

# THANK YOU REV2024 SPONSORS!





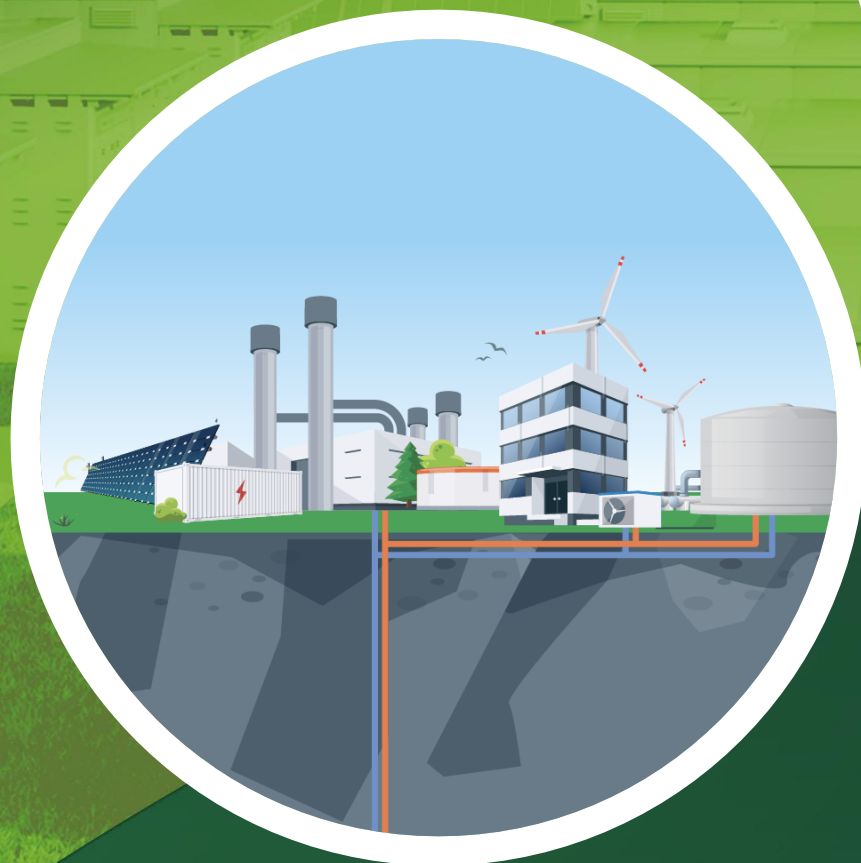


# **Onsite Energy Technical Assistance Partnerships**

**U.S. DEPARTMENT OF ENERGY**

New England

**603-862-3171**



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10-17-2024

# Onsite Energy Program

The U.S. Department of Energy's (DOE) Onsite Energy Program provides technical assistance, market analysis, and best practices to help industrial facilities and other large energy users increase the adoption of onsite clean energy technologies.

battery storage | combined heat and power | district energy | fuel cells | geothermal | industrial heat pumps |  
renewable fuels | solar PV | solar thermal | thermal storage | waste heat to power | wind



# Why is Onsite Energy Important?

- **Cost Savings:** Significant cost savings can be achieved through **utility bill reductions** and the **sale of excess electricity production** back to the grid.
- **Resilience:** Organizations can **ensure uninterrupted operations during grid outages or emergencies** with onsite energy solutions, enhancing operational resilience and reducing the risk of financial losses.
- **Sustainability:** Onsite energy deployment contributes to environmental sustainability by **reducing carbon emissions**, demonstrating corporate responsibility, and **aligning with sustainability goals and regulations**.
- **Independence:** By **reducing dependence on external energy sources**, onsite energy systems enhance energy independence and security, **mitigating risks** associated with energy price volatility and supply chain disruptions.
- **Grid Support:** Onsite energy resources can **provide ancillary services to the grid** (e.g., voltage support and frequency regulation) and **peak shaving**, enhancing grid stability and reliability.
- **Community Engagement:** Onsite energy projects can **foster community involvement** through cooperative ownership models, shared savings programs, and educational initiatives, **strengthening social cohesion and resilience**.
- **Innovation:** Investing in onsite energy technologies drives **innovation and technological advancement in renewable energy and energy storage**, positioning organizations at the forefront of the clean energy transition.



# Barriers to Adopting Onsite Energy Technologies

- Awareness of technologies
- Evaluating suitability of technologies for specific facility and energy usage patterns
- Financing



# Technology Snapshot - CHP

Combined Heat and Power (CHP) systems are well suited for facilities with a high thermal load. Electricity is generated onsite and the waste heat is captured and utilized, replacing the need for separate fossil fuel boilers.

CHP systems can be powered by traditional natural gas and/or renewable natural gas from anaerobic digesters or landfills.

Many CHP systems can be upgraded in the future to use a mix of natural gas and hydrogen as fuels.



Source: NREL

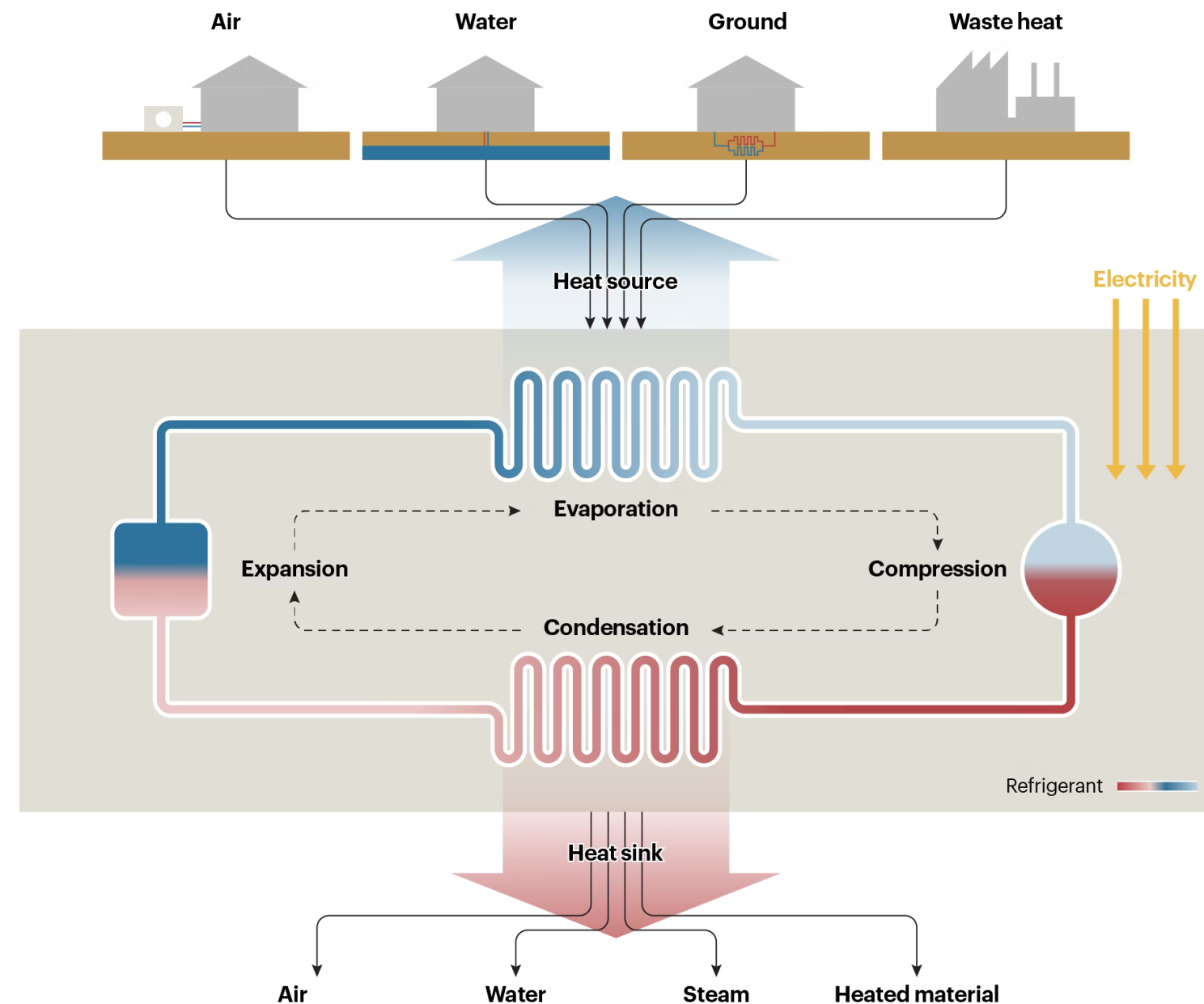
# Technology Snapshot – Heat Pumps

Industrial heat pumps are designed to meet specific requirements using a variety of heat sources and sinks.

Sources include waste heat, shallow geothermal, water, and wastewater.

Common applications include those with process temperatures  $< 100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ).

- Food processing
- Textiles
- Metal plating



# Technology Snapshot – Solar PV

Solar PV is a well-established industry that can provide clean renewable electricity to onsite applications and sold into the grid.

Large energy users can take advantage of unused roof space, carports, and open space to save on electricity costs.



