



May 25, 2021

Epic Loans: Leveraging Public and Private Capital for Customer Benefits

Presented by:

John Phelan

Energy Services Senior Manager
City of Fort Collins Utilities

Blaine Dunn

Accounting Director
City of Fort Collins Financial Services





John Phelan
Energy Services Senior Manager



Blaine Dunn
Accounting Director

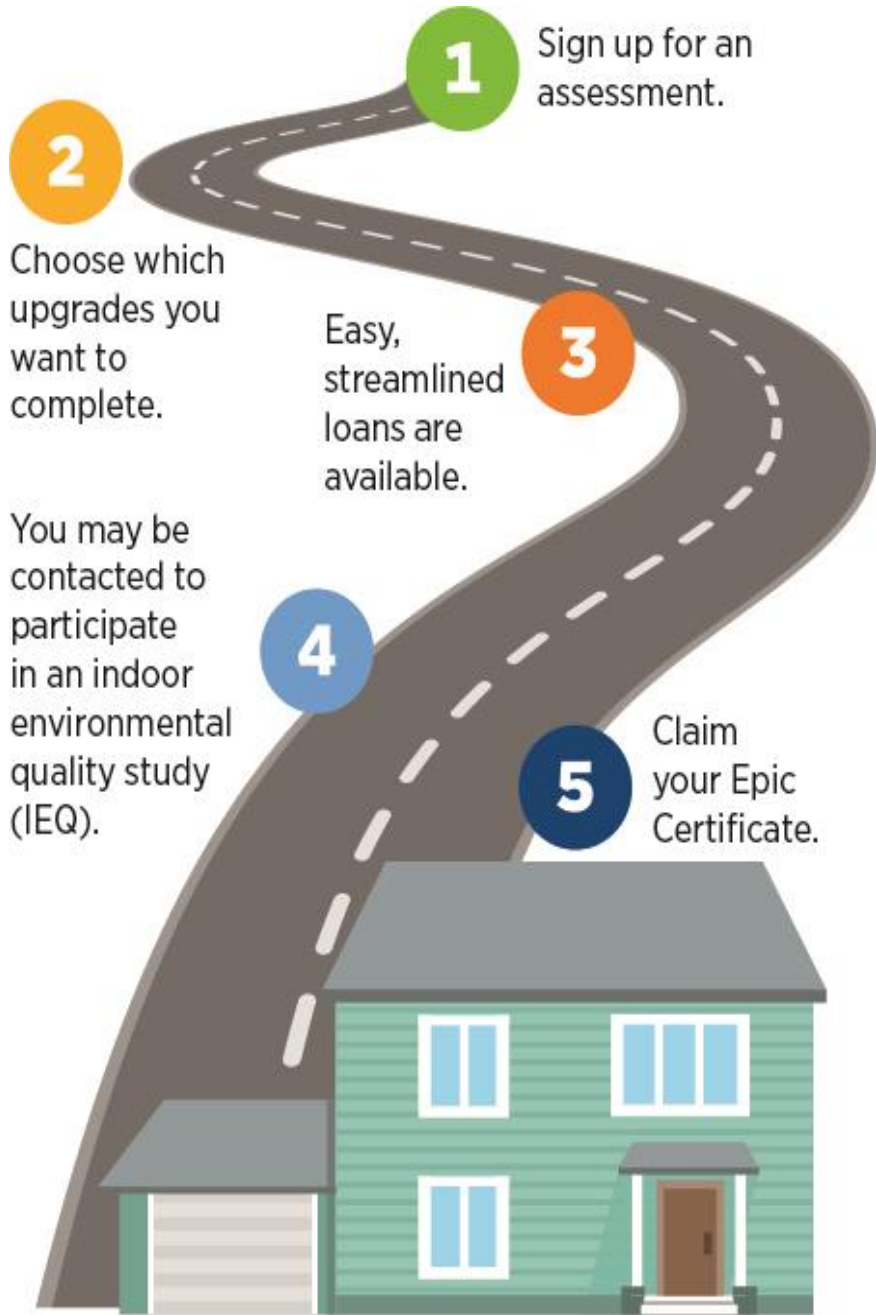
- 1 | What is Epic Homes?
- 2 | Financing Strategies for the Epic Loan
- 3 | The Public-Private Capital Blend
- 4 | Epic Loans Portfolio Data
- 5 | What's Next?



- Cities identified innovative solutions to solve challenging issues facing their community
 - 300+ cities, eight winners, each awarded \$1M to implement their idea
- Epic Homes won the Bloomberg Mayors Challenge for its proposal to bring together **energy efficiency** and **easy financing** options with an emphasis on **health and well-being** for Fort Collins homes. It also focuses on **low- to moderate-income renters**.



It's not about the home, it's about the people living in the home.



EPIC HOMES

A streamlined, affordable approach for single-family home and rental property energy efficiency upgrades.

City of
Fort Collins
Utilities



Upgrade energy efficiency in renter- and owner-occupied homes



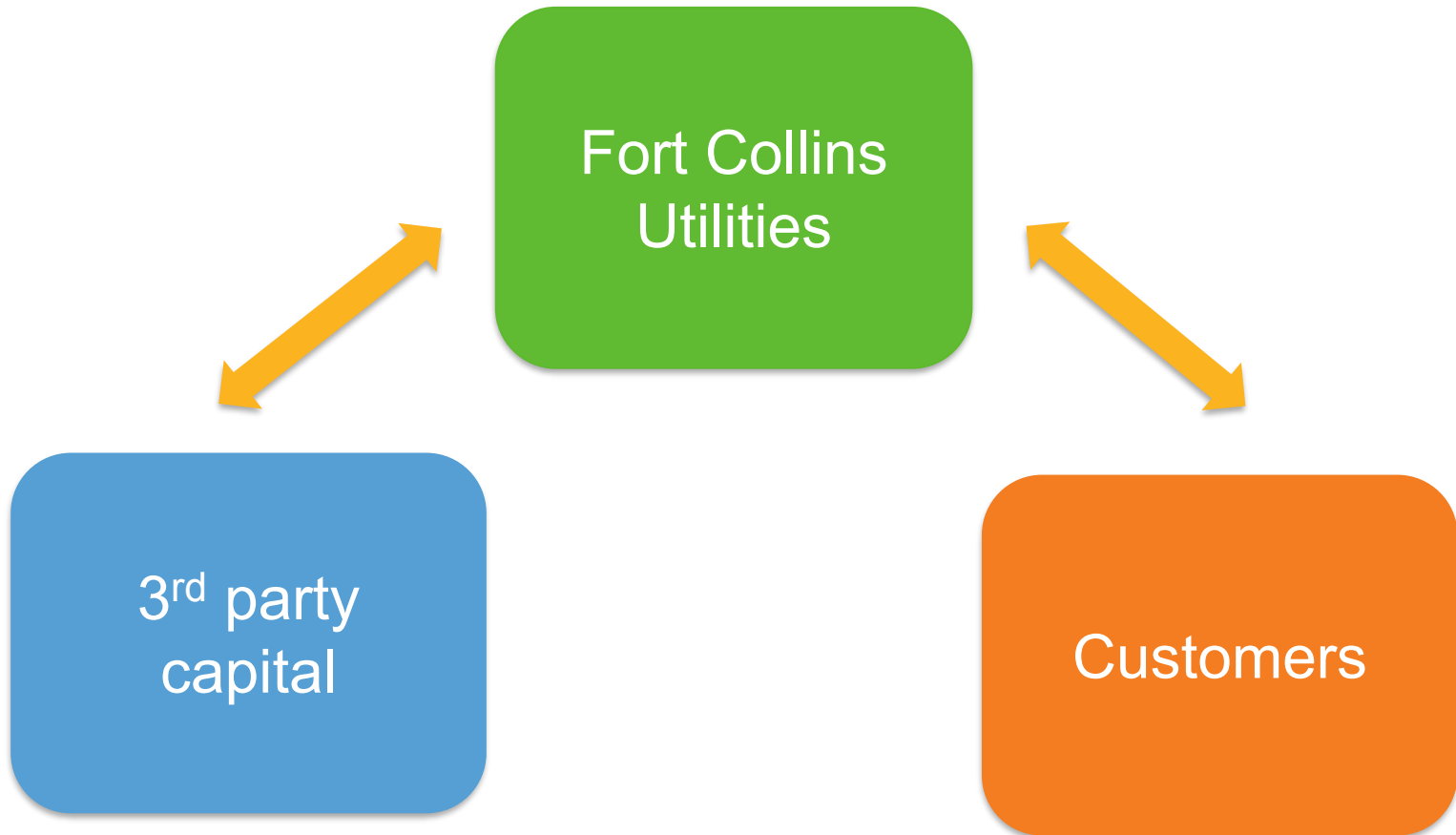
Document connections between energy efficiency and indicators of improved health/well-being

