NO GOOD REASON:

Vermont's Regulatory Roadblocks to Renewable Energy and Our Fight Against Climate Change

June 2023

Renewable Energy Vermont

About This Report

This Renewable Energy Vermont (REV) report documents the degradation of the permitting process for renewable energy projects under Title 30, Section 248 Certificate of Public Good. Over the last half-decade, the process of permitting renewable energy projects has become increasingly unpredictable. Today, the process is impeding the deployment of renewable generating capacity, blunting climate mitigation efforts, and raising the cost to consumers of transitioning to clean, renewable energy. This report presents 10 recent permitting case studies demonstrating the problems caused by unpredictability and lack of timeliness in the review process, the inconsistent application of existing rules, and highly subjective evaluation criteria and suggested legislative action to resolve these problems.

Acknowledgments

The REV staff is grateful for input from Ben Edgerly-Walsh of VPIRG, Paul Lesure of Green Mountain Solar, Joslyn Wilschek and Anthony Iarrapino of Wilschek Iarrapino Law, Martha Staskus and Jim Merriam of Norwich Solar, Chad Farrell and Jake Clark of Encore Renewable Energy, Kevin McCollister of Catamount Solar, Leslie Cadwell of Legal Counselors & Advocates, Thomas Hand of MHG Solar, Lydia Lee and Tim Upton of VHB, and Kimberly Hayden of Paul Frank and Collins. The views expressed in this report, and any errors contained in it, are entirely those of the REV staff.

REV members believe in the importance of a transparent and robust permitting process in order to protect our natural resources, balance the public good, and ensure orderly development. However, it is clear that under the current regulatory regime, the pendulum has swung too far and now threatens Vermont's ability to achieve its climate change goals.

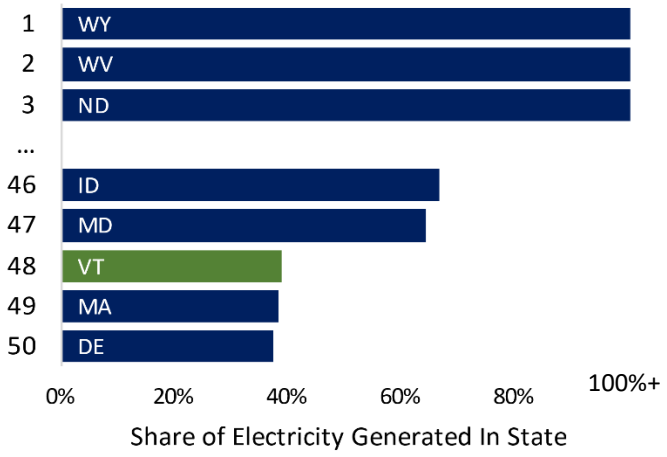
Peter Sterling,
Executive Director, Renewable Energy Vermont

Table of Contents

Executive Summary

To meet our legally binding commitments under the Global Warming Solutions Act, we must electrify the transportation and thermal sectors. This will create new electricity demand which must be met with electricity from new renewable sources. Otherwise, we will not do enough to reduce our total greenhouse gas emissions.

Vermont is 48th in the share of electricity that it generates in state…



Despite that, Vermont today ranks 48th nationally in the share of its electricity consumption that is generated within the state. Solar installations are lagging in Vermont while growing nationwide.

Over the last half-decade, REV members have faced an increasingly adversarial approach from the Public Utility Commission (PUC) and Agency of Natural Resources (ANR) towards renewable development. As a result, the permitting process has become less predictable, more time-consuming, and costlier **without any discernable public benefit**.

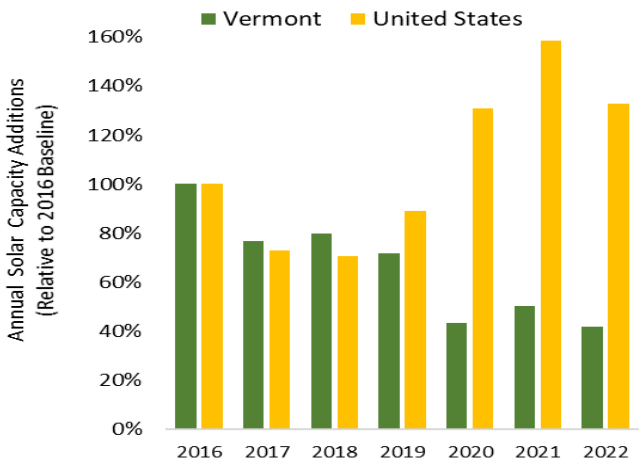
REV members fully support a permitting process for renewable energy projects that protects the public interest and our natural resources. But the current process is failing Vermonters. It halts or slows new renewable energy projects, drives up the cost of renewable energy for ordinary Vermonters, and infringes on Vermonters' property rights, all of which ultimately blunts the state's fight against climate pollution.

This report examines 10 recent permitting case studies. These case studies demonstrate that ANR and the PUC often interpret administrative rules and statutes in a manner contrary to Legislative intent and that fails to prioritize climate change mitigation and energy security.

The case studies highlight three recurring barriers to permitting new renewable energy projects:

- lack of timeliness in the review process
- the inconsistent application of existing rules
- highly subjective evaluation criteria

… and in the last half-decade solar installations are accelerating nationwide but slowing in Vermont



In this report, REV has proposed solutions to provide more consistency and predictability to the permitting process. These solutions will protect the public interest and our natural resources. They will also allow Vermont to meet its statutory commitment by supporting new, responsible renewable energy development. Solutions include:

- mandating the development of clear and binding timelines for PUC decisions
- clarifying statutes to make the process for permitting renewables more objective and predictable
- amending the aesthetic assessment process so the burden to demonstrate an undue impact aligns with Act 250

Introduction

With the passage of the Global Warming Solutions Act (GWSA), the Legislature codified Vermont's commitment to combating climate change. This forward-looking legislation embodies the state's environmental ethos and Vermonters' widespread commitment to environmental leadership. The Vermont Climate Action Plan provides the foundational strategy for reducing emissions to satisfy the requirements of the GWSA: electrify the transportation and thermal sectors and ensure that our power comes from clean, renewable sources. In contrast, the state's regulatory process has evolved so that applying for a Title 30, Section 248 Certificate of Public Good (CPG) is working directly against these vital objectives by impeding the deployment of renewable generating capacity, blunting climate mitigation efforts, and raising the cost to consumers of transitioning to clean, renewable energy.

At the national level, United States renewable energy development costs are significantly higher than in other developed countries according to Lawrence Berkley National Laboratory research and the permitting process is one of the primary reasons for these high costs. The Solar Energy Industry Association (SEIA) estimates that direct and indirect permitting costs in the United States contribute approximately $1 per watt to the cost of residential solar installations, roughly 33% of the total cost.

> *The total direct and indirect cost of permitting for a residential system is on the order of $1/watt (or $6,000 – $7,000 per system) for residential solar PV systems. Outside the U.S., soft costs and specifically permitting costs are much lower.*
>
> *Solar Energy Industry Association*
> *Solar Soft Costs Factsheet, 2019*

REV members that work in multiple states report that the regulatory review process in Vermont is especially challenging for all but the smallest rooftop projects. This is driven by increasing unpredictability and extended project permitting timelines. In a 2022 survey of REV members, 16 of 22 respondents (72%) cited unpredictability in the regulatory process as a barrier to renewable energy development in Vermont. Thirteen respondents reported turning down projects that they assessed to be technically and economically feasible specifically because of regulatory uncertainty. Multiple companies reported that they had stopped working on community solar projects in Vermont or had abandoned working in Vermont altogether because of the permitting environment.

REV members report that Vermont's Title 30 Section 248 permitting process for new renewable generating facilities is increasingly characterized by an adversarial approach by the PUC and ANR. In combination with this adversarial outlook, the unpredictability of Vermont's regulatory process is driven by three primary factors:

Lack of timeliness in the review process: Whether due to an absence of clear deadlines, insufficient staffing, inadequate management systems, or an institutional culture that does not value timeliness in PUC decisions making, the permitting process is plagued by delays that serve neither project applicants

nor Vermonters at large. Because the construction period for Vermont renewable energy deployment is limited, even relatively short delays can push projects outside of the construction season, postponing commissioning by as much as a year. This delays reductions in greenhouse gas emissions from the region's fossil power plants and increases the cost of renewable energy for Vermonters. A single 500 kW solar array, for example, can produce over 800 MWh of electricity in a single year, thereby contributing to a reduction of over 720 tons in regional greenhouse gas emissions. The lack of expediency that characterizes the process has real economic costs to Vermonters and the climate.

Highly Subjective Evaluation Criteria: In principle, aesthetic and orderly development review processes should provide clear, meaningful guidance to facilitate successful renewable energy project siting. In practice, these criteria can easily be used as grounds to delay and even deny a project, regardless of its broader social benefits or public support. Landowners and project developers face considerable uncertainty about how these criteria will be adjudicated if even a small number of people object to a project based on shaky “not in my backyard” reasoning.

Inconsistent Application of Rules: Landowners and project developers have every incentive to thoroughly evaluate potential projects for compliance with regulatory requirements. Proposing projects that are likely to be denied benefits no one. The inconsistency with which Rules are interpreted and applied results in uncertainty and confusion about the likelihood that non-rooftop projects will be approved. Too often applicants relying on assessments made by independent experts to evaluate pertinent Section 248 criteria face surprise requests for information that is not typically required or challenges that were not applied to other comparable projects.

The result of the unpredictability in Vermont’s permitting process is that the pace of new renewable generation is considerably slower than technical, economic, and environmental considerations allow, and the new renewable capacity that is built is more expensive than it would be if it were permitted under a more predictable and timely process. The negative impacts are not simply the higher cost for the projects that are successfully permitted but also the profound chilling effect that this uncertainty has on the projects that are even proposed. For example, sites close to load centers that have even minimal visibility are likely to be avoided in favor of locations that are further from electrical loads and more expensive to build, simply to avoid prolonged legal litigation. As we ask Vermonters to electrify everything, we are also asking them to pay more for their electricity than they would need to with a better-managed, more predictable, and objective permitting process.

