

Nuclear Power Can Save America from the “Energy Cliff”

by *Danny Roderick*

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America is heading toward an energy cliff in the next 20 years and the impacts could be much worse than those of the recent recession.

Simply put, we cannot climb out of our economic downturn without a readily-available supply of clean and abundant energy—from sources that are affordable, scalable to meet short-term demand, and do not compound the problem of global climate change.

And as “*Pandora’s Promise*” correctly suggests, nuclear power is the safest, most stable and secure option for achieving that goal.

The U.S. has an aging fleet of nuclear plants that will soon reach the end of their design life combined and an aging fleet of coal-fired power plants that has numerous challenges with environmental compliance. Combined, these two sources represent over 60% of this nation’s electricity supply. What’s more, the U.S. Department of Energy forecasts that somewhere between 35 and 60 gigawatts of coal-fired power plants will be shut down by 2018 because of low gas prices and rigorous enforcement of clean air standards. That means up to one-fifth of the largest source of domestic energy production will soon be gone.

At the same time, per capita electricity use is expected to grow by nearly 30 percent through the year 2040 after a slow and steady decline over the past several decades. Energy efficient products have helped reduce consumption, but they have been outpaced by new digital devices, larger homes, and other energy-consuming lifestyle choices. This will undoubtedly drive environmental taxes such as a carbon tax on generation from natural gas and coal.

Yes, it’s important to increase our use of renewables like solar, wind, hydro, geothermal and others. But today, these sources *combined* represent only about ten percent of all domestic electricity production, compared with 20 percent for nuclear. And as *Pandora* director Robert Stone rightly points out, coal or natural gas is needed to supply the electricity when the sun isn’t shining or the wind blowing.

Nuclear power has been proven to be the safest form of energy since the U.S. first reactor went online more than 50 years ago. What’s more, the new plants being built today by Westinghouse feature advanced technology and design that take safety to new levels and are being built at costs below levels from the 1970’s and 1980’s when most of the U.S. plants in operation today were built.

For more than 35 years the nuclear industry has provided over 20% of the electricity that powers the U.S. economy, creating jobs and fueling economic growth.

Many thought the 1979 accident at Three Mile Island would mean the end of the nuclear industry. In fact, the industry with the help of government regulators learned a great deal from that event and over the next decade reinvented itself. In the years that followed, the U.S. nuclear fleet and its suppliers developed and embraced the highest standards of plant safety in the world. Improvements in technology, design and plant maintenance enabled the nuclear industry to survive and grow. Today, the U.S. nuclear industry

consists of 200,000 highly trained employees and is the world's leading exporter of advanced nuclear technology.

During that time, no other energy source realized a lower and more stable price than nuclear power. And in that same period, over 440 reactors were built around the world. Even today over 100 new reactors are in some phase of project development globally.

In 2010, two forward-thinking utilities in the southeastern U.S. made an investment in the future to protect stable pricing and hedge against pending environmental regulations that penalize carbon emissions. They committed to building four new advanced-generation nuclear power plants – the first in the U.S. since the accident at Three Mile Island.

They understand that a balanced fuel portfolio creates long term stability and predictable costs for electricity. They also know that baseload electric generation costs are susceptible to volatility in the natural gas market.

For most of the last three decades, nuclear generating costs have been lower than natural gas or coal. Today we are realizing the benefits of low price natural gas, but history tells us that over time and increased use that price volatility will return.

It is important to remember that large scale energy infrastructure investments typically have a 60-year life span. Then consider the volatility of natural gas and oil over the last 60 years. It is a trade-off between higher construction costs and long term price and supply security versus a lower construction cost and high exposure to supply and price volatility.

In my lifetime, I have been assured at least twice of a new 100-year supply of natural gas, only to have those hopes dashed as increasing demand repeatedly burst the natural gas bubble.

Concern over high natural gas prices and global natural gas shortages and potential carbon taxes gave rise to the so-called "nuclear renaissance" of just a few short years ago. But the financial crisis and economic downturn that followed reduced the number of planned new nuclear plants from 25 to just four. Another 12-15 licenses to build are in progress but their timelines have been extended.

Over half of the world's nuclear plants in operation today are based on Westinghouse pressurized water technology. In addition to the eight new units we currently have under construction, another 30 or more units will begin construction within the next ten years. This new advanced nuclear power capacity will help fuel global industrialization without long term environmental impacts – and these new plants feature an advanced design that can withstand the kind of natural disaster that caused the accident at Fukushima.

But one thing is certain – we need the power these new plants can provide to meet the expected shortfall that will occur in the years ahead. And nuclear power is the only energy source that can safely and achieve this goal. The private sector and government policy-makers alike recognize that nuclear energy must be an essential cornerstone of any national energy policy and is the most certain solution to keep us from going off the energy cliff.

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