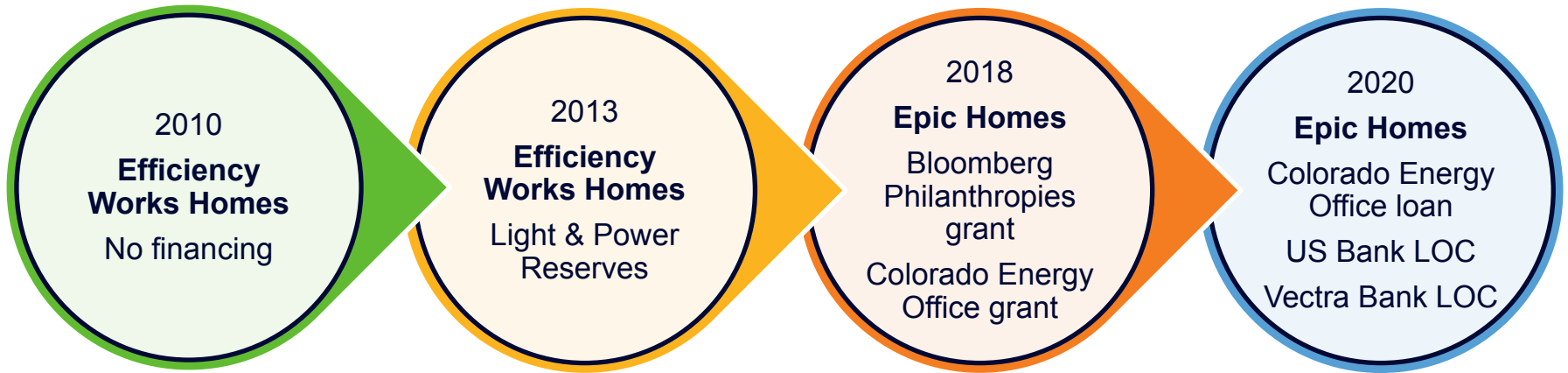


Track reductions in energy use and lower utility bills



Remove financial barriers to energy efficiency upgrades

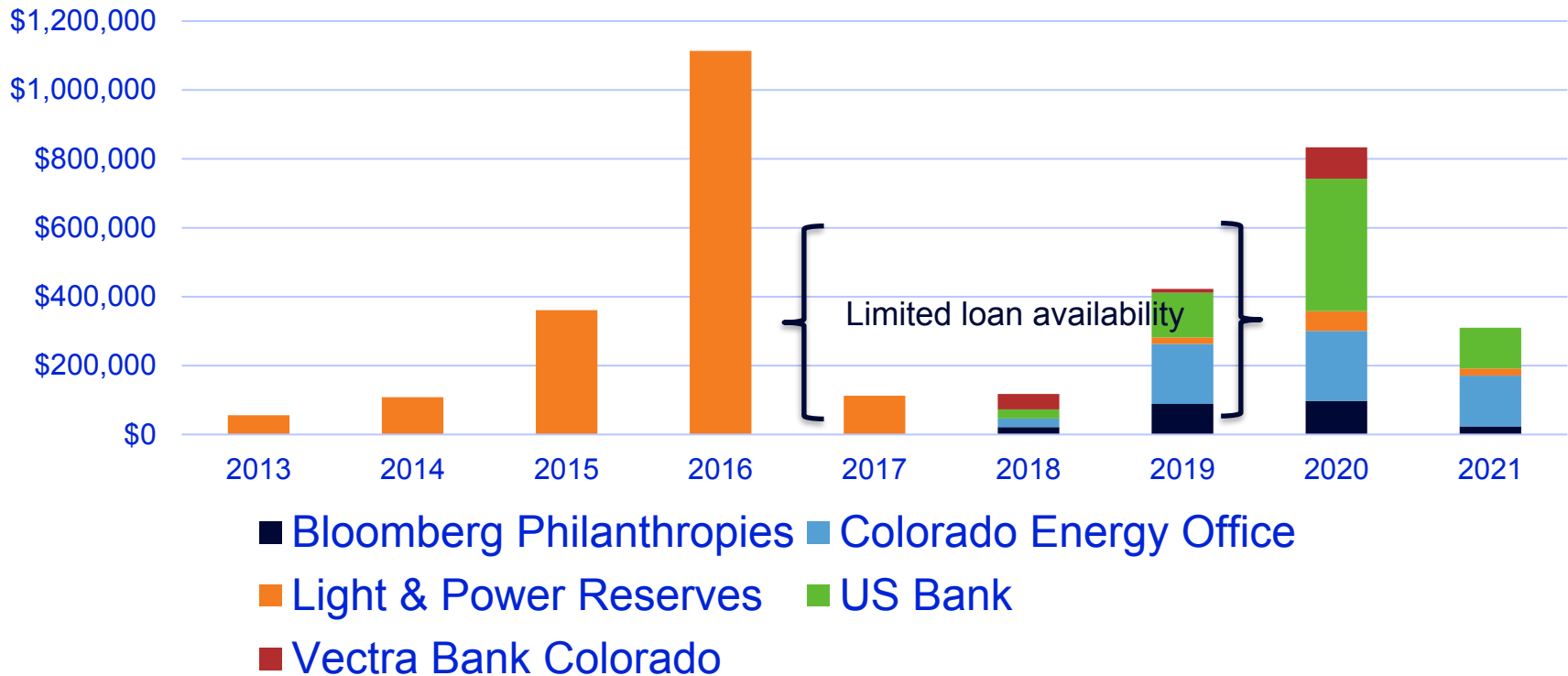




Capital Stack

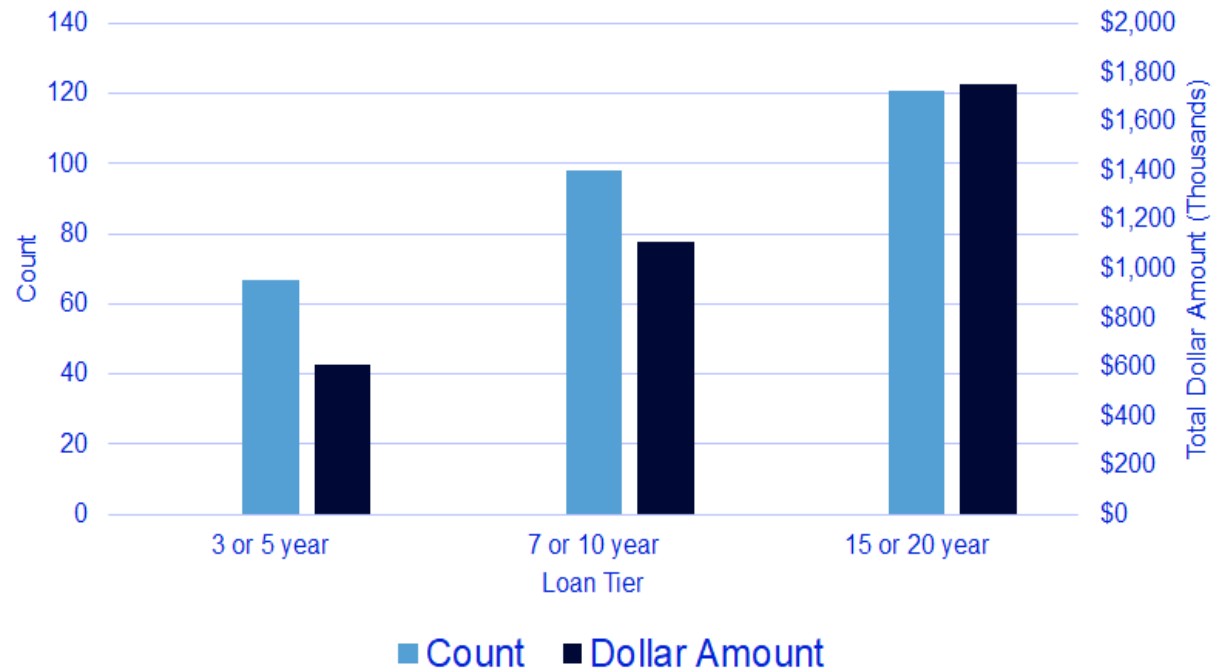
-	Utilities Light & Power Reserves - \$1.6 million	Utilities Light & Power Reserves - \$1.6 million	Utilities Light & Power Reserves - \$1.6 million
-	-	Bloomberg Grant - \$688k	Bloomberg Grant - \$688k
-	-	CO Energy Office Grant - \$200k	CO Energy Office Grant - \$200k
-	-	-	CO Energy Office Loan - \$800k
-	-	-	US Bank LOC – Up to \$2.5M
-	-	-	Vectra Bank LOC – Up to \$2.5M
-	\$1.6 MILLION	\$2.5 MILLION	\$8.3 MILLION

