

EMERGING FINANCING FOR CUSTOMER SITED SOLAR ENERGY



OVERVIEW

- Solar Pricing
- Average System Cost
- Solar Finance Product Options
 - ✧ Loan Opportunity
 - ✧ HELs, HELOCs, and Cash Out Refinancing
 - ✧ Home Improvement Loans
 - ✧ PowerSaver
 - ✧ PACE
 - ✧ On Utility Bill
 - ✧ Emergent Unsecured Product

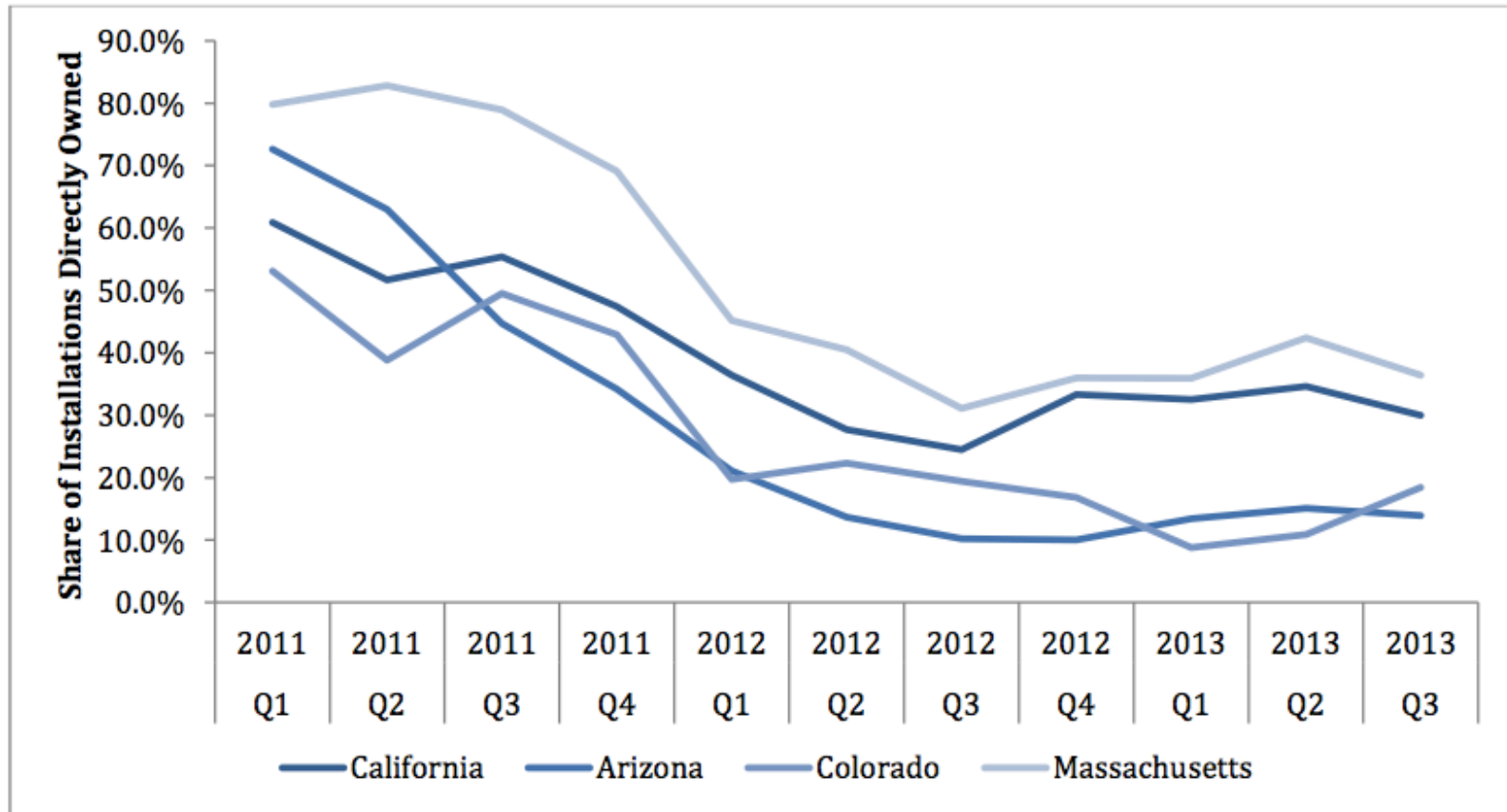
AVERAGE SYSTEM COST

- National average cost per watt for residential PV systems is now **\$4.72**. Minnesota is higher.
- At an average system size of **6 kW**, total system costs sum to just over **\$28,000**.
- With the **30% federal tax credit**, system costs come down to **\$19,800**

