DREAM Package for Energy Efficiency Upgrades in East Montpelier

Decarbonization · Resilience · Energy Affordability

Hosted by

Collective Well Foundation

and

the Town of East Montpelier

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Executive Summary

Energy Costs are a growing part of everyone's household budget. In addition to weatherizing our homes, we can use local renewable fuels to heat and power our homes. We can take practical, step-by-step actions to lower our bills, improve our comfort, and boost our resilience by making energy efficiency upgrades to our homes.

Starting with weatherization, we can seal and insulate our homes to improve our ability to retain warmth in winter and repel heat in summer. When we right-size heating and cooling with efficient heat pumps or modern wood systems. We can also choose local renewable woody biomass and sunlight to layer in modern wood stoves and boilers, solar, wind (where viable), and battery storage for resilience during power outages. In addition, we can select smart controls to lock in savings throughout our homes, using off-peak rates for some appliances, and scheduling off-cycles for home systems during low-activity periods.

Here at Collective Well Foundation, we can help navigate your energy upgrade journey! Together we can assess how you can save money by saving energy through upgrades and adjustments. With our Vermont partners, we can also schedule formal energy assessments, find incentives, rebates and 0% loans, plus deliver technical support. There is a world of practical steps we can all take to button up for the winter, and cool it right on down for the summer. If you are reading this, you have already taken the next step to learn more. Let's do this! Learn more at CollectiveWell.earth/DREAM to book a free energy assessment.

Summary of Key Actions

- Seal air leaks and insulate attics, basements, and walls to raise R-value and cut drafts.
- Right-size heating and cooling (heat pumps) after envelope upgrades; consider modern wood options.
- Leverage rooftop solar and appropriately-sized batteries for resilience and lower bills.
- Adopt smart thermostats and time-of-day use to maximize savings; automate what you can.
- Work with local partners to find local and in-state contractors, plus find financing options including assessments, rebates, financing, and project sequencing.

Weatherization

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1) Improve insulation (attic, walls, basement)

Adding or topping up insulation increases your home's **R-value**, reducing heat loss in winter and heat gain in summer. Start with the **attic** (typically the fastest payback), then address **basement/crawlspace** rim joists and walls to stop cold floors and drafts. Dense-pack cellulose or blown fiberglass can be used in wall cavities without major interior work. Guidance from **DOE Weatherization Assistance Program (WAP)** emphasizes insulating continuous thermal boundaries and avoiding thermal bridges; **Efficiency Vermont** and **Capstone** follow similar field standards, including safe ventilation and air quality considerations during and after work.

2) Seal thermal leaks (air sealing)

Air sealing targets the hidden gaps around penetrations, framing seams, and top-floor bypasses that drive stack-effect heat loss. A pro uses blower-door testing and smoke to find leaks, then seals with foam, caulk, and gaskets. This step is often **the most cost-effective** single measure. Partner programs (WAP, **Capstone Weatherization**, **Efficiency Vermont Home Performance**) pair air sealing with ventilation checks to keep indoor air fresh while tightening the building.

3) Roof maintenance/replacement

A sound, dry roof protects your insulation investment. Address ice dams (often a sign of inadequate air sealing/insulation) and correct roof ventilation to extend shingle life and reduce moisture risks. If replacement is due, consider **lighter-colored roofing** to reduce summer heat gain or **roof assemblies** that integrate additional insulation ("above-deck" or "cold roof" strategies). These improvements set the stage for **rooftop solar**, coordinated to avoid re-roofing soon after a solar install.

4) Window & door upgrades

Old, leaky windows and doors can add drafts and discomfort. Upgrades range from **high-quality weatherstripping and hardware tuning** to full replacements with **ENERGY STAR** rated units (low-e, double or triple pane). In many homes, door upgrades and targeted window replacements at the worst locations (prevailing wind, north side) combined with air sealing deliver excellent returns. Partners can help prioritize where replacement is warranted and where simpler treatments will suffice.

5) Window pane treatments (storms, low-e films)

Exterior or interior storm panels add an insulating air layer without full replacement cost. **Low-e films** can reduce solar heat gain and UV fading while keeping winter warmth in. These are quick, lower-cost ways to boost comfort and performance, particularly in historic windows. Programs like **Efficiency**

Vermont often recognize storm windows and films as part of a comprehensive package when verified by a participating contractor.

