



A typical steel-framed home, like the Crabb's, can be built from recycling the metal in as few as three or four junk cars. A wood-framed home of comparable size would require about one-quarter of an acre worth of trees.

Heavy Metal Electric Savings

Wayne Crabb says he always wanted to build a steel-framed house; and when he and his wife, Linda, moved from Oregon to Texas in 2004, he decided to seize the opportunity. Wayne was born in Winnsboro but spent most of his adult life near Portland, Oregon, where he and his wife raised their four sons while running a voice and data communications business. Upon deciding to sell the business, Wayne felt it would be ideal to move back to the slower-paced life of East Texas. Once the Crabbs bought property in Quitman in 2002, Wayne began methodically researching his building options.

The first thing to go up was a metal shop, which became a temporary home and contractor's office for the Crabbs while they started construction

on their 3,340-square-foot home, with 2,850 square feet of living space. The shop became their command center, as well as living space, during the two years that they developed the plans and built their steel-framed house.

When asked why he always wanted a steel-framed house, Wayne explained the many benefits, starting with today's poor grade of builder's wood that contributes to stability problems when houses shift or settle. Steel, on the other hand, won't warp or rot and is not susceptible to wood-boring insects such as termites. Steel offers strength and integrity that allows walls to remain straight for the life of a home, while adding more protection during heavy-weather events. Steel also offers a measure of fire protection.

Wayne believes in the value of a

steel-framed home so much that he has put his money where his mouth is. When he was researching for his own home build, he discovered he could get a discount on his house frame by becoming a distributor. Now the proud owner of a steel-frame business, SteelMade Homes, Wayne stays busy taking orders and offering training programs for those who want to build it themselves. While steel frames add about 20 percent more in up-front costs, Wayne believes the additional price for the steel is typically made up for in labor costs. He gets many calls from do-it-yourselfers and says, "I like to call it pride in workmanship."

In addition to the structural qualities, there's another prime side benefit of steel-frame housing. Because these homes don't settle or shift, there is

much less air infiltration. Also, because of the high-strength framing, these homes have much wider exterior wall cavities, which allow for much thicker insulation for all walls. The Crabbs' home has 8 3/8 inches of insulation.

Insulation is rated in R-value, which equates to thermal resistance. The higher the rating, the better the insulation properties. The Crabbs employed an R-30 value on their exterior walls, when homes in East Texas generally use values ranging from R-11 or R-19 for exterior walls.

What's the importance of an elevated R rating? It translates to less air infiltration, which in turn contributes to considerably lower electric bills by reducing heating and cooling costs. That's why the Crabbs also paid special attention to attic insulation, blowing in an R-40-rated fiberglass. As an extra measure, they hung the ductwork above the insulation, so as not to displace any insulation, thus enhancing the protective properties. Another added side benefit of the thick insulation is the soundproofing qualities, contributing to a quieter home.

Acting as the contractor for his own home, Wayne also incorporated many other techniques to further prevent air leaks. He says he just used "a bunch of common sense" type methods, including foil wrapping the house. Special attention was given to window insulation by taping around the open frames before spraying insulating foam. When selecting windows, they chose all single-hung, double-paned low-e coated windows, which are also energy savers.

Because the Crabbs' house is so well-insulated, they could employ another cost-saving measure by selecting a 5-ton heating and cooling unit. One might expect a larger unit in a house of this size, but because it is so well insulated and sealed, a smaller, more efficient unit is sufficient. It helps, too, that they did not put any windows facing west, which keeps the house from heating so much in the summer.

While many of the energy-saving measures in the Crabbs' household can be directly attributed to the use of

a steel frame when building, there are many others that can be used by just about anyone. For example, the Crabbs installed on-demand water heaters, which provide almost instant warm water but don't require constant electricity to keep warm water stored and ready for use.

Another big energy saving technique the Crabbs used was the installation of all energy-efficient lighting and light bulbs inside and out. For example, their master bathroom has three separately controlled vanity fixtures, but all the bulbs are compact-fluorescents. Even with the bright light given off by the 20 bulbs, they don't contribute heat to the space. The same care went into selecting every fixture and bulb throughout the house and even extends to the accent lighting above the bookshelves in the den,

which are energy-efficient LED lights of not more than 2 watts. These bulbs are also expected to last about 10 times longer than conventional bulbs, saving even more money in replacement costs.

Rightly so, the Crabbs are pleased with their beautiful, yet energy-efficient home, which they believe will bring them further savings in long-term maintenance costs, as well as bring good value in resale. Wayne says, "Aesthetics and efficiency can meet." And, as proof and encouragement that anyone can achieve what they have done, he repeats a favorite refrain: "Quite frankly, it's more common sense than anything."

SteelMade Homes is located in Quitman and is served by Wood County Electric Cooperative. To learn more about SteelMade Homes, call (903) 258-9359 or visit www.steelmade.com.



Wayne and Linda Crabb enjoy the many energy-saving features of their steel-framed home in Quitman. The depth of this window frame gives some idea of the wider wall spaces that lend themselves to thicker insulation.

Our Energy. Our Future.

What do you think would happen if electricity suddenly became unavailable or simply so unaffordable it was not within reach of the average consumer? What would happen to commerce? The price of goods and services? Our way of life as we know it? It's daunting to think about, but think about it we must.

Consumers need to be aware that the future of our electric supply is not as clear as it once was because several pressures are coming to bear simultaneously: Demand for electricity is increasing, and by 2025 it is projected to be 57 percent higher than it was in 2002. Price is expected to drastically escalate as fuel costs to generate continue to increase. Also, climate change legislation threatens to add substantial costs to power production.