FINANCE OPTIONS FOR CUSTOMER SITED SOLAR

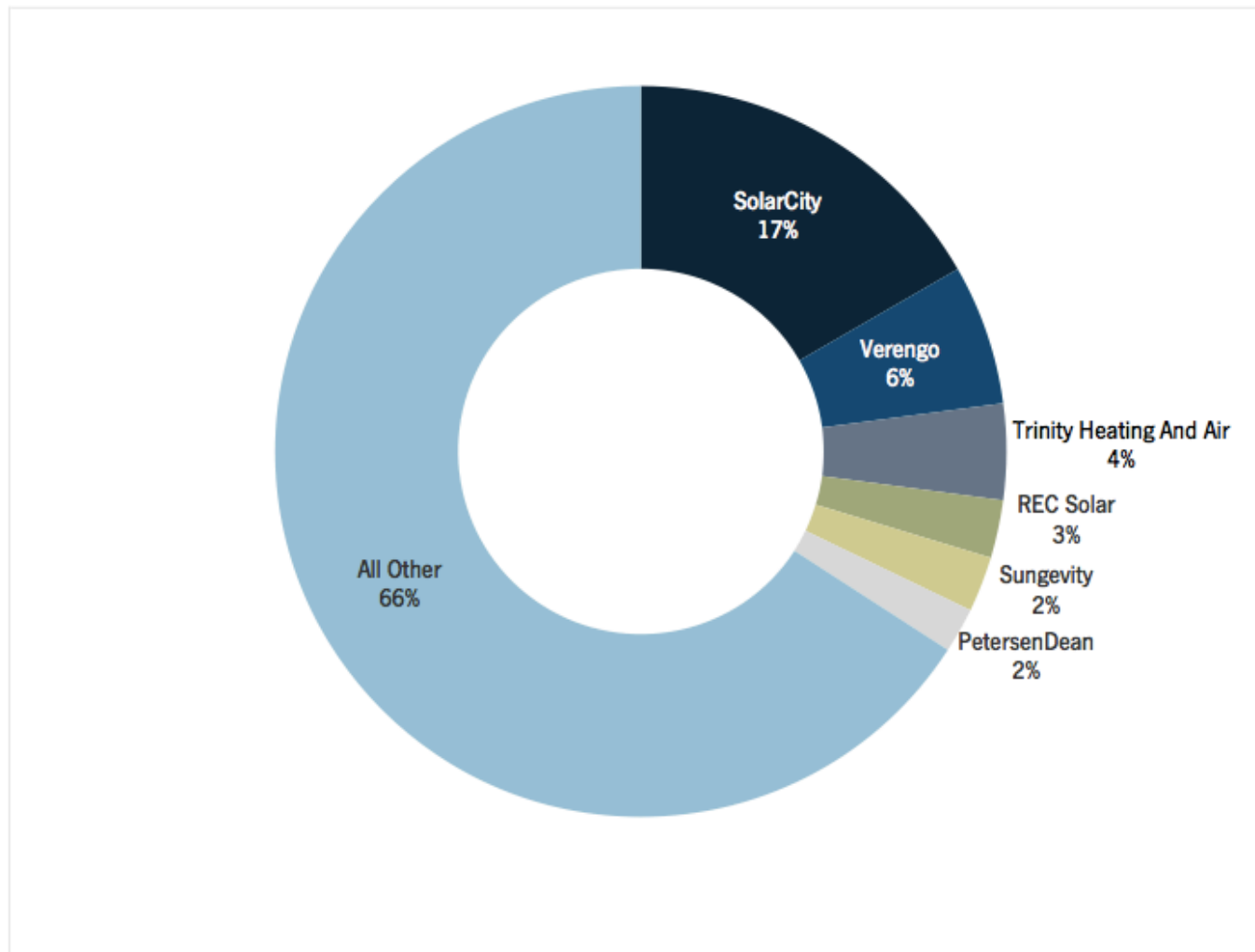
Cash and Loans	Third-Party Ownership	Utility and Public Financing
<ul style="list-style-type: none">• Cash purchase• Home equity loan (HEL)• Home equity line of credit (HELOC)• Cash-out mortgage refinancing (COMR)• Home Improvement Loan	<ul style="list-style-type: none">• Power purchase agreement (PPA)• Solar lease	<ul style="list-style-type: none">• On Utility Bill• Property assessed clean energy (PACE) financing

