



Consumer Financing of Beneficial Electrification

Interim Report: On-Bill Lending Review

March 2024





ACCELERATING THE CLEAN ENERGY TRANSITION



ANALYSIS + STRATEGY



BUILDINGS



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Report Contents

1 Study Context & Approach

2 On-Bill Lending Overview

3 On-Bill Lending Program Examples

4 Discussion and Next Steps

5 Appendix



Study Context & Approach

Project Context

- LD 1724 An Act to Enact the Beneficial Electrification Policy Act was recently passed.
- This requires the MPUC to
 - “...conduct a study on how to **cost-effectively provide consumer financing** of **beneficial electrification** projects, including products for energy efficiency, home or business energy storage, electric vehicle charging equipment and other distributed energy projects through methods including, but not limited to, **on-bill financing by standard-offer service providers or competitive electricity providers**, or through some combination thereof.”
- This review specifically considers **on-bill lending options** in Maine.
- In parallel, a survey of national best practices for **financing beneficial electrification** and associated distributed energy resources is also being conducted.

The Study

The National Best Practices and **On-Bill Lending** reviews, paired with the forthcoming comparative analysis of financing options, will identify financing models to help accelerate beneficial electrification across Maine, and will also specifically consider on-bill lending in the context of Maine's electricity suppliers and distributors.

The Approach



Desktop research to determine programs of most relevance and interest to the State of Maine.



Targeted **interviews** with program administrators in other jurisdictions and stakeholders within the State of Maine.*



Comparative analysis of financing options, focusing on beneficial electrification considerations.