Source: NREL



# Technology Snapshot – Battery Storage

Battery electric storage systems (BESS) provide buildings additional resiliency.

These assets can be monetized through peak shaving, behind the meter demand response, and other grid services programs.

Some regions have incentives for adding battery storage to a Solar PV system.



Source: PNNL

# Onsite TAP Services Across Project Development Phases

## Identification

- Operational goals
- Portfolio analysis
- Technology screening
- Economic analysis
- Regulatory review

## Design & Development

- Planning
- Equipment options
- Equipment siting
- Third-party reviews
- Utility rate analysis

## Procurement

- Specifications review
- Finance identification
- Permitting support

## Operations & Maintenance

- Measurement & verification
- Optimizing performance
- Reporting

## Technical Assistance Touchpoints

### Identification



### Design & Development



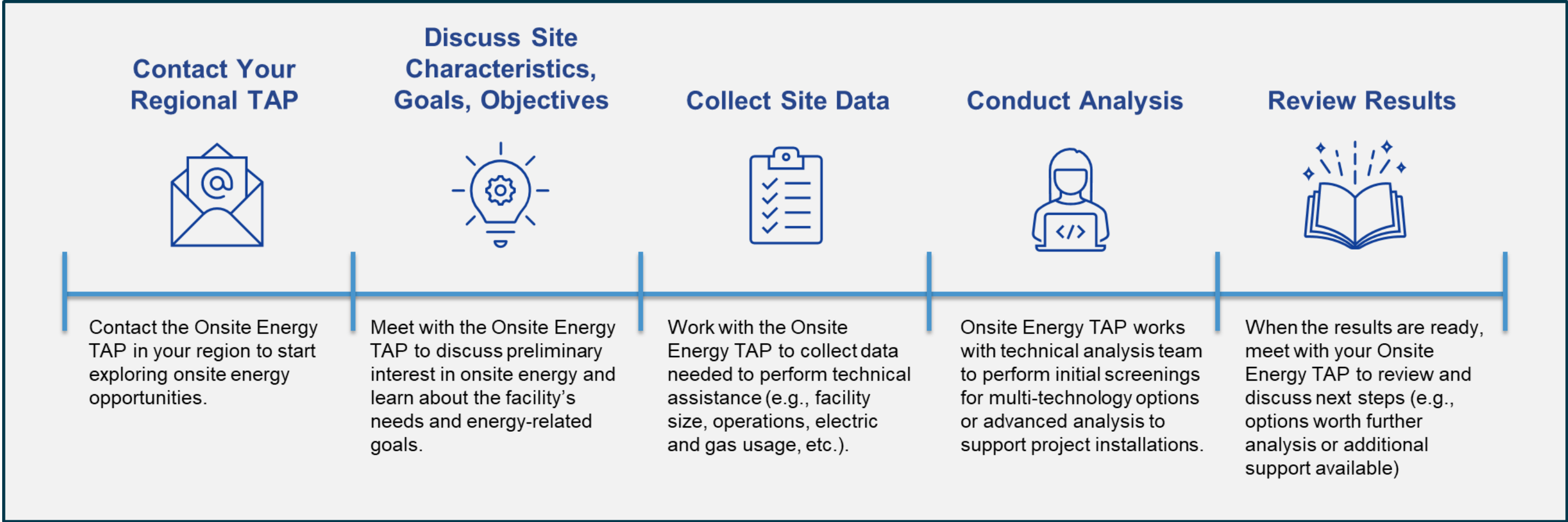
### Operations & Maintenance



### Procurement



# Identification Phase – “Initial Technical Assessment”





**Table 2: ITA Analysis Summary**

	BAU	BESS	PV	GHP	PV + BESS	GHP + PV + BESS
System Size(s)	250 kW	50 kW / 137 kWh	200 kW	178 tons, 49 wells	PV: 200 kW; BESS: 92 kW / 252 kWh	PV: 200 kW; BESS: 94 kW / 264 kWh; GHP: 178 tons, 61 wells
Electricity Cost (\$/year)	119,700	109,900	106,500	141,000	88,700	106,700
Natural Gas Cost (\$/year)	30,400	30,400	30,400	4,800	30,400	4,800
Incremental O&M Cost (\$/year)	4,500	4,500	8,100	(19,980)	8,100	(16,380)
Net Operating Cost Savings (\$/year)	-	9,800	9,600	28,800	27,300	59,500
Net Capital Cost (\$)	-	37,900	125,300	189,900	194,800	522,900
Simple Payback (years)	-	4	13	7	7	9
Year 1 Site CO <sub>2</sub> Emissions Reduction (tonnes/year)	-	-	166	37	161	202
Site CO <sub>2</sub> Emissions Reduction (%)	-	-	50%	11%	48%	60%
BAU: Business as usual; PV: Solar photovoltaic; BESS: Battery energy storage system; GHP: Geothermal heat pump						

# Selected Federal Financial Incentives

- Investment Tax Credits (ITC) - energy storage technologies, microgrid controllers, fuel cells, geothermal (heat pump and direct use), combined heat & power, microturbines, and interconnection costs. CHP to be discontinued in 2025.
- Production Tax Credits (PTC) - biomass, landfill gas, hydroelectric, marine and hydrokinetic
- Additional tax credits for DOE designated Disadvantaged Communities
- Industrial Assessment Center (IAC) Grants - \$300,000 each with 50% cost share.



# Clean Energy Tax Incentives for Businesses

The Inflation Reduction Act of 2022 (“IRA”) makes several clean energy tax credits available to businesses.

[IRS.gov/CleanEnergy](https://www.irs.gov/CleanEnergy)

## Energy Generation & Carbon Capture

Tax Provision	Description
<b>Production Tax Credit for Electricity from Renewables</b> (§ 45, pre-2025)	<b>For electricity sold to an unrelated person and produced from the following renewable sources:</b> wind, biomass, geothermal, solar, landfill and trash, hydropower, and marine and hydrokinetic energy. <b>Credit Amount (for 2023):</b> 0.55 or 0.03 cents (depending on source) per kilowatt hour (kW) for facilities placed in service (PIS) after 12/31/21; 2.8 or 1.4 cents (depending on source) per kW for facilities PIS before 1/1/22; 0.55 cents per kW for marine and hydrokinetic for facilities PIS after 12/31/22. <sup>1,2,3,7</sup>
<b>Clean Electricity Production Tax Credit</b> (§ 45Y, 2025 onwards)	<b>Technology-neutral tax credit for production of clean electricity.</b> Replaces § 45 for facilities that are placed in service after December 31, 2024. <b>Credit Amount:</b> 0.3 cents/kWh; 1.5 cent/kWh if PWA requirements are met. <sup>1,2,3,6,7</sup>
<b>Investment Tax Credit for Energy Property</b> (§ 48, pre-2025)	<b>For investment in renewable energy projects</b> including fuel cell, solar, geothermal, small wind, energy storage, biogas, microgrid controllers, and combined heat and power properties. <b>Credit Amount:</b> Generally, 6% of qualified investment (basis); 30% if PWA requirements are met. <sup>1,4,5,6,8</sup>
<b>Clean Electricity Investment Tax Credit</b> (§ 48E, 2025 onwards)	<b>Technology-neutral tax credit for investment in facilities that generate clean electricity</b> and qualified energy storage technologies. Replaces § 48 for facilities that begin construction and are placed in service after 2024 <b>Credit Amount:</b> 6% of qualified investment (basis); 30% if PWA requirements met <sup>1,4,5,6</sup>
<b>Low-Income Communities Bonus Credit</b> (§ 48(e), 48E(h)) <b>Application required</b>	<b>Additional investment tax credit for small-scale solar and wind (§ 48(e)) or clean electricity (§48E(h)) facilities</b> (<5MW net output) on Indian land, federally subsidized housing, in low-income communities, and benefit low-income households. Allocated through an application process. <b>Credit Amount:</b> 10 or 20 percentage point increase on base investment tax credit
<b>Credit for Carbon Oxide Sequestration</b> (§ 45Q)	<b>Credit for carbon oxide sequestration</b> coupled with permitted end uses in the United States. <b>Credit Amount:</b> \$12-36 per metric ton of qualified carbon oxide captured and sequestered, used as a tertiary injectant, or utilized, depending on the specified end-use; \$60-\$180 per metric ton if PWA requirements met. <sup>1,7</sup>



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## Technical Assistance Touchpoints

Identification



## Design & Development



Operations & Maintenance



Procurement

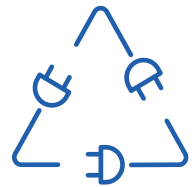


# IAC Implementation Grants

Bipartisan Infrastructure Law Provision 40521.b1



**\$80M in funding** available in the first year (Additional funding available in the next couple years depending on demand)



Grants awards of up to **\$300,000 per quarterly funding round**, at a 50% cost share<sup>1</sup> (**valid cost share options** include internal capital, in-kind contributions, state and local public programs, private loans – including SBA-guaranteed sources, utility programs, leases, and Energy Savings Performance Contracts)



Eligibility exclusively for **small- and medium-sized manufacturing firms**,<sup>2</sup> and water and wastewater treatment facilities



To **address energy assessment recommendations** by IACs, DOE Combined Heat and Power/Onsite Energy Technical Assistance Partnerships, or other third-party assessors deemed equivalent by DOE

1. 50% cost share means that the applicant must cover at least 50% of the project cost. So, for instance, if an implementation project or projects costs \$100k, DOE can make a \$50k grant.