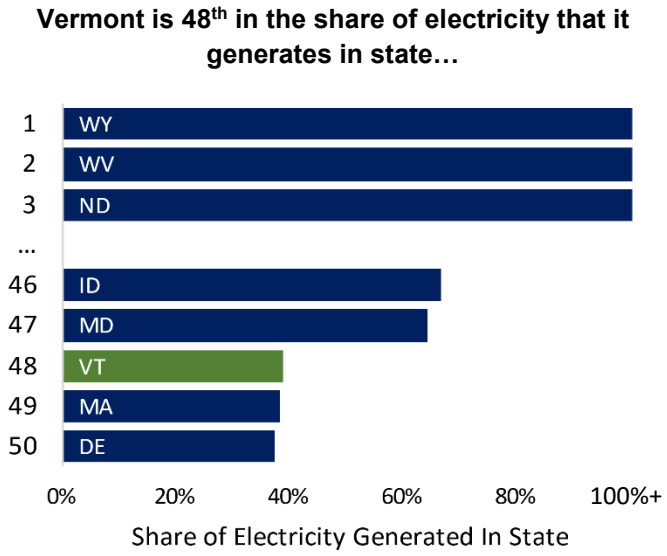
Currently, the regulatory process results in slow outcomes that undermine the state’s larger energy and climate goals. It is now underdevelopment, rather than overdevelopment, that poses the greatest risk of environmental harm and injustice. Climate change is already reshaping the region's weather patterns and adversely impacting Vermont communities. Absent a rapid shift to clean, renewable energy, the impacts of climate change will only accelerate with devastating impacts on Vermont’s communities and our natural environment. With the imperative to electrify both the transportation and thermal sectors, modeling for the Vermont Climate Council suggests the electricity demand could grow by 34% by 2030 and double by 2050. Meeting this new electricity demand will require a historic expansion of renewable

energy generating capacity. Under these circumstances, a regulatory process that is too slow or too conservative and substantially inhibits new renewable generation fails Vermonters.

The overarching need is clear: if Vermont is to accelerate the deployment of renewable energy and reap the economic and energy security benefits that come from that expansion, the Legislature must act to clarify the scope of the PUC's and ANR's authority and return predictability to the regulatory process. Vermont needs a process that provides clear Rules and timely approvals.

Vermont In-State Generation has Fallen Behind

Vermont ranks 48th in the share of the power that is generated within the state. Despite Vermont's relatively low population density, only Massachusetts and Delaware generate a lower share of the power they consume. Why does this matter?



Environmental Justice: The marginal power plants used to meet changes in demand in New England are predominantly powered by natural gas and the region's "peaker plants"– used only to meet peak load – burn natural gas and oil. These plants are located disproportionately in low-income and/or BIPOC communities outside of Vermont. They not only threaten climate stability, but they also threaten the health of the communities that live nearby. When Vermont deploys new renewable capacity, it displaces electricity generated by burning fossil fuels elsewhere in New England.

Risk to State Climate Goals: Relying heavily on new renewable development in other states puts Vermont's capacity to meet its GWSA emission reduction requirements at risk. Other Northeastern states have comparably aggressive renewable standards and electrification goals. The intense competition for renewable energy creates the possibility that Vermont will be left empty-handed. Vermont must take greater control of its own energy security.

Economic Development: In-state renewable energy deployment makes Vermont more attractive to individuals entering our workforce. The renewable energy sector creates well-paying jobs across the employment spectrum including equipment operators, engineers, environmental scientists, electricians, installers, and financiers. Forcing these jobs out of state because the state's regulatory environment does not support new renewable generation hurts our long-term economic well-being.

Aesthetics

Building clean energy is the project of our era on earth. And at some level it really is an aesthetic issue. When we look at a solar panel or a wind turbine, we need to be able to see…that there's something beautiful reflected back out of that silicon: people finally taking responsibility for the impact our lives have on the world and the people around us.

-Bill McKibben

AESTHETICS SUMMARY

Problem: Though the aesthetic standard is well-intentioned to minimize unwise development, subjective evaluation criteria are unpredictably applied and given excessive weight in the permitting process. As a result, otherwise sound projects can be dragged into lengthy and expensive permitting battles based primarily on shaky "not in my backyard" arguments. This leads to an unreasonable risk of projects being rejected based on narrow and subjective grounds, without regard for their overall merits and compatibility with state, regional, and local priorities. This has a profound chilling effect on what projects are proposed at all and slows the development of renewable resources, threatening GWSA

Solution: The Legislature should amend the Section 248 aesthetics evaluation process to be consistent with the Act 250 process by placing the burden of proof on opposing parties to demonstrate clear and convincing evidence that a proposed facility causes unduly adverse aesthetic impacts. Additionally, the Legislature should require the PUC to balance any aesthetic impacts against the public benefits of the project, including the positive impacts of reducing greenhouse gas emissions that these projects create.

The unpredictable application of aesthetic standards and the aggressive use of aesthetic objections by individuals opposed to new renewable facilities pose a significant barrier to the deployment of renewable energy in Vermont. Because aesthetic objections have been sustained over the recommendations of aesthetics experts testifying on behalf of both the project team and the Department of Public Service (DPS), applicants have little way of predicting whether or not a site will be deemed aesthetically suitable. Even when resolved in favor of the developer, these types of disputes also can add more than a year to the permitting process. To avoid these uncertainties, potential project sites that are technically and environmentally superior – particularly sites that are close to existing distribution infrastructure and may not require as much tree clearing – are being passed over for more remote sites that are costlier to develop but have a lower risk of being blocked on aesthetic grounds. As a result, fewer renewable energy projects are proposed and constructed and the projects that are constructed provide power at a higher cost than would otherwise be required.

Section 248 states that to be eligible for a CPG, a proposed project must "not have an undue adverse effect on aesthetics." Drawing on the principles of the Quechee Analysis, this means that a project cannot be "offensive or shocking to the average person" or "violate a clear community standard." While

this language clearly allows for projects to be visible to the public and would seem to set a high bar – *broadly* offensive or shocking – for disqualification on aesthetic grounds, in practice aesthetic objections are frequently used to delay or deny project CPGs.

New, reasoned Legislative direction on the aesthetics criterion relevant to Section 248 is required to facilitate the state meeting these obligations without undue delays and increased renewable energy costs for Vermonters.

QUECHEE ANALYSIS 101

Quechee Analysis is a two-part determination used to establish whether a project has an undue adverse aesthetic impact on the surrounding area. The first part of the determination is whether or not a project has an adverse impact while the second determines if the impact is "undue."

A project is deemed to have an adverse impact if it does not "fit" with the surroundings in terms of the size and colors of the materials used, its visibility, and its impact on open space.

A project's adverse impact is further determined to be undue if it does one or more of the following:

1. Violates a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area
2. Offends the sensibilities of the average person, is offensive or shocking because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area, or
3. Fails to take generally available mitigating steps which a reasonable person would take to improve the harmony of the Project with its surroundings

Aesthetics Case Study: Richville Rd Proposed Solar Project

In May 2020, MHG Solar submitted an application for a Certificate of Public Good for a group net-metered solar project sited off of Richville Road in Manchester Vermont. This project would have generated over 800 MWh of solar power each year, enough electricity to power approximately 100 homes, and was supported by the Manchester Selectboard, Manchester Planning Commission, and the Bennington County Regional Commission which designated the location as a preferred site. The proposed project included an aesthetic mitigation plan to plant trees and shrubs that would screen the project from view while still allowing clear sight lines of Mount Equinox. Outside aesthetics experts hired by the Public Service Department submitted testimony stating that the project would not have an undue adverse aesthetic impact on the area. Ultimately, after a process that lasted for 16 months, the PUC blocked the project on aesthetic grounds, without supporting expert testimony, and over the objections of the Public Service Department.

The project was proposed for 5 acres on an 8-acre parcel and land use in the half-mile surrounding the site consisted of residential homes, office buildings, and light manufacturing facilities, as shown in Figure 1. It is located within a quarter of a mile of a manufacturing/ warehouse facility and a self-storage facility and is spanned by existing GMP distribution and transmission infrastructure. According to filings

Figure 1. Proposed Richville Rd site

by the Department, the area is properly characterized as mixed-use development. The site is visible to passing vehicle traffic for 26 seconds and in view of approximately 10 residences and businesses. The project is located approximately seven miles east of Mount Equinox, which the Manchester Town plan recognizes as a "significant natural feature," but the views of the mountain range are not unique to the site and would not have been obstructed by the proposed project.

As part of the project development process, MHG retained TCE to conduct an aesthetic impact assessment, including a Quechee analysis. This analysis highlighted a *potentially* adverse impact on nearby residences (step 1 in the Quechee) but concluded that with proper mitigation these impacts would not qualify as "undue" impacts (step 2 in Quechee). TCE and MHG worked with the Town to develop a visual mitigation plan consistent with the "Screening of Energy Generation Facilities" standards included in the then-draft Manchester Energy Plan. Figure 2 shows visualizations of the proposed project immediately after the plantings are completed and after 4-6 years of growth. As can be seen in these images, the mitigation plan is highly effective at reducing the visibility of the project while leaving views of Mount Equinox undisrupted.

Figure 2. Visualization of the Richville Road Project at the time of installation (top) and with 4-6 years of vegetation growth (bottom)

Despite the developer's work with the Town on the mitigation plan, the Department noted that three public comments objected to the project on aesthetic grounds and this prompted the Department to retain an outside

expert, Environmental Design and Research (EDR), to perform an independent analysis of the aesthetic impacts of the project. EDR's Aesthetics review, provided in December 2020, substantially supported the methodology and conclusion in the earlier TCE analysis concluding: "The Project would not result in an adverse visual impact... EDR believes that the Richville Road Solar Project meets the requirements of the Quechee Test, and that the additional information provided by the Petitioner supports EDR's conclusion." Nonetheless, the report also recommended additional visualizations be created to facilitate the PUC's understanding of the project. In April of 2021, EDR filed a supplemental report endorsing the final visualizations submitted by MHG and TCE and reaffirming the conclusion in their initial report. The process of commissioning and completing this independent review lasted from June 2020 through April 2021 and arrived at the same conclusions that were available in May 2020.

Despite the concurring analysis of the two independent experts, one commissioned by the developer and the other by the Department, that the project did not create an undue adverse impact, the PUC ultimately rejected the project on aesthetic grounds, based on the personal judgment of the Hearing Officer. The Hearing Officer noted that the project "would introduce new components into the landscape that would create a visible change within the context of the immediate surroundings" and that "the proposed vegetative screening would not reach a mature height for several years and also would not fully screen the Project during part of the year due to the use of deciduous plantings in the mitigation plan" and rejected the analysis by both TCE and EDR that the project would not be offensive to the average person. While the PUC correctly asserts that their Hearing Officers have the authority to judge the persuasiveness of the testimony submitted to the Commission, **the judgment that any level of project visibility is offensive to the average person is poorly substantiated and sets a standard that is incompatible with the urgent need to combat climate change.**

In addition, the Commission found that it "is an open question whether the PUC's precedent of considering societal benefits when applying the Quechee test is applicable in net-metering cases" and concluded that societal benefit should not be considered in individual net-metering cases. As a result, a contested, subjective aesthetic decision was enough to block a renewable energy project with minimal visibility that was supported by both the Town and Regional planning bodies.

