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Cc: Faith Brown <FBrown@leg.state.vt.us>
Subject: [External] Public comment on Senate #1 re Ryegate

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Dear Members of the Senate Finance Committee

I am a forest ecologist who has been involved in the conservation and management of Vermont forestland, both working forest and natural areas, for over 30 years. I helped co-manage Atlas Timberlands for over a decade when I worked for The Nature Conservancy and the Vermont Land Trust.

I write in opposition to renewing the state subsidy to the Ryegate powerplant for 10 years as Senate Bill #1 proposes. The policy and economic issues surrounding the bill are complex. In many ways the key issues boil down to doing "business as usual" because it is easy, rather than taking the opportunity to make large changes that will result in better long-term public policy. Mitigating climate change will require large changes to "what we've always done" and the amounts of money involved in the current arrangement are huge by Vermont standards; thus, this contract renewal presents an opportunity for bold leadership.

Key Issues:

1) - Biomass: Don't be misled by representations that burning biomass for electrical generation helps mitigate climate change. The science behind the burning of woodchips for electrical generation might be counterintuitive, but is settled. There is a reason 500 scientists and economists signed a letter ([link is here](#)) a few days ago to President Biden and other world leaders pleading with them to not make policies that would increase the burning of trees for power. While the carbon in the cut trees does regrow it takes years, yet is burned in minutes and is ongoing, and so large amounts of stored carbon are released very quickly. The long-term incremental gain in terms of reduced carbon dioxide over fossil fuels is small. This is the so-called carbon-debt, and one doesn't get to a calculated point of carbon neutral for nearly 100 years in most cases. Yet, if we are going to actually mitigate climate change we need to greatly **reduce** carbon dioxide input over the next 30 years.

Biomass for generation is considered "green" only because it is listed as such in policy documents, not because science supports it. The owners of such plants like Ryegate then benefit economically because they have RECs (Renewable Energy Credits) to sell so that state and companies can meet green-energy policy goals. One might be forgiven for thinking burning wood for electricity generation was green energy years ago. Now it would be a public policy mistake to assume a large subsidy for Ryegate's old, inefficient technology helps mitigate global warming.

2) - Forestry: You have heard a lot about how Ryegate provides a market for low value wood, and that a market for low value wood is a necessity for high quality forest management. That may sometimes be true, but it largely arises because foresters and policy makers fear a return to a past practice of "high-grading" Vermont's forest, where the high value timber is cut and the junk is left. It is true that type of management degrades Vermont's forest, by any measure of ecological or economic health over a reasonable period of time. Therefore, the argument is made that to prevent a return to that management approach one must have low-value pulp markets to incentivize high quality forest management, and some even argue that additional small return helps allow landowners offset taxes and continue to own their land as forests.

The truth is far more complex. For landowners of typical northern hardwood forest, where saw-timber is harvested while also thinning the forest to increase the growth of remaining high-value timber, one could have no pulp market (the lowest of the low-value markets) such as Ryegate and still practice excellent forestry. One simply leaves the pulp trees to be removed lying on the ground. Openings are thus created that allow sunlight. The retention of large diameter organic matter rebuilds soil and vastly increases the biodiversity of the forest as the log decays. Timber is still removed without any high-grading. From a climate change perspective, some of the carbon in the felled tree is stored very long term in the soil and the rest decays very slowly, releasing its carbon over nearly a century rather than immediately. If one wanted to maximize forest carbon sequestration then one could not cut any trees. Leaving the tops of trees to rot has been best practice for a long time, but with a market for chips to burn even that amount of soil nutrient replenishment is lost for many harvests.

Currently this retention of pulp logs in the forest does not happen largely because of a deeply held culture within the forest products industry that such an approach is wasteful, and because many landowners do not like the aesthetics of downed trees. It also would necessitate a bit more complex layout of harvest plans and potentially create some logistical problems to be solved. Yet the argument made publicly is that it is about economics. In the past that was probably true and, thus, the argument that low value markets are needed developed. However, at the pulp prices of the past few years what most landowners don't realize is that the saw-timber harvest is actually subsidizing the removal of pulp on many timber jobs. But few questions get asked because selling the pulpwood is represented as a benefit. If we could rethink the process and redirect the subsidy to Ryegate more directly to the timber industry by paying for the cost of leaving the pulp quality logs in the forest then the economic impact of changing the Ryegate contract on the forest products industry is reduced. It would also be a clear win for climate mitigation, a win for better soils and good management to grow more timber over the long term, a win for wildlife and biodiversity, and in many cases a win for the landowner.

Ryegate's role in providing a market for Windsor County's weevil damaged pine does not readily fit the scenario outlined above. However, if one looks at it from a climate perspective, and an opportunity for change, then answers are possible. The state subsidy money could be redirected to simply have pulp quality trees chipped on-site if a landowner did not want a large scale jumble of downed trees. The technology is readily available. There would still be soil benefits; the forest would still regrow as northern hardwood; and while the carbon release from decay would be quicker it still would be a huge climate-beneficial change over burning the wood. If done thoughtfully the

landowner could see the same economic return without creating a management subsidy that could be abused.

Would the changes in the forest products industry envisioned by this outline be simple? Clearly no. Would jobs be affected, clearly yes, particularly in trucking. It would also take state leadership rather than simply relying on markets. However, the amounts of money and time frame involved would make it possible to provide an orderly transition to rethinking the issues through the lens of climate mitigation. Ideally, it would involve the state looking at developing low-value markets and manufacturing within Vermont that sequester wood for long periods of time, like structural engineered wood products.

3) Farm use of wood ash: I acknowledge that the potential loss of this resource is not easily replaceable and could have a large impact on individual farms. As some of the comments say, this allows better pasturing and crops, and improves soil health. An orderly transition should help in finding solutions. Among such solutions could be more intensive grazing management that increases carbon sequestration, and that transition could be funded by redirecting the subsidy currently going to Ryegate.

I acknowledge these changes will not be easy. However, this is a source of money specifically targeted to help mitigate climate change through the world of energy RECs and meeting state-wide goals through public investment. In fact, maybe it is premature to renew this contract in isolation as the bill proposes; and instead, consider this subsidy in the context of the Global Warming Solutions Act and be among the tools available for the Council's recommendations. We can do far better than helping an old technology survive that in reality makes the policy situation worse. It just will take the courage to boldly rethink complex systems rather than continuing on a well worn path of "business as usual." It is a rare opportunity to think about climate solutions at scale that should not be missed.

Thank you,

John Roe