2. Small and medium-sized manufacturer (an entity that engages in the mechanical, physical, or chemical transformation of materials, substances, or components; or, a water or wastewater treatment facility) is a firm with: gross annual sales of less than \$100M, fewer than 500 employees at the plant site, and annual energy bills of \$100,000 - \$3,500,000. **If the manufacturer/facility is an individual LLC that pays separate taxes from the parent company, then eligibility is based on the LLC.**



# IAC Grant Eligibility Requirements



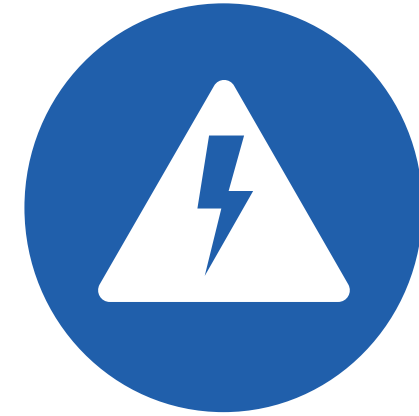
## Annual Gross Sales<sup>1</sup>

- Few than \$100M
- Based on **manufacturing firm/entity**



## Number of Employees

- Fewer than 500
- Based on **facility/plant site**



## Annual Energy Bills<sup>1</sup>

- Between \$100K - \$3.5M
- Based on **manufacturing firm/entity**

All three grant eligibility requirements can be determined using either last completed fiscal year or year in which the assessment was completed (if different)

1. If the manufacturer/facility is an individual LLC that pays separate taxes from the parent company, then eligibility is based on the LLC.



# Getting a Qualified Assessment

## Option 1: Industrial Assessment Centers (IACs)

Receive a no-cost comprehensive assessment from one of 36 IACs located at four year-universities around the country. To locate the closest IAC and apply, visit: <https://www.energy.gov/mesc/locations-industrial-assessment-centers>



## Option 2: Onsite Energy Technical Assistance Partnerships (TAPs)

Receive a no-cost screening assessment for onsite clean energy technology deployment from one of 10 regional TAPs. To locate the closest Onsite Energy TAP and apply, visit: <https://betterbuildingsolutioncenter.energy.gov/onsite-energy/taps>



## Option 3: Third-Party Assessors

Receive an assessment\* from a third-party assessor qualified as "IAC-equivalent:"

- [Alternative Energy Systems Consulting, Inc.](#)
- [BASE Energy, Inc.](#)
- [Cascade Energy](#)
- [CLEAResult](#)
- [Cunningham Engineering PC](#)
- [Energy 350](#)
- [eSai LLC](#)
- [Frontier Energy, Inc.](#)
- [GENEDGE Alliance](#)
- [Go Sustainable Energy, LLC](#)
- [Lincus, Inc](#)
- [Michaels Energy](#)
- [New York State Energy Research and Development Authority: Flexible Technical \(FlexTech\) Assistance Program](#)
- [North Carolina Advanced Energy Corporation](#)
- [Pennsylvania Technical Assistance Program \(PennTAP\)](#)
- [QGM Consulting](#)
- [Rutgers Center for Advanced Energy Systems](#)
- [TRC](#)
- [Utah DEU StepWise Program](#)

\*DOE cannot guarantee that third-party assessments will be free




Energy Category: Renewable Energy X

Eligible Sector: Non-Residential X

State/Territory: New Hampshire X

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Name	State/ Territory	Category	Policy/Incentive Type	Created	Last Updated
Unitil (Electric) - Commercial and Industrial Energy Efficiency Programs	NH	Financial Incentive	Rebate Program	04/18/2006	09/06/2024
USDA - Rural Energy for America Program (REAP) Grants	US	Financial Incentive	Grant Program	04/09/2003	08/28/2024
Renewable Electricity Production Tax Credit (PTC)	US	Financial Incentive	Corporate Tax Credit	03/11/2002	08/13/2024
Modified Accelerated Cost-Recovery System (MACRS)	US	Financial Incentive	Corporate Depreciation	03/15/2002	07/22/2024
Energy and Emissions Goals and Standards for Federal Government	US	Regulatory Policy	Energy Standards for Public Buildings	06/19/2006	06/26/2024
Commercial & Industrial Renewable Energy Grants	NH	Financial Incentive	Grant Program	02/08/2012	06/07/2024
Local Option - Property Tax Exemption for Renewable Energy and Electrical Energy Storage	NH	Financial Incentive	Property Tax Incentive	01/01/2000	06/07/2024
Granite State Clean Fleets (GSCF)	NH	Financial Incentive	Grant Program	07/13/2023	06/06/2024

[www.dsire.org](http://www.dsire.org)

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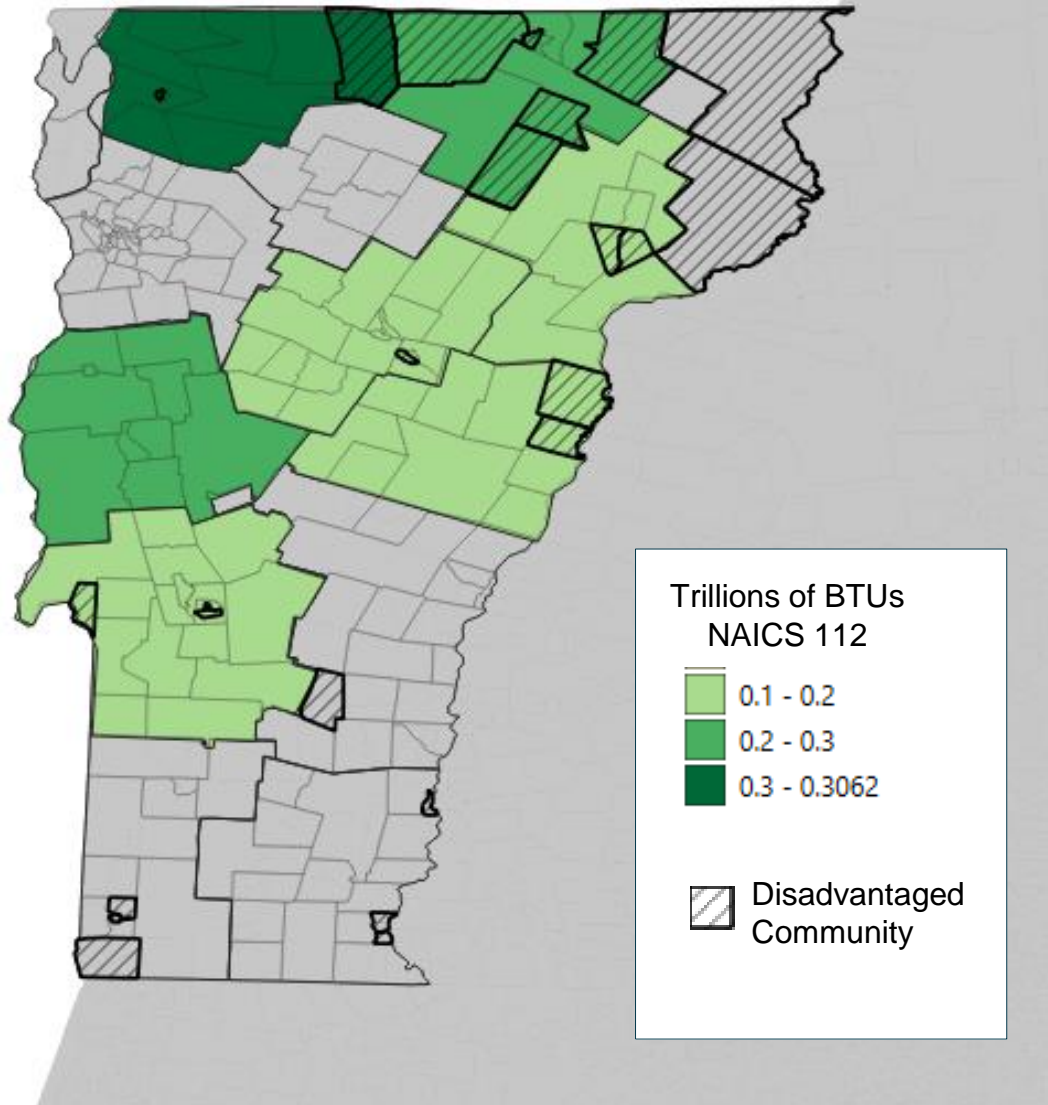




# TAP Market Analysis

## Vermont – Top 10 Industrial Energy Sectors

Map of total BTUs for Animal Production (data from NREL, 2018)



NAICS	Agricultural and Manufacturing Sector	Trillion BTUs	GDP \$Millions
322	Paper Manufacturing	9.07	80
316	Leather and Allied Product Manufacturing	6.85	61
311	Food Manufacturing	2.19	602
112	Animal Production and Aquaculture	1.70	621
334	Computer and Electronic Product Mfg	1.04	796
111	Crop Production	0.48	Incl in 112
312	Beverage and Tobacco Product Manufacturing	0.28	Incl in 311
333	Machinery Manufacturing	0.27	381
332	Fabricated Metal Product Manufacturing	0.25	181
313	Textile Mills	0.23	12