Aesthetics Case Study: Bradford Solar

In 2019, Bradford Solar LLC submitted an application for a CPG for a 500-kW solar project that would have been sited between a gas station, a Hannaford Supermarket, an auto parts store, and a self-storage facility as shown in Figure 4. The landowner sought to develop this site because it was immediately adjacent to the landowner's business, which would benefit from the power produced by the project. Despite the site's highly previously developed character, the PUC once again overruled the concurring testimony of independent aesthetics experts for the both project team and DPS to determine that the project would have an undue adverse aesthetic impact.[1]

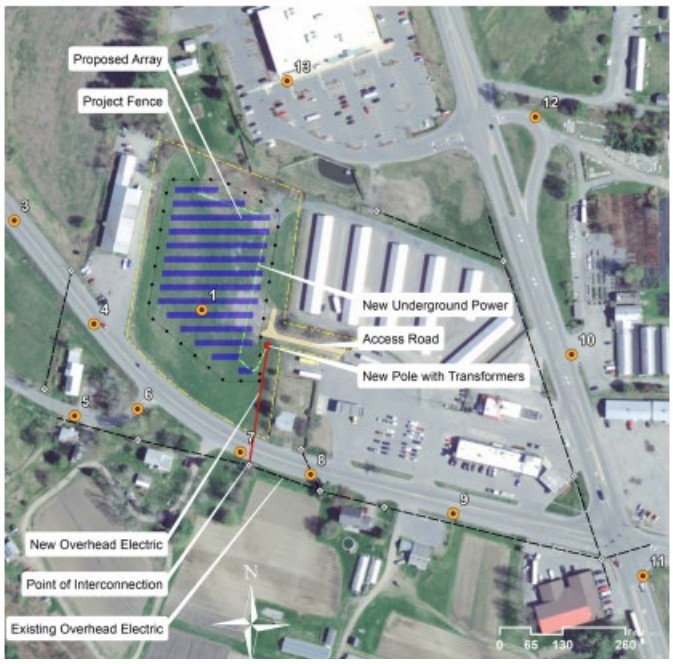


Figure 3. Proposed site for Bradford solar project

The project would have been constructed on 1.9 acres of a 3.6 acres parcel on Route 25 (Waits River Rd) near the intersection of Route 25 and Route 5 in an area dominated by commercial and light industrial development. From many directions, the project site is screened from view by existing structures and the project team proposed additional visual mitigation measures to lessen the project's visual impact from Route 25. As illustrated in Figure 5, the mitigation plan included four groupings of plantings consisting of a mix of evergreens and deciduous shrubs and extended along the length of the project's Route 25 exposure. Within five years of the project's completion, the trees were anticipated to be 7-13 feet tall, generally equal to exceeding the height of the panels.

[1] In addition to determining the proposed project failed the Quechee test, the PUC also found that the project conflicted with the orderly development of the region. The determination that the project failed the Quechee test would have been sufficient to block the project, however.

The project team hired TJ Boyle Associates to conduct an aesthetics review of the proposed project. The resulting aesthetics assessment found that given the project setbacks and the existing structures around the project site, visibility would largely be limited to Route 25 in the immediate vicinity of the site. The assessment also concluded that the site is not identified within the Town Plan as a scenic resource while noting Vermont Route 25 is mentioned as a scenic road in the plan. While the report found that the project *could* have an adverse impact on aesthetics, it concluded that the impacts would not be undue since the project met the community standards regarding the siting of generation projects in the Town Plan, and the site was not identified as a scenic resource.

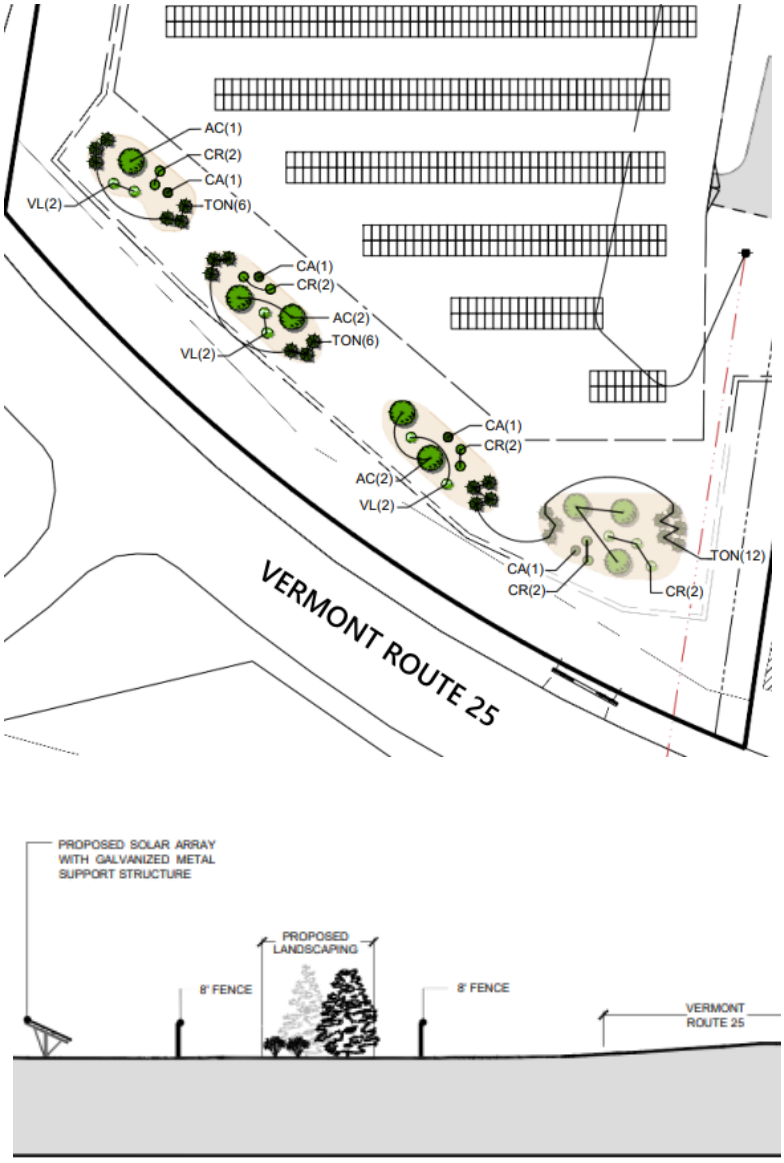


Figure 4. Proposed visual mitigation plan

Despite the developed character of the area and the infill provided by the proposed project, the Bradford Planning Commission raised an aesthetic objection to the project on the ground that it considered Route 25 a scenic road. Route 25 spans more than 6 miles within the Town of Bradford and the views in the vicinity of the proposed project site have limited scenic quality given the existing commercial and light industrial development in that location, examples of which are shown in Figure 6. The objection is all the more confounding since the Town, in its testimony, expressed a desire to see a Tractor Supply store built on the site. It is difficult to fathom on what basis a solar project would be considered more aesthetically disruptive than a Tractor Supply or other box store. Any store located on the parcel would be considerably taller than the solar

panels, would not have the same level of landscape mitigation, would require significantly more paved area, and include prominent signage and lighting that would not be required for a solar project.

In response to the Planning Commission's objections, the Department hired its own independent expert, TCE, to evaluate the project's potential aesthetic impacts. TCE noted that the materials and colors of the proposed project would be similar in character to the surrounding commercial structures. Nonetheless,

Figure 5. Existing streetscape along Route 5 looking toward the project site

TCE determined that the project potentially failed the first part of the Quechee Analysis, stating that it "***may*** have an adverse aesthetic impact on the visual resources" since it would "create a noticeable change to the visual assets in the area, ***from a limited number of public perspectives***."

Consequently, TCE reviewed the Bradford Town Plan, Bradford Zoning Regulations, the Two Rivers-Ottauquechee Regional Commission Regional Plan, and the Regional Energy Implementation Plan for issues related to scenic areas, renewable energy siting and screen requirements or any clear written standard that would have bearing on Part II of the Quechee Analysis. After reviewing the documents, TCE observed that "no specific scenic qualities or sites have been identified for this area by the Town of Bradford or the [Two River Two Rivers-Ottauquechee Regional Commission]" noting that the project incorporated reasonable mitigation measures to improve the harmony of the project with its surroundings and that the "landscape" of the proposed site is defined by "the dominance of primarily commercial buildings, large, street-facing parking with limited vegetation," TCE concluded that the project would satisfy the Quechee analysis and would not create an undue adverse aesthetic impact.

Despite these concurring assessments, the proposed decision written by the Hearing Officer rejected the common conclusion reached by TJ Boyle Associates and TCE that the project would not create an undue adverse impact. Contrary to all expert testimony, the Hearing Officer reached the decision that the Town Plan's designation of the entirety of Route 25 as a "scenic road" -- without distinguishing any specific viewsheds from the road, considering the level of existing development at specific sites along Route 25, or providing guidance on how to protect scenic assets on the Route -- constituted a clear community standard that applied to *specific* scenic resources. The Officer further concluded language in the Town Plan stating that impacts of renewable generation projects could be minimized or mitigated "*if no other reasonable alternative exists"* obligated the project team to consider an unspecified number of alternative project sites on entirely different properties in the town. This contradicted the general

precedent for alternative-location analysis which is limited to considering alternative sites on the same property and was incompatible with the landowner's intention to utilize their own property to provide renewable power for their own business.

The ultimate result of this process was that the partial visibility of a solar array well screened by vegetation was deemed to be too aesthetically disruptive to be built between a self-storage facility and an auto parts store. The landowner's ability to utilize the property for their economic benefit was blocked by a general designation of more than six miles of busy, heavily developed road as a scenic resource, and Vermonters were deprived of the addition of renewable energy to the grid. To our knowledge, this parcel has not been used for any other purpose.

Discussion and Solutions

The current application of the aesthetics criterion is broken. Project teams have no way to assess what project sites might be deemed ineligible for a CPG on aesthetic grounds because the consensus of expert testimony stands to be overruled by the PUC. Under these circumstances, there is overwhelming pressure to select the least visible sites rather than those that are closest to load, substations, and in developed areas. Pushing renewable energy facilities farther and farther away from developed areas is economically and environmentally counterproductive.

These cases suggest that the first step of the Quechee Test – whether or not a project has an adverse impact – has become all but meaningless. In both cases, project visibility would have been limited by setbacks, other structures, and extensive mitigation measures. Yet, all four aesthetics experts – two in each case – flagged that even this limited visibility raised the *potential* for the projects to be characterized as having an adverse aesthetic impact and therefore moved to the second step in the Quechee analysis. In the Bradford solar case, two experts reached this conclusion despite the similar colors and materials found in the surrounding commercial buildings. *If partial visibility of renewable equipment is in and of itself considered to create an adverse impact, no renewable project will pass this step.* Similarly, if limited visibility is deemed shocking and offensive, as in the Richville Road project, or if towns are able to issue generalized designations that make potential infill sites in areas of commercial and industrial development scenic resources, step two of Quechee loses the capability to meaningfully distinguish what aesthetic impacts are "undue."

