Institute for Energy and the Environment

Vermont Law School Energy Clinic[1]
energyclinic@vermontlaw.edu
164 Chelsea Street, PO Box 96
South Royalton, VT 05068
802-831-1151

An Analysis of Renewable Energy Credits in Vermont[2]

Gregg Freeman, Heather Huebner, Aaron Kelly

EXECUTIVE SUMMARY

- This report explains renewable energy credits (RECs) and shows the dramatically different impacts on Vermont's renewable energy consumption and greenhouse gas emissions of selling RECs out-of-state versus retiring them in-state.

- According to Vermont's 2016 Comprehensive Energy Plan, **Vermonters receive 0% of their energy from solar and wind sources. Vermont's electric sector greenhouse gas emissions have approximately doubled over the last decade,** partly due to flawed renewable energy policies.[3]

- RECs are the environmental attributes associated with one unit of energy generated from a renewable source. A REC can be unbundled from the individual unit of energy and traded separately. Vermont electric customers may only claim they are consuming renewable energy if they retain and retire the RECs.

- The Vermont net metering program allows customers to receive monetary credits on their bills in exchange for generating renewable electricity. Most small residential net metering projects retire RECs in Vermont, but projects larger than 100kW often sell their RECs out-of-state.

    - Net metering customers who retain and retire their RECs in Vermont consume renewable energy and the state's renewable consumption levels increase accordingly.
    - When RECs are instead transferred to a utility for compliance with a state requirement, the customer does not consume renewable power because the utility legally claims the title to the renewable energy.
    - When the customer sells their REC out of state, the customer does not consume renewable power because they have sold that right to another entity.

[1] The Vermont Law School Energy Clinic is a student run energy law and policy clinic supervised by Professor Kevin Jones and Global Energy Fellow Laura Schieb. The Energy Clinic works with community organizations on clean energy projects to resolve energy policy challenges in a sustainable and socially equitable manner for both the local community and the world. The Energy Clinic does not offer legal advice.
[2] Produced for the Vermont Senate Committee on Natural Resources and Energy.
[3] Vermont 2016 Comprehensive Energy Plan. Exhibit 9-8 page 189.

- The Vermont customer who has sold or transferred RECs technically consumes electricity from a portfolio consisting mostly of fossil fuel and nuclear power. Thus, projects in Vermont that sell RECs for compliance with out of state RPS programs do not increase regional renewable energy deployment.

- Sales of RECs out of state from the net metering program do not provide a financial benefit to ratepayers. When RECs are sold by private developers and owners of net metering solar projects, they receive all revenue from these REC sales. Vermont's ratepayers are harmed by REC sales from the net metering program because Vermont is not credited for the renewable energy that customers are paying for. The current rate of compensation for net metered projects is only fair to Vermont's ratepayers if the value of REC retirement in Vermont and the avoided greenhouse gas emissions are included.[4]

- Selling RECs from net metering programs out of Vermont, has often led to deceptive marketing practices by solar companies and false claims of renewable energy consumption.

- <u>This report recommends the following changes to Vermont net metering policy to overcome the problems with the policies identified here:</u>

  - The Vermont Legislature should consider prohibiting the out of state sale of RECs from net metering projects, given that Vermonters pay a premium for this clean distributed energy and should keep the renewable energy it has paid for in Vermont.
  - Allow Vermonters to retain and retire their net metering RECs without penalty. A central premise of net metering has historically been that customers can retain their RECs in order to legally "go solar" and reduce their individual greenhouse gas emissions. Vermont customers who retire their RECs keep the renewable energy in state and reduce Vermont's greenhouse gas emissions and should be treated fairly.
  - Improve education and communication about Vermont's renewable energy products. Products which do not provide solar electricity to their customers should not be described as "solar" products.

- The Vermont SPEED program was designed to increase in-state development of renewable energy. The SPEED and Standard Offer programs have not increased the percentage of renewable energy consumed in Vermont but have increased Vermont's greenhouse gas emissions because they have incentivized the out of state sale of RECs.

- <u>Recommended policy changes for utility contracted and utility-owned projects include</u>:

  - Modify Tier 1 of Vermont's Renewable Energy Standard to begin phasing in the retirement of the RECs from Vermont utility SPEED resources.
  - Improve communication and disclosure about utility-owned projects and their outcomes in order to improve transparency for customers including disclosing sources of Vermont utility power and its environmental attributes on customer bills.

[4] VERMONT PUBLIC SERVICE DEPARTMENT, EVALUATION OF NET METERING IN VERMONT CONDUCTED PURSUANT TO ACT 99 OF 2014 24 (Nov. 7th, 2014), http://psb.vermont.gov/sites/psb/files/Act%2099%20NM%20Study%20Revised%20v1.pdf.

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I. INTRODUCTION

Understanding the effects of selling renewable energy credits (RECs) is crucial to the implementation of legislation designed to meet renewable energy goals and reduce greenhouse gas emissions in Vermont. Environmental attributes are an energy plant's characteristics that qualify the produced energy as renewable, including avoided emissions and other environmental benefits.[5] RECs are the environmental attributes of one unit of energy generated from a renewable source.[6] When RECs are traded, they are transferred separately from the associated unit of energy and owned by a party that acquired the exclusive legal ownership of the associated environmental attributes.[7] A utility may claim that it sells renewable electricity to its customers only if it retires the RECs. When a utility receives electricity generated by renewable facilities and sells the associated RECs, the remaining electricity is no longer renewable. After selling the RECs, the remaining electricity is provided from nonrenewable resources with the attributes of the region's residual mix.

Various programs in Vermont (e.g. net metering and SPEED) have sought to promote renewable energy development in Vermont, particularly from solar and wind resources. **While these programs have resulted in the development of significant in-state renewable resources, RECs have been sold from the vast majority of large scale wind and solar resources to utilities out of state. Surprisingly, Vermont consumers currently receive 0% of their electricity from wind and solar sources.**[8] Vermont must retire RECs from its solar and wind resources in order to receive renewable power from the wind and solar projects located within the state. RECs cannot both be used as a financial incentive to lower Vermont's electric rates and reduce our greenhouse gas emissions. RECs must be retired in Vermont to retain the ownership of renewable energy generation and to meet regional greenhouse gas emissions goals. REC sales from Vermont are contributing to increasing statewide greenhouse gas emissions and reducing the effectiveness of Vermont's renewable energy policies. Vermont's electric sector greenhouse gas emissions have doubled over the last decade partly due to REC sales.[9]

[5] 30 V.S.A. §8002(7).
[6] 30 V.S.A. §8002(26).
[7] *Id.*
[8] Vermont 2016 Comprehensive Energy Plan. Exhibit 9-8 page 189.
[9] VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION AIR QUALITY AND CLIMATE DIVISION. VERMONT GREENHOUSE GAS EMISSIONS INVENTORY UPDATE 1990-2012 2 (2015) http://anr.vermont.gov/sites/anr/files/specialtopics/climate/documents/emissions/Vermont%20GHG%20Emissions%20Inventory%20Update%201990-2012_June%20-2015.pdf. See Also Vermont 2016 Comprehensive Energy Plan. Exhibit 4-6 page 35

II. HOW DO RECS WORK?

RECs substantiate and verify renewable energy claims. When electricity from a renewable energy facility enters the electric grid, the electrons are "mixed" with all other electrons in the grid. This makes it impossible to differentiate between "renewable electrons" and "non-renewable electrons." RECs fix this problem by "labeling" electrons as renewable. Similar to how a Certificate of Origin verifies that a good was manufactured in a particular country, a REC verifies that electricity was generated from a particular renewable energy source.

Figure 1: RECs "label" electricity from renewable energy generators as renewable.

Renewable energy generators produce two products. The first product is electricity. The second is a package of environmental benefits, called renewable energy credits, resulting from producing electricity from a clean renewable source.[10] For every megawatt hour (MWh) of renewable energy generated, one REC is created. For example, if a solar facility generated 100 MWh of electricity, the facility would earn 100 RECs.

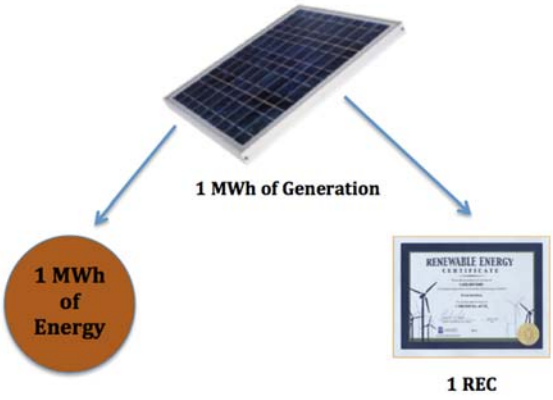

Figure 2: Every MWh of renewable energy generated produces one MWh of energy and one REC.