# Onsite Energy Technical Assistance Partnerships (TAPs)

DOE's 10 regional Onsite Energy TAPs provide technical assistance to end users and other stakeholders about technology options for achieving clean energy objectives. Key services include:



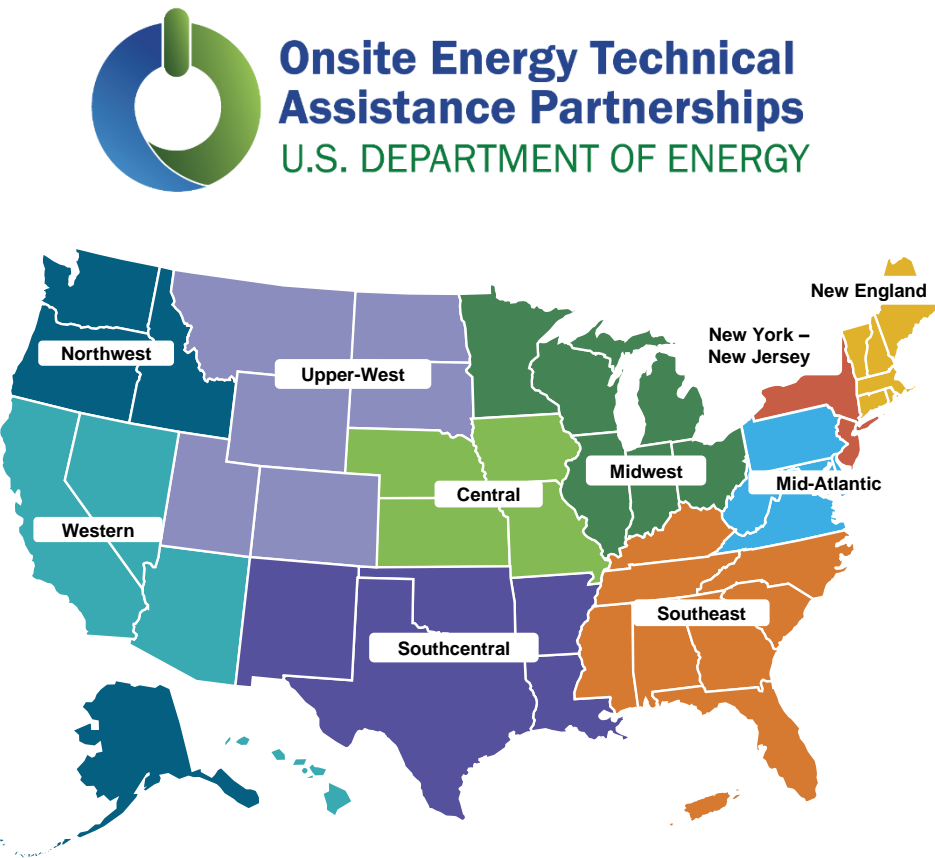
**Technical Assistance:** Screen sites for opportunities to implement onsite energy technologies and provide advanced services to maximize economic impact and reduce risk from initial screening to installation to operation and maintenance.



**End-User Engagement:** Partner with organizations representing industrial and other large energy users to advance onsite energy as a cost-effective way to transition to a clean energy economy.



**Stakeholder Engagement:** Engage with strategic stakeholders, including utilities and policymakers, to identify and reduce barriers to onsite energy through fact-based, unbiased education.



<https://betterbuildingsolutioncenter.energy.gov/onsite-energy/taps>



## Onsite Energy Technical Assistance Partnerships

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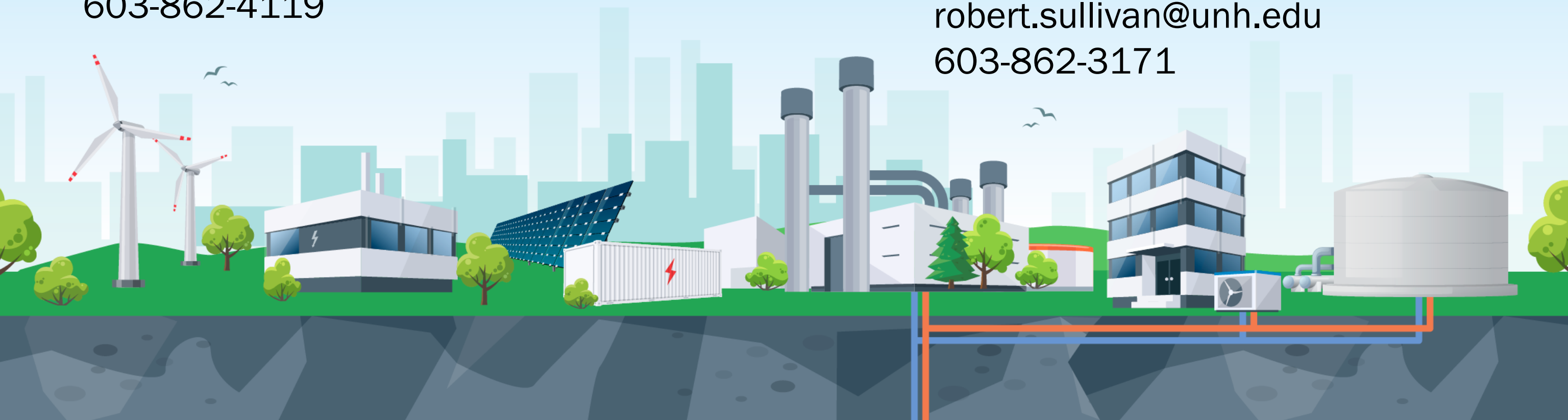
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# How the public sector can support energy project development

Chirag Lala

Director of Energy

Center for Public Enterprise

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# Three takeaways

1. **Public entities can accelerate project development** through direct ownership and concessional public financing of projects.
2. **Many ways to pair federal and state policies to reduce project WACCs.**
  - a. SEFI
  - b. Public/green banks, state-level revolving loan funds
  - c. Elective Pay
3. **CPE stands ready to assist state and municipal governments** with planning project pipelines, soliciting projects, modeling their finances, and identifying best practices for integrating state and federal policy.

**The money is out there. We need to get it here and into projects.**

# Elective pay basics

- Public entities and nonprofit organizations—entities without tax liabilities—can take advantage of renewable energy, clean vehicle, and other eligible tax credits as if the entity did have a tax liability
- Payment comes from the IRS in the form of a direct cash payment
- Elective pay is attached to specific projects and requires ownership of assets
- Other requirements
  - Domestic content
  - Prevailing wage
  - Bonuses and penalties!



## Clean Energy Tax Incentives: Elective Pay Eligible Tax Credits

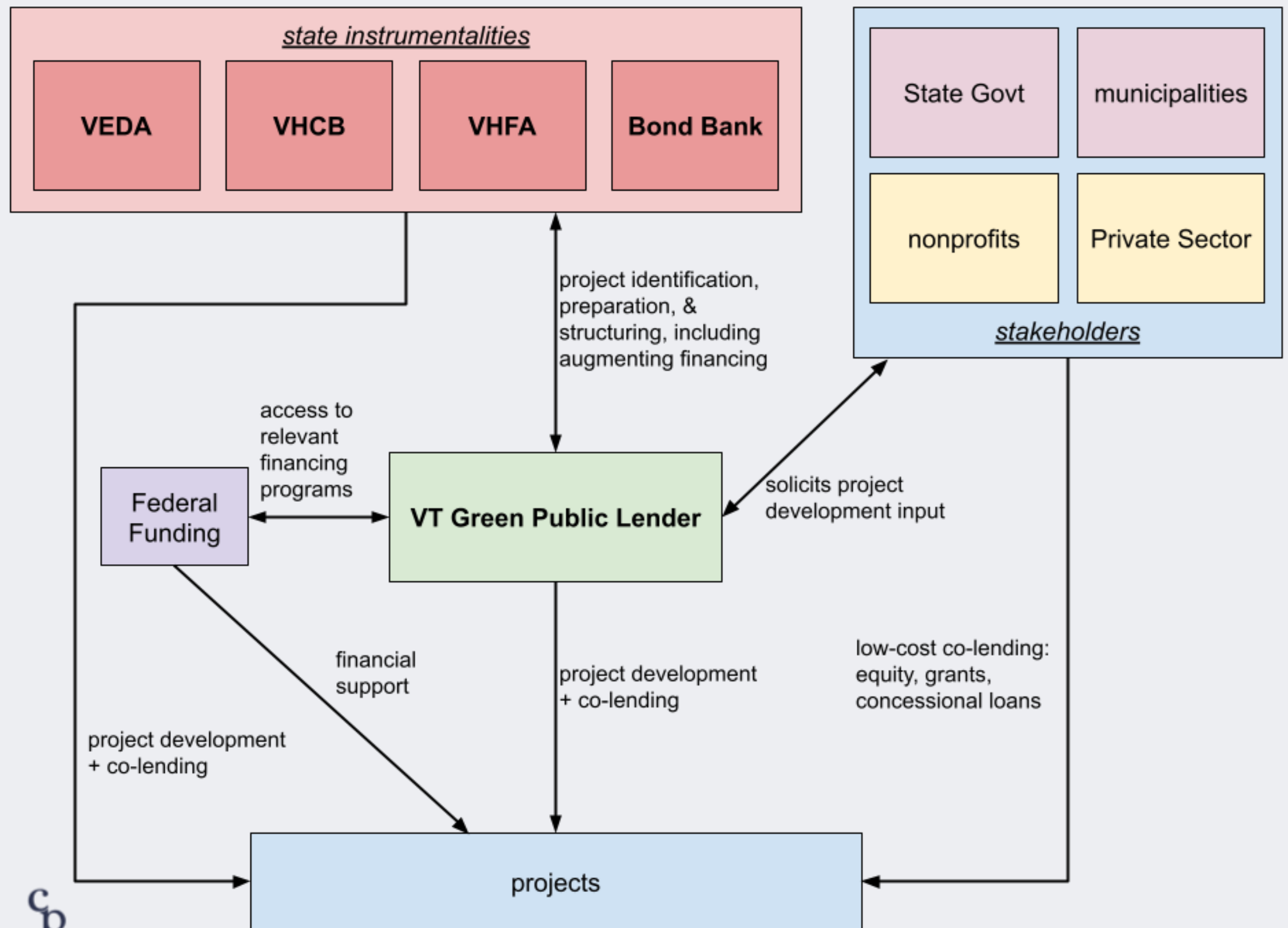
The Inflation Reduction Act of 2022 ("IRA") makes several clean energy tax credits available to businesses; tax-exempt organizations; state, local, and tribal governments; other entities; and individuals. The IRA also enables entities to take advantage of certain clean energy tax credits through its elective pay provision (also colloquially known as direct pay). Elective pay allows several types of entities, such as tax-exempts and governments, to treat the amount of certain credits as a payment against tax on their tax returns and as a result receive direct payments for certain clean energy tax credits.

