



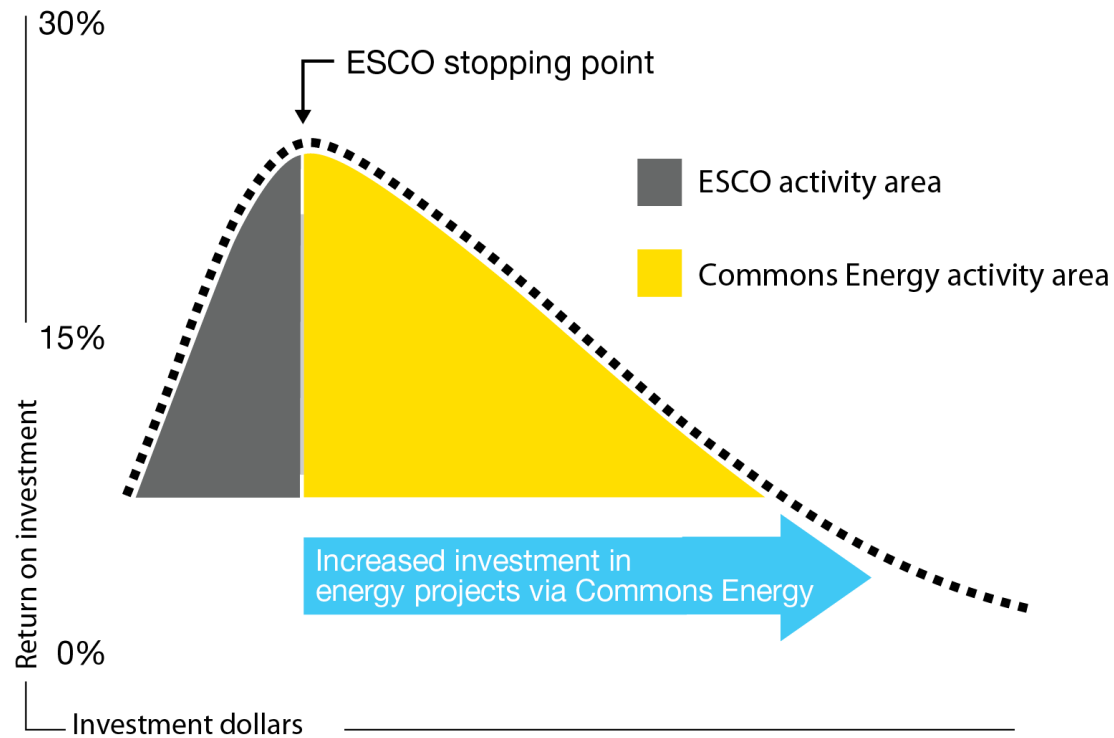
Commons Energy

Saving Energy,
Strengthening
Communities

ACEEE Finance Forum
*New Business Models for
Financing Energy Efficiency*
June 2, 2015

How the Return on Investment Drives the ESCO

How Commons Energy Builds a Client's Positive Cash Flow



Purpose:

Commons Energy seeks to achieve deep energy savings in small and medium-sized unserved buildings in 4 market sectors serving a public purpose.

Result:

Energy, economic, and carbon gains

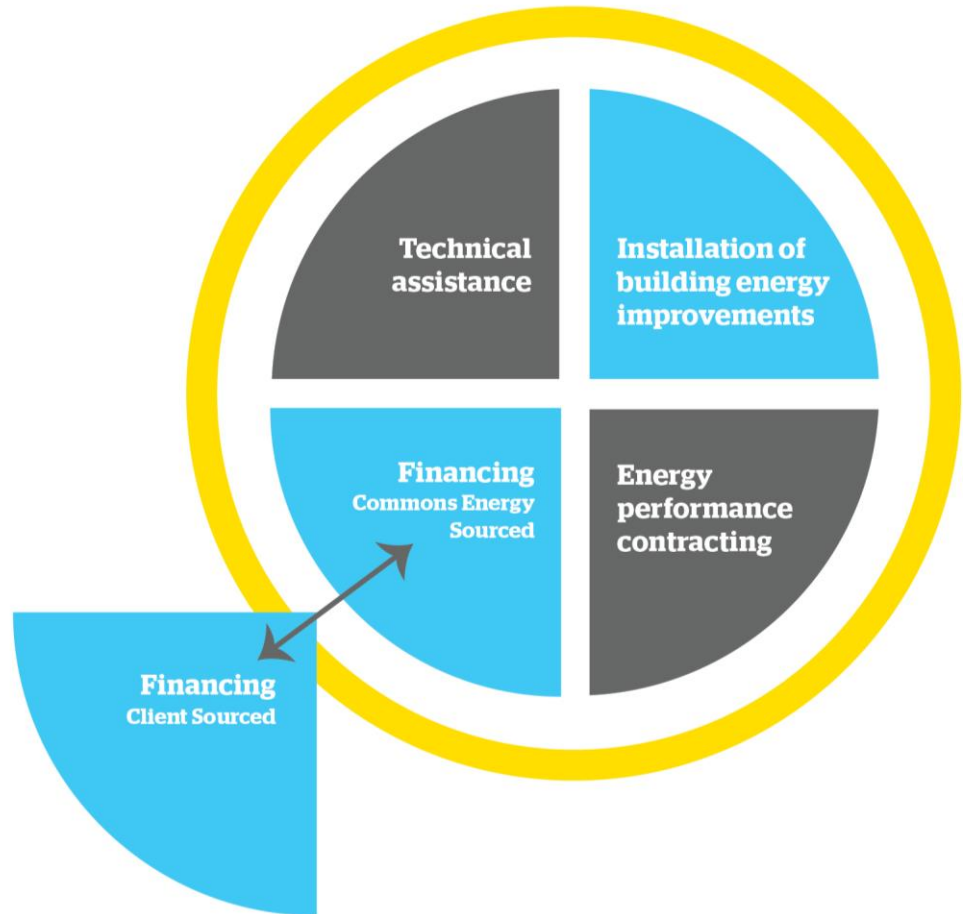
Commons Energy Market Sectors



Method:

Four-part set of integrated services offering comprehensive, whole-building, client-based solutions to existing barriers

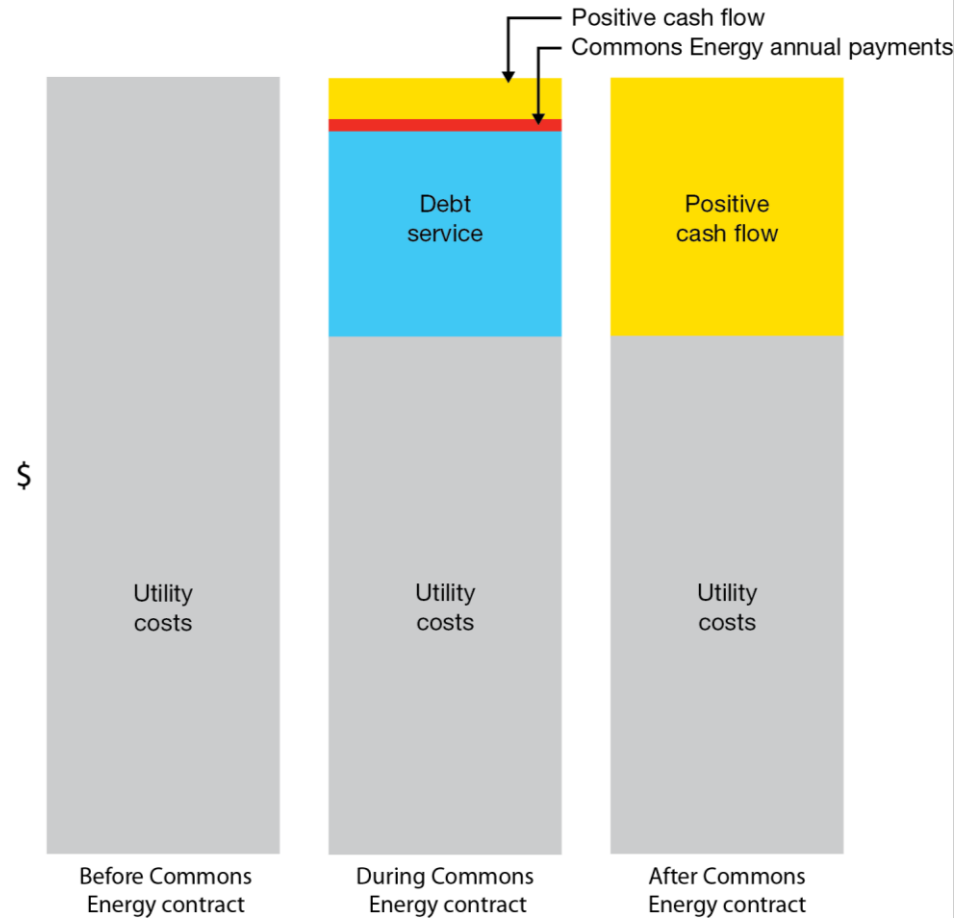
Commons Energy Integrated Services Model



