

THE ESSEX PLAN

AN ECONOMY STRENGTHENING
STRATEGIC ENERGY EXCHANGE



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HOW A VERMONT-SPECIFIC, FORWARD-FACING ECONOMIC DEVELOPMENT STRATEGY CAN:

- Create jobs, attract new businesses, spur strategic electrification and provide the cleanest electricity at the lowest rates in New England,
- Prioritize the most vulnerable and the middle class by lowering utility bills for every Vermonter and Vermont business and providing fully refundable rebates for low-income and rural Vermonters, and
- Deploy the most efficient and effective tool to reduce carbon pollution and help the state meet its climate and clean energy goals: the market.

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INTRODUCTION

The ESSEX Plan is a Vermont-specific, future-oriented economic development strategy designed to:

- 1) Provide Vermonters *the cleanest electricity at the lowest rates* in New England,
- 2) Prioritize working families and rural Vermonters in the transition to the lower-cost/lower-carbon energy future, and
- 3) Deploy the most efficient tool to drive carbon pollution reductions: the market.

The ESSEX Plan is unprecedented in its scope and commensurate to the challenge and opportunity that climate change presents.

It proposes a partnership between state government and Vermont's regulated electric utilities whereby all of the proceeds of a gradually rising fee on carbon pollution are returned to Vermonters and Vermont businesses on a monthly basis in the form of lower effective electric rates.

The ESSEX Plan prioritizes working-class Vermonters through additional per-person rebates for families earning less than 400% of the federal poverty level (about \$90,000/year for a family of four). And rural Vermonters earning less than \$75,000 annually (\$150,000 per couple) will receive additional monthly rebates to cover their necessary travel expenses.

The ESSEX Plan builds off of two existing programs. It expands carbon pricing in Vermont beyond the limited reach of the Regional Greenhouse Gas Initiative (RGGI) by requiring the Petroleum Cleanup Fund to cover climate pollution as well as ground and water spills. It uses Green Mountain Power's existing Energy Assistance Program partnership with the state as a model for additional rebates to Vermont's most vulnerable.

Because Vermont already has one of the lowest-carbon electric portfolios in the nation and is on pace to decarbonize further due to the state's Renewable Energy Standard and the Regional Greenhouse Gas Initiative, The ESSEX Plan is both "revenue neutral" and a 100% investment in clean energy.

The ESSEX Plan is comprehensive. It covers approximately 94% of the carbon dioxide pollution in the Vermont economy.

Economic analyses of similar carbon pricing proposals completed by the Department of Public Service, Regional Economic Models, Inc., and the Congressional Budget Office indicate that the ESSEX Plan would create up to 6000 new jobs, hold harmless Vermonters on the lowest rungs of the economic ladder, and reduce carbon pollution by 15%-25% by 2025 and 30%-50% by 2050.

THE VERMONT ENERGY CONTEXT

More than sixty nations and states around the world put a price on carbon pollution – and every jurisdiction does it differently. In addition to charging a fee for climate pollution, the one thing that unites the various policies is that each is designed to fit its local energy context.

The ESSEX Plan is designed specifically to fit the Vermont energy context.

Fossil Fuels in Vermont: As the *Comprehensive Energy Plan* notes, “In 2013, the state spent nearly \$2.3 billion annually — about 8% of Vermont’s GDP — on petroleum products...” At the tail end of the distribution chain, Vermonters have little control over extraction techniques, refining practices, transportation safety, or price.

Fossil fuels in Vermont are a low-margin industry with 80% or more of revenues leaving the state’s borders. With no value-adding industry in-state, what fossil fuel jobs there are in Vermont are mostly low-wage end-distribution roles. The industry has been struggling for years to attract and retain employees. Because of these factors and more, Vermont’s successful home heating fuel dealers are rapidly diversifying their equipment offerings beyond gas and oil and transitioning to become energy service providers that deliver complimentary conservation and efficiency measures.

In addition to their drain on the Vermont economy, fossil fuels are also the primary driver of the 4% increase in carbon pollution since 1990.