Energy Generation & Carbon Capture	Tax Provision	Description
	<b>Production Tax Credit for Electricity from Renewables</b> (§ 45, pre-2025)	<b>For production of electricity from eligible renewable sources</b> , including wind, biomass, geothermal, solar, small irrigation, landfill and trash, hydropower, marine and hydrokinetic energy. <b>Credit Amount (for 2022):</b> 0.55 cents/kilowatt (kW); (1/2 rate for electricity produced from open loop biomass, landfill gas, and trash); 2.75 cents/kW if Prevailing Wage and Apprenticeship (PWA) rules are met <sup>1,2,3,7</sup>
	<b>Clean Electricity Production Tax Credit</b> (§ 45Y, 2025 onwards)	<b>Technology-neutral tax credit for production of clean electricity.</b> Replaces § 45 for facilities that begin construction and are placed in service after 2024. <b>Credit Amount:</b> Starts in 2025, consistent with credit amounts under section 45 <sup>1,2,3,6,7</sup>
	<b>Investment Tax Credit for Energy Property</b> (§ 48, pre-2025)	<b>For investment in renewable energy projects</b> including fuel cell, solar, geothermal, small wind, energy storage, biogas, microgrid controllers, and combined heat and power properties <b>Credit Amount:</b> 6% of qualified investment (basis); 30% if PWA requirements met <sup>1,4,5,6,8</sup>
	<b>Clean Electricity Investment Tax Credit</b> (§ 48E, 2025 onwards)	<b>Technology-neutral tax credit for investment in facilities that generate clean electricity</b> and qualified energy storage technologies. Replaces § 48 for facilities that begin construction and are placed in service after 2024 <b>Credit Amount:</b> 6% of qualified investment (basis); 30% if PWA requirements met <sup>1,4,5,6</sup>
	<b>Low-Income Communities Bonus Credit</b> (§ 48(e), 48E(h)) <b>Application required</b>	<b>Additional investment tax credit for small-scale solar and wind (§ 48(e)) or clean electricity (§48E(h)) facilities</b> (<5MW net output) on Indian land, federally subsidized housing, in low-income communities, and benefit low-income households. Allocated through an application process. <b>Credit Amount:</b> 10 or 20 percentage point increase on base investment tax credit <sup>7</sup>
	<b>Credit for Carbon Oxide Sequestration</b> (§ 45Q)	<b>Credit for carbon dioxide sequestration</b> coupled with permitted end uses in the United States. <b>Credit Amount:</b> \$12-36 per metric ton of qualified carbon oxide captured and sequestered, used as a tertiary injectant, or used, depending on the specified end use; \$60-\$180 per metric ton if PWA requirements met. <sup>1,7</sup>
	<b>Zero-Emission Nuclear Power Production Credit</b> (§ 45U)	<b>For electricity from nuclear power facilities.</b> Facilities in operation prior to August 16, 2022. <b>Credit Amount (for 2023):</b> 0.3 cents/kWh (reduced rate for larger facilities); 1.5 cent/kWh if PW req's met <sup>1,7</sup>

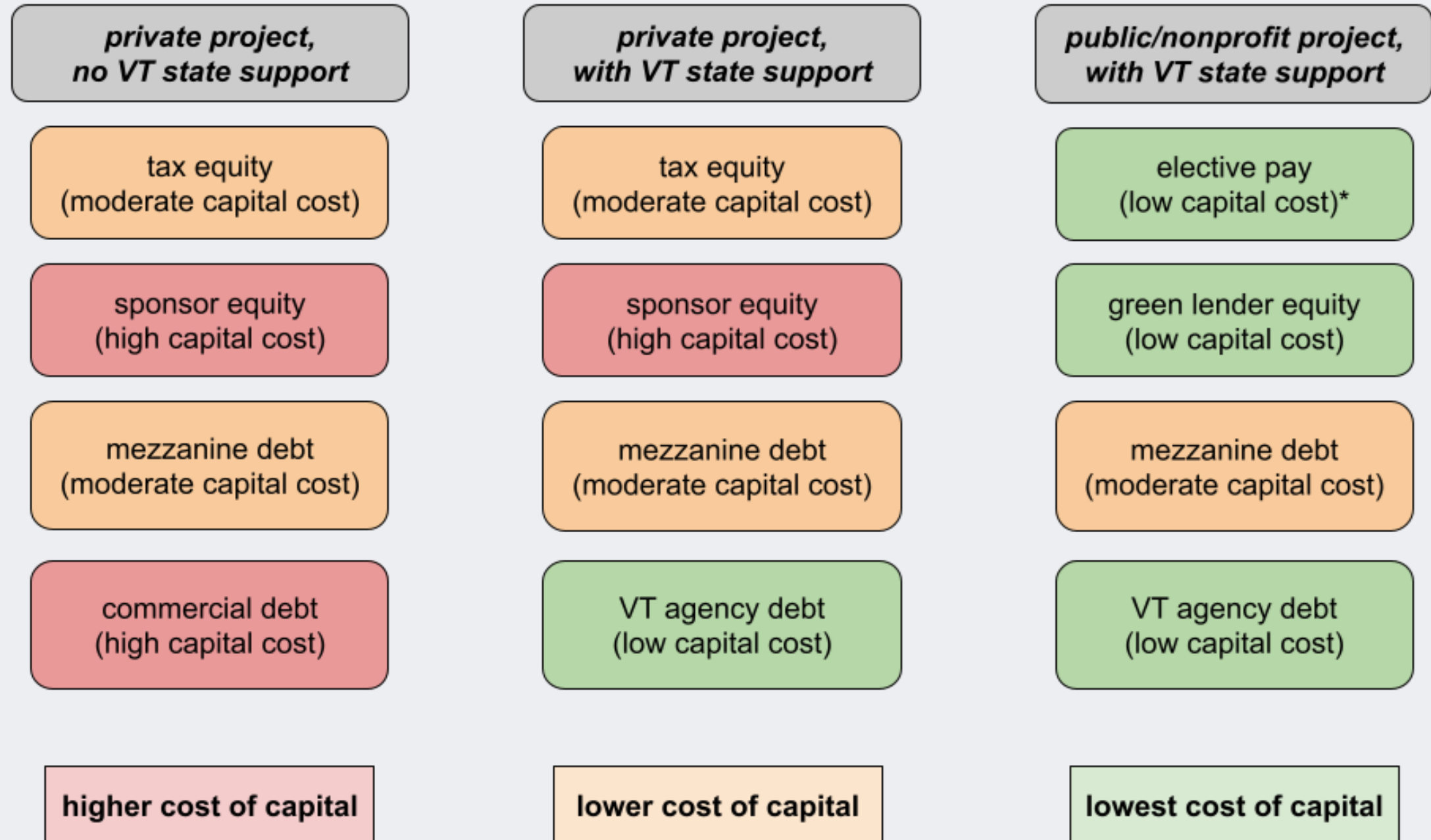


# Elective pay barriers

- **Bridge/construction financing**
  - Solution: green bank-supported products to derisk construction and thereby facilitate capital market access
- **Large-volume project financing**
  - Solution: GGRF, LPO-SEFI, USDA (RESP, REAP), EPA (WIFIA), GGRF/green banks, capital markets, muni bond markets
- **Administration**
  - Contracting, tax credit calculation, selection, filing
  - Technical assistance from state governments and from CPE and partners
  - Project pipeline development through RFIs and other processes
- **Grids**
  - Interconnection, permitting



