

Vermont Clean Energy Development Fund Multi-year Strategic Plan

A Strategic Mission

The mission of the Clean Energy Development Fund is to serve the citizens of Vermont by increasing the local supply and utilization of distributed, small-scale, community-supported electrical and thermal renewable energy, while targeting related economic development advantages.

Creating a Different Type of Strategic Plan

The Clean Energy Development Fund's (CEDF) mission statement was developed by an examination of its past activities, its legislative purpose, and view of the future. Similarly, in creating this multi-year strategic plan the CEDF looked back at the 2013 strategic plan, past annual plans, and funding activities, then conducted an assessment of Vermont's clean energy landscape, and examined the funding available to the CEDF.

In going through these steps it was clear that the last item, funding availability, is a critically limiting factor on CEDF's capability to make meaningful progress towards its goals. The CEDF is in a different funding situation than it was ten or five years ago when the past strategic plans were created. Since 2014 the CEDF has not secured a new funding source. The only incoming funds have been the principle and interest payments from past loans made. While the CEDF has a ~\$3.9M balance¹ almost of all of that is obligated, leaving few program or budget decisions to be made over the next several years.

Given its financial situation, the CEDF has created a different type of strategic plan, one that is more of a strategic framework, to be used as needed. Past CEDF strategic plans looked forward five years. Because CEDF resources are declining, with no new revenue sources yet committed, this is more appropriately termed a multi-year plan, designed to inform decision making regarding the remaining funding available to the CEDF.

Over the next couple of years the CEDF may be powered down and preserved awaiting possible new funding. During the next two years, and beyond if there is funding, the CEDF will use this strategic framework in building future annual budgets, programs, and priorities as funding necessitates. The CEDF may adapt this plan, if needed, after annual reviews of market conditions, funding levels, program evaluations, public/stakeholder communications, and any new related legislation or policies enacted.

Funding Situation

The CEDF no longer has a funding source. Incoming funds since 2014 have only consisted of a few small grants, loan repayments, and interest. As of December 31, 2017 there was a balance of \$1.3

¹ As of 12/31/2017

million of outstanding CEDF loans and another \$1.2 million in outstanding loans funded with American Recovery and Reinvestment Act (ARRA) dollars granted to the CEDF in 2009. The repayment of these loans and interest earned on the CEDF fund balance will equal roughly \$275,000 of CEDF and \$175,000 of ARRA-CEDF funds in fiscal year 2019, a total of ~\$450,000.

Figure 1 shows the history of annual CEDF revenue and the amount of annual expenditures. Revenue has declined every year since fiscal year 2014 and that will be the case for fiscal year 2018 as well.