Approach:

Deepens and extends the ESCO model of future savings to fund improvements, replacing objective of public benefit to traditional private returns

How Commons Energy Builds a Client's Positive Cash Flow



Project Financing Model:

Bundles projects into portfolios, matches “patient capital” (long term, low rates) with portfolios

Relationship of Projects to Portfolios

Sources of Capital

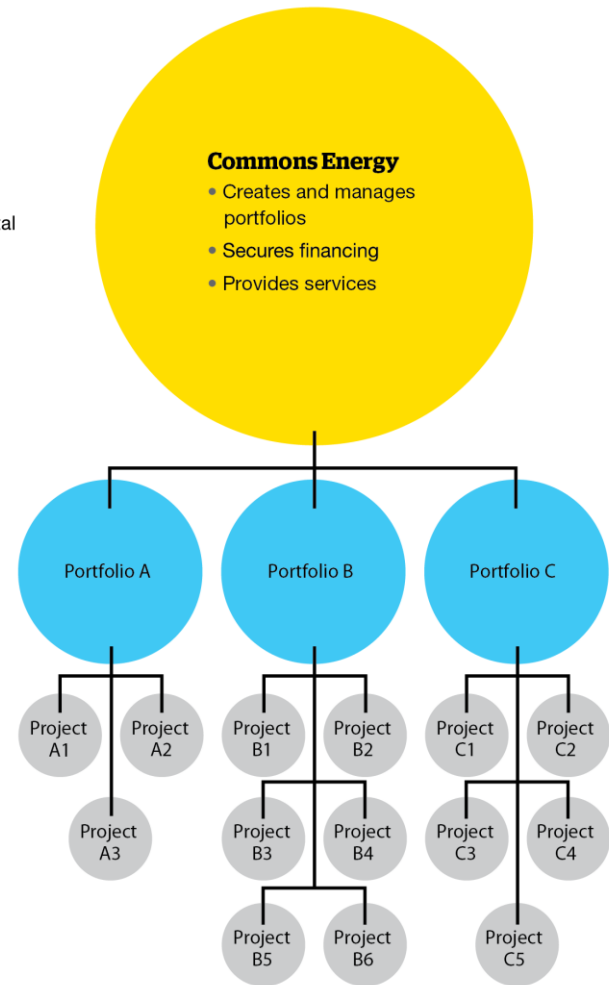
- Foundations
- Social investment funds
- Parent organization
- Operating capital
- Credit enhancements

Sources of Capital

- Banks
- Foundations
- Credit unions
- CDFIs
- Social enterprise funds
- PRI and other debt investments
- Equity investments

Characteristics

- Portfolios composed of multiple projects, typically 5-10
- LLC formed for each portfolio
- Each project governed by an energy performance contract



Union Square Apartments Windsor, Vermont



Project Type

Biomass Fuel Switch

Project Description

Union Square Apartments is a 58-unit apartment building located at 7 Union Street in Windsor, VT. Comprehensive energy efficiency opportunities were implemented several years ago. The facility currently burns 17,000 gallons of fuel oil annually to provide heat and domestic hot water, and facilities management is interested in switching to a biomass boiler to reduce heat and hot water costs. This is a capstone project for the property; a final energy-related upgrade that was left undone after the retrofit.

Engineering and Design

Commons Energy will develop mechanical performance specifications and a scope of work to guide bid solicitation from biomass mechanical contractors who will bid on providing installation of biomass boiler(s), fuel storage, fuel distribution, and fuel delivery systems.

Construction Management

Commons Energy will oversee the installation of building energy improvements, including work specification, bid solicitation and review, contracting, construction and project management, and building / system commissioning.

Project Partners

Housing Vermont, Windham and Windsor Housing Trust

Measurement and Verification

Commons Energy will monitor boiler system performance via remote monitoring and provide annual performance evaluation reports. Commons Energy will facilitate access to necessary training for facilities staff involved with the daily maintenance and operation of the new biomass system.

Project Financing

Lead underwriting provided by National Housing Trust Community Development Fund, with additional fixed-rate project financing provided by Commons Energy.

