

Energy Efficiency Financing Foundations

Training for Public Sector
Facility Managers and
Finance Officers





U.S. DEPARTMENT
of ENERGY

Module 4

Specialized Financing Products

Learning Objectives

“**Traditional**” financing product: Widely used to support investments in many different contexts, including energy efficiency.

“**Specialized**” financing product: Designed specifically to promote energy efficiency by helping to overcome market barriers.



Introduce and explain specialized public sector financing products.



Examine use of specialized financing products in public sector project examples.



Understand and compare strengths and weaknesses of specialized financing products.



Compare traditional and specialized financing products.



Types of Specialized Public Sector Financing Products

On-Bill

Contract in which a utility or private lender supplies capital to fund energy efficiency projects and is repaid through the customer's utility bill.

“On-bill financing” refers to contracts in which the utility itself provides the capital.

“On-bill repayment” refers to contracts in which capital comes from a private lender, and loans are repaid through the utility bill as a conduit.

“On-bill tariff” refers to an on-bill structure in which repayment rules are written into the same documents that govern other customer charges, called tariffs. Charges stay with the property by default if the customer moves out. Payments are structured to be less than projected energy savings.

ESPC

An Energy Savings Performance Contract (ESPC) is a contract in which an energy service company (ESCO) installs energy and water efficiency, renewables, storage, and other facility improvements and provides a guarantee of actual savings from avoided consumption. The ESCO typically conducts savings measurement and verification (M&V) to determine whether guaranteed savings have been achieved and may perform ongoing operations and maintenance (O&M).

ESPC arrangements are often discussed loosely by industry professionals as financing agreements but are actually agreements with an ESCO contractor who guarantees energy savings. Payments to the contractor generally come from budget allocations and/or a separate underlying financing agreement with a third party. The savings guarantee provides the customer some assurance that they will have the cash flow to make their financing payments on that contract. ESCOs typically do not advise on or arrange financing because of Securities and Exchange Commission rules requiring registration as a municipal advisor when assisting with public debt issuance.

EaaS

Efficiency-as-a-Service (EaaS) is a contractual arrangement in which a provider pays up-front costs and oversees installation and ongoing maintenance of energy efficiency measures. Customer repayments are based on energy savings achieved, as measured by the provider.

EaaS generally does not involve issuing public securities like bonds or tradeable leasing shares (COPs). As a result, EaaS companies may not be subject to the rule requiring registration of municipal advisors who provide recommendations on public issuance of securities.

Some accountants have classified EaaS as off-balance sheet. The Government Accounting Standards Board (GASB) has not issued guidance on disclosure of these transactions.

Note: Commercial Property Assessed Clean Energy (C-PACE) is another specialized financing product for the commercial sector but does not work for publicly owned buildings, as it must be placed on a property tax bill.



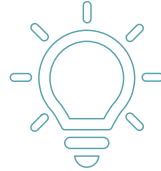
On-Bill Financing/On-Bill Repayment



Capital can come from private lenders or utilities.



Some programs only check bill payment history, not credit.



Repaid directly on utility bill.