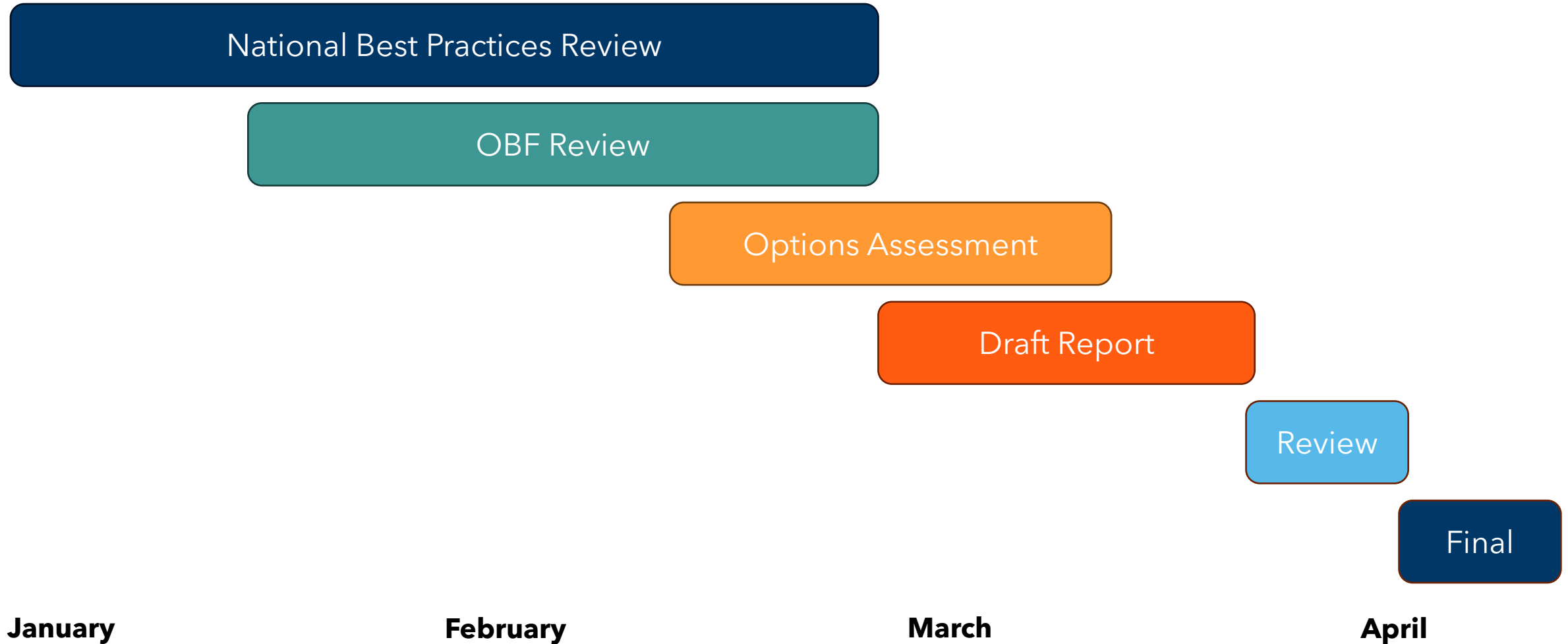
On-Bill Lending Interim Report

This interim report will provide an overview of the study to date, including an overview of on-bill financing, what we've heard from interviewees - including internal and external stakeholders - and understanding how current findings apply to Maine. It is being delivered in tandem with an interim report on the study of national best practices for financing beneficial electrification. A final report, including the comparative analysis, will follow.

**Note that a full list of programs included in the desktop research and targeted interviews is available in the appendix.*

Approach, cont.

Below is an overview of the project timeline:



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On-Bill Lending Overview

Financing Models

- There are various forms of consumer financing programs, including traditional direct lending from financial institutions or other third-party lenders, **on-bill lending**, credit enhancement programs, and more.
- Within on-bill lending, there are sub-types of program structures, each with benefits and challenges. Understanding these elements can inform smart program design.
- **Sources of capital** and the **owner of the debt** related to the project are key differentiators between on-bill lending models.



On-Bill lending



Homeowner repays **the utility** through energy bills

Requires strong collaboration and alignment with the **utility or utilities**



Loan default and recovery through **utility bill**; utility's responsibility

Direct lending



Homeowner repays **financial institution** through a loan agreement

Requires strong collaboration and alignment with a **financial institution**



Loan default and recovery through **loan agreement**; financial institution's responsibility

On-Bill Lending is an option that allows consumers to finance beneficial electrification projects by paying back their loan on their utility bill, rather than directly with a traditional lender. There are benefits and challenges associated with on-bill lending programs compared to direct lending or other financing programs.

Benefits

- Addresses common barriers
- Simplicity and convenience of one bill
- Flexible underwriting based on utility payment history
- Reduced risk of loan default as payment is tied to utility bills
- Increased transparency with savings and repayment on the same bill
- Loan may be transferable

Challenges

- Requires coordination with utilities
- Billing systems may require complex and costly changes for some utilities
- Repayment allocation (i.e., who is paid first) when customers partially pay their bills, and in some cases, disconnection as a result of defaulting
- May require utilities to invest in new capabilities to issue loans
- Requires strong consumer trust in their utility

There are three forms of on-bill lending:

- **On-bill financing (OBF):** A loan or lease program wherein the **utility is the lender** and repayment is through an additional line item on the utility bill. Sources of capital include ratepayer (more common) or shareholder funds. The loan or lease is made to an individual customer and must be paid off by the original borrower.
- **On-bill repayment (OBR):** A loan or lease program wherein the **utility is not the lender**, but the utility bill is used as the repayment vehicle. Capital is provided by a third party (public or private), although utility funds could be used for the initial capitalization. As with OBF, an OBR loan or lease is made to an individual and must be paid off by the original borrower.
- **Tariffed on-bill (TOB): Not a loan but a new charge on the bill.** The utility collects payment for the upgrades via a new tariff. The charge is less than the estimated savings (i.e., Pay As You Save model). TOB programs can use both public and private capital to fund the upgrade. The tariff is associated with a meter and therefore can be transferred to a new occupants, which can include renters.

