



Energy Efficiency and Affordable Housing

Evan Williams

Affordable Housing Loan Originations
February 16, 2024

Inflation Reduction Act and Affordable Housing

1. Inflation Reduction Act: Highlights
2. Assessing Solar
3. FHA & Agency Support for Energy Efficiency
4. Case Studies

Inflation Reduction Act: Highlights

45L Tax Credit

- Energy Star For Multifamily
 - \$500 p/u
 - \$2,500 p/u w/ Davis Bacon
- Zero Energy Ready Home
 - \$1,000 p/u
 - \$5,000 p/u w/ Davis Bacon

Investment Tax Credit

- Increased Investment Tax Credit to 30% with “add-ons” through 2033
- +10% for Low Income Community
- +20% for Qualified Low Income Residential Building Project

GRRP

- 3 Programs within one. Final application round in March to May 2024.
- Comprehensive: \$1.47B, \$80k p/u or \$20MM per property.
- Leading Edge: \$400MM, \$60k p/u or \$10MM per property
- Elements: \$140MM, to \$750,000 per property.

High Efficiency Electric Home Rebate*

- \$4.3B to State Energy Offices
- \$1,750 heat pump water heater
- \$8,000 for HVAC water heater
- \$850 for cooktop, stove, range, oven, or heat pump clothes dryer

Efficiency & Electrification Rebate*

- \$4.3B to State Energy Offices
- 20% to 35% Modeled Energy Savings
 - Lesser of \$2,000 p/u or
 - \$200,000 per building
- Energy Savings of 35%+
 - Lesser of \$4,000p/u or \$400,000 per building

Cross Disciplinary Approach



Legal



Capital
Markets



Accounting



Design /
Engineering



Regulatory /
Incentives

Solar Example:

- LIHTC & Investment Tax credits cover 70% of the improvement cost with “based investment tax credit” and Basis Boost
- LIHTC basis is not reduced by Investment Tax Credits
- Solar facility “Yield on Cost: 6.4%”
- “ROE”: 53%
- Limited by: tenant or landlord usage, roof space, car ports.

Example Deal			
Maryland			
Total Solar Facility Cost:	(a)	\$330,800	< Estimate using inputs below (a), or hardcode
Investment Tax Credit:			
Investment Tax Credit (%)		30%	
Energy Community OR Domestic Content	(b)	0%	N/A
Low Income Bonus (see details)	(c)	10%	
Investment Tax Credit (\$)		\$132,320	
Bond Reduction	(d)	0%	
Price		\$0.96	
Total ITC:		\$126,366	
LIHTC:			
LIHTC Basis (Solar Cost)	(e)	\$330,800	
QCT/DDA Basis Boost		130%	
Applicable Fraction		100%	
Credit Price		\$0.955	
Total LIHTC:		\$164,275	4% deal
Total Credits (ITC+LIHTC)		\$290,641	
<i>Tax Credits as % of Cost</i>		<i>88%</i>	
Economics/Loan			
+ Electricity Produced (\$/yr)	(f)	\$25,405	
- Solar Operating Expenses:		\$4,145	
= Annual Benefit		\$21,260	==>
UW Income (75%), Loan Sizing		\$15,945	
Debt Yield (Perm Loan)	(g)	7.31%	
Potential Additional Loan Proceeds:		\$218,237	
Requested Additional Loan Proceeds:		\$0	\$0 by default
Other Proceeds and Policies			
GRRP Proceeds (for Solar)	(h)	\$0	< Loan? <input type="checkbox"/> Yes <input checked="" type="checkbox"/>
SRECs (Annual x 5 years)	(i)	\$49,903	Varies by State, see below
Value from other Renewables Policies:	(j)	\$0	Varies by State, see below
Total Other Sources		\$49,903	
Total Sources:		\$340,544	
Solar Sources / Solar Cost		103%	

Solar Tax Credit Screening Tool

- Estimate Facility Size through NREL, Project Sunroof tools
- Cost estimate (\$2.40Kw to \$3Kw) on SEIA Pricing Data
- User Inputs: Electric \$, LIHTC, Debt, SREC, Grant assumptions
- Not intended to support investment decisions, but indicator of whether to get solar bids
- Preliminary: Equitable Benefit to Tenants and Battery Storage
- Doesn't support Time of Use Rates, Net Metering/Community Solar, or Battery Storage Returns

