



RESPONSE OF THE ELECTRICITY CONSUMERS RESOURCE COUNCIL (ELCON) TO THE SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES QUESTION 5

The Electricity Consumers Resource Council (ELCON) is the national association representing large industrial consumers of electricity. Our membership comes from nearly all sectors of America's manufacturing community.

ELCON members compete in fiercely competitive global market places, and, by necessity, must keep their operating costs as low as possible. Our members are energy-intensive, and all have operations throughout the world. In some industrial process, purchased electricity can be the largest operating cost. Even in industries that use less electricity, it can be the largest controllable costs (since other operating costs are fixed or result from contracts negotiated at the national level). As a result, ELCON members demand a reliable, competitively priced supply of electricity and have long been leaders in implementing energy efficient technologies.

ELCON members have been following the issue of using "alternative" fuels to meet electricity demand for many years. We emphasize that as an association we take no position on whether or not a Clean Energy Standard (CES) is a good idea or whether it should be enacted, nor do we have recommendations regarding its design or technical characteristics. As a general principle, we support a diverse fuel supply and many ELCON members are leaders in reducing the use of fossil fuels and the resulting greenhouse gas emissions.

If a CES is to be enacted, ELCON members are very concerned about any potential increase in electricity costs as a result of the program – which would obviously disadvantage American manufacturing facilities vis a vis other manufacturers. Additionally, ELCON members want to ensure that the implementation of the program does not jeopardize the reliability of the existing bulk power system resulting from an unmanageable increase of intermittent power.

These increased costs would include not only those associated with the cost of the power itself, but also the costs associated with the construction of new transmission needed to make the power deliverable as well as the cost of procuring additional ancillary services (back up capacity) needed as a stop gap to meet demand when energy from variable resources is not produced. In addition, too aggressive a timeline may cause an excessive reserve margin or the stranding of useful assets, as has happened in California.

ELCON members want to ensure that any CES recognizes and protects domestic manufacturing from being placed at a cost disadvantage as a result of its implementation

Minimizing Costs Through A Broad Clean Energy Resource Definition

With regard to cost, ELCON members fear that a Clean Energy Standard could be used to justify the adoption of more expensive resources, including many variable energy resources. When

taken together, the delivered cost of some “clean” energy from variable resources is often less cost effective when compared to other “clean” energy from traditional generation fuels. As long as these variable resources represent a very small proportion of the total generation mix, the consumer impacts are minimal. However, as the proportion of these resources grows, the consumer impact also grows.

Therefore, if adopted, the focus of a CES should be on reducing Greenhouse Gases (GHGs) and not promoting the adoption of carbon-free resources, which will greatly increase costs. If power from renewable sources were, in fact, less expensive than that generated from conventional sources, such power would not need a CES, special tax credits and/or other incentives or subsidies. ELCON members believe that market forces should drive the selection of fuel choices, and view a CES as a mandate that could interfere with market-driven fuel choice selection. A CES will increase electricity costs – the only question is by how much.

In attempting to reduce greenhouse gas emissions, one should consider less costly, more efficient mechanisms that will also reduce carbon. Specifically, Combined Heat and Power (CHP) and Waste Heat Recovery, which are included in some state Renewable Energy Standards, have been identified by the Department of Energy as a potential major contributor to reducing carbon. According to DOE, “If the United States adopted high-deployment policies to achieve 20 percent of generation capacity from CHP by 2030, it could save an estimated 5.3 quadrillion BTUs (Quads) of fuel annually, the equivalent of nearly half the total energy currently consumed by U.S. households.” Today CHP accounts for 9 percent of total electricity production. Increasing that percentage would benefit both the environment and America’s manufacturing competitiveness. Many CHP units operate on a “24/7” basis and increasing utilization of CHP mitigates the need for new transmission.

In addition, there is significant potential that economic Demand Response could reduce costs to consumers – both by lowering the market clearing price in the short term and by mitigating the need for new generation and new transmission in the long term – while reducing carbon emissions.

Finally, ELCON members believe that the role of natural gas, as both a bridge fuel and a larger component of the long-term solution, should not be overlooked, given its abundance and relatively low carbon output. Experience has shown that no special incentives or subsidies are needed to encourage exploration and production of natural gas.