Financing for Beneficial Electrification: On-Bill Programs

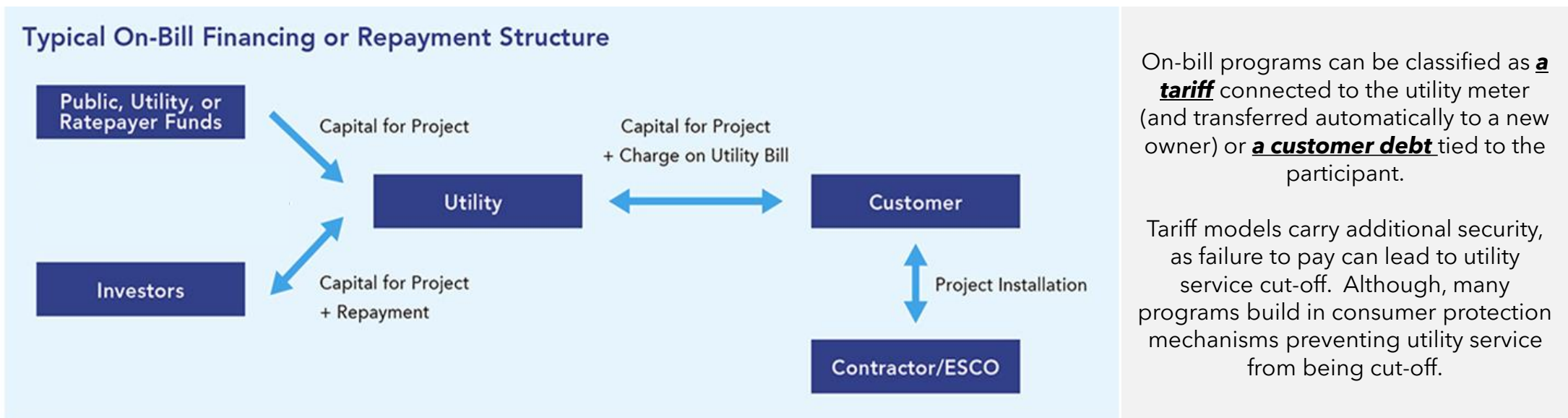


There are **three major categories** of on-bill lending programs, depending on where capital is sourced and who is accountable for the loan. These inputs can have consequences on other aspects of the program design.

	Provider of Capital	Owner of Asset	Charge on Monthly Bill	Eligibility	Underwriting Criteria	Consequence of non-payment
On-Bill Financing (OBF)	Utility	Building owner or homeowner	Debt payment	Building owners and homeowners only	Set by the utility, typically based on payment history	Can include disconnection depending on state regulations
On-Bill Repayment (OBR)	Third-party (e.g. financial institution)	Building owner or homeowner	Debt payment	Building owners and homeowners only	Traditional underwriting based on credit score and debt-to-income ratio	Can include disconnection depending on state regulations
Tariff On-Bill (TOB)	Varies	Utility (repayment tied to meter)	Cost recovery fee	Building owners, homeowners and renters	Not necessary	Can include disconnection depending on state regulations

Financing for Beneficial Electrification: On-Bill Programs

While the source of capital (public/utility vs. third-party) differentiates OBF from OBR, all forms of on-bill lending see the utility add the charge for the project to the utility bill.





On-Bill Lending Program Examples

Program Examples

- As part of this study, desktop research and interviews were conducted with on-bill lending programs in comparator jurisdictions of various types to understand key features:
 - Source(s) of capital
 - Program administrators
 - Underwriting
 - Program features
 - Eligible measures
 - Sectors included
 - Other differentiating information



On-Bill Program Examples

	OBR Illinois Energy Efficiency Loan Program	TOB NYSERDA On-Bill Recovery Loan	TOB Hawaii Green Energy Money \$aver (GEM\$)
Capital	Private capital	Regional Greenhouse Gas Initiative (RGGI)	Various sources including state green infrastructure bonds, state general funds, and federal funding
Administrator	Slipstream Energy Finance Solutions	NYSERDA, Slipstream Energy Finance Solutions	Hawaii Green Infrastructure Authority
Underwriting	Minimum credit score of 640 and DTI of 50%. No bankruptcy in past 24 months.	Minimum credit score of 540 and DTI ratio of 40%. No bankruptcy in past 24 months.	Must have minimum of 6 months of history with utility and have income of <140% AMI.
Features	Up to \$20,000 Fixed: 8.99% Up to 10 years	Up to \$50,000 Fixed: 3.49% Up to 15 years	Fixed: 5.5% Up to 20 years
Eligible Measures	Air source heat pump, ductless mini-split, ground source heat pump, ECM blower motors retrofits, smart thermostats (ComEd)	Traditional energy efficiency improvements, solar PV, air source and ground source heat pumps	Solar thermal and PV water heaters, heat pump water heaters, other commercial energy efficiency technologies
Sectors	Residential, small business, multi-family	Residential, small business, non-profits	Residential, commercial
Notes	Renters are eligible, but utility account must be in the name of the property owner.	NYSERDA also offers a soft loan product (Smart Energy Loan) which has seen greater uptake due to not requiring a cost effectiveness test.	Participating households must be low and moderate income; tariff tied to meter, so an option for renters.