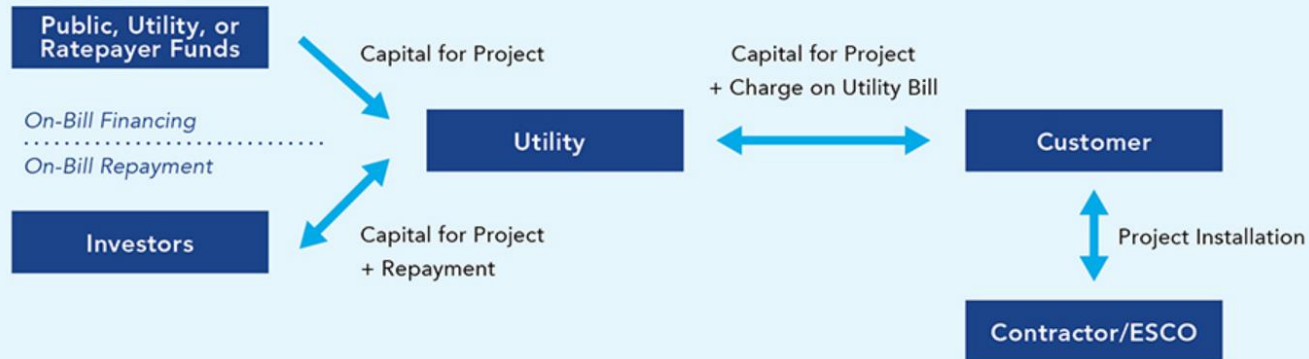


May expedite internal sign-off as part of the utility bill.



May require separate accounting.

Typical On-Bill Financing or Repayment Structure



[Learn More](#)

Source: [U.S. Department of Energy Better Buildings Solution Center](#)



On-Bill Advantages

✓ CONVENIENT STRUCTURE

On-bill agreements are typically very simple, and making repayments directly on the utility bill is convenient.

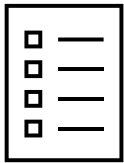
✓ ALTERNATIVE UNDERWRITING IN SOME PROGRAMS

Some on-bill programs only check a customer's utility payment history, which can streamline the application and approval process as compared with underwriting a customer's creditworthiness.

✓ MAY FACILITATE INTERNAL APPROVAL

May facilitate a speedier internal approval process, if seen as part of utility bill that can be paid out of operating budget. (Note: internal budgeting does not determine proper accounting treatment or disclosure requirements.)

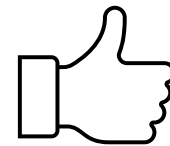
Source: [U.S. Department of Energy, Better Buildings Solution Center](#)



Simple Repayment
Structure



Alternative Underwriting
(some programs)



May Facilitate
Internal Approval



On-Bill Disadvantages

✘ **NOT SUITED FOR WIDER PROJECT SCOPES**

Although some programs allow a portion of the project scope to include non-energy improvements, the majority of the project must typically be energy-related. It is not ideal for wrapping energy improvements into wider project scopes.

✘ **OTHER PROGRAMMATIC LIMITATIONS**

Programs typically set limitations on project size, financing term length, eligible energy improvements, etc.

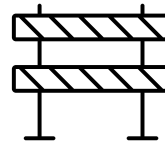
✘ **LIMITED AVAILABILITY**

Available only where utility providers offer an on-bill program and must be open to public sector customers.

Source: [U.S. Department of Energy, Better Buildings Solution Center](#)



Narrow Project Scopes



Programmatic Limitations



Limited Availability



Example: Energize Connecticut Small Business and Municipal Loan Program (Eversource and United Illuminating)

Energize Connecticut

Small Business & Municipal Loan Program

What Is the Small Business and Municipal Loan Program?

These loans are funded through the Connecticut Energy Efficiency Fund to help upgrade or replace existing electric and gas equipment with qualifying high-efficiency equipment.

Loan Terms

- Commercial or industrial businesses participating in the [Small Business Energy Advantage \(SBEA\)](#) program can apply for loans ranging from \$500-\$100,000.
- Municipalities participating in a retrofit program can apply for loans up to \$1 million.
- Repayment terms are up to 48 months.
- Convenient on-bill payment option.

Eligibility

- Commercial and industrial businesses of Eversource or United Illuminating that are participating in the SBEA program are eligible.
- Municipalities served by Eversource or United Illuminating with projects qualifying for the Energy Opportunities program may also participate.
- All participating customers must be in good credit standing, be a utility customer for one year, and have less than four late utility payments.
- The loan must be used to upgrade or replace existing electric and natural gas equipment with high-efficiency equipment.

Source: [Energize Connecticut](#)



On-Bill Example: Connecticut Department of Transportation



“We’ve been working with the SBEA program to provide the department a means to retrofit 55 of our Department of Transportation state facilities, including maintenance facilities, repair facilities, and rest areas along the highway since 2015. The SBEA program has provided us with the most cost-effective method of performing these retrofits.”