Because RECs are separate products from electricity, they can either be included with the sale of electricity (bundled) or sold separately (unbundled). When the RECs are *bundled* with the sale of electricity, the purchaser receives both the electricity and the associated RECs and is considered to have purchased renewable energy. When RECs are *unbundled* from the electricity, one entity purchases the electricity (which is no longer renewable), and a different entity (such as a utility seeking to comply with a Renewable Portfolio Standard (RPS), or a business attempting

[10] Jason Coughlin *et. al.*, A Guide to Community Shared Solar: Utility, Private, and Nonprofit Project Development 4 (2012), http://www.nrel.gov/docs/fy12osti/54570.pdf.

to make a renewable energy claim) purchases the RECs.[11] A renewable portfolio standard is a regulatory requirement that a utility procure a specific percentage of its electricity from qualifying renewable sources by a target date.

To create, track and retire RECs, there are nine different electronic tracking systems in North America.[12] In the New England region, RECs are tracked in the New England Power Pool Generation Information System (GIS). GIS is an "all generation" tracking system, meaning that it issues and tracks certificates for *all* MWh of generation (both renewable and non-renewable) and load in the ISO New England control area.[13] GIS issues one "Certificate" for every MWh of *generation* entering the system,[14] and one "Certificate Obligation" for each MWh of *load* in the system. Each Certificate is assigned a series of attributes depending on the fuel source, emission characteristics, labor characteristics, vintage, location, RGGI and Green-E status of the generators. However, RECs from some sources such as net-metered solar which are never traded may not enter into and be tracked by the GIS system. RECs are not traded when the owner of a renewable generation system keeps them bundled in order to consume renewable energy from their system.

Market participants who have accounts in GIS can buy and sell Certificates. All retail load serving entities (i.e. utilities) in New England automatically have subaccounts in GIS. Many other entities, such as REC brokers, marketers, etc., also have subaccounts. Certificate transactions between market participants occur *outside* of GIS, and are reported to GIS by means of a transfer within the system. At the end of each "Trading Period," GIS matches Certificates (generation) with Certificate Obligations (load) in each subaccount. Any Certificate Obligations that are unmatched with Certificates receive "Residual Mix" Certificates. The Residual Mix is the average attributes of all unassigned Certificates created during that Trading Period, which is largely composed of fossil fuel and nuclear power.[15]

Example: REC Transaction

1. A Vermont solar facility produces 100 MWh of renewable energy in a month.
2. GIS places 100 RECs in the solar facility's GIS account.
3. If the solar facility decides to sell the RECs to a utility, they notify the GIS to record the sale and 100 RECs are transferred from the solar facility's account to the utility's account. The utility will either retire the RECs or sell them to a different entity.
4. Once the RECs are retired, they may no longer be traded.[16]

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[11] Environmental Tracking Network of North America, The Interaction between Carbon, RECs, and Tracking: Accounting and Tracking the Carbon Attributes of Renewable Energy 13 (2010), http://etnna.org/images/PDFs/Intersection%20btwn%20Carbon%20RECs%20and%20Tracking.pdf.

[12] U.S. DEPARTMENT OF ENERGY, *Green Power Markets, Renewable Energy Certificates (RECs*) *National REC Tracking Systems*, http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=3 (last visited Feb. 24, 2016).

[13] NEPOOL GENERATION INFORMATION SYSTEM, http://www.nepoolgis.com (last visited Feb. 24, 2016).

[14] NATIONAL RENEWABLE ENERGY LABORATORY, *REC Tracking Systems: Costs & Verification Issues* 10 (2013), http://www.nrel.gov/docs/fy14osti/60640.pdf.

[15] Paul Belval, NEPOOL GENERATION INFORMATION SYSTEM 3—12 (Sep. 23, 2013), http://www.resource-solutions.org/images/events/rem/presentations/2013/Paul%20N.%20Belval.pdf.

[16] Farnsworth & Terada, TRACKING EMISSIONS ASSOCIATED WITH ENERGY SERVING LOAD IN THE REGIONAL GREENHOUSE GAS INITIATIVE (RGGI) States 23 —24 (2013).

III. THE ROLE OF RECS IN NET METERING PROJECTS

A. Net Metering Program

The net metering program allows Vermont electric customers to generate their own electricity and receive a monetary credit on their bills ("net metering credits") for the electricity they produce. Net-metered generators consist of small-scale residential solar arrays from a few solar panels to larger-scale 500kW solar arrays consisting of more than 2,000 solar panels. There are a few wind turbines and hydroelectric dams in the net metering program; however, more than 93.5% of the capacity in the net metering program is solar. Currently, net metering generators are allowed to sell their RECs outside Vermont. Most net metering projects larger than 100kW are selling their RECs outside Vermont and almost all residential projects are retaining and retiring them in Vermont. Each of these actions has a very different impact on the net metering customer's carbon footprint, Vermont's statewide greenhouse gas emissions and regional renewable energy deployment.

1. RECs Retained and Retired by Net Metering Generator

First, when a net metering customer keeps their RECs bundled with their electricity, the customer legally consumes renewable electricity. The customer can claim that they consume energy from a renewable generation source and that they reduce their greenhouse gas emissions because the RECs are owned by the customer. For example, a homeowner who installs solar panels on her roof and does not transfer the RECs to the utility or sell them to any other party consumes solar electricity because she owns the RECs. The homeowner can legally and honestly claim to be consuming solar electricity from her panels. When the Vermont homeowner retires her RECs, Vermont's statewide consumption of solar electricity increases and Vermont takes a step toward meeting its statewide renewable energy and greenhouse gas reduction goals.

When additional solar energy is consumed by Vermont, the amount of solar consumed in New England as a whole increases. The choice of the Vermont solar homeowner to install solar panels and consume solar energy does not affect the renewable energy requirements of other states. Other states in New England continue to install solar panels and other renewable resources to meet their state mandates and the Vermont homeowner installs solar panels, too. When RECs are retired in Vermont, Vermont's net metering program increases renewable deployment in the region, Vermont's total renewable electricity consumption increases, and the net metering customer can factually and legally claim to be consuming renewable energy from their renewable generation source and reducing their and Vermont's carbon footprint.

2. RECs Transferred to Utility by Net Metering Generator

Second, when a net metering customer transfers their RECs to the utility for compliance toward Vermont's renewable energy standard, the net metering customer is not consuming renewable energy and cannot make environmental claims about their energy.[17] At best, the

[17] "If the utility keeps the RECs for any reason, including for Renewable Portfolio Standard compliance, then only the utility can make environmental claims related to the solar system." *Community Shared Solar FAQ*, U.S. DEPARTMENT OF ENERGY,

customer may be able to claim that their electricity has the characteristic of their utility's average fuel mix, not the characteristic of their renewable energy system. The customer cannot legally claim to be consuming renewable energy as doing so would result in double counting[18] since the utility owns the right to the renewable energy and is retiring them for compliance with the state standard. [19] For example, a homeowner who installs solar panels on her roof and transfers the RECs to the utility does not consume solar electricity because she does not own her RECs. She does not have the right to claim that she consumes solar power or that her decision to install solar panels has led to a reduction in her greenhouse gas emissions. Those rights were transferred to the utility and used by the utility to claim compliance with the renewable energy standard.

When a Vermont utility retires a net metering customer's RECs toward compliance with the renewable energy standard (as required by Act 56), the utility procures solar electricity and Vermont's statewide consumption of solar electricity increases, but only up to the state standard. However, solar homeowners who transfer their RECs to the utility lose their right to call the electricity from their own solar panels renewable and there is no additional renewable energy produced beyond the state standard. The ability to consume renewable energy and reduce their own carbon footprints is a key reason that homeowners, businesses, and other Vermont institutions invest in renewable energy systems. Thus, requiring the transfer of RECs to the utility would likely adversely affect the decision of many Vermonters to go solar and will slow renewable adoption.[20] Therefore, there are good public policy reasons to allow RECs to be retired directly by net metering customers rather than mandating transfer to the utility.

