



Testimony on S. 267: Renewable Energy Standard  
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Thank you for the opportunity to testify today on behalf of the Vermont Chapter of the Sierra Club. Sierra Club is a national organization, with about 4.5 million members and supporters. In Vermont, there are about 15,000 members and supporters. We operate in Vermont as a group of volunteer leaders with the support of one Montpelier-based staff person.

I'm here today to support S. 267 as currently drafted. I'll suggest a couple of improvements, and strongly urge you to oppose suggestions to weaken the bill in any way.

We offer our strongest support for increasing the Tier 2 Renewable Energy Standard. This is the core of the bill, it's the greatest opportunity for our state. This is about clean energy, it's about resilience and flexibility in the face of the challenges of the climate emergency, and it's about economic development, creating that vibrant new clean energy economy that will serve us so well. We support the increase from 10% to 20%; we would even urge this be a larger number.

We are offering qualified support for the move to 100% renewables through expanding the Tier 1 standard. We find that the Tier 1 resources are a mix that sometimes blurs the distinction between what is truly renewable and what is not. In today's world, we also pay attention to what is GHG-neutral and what is not. In particular, we need to look to each source and ask, are these renewable or greenhouse gas benefits real? Are they verifiable? Are they additional -- that is, is this project actually making a difference in our greenhouse gas balance? Are the extra pennies we pay on these kilowatt hours really making a difference in our efforts to hold back the climate crisis?

A central concern with the Tier 1 standard is the role played by large hydroelectric projects, which make up the vast majority of our Tier 1 compliance. The reality of these large hydro sources is that they are not the renewable and carbon-neutral sources of electricity we often assume them to be.

Under VT statute, renewable energy is “energy produced using a technology that relies on a resource that is being consumed at a harvest rate at or below its natural regeneration rate.” In our view, we often overlook the question of what is the resource that is being used. Obviously, the water flowing through the powerhouse is one aspect of this. But we can’t overlook the other resources that are part and parcel of any facility. A large hydro facility requires a large reservoir, and this means the elimination of whatever features were there before flooding. In the case of the hydro facilities from which we now draw the great majority of our Tier 1 power, this has meant lots of square miles of forest or peatland, with no expectation of any natural regeneration rate. With the poisoning of fish populations with methylmercury, this means that vital food resource that is taken off the table. With the lost terrestrial ecosystem, there is a lost resource of wildlife. It is only by turning a blind eye towards these aspects of the resource that we can consider this power renewable.

We also need to be mindful of the greenhouse gas equation that’s involved here. There are two sides to that equation, one is about emissions of CO<sub>2</sub>, methane, and other greenhouse gases, the other is about the capacity of living things, particularly plants and algae, to take up and hold onto CO<sub>2</sub>, that is, sequestration, or carbon sinks. When we remove a forest to make room for a reservoir, we eliminate that carbon sink. In the case of Hydro-Quebec, there are about 12,000 square miles of reservoir, larger than the entire state of Vermont, that have been bulldozed and flooded. If you work out our share of that on a kilowatt-hour basis, that’s about 100 square miles of boreal forest and peatland that are taken out of the sequestration equation.

At the same time, the reservoirs are adding to the other side of the equation by emitting greenhouse gases. Some of this is in the form of CO<sub>2</sub>, the product of decomposition of organic matter that has been stored in the forest soils over thousands of years. Some is in the form of methane, from stored or partially decomposed organic matter. Methane is critical because it is far more powerful as a greenhouse gas, trapping 86 times the energy as a similar volume of CO<sub>2</sub>.

When you add up the lost carbon sink and the reservoir emissions, you have an electricity source that is not a lot better than burning fossil fuels.

We should also consider that Hydro Quebec, the source of the majority of our Tier 1 power (and RECs) is very close to capacity. There are even times now, as they are exporting power to serve contracts to the south, they are shutting off delivery to other clients in Canada, which substitute that with fossil energy. This will only increase as their exports expand, with transmission proposals through Maine or Vermont, and new export contracts with Massachusetts, New York, and elsewhere. Beyond this, there are plans to expand. They and their sister crown corporation Nalcor are just completing and filling reservoirs on new projects, and they have others on the drawing boards. They want to keep growing, and we think this is a really bad idea.

The question of Renewable Energy Credits from large hydro, particularly Hydro-Quebec, is even more troublesome. Consider the following:

- H-Q produces power at the rate of around 180 TWh per year. Vermont's share of the actual power is around 1.2 TWh/yr.
- Vermont utilities also "claim" another 1.2 TWh/yr worth of renewable energy credits, as a requirement under the Tier 1 REC, or to further claim their own status as 100% renewable.
- No other jurisdiction considers large hydro as renewable, so there is no other market for those 180 TWh of renewable attributes.
- Our purchase of those RECs does nothing to improve our GHG balance, it does nothing to improve "renewability." This is just free money, out of ratepayer pockets, flowing north.

It is our position, and has been for over three decades, that large hydro is a harmful source of power, and that local, truly carbon neutral, renewable power offers great advantages in resilience and economic development. In terms of S. 267, we feel that a move to 100% renewables **must** be accompanied by a cap on large hydro.

- We would like to see large hydro in our power mix go to zero as current contracts expire, through the 2030's.
- As a second choice, we would prefer to see the actual quantity of power from Hydro-Quebec, that is, the large hydro portion of the Tier 1 RES, hold steady at around 220 MW.
- We call attention to the fact that as a *percent* of the Tier 1 standard, the actual amount of power would increase as our power demand increases. In the

scenario, which we strongly support, in which our transportation energy and thermal energy are both almost fully electrified, it would not be surprising to see our overall electricity load increase from 1000 MW currently to 1500 or 1800 MW. A 33% cap on large hydro would mean that part of our portfolio would increase from the current 220 MW to 500 or 600 MW.

- It is with some reluctance that we support S. 267 with a percentage cap, and we strongly urge you to place a hard number as a cap, the 220MW we currently draw.

Thank you for the opportunity to testify today, and I'm happy to answer any questions.

## RESOURCES

<http://www.ippny.org/page/media--publications-2/news/report-champlain-hudson-power-express-line-will-not-reduce-greenhouse-gas-emissions-739.html>