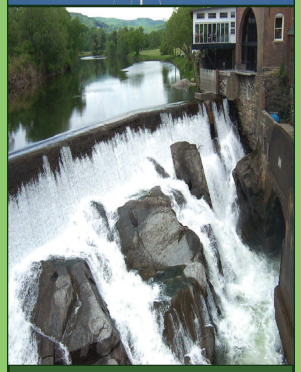

Vermont Clean Energy Development Fund

2008 Annual Report

January 2009

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Purpose of this Report

The purpose of this annual report is to provide an account of the activities of the Vermont Clean Energy Development Fund (CEDF), including how the funds were managed and distributed to meet the goals of the Fund. This report covers the period between January 2008 and December 2008.

Establishment of the Fund

In 2005, the Vermont General Assembly established the Vermont Clean Energy Development Fund through Act 74 (10 V.S.A. § 6523). The Act specifies that the Vermont Clean Energy Development Fund will be established and funded through proceeds due to the state under the terms of two Memoranda of Understanding between the Vermont Department of Public Service (DPS) and Entergy Nuclear VT and Entergy Nuclear Operations, Inc., and by any other monies that may be appropriated to or deposited into the Fund. The CEDF will receive payments from Entergy through 2012.

Management & Governance

DEPARTMENT OF PUBLIC SERVICE (DPS) ADMINISTRATION

In accordance with 10 V.S.A. § 6523, the CEDF is administered by the DPS. The DPS has extensive experience with issuing proposal solicitations and administering contracts and grants. The DPS also works with Vermont's ratepayers, power suppliers, and other stakeholders and interested parties on a regular basis. DPS staff fulfilled this function until a permanent Fund Manager was hired in August 2008 to manage day-to-day operation of the Fund.

The Fund Manager is responsible for:

- Updating the strategic plan
- Preparing the annual program plan and budget
- Maintaining a loan and credit policy that details underwriting criteria for all loans, grants, and investments made by the Fund
- Distributing information on the Fund, including maintaining a page on the DPS website and creating brochures
- Writing and issuing proposal solicitations, reviewing proposals, and awarding funding
- Monitoring and managing all financial assistance
- Making recommendations for loans and investments, in consultation with Vermont Economic Development Authority (VEDA) management and the DPS Commissioner, to the Investment Committee
- Preparing program and financial reports

ADVISORY COMMITTEE

The role of the Advisory Committee is to review the strategic plan and the annual program plan and operating budget. The Advisory Committee also appoints the Investment Committee members. As defined in 10 V.S.A § 6523, the Advisory Committee consists of the Commissioner of

Public Service or a designee, and the Chairs of the House and Senate Committees on Natural Resources and Energy or their designees.

INVESTMENT COMMITTEE

The Investment Committee reviews and approves the CEDF plans, budget and program designs. The Investment Committee also assists the Fund Manager and the DPS Commissioner in the review of grants and investments; determining the viability of a project, company, product or service; and evaluating marketing and business plans. The Investment Committee consists of seven persons appointed by the Advisory Committee. The Investment Committee members are as follows:

- Patty Richards, VPPSA Director of Power Supply and Transmission (Chair)
- Robert Dostis, Green Mountain Power Director of Consumer Service and External Affairs (Vice-Chair)
- Jo Bradley, VEDA Chief Executive Officer
- Richard Sedano, Regulatory Assistance Project Director
- Mark Sinclair, Clean Energy Group Vice President
- Jeb Spaulding, VT State Treasurer
- Sam Swanson, Pace Law School Energy Project

Lawrence Miller resigned from the Committee in October 2008. Robert Dostis, of Green Mountain Power, was appointed to the Committee as his replacement in October 2008.

MANAGEMENT OF THE FUNDS

The Fund Manager and the Investment Committee work together to determine the amount of funds to be used for grants, loans, equity and/or subordinated debt investments. Since these types of financial support are markedly different in nature, the processing of requests for these types of funds are handled as described below:

1) When a request for a grant is approved by the Investment Committee and Fund Manager, funds will be dispersed by DPS based on specific requisitions by the grantee, which is subject to approval by the Fund Manager.