Loans Issued by Funding Source, 2013 - 2021 YTD



Loan Term	Customer Rate
3 or 5 years	2.95%
7 or 10 years	3.15%
15 years	3.25%

Epic Loans Portfolio by Loan Tier (through Q1 2021)



Number of Loans: **286**
 Cumulative Loan Amount: **\$3,469,845**

Average Loan Amount	\$12,132	Average Monthly Payment	\$123
Minimum Loan Amount	\$1,960	Minimum Monthly Payment	\$17
Maximum Loan Amount	\$25,000	Maximum Monthly Payment	\$726

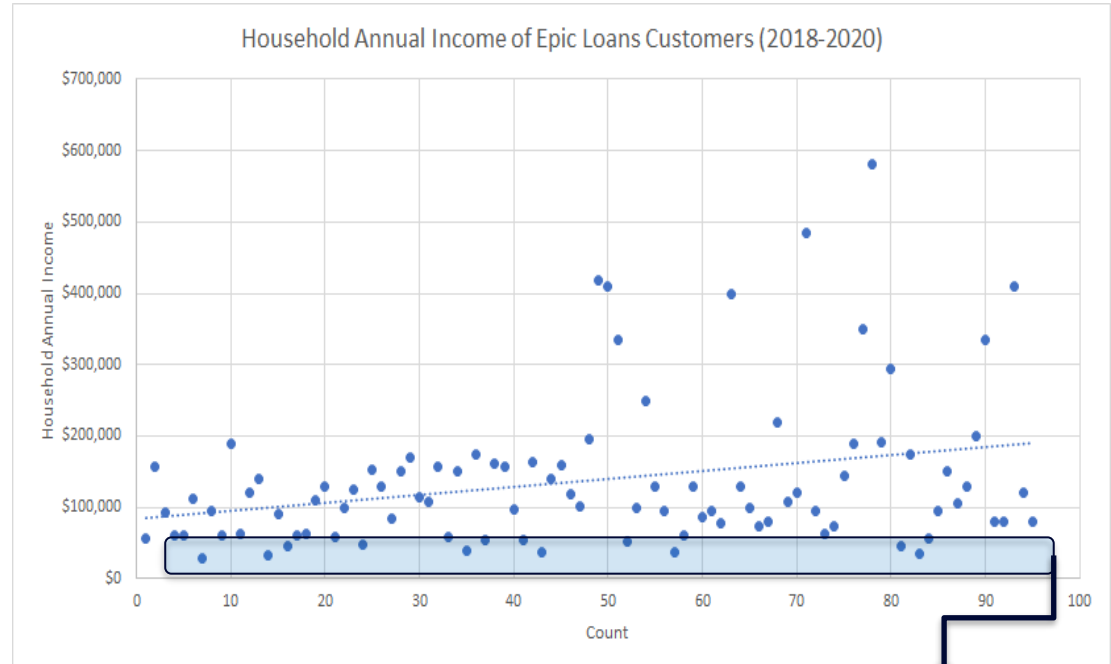
Interest Earned on Customer Loans	\$210,073
Interest Earned on Undeployed Funds (2020)	\$11,327

ON-BILL LOANS

- ✓ 96 loans totaling over \$1,330,000
- ✓ Average loan: \$13,900

LOAN CUSTOMERS

- ✓ 15 loans for LMI households
- ✓ Household income
 - ✓ Median: \$108,000
 - ✓ Minimum: \$29,500
 - ✓ Maximum: \$580,000



LMI
(Less than
80% AMI)

Loan data from 2018-2020 (Bloomberg Mayors Challenge)

- Facilitate customers undertaking multi-measure, comprehensive projects, including solar + storage and electrification
- Monitor customer interest in upgrades with higher loan maximums
 - Increased loan max from \$25k to \$50k in February 2021
- Continue to work on simplifying loan processes for customers and contractors
- Plan next round of external capital procurement





Thank You

John Phelan
jphelan@fcgov.com

Blaine Dunn
bdunn@fcgov.com

Financing Electrification

through the California Hub for Energy Efficiency Financing (CHEEF)

Presented by

California Alternative Energy and Advanced Transportation
Financing Authority (CAEATFA)

*Coalition of Sustainable Communities New Mexico Energy
Efficiency Finance Roundtable, July 2021*

gogreen
FINANCING™



CHEEF
CALIFORNIA HUB FOR
ENERGY EFFICIENCY FINANCING



California State Treasurer's Office houses CAEATFA and over 15 other financing authorities and commissions



California Alternative Energy & Advanced Transportation Financing Authority (CAEATFA) administers the CHEEF and other programs



California Hub for Energy Efficiency Financing (CHEEF)



Public facing platform for the CHEEF

Residential, Small Business, and Affordable Multifamily programs



California Public Utilities Commission created the CHEEF to bring private capital into the energy efficiency marketplace and authorized CAEATFA as its administrator

Program is funded by CA's Investor-Owned Utilities

The Problem

California has set ambitious climate goals for 2030...

- ✓ 40% reduction in total greenhouse gas emissions from 1990 levels
- ✓ Doubling of energy efficiency savings in existing buildings from 2015 levels

...but energy retrofits needed to achieve these goals face financing barriers.

- ✓ Energy efficiency projects come with **high upfront costs**, and consumers **lack necessary capital** to undertake them
- ✓ Existing loan products don't meet customer needs:
 - Many homeowners do not want to use their **property as collateral**
 - Credit card **interest rates are high**
 - Unsecured loans are **limited to five-year terms**, and maximum loan amounts **do not cover full retrofit**

The Solution

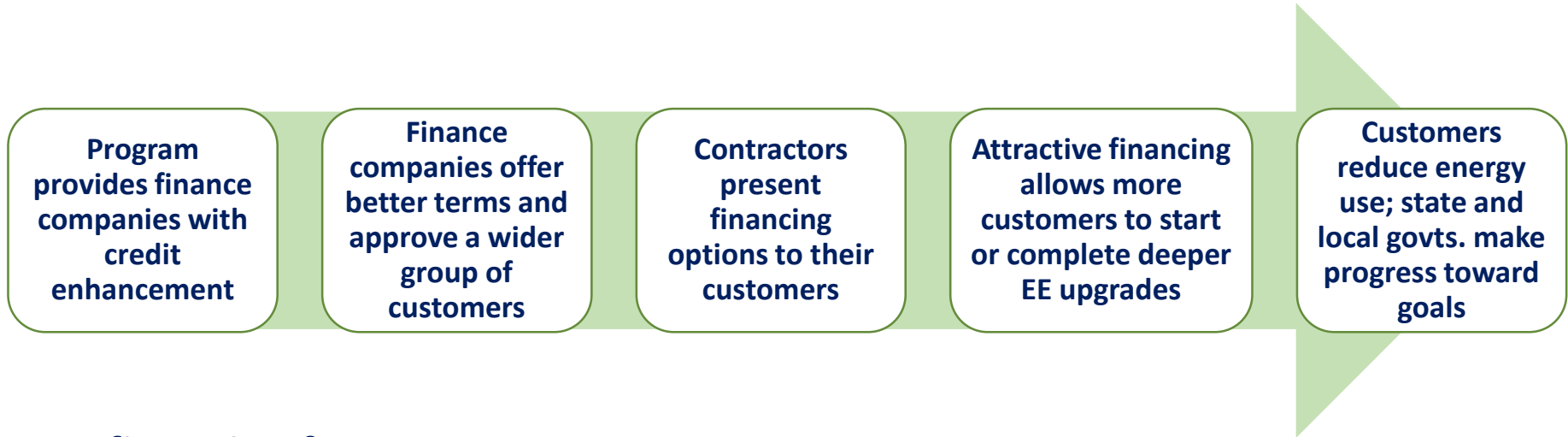
The CHEEF Programs address barriers to financing by offering lenders:

- ✓ **A credit enhancement** to help mitigate risk
 - Receive a loan loss reserve (LLR) contribution for every enrolled loan
 - **Participate at no cost** to lender or borrower
 - Recover up to **90% of outstanding principal** in the event of default

- ✓ **Statewide marketing** to grow your customer base
 - Leverage a growing network of **500+ approved contractors** promoting financing to borrowers
 - Benefit from **statewide marketing campaigns**, including efforts led by your customers' energy utility
 - Be featured as a lender on **GoGreenFinancing.com**, our online marketplace for EE financing

- ✓ **Strategic collaboration with trusted organizations**
 - Administered by the California Hub for Energy Efficiency Financing in the **California State Treasurer's Office**
 - Supported by **California's four IOUs** – Pacific Gas & Electric (PG&E), San Diego Gas & Electric (SDG&E), Southern California Edison (SCE), and Southern California Gas (SCG)

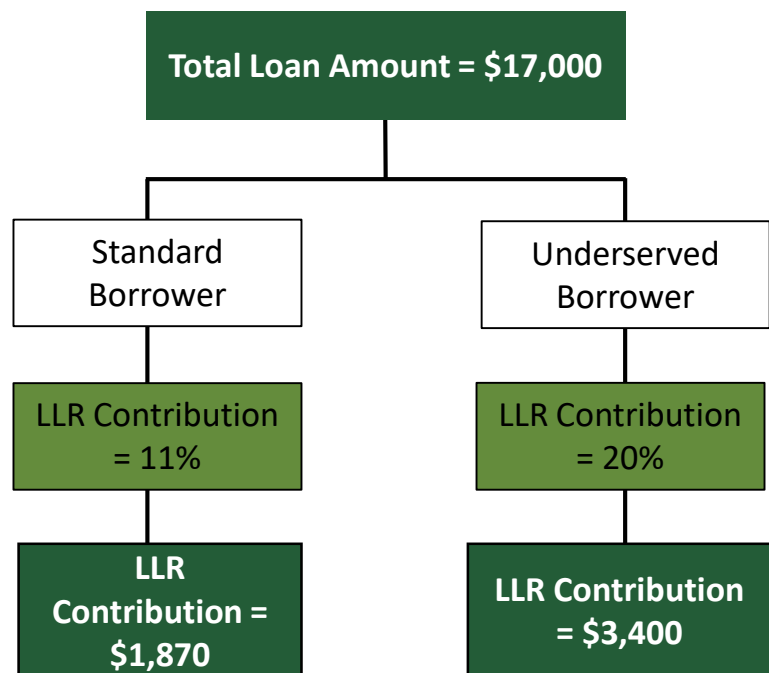
Credit enhancement leverages private capital for energy efficiency



Key financing features:

- Single Family, Small Business and Affordable Multifamily Programs
- Financing is unsecured or equipment-secured; no property liens
- Finance companies offer lower rates, longer repayment terms, larger amounts of financing and more approvals
 - For Residential: Minimum FICO score is 580 and rates range from 2.95% - 8.12%, terms out to 15 years, no prepayment or closing fees
- Residential Program: 8 credit union lenders, 500+enrolled contractors

How the Loan Loss Reserve Works











- ✓ REEL has **up to \$20 million** authorized for credit enhancements
- ✓ For each enrolled loan:
 - A contribution is made to the lender's LLR account, held at a trustee bank
 - The LLR account may be accessed in case of default to **recoup up to 90% of the unpaid balance** of a charged-off loan
- ✓ Additional contributions are made to **support underserved borrowers**
 - Underserved borrowers are those defined as either:
 1. *Low-to-Moderate Income (LMI)* – Area Median Income (AMI) of the borrower's census tract does not exceed 120% of the AMI for the metropolitan area, county, or state
 2. *Credit-Challenged* – A borrower whose credit score is < 640. Lenders must opt in to the Credit-Challenged facility by demonstrating additional benefits to credit-challenged borrowers.

✓ No closing costs or annual fees

✓ No collateral required

✓ Terms up to 15 years

Start today! GoGreenFinancing.com

	Lending Area	APR ¹ (06/15/2021)	Loan Size	Minimum Credit Score	Pre-Approval	Contact Info
STATEWIDE LENDERS						
Available to borrowers in:						
	Anywhere in California	2.98% - 6.38% 2.98% rate limited to \$30,000 and 30-month term	\$2,500 - \$50,000	600	Instant pre-approval for qualified borrowers (up to \$25,000)	(858) 495-1637 CCCU Energy Group: Ray, Zak, Bill & Katya energy@calcoastcu.org
	Anywhere in California	3.49% - 5.49% Limited-time offer: \$200 cash back on REEL loans	\$2,500 - \$50,000	580	Within one business day	(818) 993-6328, option 4 MCCU Consumer Lending energy@matadors.org
REGIONAL LENDERS						
Available to borrowers in:						
	Indian Wells Valleys, Searles Valley, Kern River Valley, Bishop, Barstow, and parts of Kern and Inyo counties	4.00% - 8.00%	\$2,500 - \$50,000	580	Within one business day	(866) 743-6497 Eric Bruen REEL@desertvalleys.org
	Orange County	3.95% - 7.95%	\$2,500 - \$50,000	580	Within one business day	(949) 639-7819 Bob Thompson bthompson@eaglecu.org
	Sacramento, Placer, Nevada, El Dorado, Amador, Yuba, Yolo, Sutter, San Joaquin, Solano, Sierra, and Contra Costa counties ²	2.95% - 6.49% 2.95% rate limited to 36-month term	\$2,500 - \$50,000	600	Within one business day	(800) 556-6768 x2009 First US Consumer Lending energy@firstus.org
	Pasadena, Covina, Vernon, and the greater San Gabriel Valley	4.99% - 8.10%	\$2,500 - \$30,000	600	Within one business day	(877) 297-4707 PFCU Lending lending@mypsfcu.org
	Alameda, Colusa, Contra Costa, Merced, Napa, Placer, Sacramento, San Joaquin, Solano, Sonoma, Stanislaus, and Yolo counties ³	3.99% - 7.99%	\$1,000 - \$50,000	600	Instant pre-approval for qualified borrowers	(707) 392-9277 Carla Eaton ceaton@traviscu.org
	Tulare County and Madera County ⁴	5.62% - 8.12%	\$1,500 - \$50,000	580	Within one business day	(559) 688-5996 x2315 Kiersty Vaughan kvaughan@valleyoak.org

¹ APR = Annual percentage rate. May include .5% auto-pay discount. Rates are subject to change at any time. Check with lender for the most up-to-date rate information. ² Existing and retired federal employees throughout the State of California are also eligible. ³ Available to homeowners who receive gas and electric service from PG&E. ⁴ Valley Oak can lend to select employee groups in Kings and Fresno counties. Please see Valley Oak's website for membership details.