3. RECs Retained and Sold Out of State by Net Metering Generator

Third, when a net metering customer sells the RECs, the net metering customer does not consume renewable electricity from their renewable system. The customer no longer owns the RECs and cannot claim, explicitly or by implication that their electricity is "renewable", "clean", or "green." [21] In fact, accurate accounting of the environmental attributes suggests the customer should be assigned the characteristics of the "NEPOOL Residual Mix".[22] The Residual Mix consists of electricity generated from the residual resources unclaimed by other entities and

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http://apps3.eere.energy.gov/greenpower/community_development/community_solar_faq.html (last visited Feb. 24, 2016). *See also Making Environmental Claims*, ENVIRONMENTAL PROTECTION AGENCY http://www3.epa.gov/greenpower/buygp/claims.htm (last visited Feb. 24, 2016) (explaining the process for making environmental claims).

[18] "Double counting occurs when more than one entity claims ownership of a REC or of the REC and its associated power." K.S. Cory & B.G. Swezey, RENEWABLE PORTFOLIO STANDARDS IN THE STATES: BALANCING GOALS AND IMPLEMENTATION STRATEGIES 5 (2007), http://www.nrel.gov/docs/fy08osti/41409.pdf.

[19] "A REC used to satisfy an obligation such as an RPS may not also be used to support a marketing claim in a voluntary market." Peter C. Fusaro & Marion Yuen, GREEN TRADING MARKETS DEVELOPING THE SECOND WAVE 69 (1st ed. 2005).

[20] In re California Solar Initiative, 07-01-018 (Jan. 11, 2007) (noting that "[t]ransfering RECs from DG system owners to ratepayers would remove that potential benefit and thereby could adversely impact decisions to invest in solar and other renewable DG projects").

[21] STATE OF VERMONT OFFICE OF THE ATTORNEY GENERAL, GUIDANCE FOR THIRD-PARTY SOLAR PROJECTS 2 http://ago.vermont.gov/assets/files/PressReleases/Consumer/Guidance%20on%20Solar%20Marketing.pdf (last visited Feb. 24, 2016).

[22] Farnsworth, *supra* note 13, at 24.

largely includes dirty resources such as coal, oil, nuclear, and natural gas and virtual no renewable energy.[23] For example, when a homeowner installs solar panels on her roof and sells the RECs, the homeowner consumes electricity which has been stripped of its environmental attributes. This consumed electricity is from the residual mix, which is electricity from polluting, non-renewable sources. The homeowner does not consume renewable energy and does not have the right to claim that she consumes solar power or that her decision to install solar panels has reduced her greenhouse gas emissions. Those rights were transferred to the purchaser of the RECs, which is typically an out-of-state utility seeking to claim compliance with a renewable portfolio standard (RPS).

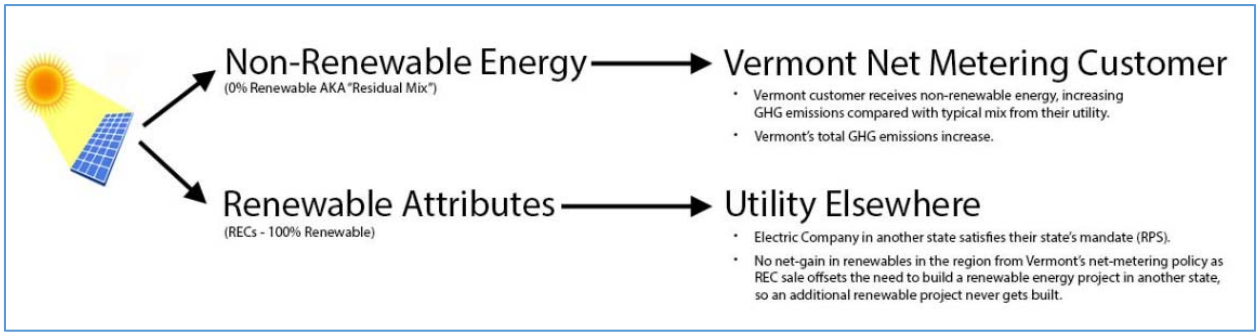

Figure 3: Impact of selling RECs from net metering programs out of Vermont.

When a Vermont electric customer sells their RECs outside of Vermont, Vermont's overall electric supply becomes dirtier and Vermont's statewide greenhouse gas emissions increase. This is because the Vermont net metering customer consumes the residual mix instead of the utility's average mix. Vermont utilities' average mixes have lower greenhouse gas emissions than the residual mix, so the customer's choice to consume the residual mix increases his greenhouse gas emissions and consequently Vermont's statewide greenhouse gas emissions increase as well. One way to conceptualize what is happening is to consider that the Vermont customer is exporting the clean solar energy to Massachusetts and in its place we must import fossil and nuclear energy.

When the Vermont customer sells RECs outside the state, a utility in another state will purchase them to comply with its renewable energy requirement (RPS). The utility in the other state no longer needs to build a solar array or other renewable resource in that state because it has purchased the Vermont RECs to meet its renewable energy requirement. As a result, when Vermont RECs are sold out of state, the Vermont solar array substitutes for the requirement to build another renewable resource elsewhere and no additional renewables are added to the region beyond what would have been built regardless. By contrast, when RECs are retired in Vermont, the utility in another state must build a solar array or another renewable resource to meet its own state's requirement and Vermont builds an additional solar array that provides renewable energy to Vermonters. As a consequence of REC sales by net metering customers, renewable

[23] *See* NEPOOL GENERATION INFORMATION SYSTEM, *NEPOOL Residual Mix* https://www1.nepoolgis.com/myModule/rpt/myrpt.asp?r=112 (last visited Feb. 24, 2016).

deployment in the region is lower than it would be if those RECs were retired in Vermont. Therefore, Vermont's greenhouse gas emissions are higher than would be the case if these RECs were retired in Vermont rather than sold out of state for RPS compliance. This would bring Vermont closer to meeting its own greenhouse gas reduction goals which Vermont currently is nt meeting.

B. Consequences of REC Sales in the Net Metering Program

1. Impact of Net Metering REC sales on Vermont GHG Emissions

RECs sales to other states undermine the net metering program's fundamental policy goals of reducing Vermont's greenhouse gas emissions and increasing renewable deployment in the region. Nearly all large-scale net metering generators (solar projects 100kW-500kW) are selling their RECs outside Vermont and, thus, increasing Vermont's greenhouse gas emissions. The current net metering program's structure strongly encourages REC sales by large-scale net metering generators. These generators are able to increase their profits significantly by selling their RECs outside the state. Only a small number of large-scale net metering projects are not selling their RECs out of state.

Approximately 60% or more of all solar capacity in the net metering program is selling the RECs outside Vermont.[24] This means that Vermont utilities paid more than half of the net metering resources in Vermont $0.19/kWh to sell clean renewable energy to Connecticut and Massachusetts while Vermont increased its greenhouse gas emissions while consuming the New England Residual Mix. REC sales to other states result in Vermont importing non-renewable energy, increasing the percentage of non-renewable electricity in Vermont's fuel mix.

2. Impact of Net Metering REC Sales on Regional Renewable Energy Deployment

Only net metering projects which retire their RECs in Vermont increase the renewable energy consumed in Vermont. RECs which are sold from Vermont's solar projects to other states for the purpose of allowing out-of-state utilities to comply with their regulatory requirements do not increase renewable deployment in the region beyond what regulators in those other states had already required. These resources would have been built (most likely in another state) to satisfy those requirements regardless of Vermont's net metering policy.

Therefore, if the estimate of REC sales from the net metering program is accurate, over half of the solar that has been deployed in the net metering program has not resulted in any increase in renewable deployment in the region since it has largely displaced renewable projects that were already mandated by other New England states and crowding out more local projects

[24] Because generator-specific data about REC sales is not publicly available, this is an estimate derived by assuming that all solar generators less than 100kW in capacity retire their RECs in-state and most all solar generators 100-500kW sell their RECs out of state (with the exception of generators we have been able to identify as retiring their RECs in-state). This estimate is based on complete CPG applications received by the Public Service Board through January 14th, 2016 and some projects may not yet have been built. The Vermont Department of Public Service was not able to provide us with quantitative data on REC sales from the net metering program, data which is necessary for a rigorous evaluation of the effectiveness of the program.

that would have reduced Vermont's greenhouse gas emissions and increased the percentage of renewable energy consumed in Vermont. This raises fundamental questions about whether the net metering program is accomplishing its policy objectives particularly when we recently hit the utility caps for net metering. Over half of the interconnection capacity available for net metering in Vermont is taken up by projects that are selling renewable energy to other New England states.

