

The Impact of Energy on Real Estate Value

By Dr. Lawrence J. Golicz, PhD, MAI

Appraisers are going to be busy valuing energy property and all energy users' property as the price of energy continues to rise at double digits. The source of this soon to be abrupt change is the energy policy of the EPA going into effect on January 1, 2013. Its latest injunction is on coal-fired power plants that provide just about 45% of the nation's base power. A carbon tax and emission restrictions that cannot technologically be met, will lead to a closing of coal fired plants in favor of natural gas and other sources including variable energy from wind, sun, and biological renewable sources, all of which cost almost four times more than the base price of coal fired electrical generation.

Where is the first valuation challenge? About ninety percent of the coal mined in this country is used for energy production. With the intentional closing of coal-fired plants by the EPA, all of the employment in that industry will cease. Tens of thousands of jobs will be lost and hundreds of communities will become ghost towns. For sure, appraisers will be busy with foreclosures, auction sales, and the declining value challenges created by high vacancies and abandonments in small towns and cities in the coal regions of the country.

Next comes the value of an abandoned coal fired power plant. Alternative users? Who knows? Demolition is also expensive. Maybe they can be made into parks? Of even greater concern is the former users of cheap, coal fired electricity. The Midwest relies upon 70-80% of its electricity from coal- fired generators. Manufacturers consume gigawatts of energy making steel, forging steel, stamping and cutting steel, welding steel and assembling steel. Yes, automobiles, trucks, military equipment including the M1A1 tank, and heavy machinery from Bucyrus, John Deer, Caterpillar, and International , all of whom are variously located in Wisconsin, Illinois, Indiana, Ohio and Michigan, they all rely on cheap power.

With skyrocketing energy prices in the Midwest appraisers will be busy appraising empty houses, empty stores, and empty plants as a manufacturers, saddled with high taxes and the globally challenged labor costs of production, seek relief with cheap power elsewhere, like in the Tennessee Valley, or a foreign country like Australia, that still burns coal for energy. (It refused to sign the global warming treaty because it relies heavily on coal-fired generation.)

To be sure, you will also be busy appraising expensive windmills, and solar arrays, and the tens of thousands of acres of land underneath them taken out or lessened from agricultural production. (And, not to worry about dead birds and threatened wild-life in the solar and wind turbine fields. The windmill loss of 400,000 birds annually including 500 eagles is excused by Fish and Wildlife, while the loss of 28 ducks in a sludge pond in North Dakota is fined \$30,000.) The power output of these sources will not be cheap or reliable. And, without a very long life at typically 15 years, the

equipment is very expensive and will require replacement and high maintenance. And guess what, without a base supplier like coal, natural gas, or hydroelectric generation, brown outs from these sources may become as common as they are in India

Yet on the bright side, for the nation and those who still live in the economically gutted communities of the Midwest, high energy costs will be a boon to appraisers. The high cost of power will make the greening of buildings an important, if not mandatory valuation issue. From grass covered roofs, to solar platforms, from Styrofoam houses with R-60 insulation to LED lighting and energy efficient mechanical systems, the appraiser will be busy keeping up with new energy saving technology.

Well, what about nuclear plants? This is the biggest con of all, but not a good source of business for appraisers. The total energy required to decommission a nuclear plant can be as much as 50% more than the energy needed for the original construction. Of course the vacant land will need appraising, if you can find a comparable with spent fuel rods stored on it, as is the case with many certified clean sites. Of the 253 nuclear power reactors ordered in the United States in the past forty years, forty- eight percent of them were canceled and eleven percent were early shut downs. In the end, only twenty- seven percent are still operating without major shut-downs. On the positive side, as of 2011, the remaining reactors have received 20-year extensions to their licensed lifetimes, with more than a dozen applications still under review. It makes sense, as the capacity factor for all US reactors has improved from below 60% in the 1970s and 1980s, to 92%. And we might as well keep the continuing surface accumulation of spent fuels where they can be guarded best.

Yet the best of the best, is hydroelectric power. These plants have the longest life, over 100 years. They also have the lowest maintenance cost and no cost for fuel, which is falling water. (The Hoover Dam, for the first time in 50 years, is replacing the bearing on just one of its turbine generators. And, tests indicate that the dam's poured concrete is still curing to a higher strength rating.) The State of Washington is best off with 80% of its power generated by dams and stored reservoirs. And their cheap electricity comes from the biggest and best dams built in the 1930's by the NRA, Bonneville on the Columbia and the Grand Coulee on the Snake. Other great dams include those of the Tennessee Valley Authority. But, don't count on a lot of business from the future creation of hydroelectric dams. Even though dams reduce greenhouse gas emissions and are reliable as a base power, day or night, all year long, and wow, they even operate on a renewable resource, rain- water. You guessed it, the EPA will not allow it, because dammed up waterways threaten wildlife, more particularly migrating fish.

Of course, for all of the positive reasons, the rest of world is actively pursuing dam construction with the largest dams in China, Russia, Brazil, and India. China has the most hydropower generation, while our neighbor with its many rivers, Canada, is second, Brazil, also with many running water opportunities, is third, and the USA is

fourth and going downhill as other countries like India now add massive new dams. There is some hope, but not so much for appraisers. There are over 7,000 dams in this country, most of them with less than a 25-foot fall of water. Engineers are working hard to develop horizontal turbines that can capture ten feet of the fall to generate power, and we will need it.

So in my opinion appraisers today will be especially challenged in the very near future by valuation issues created by changes in the way we not only generate energy, but, transport it. I foresee a great deal of appraisal work forthcoming in a few decades. Think of the millions of miles of easements and corridors for those ugly power lines, those swaths of land coming back into other uses. It happened to the railroads with highways. It will happen to power distribution with fuel cells at each house and at each store and plant. It can also happen with the revival of Nikola Tesla's Coil for wireless transfer of energy, captured from the magnetic field of the earth and ambient electrical charges in our atmosphere. With the earth acting as a ground and the air as the transmitter of a positive charge, imagine as he actually demonstrated holding an energized light bulb in his hand while touching the ground and feeling no shock. A laboratory in California and Australia are currently working on practical applications. As the story goes, appraisers never stop learning. How could they afford not to?

About the Author

Dr. Lawrence J. Golicz, PhD, MAI is currently acting as an independent valuation consultant, and appraising for over thirty-five years, Dr. Golicz has specialized in atypical and complicated property appraisals. He has had experience with all types of real estate, has performed mass appraisals of whole communities, appraised tangible property of all kinds, including machinery and equipment, and provided valuations dependent upon special purpose improvements, including sewage treatment plants, licensed land-fills, scrap metal processing, recycling facilities, power plants, refineries for gasoline and recycled oil, a whey plant, and breweries. For extensive complex properties he has participated in the appraisal of the General Motors Technical Center and the Chrysler Technical Center. Also acting as a Special Magistrate for Tax Appeals, Dr. Golicz has provided expert testimony in federal and circuit courts in bankruptcy and foreclosure as well as before the Michigan Tax Tribunal. He can be reached for further contact at lgolicz@tampabay.rr.com.