2) If a loan is requested and approved by the Investment Committee and Fund Manager based in part on a due diligence write-up prepared by VEDA, VEDA will prepare the loan documents, close the loan, monitor it and manage the relationship with the borrower. VEDA will handle the accounting for the loan and apply payments as they are received, and manage any loan collection activity that may become necessary with the approval of the Fund Manager and Investment Committee. VEDA charges a modest fee for its services that was negotiated between VEDA and DPS.

3) The Investment Committee decides on a case-by-case basis whether to allocate funds for equity/subordinated debt investments and will identify resources to participate in due diligence and negotiate on the

Fund's behalf. The preference would likely be to co-invest with other established investment firms.

Funds that accumulate in the CEDF will be temporarily managed by the State Treasurer's office prior to their being granted, loaned, or invested as outlined above.

Every attempt will be made to fully obligate all CEDF funds each year with the exception of setting aside a small portion that can be used for equity investments should the opportunity arise.

Goals and Objectives

GOALS

The goal of the Fund is to increase the development and deployment of cost-effective and environmentally sustainable electric power resources – primarily with respect to renewable energy resources, and the use of combined heat and power technologies - in Vermont. The Fund is managed to promote:

- The increased use of renewably produced electrical and combined heat and power technologies in the state;
- The growth of the renewable energy-provider and combined heat and power industries in the state;
- The creation of additional employment opportunities and other economic development benefits in the state through the increased use of renewable energy and combined heat and power technologies;
- The stimulation of increased public and private sector investment in renewable energy and combined heat and power related enterprises, institutions, and projects in the state.

RATIONALE

The further development of clean energy generation in Vermont will provide environmental benefits, increased energy diversity, price stability, and a thriving clean energy market to enable clean energy businesses to develop and expand.

The promotion of clean energy businesses and industry in the state will create additional employment opportunities. Creation and retention of quality jobs is important for current and future generations of Vermonters.

Fulfillment of the Fund goals will also support Vermont's greenhouse gas emission reduction targets as well as supporting the objectives set forth in 30 V.S.A. § 8004 to meet all incremental energy growth in Vermont between 2005 and 2012 through renewable energy generation.

SCOPE

The CEDF funds a wide variety of clean electric energy technologies and programs. 10 V.S.A. § 6523 specifies that "clean energy resources" means electric power

supply and demand-side resources that are combined heat and power facilities, cost-effective energy efficiency resources, or renewable energy resources.

The definition of renewable energy for the purposes of the Clean Energy Development Fund includes the following:

- solar photovoltaic energy;
- wind energy;
- hydroelectric energy
- farm, landfill, and sewer methane recovery;
- low emission, advanced biomass power, and combined heat and power technologies, using biomass fuels such as wood, agricultural or food wastes, energy crops, and organic refuse-derived waste, but not municipal solid waste.

OBJECTIVES

- Increase the installation of renewable energy systems for homes, businesses, farms, and public buildings.
- Increase the amount of combined heat and power (CHP) in the state.
- Facilitate clean energy distributed generation that enhances grid stability.
- Facilitate and support efforts by Vermont communities to develop small-scale renewable energy projects.
- Help developers secure project financing for construction of eligible renewable energy generating facilities and support pre-development activity.
- Continued growth of clean energy related businesses and industry in Vermont.
- Provide financial and technical assistance for the design, development, and commercialization of clean energy technologies and products.

Guiding Principles

1. Support diversified portfolio of clean energy technologies that will benefit ratepayers and municipalities; leverage private and public investment; and have positive impacts in terms of economic development, additional employment opportunities, and environmental attributes.

2. Allow for sufficient risk taking in fund use to stimulate development of clean energy products, businesses, and market initiatives by investing the funds through grants, loans, and equity investments in the most appropriate fashion for each project to maximize the mission related public benefit return over the life of the Fund.

3. Seek to remove market barriers related to the development and deployment of renewable energy and combined heat and power technologies in Vermont through the support of transformational technology, market and cultural developments.

4. Ensure maximum value from the CEDF by supporting initiatives and activities that are reliable, cost effective (or reasonably likely to become cost effective), and utilize commercialized or nearly commercialized technologies.

5. Pursue geographic distribution of projects throughout the state consistent

with system needs, while providing citizens the maximum exposure to alternative generation opportunities.

6. Pursue organizational development that results in the least administrative cost to maximize funds for direct investment.