3. Impact of Net Metering REC Sales on Ratepayers

Sales of RECs out of state from the net metering program do not provide a financial benefit to ratepayers. The RECs are sold by the developers and owners of net metering solar projects who receive all revenue from these REC sales. Unlike when a utility sells RECs these REC sales are not credited as a reduction in utility rates. Ratepayers do not receive any revenue from REC sales from the net metering program even as these sales harm Vermont ratepayers by increasing Vermont's consumption of non-renewable electricity and consequently its greenhouse gas emissions. If Vermont is to achieve its renewable and greenhouse gas reduction goals, additional ratepayer funds will need to be expended to purchase RECs to account for these net metering REC sales.

Vermont's ratepayers are harmed by REC sales from the net metering program because Vermont is, in short, not getting the renewable energy ratepayers are paying for. The current rate of compensation for net metered projects is only fair to Vermont's ratepayers if the value of REC retirement in Vermont and the avoided greenhouse gas emissions are included.[25] The Department of Public Service assumes in its estimate of ratepayer benefits that RECs are not sold out of state by net metering system owners.[26] This assumption is made even though the net metering program does not require RECs to be retired in Vermont and a majority of the RECs from the program have been and continue to be sold outside the state.[27]

4. Deceptive Marketing & False Claims in the Net Metering Program

"If a marketer generates renewable electricity but sells renewable energy certificates for all of that electricity, it would be deceptive for the marketer to represent, directly or by implication, that it uses renewable energy."[28]

Two major problems have arisen due to the sale of RECs in the net metering program. First, a number of companies are selling products which are being described and marketed as solar products, but which in fact do not provide their customers with solar electricity or any of the environmental benefits of solar electricity. Second, individuals are claiming or wrongly believing that they are consuming solar electricity when they are not, in fact, consuming solar electricity or creating benefits to the environment.

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[25] VERMONT PUBLIC SERVICE DEPARTMENT, EVALUATION OF NET METERING IN VERMONT CONDUCTED PURSUANT TO ACT 99 OF 2014 24 (Nov. 7th, 2014), http://psb.vermont.gov/sites/psb/files/Act%2099%20NM%20Study%20Revised%20v1.pdf.

[26] *Id.* at page 16, n.5.

[27] *Id*.

[28] 16 C.F.R. § 260.15(d)

i. Deceptive Marketing Practices

Vermont consumers are purchasing products which they reasonably believe provide them with solar energy, when in fact they receive the residual mix, increasing their carbon emissions. Companies engaged in deceptive practices harm their customers by not providing them with the product they paid for and harm the environment because the customer does not reduce their greenhouse gas emissions as they reasonably believe they do.

There are three types of products which are being offered to Vermonters that some marketers are deceptively describing as solar products: community solar arrays, net metering agreements (sometimes referred to as power purchase agreements), and solar leases. All three can be legitimate solar products that provide solar electricity to the customer if RECs are contractually transferred to the customer. However, many companies are providing non-renewable energy (the residual mix) to their customers while selling the RECs to another party in another state. In these cases, it is deceptive to lead consumers to believe that they will be receiving solar electricity or that their purchase of the solar product will result in reducing their greenhouse gas emissions. When the RECs are sold to another party in another state, rather than transferred to the customer, that party in the other state has purchased all rights to the renewable character and environmental attributes of the electricity and the Vermont customer no longer has the right to call their electricity "solar" or "renewable."

1. Community Solar Arrays

A "community solar array" is a solar-electric system that provides power and/or financial benefit to multiple community members.[29] According to the U.S. Department of Energy, "Community solar projects allow customers that do not have sufficient solar resource, that rent their homes, or that are otherwise unable or unwilling to install solar on their residences or commercial buildings, to buy or lease a portion of a shared solar system. The subscriber's share of the electricity generated by the project is credited to their electricity bill, as if the solar system were located at the home or business."[30]

In Vermont, there are two very different ownership structures for solar projects that are being called "community solar arrays." The solar array may be owned jointly by community members who each receive a percentage of the net metering credits that the community solar array produces or a company may own a solar array and allocate net metering credits from it to various customers who agree to provide a monthly payment in exchange for the receipt of net metering credits on their bills. The issues with RECs are the same for both ownership structures.

Net metering credits are monetary credits applied to a customer's electric bill by a utility based on the energy production of a net metering generator (for example, a solar array). Net metering credits are distinct from RECs. Unlike a REC, a net metering credit does not embody

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[29] DICK WANDERSCHEID ET AL., A GUIDE TO COMMUNITY SHARED SOLAR: UTILITY, PRIVATE, AND NONPROFIT PROJECT DEVELOPMENT 3 (2012), http://www.nrel.gov/docs/fy12osti/54570.pdf.

[30] *Community Shared Solar FAQ*, U.S. DEPARTMENT OF ENERGY http://apps3.eere.energy.gov/greenpower/community_development/community_solar_faq.html (last visited Feb. 24, 2016).

ownership of the renewable character or environmental benefits of electricity, it is simply a monetary credit for electricity which is not necessarily renewable in character (it is therefore inappropriate to describe these net metering credits as "solar credits").[31]

If a member or customer of a community solar array does not contractually receive ownership of the solar RECs along with the net metering credits, the member or customer does not receive solar electricity. When the RECs are stripped from the electricity being provided to a community solar customer (and sold to another party) the community solar customer consumes the residual-mix, which consists of electricity from coal, oil, nuclear, and natural gas.[32] [33]

There are numerous examples of companies around Vermont who continue to offer products they describe as "community solar," but who do not provide customers who purchase their "community solar" product with solar electricity at all. Reasonable consumers continue to be misled by these marketers, to their detriment and to the detriment of the environment.

2. Solar Leases

Some companies offer customers the option of leasing solar panels rather than owning them. The company will install the solar panels on the customer's roof or property, but the customer does not own them.

Because the leasing company owns the solar panels, it has control of the RECs. If it does not contractually transfer those RECs to its customer, the company is not providing the customer with solar energy and should not represent to their customers that they are consuming solar energy. Some leasing companies advertise that a customer can "pay less for solar power than they pay for electricity from the utility company." This is a deceptive statement if the customer does not receive the RECs as part of the lease because the RECs represent exclusive ownership of the renewable and environmental characteristics of the electricity.

3. Net Metering Agreements

A net metering agreement is an agreement between a solar facility owner and a power consumer to receive net metering credits and, optionally, RECs from a solar array. Net metering agreements are generally utilized by large-scale power consumers, such as towns, schools, and businesses to procure solar electricity. If RECs are not transferred to the electricity consumer in the agreement, the consumer does not receive solar energy. If RECs are not contractually transferred to the consumer, the net metering agreement becomes, in essence, a long-term contract to procure non-renewable energy (the residual mix) for a town, school, or business at a cost-savings.

Solar developers will often approach schoolboards, select boards, and large businesses seeking to enter into an agreement for a proposed project. Because members and leaders of these

[31] RECs include "all of the environmental attributes associated with a single unit of energy generated by a renewable energy source." 30 V.S.A. § 8002(22). By contrast, a net metering credit is a generation-based monetary credit as described in 30 VT. STAT. ANN. § 219a.
[32] Farnsworth, *supra* note 13, at 24.
[33] *See* NEPOOL GENERATION INFORMATION SYSTEM, *supra* note 20.

organizations are usually not energy experts, they may lack an understanding of RECs and developers may not be fully honest about whether the customer will or will not receive solar energy. Because of the individualized nature of the communications surrounding these agreements, it is unclear how developers across the state are communicating about the nature of their product. However, developers generally emphasize the financial savings of such agreements and downplay or omit any mention of the fact that the customer does not receive solar energy. An agreement which does not include RECs will increase the customer's carbon footprint.

Using the word "solar" to describe these products is deceptive and should be prohibited. The word "solar" necessarily implies that the electricity consumed by purchasing the product has the characteristics of solar power, which include being "renewable," "clean," and "green." According to the Vermont Attorney General's Office:

> *Nearly all solar providers are promoting their third-party solar projects as clean, renewable energy for the benefit of local Vermonters. But if a solar provider retains and then sells the RECs, then it is deceptive to state or imply that the electricity consumed from that solar project is "renewable," "clean," "green," etc. That practice is known as "double counting" the RECs, and it is deceptive.*[34]

Companies offering products which are not solar should not describe their products using the word solar and should not use images depicting solar panels in their marketing. These companies should disclose to their customers that they do not receive solar, but rather receive non-renewable energy and increase their greenhouse gas emissions when they purchase or sign up for the product. Disclosure regarding whether the RECs are sold is not sufficient to inform reasonable consumers, who generally do not understand what a REC represents, about what they are purchasing.