“In 2022, we used the SBEA program for the first time to retrofit lighting along Interstate 91. This project was very successful in providing the most time-efficient and cost-effective method for retrofitting our state-owned roadway lighting so far.”

- Connecticut Department of Transportation

Photo from [Doug Kerr on Flickr](#)

Year	Project_Name	Facility_Street _Number	Facility_Street1	Legal_Town	Facility_ State	Facility_Zip	Total Project Cost	Loan Amount	Total_Incentive _Amt	Annual_kWh_ Savings	\$ Savings/ Year
2019	CT DEPT OF TRANSPORTATION	151	TORRINGTON RD	Winchester	CT	06098	\$93,519.68	\$57,642.05	\$35,877.63	90032.176	\$15,305.47
2019	CT DEPT OF TRANSPORTATION		JENNINGS RD	Hartford	CT	06120	\$71,314.20	\$42,867.71	\$28,446.49	79228.684	\$13,468.88
2019	CT DEPT OF TRANSPORTATION		PADDOCK RD	Middletown	CT	06457	\$54,962.08	\$32,977.64	\$21,984.44	55959.626	\$9,513.14
2019	CT DEPT OF TRANSPORTATION		BOSTON TPKE	Bolton	CT	06043	\$37,889.42	\$22,733.64	\$15,155.78	38131.336	\$6,482.33
2019	CT DEPT OF TRANSPORTATION	47	GERDES RD	New Canaan	CT	06840	\$63,778.98	\$44,427.06	\$19,351.92	48510.3	\$8,246.75
2019	CT DEPT OF TRANSPORTATION	66	LEETES ISLAND RD	Branford	CT	06405	\$28,514.63	\$20,039.60	\$8,475.03	21187.2	\$3,601.82
2019	CT DEPT OF TRANSPORTATION	829	BUCKLEY HWY	Union	CT	06076	\$27,227.63	\$19,274.37	\$7,953.26	18644.442	\$3,169.56
2019	CT DEPT OF TRANSPORTATION	345	BLOOMFIELD AVE	Windsor	CT	06095	\$57,382.28	\$37,381.14	\$20,001.14	50291.164	\$8,549.50
2019	CT DEPT OF TRANSPORTATION	1549	HOPMEADOW ST	Simsbury	CT	06070	\$22,365.71	\$14,993.46	\$7,372.25	18430.596	\$3,133.20

Source: [State of Connecticut](#)



ESPCs



Identify an ESCO.



Negotiate an ESPC, the agreement with the ESCO contractor.



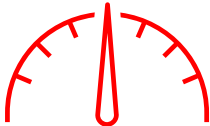
Identify and procure separate underlying financing to support payment to the ESCO.



The ESCO identifies and implements energy-saving measures.



The ESCO and owner conduct agreed-upon roles in O&M.



ESCO conducts savings M&V.



For additional ESPC resources, see [Slide 25](#)

Source: [U.S. Department of Energy Better Buildings Solution Center](#)



ESPC Advantages

✓ ENERGY SAVINGS GUARANTEED

Most ESPCs include a performance guarantee, reducing project risk for the customer. This is particularly beneficial for large and complex retrofits.

✓ OUTSOURCED PROJECT MANAGEMENT

The ESCO handles most aspects of project scoping, implementation, and management, reducing the burden on the customer's in-house staff. (Must be part of negotiated agreement.)

✓ ENHANCED RELIABILITY OF OPERATIONS

Projects are maintained through rigorous monitoring and verification by the ESCO, which will typically conduct periodic maintenance and/or adjustments to ensure long-term reliability and performance of the equipment.

✓ SCALABLE

EPCs can be used for portfolio-wide initiatives, and the large size and deep bench of most ESCOs gives the customer access to a range of vertically integrated services.

✓ MAY FACILITATE INTERNAL APPROVAL

The performance guarantee may help sell the project internally.