6) Thermal window coverings (insulated curtains/shades)

Lined drapes, cellular shades, and insulating blinds add nighttime R-value and reduce radiant heat loss you feel sitting near glass in winter. In summer, reflective shades and well-managed curtains help keep rooms cooler. Combine with proper **daytime/sun-exposure habits** (open on sunny winter days, close on hot summer afternoons) for simple, durable savings.

7) Entryway weather stripping

Tight-sealed doors reduce drafts dramatically. Replace worn gaskets, add adjustable thresholds and sweeps, and ensure latch alignment. This is a **DIY-friendly** upgrade but can also be delivered as part of a professional air-sealing job. Properly sealed entries often yield an immediate comfort boost near foyers and mudrooms.

8) Extending roof overhangs (shade & protection)

Strategic overhangs and awnings **shade high-gain windows** in summer while allowing **low winter sun** to warm interiors — a passive design move that also protects siding and openings from weather. Coordinate with any re-siding/roof work. Overhangs complement **passive solar** goals and reduce cooling loads, especially on south and west exposures.

Solar, Wind & Battery Storage

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1) Rooftop solar & other solar generation

Grid-tied photovoltaic (PV) systems reduce your electric bill and can be paired with batteries for resilience. Site viability depends on roof condition, orientation, shade, and structural capacity. Consider the age, condition and R-value of your roof and coordinate re-roofing with optional PV upgrades. Programs from **Efficiency Vermont** and guidance from **VEIC** can help you assess contractors, incentives, and net-metering structures.

2) Passive solar heating & cooling

Use building form and behavior, not just equipment: admit **winter sun** via south-facing windows, capture it with interior mass (floors/walls), and block **summer sun** with overhangs, exterior shades, and landscaping. Combine with night flushing and morning pre-cool strategies. Passive solar isn't a product — it's a design and habit set that **cuts loads** so smaller mechanical systems work better.

3) Solar thermal hot water

Roof-mounted **solar thermal collectors** preheat domestic hot water, reducing water-heating energy. Best on homes with **high hot-water use** (larger households, frequent laundry). In cold climates, closed-loop glycol systems and proper freeze protection are essential. Consider maintenance access and roof condition before installing, and weigh against a high-efficiency **heat pump water heater** alternative.

4) Small-scale wind generation

Residential wind requires **excellent, unobstructed wind resources** and sufficient tower height — conditions not every site has. A professional assessment (wind maps, on-site data) is key. For many homes, **solar PV** offers better cost-effectiveness, but viable wind sites can complement solar to diversify renewable generation.

5) Energy storage with batteries

Battery storage (often lithium-ion) provides **backup power** for critical loads and lets you **shift** solar production to evening use. When paired with smart controls and time-of-use rates, storage can reduce bills and improve resilience. Plan critical circuits (fridge, heat pump head, well pump, lights, internet) and size the system accordingly. **VEIC** and **Efficiency Vermont** can help evaluate products, rate structures, and contractors.

Heating & Cooling

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1) Heat pumps

Cold-climate air-source heat pumps (ducted or ductless) deliver efficient heating and cooling from the same system. They shine when combined with weatherization and right-sized to the home's actual loads. Expect quiet operation, room-by-room zoning (for minisplits), and dehumidification in summer. Partners like **Efficiency Vermont** provide equipment criteria and rebates; **VEIC** offers technical guidance; **3E Thermal** supports multifamily projects with design advice and quality assurance.

2) Wood-burning stove and boilers (modern efficient units using local renewable wood fuel)

Modern **EPA-certified wood stoves**, pellet stoves, and **advanced wood boilers** provide renewable, local heat with improved combustion and much lower emissions compared to older units. Proper venting, fuel storage, and maintenance are critical. Weatherization reduces the amount of wood needed, improving comfort and air quality. In multi-unit buildings, **3E Thermal** can advise on central biomass systems and distribution.

3) Heating & cooling fans (ceiling/smart fans)

Efficient **ceiling fans** improve comfort by enhancing air movement, letting you set thermostats higher in summer and slightly lower in winter (reverse mode). **Smart fans** can tie into home automation and occupancy sensors. Fans don't create heat or cold — they help you **feel** more comfortable at lower energy cost, especially when paired with sealing and insulation.

Smart Building Solutions

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1) Smart home & building automation systems

A smart hub (or platform) can coordinate **lighting, plugs, thermostats, leak sensors, shades, and EV charging** to reduce waste. Automations based on occupancy, daylight, and time-of-use pricing shave peaks and catch problems early (e.g., alerts for unusual energy use or leaks). In multi-family, **3E Thermal** and **VEIC** support portfolio-level strategies that combine metering, dashboards, and maintenance insights.