LEASES HAVE COME TO DOMINATE THE SOLAR MARKET



LOAN OPPORTUNITY

Figure 3.1 National Market Shares of Top Residential PV Installers in the U.S., Q1 2012-Q3 2012



Source: GTM Research U.S. PV Leaderboard

Pros and Cons – HELs, HELOCs, and Cash Out Refi

- Widely available loan products through standard channels
- Homeowners need equity to obtain, which has been challenging in recent years
- Homeowner must determine how they can take full benefit of the federal ITC
- Homeowner must determine how to best manage O&M expenses

COMPARATIVE ANALYSIS OF HEL, HELOC AND CASH OUT REFI

	Representative Rates		
	Total Fees	Interest rate	Cumulative Interest
Home equity loan (HEL)	n/a	6.78%	\$30,719
Home equity line of credit (HELOC)	n/a	5.50%	+/- \$24,117
Cash-out mortgage refinancing (COMR)	n/a	4.23%	\$17,918

These numbers are based on the cost of financing a PV system with an estimated \$37,050 in capital costs.

The information is based on a small sample of market rates at a given point in time. Actual rates will vary depending on the homeowner's location, credit rating, and extraneous market factors.

POWERSAVER TITLE 1 AND 203K LOANS

- A relatively new financing option that may be well-suited to solar
- HUD offers loan insurance finance option based on Title 1 insurance
- HUD provides grant money to cover certain loan related costs
- Specifically designed for energy efficiency and renewable energy projects
- Maximum size is \$25,000

Example of Emerging Loan Product

Solar StepDown Loan

- Maximum Loan Amount: \$25,000
- 650+ Credit Score Approval
- No equity or appraisal required
- No prepayment penalties
- Flexible loan terms
- Fixed rates: 4.95-9.95%
- Interest and HUD insurance fees may be tax deductible
- May apply any tax credits and/or local incentives to the principal balance of the loan and request a one-time re-amortization within the first 24 months of the funding date of the loan to lower, or 'step down,' monthly payments

The SolarPlus Loan

- Combined maximum loan amount of \$40,000
- 700+ Credit Score Approval
- No pre-payment penalties
- Combine an unsecured, same-as-cash loan for 30% of their system's value, with a term loan for the remaining amount of the system value
- Same-as-cash: no interest, no payments on this portion for 18 months
- Secured FHA Title I loan covers remainder of the system financing - flexible loan terms are available for multiple monthly payment options

ON UTILITY BILL: HAWAII

Terms:

- Establish up to \$20M Fund utilizing a combination of Public and Private Capital
 - Funds may be tranching
 - Assumes approximately 2,400 projects at installed cost of \$7,000
- Deployed over 24 to 36 months
- Private capital may include a combination of debt and tax equity
 - Initial focus on tax equity
- Term not to exceed 12 years, aligned with useful life of measure
- Public capital bears repayment interruption or first losses