Electricity in Vermont: For all the strategic weaknesses on the fossil fuel side of its energy portfolio, Vermont’s electric position is one that other states should emulate. For decades the state’s utilities and policy makers have been working to reduce carbon pollution. The outcomes of this effort are evident in:

- A Renewable Energy Standard (RES) that requires electric utilities to source an ever-increasing supply of renewable energy;
- The Regional Greenhouse Gas Initiative (RGGI) that prices what carbon pollution there is in electric generation, and is poised to reduce CO₂ emissions a further 30% by 2030;
- Efficiency Vermont – the nation’s first electric efficiency utility – which has made Vermont one of the most efficient consumers of electricity in the nation;
- Robust renewables, with Vermont leading on many per-capita metrics for PV and wind deployment;
- A clean energy industry that employs about one in 16 working Vermonters;
- Progressive utilities eager to lead the transition to renewable energy; and
- The highest percentage of low-carbon electricity generation and some of the lowest-carbon electricity consumption in the nation.

It is this energy context that makes the strategic energy exchange at the core of The ESSEX Plan possible.

THE THREE PILLARS OF THE ESSEX PLAN

1. A GRADUALLY INCREASING FEE ON THE POLLUTION CAUSING GLOBAL WARMING

The first leg of The ESSEX Plan is a gradually rising fee on the carbon content of fossil fuels paid by the companies that distribute these fuels in Vermont. A sensible fee might begin at \$5 a ton and increase annually until reaching \$40/ton or the Social Cost of Carbon (an estimate of the monetized damages caused by greenhouse gas emissions) as calculated by the U.S. Environmental Protection Agency during the Obama administration.

The Department of Public Service should be tasked with determining the percentage of carbon pollution fees that come from the sales of fossil fuels destined to the residential sector (primarily home heating and personal transportation fuels) and the percentage of fees from the sale of fuels destined to Vermont's commercial and industrial sectors.

2. DRAMATIC ELECTRIC RATE REDUCTIONS FOR EVERY HOUSEHOLD AND BUSINESS

All carbon pollution fees derived from Vermont's commercial and industrial sectors will be returned to those sectors of the economy through lower effective electric rates. All fees derived from the residential sector will be returned to Vermont households. There is no cross-sector subsidization under The ESSEX Plan.

Fully implemented, The ESSEX Plan will reduce Vermont's commercial and industrial rates 27% below current levels and Vermont businesses will enjoy electric rates 25%-40% below the New England average.

Similar to Vermont businesses, the ESSEX Plan would allow all Vermont households to benefit from the lowest electric rates in the region.

3. ADDITIONAL REBATES FOR WORKING-CLASS FAMILIES AND RURAL VERMONTERS

The ESSEX Plan dedicates 50% of all carbon pollution fees derived from the residential sector to working class and rural Vermonters through additional per person rebates.

- Low-Income Rebate: Working-class Vermonters earning less than 400% of the federal poverty level will receive an additional monthly rebate
- Rural Adder: Rural Vermonters earning less than \$75,000 per year (\$150,000 per couple) will qualify for an additional monthly rebate.

The Low-Income and Rural rebates would expand an existing public/private partnership: Green Mountain Power's Energy Assistance Program (EAP) which reduces monthly charges for households with a total gross income at or below 150% of the federal poverty level. The ESSEX Plan would extend the EAP program to all utilities and raise the qualification threshold to 400% of the federal poverty level.

OUTCOMES

CREATING JOBS

By reducing electricity rates to the lowest in the region, The ESSEX Plan helps retain and attract the low-carbon businesses and industries of the 21st Century.

The ESSEX Plan will steer Vermonters to lower-carbon options for heating and transportation, increasing demand for weatherization, renewable energy, and travel efficiencies while simultaneously spurring business innovation in these sectors. The transition to a clean energy economy will be a generational effort, and there is at least a generation's worth of work to be done.

The Public Service Department's Total Energy Study of 2014 estimated that a similar carbon pollution policy would create 2,000 – 6,000 new jobs in the state.

STRENGTHENING VERMONT'S ECONOMY

Since the turn of the 21st century Vermont's economy has begun to "decouple" from fossil fuels. In other words, the state has reduced its carbon pollution emissions by almost 13%, while Vermont's real GDP has grown by almost 23% – the fastest rate in New England.

It is easy to see why decoupling is good for Vermont's economy – all fossil fuels used in Vermont are imported. The state has no known petroleum reserves. We don't mine for coal, drill for oil or frack for gas. There are no coal jobs here. There are, however, nearly 20,000 Vermonters working in clean energy – and the industry is growing at a rate ten times faster than the workforce as a whole. It makes economic sense to build on that success.