Source: [U.S. Department of Energy, Better Buildings Solution Center](#)



Savings
Guaranteed



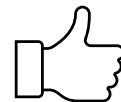
Option for Outsourced
Project Management



Reliability of
Operations



Scalable



May Facilitate
Internal Approval



ESPC Disadvantages

✘ **LONG CLOSE TIMES**

Because ESPCs are complex and require the ESCO to take on performance risk, they can have high transaction costs and long negotiation periods (typically over a year).

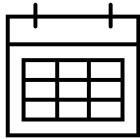
✘ **MAY NOT WORK FOR SMALLER PROJECTS**

Because of the substantial transaction costs to set up an ESPC, ESCOs tend to look for larger project sizes.

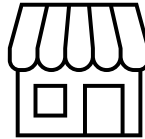
✘ **COMPLEXITY OF SAVINGS MEASUREMENT**

Methods for measuring energy savings compared to pre-installation usage can be complex and are not always transparent to customers. This may detract from attractiveness of the savings guarantee.

Source: [U.S. Department of Energy. Better Buildings Solution Center](#)



Long Close Times
(High Transaction Costs)



May Not Work for
Smaller Projects



Complexity of Savings
Measurement



ESPC Example: Virginia Beach Public Schools

Virginia Beach City Public Schools, Virginia

- Largest school division in southeast Virginia (90 buildings)
- Faced budget reductions and declining enrollment (1% per year)
- \$5.9 million in energy improvements
 - Lighting
 - Portable heat pump controls
 - Ground source heat pumps
 - Air conditioning unit replacements
 - Computerized power control systems
 - Water conservation measures
- \$730,000+ total annual savings

Energy Saved (MMBtu/year)	Total Energy Cost Savings (\$)	Total O&M Cost Savings (\$)	Total Savings (\$)	Total Project Cost (\$)	Simple Payback Including Financing Cost (years)
20,005	\$6,626,322 (over 10 years)	\$697,670 (over 10 years)	\$7,323,992 (over 10 years)	\$5,849,657	10

Source: https://betterbuildingssolutioncenter.energy.gov/sites/default/files/slides/Expanding_ESPC-Slides.pdf



EaaS



Sign contract with a provider.



Provider pays contractor for building upgrades.



Provider conducts ongoing O&M.



Provider measures savings on an ongoing basis.



Customer makes payments and provider takes on performance risk.



At the end, customer can terminate, extend, or (theoretically) return the assets

Energy Services Agreement Structure



**Learn
More**

Source: [U.S. Department of Energy Better Buildings Solution Center](https://www.energy.gov/better-buildings-solution-center)



EaaS Advantages

✓ ENERGY SAVINGS PAY FOR PROJECTS

Efficiency-as-a-service allows customers to redirect a portion of their current utility spending to pay for efficiency improvements; ESA payments are based on realized energy and operational savings and set below the current utility price.

✓ ENHANCED RELIABILITY OF OPERATIONS

Efficiency-as-a-service providers pay for periodic maintenance services to ensure long-term reliability and performance of the project equipment. Under a MESA*, the customer has a single point of contact and a single payment for all utility expenses and the MESA provider actively manages energy consumption at the facility.

✓ FLEXIBLE ENTERPRISE-SCALE FINANCING

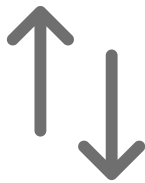
Many providers can bundle together multiple sites that have smaller project opportunities into a single package (e.g., bundle 10 sites with \$500,000 projects into a single \$5 million service contract).

✓ MAY FACILITATE INTERNAL APPROVAL

No capital outlay and payment only when savings are realized.