Additionally, third party solar providers should refrain from describing REC sales as an "incentive" for renewable energy. REC sales are not an "incentive." When a solar provider sells its RECs, it gives up the renewable character and environmental attributes of its customers' electricity. That is not typically how an incentive works. Moreover, if the third party solar provider does sell its customers' RECs, less renewable energy is added to the region than if it did not, so it is in fact best for renewable energy deployment if the solar provider contractually transfers the RECs to its customers (for retirement in Vermont) along with the electricity the customers are purchasing rather than selling them out of state.

ii. Individual False Claims and Beliefs

Homeowners, businesses, and others may wrongly believe and may falsely claim that they are consuming solar energy when they are not. False beliefs and claims can occur because a consumer has been the victim of deceptive marketing by a third party solar provider such as a solar lease company, solar developer, or community solar company. False beliefs and claims can occur when an electric customer owns their own solar array and transfers their RECs to the

[34] *See* STATE OF VERMONT OFFICE OF THE ATTORNEY GENERAL, *supra* note 18 at 2.

utility and is wrongly under the impression that they are solar powered. These false beliefs and claims can occur when someone, who does not own a renewable energy system or procure renewable energy, willfully makes a false claim that they are renewable. False beliefs and claims are damaging to the environment because a homeowner, business, or other entity may believe or claim that they consume green power when in fact, their power consumption is from dirty sources which damage the environment.

5. RECs in the Revised Net Metering Program

Act 99 delegated the design of a revised net metering program to the Public Service Board, which is currently engaged in a rulemaking process to revise the program. On February 19th, 2016, the Board released the latest draft of the proposed rule.

As written, the draft rule will prevent Vermonters from going solar by significantly reducing compensation to net metering customers who retain and retire their RECs in Vermont.[35] Retaining and retiring RECs is the only way that homeowners, schools, businesses, and others can go solar. As described previously, if RECs are transferred to the utility for compliance with the renewable energy standard, the solar homeowner, school, or business loses their right to call the electricity from their own solar panels "solar" or "renewable."

Under the draft rule, any net metering customer who retains their RECs will have their net metering credit reduced by $.06 per kilowatt-hour. [36] This reduction is substantial and would undermine the economics of installing solar panels for all Vermonters who seek to consume solar energy. Because having the ability to consume solar energy is a key reason that many choose to go solar, the $.06 / kWh reduction would slow solar adoption.[37] Moreover, the reduction acts as a penalty on net metering customers who go solar, and in so doing, add renewable energy to the region and reduce Vermont's greenhouse gas emissions. A Vermonter's decision to consume solar electricity is an action that should be encouraged rather than penalized. By contrast, any net metering customer who transfers their RECs to the utility receives no reduction in compensation.[38]

The $.06 / kWh REC adjuster in the revised rule would reduce the current incentive for solar developers to sell their RECs outside Vermont. However, RECs from existing generators would continue to be sold outside the state under the draft rule.

To address these shortcomings of the current draft rule, we recommend that REC sales be prohibited from the net metering program given that Vermont pays these resources a premium compared to market power and, thus, should retain the environmental benefits paid for. Net

[35] Please refer to the definitions section of this document for definitions of "retain" and "retire"
[36] *Draft 2-19-2016 5.100 Rule Pertaining to Construction and Operation of Net Metering Systems*, 12 VERMONT PUBLIC SERVICE BOARD (Feb. 19, 2016), http://psb.vermont.gov/sites/psb/files/docketsandprojects/electric/Rule51002016/Draft5.100SenttoICAR%202-29-26.pdf.
[37] In re California Solar Initiative, 07-01-018 (Jan. 11, 2007) (noting that "[t]ransfering RECs from DG system owners to ratepayers would remove that potential benefit and thereby could adversely impact decisions to invest in solar and other renewable DG projects").
[38] *Id*.

metering RECs should remain bundled with the electricity generated in the net metering program. Net metering generators should receive the same net metering credit for retaining and retiring their RECs as for transferring them to the utility for retirement as both actions have the same environmental benefit and both help Vermont make progress on its greenhouse gas reduction goals.

C. Recommended Policy Changes for Net Metering Program

These are the recommended policy changes for net metering programs:

1. **Prohibit the out of state sale of RECS from net metering programs.** Implementing a requirement that all RECs from the net metering projects be retired, rather than sold out of state would have no impact on rates and would ensure that the net metering program is reducing Vermont's greenhouse gas emissions and that all net metering projects are adding to regional renewable energy deployment. Vermonters are paying a premium for these resources and should get to retain the environmental benefits for Vermont.
2. **Allow Vermonters to retain and retire their net metering RECs without penalty.** Vermonters should be encouraged to "go solar," without having their net metering credits reduced for not transferring them to the utility. When Vermonters go solar, we make progress on our state's greenhouse gas reduction goals and renewable deployment in the region increases. Net metering customers who retain and retire their RECs in order to go solar should receive the same compensation as RECs which are transferred to the utility.
3. **Improve education and communication about Vermont's renewable energy products.** Ensuring that accurate and honest representations are made about products being offered to Vermonters will help ensure Vermont's net metering program accomplishes its objectives and that consumers are not misled about the nature of the products they are purchasing. Products which do not provide solar electricity to their customers should not be described as "solar" products.

IV. THE ROLE OF RECS IN UTILITY CONTRACTED PROJECTS.

A. SPEED/Standard Offer Program

The Sustainably Priced Energy Enterprise Development (SPEED) and Standard Offer programs in Vermont have *increased* Vermont's carbon footprint because the two programs allow RECs to be sold out-of-state. The purpose behind SPEED was to promote the development of in-state renewable energy and to ensure that the economic benefits from those resources flowed to the Vermont economy.[39] SPEED established a voluntary goal of having 20 percent of total statewide electric retail sales be generated from renewable energy by 2017.[40] In 2009, SPEED was modified to include the Standard Offer program, which set fixed prices for long-term power purchase contracts for SPEED projects.[41]

Vermont enacted SPEED instead of implementing a Renewable Portfolio Standard (RPS) like every other state in New England. An RPS is a mandate that requires a state's electricity supply to include a certain percentage of renewable energy.[42] RPSs establish "classes" or "tiers" of different types of renewable energy that must be met. The main difference (and flaw) between SPEED and an RPS, is that when utilities enter into contracts with renewable energy generators, the utilities are not required to retire the RECs. Instead, they are allowed to sell the RECs to other states in the region.[43] In 2015, Act 56 established a Renewable Energy Standard (RES), repealing the SPEED program (except for the standard offer program). The RES established a goal of 55 percent renewable by 2017.[44]

Although the RES requires RECs from new renewable sources to be retired, the policy provides a perverse incentive to continue to sell SPEED RECs out-of-state. The RES allows a utility to use *any class* of tradeable renewable energy credits to meet the minimum total amounts of renewable energy.[45] In other words, because the utilities are not required to pay the price of premium renewables (those that qualify for other state RPS programs, often known as Class 1), utilities have the incentive to sell Class 1 RECs (large scale solar, wind, and biomass) out-of-state and instead procure lower value RECs that other states do not allow to count toward their programs for compliance with the RES. As a result, there is no incentive for utilities to retire the RECs from existing SPEED projects or build new renewable energy facilities to meet Tier 1 of

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[39] CLEAN ENERGY STATES ALLIANCE, ANALYSIS OF RENEWABLE ENERGY POLICY OPTIONS FOR VERMONT 15. (2011) http://psb.vermont.gov/sites/psb/files/publications/Reports%20to%20legislature/RPSreport2011/CESA%20SEA%20Draft%20Vermont%20Report%208%2026.pdf.

[40] VERMONT PUBLIC SERVICE BOARD, BIENNIAL REPORT TO THE VERMONT GENERAL ASSEMBLY PURSUANT TO 30 VT. STAT. ANN. 8004(F) 2 (2012), http://psb.vermont.gov/sites/psb/files/publications/Reports%20to%20legislature/2012%20Section%208004(f)%20Biennial%20Report.pdf.

[41] *Id.* at 3.

[42] CLEAN ENERGY STATES ALLIANCE, *supra* note 35 at 14.

[43] *Id.* at 7; VT P.S.B. Rule 4.315(A).

[44] *Hawaii and Vermont set high renewable portfolio standard targets*, U.S. ENERGY INFORMATION ADMINISTRATION (June 29, 2015), http://www.eia.gov/todayinenergy/detail.cfm?id=21852.