According to the Comprehensive Energy Plan 2016, "In 2013, the state spent nearly \$2.3 billion annually — about 8% of Vermont's GDP — on petroleum products that are extracted and refined elsewhere." This is a significant drain on the Vermont economy, particularly when there are abundant, low-carbon and comparably-priced sources of energy available locally.



Consider this economic phenomenon in terms most Vermonters understand implicitly: maple syrup. It makes little sense for Vermont to import maple syrup when we produce the best product and all the quantity we need. Buying Vermont maple syrup creates jobs and boosts our local

KEEPING DOLLARS IN VT

economy. The same applies to energy. Our economy is stronger when we use locally generated energy instead of imports from distant states and countries.

Since all electricity is generated regionally instead of imported from distant states and countries, the ESSEX Plan in its first decade is a billion dollar “Buy Local” campaign.

HELPING WORKING-CLASS AND RURAL VERMONTERS

In addition to boosting the competitiveness of Vermont businesses, The ESSEX Plan prioritizes those most vulnerable to the financial and physical impacts of climate change: working-class and rural Vermonters. The plan accomplishes this by expanding an existing public/private partnership: the Green Mountain Power Energy Assistance Program.

Under The ESSEX Plan, every Vermont family earning less than 400% of the federal poverty level will be eligible for additional per-person refundable rebates on their electric bill. If a household’s rebates exceed their electricity costs, then they will receive a check instead of a bill.

Rural Vermonters earning less than 400% of the federal poverty level will be eligible for additional rural rebates which would double their savings and help cover the additional costs of rural driving.

Unlike other carbon pricing proposals, The ESSEX Plan distributes rebates and rate reductions on a monthly basis – alleviating cash-flow concerns for those living paycheck-to-paycheck.

An additional, indirect benefit of The ESSEX Plan is that it benefits Vermont’s Low-Income Weatherization Fund. That Fund is currently supported by a combination of a cents/gallon charge on heating fuels and a percentage charge on electricity sales. By encouraging the rapid adoption of electric vehicles, The ESSEX Plan expands the sources of Low-Income Weatherization funding to include transportation energy – a source of revenue not currently contributing to efforts to help the most vulnerable save money by saving energy in their homes.

THE CLEANEST ELECTRICITY AT THE LOWEST RATES IN NEW ENGLAND

Two of Vermont’s largest utilities – Burlington Electric Department and Washington Electric Co-op – are 100% renewable already. Green Mountain Power is 55% renewable and 90% carbon-free, with a requirement to reach 75% renewable by 2032. Vermont has the highest percentage of low-carbon electric generation in the country, and our electric consumption is among the cleanest.

It is time to build upon Vermont’s low-carbon strategic advantage by making the cleanest electricity the least expensive.

Fully implemented, The ESSEX Plan would reduce effective commercial and industrial electric rates by an estimated 27% - attracting and retaining the low-carbon businesses of the future.

For example, a carbon pollution fee of \$40/ton would generate approximately \$120 million in commercial and industrial rebates. Vermont utilities collected approximately \$440 million for commercial and industrial electricity sales in 2015.

$$\$120,000,000 \div \$440,000,000 = 27\% \text{ Rate Reduction}$$

A rate reduction of this magnitude would slash energy bills at some of Vermont's most dynamic businesses and largest employers.

Further, the benefits would not be limited to commercial and industrial enterprises. The ESSEX Plan spurs strategic electrification by dramatically reducing the operating costs of electric heating and transportation options. Every Vermonter will benefit from the lowest residential electric rates in New England, making low-carbon technologies like heat pumps and electric vehicles spectacularly attractive financial investments.

ADVANCING CONSERVATION, EFFICIENCY AND RENEWABLE ENERGY

By including the true cost of carbon pollution into the cost of fossil fuels, every conservation and efficiency measure becomes more financially attractive.

The "negawatt" (the kilowatt hour not needed because of conservation and efficiency) remains the least expensive energy, while the pay-back period shortens for low-carbon investments and the financial benefits of using less fossil fuel accrue more quickly.

Under ESSEX, renewable generating programs and facilities like Green Mountain Power's Cow Power, Burlington Electric Department's wind and hydro facilities, the Cassella/Washington Electric Co-op Coventry landfill gas station, and Vermont Gas System's Renewable Natural Gas program become more financially attractive relative to the fossil fuels they displace.