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Investment Tax Credits

- Technology neutral for renewable energy. Includes battery storage w/ solar PV system.
- 30% Tax credit
- Extended through 2032
- Investment Tax Credit no longer reduces LIHTC Basis
- Non-Allocated Bonus Credits based on Domestic Content or Energy Communities
- Allocated 10% to 20% Bonus Credits for up to a combined 1.8 gigawatts of capacity annually based on 4 categories. Categories 3 and 4 require benefits to Tenants:
 - Category 1 (10%): Located in [low-income community](#) (700 MW)
 - Category 2 (10%): Located on “Indian Land” (200 MW)
 - Category 3(20%): [Qualified low-income residential project](#) (200 MW)
 - Category 4: [Qualified low-income economic benefit projects](#) (700MW)

Initial Opportunities

New Construction

- 45L
- 179 D
- Solar Investment Credit, SREC, Other
- Points/Eligibility for Green Criteria
- Site Specific Utility Allowances

Initial Opportunities

Section 8

- GRRP
- Energy Audit
- Solar Investment Credit, SREC, Other
- Rebates for Electrification and Efficiency
- Utility Allowance Reduction/ Reconfiguration

Initial Opportunities

LIHTC Rehab

- Energy Audit
- Solar Investment Credit, SREC, Other
- Rebates for Electrification and Efficiency
- Utility Allowance Reduction/ Reconfiguration

Initial Opportunities

Property

- Garden Style/ Roof Mount, Large Parking Lot (Parking Lot Canopy)
- Mastered Metered Property
- Electric Resistance Heating, PTACs, Split System with Furnace
- Warm/Temperate Climates

Initial Opportunities

Markets / Utilities

- Energy Prices
- Community Solar / Aggregate Net Metering
- SRECS
- Local Regulation/Building Code
- Net Metering Policies /TOU

Agency Approach to Solar

75%

of Landlord
Savings

5-20 bps

Interest Rate Savings

5%

Max Additional
Proceeds

Freddie Mac Green Advantage

\$64B

\$478 cost per unit

\$191 utility savings per unit

\$129 annual tenant savings

Fannie Mae Green Rewards

\$110B

1.0M Green units

\$11.8B kBTU savings

\$187 annual tenant savings

Green Retrofits

	FHA	Fannie Mae	Freddie Mac
Solar Requirements	None, SNDA & Lease requirements may apply	Borrower Owned; Technical and Legal Review	Legal Review; Appraisal & Comp Support
Income Limitations	None	None	40% at 80% to 150% AMI
Proceeds Increase Limit	None	5%	Not Applicable, 10 year loans only
Underwritten Savings	75% of Landlord Savings	75% of Landlord Savings, 25% Tenant Savings	Earnout Only ⁽¹⁾
Energy Audit	ASHRAE Level II	High Performance Building Report	Green Up Plus Energy Audit
New Construction	Energy Modeling & Appraisal	Appraisal, supporting DD	Appraisal, supporting DD
Incentives	Green MIP, Loan Proceeds	5 to 20 bps, Free Energy Audit & Solar Assessment, Free Monitoring	5 to 20 bps, \$5,000 for Energy Audit
Annual Benchmarking	Green MIP Only	Yes, Fannie paid	Yes, Owner paid



(1) Underwriting saving- Requires Rental Achievement Agreement - NOI test for Acquisition /Rehabs.

Freddie Mac Examples



Property: Radius at The Domain | Austin, TX
Financing: Green Up Plus
Year Built: 1995/2017
Units: 400

Loan Amount | \$43,191,000
Estimated repairs | \$196,380 (\$491/Unit)

Impact and Benefits

Radius at The Domain's improvements are expected to reduce whole property energy costs by 15.3% and cut water costs by 17.9%. The property also benefited from additional proceeds because of a 16bps reduction to the spread.

- Total Energy Savings - 1,771,752 kBTU translating to \$58,679/year
- Total Water Savings - 4,075,578 gallons translating to \$50,871/year



Property: Verona at Suitland | Suitland, MD
Financing: Green Up
Year Built: 1964/2015
Units: 324


Loan Amount | \$41,550,000
Estimated repairs | \$141,360 (\$436/Unit)

Impact and Benefits

Verona at Suitland's improvements are expected to reduce whole property energy costs by 15.0% and cut water costs by 32.9%. The property also benefited from additional proceeds because of a 15bps reduction to the spread.

- Total Energy Savings - 3,657,942 kBTU translating to ~\$58,289/year
- Total Water Savings - 5,527,772 gallons translating to ~\$62,166/year

Fannie Mae Examples



Property: Ridgeway Apartments | Sausalito, CA
Financing: Green Rewards
Year Built: 1997
Units: 225

Loan Amount | \$61,591,000

Estimated repairs | \$576,535 (\$2,562/Unit)


Underwritten water/energy savings | \$13,374 / \$73,814

Additional Proceeds from Pricing | \$1,727,000

Impact and Benefits

Ridgeway's improvements, which include solar, are expected to reduce whole property energy costs by 23.8%, cut water costs by at least 7%, and generate whole property cost savings of \$119,366. The property also benefited from additional proceeds as a result of underwriting 75% of the projected owner cost savings and a 5bps reduction to the spread.