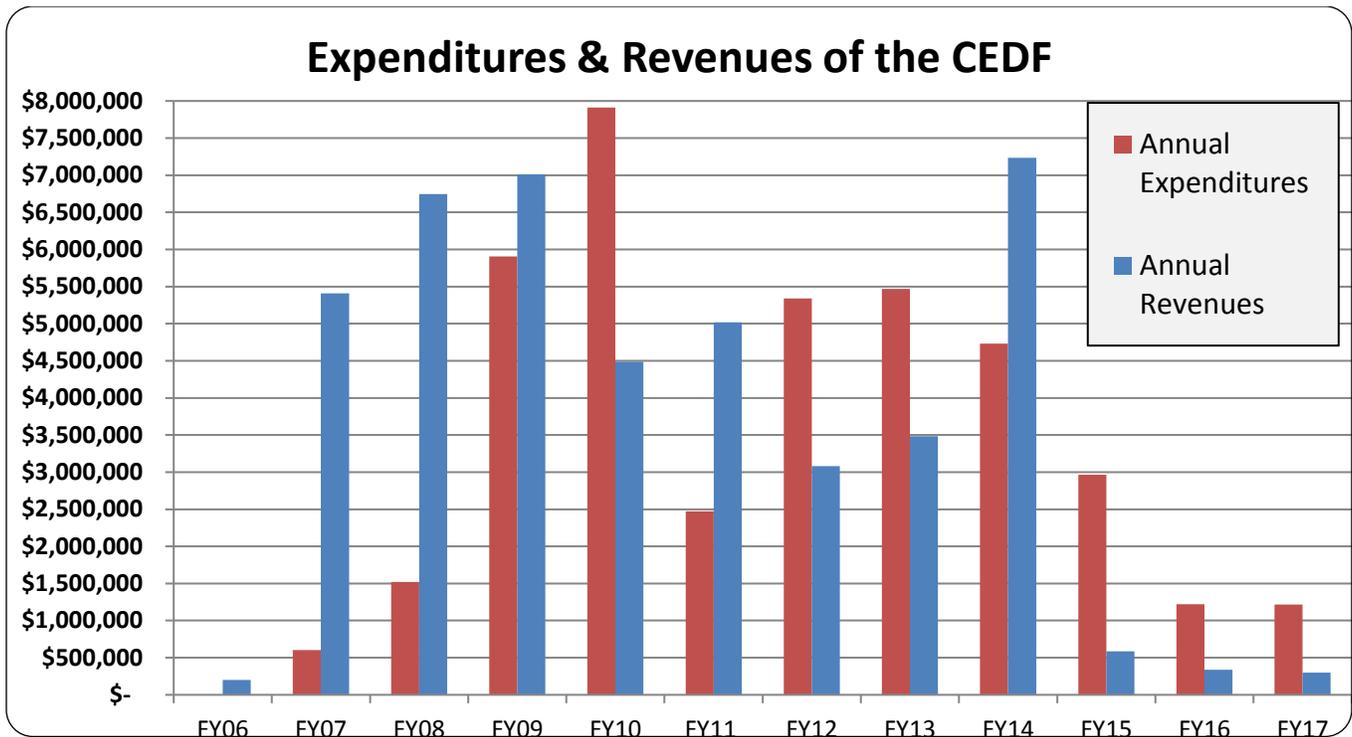


Figure 1. CEDF’s Annual Fiscal Year (FY) Revenue and Expenditures

As the loans are paid off and the CEDF’s cash balance shrinks there will be little income from the loan repayments and interest for the CEDF to operate incentive programs. Within the next two to three year timeframe the current balance of CEDF funds (eighty-nine percent of which is already obligated), will be fully expended. Within five years the annual incoming loan repayments and interest will be less than CEDF’s current budget for administrative costs.

CEDF & Vermont Energy Policy Background

When planning for CEDF’s future it is important to understand CEDF’s history and the dramatic changes that happened in Vermont’s energy landscape over the last decade since the CEDF was created.

The CEDF was created in 2005 with the purpose of developing local renewable energy generation in support of the State’s goal of transitioning away from nuclear power dependency. When the CEDF was created, over 30% of Vermont’s electricity use and 100% of CEDF’s funding came from Entergy Vermont Yankee’s (EVY) nuclear generation plant in Vernon, Vermont.

The grants and incentives that the CEDF started in 2006 were spread broadly amongst many renewable electricity producing technologies, with a priority on projects that could produce the most renewable electricity. The primary goal was to increase the amount of in-state renewable energy generated to reduce the State's dependency on the EVY plant by the time the EVY plant's license expired in 2012.

The creation of the CEDF was one of many actions the State has taken to increase local renewable energy generation. Vermont had enacted net metering and set goals for new renewable energy when the Legislature created the CEDF, but they didn't stop there. The Legislature then created the Standard Offer program and later expanded it. In the years following, Vermont's net metering law was amended several times to increase distributed renewable energy production. In addition, several pronounced changes to the Vermont clean energy landscape during the last five years impact CEDF's current strategic planning:

- At the end of 2014 the EVY nuclear power plant shut down permanently.
- In 2015, the state passed the Renewable Energy Standard (RES), establishing a requirement that by 2032 Vermont's electrical distribution utilities source at least 75% of kWh sales from renewable energy and achieve the equivalent of 12% of kWh sales in non-electric fossil fuel savings.
- In 2016, the State's Comprehensive Energy Plan (CEP) reaffirmed, solidified, and provided more specifics on reaching the goal of meeting Vermont's total energy demand with 90% renewable energy by 2050.
- In 2017 Governor Scott, through executive order, formed the Climate Action Commission to identify actions to achieve the CEP's greenhouse gas (GHG) emission reduction goals.
- Vermont's most recent GHG accounting shows that there is little opportunity to meet the State's GHG emission reduction targets by focusing on reducing the greenhouse gas emissions in electricity production. With an electric grid that already produces few GHG emissions and that is becoming more and more renewable, there are far greater GHG emission reduction opportunities in the heating and transportation sectors.
- Local and regional markets for low-grade wood have declined, with the continued closure of pulp and paper mills across the Northeast. This has resulted in greater interest and need for CEDF's advanced wood heating incentive programs that generate demand for low-grade wood.
- Vermont's Efficiency Utilities have begun to use thermal process fuel funds to incentivize thermal energy production as well as thermal efficiency measures, such as offering incentives for wood pellet boilers.

Through all the renewable energy policy changes and developments the CEDF has successfully adapted its programs and policies to maximize its impact in fulfilling its mission consistent with State policy and goals. The CEDF benefits from being located within the Public Service Department as renewable energy policies and programs are being developed and debated. This allows the CEDF to effectively integrate evolving Vermont renewable energy policies into its programs. This also enables the CEDF to better leverage its incentive dollars to maximize the value it contributes to progressing toward our State energy goals.

The CEDF has developed the clean energy expertise needed to help Vermont meet its statewide goals. The CEDF staff, CED Board, and the Public Service Department staff, have built up strategic

market knowledge, partnerships, and understanding of the local and regional clean energy markets that it uses to develop incentives and programs in support of the CEDF vision and goals. The current CEDF Fund Manager has eight years of experience with the CEDF and another ten years building knowledge and expertise in the Vermont renewable energy sector.

The CEDF also is supported and strengthened tremendously by the PSD in which it is housed. The PSD has a dedicated and knowledgeable staff that includes two prior CEDF Fund Managers and experts in many energy fields that are a resource to the CEDF. In addition, the PSD's regulatory role can be helpful to the CEDF as it tries to maximize coordination for a greater collective impact on improving the clean energy economy.

The CEDF is strengthened by oversight provided by the Clean Energy Development Board. The Board, appointed by the Legislature and the Public Service Department, brings diverse experience and expertise to their responsibility for overseeing the Department developed CEDF plans budgets and program designs.

Three Planning Pillars

The CEDF endeavors to use its structural strengths, position, experience, and knowledge to create plans and programs based upon three foundational pillars:

1. To meet the State's clean energy goals Vermont needs an entity to focus on and coordinate renewable energy market development
2. Vermont's energy future must include significant contributions by local and distributed thermal and electrical renewable energy generation.
3. Renewable energy development should be pursued with an eye toward obtaining the economic development benefits that contribute to improving the prosperity of Vermont citizens.

It is important to note that there are other organizations active in aspects of the clean energy economy where the CEDF is not active. These organizations are focused on specific sectors of the clean energy economy and the CEDF should continue to work in coordination with them. For example, Efficiency Vermont continues its successful work and focus on energy efficiency, and the electric distribution utilities continue to focus on the electric grid, power supply, and strategic electrification through Tier Three of the Renewable Energy Standard.

Vermont could import sufficient renewable energy to meet its clean energy goals, but not without sacrificing control and local economic benefits and not without growing more dependent on entities beyond Vermont's borders. Imported renewable energy is likely to remain a part of the State's clean energy strategy, but Vermont's Comprehensive Energy Plan aims to reduce dependency on imported energy (electrical or thermal) and related technological expertise. Importation of energy reduces the number of creative catalysts that spring from having local firms work on local installations. Distributed in-state renewable generation must contribute to Vermont's energy supply in order to maximize economic development and to develop local markets for products and services that the increasing use of clean energy technologies requires.

CEDF's promotion of renewable energy with targeted economic development benefits includes attention to the affordability of clean energy and the distribution of the local economic benefits gained. The clean energy sector can provide needed economic development to the Vermont economy while also supplying energy to meet the State's requirements and goals.

The CEDF's recently adopted priority on increasing the use of advanced wood heating not only contributes to meeting renewable energy and emissions reduction goals, but also contributes to improving long term heating affordability, and supporting Vermont's working forested landscape, which is a critical sector of the State's economy.