The ESSEX Plan exempts the non-fossil fuel portion of bio-fuel blends of home heating and transportation fuels.

Biomass is similarly exempted, giving a new boost to Vermont's forests and wood products industry as pellets and advance wood heating become a much better financial proposition than heating with fuel oil or propane.

Demand for distributed solar will climb as Vermonters transition to electric heating and transportation and seek ways to displace that additional load with new renewables.

SAVING LIVES AND MONEY

In addition to the damage carbon dioxide pollution is causing our climate, the co-pollutants generated by the burning of fossil fuels are deadly to human health. One recent study conducted by MIT estimated that more than 200 Vermonters suffer premature deaths annually due to air

pollution attributable to the burning of fossil fuels. These cases of heart and lung disease put even more burden on Vermont’s already strained health care systems.

The ESSEX Plan can help reduce these health and financial costs.

A comprehensive study of the health benefits of the RGGI program released earlier this year found that the program has helped save over 300 lives and more than \$5 billion in health care costs in the region over the last decade. A second study conducted by the Harvard School of Public Health forecast additional lives and dollars saved if Massachusetts enacted a similar price on carbon pollution.

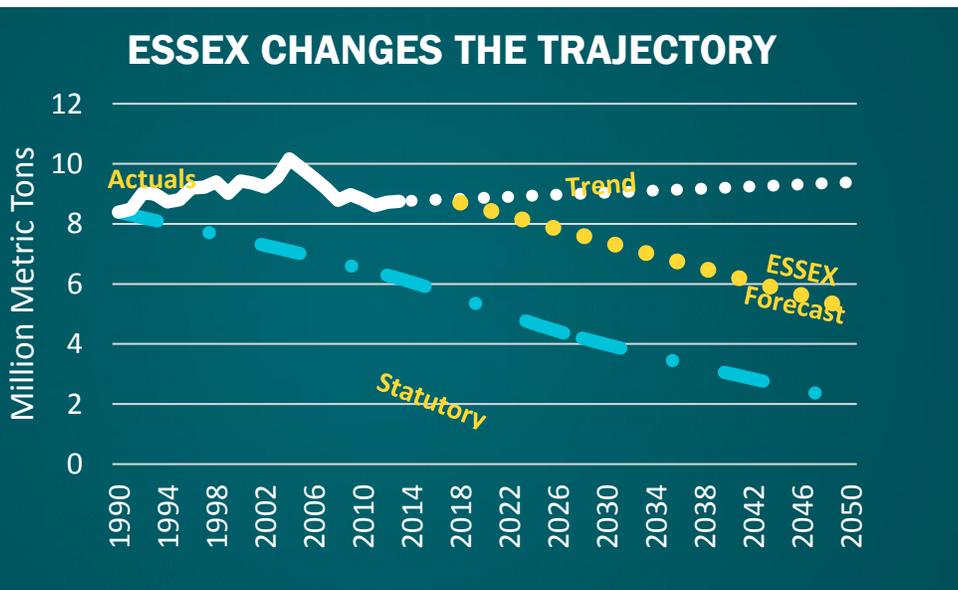
By attacking the major drivers of Vermont’s carbon pollution – transportation and heating – the ESSEX Plan would also help save lives and money in our state’s health care system.

A CLEANER CLIMATE

Carbon pricing is both essential and inevitable. To achieve Vermont’s climate and clean energy goals, some form of carbon pricing will need to be implemented. Until the state begins to address the source of the problem – carbon pollution – we will only be dealing with the symptoms of climate change, rather than seeking ways to prevent the problem.

The ESSEX Plan addresses Vermont’s carbon pollution issue head on. By putting a price on pollution, The ESSEX Plan begins to recoup the true costs of fossil fuel combustion. By reducing the cost of the low-carbon alternatives to fossil fuels, The ESSEX Plan speeds the solution climate change.

Based on economic analyses of similar carbon pricing proposals completed by the Department of Public Service and Regional Economic Models, Inc., as well as the experiences in other jurisdictions that price carbon pollution, a sensible forecast of The ESSEX Plan is that it would achieve a 15%-25% reduction in carbon pollution below 1990 levels by 2025 and a 30%-50% reduction by 2050.