7. Participate in projects in which the funds will make a meaningful difference.

Funding

The CEDF offers a portfolio of funding opportunities to accelerate the development, commercialization, and production of clean energy in Vermont, including: grants and contracts; loans; equity investments; and direct incentive payments to individuals, businesses, state and local government, and non-profit organizations.

SMALL-SCALE RENEWABLE ENERGY INCENTIVES

The CEDF has provided funding for the *Vermont Small-Scale Renewable Energy Incentive Program.* The program currently provides an incentive to individuals, businesses, and multi-family low-income housing projects for solar electric, solar hot water, small hydropower, and small wind grid-connected systems.

Additional CEDF funding of $200,000, in addition to the $1,000,000 allocated for 2006-2008, was provided in July 2008. In August 2008, a $1,500,000 contract to the program was approved, which is to cover 2008-2010.

Between January 1, 2008 and December 31, 2008, a total of 84 systems were installed, with another 168 reserved in that time frame. The table below shows the number of wind, solar PV, and solar hot water systems installed in 2008 as well as the capacity of the systems.

	Wind	Solar PV	Solar Hot Water
Systems Installed	5	69	10
Installed Capacity	21.7 kW	255 kW	8,130 kBtu/d
Systems w/ Incentive Reservations	15	26	127
Proposed Capacity of Systems	56.3 kW	68.9 kW	10,181 kBtu/d

The current incentive levels are as follows:

Solar Electric

- $1.75/Watt for individuals and businesses
- $3.50/Watt incentive for multi-family low-income housing projects

Solar Hot Water

- $1.75/100 Btu/day for individuals and businesses
- $3.50/100 Btu/day incentive for multi-family low-income housing projects

Wind

- $2.50/Watt for individuals and businesses ($4.00/Watt for Vermont-made components)

- $4.50/Watt for schools, farms, and local/state governments

Hydro

- $1.75 per 3 head-foot gallons per minute (head*flow/3)

The Vermont Small-Scale Renewable Energy Incentive Program is currently administrated by the Renewable Energy Resource Center.

GRANTS

Two competitive requests for proposals were issued in 2008, one in February and the other in August, for projects in the following categories:

Pre-Project Financial Assistance

This category includes feasibility studies and pre-development activities to develop new renewable energy generation facilities and combined heat and power systems, which may require high-risk, early-stage activities and for those projects that do not have the resources to finance pre-project activities. Projects under this category may include: renewable energy resource assessments; site assessments; environmental impact and regulatory analysis; permitting activities; technical and engineering feasibility studies; engineering designs; and economic and financial feasibility studies. Other similar projects not specifically listed above will also be considered.

In 2008, he maximum grant award for this category was $25,000 and required a 20% cash match. Projects were to be completed within 1 year of award.

Small-Scale Systems

This category includes the installation of micro-CHP systems, micro-turbines, or fuel cells at residential or small commercial buildings. Renewable energy systems totaling no more than 15 kW of capacity per installation such as micro-hydroelectric were also eligible in 2008 (micro-hydro became ineligible in the August 2008 grant round, when it became part of the Vermont Small-Scale Renewable Energy Incentive Program). Solar electric, solar hot water, and small-scale wind systems were also ineligible for the same reason. All projects were required to be grid-connected.

The maximum grant award for this category in 2008 was $60,000 and required a 50% match, no more than 25% of which could be in-kind match. Projects were to be completed within 2 years of award.

Large-Scale Systems

This category includes renewable energy and combined heat and power projects greater than 15 kW in capacity located at commercial, industrial, institutional, and public facilities. Renewable energy projects may include, but are not limited to: solar electric; hydroelectric; farm, landfill, and sewer methane recovery; low emission, advanced biomass power; and wind. This may include utility-scale installations. All projects must be grid-connected. The installation of micro-turbines and fuel cells at large commercial or industrial buildings is also eligible.

The maximum grant award for this category in 2008 was $250,000 and required a 50% match, no more than 25% of which could be

in-kind match. Projects were required to be completed within 2 years of award.

Special Demonstration Projects

This category includes projects that demonstrate and facilitate the development and commercialization of innovative renewable energy products, technologies, technology applications, and processes. All electric generation projects must be grid-connected. These projects must be designed to focus on market building and technology deployment strategies as opposed to traditional research and development activities. Projects should also include the following: a technical and economic analysis of the technology application or demonstration; expected project impact on the near-term commercialization of this technology; and dissemination of project information to potential users of the technology.