[45] 30 VT. STAT. ANN. 8005(a)(1)(A).

the total renewable energy requirement.[46] In 2014, SPEED resources accounted for 13 percent of Vermont's total electric energy supply.[47]

B. Recommended Policy Change for Utility Contracted Projects

Phase-in retirement of SPEED Project RECs: Utilities should be required to begin phasing-in retirement of SPEED project RECs towards the Total Renewable Energy (Tier 1) requirement of the RES. We recommend requiring utilities to retire at least 10 percent of their SPEED RECs annually.

[46] Josh Leckey, *Summary of H.40: An Act Relating to Establishing a Renewable Energy Standard*, DOWNS RACHLIN MARTIN, PLLC (June 18, 2015), http://www.drm.com/resources/summary-of-h40-an-act-relating-to-establishing-a-renewable-energy-standard.

[47] Vt. Dept. of Pub. Serv., Comprehensive Energy Plan 2016, Exhibit 9-8. Vermont Electric Energy Supply, 2014, before and after REC sales and purchases 189 (2016), https://outside.vermont.gov/sov/webservices/Shared%20Documents/2016CEP_Final.pdf (chart titled "With Adjustments for REC Holdings" demonstrates that "Uncovered Renewables" (i.e. SPEED resources) accounted for 13 percent of Vermont's total electric energy supply in Vermont.

V. THE ROLE OF RECS IN UTILITY-OWNED PROJECTS

A. Utility-Owned Projects

Vermont's utilities own a number of renewable energy projects, including wind, solar, landfill gas, wood-biomass, and hydroelectric generators. Whether a utility's ratepayers consume renewable energy from any of these projects depends on whether the utility retains and retires the RECs from their projects or whether they sell them out of state.

1. RECs Retained and Retired by a Vermont Utility

When a Vermont utility retains and retires its RECs, it procures renewable energy (from the source that produced the RECs) for its customers. Because the utility adds renewable energy to its fuel mix as a result of its decision to retain and retire the RECs, the greenhouse gas emissions of the utility's customers are reduced. Statewide greenhouse gas emissions are consequently lower and Vermont takes a step toward achieving its greenhouse gas reduction goals.

Regionally, the Vermont utility's procurement of renewable energy for its customers adds to the renewable energy being procured by other utilities in the region. Therefore, there is a net increase in renewable deployment in the region (this is the concept of "additionality").

2. RECs Sold Out of State by a Vermont Utility

When a Vermont utility sells the RECs from a renewable energy project, it no longer procures renewable energy from that project, but rather procures polluting, non-renewable energy for its Vermont customers. For example, a Vermont utility builds a wind project, provides the electricity to its customers, and separates and sells the renewable character (RECs) of that electricity to a utility in another state. The Vermont utility is then left with non-renewable electricity for its customers, which is assigned the characteristics of the "Residual Mix" by the NEPOOL GIS tracking system. [48] The residual mix consists of electricity generated from coal, oil, nuclear, and natural gas and that is what the Vermont customers consume.[49] It is therefore possible for a Vermont utility to build, own, and operate a renewable energy project and supply non-renewable electricity to their Vermont customers from the project.

When a Vermont utility sells the RECs from a renewable generation facility, Vermont's greenhouse gas emissions increase due to the decision to procure non-renewable energy for Vermonters and Vermont takes a step backward on its greenhouse gas reduction goals. If Vermont wants to consume renewable energy from its renewable projects and in so doing reduce its greenhouse gas emissions, it must retain and retire the RECs from those projects and not sell them out of state.

RECs which are sold from Vermont utilities' projects to other states for the purpose of allowing out-of-state utilities to comply with their regulatory requirements do not result in an

[48] Farnsworth, *supra* note 13, at 24.
[49] NEPOOL, NEPOOL RESIDUAL MIX (2015) (The precise characteristics of the residual mix: http://www.nepoolgis.com/public-reports/).

increase in renewable deployment in the region beyond what regulators in those other states had already required. In other words, a renewable facility would be built (perhaps in another state) regardless of the Vermont utility's action to build a renewable facility in Vermont because it is required. When the RECs are sold, the Vermont project simply meets the requirement of the other state and precludes the need for the utility in the other state to build a renewable project elsewhere to satisfy that requirement.

When Vermont utilities sell their RECs, renewable deployment in the region is lower than it would be if Vermont utilities were required to retire the RECs toward Vermont's goals. If the Vermont utility retains and retires its RECs and does not sell them out of state, the Vermont renewable facility would provide renewable energy to Vermonters and the utility in another state would build an additional renewable facility to meet its own state's requirement. There would then be two renewable facilities producing renewable energy as opposed to one. Consequently, Vermont's greenhouse gas emissions would be lower and there would be additional renewable deployment in the region.

The practice of stripping renewable energy of its environmental and renewable characteristics and providing what is left (the residual mix) to Vermont customers has resulted in Vermont's utilities having dirtier fuel mixes, including 0% Solar and Wind resources, and has contributed to increases in greenhouse gas emissions from Vermont's electric sector.[50]

3. Impact of Utility REC Sales

The practice of stripping RECs from in-state utility-owned renewable generation is the norm; however, there is not a hard number on the percentage of utility owned projects selling their RECs out of state. In 2010 GMP submitted pre-filed testimony to the Public Service Board indicating that it "presently sells most of the RECs associated with its premium renewable sources . . . to entities in neighboring states . . ." GMP indicated that it sells the RECs from the Searsburg wind plant, the Moretown landfill facility, and the McNeil biomass plant.[51] Also, GMP indicates on its website that the RECs from the Lowell wind project are being sold out of state because "Vermont law encourages our utilities to sell their RECs."[52]

Current Vermont law does not require Vermont utilities to retain and retire their RECs. Therefore, utilities have chosen to sell RECs out of state, in the process procuring non-renewable energy for Vermont customers.

The recently passed Act 56, the Renewable Energy Standard (RES), does not require utilities to retire the RECs from existing SPEED resources. Tier 1, which is 75% of the RES,

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[50] Vermont 2016 Comprehensive Energy Plan. Exhibit 9-8 page 189; VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION AIR QUALITY AND CLIMATE DIVISION. SEE ALSO VERMONT GREENHOUSE GAS EMISSIONS INVENTORY UPDATE 1990-2012 2 (2015) http://anr.vermont.gov/sites/anr/files/specialtopics/climate/documents/emissions/Vermont%20GHG%20Emissions%20Inventory%20Update%201990-2012_June%20-2015.pdf.

[51] Pre-filed Testimony of Douglas C. Smith on Behalf of Green Mountain Power Corporation, Vermont Public Service Board, p. 26 (May 21, 2010). http://psb.vermont.gov/sites/psb/files/document/2015-07-15%20GMP%20Smith%20PFT.pdf

[52] FAQs, GMP Power. http://www.greenmountainpower.com/innovative/wind/faqs/ (last visited Feb. 24, 2016).

includes a low-alternative compliance payment mechanism of 1 cent per kWh which utilities can pay "in lieu of purchasing renewable energy."[53] As a result, utilities are unlikely to retire their RECs from their existing SPEED resources toward compliance with the RES. RECs from Vermont's solar, wind and biomass energy projects can be sold for prices significantly above the alternative compliance payment to utilities in other states.

GMP has indicated that "present market forecasts indicate that the RECs from these sources (GMP's renewable supplies) will likely command prices well above the Tier 1 Alternative Compliance Payment for some time, indicating that GMP's least-cost approach may be to continue to sell the RECs from these sources (and apply the revenues against GMP's power costs) rather than retire them for RES Tier 1 compliance." [54] According to GMP, there is also a "substantial gap[55] for Tier 1 compliance over time, assuming that all of the RECs associated with sources that are eligible for premium REC markets in other states (and not needed for RES Tier 2) will be sold."[56]

4. Green Pricing Programs: Cowpower

Utilities can offer their customers the option to purchase renewable energy beyond the amount in the utility's overall fuel mix through green pricing programs. One example of a green pricing program is GMP's Cowpower program. This program allows GMP customers to purchase renewable electricity generated from cow manure. GMP has indicated that RECs from the Cowpower program are retired.[57]

The customer who purchases the green power in a green pricing program such as Cowpower has the right to make all renewable claims about the power they are purchasing. "As only one party can claim a discrete amount of renewable energy, in this case the green pricing customers (and not the general ratepayers) have paid for the renewable energy generation by their purchase of the green pricing product." [58] A utility cannot therefore count the power in a green pricing program toward Vermont's Renewable Energy Standard, in its fuel mix, or as part of its other customers' power supply. [59] Currently, GMP does not count the renewable energy from the Cowpower program in its fuel mix. To avoid double counting when the renewable energy standard takes effect in 2017, GMP should not include the renewable generation from the Cowpower program.[60]