The ESSEX Plan is not the only climate and clean energy policy Vermont needs to achieve its statutory goals, but it is an essential component of the suite of policies Vermont needs.

▶▶▶ ATTRIBUTES

WHY BEGIN AT \$5/TON? WHY CAP AT \$40/TON?

The ESSEX Plan recommends starting at \$5/ton of carbon pollution because that is close to what a ton of pollution has been selling for through the RGGI auction process for the last several years. Five dollars per ton of pollution is too low a price to significantly affect behavior. It is, however, a reasonable starting point and gives businesses and homeowners nearly a decade to implement strategies to reduce carbon pollution before the program rises at \$5/ton/year to its maximum \$40/ton.

A \$5/ton fee on carbon pollution equates to three cents on a gallon of propane or CCF of natural gas, four cents on a gallon of gasoline, and five cents on a gallon of diesel or home heating oil. In Year 1, The ESSEX Plan would generate about \$30 million dollars in electric rate reductions for Vermont rate payers.

The ESSEX Plan recommends capping the carbon pollution fee at \$40/ton for three reasons:

PUT A PRICE ON CARBON POLLUTION

Fiscal Year	Carbon Price (\$/ton)
FY19	5
FY20	10
FY21	15
FY22	20
FY23	25
FY24	30
FY25	35
FY26	40

SLASH ELECTRIC RATES FOR ALL VERMONTERS

1. That is the approximately the “Social Cost of Carbon” as calculated by the Environmental Protection Agency during the Obama administration,

2. It is the same level that other states in the region (MA, RI, CT) are considering in their carbon pricing legislation, and

3. It is the same level the *Conservative Case for Carbon Dividends* (proposed by Reagan and Bush administration cabinet secretaries) suggests as a starting price. The ESSEX Plan is more conservative than the *Conservative Case for Carbon Dividends*.

REVENUE NEUTRAL AND A 100% INVESTMENT IN CLEAN ENERGY

Other climate and clean energy proposals often flounder in arguments over revenue neutrality versus investments in clean energy, with conservatives demanding no net change on the government's balance sheet and liberals advocating for spending on the technologies that reduce carbon pollution. The ESSEX Plan resolves this standoff.

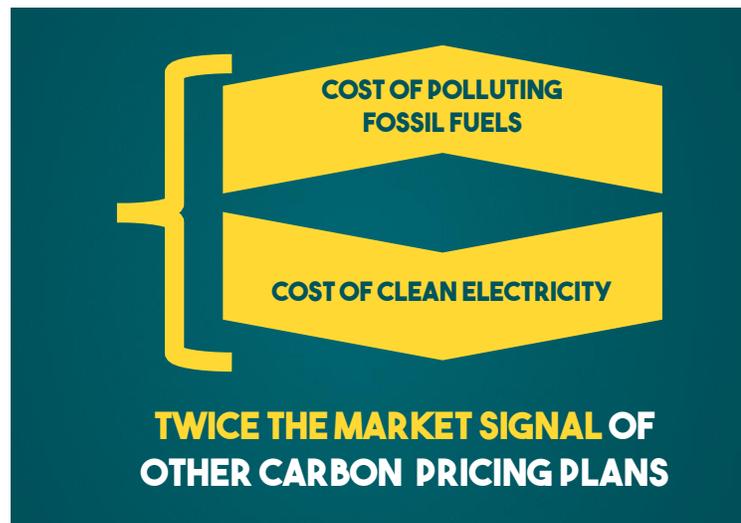
The ESSEX Plan is revenue neutral. 100% of the carbon pollution fees are returned to Vermont electric ratepayers, and the program is assessed annually by Vermont's Auditor of Accounts.

The plan is also a 100% investment in clean energy since Vermont's electric portfolio is primarily powered by renewable energy and is on pace to become even cleaner in the decade ahead.

For Vermont as a whole, there is no net change in energy spending. For every \$1 more Vermonters pay for polluting fossil fuels they will save \$1 on clean electricity ... if no one reduces their carbon emissions. But thousands of Vermonters will transition to the more efficient, lower-cost and lower-carbon technologies – dropping total energy spending and leaving hundreds of millions of dollars in Vermonters' pockets.