The maximum grant award for this category in 2008 was $250,000 and required a 50% match, no more than 25% of which could be in-kind match. Projects were to be completed within 2 years of award.

Grant Awards

In the February 2008 grant round, the DPS received 29 proposals requesting over $3.5 million in funding, in response to the CEDF grant solicitation. Eighteen projects were awarded funding totaling $2,284,484.

In the August 2008 grant round, the DPS received 29 proposals requesting $3.8 million in funding. Seventeen projects were awarded funding totaling $2,648,803.

The table below contains a list of the projects that were selected for grant awards and the estimated kWh generated per year as well as the projected avoided CO2 emissions for each project.

Project	Location	kWh/year (Estimated)	Avoided CO_2 emissions (in short tons)
Pre-Project Financial Assistance:			
Goddard College Woodchip CHP System Feasibility Study Goddard College	Plainfield	N/A	N/A
Evaluation of Biomass CHP at Northeastern VT Regional Hospital Northeastern VT Regional Hospital	St. Johnsbury	N/A	N/A
Industrial Park Sustainable Energy Northeastern VT Development Association	St. Johnsbury	N/A	N/A
CHP Feasibility at ReNew Bldg. Materials & Salvage Renew Bldg. Materials & Salvage	Manchester	N/A	N/A
Anemometer & Wind Resource Report Peter Schneider & Jessica Donavan	Charlotte	N/A	N/A

Randolph BioFiber CHP Project Randolph Area Community Development Co.	Randolph	N/A	N/A
CHP Feasibility for the WSWMD Office Building Windham Solid Waste Mgmt	Brattleboro	N/A	N/A
Hydroelectric System Feasibility @ Airport Pkwy WW Treatment Facility City of South Burlington	South Burlington	N/A	N/A
Digester Optimization & Cogen Feasiblity @ Brattleboro WW Treatment Facility Town of Brattleboro	Brattleboro	N/A	N/A
Ball Mountain Hydroelectric Project Blue Heron Hydro, LLC	Jamaica	N/A	N/A
Central VT Recovered Biomass Energy Facility Vermont Sustainable Jobs Fund	Randolph	N/A	N/A
Small-Scale Systems:			
Micro-hydro Energy & Education in the Northeast Kingdom NorthWoods Stewardship Center	East Charleston	3,843	43
Large-Scale Systems:			
Proposal to Restore Hydroelectric Power Generation to the Middlebury Upper Anders Holm	Middlebury	5,800,000	64,206
Biomass Fired Cogeneration Facility Columbia Forest Products	Newport	2,729,935	N/A
HCRS Solar Panel Project Health Care & Rehabilitation Service of SE VT	Springfield	49,053	537
Chaput Farm Anaerobic Digester Chaput Family Farms	North Troy	2,496,600	8,492
Solar PV at National Life National Life Group	Montpelier	77,767	852
Co-Generation System Implementation at Wastewater Treatment Facility City of South Burlington	South Burlington	492,000	N/A
51.24 kW PV Array WallGoldfinger, Inc.	Northfield	55,351	606
Solar Energy System at Farm-Way Farm-Way, Inc.	Bradford	76,941	843
Solar Energy System at GMP Green Mountain Power	Westminster	76,941	843
Southern Vermont Health & Recreation Center PV Project (Phase II) SVHRC	Springfield	86,583	1,185

Co-Gen System Implementation at Green Mountain College Green Mountain College	Poultney	427,000	N/A
Putney District Energy Project Economic Development Group	Putney	4,414,821	N/A
Hildene's Renewable Energy Project for Cheesemaking Facility Friends of Hildene, Inc.	Manchester	28,830	316
Plainfield Batchelder Mill Dam Town of Plainfield	Plainfield	400,000	4,428
CVPS Solar Generation Project CVPS	Rutland	73,000	800
Fillmore Farms, LLC Anaerobic Digester Fillmore Farms, LLC	Bennington	1,239,000	3,190
Gebbies' Maplehurst Farm Anaerobic Digester The Gebbies' Maplehurst Farm	Greensboro	723,047	2,667
Dubois Farm, Inc. Anaerobic Digester Dubois Farm, Inc.	Vergennes	2,703,066	12,870
Bolton Valley Resort Northwind 100 Project Bolton Valley Resort	Richmond	330,250	3,656
City of Barre Energy Recovery Project City of Barre	Barre	120,000	1,328
Special Demonstration Projects:			
Installation of a Concentrated PV System Nathaniel Group, Inc.	Vergennes	11,400	125
Power Generation from a Small Farm Digester Avatar Energy, LLC	Charlotte	96,500	409
Neighborly Farms Digester Neighborly Farms/Dimmick	Randolph Ctr.	132,008	517