- Owner Cost Savings - \$116,251/year (water and energy)
- Tenant Cost Savings - \$3,115/year (energy)



Property: Belage Manor Apartments | Anaheim, CA
Financing: Green Rewards
Year Built: 1989
Units: 180

Loan Amount | \$27,869,000

Estimated repairs | \$532,800 (\$2,960/Unit)

Underwritten water/energy savings | \$9,445 / \$9,118

Additional Proceeds | \$978,000

Impact and Benefits

Belage Manor's improvements are expected to reduce whole property energy costs by 23.3%, cut water costs by 39.5%, and generate whole property cost savings of \$45,642. The property also benefited from additional proceeds as a result of underwriting 75% of the projected owner cost savings and a 20bps reduction to the spread.

- Owner Cost Savings - \$24,750/year (water and energy)
- Tenant Cost Savings - \$20,892/year (energy)



Thank you!

Energy Efficiency and Affordable Housing

Evan Williams

Loan Originations- Affordable Housing

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Areas of Study

Efficiency /Electrification / Renewables

Energy Professionals- Feasibility Study

- **TOU Rates/Demand Charges**- Battery Storage, strategic heating/cooling, energy arbitrage [CA]
- **Solar** - building capacity, cost, production, system specs, federal, state, and local incentives, Virtual Net Metering
- **45 L Feasibility Study** - Initial Design / Commissioning revisions. “Above Code” Standard. NC & all but New Construction
- **Electrification** - Identifying opportunities for replacements & rebates benefits.
 - EV charging - building code & future proofing, adding load
 - Utility Allowance adjustments (LIHTC and Section 8) [CA]

Area for Opportunity/ LIHTC Invest /Legal/Crowdsource:

- Federal - (Investment tax credit, 179d, Electrification/Efficiency Rebates)
- State - SRECS
- Local - Incentives

Fannie / Freddie / FHA:

- Providing prompts and capturing the full electrification process
- UW Utility Savings

LIHTC Investor

- Ability to purchase 45L and investment tax credit w/LIHTC

Financing:

- Agency lender for increased loan proceeds/ rent underwriting

IF Section 8 - HAP Counsel for adjusted HAP Utility Allowances

IF LIHTC - Borrower and Borrower course for adjusted LIHTC Utility Allowances

- 1) Landlord Paid Electric -
- 2) Tenant Paid - Community Solar / Virtual / Outsourcing [Whispering Oaks,]

Additional Resources

- <https://www.polsinelli.com/publications/polsinelli-green-tax-incentive-compendium>
-
- Community Solar/ Aggregate New Metering:
- <https://calsomah.org/> -Solar on Multifamily
- <https://programs.dsireusa.org/system/program> - sortable state policies

- Section 8:
 - Utility Allowance
Determinations:https://www.hud.gov/program_offices/public_indian_housing/programs/ph/phecc/allowances2
 - Tenant Income w/ Respect to Solar Programs:
<https://www.hud.gov/sites/dfiles/OCHCO/documents/2023-09hsgn.pdf>

Known Unknowns - Regulatory Framework

- Community Solar -Virtual New Meter
- Utility Allowance Policies (HUD)
- Utility Allowance Policies (LIHTC / issuer policy)

Targeted Outcomes

Decarbonization

- Reduce reliance on fossil fuels for heating and hot water
- Electrification enables decarbonization as electricity production shifts to renewable energy

Environmental Justice

- Reduced Tenant Utility Cost

Development Feasibility/Resiliency

- Reduced Landlord Utility Costs
- Accretive to the capital stack
- Compliance with HUD, Local and State requirements

Four Columns With Header Boxes: Display Related Subjects and Information



- Primary Bullet Point
 - Secondary Bullet Point
 - Tertiary Bullet Point
- Primary Bullet Point
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 - Tertiary Bullet Point



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Three Rows With Header Boxes: Display Related Subjects and Information



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Three Columns With Header Boxes: Display Related Subjects and Information



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- Primary Bullet Point
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TODAY'S FOCUS



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Row Two (Highlight Example)	Add your data or information here	Add your data or information here
Row Three	Add your data or information here	Add your data or information here
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Four Person Profile: Introduce Your Team

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First Last Name

TITLE/DESCRIPTION

First Last Name

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Six Person Profile: Introduce Your Team