*simplified project developer capital stacks*



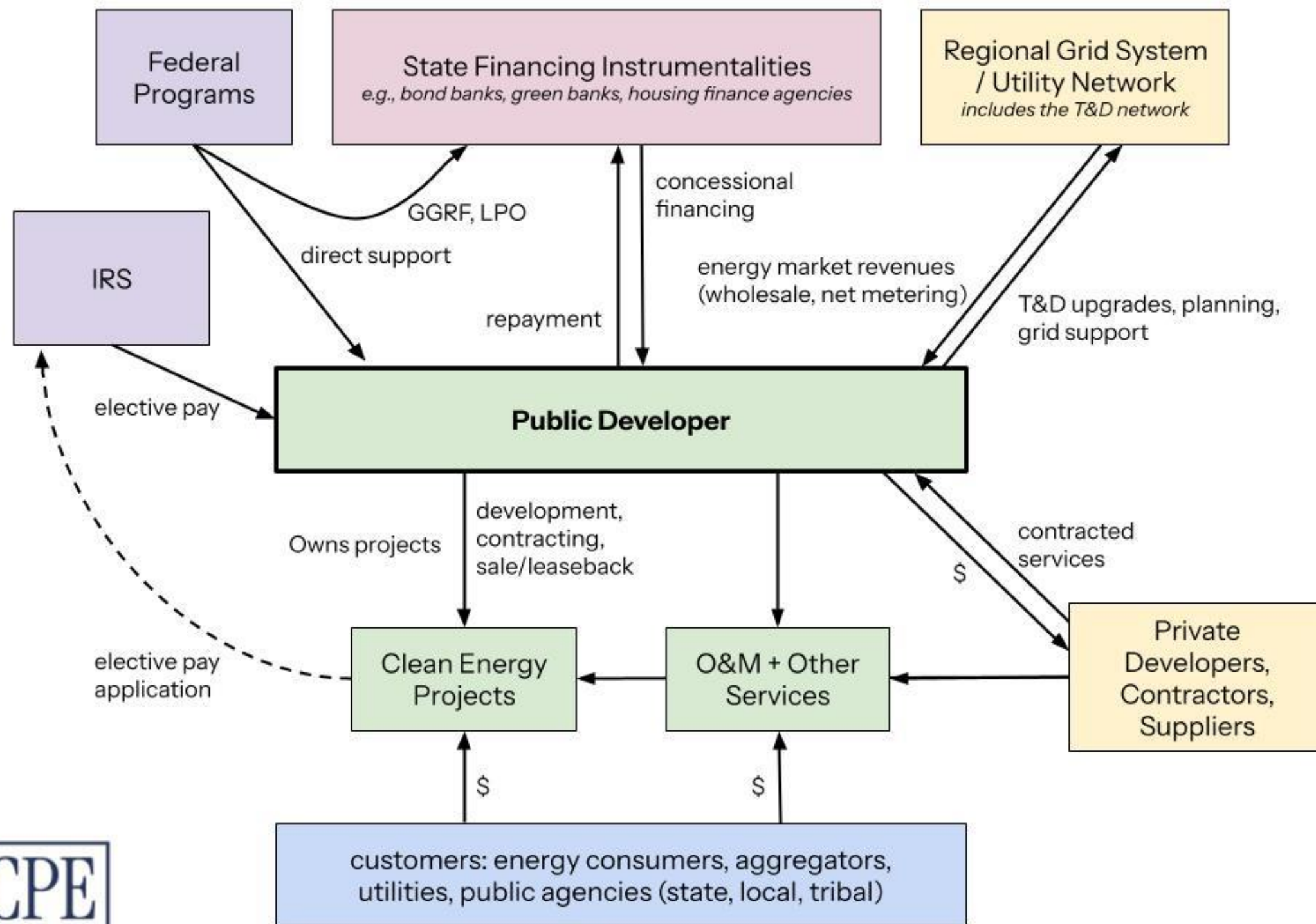
# How green public finance can help VT

- Necessary capabilities for green public institutions:
  - **Bond issuances** independent of government allow it to raise financing as needed
  - **Lending** to project developers across the region, including to both government instrumentalities and private developers
  - **Construction finance support**—This is crucial! Construction is highest-risk phase of project development
  - **Revolving loan funds** for construction bridge finance
    - Allows green bank to recycle financing into seeding new projects
  - **Strategic equity stakes** in already-entitled projects that run into financial trouble
  - **Underwriting** capacity to conduct due diligence, structure deals
- **Public banks can also be the public developer!**

*\*subject to double-dipping restrictions*



## What all can a public developer do?

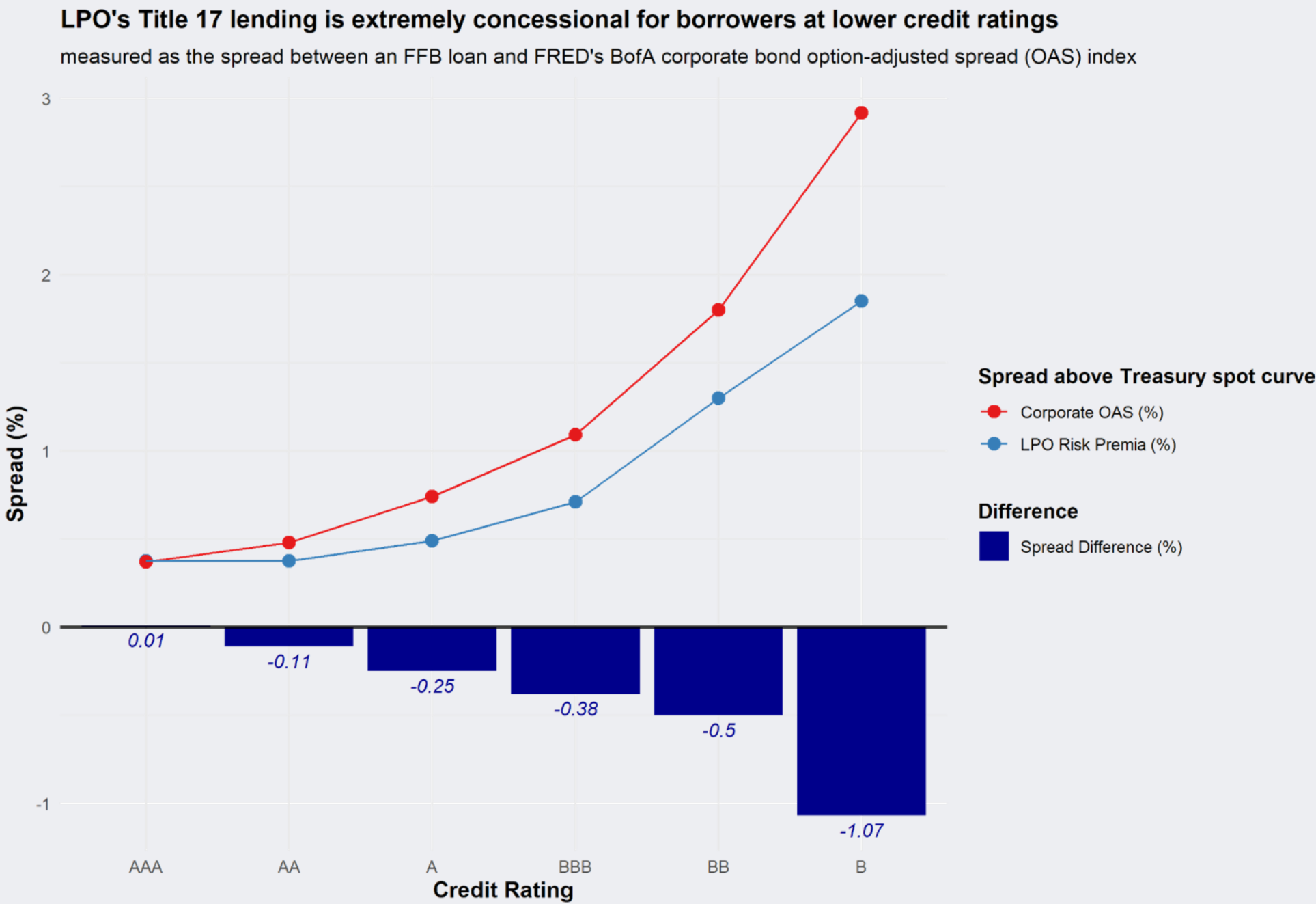


# SEFI is an opportunity to set up a pipeline

- Low-cost, high volume co-lending from the Department of Energy's Loan Programs Office (LPO)
  - Covers up to 80 percent of project capital stacks for “innovative” projects
  - Covers “non-innovative” projects with a State Energy Financing Institution (SEFI)
- SEFI is a big program—but do not limit yourself to it: think through how it can fit with other state programs and federal funding possibilities\* and send projects that way
- Think about how current investments supported by SEFI can create new streams of revenue for future investments
- Use the opportunity to incentivize other state entities to work with you and share their capacity—create a “tiger team” of experts
- Use the RFI/RFQ process to find out which developers and financing institutions can meet your needs
- **CPE can help develop a project pipeline and bring it to LPO to start the process**