To address these failings, the Legislature should act to ensure that the process for evaluating aesthetic standards that renewable energy projects face under Section 248 is consistent with those under Act 250. This can be achieved by placing the burden of proof on project opponents to show by clear and convincing evidence that a proposed facility is unduly adverse, as it is in Act 250 cases. Moreover, to protect the rights of landowners, the Legislature should mandate that planning commissions provide individualized notices to landowners whose parcel stands to be designated a scenic resource and provide a meaningful process for landowners to challenge that designation, especially in cases where it would deprive a landowner of the right to use their land to advance clean energy objectives. Finally, the Legislature should require the PUC to balance any aesthetic impacts against the public benefits of the project, recognizing, as the GWSA does, that the impacts of greenhouse gas emissions are global,

disproportionately impact rural and marginalized communities, and risk significant economic damage to Vermont.

Timely Review

TIMELY REVIEW SUMMARY

Problem: Successful regulatory processes must balance competing public interests in speed, predictability, and thoroughness. Slow and unpredictable processes drive up the cost of renewable energy for Vermont utilities and consumers. A timely review process is especially important in light of Vermont's relatively short construction season where unnecessary delays in the review process can result in a full year of project delays. Increasingly, Vermont's regulatory agencies are failing to achieve this balance and to move CPG cases through the review process in a predictable and timely manner.

Solution: Mandate the development of clear and binding timelines for PUC orders, requests for information, and decisions. Require meaningful reporting metrics that provide transparency on the rate at which renewable energy project applications for projects of different sizes are processed.

Effective regulation must operate predictably and on a reasonable timetable. Because Vermont's construction season is limited, even relatively short delays can push projects outside of the construction season and postpone the completion of a project by as much as a year, resulting in ongoing greenhouse gas emissions from the region's fossil power plants that could have been avoided.

Currently, whether due to understaffing, inadequate management systems, or simply an institutional culture that does not value timeliness, the permitting process frequently encounters unnecessary delays. The delays caused by these case management problems exacerbate the unpredictability that plagues the permitting process and many solar developers report that they have been increasing in frequency over the past five years.

Timely Review Case Study: Great Bear Realty

In 2021, Great Bear Realty applied for a Certificate of Public Good for a 500-kW net-metered system in Springfield Vermont. While reviewing the proposed project's potential impact on rare plant species under Section 248(b)(5), ANR identified a rare sedge growing within the project limits and developed a set of mitigation practices that would be required over the life of the project. As is common practice in these cases, ANR worked directly with the applicant to reach an agreement about the required modifications to the terms of the proposed CPG. This collaborative approach speeds up the CPG process by reducing the need for the PUC to coordinate between parties and adjudicate contested issues. As such it is more efficient for applicants and less costly for the state. ANR filed the agreed-upon modifications specifically stating that both ANR and the applicant had agreed to the mitigation practices. This resolved the Section 248(b)(5) issues and should have allowed the PUC to immediately begin its final review of the CPG application.

In this case, the PUC did not act on this shared agreement between ANR and the project applicant for 120 days. At that point, the Hearing Officer issued a request for information asking the applicant to

respond to ANR's proposed changes even though the applicant had already explicitly agreed to the terms that ANR proposed. The applicant responded by quoting ANR's filing that both ANR and the applicant had agreed to the proposed changes. This information request, as the Hearing Officer should have been aware of before making the request, did not provide any new information that was not included in ANR's filing. Absent this information request, the PUC would have been required to rule on the CPG application within 90 days of ANR's filing, 30 days *before* the Hearing Officer issued that request for information. The final CPG for this project was issued on February 3rd, 2022. Given that the PUC had all of the information used in the final ruling on September 27th,2021, this suggests that with better case management the CPG could have been issued on October 5th, 2021, and, by law, should have been issued no later than December 27th, 2021. The failure of PUC staff to act effectively in this case resulted in an unnecessary delay of two to four months.

Timely Review Case Study: ER South Street Solar

In May 2021, ER South Street Solar submitted an application for a CPG for a 5 MW solar project located on South Street in Middlebury. This project was supported by the Middlebury Select Board and Addison County Regional Planning Commission. The proposed project site was on agricultural land that had been heavily managed for agricultural purposes for several decades and was of relatively limited, though non-zero, habitat value. In this case, ANR failed to provide timely guidance on a bird survey that ANR considered necessary for this specific site.

In September 2019, the project team sent an advanced notice of their plans to apply for a CPG to the Town of Middlebury Selectboard, the Town of Middlebury Planning Commission, the Addison County Regional Planning Commission, the DPS, and ANR. This Advanced Notice period provides a critical window for coordination between developers and regulators, allowing regulators to flag concerns with the proposal and developers the chance to assess and respond to these issues in the final CPG application. The advanced notice described the project location and stated that the team had retained VHB, Inc. to perform preliminary due diligence as well as detailed natural resource assessments. That notice also expressed the belief that since the proposed site was located within an existing maintained field, the likelihood of impacts to important natural resources was limited. ANR did not raise any concerns during the advanced notice period.

Figure 6. Eventual groundbreaking at the South Street location

Absent additional guidance from ANR, VHB, a reputable national consulting firm, assessed the natural resource impacts of the proposal using its standard site assessment practices for Vermont. VHB's evaluation was led by Tim Upton, who had acted as consultant and expert witness for

projects going through the Act 250 and Section 248 processes in Vermont for more than twenty years. Though VHB observed that the project site had reduced suitability for grassland bird habitat as a result of its regular rotation between hay and corn crops, the initial site assessment did include a search for occurrences of rare, threatened, endangered, and uncommon bird species. This search did not identify any occurrences of rare, threatened, endangered, or uncommon bird species that utilized grassland habitat within a mile of the proposed project site. VHB further determined that there was "no 'necessary wildlife habitat' as defined by Act 250 Criterion 8(A) and as recognized by the Vermont Fish and Wildlife Department, within the proposed Project site." The completed natural resources assessment report was filed with the PUC on May 14th, 2020, and the full CPG application was deemed complete by the PUC on May 21st, 2020.

On July 1st, six weeks after the application was complete and nine months after the original advanced notice was sent to ANR, ANR first raised concerns about the potential for grassland bird habitat on the site. ANR eventually argued that "[a]n appropriately timed formal grassland breeding bird survey conducted at the start of the breeding season (late May/early June) is necessary to accurately determine whether grassland bird species use a particular site for breeding." **Unfortunately, despite being aware of the proposed project for 9 months, ANR did not raise the study as a potential issue until after the window to conduct the study had already passed for the year.**

In the subsequent proceedings, the project team emphasized the compromised nature of the existing habitat precluded the site from qualifying as "necessary wildlife habitat" since Vermont Supreme Court has ruled that a site must be "of a certain quality" to be deemed necessary habitat. VHB further pointed out that a dozen species of grassland birds would benefit from increased insect availability and from habitat provided by buffer plantings if the site was converted from intensive agricultural rotation to a solar farm with pollinator-friendly plantings. The Department of Fish and Wildlife's own *Vermont Grassland Bird Management and Recovery Plan* states that early-hayed sites like the proposed South Street site were of low habitat quality and that habit losses and degradation – from agricultural practices as well as urban and suburban development – were "the primary threat to grassland birds." While Agency's expert agreed that fields that attracted nesting activity which then failed due to agricultural management practices (mowing, tilling, etc.) likely did not promote the survival of the attracted species, ANR continued to insist that a breeding season survey was required to determine if the site was necessary wildlife habitat.

In order to prevent the project from falling irrecoverably behind schedule, the project team eventually agreed to an extensive mitigation plan that *assumed* a breeding season survey would have found bobolink present at the site. With timely notification of ANR's desire for a bird survey that allowed the survey to be conducted in the spring of 2020, work on the project would likely have begun five months earlier.

Timely Review Case Study: Newmont Farm Solar Project

In September 2017, Newmont Solar submitted an application for a CPG for a 500-kW solar project in South Fairlee. The Two Rivers-Ottauquechee Regional Commission, the Town of Fairlee Planning Commission, and the Town of Fairlee Selectboard submitted a joint letter in support of the project. The proposed project site was located between Route 5 and the Connecticut River and was under intense agricultural cultivation at the time the project was proposed. The project proposed to utilize only a portion of the land that was in agricultural use, resulting in an expanded riparian buffer for the river, as shown in Figure 8. Despite proactive coordination between the project team and ANR to protect the riparian zone next to the project, the PUC required a separate status conference on this issue against the recommendation of ANR. The final plan for the riparian zone was delayed but unchanged by this conference which included eight state employees and three people from the project team.

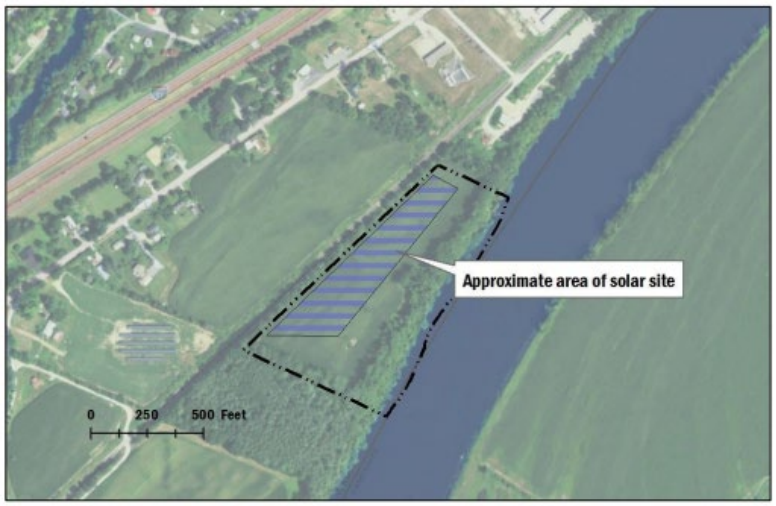


Figure 7. Footprint of the Newmont Farm solar project Source: Aesthetic review

On June 21st, 2017, in response to the project's required 45-day advance notice, ANR informed the project team that a 100-foot undisturbed riparian area, measured from the top-of-slope of the river, would be required and that no activity could take place within the buffer. As part of its prefiled testimony submitted on September 15th, the project team outlined a plan to protect this riparian buffer. The plan included surveying the boundary of the riparian zone, installing flagging or a warning line to "prevent access to the buffer area during construction," and reseeding the bare ground within the riparian zone that had previously been under agricultural cultivation with a seed mix that supported native pollinators. While the re-vegetation component of this plan required the project team to enter the riparian buffer to re-seed the bare ground, all parties involved, including ANR, agreed that this activity would improve the environmental health of the shoreline. The project team's filing specifically stated that the vegetation within the riparian buffer would "not be managed thereafter" and that the buffer would not be accessed during construction. The documents submitted by the project team include a site plan showing the 100-foot riparian buffer and the project's location in relation to this buffer, shown as a dashed red line in Figure 9. ANR agreed with the project team's assessment of the location boundary of the riparian buffer. From this point on, the plan for the protection of the riparian zone remained essentially unchanged across a supplemental filing by the project team, two rounds of comments by ANR, additional comments by the project team, a status conference required by the Commission, and a final agreement between the project team and ANR filed more than two months after the original plan on November 21st.