2) Smart thermostats

Modern thermostats learn schedules, geofence occupancy, and optimize heat pump defrost and staging. They also enable **time-of-day** strategies (pre-heating or pre-cooling when electricity is cleaner/cheaper). For rebates and approved models, start with **Efficiency Vermont** and your utility's program requirements.

3) Time-of-day usage and charging of appliance and devices

Run and charge appliances and devices like **dishwashers, washers/dryers** during off-peak or high-renewable periods. Many appliances now include delay-start; smart plugs can add it to others. With **battery storage** and solar, you can shift even more use to lower-carbon, lower-cost hours. DOE and **VEIC** provide frameworks for demand flexibility that households can apply simply with timers and schedules.

Next Steps — Who Can Help

✓ 1. Sign Up for Free Energy Assessment: Collective Well DREAM

✓ 2. Check Financing Options: EastRise Credit Union; Champlain Housing Trust

✓ 3. Schedule optional Home Energy Assessment: Capstone Community Action; Efficiency Vermont Assessment/Audit

✓ 4. Apply for Rebates: Efficiency Vermont

✓ 5. Plan Your Upgrades: 3E Thermal; VEIC

✓ 6. Enjoy Comfort & Savings: lower bills, resiliency, and comfort year-round

Financing Options

Most home owners can stack rebates, no-/low-interest financing, and assistance to cut out-of-pocket cost. Collective Well Foundation DREAM program will take Next Steps above, helping you navigate a typical action plan flow as follows:

1. Complete an energy assessment/audit.
2. Choose a scope that prioritizes weatherization first.
3. Lock In Efficiency Vermont rebates and any income-qualified support.
4. Use EastRise Credit Union or other financing to bridge the remainder until incentives post.

Remember to keep every quote, model number, and invoice—rebate programs require documentation and deadlines.

Our Energy Efficiency partners have programs to assist with your energy efficiency upgrades:

1) 3E Thermal (a Capstone program) — multifamily planning and incentives packaging

For owners/HOAs of apartments and small multifamily buildings, 3E Thermal helps scope and sequence comprehensive upgrades (envelope, electrification, ventilation, controls), align work with utility/state incentives, and provide quality assurance/test-out. They specialize in building-type-specific funding pathways and can help line up bids from qualified firms statewide. Learn more: https://www.3ethermal.org/.

2) Capstone Community Action (Weatherization) — income-eligible

Through the Weatherization Assistance Program (WAP), Capstone can deliver **no-cost** air sealing, insulation, health & safety, and related upgrades for income-qualified households, beginning with an energy assessment/audit and diagnostic testing. If a household is just over the WAP threshold, Capstone staff can still help identify sliding-scale support or pair you with participating contractors and incentives so you capture the best available mix. Start here: https://capstonevt.org/home-weatherization.

3) EastRise Credit Union — local “green” home energy loans

EastRise offers home energy improvement financing that can cover the gap after rebates and WAP support. Ask about 0% promotional or below-market options available through program partnerships, and whether they’ll accept contractor progress draws so projects can move without delays. Tips: get pre-qualified, bring your assessment/audit findings and itemized scope, and confirm how rebates will be applied to your principal once they arrive. Start here: https://eastrise.com/.

Pro tip: Time your roof work (if needed) before rooftop solar; reserve rebates early; and confirm your contractor can file rebate paperwork on your behalf. For technical planning on complex scopes, VEIC can provide independent assistance: https://www.veic.org/.

4) Efficiency Vermont — rebates and buy-downs

Efficiency Vermont offers rebates for weatherization measures, cold-climate heat pumps, controls, and other qualifying equipment, and coordinates with participating contractors who follow industry standards (blower-door testing, right-sizing, safe ventilation). In some cases, Efficiency Vermont and utilities support interest rate buy-downs through partner lenders so residents can access 0% or below-market APR promotions on eligible work. See current offers and contractor participation details: https://www.efficiencyvermont.com/rebates.

5) Window Dressers

Window Dressers community volunteers help Vermont residents improve the warmth and comfort of interior spaces, lower heating costs, and reduce carbon dioxide pollution by producing low-cost insulating window inserts that function as custom, interior-mounted storm windows. Their staff supplies, trains, and supports teams of community volunteers as they build affordable, insulating window inserts.