Electrification Challenges: A bit of California context

- 4 main Investor-Owned Utilities (IOUs) provide the majority of gas/electricity to California buildings
- 45 Publicly-Owned Utilities (POUs) or cooperatives provide electric service to 22% of Californians
- 85% of Californians currently heat their water with natural gas, compared with 48% nationally
- California energy is expensive compared to rest of country, but electricity is disproportionately more expensive

	Electric \$/kWh	Gas \$/therm
US Average	\$.139	\$1.166
San Francisco	\$.257	\$1.707
Los Angeles	\$.220	\$1.331

Bureau of Labor Statistics, average household energy prices for April 2021

Balancing State's decarbonization goals with current authorization

- CHEEF doesn't actually run electrification programs
- CHEEF was created to **leverage capital for energy efficiency and demand response**
- **Funded by IOU ratepayers** and must deliver benefits to those customers
- Financing can **support any IOU ratepayer-funded EE program**, but is not connected to a specific on-the-ground IOU program
- Ratepayer dollars cannot be used to credit enhance financing for distributed generation or battery storage
- **We have adapted to try and support decarbonization goals wherever possible within our authorization**



Residential (REEL) heat pump data

Program Outcomes
as of 4/30/21:

1,205

loans enrolled

\$20MM

total amount
financed

\$6.58

in private capital
leveraged for every
\$1 of ratepayer
credit enhancement

Top 3 Measures
Installed with REEL:



HVAC

*Equipment and
ductwork*



Building envelope

*Air sealing, insulation,
cool roofs, windows*



Water heating

*Water heaters, low-flow
fixtures*

Of the **757 projects** that included HVAC
equipment:

- **102*** projects (**13%**) contained heat pumps
 - **73** central systems with heat pumps
 - **50** mini-split systems with heat pumps

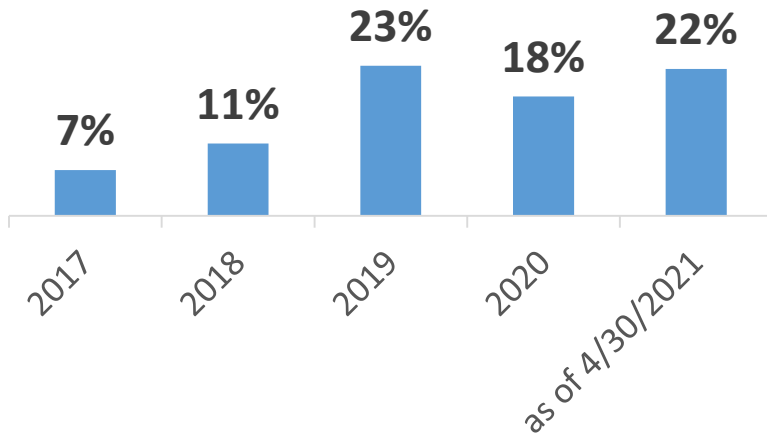
Of the **87 projects** that included water
heating:

- **10 (12%)** were heat pump water heaters

**Some projects contained more than 1 heat pump unit*

Data reveals challenges with heat pump adoption

Heat Pumps as a % of HVAC Projects Over Time



Metrics for Heat Pump HVAC Projects

Overall Average Loan Size:	\$16,669
Average Loan Size for Heat Pump Projects:	\$19,141
Overall Percentage of Rebated Projects:	13%
Percentage of Rebated Heat Pump Projects:	24%
Total Loans that Included Heat Pumps:	102
Total Loans that Included Heat Pumps to Underserved Customers:	46

Financing is flexible enough to accommodate heat pump projects

What's
Working

- Heat pumps and heat pump water heaters have always been **on our list of eligible measures**
- **Financing can include “legal and practical” costs** beyond EE measures
 - Customer is able to finance panel upgrade and water heater re-location (which are often necessary for heat pump installs) within the same REEL loan
 - Lender gets credit enhancement for portion of financing for “legal and practical” costs
- **Long repayment terms** help customers with affordable monthly payments for large loans for both residential and small business
- **40+ contractor companies** have installed heat pumps using the REEL Program

Funding silos and utility jurisdictions prevent scaling

- Programs are IOU ratepayer-funded, but there are **45 POU electric or co-op providers** in the state
- Private capital providers and contractors do not view the world through IOU/POU jurisdictions
- Result is a web of eligibility complexity that makes project qualification complicated for contractors and lenders
- **More than 8 million Californians** are unable to install electrification measures under CHEEF Programs (because they are POU electric customers, even if many are IOU gas customers)

Challenges



West Sac:
PG&E
Service
Heat pumps encouraged!

Sacramento:
PG&E &
SMUD
Service
No heat pumps!

Contextual realities pose additional challenges for financing electrification

Challenges



- **Funding silos** mean we can't finance solar and battery storage to do comprehensive decarbonization projects
- **Evaluation criteria:** based on energy efficiency, kWh and therms reduced, not decarbonization
- **Economics:** 85% of California homes currently heat water with gas; electricity is expensive
- Common **workforce challenges:** limited number of contractors who know how to install heat pumps
- **Program coordination challenges:**
 - Electricians do not see themselves as “EE contractors” – should/how do we get them to participate in our program?
 - **Payment coordination** and data collection from multiple contractors

Financing heat pump water heaters through online marketplaces

Opportunities

Rheem XE80T10HS45U0
Rheem
XE80T10HS45U0
100% ENERGY STAR
\$2,219
[Compare](#) [See offer](#)

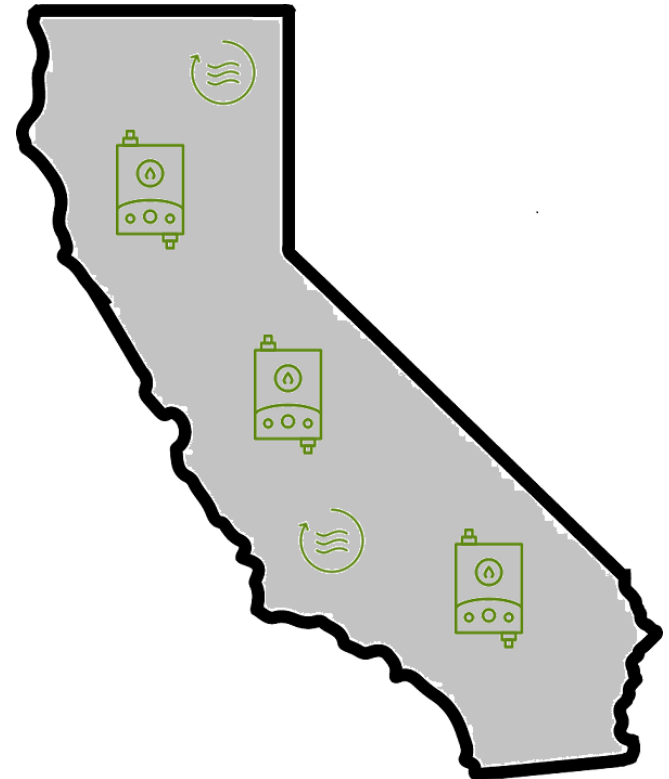
A. O. Smith HP10-80H45DV
A. O. Smith HP10-80H45DVC
★★★★★ (7)
95% ENERGY STAR
\$2,252
[Compare](#) [See offer](#)

- A **point-of-sale residential microlending product** through REEL is currently under development
- Product will **allow customers to finance heat pump technology, instantly at the time of purchase** through their utility's marketplace
- Broad credit approvals (down to 580 expected) and low rates resulting from credit enhancement - much better financing offer than credit cards
- Launching with Enervee and One Finance this year
- Challenges: balancing compliance with opportunity to scale
 - Requiring professional installation and ensuring permit compliance with an online purchase model

A truly statewide program with comprehensive projects

Opportunities

- CHEEF seeking CPUC approval to incorporate non-IOU ratepayer sources of funding to support projects in POU territories — *GRANTED (July 2021)*
 - Would allow for more uniform project eligibility rules across utility jurisdictions and ease participation for contractors
 - Significant support expressed as part of current Clean Energy Financing Proceeding
 - **Conditioned on securing non-IOU funding source**
- CHEEF seeking CPUC approval to provide credit enhancement for solar, storage, EV charging as part of the CHEEF — *Decision expected Summer 2022*
 - Customers don't view EE projects as separate from other energy upgrades
 - Would enable comprehensive decarbonization projects
 - Received mixed support as part of Clean Energy Financing Proceeding



Other ideas in motion

Opportunities

- More deliberate integration of efforts with IOU or Regional Energy Network (REN) heat pump programs
 - Financing alone doesn't create a demand; it needs to be offered as part of a package for a residential or commercial upgrade
- Decarbonization landing pages on our public platform, GoGreenFinancing.com
- Differentiation of contractors who can install heat pump technology on GoGreenFinancing.com
 - Making "heat pumps" a searchable category

The screenshot displays a search interface with the following elements:

- Residential Contractors**: A dark green button, currently selected.
- Small Business Contractors**: A light grey button.
- Service Type**: A dropdown menu with the following options: - Any -, Appliances, Heating, A/C and ducts, Insulation and/or air sealing, Lighting, Other, and Pool products.
- Other Languages**: A dropdown menu with the option: Spanish.
- Search by County**: A text input field containing the text: Sacramento.