*Managed Energy Service Agreement

Source: [U.S. Department of Energy. Better Buildings Solution Center](#)



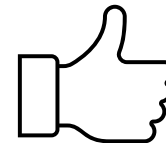
Energy Savings
Pay for Projects



Reliability of
Operations



Flexible Scaling



May Facilitate Internal
Approval



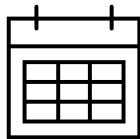
EaaS

- ❌ **COVENANTS RESTRICTING OWNERSHIP TRANSFER**
Preexisting financing agreements may prohibit transfer of ownership of building fixtures to a third party.
- ❌ **LONGER CLOSE TIMES**
Transaction costs can be high if each deal is heavily negotiated; for more complicated retrofits with no preliminary energy audits completed, deals can take 9–12 months or more to close.
- ❌ **COMPLEXITY OF SAVINGS MEASUREMENT**
Methods for measuring energy savings compared to pre-installation usage can be complex and are not always transparent to customers. This may detract from the pay-for-performance model.
- ❌ **COST OF COVERING SAVINGS RISK**
While the contingent payments may provide assurance of a net-positive arrangement, the terms may cut into the potential financial upside.
- ❌ **UNDERLYING FINANCING NOT TAX EXEMPT AND OFTEN SHORTER TERM**
The underlying financing for EaaS companies generally comes from their own capital raised from investors and does not come with the cost advantages of tax-exempt debt issuances. These investors also frequently have shorter time horizons for payback than public securities (e.g., bond) investors. These factors may restrict the scope of the project than can be covered with savings.

Source: [U.S. Department of Energy, Better Buildings Solution Center](#)



Ownership Constraints



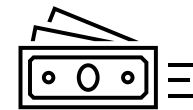
Longer Close Times



Complexity of Measurement



Cost of Covering Savings Risk



Higher Cost of Capital and Shorter Payback Requirements



EaaS Example: Pitt County Schools, Greenville, North Carolina

- Pitt County Schools entered a shared savings contract with provider Cenergistic in 2015
- Savings were split 50/50 between the school district and the provider
- Each received an annual average savings-based payment of \$556,096
- After five years of demonstrated savings, Pitt County switched to a lower fixed-fee annual payment of \$207,600
- Provider continues to guarantee savings will cover annual payment

Utility Cost Savings: Contract Fees

Cenergistic Contract Changes

- As a result of the negotiations during the contract extension process the district will keep an additional \$345,130.80 in utility savings.
- This is calculated as the difference between the fixed fee contract amount and the average annual shared savings payments.

The Math

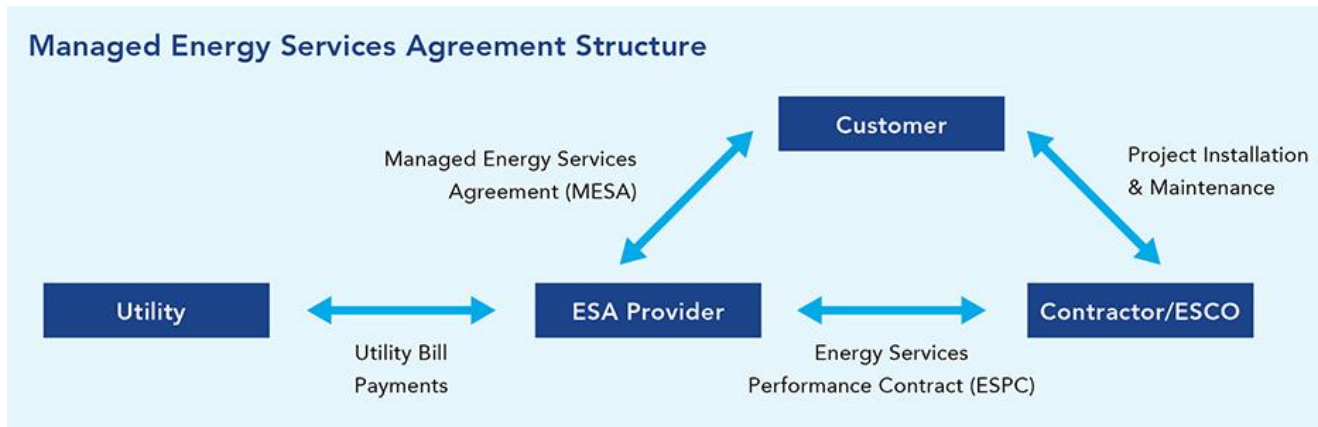
- The average annual shared savings cost is \$556,096.80.
- The fixed fee contract annual cost is \$206,700.
- There is an annual fee for software of \$4,266 that is deducted from the difference of the two amounts listed above for the final savings noted on the left.