On-Bill Program Examples (cont'd)

	TOB Vermont Weatherization Repayment Assistance	TOB Orcas Power & Light Cooperative (OPALCO) Switch It Up!	OBF and PAYS PG&E Energy Efficiency Financing
Capital	State funding	USDA Rural Energy Savings Program (RESP)	Ratepayer funds
Administrator	Vermont Housing Finance Agency	OPALCO	PG&E
Underwriting	Look at payment history to ensure no more than one missed payment in last year.	Look at history and delinquencies to calculate internal credit score.	Look at payment history screening to ensure no disconnection notices in last year. Must have been PG&E business customer for previous 24 months.
Features	Fixed: 2% Up to 15 years	Up to \$100k; larger projects require approval of General Manager Fixed: 2%-3% Up to 10 years	Up to \$250k Fixed: 0% Up to 10 years
Eligible Measures	Weatherization (insulation and air sealing), heat pumps, electric water heaters, advanced wood heating systems	Solar, batteries, weatherization, appliances, EV chargers, heating systems	Exterior and interior LED lighting, HVAC, electric motors, refrigeration, food service equipment, water pumps.
Sectors	Residential	Residential and businesses	Businesses
Notes	Renters can participate but must get landlord to sign an agreement. Program is a 2-year pilot aimed at targeting households under 120% AMI.	No special consideration for low-income groups but may require autopay if calculated internal credit score is low.	Monthly repayment amount is based on projected savings. Up to \$4m can be loaned for opportunities where significant savings are possible.

Legislative changes

All reviewed on-bill programs required legislative action for implementation.

Typically, legislation mandated utilities to offer on-bill financing. In some cases, legislation defined eligible measures, cost-effectiveness criteria, and the utility payment waterfall.

Underwriting criteria

When utilities administer the on-bill program, they **can set non-traditional underwriting terms such as looking at utility payment history** instead of a customer's credit score. This helps expand eligibility to underserved groups.

Consumer protection features

Almost all on-bill programs require borrowers to **use approved contractors and only install eligible measures**. Some require energy audits prior to installation and post-installation energy monitoring to ensure energy savings.

Applicability for rural and low-income customers

On-bill financing can be tailored to serve low-income and rural customers by evaluating payment history rather than relying on conventional underwriting criteria. Implementing savings-to-investment ratio standards for cost-effectiveness can guarantee remain cash flow positive. Additionally, a **tariff on-bill program can extend inclusion to renters.**