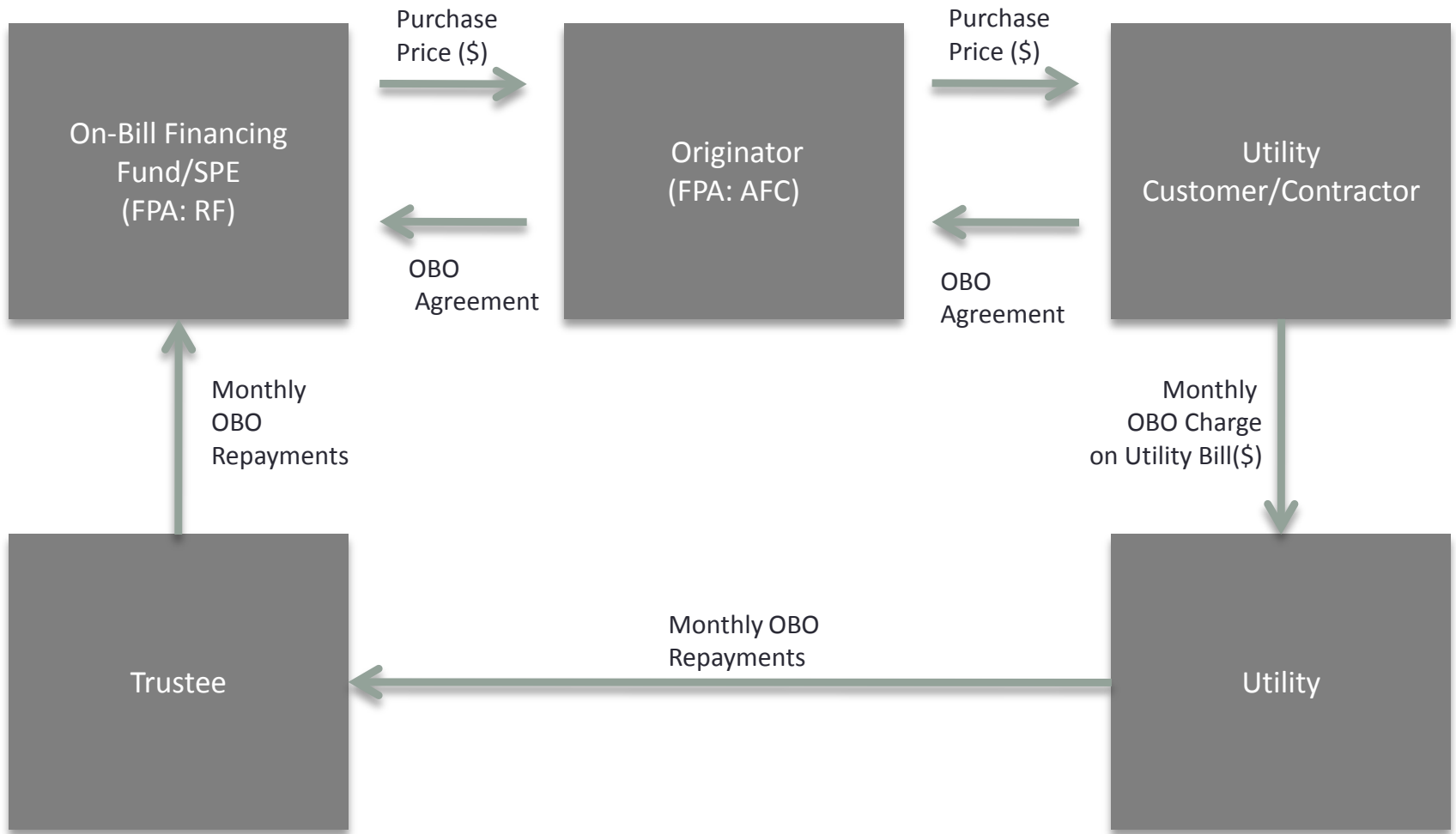
Use:

- Fund used to finance clean energy equipment on under served residential and commercial property that will be owned by special purpose entity (“SPE”)
- SPE maintain and operate systems
- Utility account repayment history will be used to qualify meter for financing

Repayment:

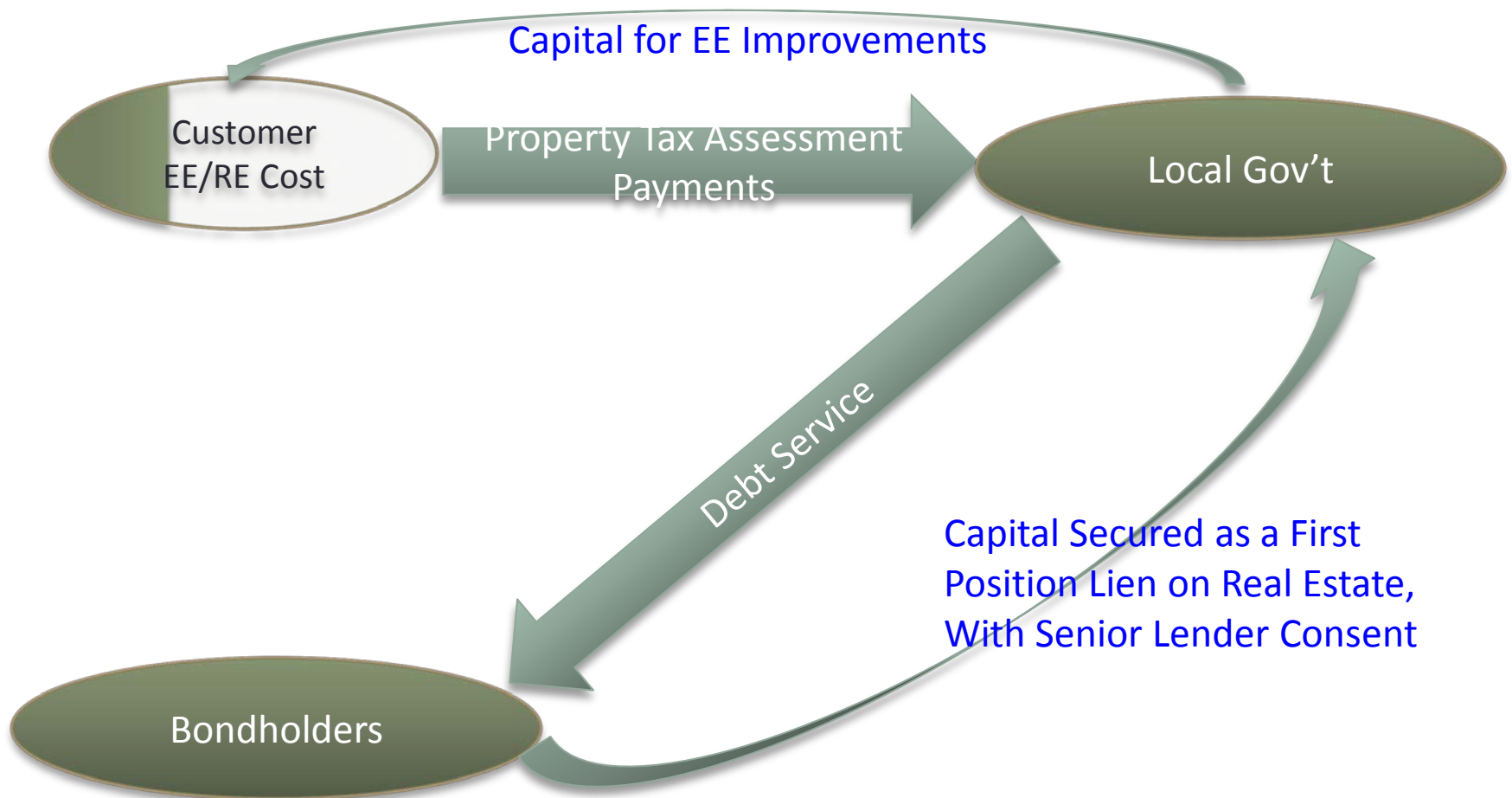
- Repayment secured by utility meter-tied tariff obligations (On-Bill Obligations)
- On-Bill Obligations repaid as charge on the utility bill and are *senior* to most other utility charges on the utility bill during delinquency and *pari passu* during default.
- In the event of delinquency on the utility bill where clean energy equipment has been installed using the Fund, the utility will suspend service until customer payment resumes according to existing practices

On Utility Bill Process



PACE SIMPLIFIED STRUCTURE

Program Administrator Typically Oversees Marketing, Project Qualifications, Contractor Approvals, Underwriting.



ON-PROPERTY TAX BILL: COMMERCIAL PACE

Benefits	Limitations
Provides a secured financing mechanism	Legal and administrative expenses are significant
Increases access to capital for property owners	May not be appropriate for small towns and cities – without a statewide or regional aggregation process -- as scale is necessary to reduce costs
Repayment obligation may transfer to new property owner	Senior mortgage holder approval required
Longer repayment times than typical unsecured loans (often up to 20 years, but local government can set a longer or shorter loan tenor)	Typically, project have seen a long sales cycle
Possibly a lower interest rate than similar commercial loans (although rates are currently not at significant discount)	New and as yet unproven method of generating deals – although showing promise in Minnesota and elsewhere.
Possible off balance sheet treatment (meaning the PACE assessment does not impinge on borrowing capacity of property owner.	

EMERGING FINANCE THEMES

- New and lower-rate finance products are beginning to enter the market, often based on loans.
- New repayment mechanisms are beginning to enter the market, using utility bills or property tax mechanisms – and the features associated with each.
- These new mechanisms will likely further reduce the cost of capital for solar, and provide new alternatives for customers and contractors.