Source: [Presentation from Pitt County Schools facilities staff](#) to the school board on June 15, 2020



Alternative Approach: Managed Energy Service Agreement (MESA)

- Variation of an EaaS agreement.
- Provider assumes the broader energy management of a customer's facility, including the responsibility for utility bills.
- MESA provider charges customer an agreed-upon rate based on historical energy consumption.
- Provider takes on performance risk and only makes money if the utility bill is lower than the charge to customer.



Source: [U.S. Department of Energy Better Buildings Solution Center](#)



Product Comparisons

Specialized Product Comparison by Product Features

	On-Bill	ESPC	EaaS
Low Administrative Costs	✓	X ¹	X
Low Cost of Capital	~	~	X
Longer Term Lengths	X	~	X
Scalable to Building Portfolios	~ ²	✓	✓
Generally Available	~	✓	~ ³
Savings Guaranteed	X	✓	✓
Actual Savings Measurement	X	✓	✓
O&M Included	X	~ ⁴	✓

1. U.S. Department of Energy resources designed for ESPCs can also be used at the state and local level to standardize and streamline contracting process. For more, see the [ESPC Toolkit](#).
2. May depend on the utility territory of other buildings. Some programs also cap total outstanding loans per customer.
3. Growing rapidly, but participation of public sector is still limited.
4. Depends on contract arrangements.

- ✓ Feature is inherent to this product.
- ~ Feature may or may not be part of a particular offering of this product type.
- X Feature is not a part of this product and may be a barrier to its use.



Specialized Product Comparison

Pros and Cons in Multiple “Debt” Contexts

Barrier	On-Bill	ESPC	EaaS	Notes (See Module 2 for further explanation of each debt-related barrier)
Competition for Financing Capital (Agency Decision-Making)	✓	✓	✓	<u>On-Bill</u> : Can help if paid for from utility (operating) budget. <u>ESPC</u> : Capital needed up front, but guarantee reduces risk. <u>EaaS</u> : No up-front capital outlay from customer.
Voter Approval Requirements (Public Policy)	✓	~	✓	<u>On-Bill</u> : In practice, unlikely to require voter approval. Strictly speaking, may depend on public policy definition of debt. <u>ESPC</u> : Depends on underlying financing used. General obligation (GO) bonds may require voter approval. <u>EaaS</u> : In practice, unlikely to require voter approval. Strictly speaking, may depend on public policy definition of debt.
Cumulative Debt Caps (Public Policy)	✓	~	✓	<u>On-Bill</u> : In practice, unlikely to count against debt caps. Strictly speaking, may depend on public policy definition of debt. <u>ESPC</u> : Depends on financing used. GO bonds generally count against limits. Others (e.g., leases) may depend on policy definitions. <u>EaaS</u> : In practice, unlikely to count against debt caps. Strictly speaking, may depend on public policy definition of debt.
Debt Covenants (Preexisting Financing Agreements)	~	~	✗	<u>On-Bill</u> : Depends on language of preexisting financing agreements and analysis of preexisting lenders. <u>ESPC</u> : Depends on underlying financing/payment. GO bonds and leases likely would be covered under any debt covenants. <u>EaaS</u> : Providers typically “own” improvements, which often contradicts preexisting agreement provisions.
Investor Tolerance of Balance Sheet Debt Levels (GAAP/GASB)	✗	~	~	<u>On-Bill</u> : Typically requires long-term debt commitment that should be booked on balance sheet (even if paid for from operating budget). <u>ESPC</u> : Depends on underlying financing/cash payment. Any lease or bonds portion should be booked on balance sheet. <u>EaaS</u> : No GASB guidance to date on balance sheet treatment.

