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energy  
**Barry Jensen**

## Staying cool saving money

You can stay cool at home without air conditioning — most of the time. Except for the very hottest days, you can keep cool without raising the electric bill by running an air conditioner. Before you decide to buy or use an electric air conditioner, consider these ways to keep cool:

- Insulation in the walls and ceiling conserves heat in the winter, but this same insulation will keep out heat in the summer so the house will stay cooler. A house with dark shingles on the roof absorbs more heat than one with light shingles. So attic insulation is more important to you if your house has a dark roof.

- Leaving storm windows on will reduce the heat coming through the glass. However, you may want to replace a few storm windows with screens on the east and west sides of your house for cross-ventilation. What you lose in window insulation will be made up for what you gain in cross breezes. If you have lots of windows on the west side of your house, leave most of the storm windows on.

- Keep drapes closed during the day to insulate the windows.

- Open windows at night to take advantage of the cool night Michigan air.

- Leave windows and doors closed during the day until the temperature inside is higher than temperature outside and then open the windows.

- Close off rooms that are inclined to be warm: the kitchen, laundry room, or utility room.

- Light bulbs, motors, TV sets and other appliances give off heat. Avoid using them during the hottest part of the day.

- Use the kitchen exhaust fan when cooking, washing clothes, mopping, and a bathroom fan when bathing. These will remove both excessive heat and moisture.

- A room fan on a pedestal circulates air within the room to give a cooling sensation to people in the room. It speeds the evaporation from the skin and evaporation is cooling.

- Window fans exchange air. Such a fan can blow either in or out. If the fan blows out, the cool air will come in through open windows in other rooms. The room with the exhaust fan will not be the coolest.

- In a two-story house, put the window fan in an upstairs window blowing out. Close upstairs windows, open the stairway door if there is one, and open windows and doors in the areas you want to cool.