LOAN PROGRAM

The CEDF loan program was launched in November 2007. The program funds a wide variety of clean and/or renewable electric energy technologies, including but is not limited to the following: solar photovoltaic, wind energy, farm, landfill and sewer methane recovery, CHP, and hydroelectric. All projects must be grid-connected. CEDF will make loans that meet the Fund's objectives and advance the overall goals of the Fund as more specifically set forth in 10 V.S.A § 6523 and the

CEDF Strategic Plan in the section entitled "Potential Funding Areas."

Eligible Borrowers

Individuals, sole proprietorships, partnerships, limited liability companies, corporations, non-profit corporations, Subchapter S corporations, municipalities, and foreign

Case Study: Power from Cows at the Maxwell Neighborhood Farm

The Maxwell Neighborhood Farm in Newport was started in 1957 by Maurice and Lois Maxwell. The farm has 850 milking cows and has won several farm management awards, including the 2003 Vermont Dairy Farm of the Year.

In 2008 – with support from the Clean Energy Development Fund, USDA, and CVPS's Cow Power™ program – the farm installed an anaerobic methane digester. The system operates by diverting manure waste from the existing lagoon (where it would otherwise release methane into the atmosphere) into a concrete digester. The resulting biogas fuels a generator that creates electricity that is then supplied to the grid.

The generator began producing electricity in early December, 2008 and is expected to produce about 1,750,000 kilowatt-hours annually. The Vermont Electric Cooperative purchases the electricity and CVPS purchases the renewable energy credits produced by the system.

In addition to renewable electricity, the system produces liquid effluent that is applied as a readily absorbed fertilizer on nearby fields, and solids are used as an ideal cow bedding material.

Photo Credits: Vermont Department of Public Service

corporations, municipalities, and foreign corporations with Vermont subsidiaries/affiliates.

Borrowing Limitations

- Loans cannot be used for more than 90% of the cost of a project.
- Minimum loan: $50,000
- Maximum loan: $1,000,000

Use of Funds

Funds can be used for the following:

- Purchasing land and buildings (when specific to project)
- Purchasing and installing machinery and equipment
- Working capital

All financing must be used for activities or assets directly related to the project.

Loan Rates & Terms

- Interest rate fixed at 2%
- Term for real estate loans is 10 years, amortized on a 15-year basis
- Term for machinery and equipment loans is a maximum of 7 years
- Term for working capital loans is 3 years, although there may be flexibility, depending on the nature of the project and the assets being financed

Fees

- Borrowers must pay an application fee of 1% on the loan amount, which is capped at $1,500, once the loan is approved.
- Borrowers are responsible for paying all closing costs.

Application Process

1. Contact DPS for application form
2. Applications are due by the first Thursday of every month
3. Investment Committee reviews applications and will either send applications on for underwriting or will reject application
4. Underwriting is performed by VEDA
5. Final approval or denial of loans by the Investment Committee

The typical review period will be 60 days for complete applications. If applications are incomplete or unforeseen circumstances arise, the review period could be longer.

Loan Awards

Two loan applications were received in November and December, 2008. The following two loans were approved:

- Green Mountain College - $750,000
- Gervais Family Farm, Inc. - $700,000

Funding Criteria

Before committing to any expenditure, the Fund Manager and the Investment Committee ensure that all potential programs and projects are rigorously evaluated to insure that the resources are allocated in a fair and cost-effective manner. Selection also takes GHG emission reductions, Sustainably Priced Energy Enterprise Development (SPEED) Program, and other related goals into consideration. A general description of the funding criteria that may be considered when making funding decisions is included below. Actual funding criteria for grant and loan solicitations may differ from the descriptions below and/or may change over time.