GAAP = Generally Accepted Accounting Principles

- ✓ Product helps overcome the barrier.
- ~ Product may or may not help overcome the barrier.
- ✗ Product does not overcome the barrier and may create one.



Traditional and Specialized Product Comparison by Product Features

Barrier	Traditional			Specialized		
	Loans	Leases	Bonds	On-Bill	ESPC	EaaS
Low Administrative Costs	~	~	X	✓	X	X
Low Cost of Capital	~	~	✓	~	~	~
Longer Term Lengths	X	X	✓	X	~	X
Flexible Project Scopes	✓	✓	✓	X	X	X
Scalable to Building Portfolios	✓	✓	✓	~	✓	✓
Generally Available	✓	✓	✓	~	✓	~
Savings Guaranteed	X	X	X	X	✓	✓
Actual Savings Measurement	X	X	X	X	✓	✓
O&M Included	X	X	X	X	~	✓

Note: Check marks are used where an advantage is inherent to the product structure. Other specific products in some jurisdictions may also carry these advantages, particularly where efficiency programs have enhanced them.

- ✓ Product helps overcome the barrier.
- ~ Product may or may not help overcome the barrier.
- X Product does not overcome the barrier and may create one.



Traditional and Specialized Product Comparison

“Debt Restrictions”/“Non-Debt”

Barrier	Traditional			Specialized			Notes
	Loans	Leases	Bonds	On-Bill	ESPC	EaaS	
Competition for Capital Budget (Agency Decision-Making)	X	X	X	✓	✓	✓	<u>Traditional:</u> Loans, leases, and bonds all compete for limited capital budgets. <u>Specialized:</u> On-bill and EaaS are often treated as part of the operating budget internally (regardless of reporting requirements). The ESPC savings guarantee can help make the case for budget neutral or positive impact.
Voter Approval Requirements (Public Policy)	~	~	X	✓	~	✓	<u>Traditional:</u> GO bonds often require voter approval. Loans and leases may depend on policy language, but usually not if there is no general obligation. <u>Specialized:</u> In practice, on-bill and EaaS may be unlikely to require voter approval. ESPC depends on underlying financing (GO bonds vs. other).
Cumulative Debt Caps (Public Policy)	~	~	X	✓	~	✓	<u>Traditional:</u> GO bonds are typically counted against debt caps; others depend on policy language (e.g., “bonds, notes, or other evidence of indebtedness” vs. “general obligation,” “paid from general fund” vs. “general obligation.”) <u>Specialized:</u> In practice, on-bill and EaaS are unlikely to count against debt caps. Strictly speaking, it depends on policy language. ESPC depends on underlying financing/payment.
Debt Covenants (Preexisting Financing Agreements)	~	~	~	~	~	X	<u>Traditional:</u> All products likely count against debt ratios and restrictions on incurring additional debt, but agreements may leave some room to do so. <u>Specialized:</u> On-bill may depend on how preexisting lenders perceive the obligation (as debt or part of the utility bill). ESPC depends on underlying financing/payment. EaaS typically gives ownership of any financed equipment, including building fixtures, to the financing provider, which may create issues for preexisting financing secured by the property.
Investor Tolerance of Balance Sheet Debt Levels (GAAP/GASB)	X	X	X	X ¹	~	~	<u>Traditional:</u> All products should be booked on balance sheet. <u>Specialized:</u> On-bill should be booked on balance sheet. ESPC depends on underlying financing/cash payment (any lease or bond portion should be booked on balance sheet). GASB has not issued guidance to date on EaaS.

¹ GASB has not issued guidance regarding on-bill that runs with the property (e.g., on-bill tariffs).

- ✓ Product helps overcome the barrier.
- ~ Product may or may not help overcome the barrier.
- X Product does not overcome the barrier and may create one.