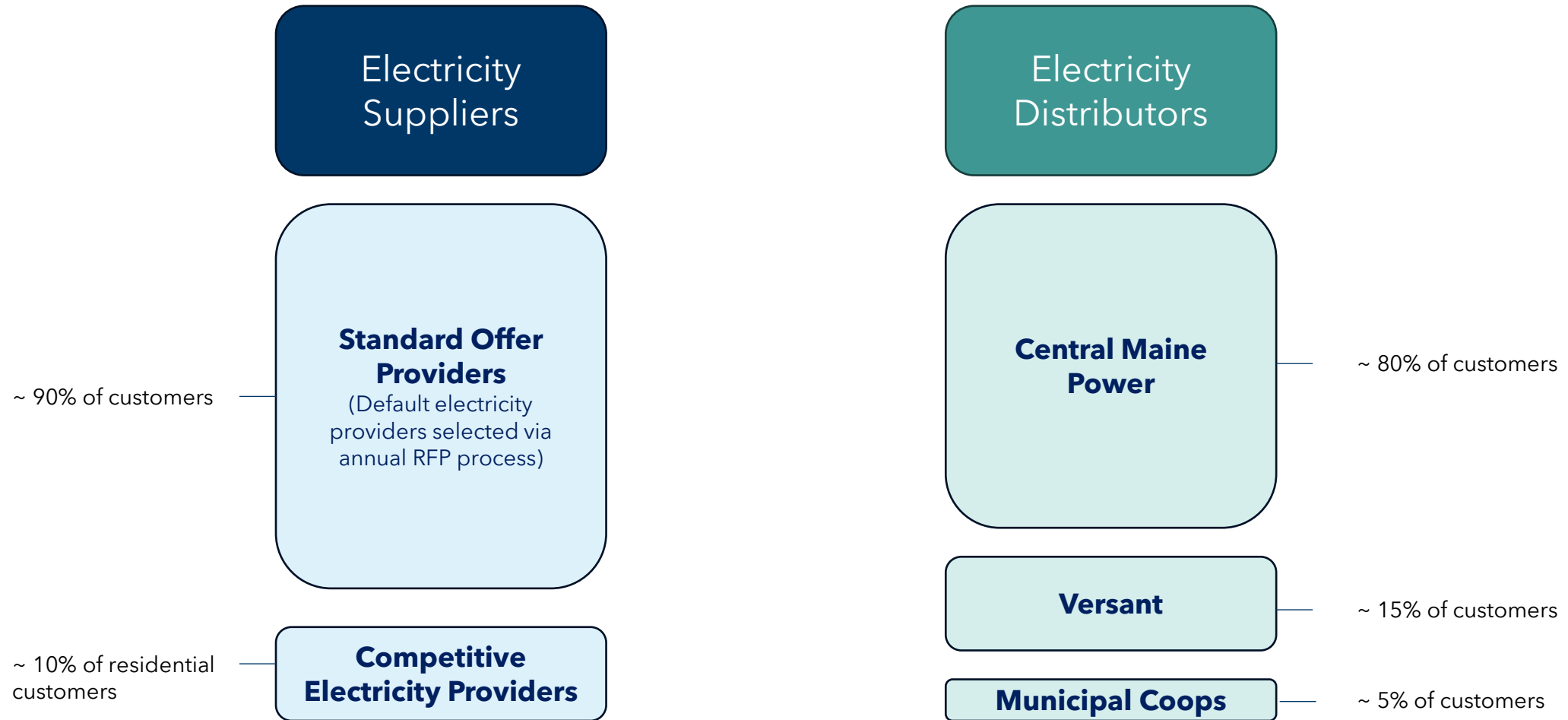
Maine Context & Considerations

Maine Context

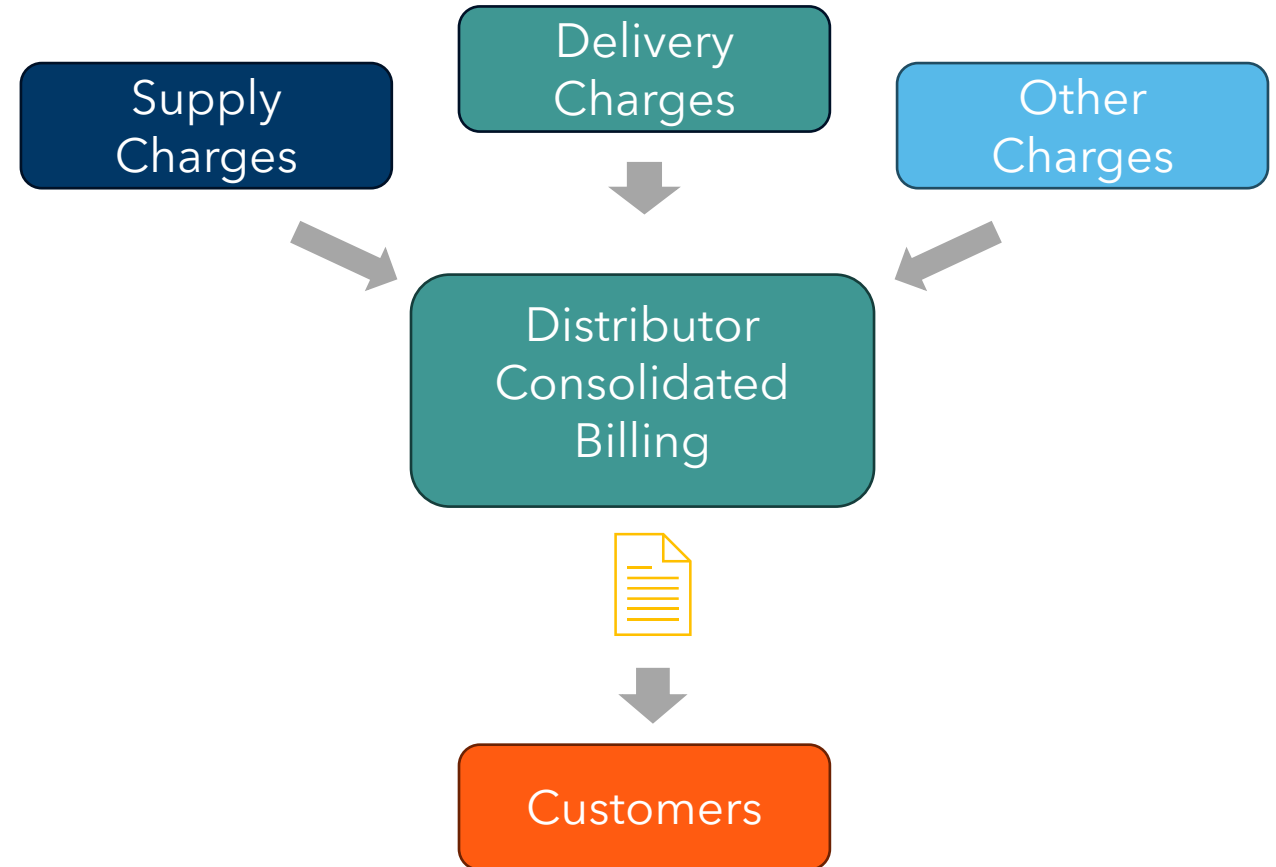
- Maine's electricity supply needs are primarily served by **Standard Offer Providers (SOPs)**, while about 10% of residential customers are served by **Competitive Electricity Providers (CEPs)**.
- There are two investor-owned transmission and distribution utilities - **Central Maine Power** and **Versant**, and some smaller **cooperatives** that serve rural areas.
- Utility bills delivered to consumers include supply, distribution and other charges consolidated onto a single bill through the transmission and distribution utilities.
- **Efficiency Maine Trust (EMT)** plays a central role in pursuit of Maine's climate action plans, including driving the adoption of beneficial electrification. Their current offerings including low-interest home energy loans and other rebate programs.