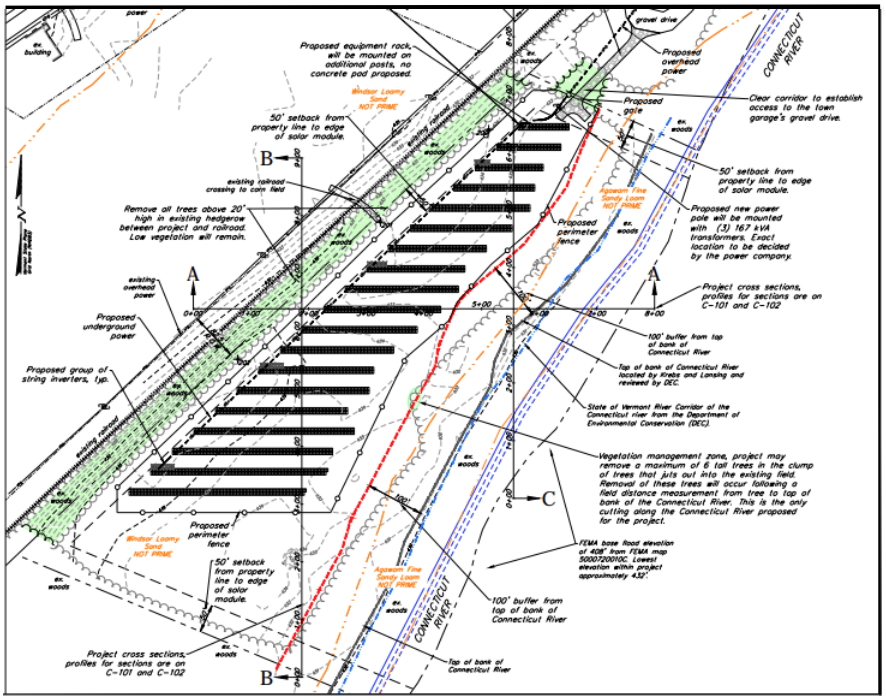


Figure 8. Newmont Farm Project Site and Riparian Buffer

Though the September 15th plan cited conversations with ANR in identifying the appropriate 100 ft buffer, on September 28th, the Hearing Officer requested additional information as to whether or not the project site was located on or adjacent to the shoreline of the Connecticut River. The project team filed supplementary testimony stating that the project was not located on the shoreline and describing their methodology for identifying the shoreline's extent. In addition, ANR responded by sharing its *Guidance for Agency Act 250 and Section 248 Comments Regarding Riparian Buffers* which prescribes protecting a 100-foot naturally vegetated undisturbed riparian zone, consistent with the project plan. ANR provided specific language to include in the CPG to ensure the riparian zone was protected and noted that the project team had agreed to ANR's language. Given the consistency of the protection plan with ANR's guidance and the agreement between both parties on the CPG terms, ANR specifically stated that no additional action was required.

Despite the concurring testimony from the project team and Agency, the Hearing Officer choose to schedule a hearing on the same issue for November 14th, somehow concluding that "the record remains unclear with regard to the shoreline criteria." The 22-minute hearing covered much of the same material previously filed by the project team and ANR, required time and fees of a Court Reporter and other Regulatory Staff and concluded with the same CPG conditions in place.

Discussion and Solutions

Predictable, specific timelines for PUC case management is imperative for the swift resolution of permit applications. The accelerating rate of climate change demonstrates the need to address the transformation of our energy infrastructure and improve the rate of renewable energy development. Facing this reality, the current regulatory process that substantially slows new renewable generation fails Vermonters.

The Legislature should mandate the development of clear and binding timelines for PUC decisions and meaningful reporting metrics that provide transparency on the rate at which renewable energy projects of different sizes are proceeding through the permitting process as well as the percentage of projects that are rejected by project size and rejection criteria. Current PUC reporting metrics that measure the

timeliness of orders issued rather than measuring how quickly all applications are processed and providing information about why projects are rejected are insufficiently transparent and do not provide the Legislature with the information it needs to identify and fix bottlenecks in the permitting process.

Inconsistent Application of Rules & Statutes

All stakeholders have every incentive to thoroughly evaluate potential projects for compliance with regulatory requirements. The permitting process can be long and costly, potentially well over $100,000, and proposing projects with a high likelihood of rejection benefits no one. Unfortunately, the inconsistency with which Rules are interpreted and applied makes it extremely difficult for applicants to confidently assess the likelihood that projects will be approved. Too often applicants relying on assessments made by independent experts to evaluate pertinent Section 248 criteria face surprise requests for information that is not typically required or challenges that were not applied to other comparable projects. These include the "single plant" determinations process that governs whether projects can be built in proximity to one another, the treatment of distribution system upgrades, and the terms for building new renewable projects in the "SHEI" region in northern Vermont. In many instances, the PUC and ANR assert that their reviews and decision-making are constrained by existing Rules and Statutes. While these claims rest on contested interpretations of Vermont statutes, the practical implications that these interpretations of Rules and Statutes are the same regardless of whether these arguments are correct or erroneous: renewable energy projects are being slowed down for reasons that do not provide any clear benefit to Vermonters.

Single Plant

SINGLE PLANT SUMMARY

Problem: The Net-Metering Program, the Standard Offer Program, and Tier II of Vermont's Renewable Energy Standard all include facility size restrictions as part of the eligibility requirements. To protect against a single large project being broken up into multiple, smaller projects that would then qualify for one or more of these programs, Vermont statute gives the PUC the authority to consider multiple, separate CPG applications as constituting a "single plant." The PUC has broad discretion in this area and overzealous application of this authority is forcing independent projects into an onerous and unpredictable rebuttal process. This single plant determination can block one private landowner from building a solar array simply because their neighbor has already done so, makes it more difficult for residential developers to include solar when a group of new homes is built, and makes it more complicated for Vermonters with solar to expand their systems as they electrify their homes.

Solution: Clarifying that utility-owned infrastructure should not be considered common infrastructure in the single plant determination process and eliminating consideration of the timing of the projects' construction would help to achieve this goal.

The net-metering program (500 kW), the Standard Offer Program (2.2 MW), and Tier II of Vermont's Renewable Energy Standard (5 MW) all include facility size restrictions in their eligibility requirements. To protect against the possibility of a developer artificially breaking a single large project that does not

qualify for one of these programs into multiple, smaller, only nominally independent projects that do qualify for one or more of these programs, Vermont statute gives the PUC the authority to consider multiple, separate CPG applications as constituting a "single plant." The intent of these provisions is laudable – to protect the integrity of Vermont's renewable energy procurement programs.

However, in practice, overzealous interpretation and application of this statute can create unnecessary project delays under a wide range of circumstances such as:

1. when solar installations are proposed on multiple units in the same new residential development,
2. when one landowner attempts to work with the same installer as their neighbor, or
3. when a homeowner tries to add additional solar on their property with an existing system.

Current practice discourages projects from being located in proximity to one another even in instances where this would otherwise be desirable, such as locating multiple renewable facilities where the grid is well equipped to handle additional generation, in new residential developments, or on brownfields or other compromised sites. Additionally, since one of the criteria that the PUC considers when determining whether separate CPG applications should be considered a single plant is whether or not the projects would use the same developer, Vermont landowners face additional regulatory uncertainty when using the same project team that worked with their neighbor. On balance, rather than protecting Vermont's renewable energy procurement programs, the current application of this statute simply makes it more difficult for Vermonters to participate resulting in restricting deployment of renewable energy systems in favorable locations in the state.

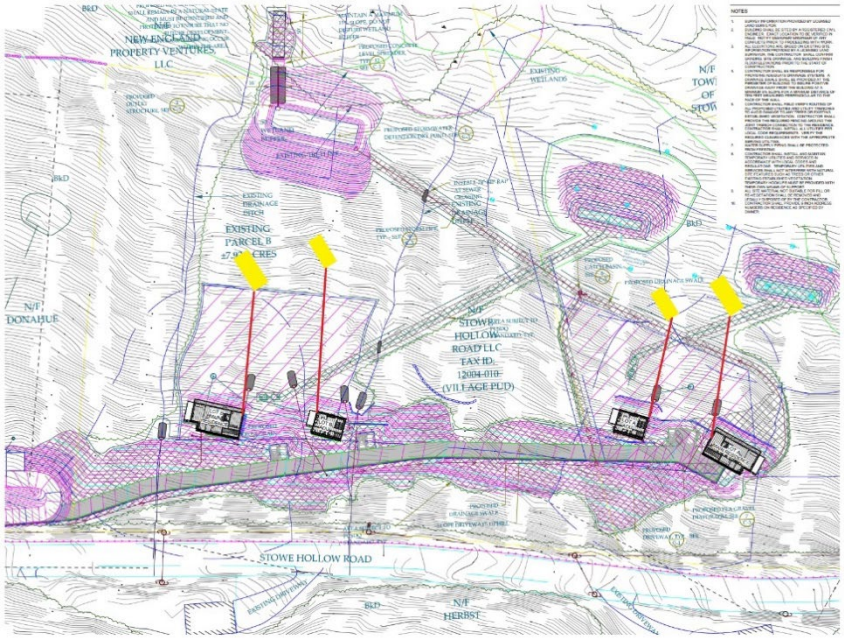


Figure 9. Planned location of residential units and ground-mounted solar arrays

Case Study: Jameson Properties

In August of 2021, Jameson Properties filed separate CPG applications for four solar arrays that would each provide power to a new residential unit slated to be constructed in Stowe. The new residential units were being constructed on a site that had previously been a single parcel but had been subdivided into two new parcels. Each parcel would be the site of a single-family home and accessory dwelling unit, as depicted in Figure 10. Each of the four units would be metered separately, and the solar and storage systems for each unit were designed to meet the individual electricity needs of that specific unit. The

arrays would not share any solar infrastructure (e.g., solar meters, inverters, racking, staging areas, electrical conduit, and access for maintenance and construction) or point of interconnection but each single-family home and associated accessory dwelling unit would connect to the same transformer at the pole. Despite the distinct purpose for each project, all four projects were trapped in a single plant determination process that lasted over 8 months from October 2021 through May 2022.