Additional Resources

- [Current Practices in Efficiency Financing: An Overview for State and Local Governments](#)
- [Better Buildings Financing Navigator](#)
- [Leveraging Bond Financing to Support Energy Efficiency and Renewable Energy Goals: A Resource Summary for State and Local Governments](#)
- [Bond Financing for Energy Efficiency and Renewable Energy: Overview for State and Local Leaders](#)
- [U.S. Department of Energy, “Achieving Energy Savings in Small- and Medium-Sized Public Facilities”](#)
- [Environmental and Energy Study Institute, “Interactive Map of Utilities with On-Bill Financing Programs.”](#)



ESPC-Specific Resources

- [Performance Contracting National Resource Center \(PCNRC\): Training Certificate Series](#)
- [Energy Savings Performance Contracting Toolkit](#)
- [eProject eXpress](#)
- [NASEO: Energy Savings Performance Contracting \(ESPC\) and Related Models](#)
- [ESPC or Design-Bid-Build for Your Retrofit?](#)
- [Benefits of Using Owner's Representatives.](#)



Glossary

- **Efficiency as a Service (EaaS):** Contract in which a provider pays up-front project costs and oversees installation and ongoing maintenance of energy efficiency measures. Customer repayments are based on energy savings achieved, as measured by the provider, and the provider typically receives payment only if savings exceed payment obligations.
- **Energy Savings Performance Contract (ESPC):** Contract in which an energy service company (ESCO) installs efficiency measures and provides a guarantee of energy savings from those measures. The ESCO conducts savings measurement and verification (M&V) and may perform ongoing operations and maintenance (O&M). The customer may pay for an ESPC arrangement using internal funding, external financing, or a mix of the two.
- **Energy Service Company (ESCO):** Company that installs comprehensive energy efficiency upgrades to existing buildings under an ESPC.
- **On-Bill:** Contract in which a utility or private lender supplies capital to a customer to fund energy efficiency, renewable energy, or other generation projects and is repaid through an existing utility bill. If the utility is the capital provider, the payment goes directly to the utility, and the arrangement is called “**On-Bill Financing.**” If the payment is passed through the utility bill as a conduit to a private capital provider, the arrangement is called “**On-Bill Repayment.**”
- **Performance Risk:** Risk that energy efficiency measures may not function as intended or produce the level of energy savings expected. In most types of financing arrangements, the customer takes on the performance risk. In EaaS contracts, however, payments may only be due if savings exceed financing payments. In ESPC contracts, the contractor takes on performance risk by providing an energy service guarantee, which can help provider the customer with assurance that they will be able to make any required financing payments.



For more information

Download publications from Energy Markets & Policy: <https://emp.lbl.gov/publications>

Sign up for our email list: <https://emp.lbl.gov/mailing-list>

Follow Energy Markets & Policy on Twitter: @BerkeleyLabEMP

Acknowledgements

This work was funded by the U.S. Department of Energy Office of State and Community Energy Programs, under Contract No. DE-AC02-05CH11231. We would like to especially thank Sean Williamson, Emily Slusser, and Hannah Taylor for their support of this work. For comments and input on this analysis, we also thank participants in the pilot webinars and subject matter experts.

The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof, or The Regents of the University of California.

Disclaimer

This document was prepared as an account of work sponsored by the United States Government. While this document is believed to contain correct information, neither the United States Government nor any agency thereof, nor The Regents of the University of California, nor any of their employees, makes any warranty, express or implied, or assumes any legal responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by its trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or The Regents of the University of California. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof, or The Regents of the University of California.

Ernest Orlando Lawrence Berkeley National Laboratory is an equal opportunity employer.

Copyright Notice

This manuscript has been authored by an author at Lawrence Berkeley National Laboratory under Contract No. DE-AC02-05CH11231 with the U.S. Department of Energy. The U.S. Government retains, and the publisher, by accepting the article for publication, acknowledges, that the U.S. Government retains a non-exclusive, paid-up, irrevocable, worldwide license to publish or reproduce the published form of this manuscript, or allow others to do so, for U.S. Government purposes