Electricity Suppliers & Distributors in Maine



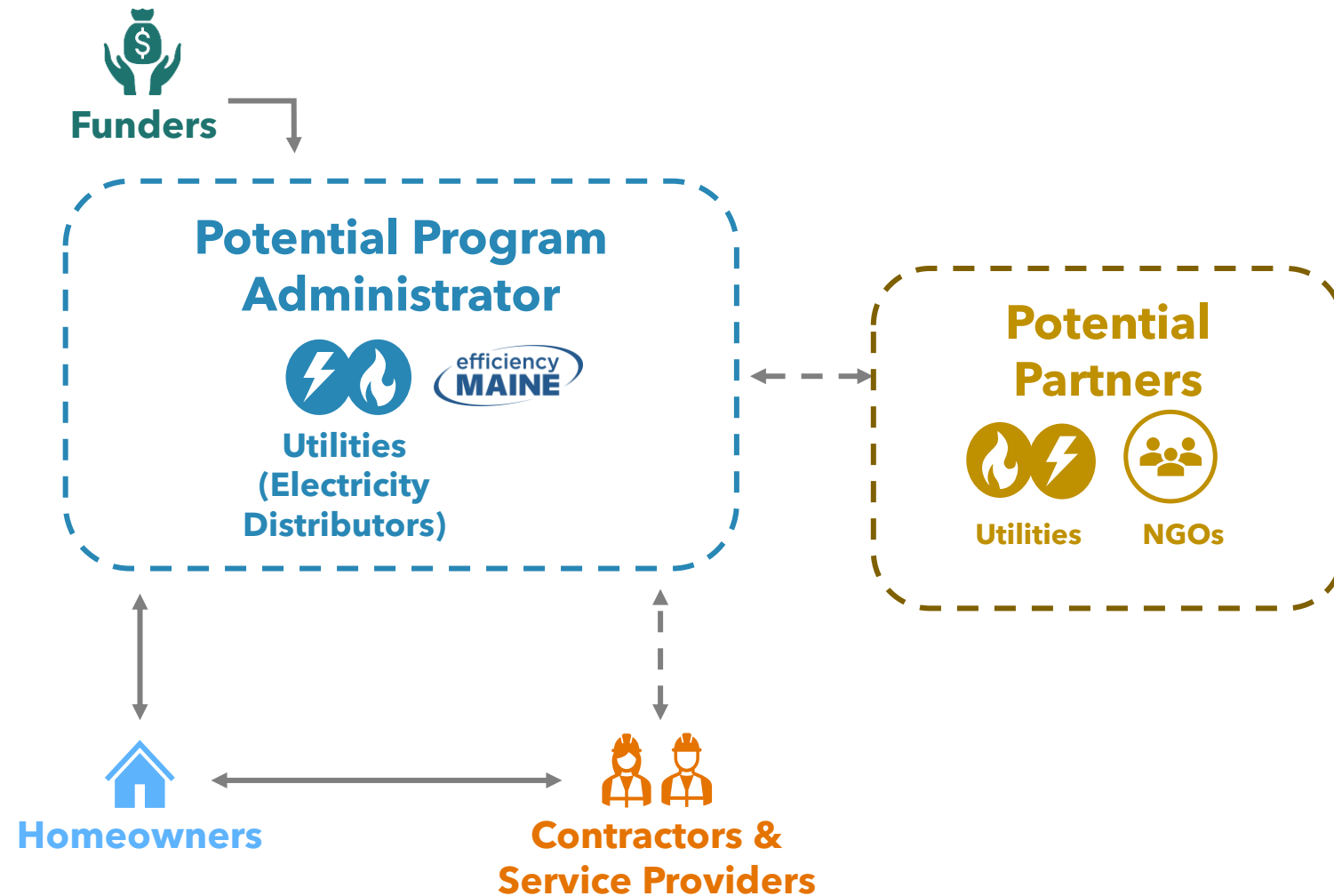
- Consumers in Maine choose a **supplier** – either an SOP or one of the CEPs – tasked with generation. The Maine Public Utility Commission chooses SOPs based on a competitive bidding process which then correspond with Standard Offer charges, while supply pricing is unregulated.
- Transmission and distribution are handled by **utilities**, and these costs are regulated.
- Both the supply and delivery charges, as well as any other fees, are **consolidated onto one bill**, delivered to the consumer via the utility (Central Maine Power, Versant, or a co-operative).



Potential On-Bill Lending Delivery Stakeholders

Considering a potential on-bill lending program in Maine requires various stakeholders, depending on program design:

- **Funders:** This could include traditional lenders, social-finance organizations, utilities (i.e. ratepayer funds), or state, federal or other public financiers.
- **Administrators:** While typically administrators of on-bill lending programs are utilities, Efficiency Maine Trust runs existing energy efficiency programming and has built a strong reputation amongst consumers.
- **Other partners:** Separate from providing initial capital, other entities may have an interest in participating in the marketing or uptake of the program.



Existing Offerings in Maine

Maine currently offers several loan and rebate programs aimed at enhancing energy efficiency. Efficiency Maine's Green Bank has various loans and lease programs for residential, commercial, and public entities. Additionally, Efficiency Maine offers numerous rebates, and MaineHousing delivers grants to assist low-income residents with energy costs and energy upgrades.

