A NEW DAWN FOR NUCLEAR?
By Lew Hay

Recently there’s been much talk of a nuclear renaissance in the United States. And that’s all it is right now: talk. Meanwhile, the rest of the world is acting. More than 50 new nuclear plants are under construction around the world, including 24 in China alone. In the United States, one.

Today, nuclear power supplies roughly one-fifth of U.S. electricity needs – safely, reliably, and cheaply. It can continue to do so in the future, and perhaps even grow its share, but only with sensible policies in place.

We must begin by acknowledging the threat from climate change. While the science of climate change will never be settled to the satisfaction of every observer, we know enough to say there is a significant risk that global warming will cause dire consequences. Confronted with risk, prudent individuals – and prudent societies – take out insurance policies to protect against potentially catastrophic losses.

What form should this insurance take? One school of thought says we can achieve all of the greenhouse gas reductions necessary through renewable energy and increased efficiency of our homes and offices. “While nuclear power undergoes yet another facelift, energy efficiency and renewable technologies will continue to provide the best opportunity to slow climate change,” says Greenpeace on its “No New Nukes!” blog. As the CEO of the nation’s largest producer of renewable energy from wind and solar power, I wish that were true. But the simple fact is that there is no way renewables and energy efficiency alone will get us where we need to go.

Every credible analysis finds that renewables and energy efficiency will provide only a portion of the emissions reductions needed if we are to “de-carbonize” our economy.
For example, a 2009 analysis by the Electric Power Research Institute (EPRI), the industry's research arm, looked at how much various approaches would contribute to carbon reduction by the year 2030. Renewables would achieve 13 percent and energy efficiency would add 6.5 percent. Yet reasonable estimates suggest we should be targeting reductions in this timeframe of 40 percent to 50 percent.

If we are serious about reducing carbon emissions, we simply must make use of every tool in the toolbox to get the job done. Among the major drivers of a lower-emitting power sector are the commercialization of technology to capture and store carbon emissions from fossil fuels, the deployment of 100 million plug-in hybrid electric vehicles by 2030, and yes, a significant expansion of nuclear power.

According to EPRI, not only does the entire current fleet need to remain in operation – which means a second round of license extensions to bring the useful lives of nuclear units from 40 to 60 years – but we need to add another 64 reactors for nuclear power to contribute an 11 percent reduction in carbon emissions. At our Florida utility, we have proposed to build two new reactors at the site of our existing nuclear plant south of Miami.

In my view, the United States should build at least 50 and as many as 100 additional nuclear units over the next few decades, at roughly 1,000 megawatts per reactor. Impossible? Hardly. Over a 19-year period, from 1970 to 1989, we brought 105 nuclear plants online. And over the last 20 years, the world has brought 90 nuclear reactors online.

All we need is the political will to do it. The most important economic incentive policymakers can adopt to make nuclear power viable is to put a price on the emission of carbon dioxide. Currently, fossil fuels enjoy a huge implicit subsidy in the form of a lack of carbon pricing. If carbon were priced, non-emitting power generation sources such as
nuclear would be able to compete on a truly level playing field. By contrast, the lack of a price on carbon is a thumb on the scale of fossil fuels.

Just as important, policymakers and regulators must ensure that a handful of anti-nuclear activists does not abuse the rule of law in order to introduce delay and uncertainty into the long process of bringing a new unit online. The argument will always be that nuclear power is not “safe,” even though the number of fatalities from America’s most significant nuclear accident, Three Mile Island, has always been the same: zero.

There are multiple points during the cumbersome approval process to object. First, anyone who wants to build a nuclear facility must get the state utility regulator to approve the need up to a decade ahead of when the plant may be needed. If history is any guide, the naysayers will start by saying the plant is not needed, and then, if regulators approve the need anyway, they will revert to saying it is not safe.

If you clear the hurdle of state regulatory approval, then the Nuclear Regulatory Commission (NRC) can take up to four years to grant your combined construction and operating license. The naysayers can be expected to raise countless objections to make the process as long and costly as possible.

Next, there is the cost of as much as $10 billion and five years to build each reactor, compared to about $1 billion for a natural gas-fired power plant.

And finally, at the end of the process when it’s time to turn the key, the naysayers will be tempted to throw in a last-minute challenge to delay your start-up indefinitely, knowing that delay adds cost and uncertainty. Policymakers and regulators need the political will to overcome these tactics. The NRC has promised that as long as plants are built according to pre-certified designs, they can start up as soon as they are complete, but this process is new and has never been tested in the real world.

I believe nuclear is the right answer for the nation. But like Charlie Brown, those of us in the electric power business have been encouraged to kick the football before,
only to have it snatched away at the last second. If we’re going to try again, policymakers need to convince us – really convince us – that we won’t end up flat on our backs.

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