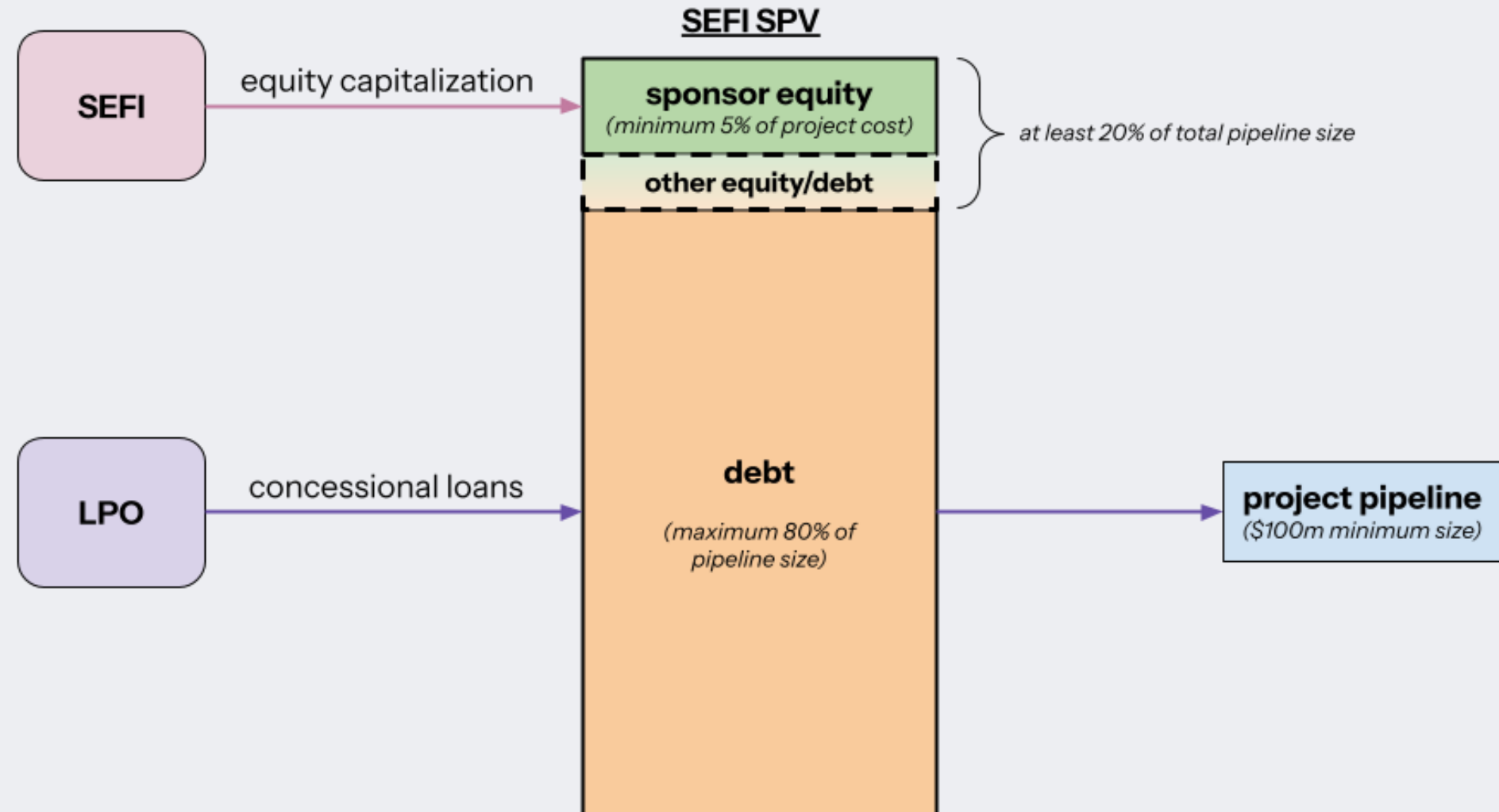
*\*subject to double-dipping restrictions*

# The SEFI Carveout can be cheap



# School solarization example

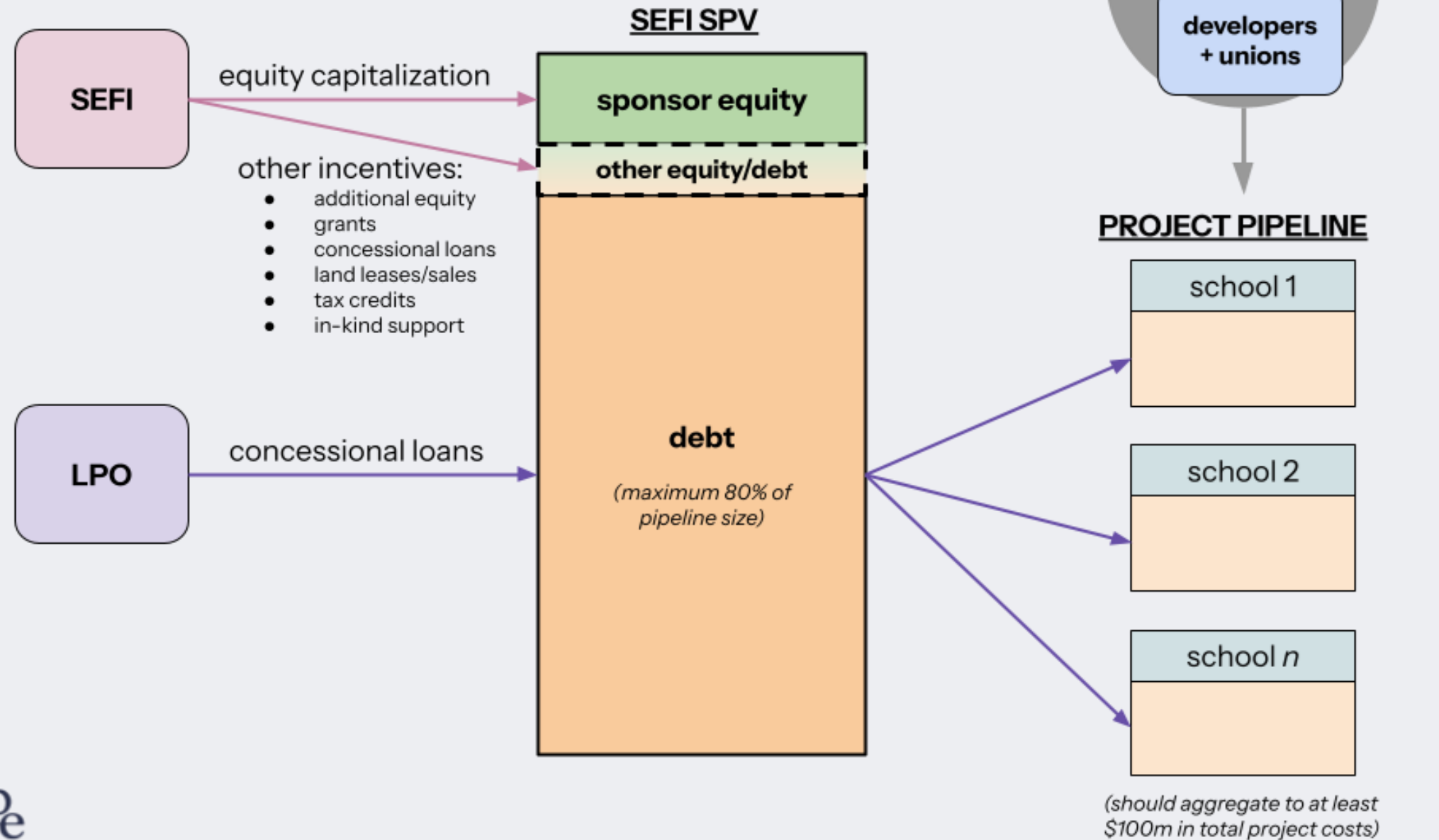
SEFIs can create an SPV to channel LPO financing





# School solarization example

Helping schools go solar through a SEFI SPV:



# How CPE Can Help

- **Resources**
  - Elective Pay Financial Model ([link](#))
  - SEFI Program Resources
  - GGFRF Program Resources
  - Model RFI ([link](#))
  - Capital stack and financing support
  - Integrating policy or programmatic best practices
  - Project pipeline planning and development

**Note.** Specialized contracts, MOUs, or other agreements available upon request

<u>Elective Pay Inputs</u>			
Default Credit	ITC	<u>Credit Amounts</u>	<u>Units</u>
Base Elective Pay		30%	Percent
Prevailing Wage	YES		
Energy Community	YES	10%	Percentage Points
EJ Bonuses	NO	0%	Percentage Points
Domestic Content	YES	10%	Percentage Points
Base + Bonuses		50%	Percent
Tax-exempt penalty	YES	15%	Percent
Total Elective Pay		43%	Percent