Organization	Program	Description
Efficiency Maine	Home Energy Loan	Loans up to \$7,500 for a maximum of 10 years at 5.99% interest available to eligible low-and moderate-income homeowners
	Commercial Property Assessed Clean Energy (C-PACE)	Financing for commercial property owners, only available in participating municipalities (8 total currently)
	Municipal Lease	Tax-exempt lease-purchase agreement for eligible municipalities and schools. Leverages tax-exempt interest rates and can pay for upgrades using money already set aside in utility budget.
	Small Business Energy Loan	Loans for small businesses upgrading to high-performance heat pumps and variable refrigerant flow (VRF) systems. Up to \$10,000 for a maximum term of 36 months at 4.99% interest.
	Various rebate programs	Rebates for homeowners and businesses for number of energy upgrades available. Additional rebates often available for low- and moderate-income individuals.
MaineHousing	Various grant programs	Programs available to help low-income individuals pay for cost of heat pump installation, weatherization, central heating systems, and pay for utility and energy bills.



Discussion and Next Steps

What We Heard from On-Bill Lending Program Administrators

- On-bill lending programs were attractive to consumers when they were simple and streamlined as much as possible. Loan terms are a key driver to ensure interest (i.e. lowest interest rate possible, ensuring cost-effectiveness of measures so that energy savings offset additional costs on utility bills).
- On-bill financing programs (where the utility provides the capital) typically gives the utility the **flexibility to set non-traditional underwriting terms**, such as considering payment history instead of credit score and debt-to-income ratio. This can expand eligibility of the program to underserved groups (such as low-to-moderate income households) that would not be able to meet traditional underwriting standards.
- Setting up these programs can take varying amounts of time, including sourcing capital, implementing legislative or regulatory changes, building capacity and making changes to utilities, and working with contractors and other stakeholders to build in adequate consumer protections.

What We Heard from Maine Stakeholders

- Overall, there were consistent concerns from stakeholders that on-bill lending may not be appropriate given the structure and governance of energy efficiency in Maine. It was noted that **Efficiency Maine Trust** operates a green bank and is mandated to implement energy efficiency programming in the State and was suggested that financing programs for beneficial electrification should continue to be run through Efficiency Maine Trust.
- Of the on-bill lending methods, **On-Bill Financing** (where the utility provides the capital) was not a preferred program method, as there were concerns about sourcing capital from ratepayers or utilities being required to pay back a loan from another entity (i.e. state or federal government). There were concerns that increased weighted average debt, if capital was borrowed to finance the program, could lead to increased costs for ratepayers.
- **Tariff On-Bill** (where the loan is associated with the meter) also raised concerns, as there was a perception that legal and other complexity would be heightened with this option.

What We Heard from Maine Stakeholders (cont.)

- Challenges were raised regarding **building capacity** for the utility to act as a financial lender, and to work with current billing systems to add a line item for collection of payment for beneficial electrification projects.
- As well, utilities were concerned regarding how a new line item on utility bills would fit within the existing **waterfall payment structure**, which is governed by regulation. There were further questions regarding consequence for defaulting on this aspect of their utility bill (i.e. would non-payment lead to shut-off).

Key Elements of the Comparative Analysis:

- Quantitative scoring (5-point scale) and qualitative assessment of each type of financing option - including forms of on-bill lending - focusing on beneficial electrification considerations:
 - Ability to overcome barriers in key markets; technology types
 - Potential sources of capital
 - Administrative cost and complexity
 - Consumer protection and underwriting provisions
 - Cost-effectiveness considerations
 - Alignment with Maine's current statutory requirements.
- The **final report** will include detailed analysis of programs and stakeholders included as part of this study, the parallel on-bill financing review, a map of current financing offerings in Maine to identify gaps, comparative analysis, and will develop recommended model(s) for Maine specifically.



Appendix

On-Bill Program Examples

In addition to the desktop research, interviews were conducted with the following five (5) program administrators and four (4) stakeholders in Maine:

On-Bill Program Administrators	Maine Stakeholders
Hawaii Green Energy Investment Authority (OBT)	Efficiency Maine Trust
Vermont Housing Finance Agency (OBF)	Versant
NYSERDA (OBR and Smart Energy Loan)	Central Maine Power
Orcas Power & Light Cooperative (OBT)	Eastern Maine Electric Cooperative
Illinois Energy Efficiency Loan Program (via Slipstream - OBF)	



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