The PUC raised the prospect that all four projects should be considered a single plant. Since the parcels were separated by steep terrain, a substantial tree line, an intervening drainage swale, and subdivided by the town, this is difficult to rationalize. The logic of considering all four projects as a single plant would seem to preclude the construction of individual ground-mounted solar projects when undertaking new residential developments, which is clearly not in the public interest. While it might be somewhat more logical to consider whether the pairs of arrays at each single-family home and associated auxiliary dwelling unit could be a single plant, given their location on the same parcel, such a determination would not have any practical implication as the combined size of the two arrays would still be below 15 kW meaning that the determination would not change any permitting standards or net-metering eligibility. Ultimately, the PUC *did* decide to consider the arrays for the main and auxiliary units on each parcel to constitute a single plant but the lengthy process and final determination consumed the time and resources of the PUC staff and project team alike and provided no discernible benefit to any Vermonter.

Case Study: West Fairlee Solar Project

In 2020, West Fairlee Stevens Solar applied for a CPG for a 500-kW net-metering project. The Town Select Board, Town Planning Commission, and the Regional Planning Commission designated the proposed project location as a preferred site. Because the same developer was involved in a project on an adjacent property which filed for a CPG in 2018 and because they connected to the same utility-owned distribution circuit infrastructure, the project was forced into a time-consuming review to determine whether or not it was part of the same project as an already completed solar array on a neighboring property. This review involved several rounds of supplemental testimony and filings across four months, followed by an additional five months of PUC deliberation before the CPG was approved.

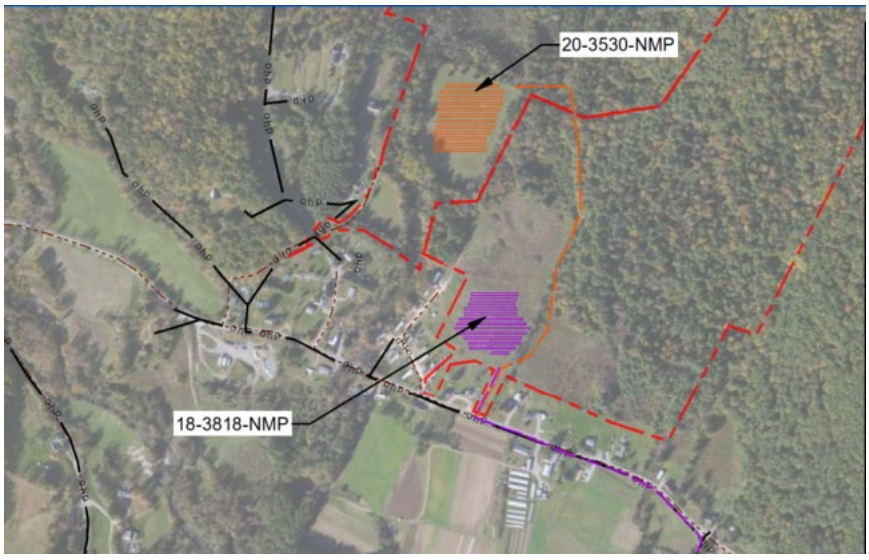


Figure 10. Independent solar facilities on adjacent properties

Figure 11 shows the previously constructed solar array in purple and the proposed array in orange, on two separate parcels of land that are owned by two unrelated parties. The existing solar project was

reviewed and approved by the Commission in January 2019, 22 months before the proposed project was submitted to the Commission. While this case was ultimately correctly decided, the lengthy single-plant review process for two projects proposed two years apart on sites supported by the Town and Regional Commission consumed the time and resources of the PUC staff and project team alike and provided no discernable benefit to any Vermonter.

Case Study: Spencer Hollow

In January 2021, two CPG applications were submitted for separate 500 kW net-metered solar projects on adjacent properties. The separate projects originated when one neighbor considering hosting a solar array approached their neighbor to make sure that the neighbor would not object to the potential project's visibility. Far from objecting, the neighbor was inspired to pursue a solar project on their own property as well. Both neighbors approached the same local solar developer. Before the projects were filed at the Commission, the Town of Springfield reviewed them and issued separate Preferred Site letters for each project, stating later in a comment letter to the PUC that "each would have to be considered on its own merit." The Town also issued reduced setback waivers for each project to minimize potential environmental impacts. Despite this history and the Town's support, the PUC considered the projects to be a single plant.

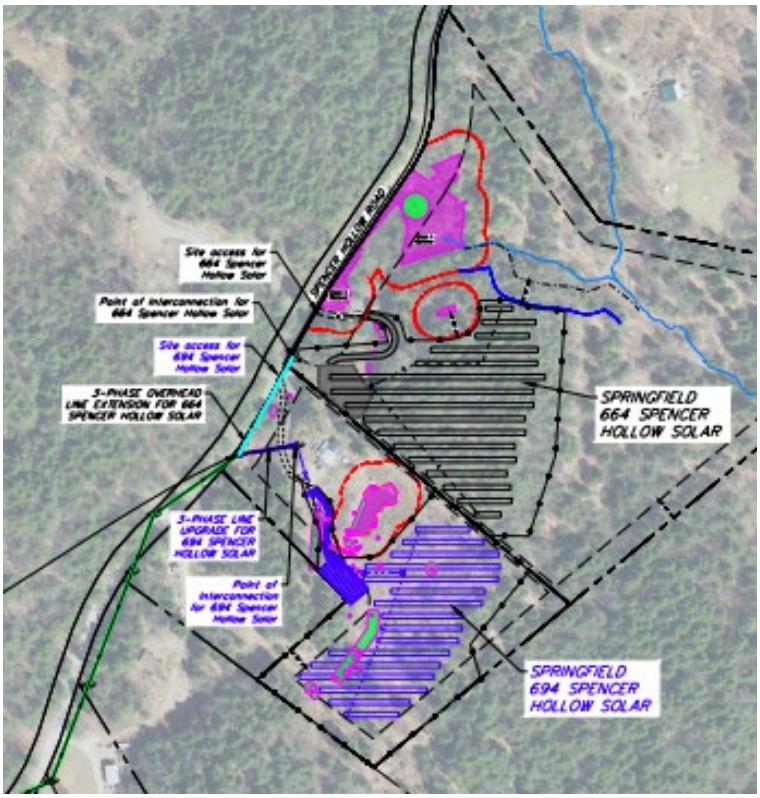


Figure 11. Proposed solar projects on neighboring parcel sin Springfield

Figure 12 shows the location of the two parcels and the originally proposed projects. Each project had a separate existing access point, a separate interconnection study identifying separate Points of Interconnection along the GMP distribution system, and each project had a separate lease agreement between the landowner and the project developer. But because the PUC considered the two projects a single plant and their combined 1 MW capacity would have exceeded that maximum size for the net-metering program, both neighbors were forced to reduce the size of their respective projects from 500 kW to 250 kW. Had the neighbors worked with different solar developers both projects likely would have been granted CPGs at their original 500 kW size. The PUC's decision reduced the value of the solar projects for the landowners and reduced the renewable energy that the two projects provide to the Vermont grid.

Discussion and Solutions

In many instances, it is desirable to have renewable facilities sited close to one another to ensure that development takes place in preferred sites, close to existing load, and where distribution infrastructure is robust. Moreover, neighbors often learn about the opportunity to host solar when they receive the PUC-required advance notice for an adjacent project creating an organic clustering effect for these projects. The PUC's discretion in regard to single plant determinations and overzealous application of this authority is forcing truly independent projects into an onerous and unpredictable rebuttal process.

The Legislature should revise 30 VSA § 8002(18) to ensure that *distinct* renewable energy projects that are physically close to one another do not have to rebut a presumption that they are a single plant. Clarifying that the utility-owned infrastructure should not be considered common infrastructure in the single plant determination process and eliminating consideration of the timing of the project construction would help to achieve this goal.

Distribution Upgrades Case Study: ER Kendall Hill Solar

DISTRIBUTION UPGRADE SUMMARY
Problem: In the permitting process, ANR has the capacity to evaluate the environmental impact of any new distribution infrastructure required to connect a generating facility to the existing, utility-owned distribution system. Any upgrades to the existing distribution system are managed by the utility just as similar upgrades would be for any other type of development. Recently, ANR and PUC have shoe-horned environmental reviews of the distribution system upgrades into the energy project permitting process. This change does not work for either developers or utilities as it creates confusion with the responsibilities of both parties and increases the cost of the permitting process unnecessarily. **Solution**: The Legislature should reinforce the integrity of Section 248 by stipulating explicitly that the evaluation of distribution system upgrades within the 248 process is limited to consideration of system stability and reliability (Section 248(b)(3)) and public health and safety (248(b)(5)).

In September of 2021, ER Kendall Hill Solar applied for a 2.2 MW CPG located on a 139-acre parcel off Kendall Hill Road in Pittsford. The project held a Standard Offer contract through the State of Vermont's Standard Offer program. The Standard Offer is frequently cited as one of the lowest cost mechanisms for developing renewable power in Vermont and it provides power and renewable energy credits that are shared among the state's utilities. The project was supported by both the Rutland Regional Planning Commission and the Town of Pittsford.

As is common for projects of this size, connecting the project would require both new distribution infrastructure (a 550-foot line extension to connect the project to existing powerlines) and upgrades to the existing distribution system. As part of its initial interconnection evaluation, GMP determined that 6,778 feet of existing distribution infrastructure, primarily along existing rights-of-way on Kendall Road and Route 7, would need to be upgraded to safely connect to the project. As is required under these circumstances, the applicant would be responsible for covering the cost of the line extension as well as the distribution upgrade costs and GMP would own the improvements. Here, GMP estimated that the line extension and system upgrades would cost $510,422. While these upgrade costs are borne solely by the project, as Vermont electrifies, the general public is likely to see benefits from the improvements to the distribution system as well.

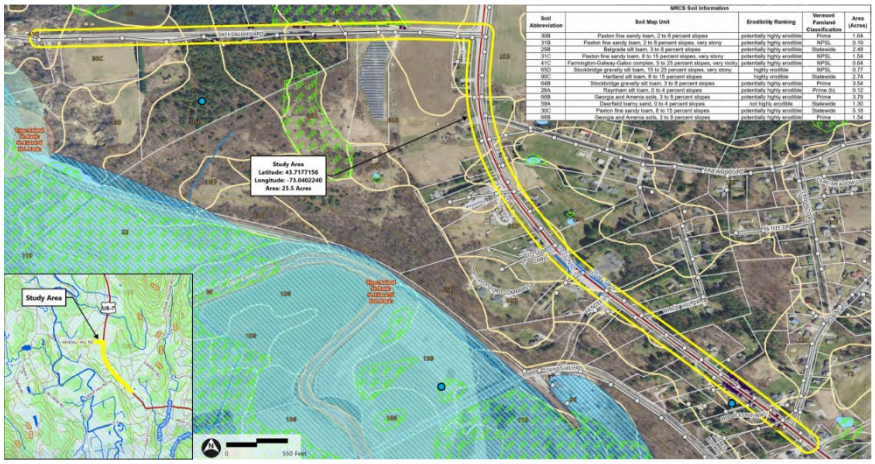


Figure 12. Study area for upgrades to existing distribution system

In preparation for filing their CPG application, the applicant contracted with VHB to assess the impact of the new line extension up to the point where the line extension would connect with the existing distribution system. Since the project team does not control upgrades to the existing distribution system, which is owned and managed by the utility, and because Vermont's utilities have well-established procedures for coordinating the oversight of distribution system upgrades with the relevant state agencies, the impact assessment ended at the interconnection point.