<u>Sector, market, policy specification</u>			
Project Energy Price Escalator	2.0%		
Electricity price or alternate PPA growth rate	2.0%		
O&M Growth Rate	2.0%		
Inflation adjustment (PTC)	2.0%		
Inflation adjustment (RECs)	2.0%		
Inflation adjustment (insurance)	2.0%		
Derat	0.5%		
REC Price (\$/MWh)	\$25.0		
% of REC Revenue to public developer	100.0%		
Interconnection Costs (\$/kWh)	\$100.0		
Insurance costs (\$/kw/yr)	\$15.0		
<u>Capital Stacks</u>			
<u>Bridge Debt Capital Stack (sans cash equity)</u>	<u>Rate</u>	<u>Weight</u>	<u>Tax Exempt</u>
Use default capital stack?	YES		
Other public RLF or program debt	4.5%	25.00%	NO
Public/green bank bridge debt	4.5%	25.00%	NO
LPO Guarauntueed Debt	5.0%	25.00%	NO
Market bridge debt	7.0%	25.00%	NO
Complete capital stack?	YES	100.00%	
Default Bridge Debt WACC (sans tax & equity)	5.25%		
Alternate Bridge Debt WACC	4.75%		
Cash equity / grant / down payment %	20.00%		
<u>Term Debt Capital Stack (sans tax and cash equity)</u>	<u>Rate</u>	<u>Weight</u>	<u>Tax Exempt</u>
Use default capital stack?	YES		
Public/Green Bank debt	5.3%	25.0%	NO
Tax-exempt "Muni" debt	4.5%	25.0%	YES
LPO Guarauntueed Debt	5.0%	25.0%	NO
Market (taxable) debt A	8.0%	25.0%	NO
Market (taxable) debt B	9.5%	0.0%	NO
Market (taxable) debt C	11.0%	0.0%	NO
Complete capital stack?	YES	100.00%	
Default Term Debt WACC (sans tax & equity)	5.69%		
Alternate Term Debt WACC (sans tax & equity)	6.75%		



Project specification			
Resource RECs? Reduce term debt with elective pay? 1st Year Project Energy Price (\$/MWh) 1st Year alternate fixed PPA price (\$/MWh) Capex Selection ("DEFAULT" OCC or Custom "TOTAL") Capex Amount (If "TOTAL" is selected in the row above ^) # of years for project term debt		Geothermal	
		NO	
		YES	
		\$72.26	
		\$76.06	
		OCC	
		\$150,000,000	
		20	
Discount / Term Debt WACC		5.69%	
Bridge Debt WACC		5.25%	
Bridge Debt Share (LTV)		80%	
Bridge Equity Share		20%	
Use Default?		Model Value	Alternate
DEFAULT	Operating lifespan (years) (Min 15; Max 60)	30	60
DEFAULT	Capacity Factor	80%	32%
DEFAULT	Base OCC (\$/kW)	\$3,963	\$1,600
DEFAULT	Base system size (MW)	50	200
DEFAULT	Fixed O&M (\$/kWyr)	\$151	\$25
DEFAULT	Variable O&M (\$/MWh)	\$0	\$15
DEFAULT	PCB Deposit Rate	4.5%	3.5%
DEFAULT	PCB Overdraft Rate	0.0%	0.0%
Model Results			
Lifetime Output (MWh)		9,784,276	
Elective Pay NPV		\$71,336,555	
Consumer avoided cost of electricity NPV		\$20,000,000	
MACRS NPV		\$0	
Unsubsidized simple levelized cost (\$/MWh)		\$69.55	
Subsidized simple levelized cost (\$/MWh)		\$52.25	
Subsidized OCC (\$/kW)		\$2,536	
Min DSCR		2.07	
Avg DSCR		2.33	
IRR		18.31%	
Capital Recovery Factor		8.50%	
Project Viability		YES	
Target debt service coverage ratio (DSCR)		1.25	

## MODEL RFI TEMPLATE

*Everything below is sample text for a model RFI.*

### Instructions

Note the issuer will be known as “**the agency**” in this generic RFI.

**The agency** is soliciting information from potential public- and private-sector partners on potential opportunities to support projects which advance state-level decarbonization goals with co-financing from **the agency** and leveraging the Department of Energy’s (DOE) Loan Programs Office (LPO). This Request for Information (RFI) is for information-gathering purposes only and should not be construed as a solicitation or obligation on the part of **the agency** to provide funding. We are especially interested in projects which advance end use building technologies, low-emission affordable housing, clean energy and distributed energy resources, and grid improvement and management technologies.

Respondents do not need to address every question and should focus on those where they have views or relevant expertise. Respondents may provide detailed responses and examples.

All comments received, including attachments and other supporting materials, are part of the public record and subject to public disclosure. Respondents should only submit information that they wish to make publicly available and should not enclose any information considered confidential or inappropriate for public disclosure.

Responses must be received by **DATE**, at **TIME**. Written responses must be submitted via one of the following options:

- Email: [**address**], as a PDF with the subject line [**subject line**]
- Regular United States mail to: [**address**]

### Background

The purpose of this RFI is to solicit initial feedback on the potential use of state funds from a State Energy Financing Institution (SEFI) to implement decarbonization projects that meet state targets and leverage federal funding from the DOE LPO. A state can have multiple SEFIs.

Specifically, **the agency** seeks input to inform how to best leverage the SEFI carveout in the LPO’s Title 17 Clean Energy Financing Program. Through this carveout, the LPO can augment state-administered decarbonization programs by providing additional, concessional financial support to projects that align federal energy priorities with those of **the state and the agency**. The LPO is the Department of Energy’s internal development agency able to issue loans and loan guarantees to qualified borrowers. Its scale and scope has been expanded by the Bipartisan Infrastructure Law and the Inflation Reduction Act. Under the Title 17 State Energy Financing Institution (SEFI) loan authority, the LPO is authorized to waive its “innovative technology requirements” on lending if a SEFI provides what the LPO considers “meaningful” financial support to the project.

**The agency** is seeking to solicit projects as part of the process of determining how the state might utilize the SEFI loan authority. **The agency** is examining a variety of options to provide meaningful support including but explicitly not limited to:

- Concessional loans
- Construction bridge loan financing
- Loan loss guarantees
- Equity financing
- Grants
- Tax credit incentives
- In-kind project development contributions

**The agency**, in examining all options for providing meaningful support, asks applicants to provide input into the kinds of project financing arrangements they might prefer.

The LPO can supplement **the agency's** meaningful support through concessional loans and loan guarantees. *However, the LPO application process involves significant costs and generally requires a \$100 million minimum transaction size per application, which can be composed of a portfolio of aggregated projects if applicable.* **The agency** seeks applications from private industry, public entities (including but not limited to school districts, municipalities, counties, public power organizations, special districts), and non-profit organizations to better understand the kinds of projects they may be interested in developing and would need state and federal support for.

**Project Types**

**The agency** is seeking opportunities to partner with project developers to establish financing for projects which reduce carbon emissions and increase the resilience of our energy system. Per LPO's rules, SEFI-supported projects must fall into one of 13 technology categories, found on DOE's website. **The agency** is seeking to gauge private, public, and nonprofit interest in developing and operating emissions-reducing projects in a subset of these categories that align with statewide deployment targets.

Target sectors include but are not limited to:

- Renewable energy systems, such as utility- and rooftop-scale solar installations
- Energy storage technologies, such as battery storage paired with or independent from solar installations
- Efficient electrical generation
- Electricity transmission and distribution infrastructure, such as grid-enhancing technologies
- Efficient end-use energy technologies
- Industrial decarbonization technologies
- Zero-emissions transport and related infrastructure, such as electric vehicle charging stations
- Residential and commercial building decarbonization, including weatherization

Illustrative examples of projects **the agency** looks favorably upon include:

- Deep building retrofits, prioritizing energy efficiency upgrades, weatherization, and fuel switching to renewable and/or electric sources, for the existing building



stock—encompassing residential, commercial, industrial, medical, educational mixed-use, and other public and private community-serving facilities.

- Renewable energy installation, including utility-scale and distributed-scale resources, and potentially virtual power plants.
- Transmission and distribution grid upgrades that allow for better integration of variable resources, smart transformers, reconductoring, and grid-enhancing technologies onto the existing grid.
- Electrification transportation fleets and related infrastructure, with a focus on mass transit options.

### Response

The RFI is intended for anyone planning to invest in clean energy and looking for attractive financing options, or with ideas for moving the state forward in deploying clean energy and expanding the clean energy economy at scale. This includes but is not limited to:

- Businesses of all sizes
- Economic development organizations
- Local units of government and other community leaders
- Community organizations
- Financial institutions, including community development financial institutions
- Energy infrastructure owners and developers
- Public institutions, including but not limited to universities and colleges

Please provide the following information in your response:

- The applying organization's name, and a brief description of the organization's business, mission, or governing mandate.
- Description of potential projects you are interested in developing and securing financing for.
- The project lead and project team's existing development experience.
- Project siting considerations, including whether the organization has secured rights to a proposed project development site(s).
- Public benefits of project development, including labor and emissions-reduction benefits.
- Current financing prospects, and capital stack to date, if possible.
- A description of how **the agency** can assist with improving project viability and preferred investment mechanisms, and any impact that **agency** and LPO financing could have on pricing decisions.
- Status of existing project pipeline and project progress.
- Domestic content outlook, including a description of your potential supply chain and subcontractors and your ability to engage in a domestic content attestation as required by federal law for projects securing federal support.
- Other technical assistance capabilities and/or needs.

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