Building new generation plants has always been a difficult task, and now concerns about greenhouse gases have made that job even harder and more expensive. With an uncertain regulatory climate, banks are looking twice at power projects. Their concern is that if a coal-fired plant is hit with increased regulatory costs associated with carbon emissions, the loans would be riskier. That could make the financing of needed base-load generation difficult. And even though Texas' supply of renewable carbon-free energy like wind and hydropower is growing, base-load generation powered by coal and natural gas will remain a necessity for the foreseeable future as renewables are not currently able to keep up with demand. Additionally, renewables are not always reliable. Lastly, cost constraints are also an issue with renewables, as many times huge investments must be made in transmission lines to move the power from the generation source to where it is needed.

At Wood County Electric Cooperative (WCEC), we are concerned about our energy future. We know that demand for electricity is rising by more than 2 percent each year. By closely

monitoring, we can see that the development of affordable generation facilities is not keeping up with that increasing demand. Anyone with a basic understanding of economics knows what happens when supply does not keep up with demand: Prices rise.

Throw into that mix potential federal or state regulation of carbon output, and the outlook for the electricity picture becomes uncertain.

We should all be concerned about the environment, and there should be some steps taken to address global warming issues. But those measures should be well thought out to ensure costs don't cripple rural Texans or the U.S. economy. There is not one single solution that will help us maintain reasonable costs, plan for ample supplies, and do both of those in an environmentally responsible manner. Part of that solution lies with all users of electricity.

Energy management is a simple and effective way we can all contribute to easing the demand for electricity. Some experts say that if Texans reduce peak energy usage by only 10 percent, we could eliminate the need to build multiple power plants. For all types of

ideas about how to conserve, visit www.wcec.org. Beyond implementing your own conservation measures, there are other ways to take action.

Add your voice to the discussion by reminding our political leaders and policymakers in Austin and Washington to look for solutions that keep you—and your pocketbook—in mind. The ability to provide reliable and affordable electricity lies in being able to use a mix of energy sources, including nuclear, renewables and fossil fuels like oil, natural gas and affordable and abundant coal. The issues are extremely complex, but one thing is clear: There must be a balance between energy affordability, reliance on foreign fuel sources and environmental responsibility.

Research at the U.S. Department of Energy and in private industry is ongoing and new technology is coming. Fascinating technologies are under development in bioenergy, carbon capture to sequester greenhouse gases, geothermal and hydrogen production, fossil-fuel efficiency measures and the use of renewable sources. However, many of these are many dollars and years away from deployment.



You don't need a megaphone to tell our national leaders your concerns about our energy future. Just go to www.ourenergy.coop.

Because our economic health as a state and a nation depends on reliable and affordable energy, it is one of the most important issues facing us as a nation. That's why the management at WCEC is remaining active in discussions on climate change and electricity generation. Remember, WCEC does not make choices based on profits for outside investors. Reliability and affordability for our members is the foundation for all decisions. That's why we are joining with our national organization, the National Rural Electric Cooperative Association (NRECA), to educate our members, our leaders and our lawmakers.

In summary, Texas and America have an energy challenge. Demand is growing, and in the next decade we could be facing brownouts and blackouts if something is not done about it today. Congress must take action to ensure we have affordable electricity while meeting climate-change goals. At WCEC, we firmly believe this crisis can be averted, but the solution lies in a well thought-out and balanced approach.

We invite you to join our campaign, "Our Energy, Our Future." NRECA has set up a convenient website at www.ourenergy.coop. Here, cooperative members can find step-by-step instructions to send questions and concerns to our national leaders. Here are three questions you can ask:

1. *Experts say that our nation's growing electricity needs will soon go well beyond what renewables, conservation and efficiency can provide. What is your plan to make sure we have the electricity we'll need in the future?*

2. *What are you doing to fund the research required to make emissions-free electric plants an affordable reality?*

3. *Balancing electricity needs and environmental goals will be difficult. What will you do to keep my electric bill affordable?*

It's time to act, and we urge you to get involved by contacting elected officials to encourage them to consider the vast implications and costs of the solutions they mandate.



Lindale High School junior Philip Hayes was selected by an independent panel of judges to represent Wood County Electric Cooperative on the 2008 Youth Tour.

HAYES WILL REPRESENT WCEC IN WASHINGTON, D.C.

Philip Hayes, a 17-year-old junior at Lindale High School, has won Wood County Electric Cooperative's essay contest and will represent WCEC at the Government-in-Action Youth Tour in Washington, D.C., June 12-20.

Hayes was chosen by an independent panel of judges based on his essay submission, which outlined ways consumers can reduce electrical consumption while lessening environmental impact.

Hayes is the son of Ron and Janet Hayes of Lindale. He participates in Key Club, is a member of the National Honor Society, is active with the debate team and is an accomplished French horn player in the Lindale High band. He is also active in Teenage Republicans and is president of the Teen Advisory Board for the Lindale Public Library. Hayes also participates in the

Media Ministry and AWANA Club at First Baptist Church of Lindale, where he is a member. Hayes also is an Eagle Scout.

"We're proud of all of his accomplishments and the man he is becoming," said his father, Ron Hayes.

Hayes will travel to Washington, D.C., with approximately 90 other Youth Tour winners from other Texas electric cooperatives. He will have the opportunity to meet congressional representatives and visit historic memorials and cultural centers in our nation's capital.

"Through time, we've seen the positive impact this program has made in the lives of participants," said WCEC CEO/General Manager Debbie Robinson. "The leadership skills and knowledge gained should reap lifelong rewards. I congratulate Philip and know he will represent East Texas well."