Thank you!

Visit [GoGreenFinancing.com](https://www.GoGreenFinancing.com)
to learn more about our programs.

Traci Hukill, Marketing Analyst

California Alternative Energy and Advanced
Transportation Financing Authority (CAEATFA)

thukill@treasurer.ca.gov

gogreen
FINANCING™



CHEEF
CALIFORNIA HUB FOR
ENERGY EFFICIENCY FINANCING



Residential



Small Business



Affordable Multifamily

Customers	Owners or renters of single-family residences (including mobile homes, condos, and multiplexes)	Small businesses and nonprofits (building owners or tenants)	Multifamily properties where at least 50% of units are restricted to LMI households
Financing Products	Loans from \$2,500 to \$50,000 with terms up to 15 years; appliance microloans via utility marketplaces currently under development	Loans, leases, equipment finance agreements, and efficiency-as-a-service agreements from \$10,000 to \$5 million with terms up to 10 years	Equipment finance agreements from \$10k-\$250k for up to 84 months; efficiency-as-a-service agreements from \$250,000 to \$10 million, up to 10 years
Collateral	Unsecured – loan is not tied to customer’s property	Equipment-secured – loan is not tied to customer’s property	Equipment-secured – loan is not tied to customer’s property
Key Features	Rates range between 2.95% and 8.12%, compared to national average of 12.3% (for unsecured loans via credit unions in 2019)	Can be combined with utility rebates, incentives, and financing programs (e.g., OBF)	Complements existing affordable multifamily energy programs, like SOMAH and LIWP
Electrification Support	Heat pumps and HPWHs are eligible measures; new regulations will ease complexity of hot water source issues	Heat pumps and HPWHs are eligible measures; custom qualification process offers additional flexibility	No eligible measure list for the program – offers flexibility to install electrification measures as needed

Financing NZE Retrofits At Scale

Presented at the 2021 Energy Efficiency Finance Forum

ACEEE 2021



Product D: 2-3 story, wood frame, 1940-1978



- > Known prices and known outcomes
- > It's a product: it's repeatable and scope is defined in advance
- > No delay or cost in price discovery
- > Easy to finance (one loan application)
- > Relevant to all buildings of similar typology (easy to size the market)
- > 30-year warranty and long-term service contract

10,448 Days

...the day we must hit zero emissions.

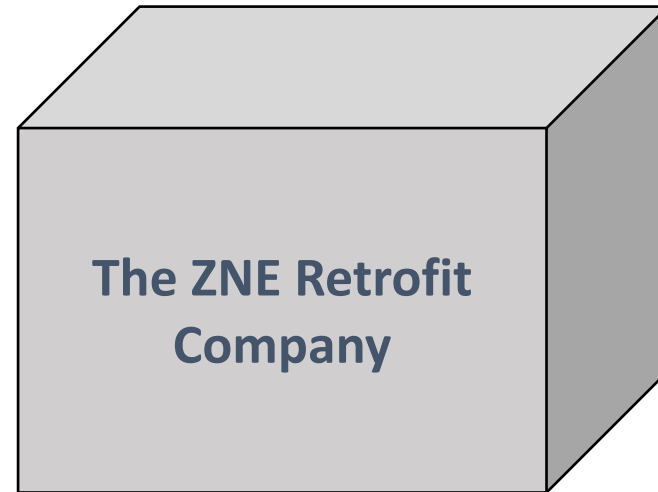
- > Days until January 1, 2050: 10,448
- > Retrofits in U.S. required per day: 7,322*
- > **Retrofits required per hour: 610****

*Based on 102 million buildings (source: DOE) and 75% of existing building stock remaining in 2050.

**Assumes installations occurring 7 days per week and through a 12 hour workday.

Delivering A Product

Structure Of Value Chain



This entity makes scale possible.

Status Quo: A Long Value Chain



With lots of costs...

Costs for manufacturers: Customer acquisition and sales costs, distribution network, inventory carrying costs (financing their own inventory), not running the plant full time, equipment costs, transportation costs, R&D, GC markups on their products. Also, installation involves high labor costs which effectively raises the cost of the product. The variability of projects prevent them from easily going to scale and low volume and margins give them a high fixed cost to sales ratio. **Costs for project:** Materials waste, scoping, pricing job, liability insurance, onsite labor, project to project sequencing, construction interest, low buying power for raw materials, shipping greater volume of materials due to onsite cutting, sub vendors (with inflated costs because of their cash flow schedule problems produced by the GC not paying them), crew transportation to site. Information transfer costs. Error costs. Process costs (soft costs.). Uncertainty premium due to unfamiliarity with building technology being added by GC and by the subcontractors—which inflates costs. **Financing costs:** High risk premium, high originator costs, high legal costs, high construction interest. **Building owner costs:** Moving of tenants out of units, idle units not receiving income, entitlement fees, management fees, liabilities, uncertainty of rent payment. Use costs. Expected value of risks.

Advantages Of Such A Company

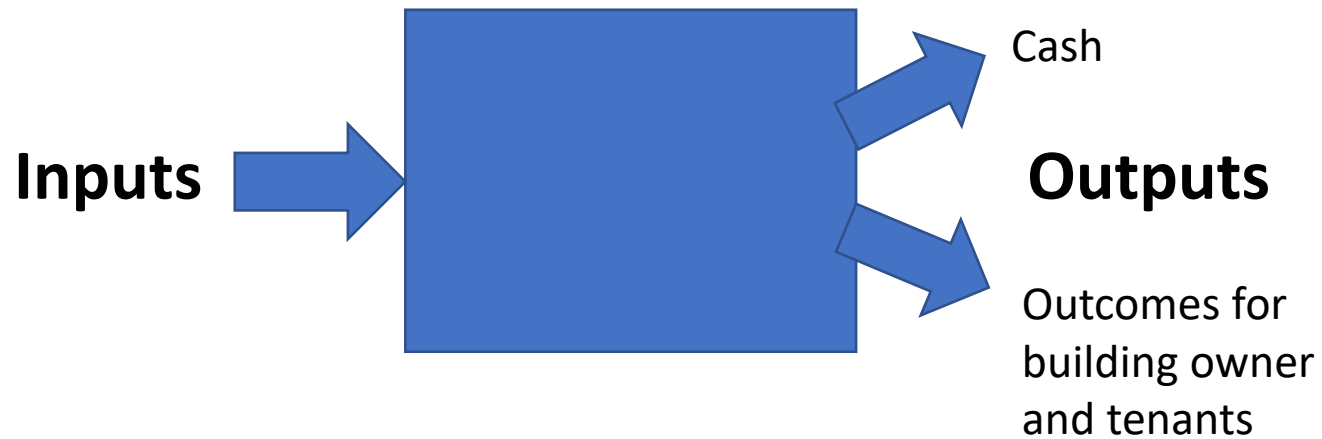
- > **Goal is to win a market, not a single project**
- > Scale (known products with known outcomes, purchase agreements with component manufacturers)
- > Ability to attract investment capital
- > Incentive to invest in product development and technology acquisition
- > Change incentives so that the seller's fate is tied to building performance
- > Ability to deliver significant cost compression

Competitiveness Of The ZNE Retrofit Co

What will allow this company to secure decisive advantages over the competition?

- > Subsidize the demonstration projects of companies that can deliver a whole building solution
- > Improve unit economics of the installed product
- > Lower customer acquisition and transaction costs
- > Develop a warranty so that the building owner and lender assign full value to the unique attributes

A Different Machine



Building Owner Decision

At what threshold does the building owner choose the NZE retrofit over the conventional upgrade?