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[53] 30 V.S.A. §8004(d) and 30 V.S.A. §8005(a)(4)(A)(i).
[54] Smith, *supra* note 50, at 15-16.
[55] PSB VERMONT, GWP-DCS-4 CHART GREEN MOUNTAIN POWER PROJECTED RES TIER 1 RESOURCES VS. REQUIREMENTS. http://psb.vermont.gov/sites/psb/files/document/Exh.%20GWP-DCS-4%20RES%20Tier%201%20Gap%20Chart.pdf (last visited Feb. 24, 2016).
[56] Smith, *supra* note 50, at 15-16.
[57] Email from David Dunn, February 19, 2016.
[58] CENTER FOR RESOURCE SOLUTIONS, BEST PRACTICES IN PUBLIC CLAIMS FOR GREEN POWER PURCHASES AND SALES 8 (Version 1.1 2010). http://www.green-e.org/docs/energy/Best%20Practices%20in%20Public%20Claims.pdf
[59] K. S. CORY, RENEWABLE PORTFOLIO STANDARDS IN THE STATES: BALANCING GOALS AND IMPLEMENTATION STRATEGIES 5. http://www.nrel.gov/docs/fy08osti/41409.pdf.
[60] Email from David Dunn, February 19, 2016.

B. Disclosures Regarding Utility-Fuel Mixes and Owned Generation

It is critical for policymakers and the public to have an honest understanding of the sources of Vermont's electricity and the real environmental consequences associated with the current electric supply being consumed in our state. The fact that 0% of the electricity Vermonters consume comes from wind and 0% comes from solar may surprise many readers of this report.[61] It may also be a surprise that the majority of Vermont's electricity comes from non-renewable sources and that Vermont's greenhouse gas emissions from the electric sector have approximately doubled in the past decade.

One of the reasons that popular, but inaccurate perceptions about the renewability and sustainability of Vermont's electric supply have taken hold is that many utilities have not been and are not being transparent in their representations to customers and members about the sources of their power. Utilities should clearly represent whether their customers receive renewable electricity from utility-owned renewable facilities as well as communicate honestly about the nature of their total electric supply (fuel mix) to their customers.

1. Fuel Mix Representation

A number of Vermont utilities' communications raise concerns regarding the characteristics of the electricity they are supplying to their customers and members. For example:

- The Washington Electric Coop's 2015 Annual Report shows the majority of its electricity as being sourced from the Coventry Landfill Gas project even though the RECs from Coventry are being sold and WEC members are not, in fact, receiving their electricity from landfill gas.[62] The chart in the report is misleading because it does not take REC sales into account – it should depict WEC's fuel mix after REC sales. Even though the chart's title implies that the chart depicts the sources of electricity that WEC members consume, due to REC sales, the chart is inaccurate.

- On its website, the Vermont Electric Cooperative depicts its energy portfolio before REC sales, which is misleading because when RECs are sold, a utility's fuel mix changes.[63] VEC's energy portfolio should not be reported without taking REC sales into account. If, for example, VEC sells its wind RECs, its customers no longer receive wind energy (they receive the residual mix). VEC should not state in its table that its members receive 15% of their power from wind energy if they do not.

[61] Vermont Comprehensive Energy Plan 2016 Exhibit 9-8 p.189.
[62] WASHINGTON ELECTRIC COOP, CO-OP CURRENTS 7 (Vol. 76, No. 3 2015). http://www.washingtonelectric.coop/wp-content/uploads/2015/01/April2015.pdf
[63] Vermont Electric Cooperative, *VEC's Energy Portfolio*, http://www.vermontelectric.coop/energy-portfolio (last visited Feb. 24, 2016).

- On its website, Green Mountain Power does display its fuel mix after REC sales, however, it shows 53% of its electricity coming from "market purchases." [64] The term "market purchases" is a misleading way to characterize the non-renewable energy in GMP's portfolio. This "market purchases" category is the residual mix consisting of coal, oil, nuclear, and natural gas. Green Mountain Power should break out the percentage of its electricity by source so that consumers can have an honest understanding that the majority of GMP's electricity supply is non-renewable and know specifically how their power is generated.

2. Communicating about Utility-Owned Renewable Generation Projects

When a Vermont utility sells the RECs from a utility-owned renewable project, the utility cannot state or imply that its customers will receive renewable electricity from the facility. Without ownership of the RECs, the utility cannot state or imply that its decision to build a renewable energy project resulted in any environmental benefits as that right was sold when the utility sold the RECs.

> *If a marketer generates renewable electricity but sells renewable energy certificates for all of that electricity, it would be deceptive for the marketer to represent, directly or by implication, that it uses renewable energy.*[65]

According to the Federal Trade Commission, if a utility sells the RECs from a renewable energy project, it "carries a particular burden to inform its customers that they are no longer receiving renewable electricity."[66]

i. Kingdom Community Wind

Green Mountain Power's communications regarding the Kingdom Community Wind project (KCW) present a case study in the need for increased transparency in utility communication about the electricity utilities are providing to Vermonters from their projects. The KCW project is a 63MW wind facility in Lowell owned by Green Mountain Power and the Vermont Electric Cooperative that was constructed in 2012.

A visitor to Green Mountain Power's website could be forgiven for getting the impression that the Kingdom Community Wind project provides wind energy to Vermonters. The FAQ page asks "Will the power stay in Vermont?" And the answer states "YES! Every single kilowatt hour of electricity will be used by Green Mountain Power customers and Vermont Electric Cooperative members."[67] Nowhere does GMP state that Vermonters are not, in fact, consuming wind energy from the project. The page requires a detailed understanding of RECs in order to ascertain this fact, an understanding which the general public does not have.

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[64] Green Mountain Power, *Fuel Mix*, http://www.greenmountainpower.com/fuel-mix/ (last visited Feb. 24, 2016).
[65] 16 C.F.R. §260.15(d).
[66] FTC Letter Regarding Petition Regarding Deceptive Marketing Practices Of Green Mountain Power in the Marketing of Renewable Energy to Vermont Consumers. February 5th, 2015 https://www.ftc.gov/system/files/documents/public_statements/624571/150205gmpletter.pdf
[67] FAQs, GMP Power. http://www.greenmountainpower.com/innovative/wind/faqs/ (last visited Feb. 24, 2016).

Because the Lowell wind project sells the RECs, the project is providing Vermonters with non-renewable electricity (the residual mix of coal, oil, nuclear, and natural gas), not renewable energy. The Center for Resource Solutions provides guidance for how a utility should communicate when it sells the RECs from a renewable project:

A utility is selling the RECs from its wind farm to a REC marketer. The utility wants to advertise its commitment to the environment and launches an ad campaign with language about green power and pictures of the wind farm. The utility also says that it has invested in renewable energy. In this example, the customers (and potential customers) of the utility are under the false impression that they are purchasing renewable energy for their homes or businesses. In fact, the claims for all of the renewable attributes of that power were transferred to the marketer with the RECs. To avoid double-counting and false advertising, the utility must not advertise that they supply green power. If the utility discusses the generation of renewable energy it must also disclose that it is selling off the RECs from the renewable facility ***and that the wind power is not part of the system mix provided to utility customers.***[68]

If GMP did not sell its wind RECs, its customers would receive 9% of their electricity from wind, rather than the 0% they are receiving today.[69]

Additionally, utilities should refrain from describing REC sales as an "incentive" for renewable energy. REC sales are not an "incentive." When a utility sells its RECs, it gives up the renewable character and environmental attributes of its customers' electricity. That is not typically how an incentive works. Moreover, if the utility does sell its RECs, less renewable energy is added to the region than if the utility did not, so it is in fact best for renewable energy deployment if the utility retains and retires its RECs rather than selling them.

C. Recommended Policy Changes for Utility-Owned Projects

1. Phase-in retirement of RECs from utility-owned Projects.

RECs which are sold from Vermont's utility-owned projects increase Vermont's greenhouse gas emissions and do not result in Vermont contributing to an increase in renewable deployment in the region. Therefore, Vermont should phase in the retirement of RECs from utility-owned projects so that Vermonters can benefit by consuming renewable energy from the renewable projects located in-state.