Transmission and Ancillary Service Cost Concerns

The increased costs associated with greater use of variable energy (whether directly or indirectly mandated, as per a CES) are attributable to several factors. One factor to be considered is that in most cases, these energy resources (particularly wind) are often located at a considerable distance from load centers and therefore necessitate the construction of new (and expensive) transmission. This issue is only magnified when there is not enough demand in the footprint of the utility, balancing authority, or RTO where the resource is located to consume the power, resulting in the need to build *additional* transmission infrastructure to deliver the power to

another utility, balancing authority or RTO footprint. All at great cost to the consumers both large and small.

Another factor to consider is that only a small proportion of the nameplate capacity of many variable energy resources is actually deliverable and can be counted on at time of system peak. Thus, costly storage or back up generation often is required. For instance, the ancillary costs of relying on more wind generation were addressed in a recent study undertaken by ICF International for the Interstate Natural Gas Association of America. That study focused on the need for new gas pipeline capacity to serve gas-fired backup generators and, by extension, the need for new gas-fired generators themselves. It concluded that the “cost of serving these backup generators, which may call on the pipeline system with little or no notice, will be higher on a unit-cost basis than traditional firm transportation service. This is because the pipeline may need to dedicate firm capacity to provide such service – even though the capacity is used infrequently.” Moreover, the study emphasizes that “gas-fired generation capacity that provides firming service must be reserved exclusively for that function and will not be available to compete in ordinary economic dispatch. This is because the firming generation must be on call when the actual output of wind generation is reduced from the level that has been forecasted as available and planned for the electric grid.” These costs could be largely avoided if the lowest cost fuel were utilized for power generation rather than a mandated variable resource.

According to ICF, the “total cost of the natural gas infrastructure to support firming requirements could range from about \$2 billion to \$15 billion,” and, of course, these costs will be borne by large and small consumers.

From the perspective of America’s manufacturers the question of cost allocation is also important. Additional costs due to the construction of new transmission or for other programs should be assigned on a capacity (kW) basis, not an energy (kWh) basis as new transmission lines must have the capacity to handle the peak production of renewables, even if the average daily load factor is much lower due to days with no wind or sun. To do otherwise would harm the most predictable component of load – i.e., add more costs to manufacturing and would violated the principle of cost-causation ratemaking that underlies fair and efficient electricity pricing.

Other energy sources that could be included in a CES also come with additional cost burdens. Clean coal is an unproven technology, but there is general agreement that it will be expensive. The cost of constructing new nuclear generation is much higher than for those built years ago, and recent events in Japan will undoubtedly result in additional – and costly – safety requirements.

The total cost to consumers of implementing a CES could well be in the tens of billions. America’s manufacturing base competes on an international basis. Domestic manufacturers will not be able to capture increased electricity costs by raising prices because the price of their products is set by global economic factors that are impervious to influences such as a national CES. If we fail to recognize the significant cost impact, the result will be to put domestic manufacturers at a distinct disadvantage to their growing international competition which in

many cases is based in the less developed world. These competitors are often protected from similar policies because they are considered an asset supporting government policies favoring the development of manufacturing technologies which provide significant employment opportunities. ELCON members urge that those developing a CES keep in mind the precarious situation of American manufacturers and not disadvantage them vis a vis their international competitors.

Reliability Concerns

The Committee has raised the issue of “technological impediments” to adding more renewable energy. From the perspective of industrial users, the issue of maintaining reliability while integrating variable renewable generation is more than an impediment – it is in fact a major potential problem. Maintaining reliability is of course also of importance to commercial and residential electricity users.

As a recent study by the Ernest Orlando Lawrence Berkeley National Laboratory confirmed, “the declining quality of frequency control in the U.S. interconnections is currently a significant reliability concern” and that “physically integrating increased wind generation will require significant transmission infrastructure investment.” That study also found that, in the Western Interconnection, even at the present levels of wind energy penetration (only about 3%), “there could be risks to reliability under certain operating conditions.” This at a time when Bonneville Power Administration has plans to increase its connected wind generation from 3,400 MW to 10,000 MW by 2017.

Conclusions

Comprehensive legislation should include mechanisms that ensure that domestic manufacturing jobs will not be sacrificed in exchange for achieving goals. Protections for manufacturers that are exposed to international market forces could take many forms, but the result must be to avoid creating additional cost burdens that have the unintended result of weakening our domestic industries.

A competitively priced supply of electricity delivered in a reliable fashion is a necessary component for American manufacturers to operate successfully in world markets and for American economy and workforce to prosper. A CES should encourage the cost-effective use of nuclear power, CHP, waste heat recovery, natural gas and clean coal technologies, with more certain cost implications. A CES should not become an exclusive mandate for less cost-effective variable generation which requires a greater level of subsidies or which poses greater threats to reliability.