List of Improvements

- Biomass boiler replacement
- High Performance Circulator Pumps and integral control VFDs

Projected Savings

The investment is expected to reduce heating and hot water costs by at least one-third.

Heineberg Senior Housing Burlington, Vermont



Project Type

Comprehensive Lighting Retrofit

Project Description

Heineberg Senior Housing is an 82-unit apartment building located in the New North End of Burlington, VT. While nearly all lighting at Heineberg was fluorescent, some technologies were outdated relative to new LED technologies, and most fixtures lacked any occupancy-based controls. Furthermore, special attention to lighting placement and quality was warranted due to the elderly population. Both in-unit and common-area lighting were audited.

Engineering and Design

Commons Energy worked with an electrician, a lighting designer, and with the client's electrical utility to audit and design an updated LED lighting schedule complete with occupancy sensing controls in hallways and common areas.

Construction Management

Commons Energy will assist the client with overseeing the installation of lighting improvements and will facilitate system commissioning upon completion.

Project Partners

Cathedral Square Corporation, Burlington Electric Department,
Donna Leban

Measurement and Verification

Commons Energy will annually compare utility bills to a utility baseline to verify savings and performance.

Project Financing

Commons Energy is providing fixed-rate financing for up to 15 years.

List of Improvements

- Upgrade stairwell lighting to LED and add occupancy-based controls designed to meet emergency egress codes.
- LED lighting upgrades in hallways and the complete retrofit of 90 existing wall scones from un-controlled compact fluorescent lamps to LED lamps on an occupancy-based controller.
- Retrofitting outdoor bollard and parking lot lighting to LED.

Projected Savings

The investment is expected to reduce electric use and costs associated with lighting by 75%.

Milton Senior Housing Milton, Vermont



Project Type

New Construction

Project Description

The proposed Milton Senior Housing property is designed to be a 24-unit senior housing facility. With designs based on a high performance building built one year previously, the developer wanted to build a building that met even higher performance standards, and made Commons Energy part of the design team tasked with making Milton Senior Housing the first Passive House certified multi-family property in the northeast.

Engineering and Design

Commons Energy is part of a large design team that includes several passive house certified modelers and the state's energy efficiency utility, Efficiency Vermont. Each member of the team is dedicated to having this property achieve Passive House certification and set a new standard for multi-family construction in Vermont.

Construction Management

N/A

Project Partners

Cathedral Square Corporation, Efficiency Vermont, Duncan Wisniewski Architecture, EcoHouses of Vermont

Measurement and Verification

Commons Energy will support measurement and verification of the energy efficiency performance of the Milton Senior Housing property. Performance will be measured against a baseline building design.

Project Financing

Commons Energy will contribute financing to cover the incremental cost of the building materials needed to allow the facility to reach Passive House standards, and will guarantee that the building will perform as designed.

List of Improvements

- Passive House Certified Construction

Projected Savings

A 77% cost savings on heating is estimated.

Darling Inn Lyndonville, Vermont



Project Type

Comprehensive Retrofit

Project Description

The Darling Inn is a 28-unit apartment building located at 76 Depot Street in Lyndonville, VT. Originally a hotel built in 1928, the Darling Inn was converted to serve as an apartment building in the 1970s. The Darling Inn is undergoing a complete facility retrofit. Darling Inn has an outdated thermal shell and an existing heating system that is complicated; the first floor is heated by an oil boiler and the second and third floors heated with electric storage heaters.

Engineering and Design

N/A

Construction Management

Commons Energy will provide both construction project oversight and commissioning services for Darling Inn.

Project Partners

RuralEdge, Amy Wright, Vermont Fuel Efficiency Partnership, Efficiency Vermont

Measurement and Verification

Commons Energy will monitor boiler system performance and provide annual performance evaluation reports.

Project Financing

None from Commons. Client was able to obtain long-term financing at a very favorable rate from a federal government program.

List of Improvements

- Upgraded insulation and air-sealing
- Heat Recovery Ventilation
- Biomass Boiler

Projected Savings

Improvements will reduce the per-unit cost to heat and provide hot water to each unit by 56%.

Capital Partners

MacArthur
Foundation

THE
KRESGE
FOUNDATION



HIGH MEADOWS
FUND



Vermont
Energy Investment
Corporation



THE
Vermont
Community Foundation

Additional resources

Open source information about Public Purpose ESCO's:

www.ppescohowto.org

Commons Energy L3C

(www.commonsenergy.com)

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