



By Don Horne

JUST WHAT EXACTLY CONSTITUTES RENEWABLE ENERGY?

Just what is “green” generation anyway?

The simple answer is one that doesn’t emit any harmful greenhouse gases (carbon dioxide, monoxide, etc.) or pollutants into the atmosphere, without damaging or depleting the resources being used.

That question is becoming all important when it comes to meeting the various renewable portfolio standards from state to state.

The Edison Electric Institute says that some states have made their standards too high, leaving utilities no other recourse than to negotiate the least expensive penalty payments possible.

In the case of Maine – a state with the highest Renewable Portfolio Standards (RPS) in the United States – their entire northeastern corner of the state is not connected to the ISO New England grid. That creates an incredible headache for those selling electricity to ensure that a certain percentage of their power is renewable.

But again, what is renewable?

Renewable generation, like wind and solar, is seen as clean and green.

Nuclear is also being touted as green generation (no emissions), although there is still some way to go to convince groups like Greenpeace that the radioactive waste from the reactors is not ultimately harmful to future generations.

New technologies like carbon capture and sequestering are making coal a “green” generation option, although many remain dubious as to whether this can be done both successfully and viably.

The oldest form of emission-free power – hydroelectricity – is viewed by many as the greenest form of generation.

But with the headlong rush to find greener, cleaner forms of generation, we are taking a step back and a deep breath to see just how green each of these really are when it comes to generating electricity.

Hydroelectricity. Yes, there are greenhouse gas emissions expelled from

the water as it emerges from the turbines and falls to the bottom of the spillway. The instant drop in pressure is equivalent



to one atmosphere, resulting in the immediate release of carbon dioxide.

Then there are water and wildlife concerns. Maintaining minimal reservoir levels during times of drought affects downstream ecosystems.

Nuclear, as mentioned earlier, does produce zero emissions but considerable radioactive waste, creating storage and security problems for successive governments. Yes, the record of nuclear generation is one of great success; but the

potential threat from an accident or terrorist attack is very real and very terrible.

Solar looks promising. Although the environmental cost of producing these panels and photovoltaic cells were considerable in the past, today’s panels pay back environmentally in one to three years. And in the next five years, those numbers could be reduced by half again. In an urban application, covering the roofs of the cityscape with solar panels leaves absolutely no footprint on the land – but certainly this would make no sense in an agricultural application, where vital farmland would wither and die underneath miles and miles of solar panels covering the landscape.

Although Texas has invested heavily in wind, it does not shine as brightly as solar when you consider that the times of heaviest demand for air conditioning are when the wind has stopped blowing and the sun is shining.

Wind turbines were touted as a great, clean way to generate power. But as they began to sprout up, objections were raised by those who didn’t want to see a string of whirring blades atop mountain vistas and spinning in their neighbour’s backyards.

In addition to the aesthetic complaints, avian experts were concerned at the large number of bird strikes created by these fast-spinning blades. Although the power being generated was clean, it was creating a graveyard for our feathered friends.

Currently, 26 states are in the process of coming up with some form of RPS, and realizing what is achievable and what is impractical needs to be addressed before a renewable percentage is codified into law.

With strained transmission grids, increasing levels of loading relief requests and backed up interconnection queues, deciding who should pay for new transmission – and how much that transmission will be – needs to be dealt with in a realistic manner.

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