Value/ Cost Ratio

		Low	High
Upfront Capital Requirements	Low	Dominated	<u>Dominating</u>
	High	Dominated	Dominated

Lower Upfront Owner Capital Requirements

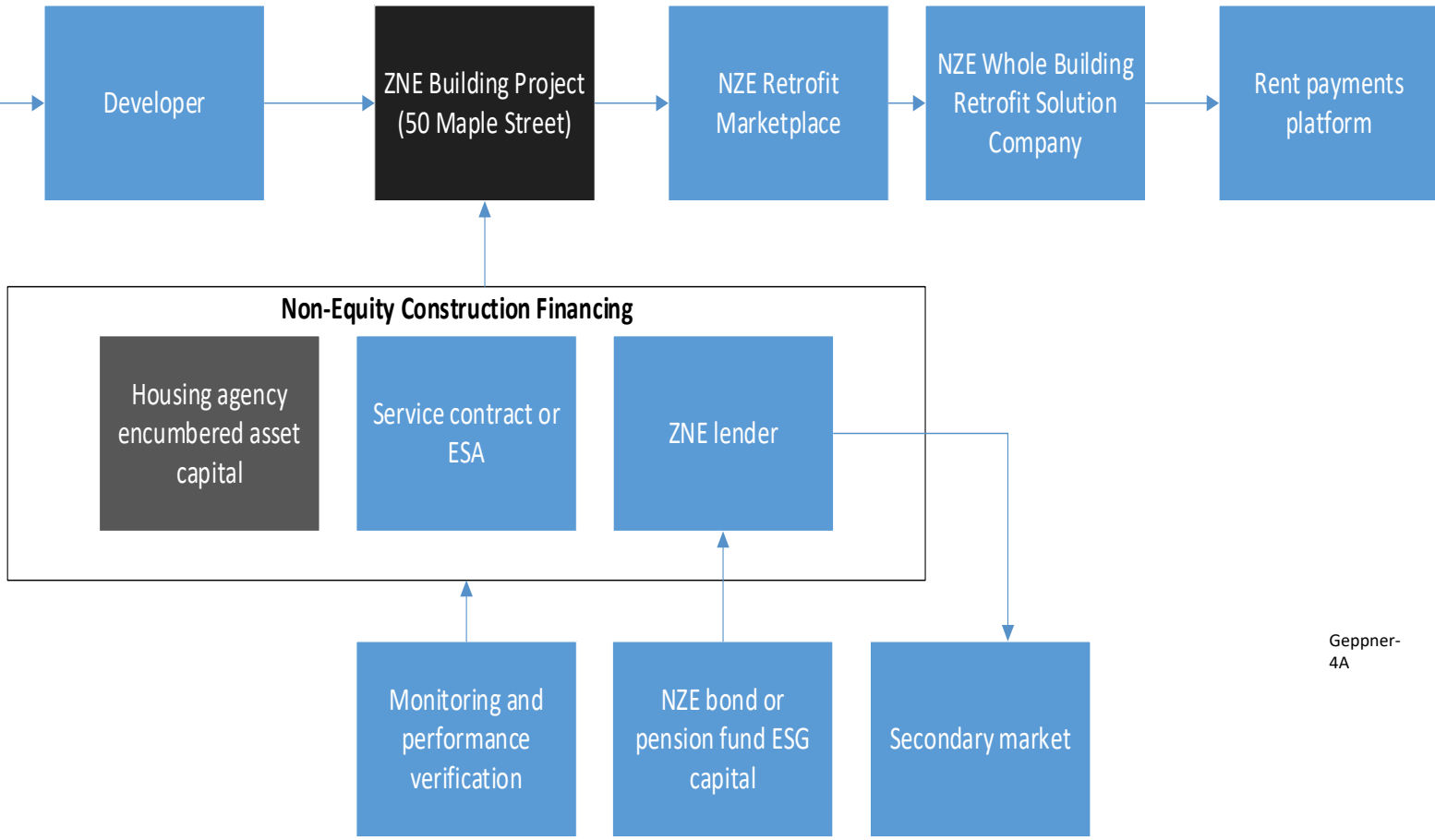
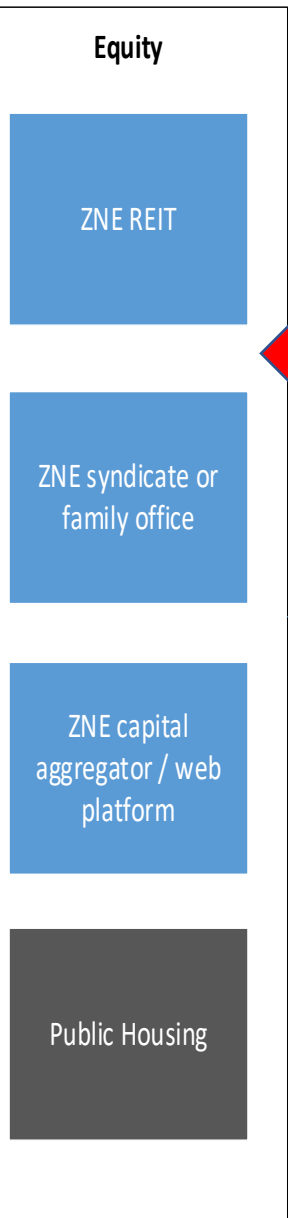
- > Lower cost product
- > Higher debt levels (based on a pro forma that is based on full value of attributes)
- > Contracts that bring cash to the front of the deal

Financing NZE Retrofit Projects

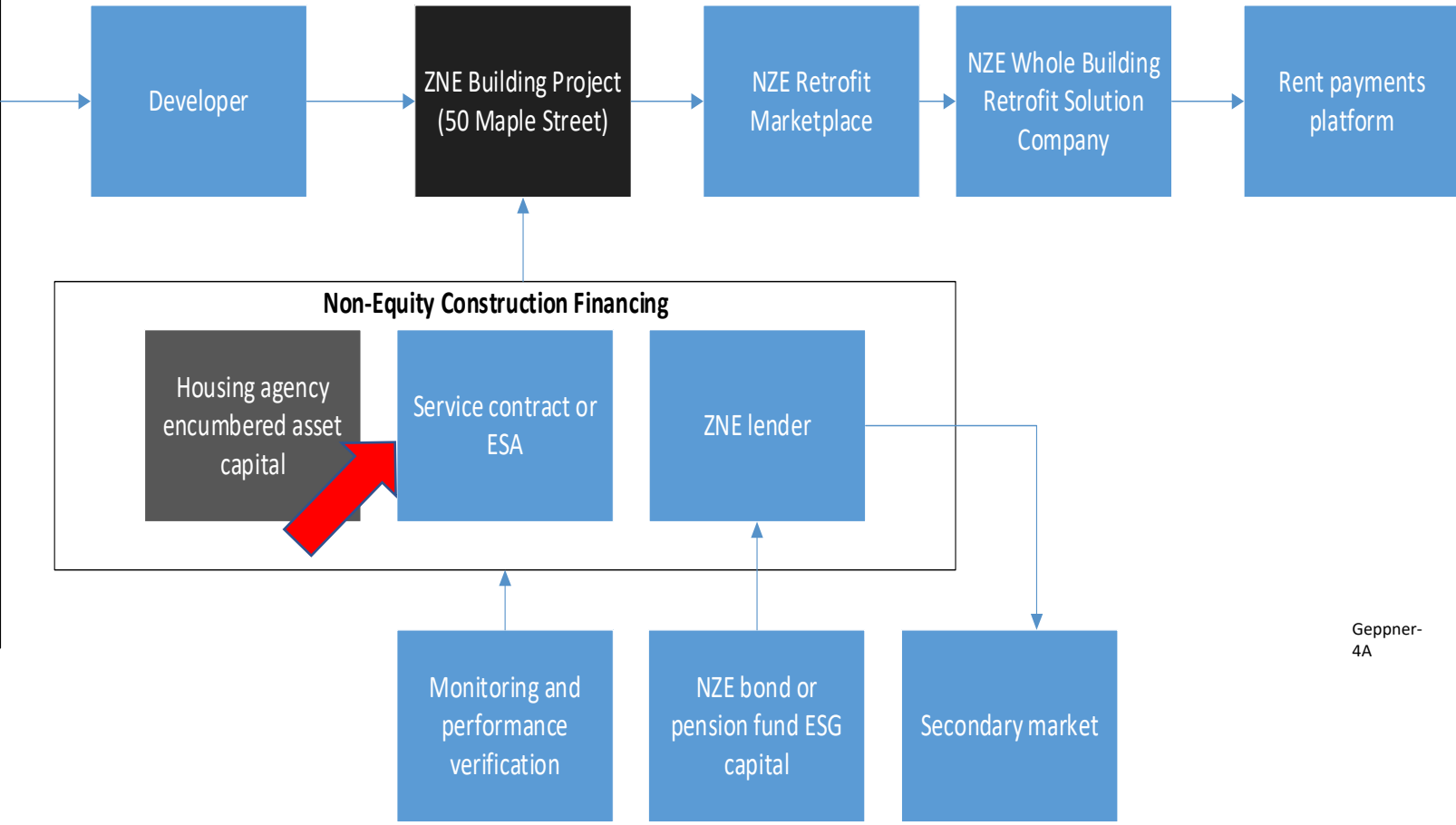
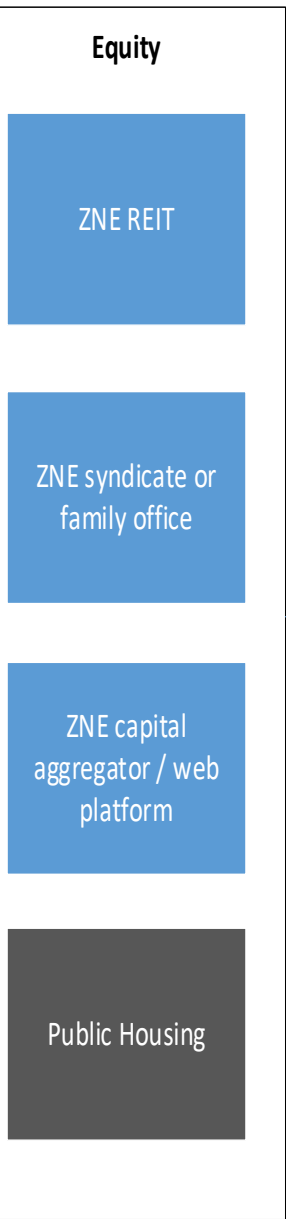
How do we increase the amount of capital available to finance these building projects?