Overall, during the past ten years the CEDF has been successful in transforming markets and adapting to market information and lessons learned to navigate programs in support of the most promising clean energy technologies and sectors. If given the opportunity in the years ahead, the CEDF will look to replicate the strategic role it played in Vermont's solar photovoltaic (PV) market advancement.

The PV market in Vermont was transformed into a self-sustaining market, measured by the number of installations, their diversity, and the extensive network of local solar companies in the market. The CEDF was an early supporter of PV through continual market development and evaluation. As the PV market matured and the State enacted regulatory rules and policies for the PV market the CEDF decreased and narrowed its monetary incentives for PV until it withdrew from the market in 2015. By that time the CEDF determined the PV market had matured to the point where it could grow without CEDF's incentives.

Building on these three pillars the CEDF adopted the following goals and strategies to guide its work in developing a clean energy future that benefits all Vermonters.

Goals

In support of the mission of increased distributed, small-scale, community-supported thermal and electrical renewable energy generation, the CEDF will be guided by four goals:

1. Create Economic development via the clean energy economy
2. Increase the cost effectiveness of clean energy
3. Support Vulnerable Vermonters
4. Reduce negative impacts of Vermont's energy use and generation on the environment

Figure 1 shows graphically the interaction between CEDF's Vision and its four supporting goals.

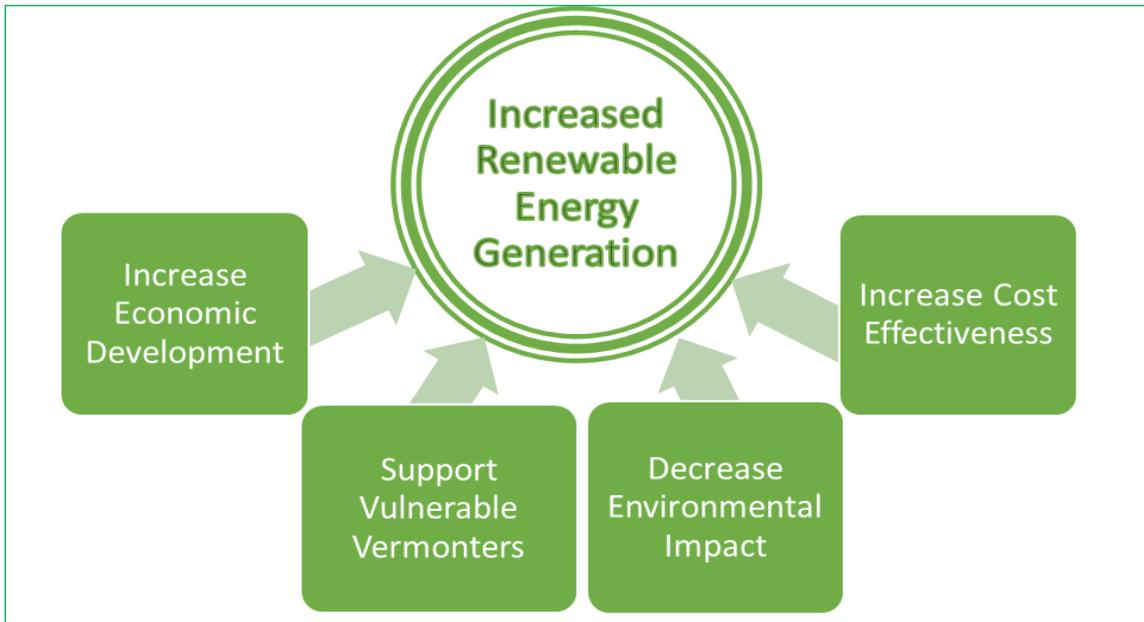


Figure 1, CEDF's four goals in support of its vision.

Strategies

The CEDF will use the following nine key strategies in designing and implementing its programs to advance CEDF's mission and meet its goals:

1. Concentrate on un-regulated energy markets. Vermont has been successful in creating a regulatory framework, policies, and a plan to move its electric supply to be at least 75% renewable. Comparatively, there has been little attention directed at how to transition the un-regulated markets for heating and transportation fuels from fossil fuel sources to increased use of renewable energy. The CEDF will seek to find un-regulated distributed energy markets where the CEDF's efforts can help overcome barriers to increased renewable energy.