PROGRAM AND PROJECT EVALUATION CRITERIA

Experience and Qualifications

Applicant's knowledge and experience in the relevant project area; adequate staffing; previous experience with state or federal grants/contracts.

Work Plan

Clarity and reasonableness of work plan; timeframe relative to similar projects; viability and strength of strategy to implement project; project control and financial management plan.

Project Characteristics

Suitability of project site; project risk similar to proposed projects; potential for replicability; potential for public visibility; number of kWh generated and cost/kWh.

Environmental, Economic, and Societal Impact

How much the project will contribute to a reduction in fossil fuel use and other

greenhouse gas and other air pollutants; the extent of additional economic value created by a project, including job creation; benefits to society including the amount the project will contribute to an increase in renewable energy generation or CHP capacity available to ratepayers.

Budget

Description and justification for each line item; costs are reasonable and competitive; degree of financial leverage; justification of need for financial assistance.

Case Study: Going Solar at National Life Group

Gov. Jim Douglas and National Life CEO Thomas H. MacLeay stood together in November of 2008 in a rooftop ceremony to commission the company's new solar photovoltaic system and to praise the public-private financial partnership that made the project possible.

A $200,000 state grant helped finance the $500,000, 73 kW system. MacLeay said the combination of the state grant, federal and state tax credits, and a solar incentive program from Green Mountain Power Company (GMP) all made the project feasible. The SolarGMP program, which works with existing "net-metering" programs, pays customers for all solar energy generated at a rate of six cents per kWh above and beyond any net-metering payments.

The system is expected to produce about 10% of National Life's electrical needs – or about 75,000 kilowatt-hours a year – enough to power 10 to 15 typical Vermont homes.

NATIONAL LIFE GROUP®

Photo Credits: Solar Daily, National Life Group, Barre-Montpelier Times Argus

Accomplishments

Below is a summary of the CEDF accomplishments from January 2008 through December 2008.

- A competitive grant solicitation was issued in February, 2008. Twenty-nine proposals were received and eighteen projects were awarded funding totaling $2.28 million.

- In July 2008, $1.5 million in CEDF funds were awarded for the Vermont Small-Scale Renewable Energy Program to support photovoltaic, solar hot water, micro-hydroelectric, and small-scale wind installations. Since its inception in 2003, the program has provided $3,006,950 in

incentives to support the installation of 874 renewable energy systems with a total cost of just under $15 million. The CEDF has provided $2.7 million of that funding. The new incentive funding is expected to support the installation of approximately 250 new renewable energy systems throughout the state, which could generate an estimated 540 MWh of electricity annually.

- In July 2008, the CEDF Investment Committee approved its first equity investment, $100,000 to Draker Laboratories, Inc., to develop renewable energy system performance monitoring equipment.

- In late July 2008, the position of CEDF Manager was filled.

- In August 2008, the CEDF launched a Municipal Technical Assistance Grant Program. The Program offers grants to Municipalities, Public Schools, and Vermont State Colleges to investigate the installation of a wide variety of clean and/or renewable electric energy technologies, including but not limited to the following: solar photovoltaic; wind energy; farm, landfill, and sewer methane recovery; combined heat & power (CHP) systems; and hydroelectric systems. Four municipal technical assistance grants have been awarded:

  -Seth Hill Brook Hydroelectric Feasibility Study, Town of Bristol Water Department ($2,700)
  -Jacksonville Pond Use in Developing a Micro-Scale Hydro Project, Village of Jacksonville Electric Co. ($5,000)
  -Kelly River Hydroelectric Project, Town of Waterville ($4,995)
  -Alternative Energy Momentum for School Addition, South Royalton School ($4,997.99)

- In August 2008, a third grant solicitation was issued. The DPS received 29 proposals for a total funding request of $3,842,837 and awarded $2.65 million for 17 projects. The RFP for the next grant round will be issued in mid-January, with grant proposals due March 1 and funding announced April 1. Since its inception, the large-scale, competitive grants program has funded $7 million in projects, leveraging over $45 million in project investment.

- In August 2008, the CEDF lowered its loan interest rate to 2% and raised the cap on loan amounts to $1,000,000. By the end of 2008, two loans had been approved, totaling $1,450,000.

- In November 2008, the CEDF Investment Committee held a public comment meeting. Comments were solicited in person and in writing, and suggestions are currently under consideration by the Investment Committee.