TWICE THE CLIMATE BENEFITS OF OTHER PLANS

Beyond early adopters and committed environmentalists, what drives the purchase of low-carbon technologies like heat pumps and electric vehicles are financial decisions. While many Vermonters would like to "go green" they also need to watch their bottom line. All carbon pricing plans raise the operating costs of polluting technologies, making the lower-carbon alternatives more financially attractive. In addition to the price signal of other plans, The ESSEX Plan also reduces the operating cost of the low-carbon technologies. In effect, The ESSEX Plan offers twice the market signal of other carbon pricing concepts.



THE BENEFITS OF LEADERSHIP

There are advantages to being a proactive innovator on climate action.

- 1) The ESSEX Plan will drop Vermont's electric rates below other states in the region, making the Green Mountain State an attractive place for 21st century businesses.
- 2) The policy will drive technology and service innovation inside Vermont that can then be marketed to other states and countries in the years ahead, as well as expand our successful and increasingly critical clean energy sector.
- 3) Vermont's brand identity will be enhanced and our rhetoric will match reality.

**SAMPLE VERMONT ELECTRIC BILL
UNDER ESSEX PLAN**

KILOWATT HOURS USED	500	\$0.1484	\$74.20
CUSTOMER CHARGE			\$12.99
ENERGY EFF. CHG-KWH	500	\$0.0091	\$4.55
SUBTOTAL			\$91.74
CLIMATE RATE SAVINGS	500	\$0.0276	-\$13.80
LOW-INCOME REBATE			-\$21.24
RURAL REBATE			-\$13.92

BALANCE DUE: \$

42.78

IMPACTS ON FOUR SAMPLE VERMONT INDUSTRIES

One of the reasons that The ESSEX Plan is an ideal fit for Vermont is that there are few carbon-intensive industries in the state. Carbon-intensive businesses long ago recognized that Vermont is at the tail end of the fossil fuel distribution chain with little control over extraction, refining, transportation, supply or price. Those fossil fuel-heavy industries have located closer to fossil fuel reserves or have transitioned to electricity.

What industry in Vermont that does consume lots of fossil fuels also tend to be heavy consumers of electricity. For them, The ESSEX Plan is an energy shift and encouragement to transition more of their operations to low-carbon electricity.

High-Tech Industrial Manufacturing

In 2014, IBM reported that its energy expenses included \$5.9 million on fossil fuels and \$37 million on electricity. Fully implemented, The ESSEX Plan would save a facility with that energy mix profile approximately \$8 million on energy costs annually.

Agriculture

The ESSEX Plan benefits Vermont's farms – some of which have electricity bills of \$10,000 a month – by reducing electricity costs by over 25% and doing so without raising the costs of driving a tractor. Farm diesel is exempt under The ESSEX Plan because there are no ready low-carbon alternatives available on the market for heavy equipment.

Ski Areas

Vermont's largest ski areas consume as much as 25 million kilowatt hours of electricity a year because many of the lift systems and snow machines are electrified. The ESSEX Plan slashes their bills without adding costs on grooming equipment which, like farm tractors, are exempt under the proposal.

Health Care

Most hospitals in the United States and in Vermont spend more on electricity than they do on fossil fuels. The ESSEX Plan helps reduce their operating costs. Couple these savings with the health benefits of cleaner air, and The ESSEX Plan reduces overall health care costs in Vermont.

POLICY FINE PRINT

A gradually rising carbon pollution fee should be steady, transparent and predictable. All rebates and rate reductions should be exempt from Vermont income tax. The State Auditor should review the program annually to assure Vermonters that every dollar in revenue is returned to Vermont rate payers. In addition, the General Assembly should commission a regular, independent 5-year review of the climatic and economic results of this program.

While The ESSEX Plan is as comprehensive as possible, the following fossil fuels should be exempt from the carbon pollution fee for the following reasons:

- Fossil fuels used by Vermont utilities to generate electricity because that carbon pollution is already priced through RGGI,
- Aviation fuels because of a federal law preemption,
- Dyed diesel used for heavy equipment because there are no readily-available low-carbon alternatives on the market at this time, and
- The non-fossil fuel content of bio-blends such as biodiesel and Renewable Natural Gas because The ESSEX Plan is limited to fossil fuel emissions.

To maintain fairness, equity and commitments to existing programs, programs that are based on the retail rate of electricity such as the following should continue to use the retail rate, not the new effective rate in their calculations:

- Energy Assistance Program (EAP)
- Net Metering
- Low-Income Weatherization Fund
- Efficiency Vermont screening