- > NZE REIT
- > NZE bonds
- > NZE whole building solution loan products
- > Fannie Mae ZNE whole building solution secondary market purchase program
- > PACE
- > On bill financing
- > Service contracts (purchase of liability)

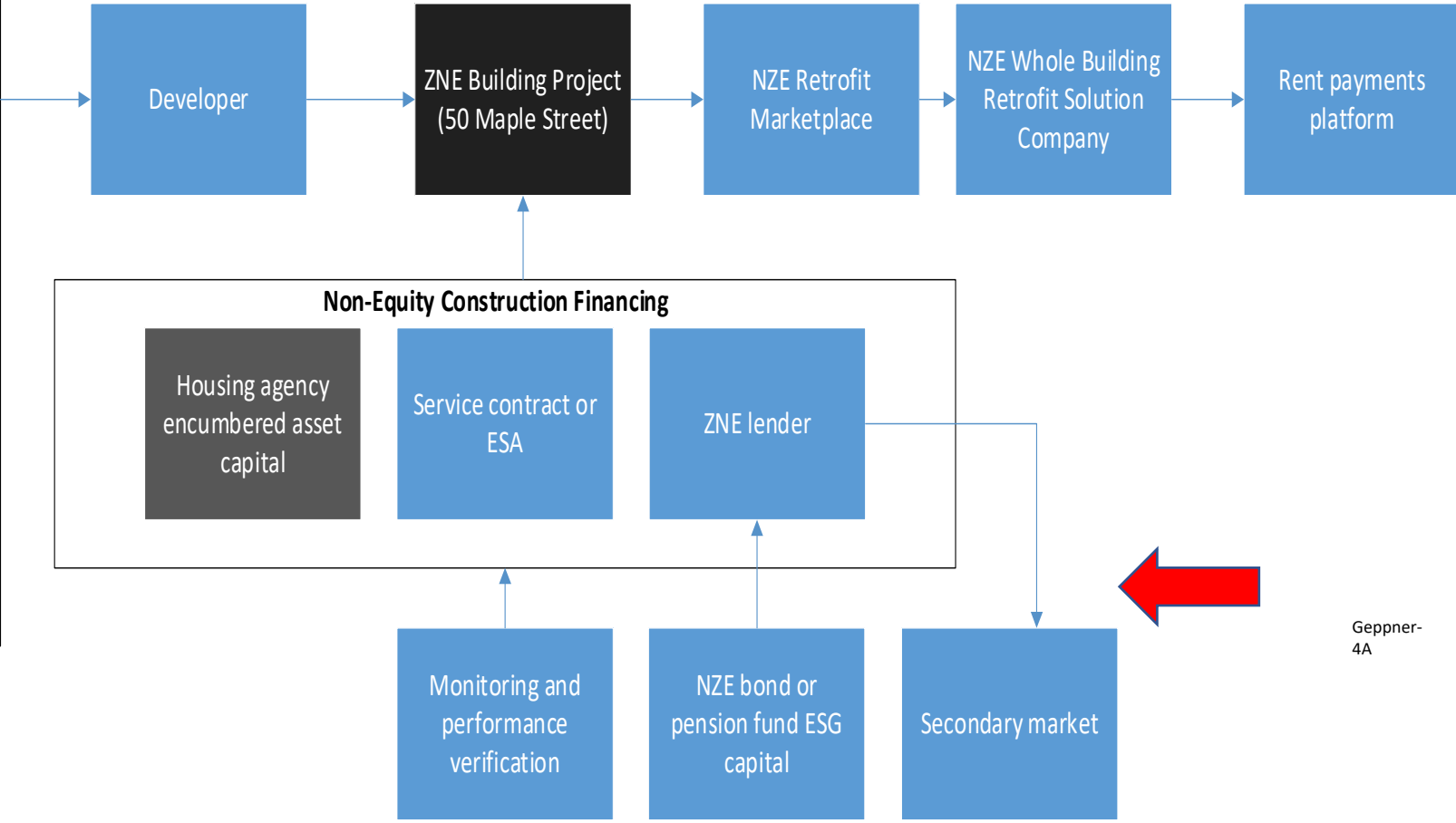
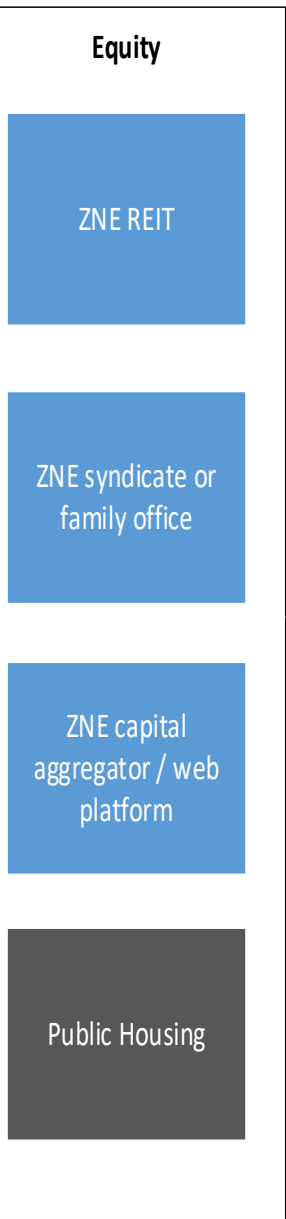
Capital Entry Points For NZE Retrofit Projects



Capital Entry Points For NZE Retrofit Projects



Capital Entry Points For NZE Retrofit Projects



RetrofitNY Program Summary

- > Standardize outcomes and product
- > Market mechanisms
- > Funding for use case development (demos)
- > Demand aggregation/ pipeline development
- > R&D support



Contact Information

James Geppner

James.Geppner@nyserda.ny.gov