2. Improve communication and disclosure about utility-owned projects and their outcomes.

Utilities should be required to communicate accurately and transparently with the public regarding the nature of the electricity they are providing. All communications regarding generation sources should be accurate (i.e. tables, charts, and text should all depict fuel mix after

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[68] CENTER FOR RESOURCE SOLUTIONS, BEST PRACTICES IN PUBLIC CLAIMS FOR GREEN POWER PURCHASES AND SALES 10 (Version 1.1 2010). http://www.green-e.org/docs/energy/Best%20Practices%20in%20Public%20Claims.pdf

[69] Green Mountain Power, *Renewable Energy Credits*, http://www.greenmountainpower.com/fuel-mix/index/renewable-energy-credits/ (last visited Feb. 24, 2016).

REC sales, not before), and charts depicting fuel mix should include the actual sources from which the electricity is generated as opposed to broad categories that obscure the nature of the electricity supply. Additionally, utilities should be required to disclose the generation sources (by percent) in their electric supply on customer bills and on the utility's website.

State law should prohibit utilities from stating or implying that a renewable facility provides its customers with renewable electricity or any of the environmental attributes of that electricity if the utility sells the RECs. All descriptions and mentions of a utility-owned renewable generation facility by the utility should disclose that the utility's customers do not receive energy from the renewable generation facility if the RECs are sold from it. This includes representations that the utility makes to the media, in letters, on its website, and in all other communications regarding its renewable facilities. In addition, to improve transparency for customers' utilities should be required to regularly disclose sources of Vermont utility power and its environmental attributes on customer bills. We require food products to include disclosure of GMOs and we should similarly provide environmental labels for our electricity usage on customer bills.

VI. OVERALL IMPACT OF SELLING RECS FROM ALL PROGRAMS

Simply put, when Vermont sells its RECs, it gives up the renewable character of its power supply and increases its consumption of non-renewable energy. When Vermont retains and retires RECs, statewide consumption of renewable energy increases and Vermont makes progress on its greenhouse gas reduction goals.

Regardless of whether RECs are sold by a utility-owned renewable project, by a net metering project, or by third party developers, when Vermont sells its RECs, its policies and projects do not increase regional renewable energy deployment beyond what would have occurred as a consequence of the renewable energy requirements of other states.

If Vermont policymakers want to make meaningful reductions in Vermont's greenhouse gas emissions and increase total renewable deployment in the region, they must design and implement policies that require RECs to be retired in Vermont rather than sold. If a policy does not require RECs to be retired in Vermont, it will not reduce Vermont's greenhouse gas emissions or increase regional renewable deployment.

A. The Overall Impact of Selling RECS

Vermont's REC sales have contributed to increasing greenhouse gas emissions from Vermont's electric sector, according to the Vermont Agency of Natural Resources.[70] While ANR does not specifically characterize the magnitude of the impact of REC sales in its Greenhouse Gas Inventory Update, we estimate that Vermont's electric-sector greenhouse emissions, which have approximately doubled over the past decade,[71] would be at least 24% lower if Vermont did not engage in the practice of selling the RECs from its renewable projects outside the state.[72] Rather than the majority of Vermont's electricity being supplied by non-renewable sources, the majority of Vermont's electricity would be renewable if Vermont did not sell its RECs.[73] It is a direct consequence of REC sales that Vermont gets 0% of its electricity from wind and 0% from solar.[74]

Renewable electricity can be procured in the net metering program at no additional cost to ratepayers by requiring that all RECs be retired in Vermont. Procuring renewable energy from utility-owned renewable projects and SPEED projects may come at increased cost relative to procuring non-renewable energy for Vermonters. If Vermont wants to consume the cheapest power on the grid, it will consume dirty power and will increase its greenhouse gas emissions. If Vermont is serious about achieving its greenhouse gas reduction goals and legitimately adding renewables to the region, it must be willing to acquire electricity from renewable sources.

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[70] VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION AIR QUALITY AND CLIMATE DIVISION. VERMONT GREENHOUSE GAS EMISSIONS INVENTORY UPDATE 1990-2012 2 (2015). http://anr.vermont.gov/sites/anr/files/specialtopics/climate/documents/emissions/Vermont%20GHG%20Emissions%20Inventory%20Update%201990-2012_June%20-2015.pdf.

[71] *Id*.

[72] Vermont Comprehensive Energy Plan 2016 Exhibit 9-8 p.189.

[73] *Id*.

[74] *Id*.

VII. OVERALL POLICY RECOMMENDATIONS

- Recommended policy changes to the net metering program:
    - 1. Prohibit the out of state sale of RECs from net metering programs and require that all RECs from net metering projects be retired in Vermont.
    - 2. Allow Vermonters to retain and retire their net metering RECs without penalty, but with full payment for the benefit of their local greenhouse gas reductions
    - 3. Improve communication about Vermont's renewable energy products.
- Recommended policy changes for utility contracted and utility-owned projects:
    - 1. Establish a program to phase in the retirement of RECs from former SPEED projects.
    - 2. Encourage the retirement of RECs from utility-owned projects
    - 3. Improve transparency and disclosure about projects and their outcomes in Vermont's Renewable Energy Sector.
        - Require utilities to report their fuel mix on customer bills and on their websites in such a way that Vermont's electric consumers are not misled about the sources of their power.
        - Require utilities to disclose, when RECs are sold from a utility-owned renewable energy project, that customers and members no longer receive renewable electricity from the project.
        - Prohibit third-party solar providers from marketing a product as "solar", "renewable", or otherwise environmentally beneficial if the product does not provide solar electricity to a customer who purchases it.
- Recommended policy changes for regional RECs sales:
    - Vermont must acquire electricity from renewable resources in order to achieve its greenhouse gas reduction goals.

VIII. CONCLUSION

In conclusion, renewable energy credits from renewable energy that is subsidized and promoted by Vermont renewable energy programs should be retired within the state. Without retiring the RECs from net metered projects and existing renewable resources, there is no hope of reaching Vermont's renewable energy goals, customers will continue to be misled about the source of their energy, and electric sector greenhouse gas emissions will continue to increase in Vermont. Currently there is a significant disconnect between Vermont's aspirations to reduce greenhouse gas emissions and the policies that have been implemented which are necessary to achieve Vermont's greenhouse gas reduction goals. In order to achieve these renewable energy goals, the Vermont Legislature should implement policy changes by considering the policy recommendations presented in this report.

IX. DEFINITIONS

- Bundled: RECs are bundled when they are included with the sale of unit of renewable electricity.

- Community Solar Array: A solar-electric system that provides power and/or financial benefit to multiple community members.

- ISO New England: The independent, not-for-profit company authorized by the Federal Energy Regulatory Commission to operate the power system, administer the wholesale electricity markets, and perform power system planning.

- Net Metering Credit: Monetary credits applied to a customer's electric bill by a utility based on the energy production of a net metering generator. Net metering credits are distinct from RECs and do not embody ownership of the renewable character or environmental benefits of electricity.

- New England Power Pool Generation Information System (NEPOOL GIS): Issues and tracks certificates for all MWh of generation and load in the ISO New England control area.

- Renewable Energy Credit: A Renewable Energy Credit (REC) is the property right to all of the environmental attributes of a unit of electricity produced by a renewable source. The environmental attributes include the renewable characteristic of that electricity and all environmental benefits, including the avoided emissions and impacts to air, water, or soil from the displacement of other non-renewable energy generation.

- Renewable Portfolio Standard (RPS): A renewable portfolio standard is a regulatory requirement that a utility procure a specific percentage of its electricity from qualifying renewable sources by a specific date.

- Residual Mix: The average attributes of all unassigned Certificates of electricity created during the NEPOOL GIS Trading Period, mostly generated from the dirty resources such as coal, oil, nuclear, and natural gas and virtual no renewable energy.

- Retained: Retained RECs are not transferred to the utility and may be retired or sold separately from the associated unit of renewable energy.

- Retired: A REC is retired when the certificate has been used and claims have been made regarding its associated environmental attributes or characteristics.[75]

- Standard Offer Program: Set fixed prices for long-term power purchase contracts for SPEED projects.

[75] U.S. EPA. *REC Tracking*. http://www3.epa.gov/greenpower/gpmarket/tracking.htm (last visited Feb. 24, 2016).

- Sustainably Priced Energy Enterprise Development Program (SPEED): Established a voluntary goal of having 20 percent of total statewide electric retail sales be generated from renewable energy by 2017. SPEED is not a Renewable Portfolio Standard.

- Unbundled: RECs are unbundled when they are sold separately from the unit of renewable electricity.

- Vermont's Renewable Energy Standard (RES): Requires Vermont utilities to buy and sell more renewable electricity beginning in 2017.