If you are low-income and qualify for public assistance programs like LiHeap, SNAP or Food Pantry, Window Dressers can provide you with up to 10 pine inserts per year at no charge. Your participation in the Community Workshop is still needed! If you are able to afford some monetary contribution, a donation is welcome to WindowDressers in whatever amount works for you so they can further extend their program to more households.

Local and In-State Contractors

How local contractors will assess and scope

If your process includes a formal Energy Assessment/Audit, you will have a walkthrough and diagnostic testing (blower-door, infrared, safety checks). Contractors translate Energy Assessment findings into a prioritized scope: attic and basement air sealing/insulation first, then targeted wall insulation and window/door fixes. You'll see clear line items (materials, R-values, quantities), expected savings, and any health & safety measures (ventilation, moisture management) needed to support a tighter building—consistent with U.S. DOE Weatherization Assessment Program (WAP) field guidance and Vermont program standards.

Program-qualified installers for incentives and assessments/audits

Many Efficiency Vermont rebates require work by participating or BPI-certified firms following program specifications (test-in/test-out, safe ventilation, correct sizing). If you are income-eligible, Capstone delivers the weatherization work directly under WAP; if you're not WAP-eligible, Capstone and 3E Thermal can still help you identify qualified contractors, line up bids, and ensure the scope meets funding criteria. This avoids surprises at rebate time and ensures you get the performance you paid for.

Weatherization first, then electrify

Contractors will recommend envelope upgrades first—air sealing and insulation amplify the performance of heat pumps and advanced wood systems, often allowing smaller equipment and lower bills. Solar and battery storage planning follows, coordinated with roof condition and interconnection requirements. Expect contractors to handle permits, product registrations, and commissioning steps (for heat pumps, controls, and solar inverters) and to provide owner training on using settings, filters, and schedules.

Quality assurance and documentation

Reputable local and in-state firms provide test-out results (post-blower door, insulation certificates), warranties, and a close-out packet you'll use for rebates and resale disclosures. For multifamily buildings, 3E Thermal adds a layer of QA and coaching across scoping, bidding, installation, and verification, helping owners standardize specs and avoid change-order risk. If

your financing hinges on program standards (e.g., specific R-values or BPI protocols), confirm your contractor will meet and document those requirements before work begins.

Tips on how to hire well

Get **2–3 apples-to-apples bids**, ask for **credentials** (BPI, Efficiency Vermont participation), confirm **who files rebates**, and request references from recent local projects. Ask installers to itemize **sequencing** (e.g., air sealing before insulation, ventilation checks after tightening) and to include a brief **maintenance plan** (filters, attic access, roof/penetration checks). For complex or multifamily scopes, bring **3E Thermal** in early to align specs, incentives, and contractor selection.

Partners & References

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1. 3E Thermal - multifamily scopes & quality assurance
2. https://capstonevt.org/home-weatherization - income-eligible WAP services
3. Collective Well Foundation DREAM Program - energy efficiency upgrades in East Montpelier
4. EastRise Credit Union - local “green” home energy loans, some 0% interest
5. Efficiency Vermont - rebates, assessments, qualified contractors
6. U.S. DOE Weatherization Assistance Program Success Stories - national best practices
7. Vermont Energy Education Program - interactive workshops, equipment and action programs
8. Vermont Energy Investment Corporation (VEIC) - developing programs to make energy available to all
9. WindowDressers.org - income-eligible low-cost insulating window inserts

Quick Start Guide for East Montpelier Homes

☐ Sign up for the Free Energy Assessment with Collective Well DREAM Program.

☐ Gather last 12 months of energy/fuel bills (electricity, oil/propane/wood/pellets).

☐ Prioritize air sealing and insulation (attic, basement, walls) and fix moisture issues.

☐ Apply for financing and rebates (EastRise Credit Union, CHT, or lender).

☐ Right-size a cold-climate heat pump.

☐ Consider advanced wood stove or boiler as supplemental or backup heat source.

☐ Schedule optional Home Energy Assessment (Capstone or Efficiency Vermont network).

☐ Evaluate solar PV potential; coordinate roof maintenance before installing PV.

☐ Decide if battery storage is warranted (critical loads, outages, well pump, internet).

☐ Adopt smart thermostats and set time-of-day use for appliances/EVs.

☐ Schedule post-project check-in to verify savings and comfort; tune thermostat and fan schedules.