

(Our thanks to the Conservation Law Foundation for allowing us to share this very clear explanation with League members and friends.)

Working with the ISO to Integrate Renewable Energy in New England

Sep 15, 2014 by [Jerry Elmer](#) | [Bio](#) |

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The ISO is the organization that operates the New England-wide electricity grid and runs New England's wholesale electricity markets.

You can [read more](#) about what the ISO is, and why CLF works on ISO committees and working groups.

I have written before about CLF's work with the ISO. You can read those prior blog posts [here](#), [here](#), and [here](#).

As I have said before, CLF is one of the very few environmental organizations to work with the ISO, and no other environmental organization is as heavily engaged in the ISO as CLF is.

A few days ago, I [wrote](#) about one of the major criticisms of renewable energy – that it is too expensive – and how changes that CLF is seeing at the ISO are, even now, making that argument a thing of the past. Today I want to describe another frequently heard criticism of renewable energy, that it is not always available and so it cannot be relied upon like fossil-fuel generation can.

We renewable energy advocates hear that argument a lot. For example, the nationally prominent, anti-renewable-energy Heritage Foundation wrote on May 5, 2010:

Wind, like solar energy, is not a dispatchable power source; that is, it cannot be turned on at will. As a result, increasing dependence on wind adds variability and uncertainty to the power grid that must be offset by quick-ramping power sources like natural gas turbines to maintain a relatively constant flow of electricity.

When the Heritage Foundation discusses an electricity source being “dispatchable,” it means both being turned on and off at will, and being able to increase or decrease its electricity output at will. Here in New England, the ISO, which runs our electricity grid, “dispatches” every electricity generator in the region. The ISO tells those generators when to run and when not to run; and it tells them exactly how much electricity to churn out. This is essential to maintaining the reliability of the electricity grid, because the aggregate supply produced by all the generators in the region has to be exactly equal to the aggregate demand of tens of millions of customers every minute of every hour of every day of the year.

What the Heritage Foundation means to say here is that the wind does not always blow and the sun does not always shine. For these reasons, up until now, renewable energy has not been a dispatchable power source.

But here is the really cool news from the ISO: the ISO is now on an irreversible track to make intermittent renewable energy sources like wind fully dispatchable in the New England power grid. In fact, the ISO expects to have wind fully dispatchable in New England by late 2015 or early 2016!

According to the ISO, there are three requirements, or prerequisites, for making wind (and, eventually, other intermittent renewable energy sources) fully dispatchable.

The **first** requirement is that the wind farms, wherever they are located, be in constant electronic communication with the ISO's control room in Holyoke, Massachusetts. The ISO refers to this requirement as "telemetry." The telemetry between wind farms and the ISO control room is already in place; it exists today.

The **second** requirement for making renewable energy fully dispatchable is that the ISO needs to have reliable, accurate five-minute-ahead weather forecasts for things like wind speed and sunshine intensity. The ISO has been running trials for months now of five-minute-ahead forecasts; and at a meeting I attended this month, the ISO reported that the five-minute-ahead weather forecasts it has been receiving have been completely reliable and accurate and fully satisfy the requirements of the ISO control room.

The **third**, and final, requirement for making renewable energy fully dispatchable in New England is the creation of the actual computer algorithms that the ISO control room will use to dispatch renewable generators when the time comes. The ISO plans to issue a so-called "DNE Order" to every dispatchable renewable generator for every five-minute interval of every day. This DNE Order will set an upper limit (i.e., "Do Not Exceed," hence, DNE) for that generator for that five-minute interval. As long as the generator does not go above its DNE limit, the generator will be considered (by the ISO) to be operating "within dispatch," and will get paid for its electricity output.

It is this third, and final, part that is still needed to make renewable energy fully dispatchable. And at the ISO meeting I attended this month, the ISO decided to start the actual work on those computer algorithms. These algorithms will take some time to complete; but when they are done, the ISO will treat wind as fully dispatchable in New England.

Many owners of fossil-fuel-fired power plants are very unhappy that the ISO is moving so inexorably toward making renewable energy fully dispatchable. Those fossil generators know, correctly, that having renewable energy fully dispatchable by the ISO will tend to undermine the economic viability of their dirty, old power plants. This is especially true now because the ISO-New England, like other ISOs in other parts of the country, is also rolling out "negative price offers" that will make renewable energy resources even more economically competitive compared to fossil-fuel plants.

This is a very exciting time for CLF to be participating in ISO matters, because the ISO is moving on multiple fronts to integrate new renewable energy resources in to New England's electricity grid.

For years, opponents of renewable energy have claimed that renewable energy, while clean and non-polluting, is too expensive for average ratepayers. But on December 3, 2014, ISO is introducing negative price offers, that will make renewable energy cheaper than ever before and drive down the cost of electricity for all New England ratepayers.

And for years, opponents (like the Heritage Foundation) have argued that renewable energy is not dispatchable. But even now the ISO is taking the final steps to make intermittent renewable energy resources fully dispatchable – and is writing the computer algorithms that the ISO control room will soon use to dispatch wind farms.

These are exciting times in the world of renewable energy development, and CLF is playing an active role in those developments.