In this case, unlike the overwhelming majority of projects that require distribution system upgrades, and unlike other types of development that necessitate upgrades, ANR requested extensive information about the upgrades to the existing distribution system outside of the project boundaries including a map depicting the locations of existing poles, the planned locations of any new or re-located poles, and all areas of tree trimming or clearing. Subsequently, ANR also required the project team to provide a natural resources assessment report for the entire distribution upgrade route. The applicant ultimately negotiated a memorandum of understanding with ANR that required the applicant to conduct the natural resources review of the distribution upgrade corridor and placed restrictions on the timing of the tree cutting for the distribution upgrades.

This process and its resolution were highly problematic for several reasons. First, utilities do not finalize distribution upgrade plans until after the project team pays a significant interconnection deposit, which typically is made after a CPG is issued. Given the unpredictability of the permitting process, changing this sequence of events unnecessarily increases the burden on utility staff, who would be required to conduct detailed planning for projects that might never be permitted, and drive up project costs for

everyone. Forcing a developer and utility to go through the time and expense of finalizing distribution upgrade planning before a CPG is issued puts additional resources at risk in the event that a project is rejected on other, unrelated grounds. Second, placing conditions on distribution upgrades in the permitting process creates a thorny and ambiguous legal situation. The CPG terms are binding on the project applicant, not the utility, but the utility is the entity that is responsible for the upgrades, putting the applicant in legal jeopardy for things that are outside of their control and for facilities that they do not design, own, build, or maintain. Third, this places a discriminatory burden on renewable energy projects since comparable distribution system upgrades that are necessitated by other types of development are not considered in the development permitting process. Finally, because the Legislature never intended to regulate distribution facilities under Section 248, intentionally leaving them under the jurisdiction of Act 250 (along with many other regulatory programs) after significant consideration and debate, the issuance of a renewable energy project CPG requiring distribution upgrades does nothing to relieve the distribution utility from having to get its own permits, requirements of which could conflict with the CPG.

While the PUC points to a 2006 precedent for this type of review, the fact of the matter is that this does not occur in the vast majority of cases. Indeed, in its decision in this case, the PUC cited only two instances where this had occurred and there is no clear expectation for when this might be required. To prevent overreach in this area, the Legislature should reinforce the integrity of Section 248 by stipulating explicitly that the evaluation of distribution system upgrades within the 248 process must be limited to consideration of system stability and reliability (Section 248(b)(3) and public health and safety (248(b)(5)). Distribution upgrades should be reviewed under the statutory authorities that were applied to them by the Legislature, not those from which they were purposefully excluded.

SHEI Case Study: Town of Glover:

SHEI FEE SUMMARY

Problem: Portions of northern Vermont (the "SHEI" region) experience transmission constraints that periodically necessitate larger renewable facilities in the region to curtail their power output. As a result, until these transmission constraints are addressed, new renewable development in this region may cause additional curtailment. To date the PUC has failed to develop a consistent or transparent mechanism for determining which projects in the SHEI region require additional review, or for evaluating and resolving these impacts at the project level. As a result, proposed projects face an inconsistently applied SHEI review, and the cost of resolving any identified issues can be significantly greater than the economic impact caused by the project.

Solution: The Legislature should require the PUC to establish a clear and consistent mechanism for determining if a proposed project in the SHEI region requires additional review – recognizing that the impact of smaller projects is minimal – as well as an efficient and predictable process for resolving any potential economic impacts identified with this additional review. Additionally, the Legislature should establish a plan for modernizing the Vermont grid to support high levels of electrification and renewable penetration (see "Grid Modernization" in the "Other Areas for Legislative Action" section of this report).

In August of 2021, West Glover Roaring Brook applied for a small, net-metered 50 kW CPG located on Country Road in Glover. This project was commissioned by the Town of Glover to advance its Enhanced Energy Plan. The Town's Energy Committee, Select Board, and Planning Commission considered it a critical project to meet the town's energy goals since the project would "provide about 90% of the electricity used by Glover's town-owned buildings, sewer pump stations, and street lights from a renewable source and at a lower cost to the taxpayers of the town."

Glover is located within the Sheffield Highgate Export Interface ("SHEI"), a region of the state that experiences transmission constraints during some hours of the year. At these times, excess power generated within the SHEI cannot safely be exported to other parts of the state, and larger renewable facilities in the region are required to curtail their power output. Curtailment of these facilities results in a loss of revenue for the owners of the facilities which includes Green Mountain Power, the Vermont Electric Coop, and Washington Electric Coop. There are ongoing efforts to address this well-known issue with the inadequacy of the grid in this region of the state. New renewable projects within the SHEI may cause some additional curtailment of these larger facilities but still provide a climate benefit since the SHEI only experiences transmission constraints intermittently.

In October, the PUC issued an Order stating that this 50-kW project raised significant issues concerning the economic benefits of the project, a Section 248 criterion that, per Rule 5.100 is "conditionally waived" for net-metered projects. Citing a single previous case, the Order raised the prospect of a negotiated settlement to offset any loss of revenue for the utilities. The case that the PUC cited, however, was a 500-kW project, 10 times larger than the West Glover project, and the negotiated settlement, in that case, was specifically in response to a motion to intervene by the Vermont Electric Cooperative. No similar motion was made in this case and in fact, the Vermont Electric Coop urged the PUC not to pursue a similar process for this much smaller project. In response to the PUC's order, both the applicant and the DPS cited multiple examples of similarly sized, and even slightly larger, net-metering projects in the SHEI region that the PUC had granted CPGs without any additional SHEI-related process or fees.

Filings by the DPS and the impacted distribution utilities (Vermont Electric Coop, Green Mountain Power, and Washington Electric Coop) strongly urged the PUC to abandon a case-by-case approach to considering SHEI impacts and to develop a uniform method for addressing these issues. The Department's comment specifically highlights the unpredictability that the PUC is creating stating "Without a mechanism for addressing all SHEI generation within clearly defined parameters, stakeholders lack notice as to when and how SHEI impacts will be addressed" and raising legal concerns that like case may be treated differently.

> *The Department maintains that a case-by-case approach to addressing SHEI constraint and curtailment impacts is fraught with potential problems and therefore* ***strongly recommends that the Commission expeditiously pursue a uniform and broadly applicable approach to the SHEI issues****.*
>
> *DPS, 11/29/2021*

In addition to the concerns about the unpredictability and fundamental fairness of the PUC's approach, the Department and the utilities also highlighted that it was so administratively inefficient that the negotiated settlement was likely to increase rather than decrease the cost to Vermont ratepayers.

> *In the event that the Commission requires small projects like this one to address SHEI impacts through a mitigation fee or other method, it will be important to establish an efficient process because* ***negotiating resolutions of SHEI impacts*** *on a case-by-case basis at this scale* ***may cost more than the economic impacts such projects have on Vermont customers****.*
>
> *Vermont Electric Coop, 10/29/2021*

Despite the Department's recommendation that the PUC forgo reviewing SHEI impacts in the case due to issues of consistency and cost, the PUC continued to insist on a negotiated settlement before issuing a CPG. Ultimately, seeking to avoid additional legal costs, the applicant and the utilities reached an agreement that the project would pay a one-time fee of $3,730 to be shared among Vermont utilities to address concerns about SHEI impacts. As the Vermont Electric Coop predicted, this payment was less than the direct cost to the utilities of negotiating the settlement amount, let alone the time, expense, and resources that this process imposed on the Town, the DPS, and the PUC itself.

Conclusions

As it operates today, the Section 248 permitting process in Vermont acts as a significant barrier to achieving the state's climate and energy goals. CPGs for renewable energy projects are often delayed or denied for reasons that provide minimal public benefit and undermine the state's larger energy and climate goals. Absent a rapid shift to clean, renewable energy, the impacts of climate change will only accelerate, with devastating impacts on Vermont's communities and natural environment. With the imperative to electrify both the transportation and thermal sectors, modeling for the Vermont Climate Council suggests that electricity demand could grow by 34% by 2030 and double by 2050. Meeting this new electricity demand will require a truly historic expansion of renewable energy generating capacity. Under these circumstances, a regulatory process that is too slow or too unpredictable and substantially inhibits new renewable generation fails all Vermonters. The overarching need is clear: if Vermont wishes

to accelerate the deployment of renewable energy and reap the economic and energy security benefits it provides, the Vermont Legislature must act to clarify the scope of the PUC and ANR's authority and return predictability and common sense to the regulatory process. The process must be overhauled to recognize the urgency of the climate crisis and the imperative of deploying renewable resources in our state. Rather than a permitting process shrouded in uncertainty that too often holds renewable projects to a higher standard than other forms of development, Vermont needs a process that provides clear guidance and timely approval for renewable energy projects.

Appendix A:

Additional Areas for Legislative Action to Accelerate Renewable Deployment

In addition to the regulatory uncertainty caused by subjective evaluation criteria, lack of timeliness in the review process, and the inconsistent application of rules, there are several other areas for legislative action that would accelerate Vermont's effort to reduce greenhouse gas emissions and transition to a clean energy economy. These include changes to how renewable energy is valued in DPS analysis and PUC cases to better incorporate the climate benefits these resources provide, protecting the viability of the net-metering program, protecting Section 248 intervention requirements, and expanding opportunities for renewable development by modernizing the grid, helping Vermont's farmers to host renewable energy projects, and revitalizing wind development in Vermont.

Renewable Energy Valuation and Greenhouse Gas Accounting

Include Social Cost of Carbon: The social cost of carbon is a valuation of the damage caused by an additional ton of greenhouse gas emissions, intended to capture the costs that climate change imposes on health, agriculture, the built environment, and other aspects of our economy. The social cost of carbon is distinct from renewable energy credit prices, which reflect the market price of achieving certain policy requirements, rather than the damage caused by climate change. The Legislature should mandate that the DPS and the PUC include the social cost of carbon in the evaluation of utilities' integrated resources plans, all procurement programs, and other cases that have a bearing on the growing burden that greenhouse gas emissions impose on Vermonters.