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Segue/Divider: Break up Your Presentation Into Sections

















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Milestone Chart: Plot Projects and Their Accompanying Milestones

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Chevron Process Diagram: Illustrates a Progression or a Process

Further define your header here



Headline

Context or additional information about your milestone

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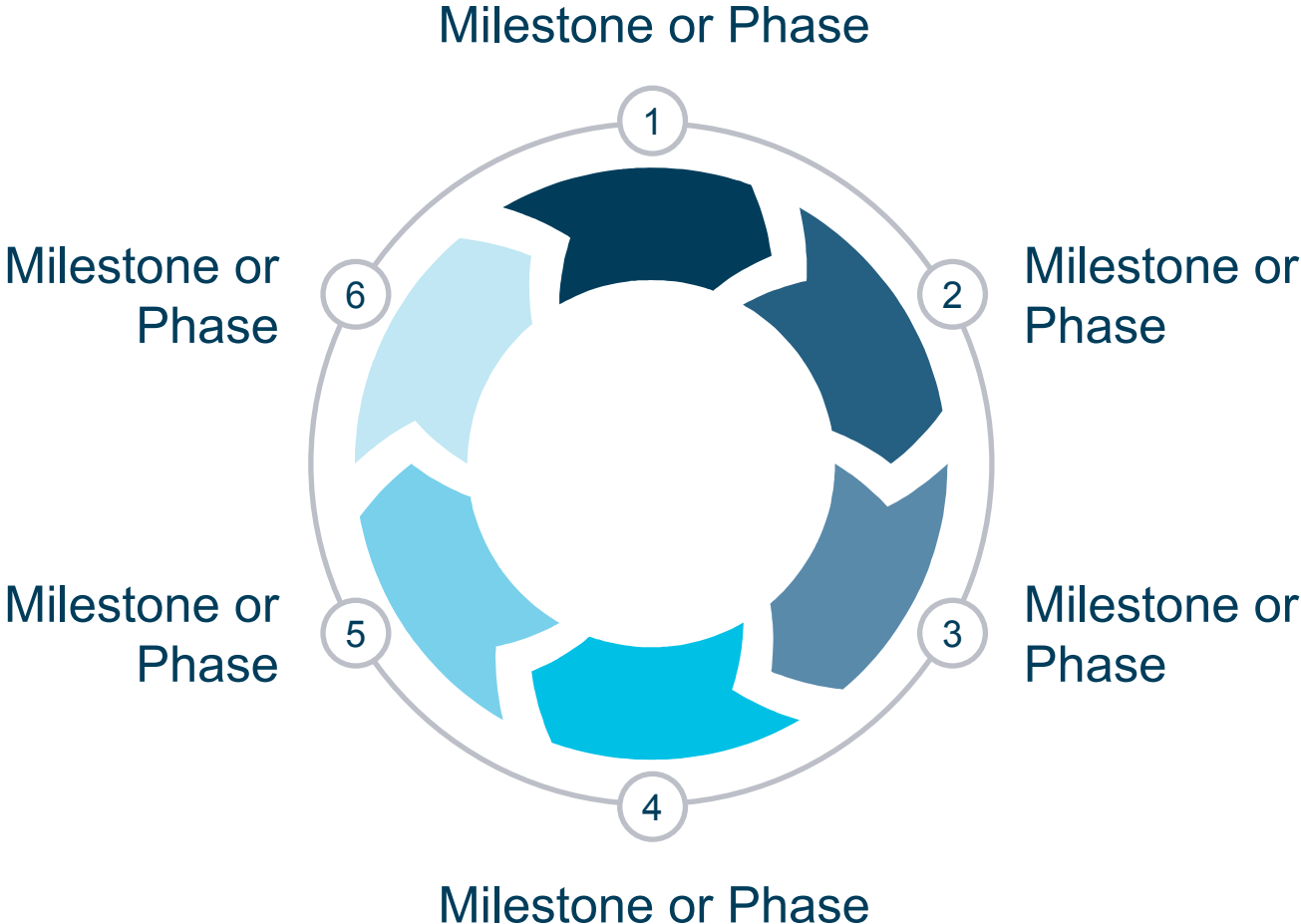


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Circular Chevron Process Diagram: Show a Cycle

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Circle Sequence: Show Phases, Steps or Progress

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Linked Subject Circles: Display and Discuss Related Subjects

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Title Two

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Title Three

Context or additional information about your subject



Title Four

Context or additional information about your subject



Title Five

Context or additional information about your subject

Stacked Subject Circles: Display and Discuss Related Subjects

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Title One

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Title Four

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Title Two

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Title Five

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Title Three

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Title Six

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