There is risk of duplicating efforts with other entities like Efficiency Vermont and the electric utilities that are active in such markets. The CEDF will be careful not to create program inefficiencies for the CEDF and others promoting clean energy in un-regulated markets.

Although the CEDF is now focusing on unregulated heating energy markets, the CEDF may return to addressing some aspect of the regulated electricity market if conditions justify action. The CEDF might find valuable opportunities to promote renewable electricity technologies, or to promote electric vehicles through the regulated electric markets, but is now focusing its efforts in the un-regulated energy markets where there are fewer market interveners and less mature markets for renewable energy, making CEDF's efforts more valuable and effective.

2. Focus on a select market/technology. There are many undeveloped renewable energy technologies in Vermont's unregulated energy markets that the CEDF could work on. However, a scatter shot approach trying to spread CEDF's resources amongst all such technologies has proven to result in an ineffective deployment of funds that does not maximize progress towards

goals. By focusing its attention on a technology, the CEDF can more successfully catalyze progress that will mature the targeted technology/market and meet CEDF's four goals.

With adequate funding the CEDF could target more than one technology or market sector, but ideally additional markets targeted would be strategically aligned and there wouldn't be more than two targeted markets. However, targeting markets doesn't prohibit the CEDF from taking advantage of special opportunities to participate in highly leveraged activities that are not in a targeted market. For example, if funds become available that require little of CEDF's resources but will benefit clean energy in Vermont, then the CEDF should take advantage of such opportunities and work to link them strategically to CEDF's core activities.

3. Transform emerging markets. The CEDF seeks to use its expertise and funds to stimulate local markets for targeted renewable energy technologies that are in early stages of development, are facing barriers to further development, and have potential for economic growth within Vermont. Given its limited size, scope and funding the CEDF will not commit resources to promoting technologies that are still undergoing primary research and development of prototypes. Nor can the CEDF carry a promising technology to market maturity on its own. Rather, the CEDF will focus on technologies that have advanced beyond the early stages of development (i.e., pre-commercialization) but have not yet reached market maturity.

The CEDF will work to remove barriers to help accelerate market maturity to the point that CEDF incentives or other CEDF interventions are not needed. The goal is to have targeted markets mature to the point that they have robust customer demand, reliable and vibrant supply chains, effective and stable policy frameworks, and access to low-cost or market rate financing.

4. Coordinate and collaborate across State government and beyond. There are several State agencies/departments working on projects that are interconnected with the goals and mission of the CEDF, in and out of the un-regulated energy markets discussed above. The CEDF will work to ensure that multiple players do not inadvertently dilute or diffuse the progress that could be made through cooperative action. The CEDF will seek to collaborate with these agencies to form symbiotic working relationships to maximize the collective impact on CEDF's and other State agencies' goals. When the CEDF's goals do not line-up perfectly with other State goals the CEDF will coordinate with others and avoid working at cross purposes to ensure that CEDF initiatives serve state energy goals.

Efforts to collaborate and coordinate extend to the private sector, including businesses and trade associations in the clean energy sector as well as to municipalities and other entities working on clean energy initiatives in Vermont.

5. Leverage other projects and programs. When there are other programs and projects that align strategically with the CEDF, the Fund will attempt to leverage its resources to increase the progress that the separate programs could have acting separately. The cooperation described in the previous strategic objective is a method for leveraging other programs.

The CEDF will actively engage with other agencies and private sector entities involved in renewable energy generally, and in CEDF's targeted market specifically, so that it is aware of

programs and projects that are happening and barriers being encountered. The CEDF should be nimble and flexible so that when special high value opportunities arise they are not missed.

6. Focus on projects that have community support. The CEDF will be most effective if the programs and projects supported are in sync with local community views and plans. While there is a growing demand from Vermonters for clean energy solutions that will address climate change, increase our energy security and sustainability, and return financial benefits directly to local citizens, effective action requires community support. Vermont's strong history of community, local control, and desire for greater energy independence will be woven into the structure of CEDF's programs.

Without local interest in, and support of, projects that generate renewable energy it will be very difficult to meet the State's renewable energy goals without importing energy from out of state and/or country. Local ownership, investment, and involvement in renewable energy projects will be the most successful and helpful way to maximize benefits and strengthen local communities.