Appropriate Value of Distributed Energy Resources: Distributed energy resources – smaller, geographically dispersed renewable energy generation and storage facilities on the order of 5 MW or less – offer unique benefits to the grid that are distinct from those provided by centralized power plants. Failing to adequately account for these benefits means that the DPS and the PUC will mischaracterize the impact that these systems have on electricity rates and chronically underinvest in DER. Recently New Hampshire commissioned an independent study of the comprehensive value of Distributed Energy Resources and found that the value of the energy provided by these facilities was 16 cents/kWh, nearly 70% higher than an estimate by Vermont's DPS that considered only a more limited set of benefits. Comprehensively updating the DPS's estimate is especially important given the rapid rise in natural gas prices over the past year (indeed even the fuel costs used in the New Hampshire study are already below current market prices). While there are differences between Vermont and New Hampshire that could result in a different valuation in Vermont, the New Hampshire study's findings are consistent with other modeling efforts, including work by Vibrant Clean Energy, which found that the least cost method for achieving a 100% clean energy grid included renewable energy facilities across a range of scales with a strong role for distributed generation and storage. The Legislature is encouraged to require a comprehensive study of the value of DER in Vermont, including the social cost of carbon, by an independent third party.

Utilize Marginal Emissions Rates: Electricity generation and electricity usage must be balanced in real time. In New England, this is almost always achieved by adjusting the output of natural gas power plants, the marginal generating unit for nearly all hours of the year. The change in emissions resulting from incremental changes in energy generation – as is seen when natural gas plants increase or decrease generation – is referred to as the marginal emissions rate and is the best way to understand the near-term impact on greenhouse gas emissions from increasing renewable generation, electrification, and efficiency. Because marginal emissions are driven by the region's natural gas power plants, marginal emissions rates are higher than the region's average emissions rates, which reflect the low-carbon emissions of generating sources like wind, solar, and nuclear power. Since these power plants do not generally change their power output in response to marginal changes in electricity demand, evaluating the effects of increasing renewable generation, electrification, and efficiency using the average emissions rate will understate their effect on current greenhouse gas emissions. Currently, the DPS uses marginal emissions rates in some applications and average emissions rates in others, an inconsistency that the Department is seeking to address. A legislative mandate to use marginal emissions rates to assess greenhouse gas emissions for renewable energy projects would ensure that these assessments provide the most accurate near-term assessment of climate impacts.

Expansion of Renewable Development Opportunities

Agricultural Wetlands: Land that has been farmed in ordinary rotation since before February of 1990 is exempt from Vermont's Wetland Rules even in areas that would otherwise be characterized as wetlands. If the land is out of crop rotation for more than 5 years, it loses this exemption, and the wetland – as well as a 50 ft buffer around it – cannot be returned to agricultural use without a permit. Since other uses for these agricultural wetlands are severely circumscribed, farmers are incentivized to continue to keep these areas in agricultural production even though these areas typically have lower productivity and intensive agricultural use is highly environmentally disruptive. Allowing farmers to maintain the exemption from Wetlands Rules when the land is in use for renewable energy generation would allow farmers to diversify their revenue sources while transitioning these areas to a less intensive land use that would increase the health of the wetland. The Legislature should amend 10 V.S.A. Section 913 to allow for the development of renewable generation in agricultural wetlands without the loss of wetland rule exemptions. This change would promote the viability of Vermont's farms, increase the land that is available for renewable generation while preserving the potential for land to be returned to agricultural production in the future, and improve the ecological functioning of agricultural wetlands.

Wind: Meeting the state's renewable energy goals as cost-effectively as possible requires a diversity of renewable energy resources. Wind and solar are highly complementary resources that tend to provide energy at different times of the day and year. In addition to the general regulatory issues identified throughout this report that apply to renewable development generally, wind projects face additional permitting obstacles that have effectively resulted in a moratorium on wind development. No project larger than 90 kW (three small, 100 ft turbines) has been approved since 2016. Wind development in Vermont has been stalled by the strictest wind sound standards in the nation which limit the allowable overnight sound from a wind turbine, measured at a distance of 100 feet from a residence, to 39 decibels which is quieter than a bird song or stream. The selection of the 39-decibel limit is not

supported by scientific evidence and is not mirrored in other jurisdictions. Many town and regional plans also include provisions that restrict wind development which must be addressed if wind energy is to play a meaningful role in the state's renewable energy portfolio. The Legislature should revisit wind energy siting in Vermont to ensure that wind provisions in PUC rules and town and regional plans are compatible with wind development in Vermont.

Protecting the Viability of Net-Metering

Vermont's net-metering program has been the state's most impactful renewable energy initiative. The Legislature created this program to increase consumer choice and empower Vermont families and businesses to generate their own clean, renewable energy. It has helped thousands of Vermonters invest in renewable generation and has resulted in the installation of more than 300 MW of renewable capacity in Vermont. However, currently, the continued success of net-metering is challenged by siting provisions created by the PUC that make group net-metered projects – the type of net-metering projects that allow renters and low-income families to access the benefits of renewable energy – significantly more challenging as well as by a biennial compensation adjustment process that undervalues the benefits of net-metering and creates artificial volatility in the net-metering market.

Preferred Siting in the Net-Metering Program:

During the original rulemaking process for the net-metering program, the PUC created "preferred site" provisions that restrict the types of sites that are eligible to host projects larger than 150 kW. The same provisions provide financial incentives to limit projects between 15 kW and 150 kW to the same types of sites. The preferred site framework is intended to steer renewable energy development towards locations previously developed and disturbed and sites supported by local planning entities. The preferred siting mechanism is not mentioned in statute and was created without Legislative direction. While conceptually this framework is appealing, in practice excessively restrictive preferred siting criteria function, not as a steering mechanism, but as a roadblock for all but the smallest net-metered projects, restricting Vermonters' ability to access this program.

In the past year, the PUC and ANR have proposed additional restrictions on preferred sites that will make building community net-metered projects more difficult without providing a clear public benefit. Among the proposals is a blanket, one-acre – later increased to three-acre - prohibition on tree clearing that did not account for project size, forest quality, habitat connectivity, or other factors that would speak to the balance between a project's benefits and its potential impacts on forest habitat. The estimates that Vermont's forest cover is declining by as much as 1,500 acres per year are overwhelmingly attributable to "suburban and rural residential sprawl."[2] In contrast, ANR's records indicate the impact of all net-metering projects on forest cover has been limited to 208 total acres.[3] Targeting net metering, which provides clear and measurable environmental benefits, rather than sprawl is an ineffectual and short-sighted approach to addressing Vermont's forest health and ignores the carbon reductions tree clearing for solar deployment provides. Additionally, the PUC proposed

[2] Brown, Joshua (2017). *Report: Vermont Losing 1,500 Acres of Forest Every Year*. https://www.uvm.edu/news/story/report-vermont-losing-1500-acres-forest-every-year

[3] Vermont Agency of Natural Resources (2021). Forest Conversion for Net-Metering: Trends & Options to Reduce

revising the criterion for previously developed sites and former extraction sites to require new limits on how much of the generation infrastructure must be built on the footprint of the previous development/ disturbance, regardless of the ecological quality of the remainder of the site. Mandating that renewable facilities be limited to only a portion of a parcel that is eligible for preferred site status without accounting for site-specific characteristics, would result in less efficient utilization of locations that have marginal value for other purposes. These proposals are indicative of a regulatory environment that fails to recognize the extraordinary rate of renewable deployment that is needed to address the climate crisis.

Additionally, while a limited number of net-metered projects larger than 150 kW qualify as preferred sites because they are built on brownfields, gravel pits, parking lots, or rooftops, the majority of net-metered projects of this size qualify as preferred sites because the host town and regional planning commission have provided a joint letter of support for the project. Because this process takes place outside of the CPG application process, there is no mechanism to contest the decision if a town planning commission declines to provide a letter of support. For towns without brownfields or rooftop space suitable for the larger project sizes that are most cost-effective for community net metering, this effectively allows towns to block group net metering altogether, regardless of site quality. Vermont was a national leader in establishing group net metering and the Legislature never intended for towns to opt out of this component of the net metering program.

The Legislature should consider whether the preferred site mechanism that the PUC created is appropriate and, if the preferred site mechanism is maintained, provide clear guidance to ensure that the preferred site criteria support the state's overall renewable energy goals and support the ability of renters, low-income Vermonters, and others interested in group net metering to access the benefits of this program.

Net-Metering Biennial Review Process:

The compensation rate that net-metering customers receive is updated every two years in a biennial review process led by the Commission. The review process has resulted in six reductions to the net-metering compensation rate in the last six years even though new net-metering interconnections peaked in 2016 and have trended steadily downward in the intervening years. The PUC justifies these cuts by asserting that net-metering results in higher rates for non-participating Vermonters, but this assertion is sensitive to the costs and benefits that are included in the rate analysis and counterfactual assumptions they are compared against. Any rate impacts that are associated with net metering should also be contextualized in terms of the overall social benefits that net metering provides as well as compared to other factors influencing rates such as the cost of responding to climate change and providing Tier III incentives. While the net-metering statute directs the PUC to ensure *to the extent feasible* "that net metering does not shift costs included in each retail electricity provider's revenue requirement between net metering customers and other customers," it also requires to account for all costs and benefits of net metering. The Legislature should either resume control over net-metering compensation directly or provide the Commission with clear guidance that moves the review process from a narrow focus on a cost shift of uncertain magnitude to a more comprehensive and longer-term

analysis of the net social benefit that net metering provides in the context of rapid electrification and climate change.

Section 248 Party Status

When the Legislature drafted Section 248, it specified that ANR would be a party in all Section 248 proceedings and that the Agency of Agriculture, Food and Markets, the applicable regional and local planning commissions, and the applicable municipal legislative body would all have the right to party status and to intervene in a 248 proceeding. These provisions ensure that the public interest is well represented in the Section 248 process. Currently, other individuals and entities may apply for formal party status, but this status is not automatic and may be contested by the Section 248 petitioner. The PUC has stated that the key consideration in granting other persons and entities the right to intervene is their ability to demonstrate "a substantial, particularized interest that will be affected by the outcome of [a] proceeding." That is, an individual or organization can gain the right to party status and to intervene in a proceeding only if their interest in intervening *differs* from the general, public interest related to natural resources, aesthetics, etc. which are the purview of the public regulatory and planning bodies that already have automatic party status. This balance ensures that all pertinent issues can be considered and resolved within the Section 248 process without empowering every individual who may object to a specific project to drag the process into drawn-out legal wrangling. It is important to note that the Section 248 process already includes robust, public participation opportunities for every member of the public regardless of whether they can meet the existing test for formal party status. These opportunities include public hearings on major projects, written public comment opportunities that begin during the mandatory advanced notice period before a project is filed with the PUC, and again once a Section 248 case review begins before the PUC renders a decision. The PUC has proposed expanding the list of individuals with an automatic right to party status to include all landowners adjoining a project. From a legal perspective, it is not clear that the Commission has the authority under statute to make this change. From a practical perspective, such a change would undoubtedly further delay Section 248 proceedings and increase costs for the state, utilities, and applicants, and therefore Vermont ratepayers, while achieving no meaningful benefit. The Legislative Committee on Administrative Rules should reject any efforts to expand the entities and individuals that are eligible for automatic party status in Section 248 proceedings to prevent further erosion in the efficiency and cost-effectiveness of these proceedings.