CEDF commits to build support for its programs. The CEDF is committed to working through difficult issues with communities in a thoughtful way. The CEDF should listen to Vermonters and evaluate their claims against the benefits to be obtained from local projects and alignment with the CEDF mission and goals. The presence of opposition alone should not be sufficient reason for the CEDF to not support a project that otherwise has broad community support.

7. Allow low-income Vermonters to access, and benefit directly from, renewable energy.
 "Growing the economy, making Vermont more affordable, and protecting the most vulnerable. We are laser-focused on these priorities and they guide us in everything we do."
 -Governor Phil Scott

Aligned with Governor Scott's Vision, the CEDF has been working to make renewable energy more affordable. The CEDF is committed to looking for strategic opportunities to build markets with low- and moderate-income Vermonters. There is an advantage to building a market from the grassroots up or the margins in. Concentrating on low-income and marginal market participants can be more challenging and programmatically costly, but markets transformed within these communities will be more resilient, successful, and in the long term will produce more local benefits.

8. Learn from past activities. The CEDF remains committed to learning from its experience by investing time and resources to evaluating its programs and performance and then acting to correct mistakes and build upon successes. The CEDF will study the results of the projects it supports, looking for lessons that could help the CEDF and/or other entities. The CEDF will also contract with third party evaluators to report back to the CEDF on the value of CEDF programs, projects, and other expenditures measured against the goals of specific projects as well as the mission and goals of the of the CEDF. Evaluations will be of the CEDF's program administration as well as the impacts of the programs.

The CEDF will seek to gather lessons learned, not only from its own activities but also from others in the clean energy sector in Vermont and across the country.

9. Maintain low administrative costs. Since its founding, the CEDF has successfully deployed over \$43 million of State funds (roughly \$36 million directly from EVY) and just under \$30 Million in federal Department of Energy funds. Throughout the \$73 million of expenditures the CEDF has been successful in keeping its administration costs very low – under 5% of expenditures annually. CEDF will continue to operate with minimal staff and keep direct CEDF administration low. CEDF’s low administrative expenses and indirect costs are a strength that the CEDF will maintain. Ensuring that the CEDF does not create unneeded bureaucracy that could become a barrier to its own success will be kept at the forefront of CEDF budgeting decisions.

While the goals and strategies listed above may be applied independently, they should be considered interdependent and in congruence with the CEDF Mission. Ideally, the CEDF will use all nine strategies when designing programs and plans in support of its four goals and in pursuit of its Mission.

Action & Revisions to the Strategic Plan

The CEDF will act on this strategic plan when making decisions on its annual plans, program designs, and annual budgets. The Mission, Goals, and Strategies embedded will be used as guides to maximize the benefits of CEDF actions.

The fiscal year (FY) 2019 Program Plan and Budget will be built from this strategic document. Before the CEDF creates the FY 2019 plan it will evaluate its current activities, as well as those planned for the remainder of FY 2018, to determine if those actions are aligned with this new plan -- and if they are not, how to adjust them to come into alignment. This strategic plan will be a living document that is used by the CEDF regularly. Thus, it needs to be flexible and amendable to transformations of the CEDF and the clean energy sector.

Although this strategic plan will serve the CEDF forward beyond next year, the CEDF will soon have fully committed its remaining funding and have few funding decisions to make. This plan is will ensure that remaining funds, and any incoming funds, are used effectively to serve Vermont energy goals.

If additional funding is provided this plan will ensure that the resulting actions will be prompt and effective. If a new CEDF enabling statute mandates change, this plan provides a starting point for refocusing the work of the CEDF.

Without additional funds the contributions the CEDF is making will end. In that case, during fiscal years 2019 and 2020 CEDF’s grants, contracts, and incentive programs will be completed and wound down. The PSD will preserve the CEDF and likely recommend statutory language to the Vermont General Assembly to provide a new structure, and possibly purpose, for the CEDF. The PSD will assure that any remaining funds, outstanding loan payments, and any Alternative Compliance Payments via the Renewable Energy Standard made to the CEDF are used appropriately for the development of renewable energy.