NYSERDA – New Initiatives

1) Home Resiliency Loan Program
2) GRID-CE – Structural Credit Enhancement

Financial Solutions
May 24, 2016

GRID CE

- **Home Resiliency Loan Program – Deferred Payment Loans secured by real-estate for energy efficiency, renewable energy and total home resiliency seniors**

Home Resiliency Loan Program (HRLP)

- A comprehensive strategy that leverages existing markets to enhance community resilience.
- IDEA: Use equity in home value to increase access to financing options for Residential DER projects.
- Fixed-rate financing that is tax free and interest deferred can be used to:
  - Increase home value
  - Reduce monthly expenditures
  - Impact communities on a macro level:
    - Health
    - Community Resiliency

Home Resiliency Loan Program (HRLP)

- In short, tap into the reverse mortgage market (Home Conversation Equity Mortgages, or HCEM)

- In FY 2015, Ginnie Mae's HCEM Mortgage-Backed Security (HMBS) portfolio reached $52 billion

- HMBS attributes are already very appealing:
  – Actuarially based performance are more easily predictable for loan pool
  – They are relatively stable and have less prepayment risk
  – HUD takes HECM loans when the loan balance reaches 98 percent of the Maximum Claim Amount (MCA) – providing extension-risk protection
  – Reverse mortgage back securities often have a better spread

Before HRLP

- Little money left over to put back into home.
- Home maintenance is neglected
- Home value doesn't increase

Limited Monthly Income

Home Owner

After HRLP

Tax Free Equity from Home

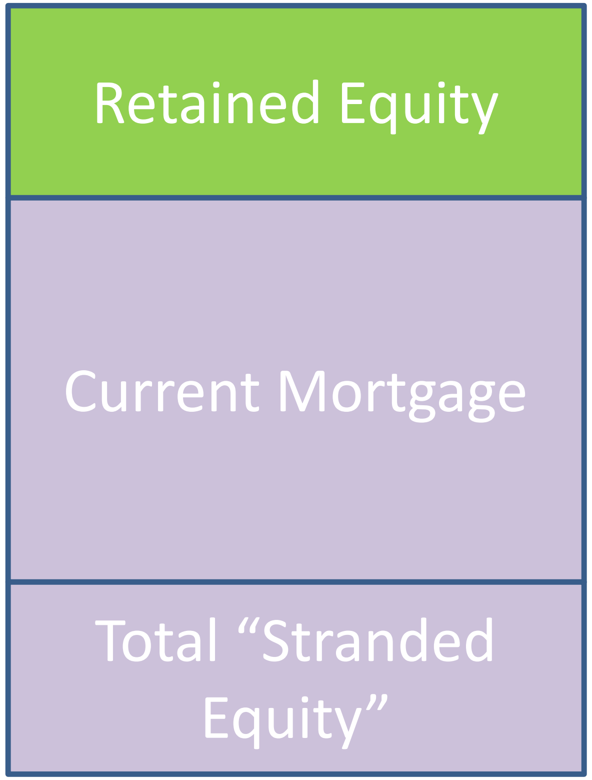
Limited Monthly Income

Home Owner

- **Home owner can use value of home to pay for various distributed energy resource or energy efficiency projects**
- **No monthly payments added to expenses**
- **Home projects:**
  - **Increase home value**
  - **Increase quality of living**
  - **Reduce monthly expenditures**

Stylized Example of HRLP Private and Agency Loan

Appraised value of home	$100,000
Percentage	x 75%
Percentage of appraised value	= $75,000
Less balance owed on mortgage	– $40,000
Total Stranded Equity	$35,000
Optional less Equity Reserves based on underwriting criteria	x 25%
Additional Optional Haircut based on underwriting criteria	$8,750
Potential HRLP Loan	$26,250**



** Subject to Program Underwriting Criteria

Home Resiliency Loan Program (HRLP)

- For borrowers, roughly half of the HCEM market is developed from home owners refinancing out of a traditional forward mortgage. Another third is for home improvements alone.
- Energy Efficiency is increasingly becoming the most cost-effective way to increase home value.
- By helping borrowers use their reverse mortgages for DER projects, they are more able to repay the loans, due to increased home value and reduced energy bills.
- Therefore, default risks are reduced, thus helping investors earn projected yields on loan pool.

Home Resiliency Loan Program (HRLP)

- 3.7 million people in New York State are >60 years of age: ranking #4 nationally
  - 5.5 million between the ages of 45-59
- 1.2 million people age 75+ - fastest growing cohort in NYS
  - 64% of individuals age 60+ own their own homes statewide
  - **Therefore, significant opportunity in accessible equity potential**

- HRLP can help an aging population:
  - Stay in their homes longer
  - Increase quality of living by no longer deferring needed home maintenance
  - Increase purchasing power by reducing monthly bills

GRID-CE

Loss Mitigation Strategy for Renewable Assets

Macro Issues

- Limited access for renewable energy for Low Moderate Income consumers (LMI) due to credit underwriting roadblocks
- Renewable loans difficult to underwrite to higher securitization leverage and bond rating without full bilateral credit support
- Lack of higher bond rating increases cost of investor capital, which limits growth of sector
- Climate change goals can’t be met without 3rd party investor capital
- Climate change goals can’t be met without intervention for LMI customers
- Higher Energy Costs projected with aging housing & building stock

GRID-CE as Credit Enhancement

- Explore the opportunity of using "GRID" as Credit-Enhancement, potentially combining with Community / Shared Solar (CSS) as a credit mechanism to backstop Solar PV loans and other renewable assets (GRID-CE)

- If a PV loan / renewable assets becomes delinquent or "defaults", the energy interest produced by the system could be moved into a GRID-CE structure within the local ISO, and a new customer could be assigned the "energy discount" to offset the cost of utility energy; Effectively creating a virtual net-metering structure

- The new customer would pay for the kWh at a discounted rate (bill credit) to utility energy costs or the value to the utility

- The GRID-CE would be managed by the local ISO (utility) and priority of allocating to LMI customers could be implemented. Effectively the Grid/network acts like a payment backstop (OC and Credit-enhancement) for the loan.

- The solar system is not in default – i.e. it will continue to produce power; only the original borrower is having a short-term or long-term financial setback.

- Taking a 100% loss on the loan does not benefit capital providers, as the system continues to produce power and there are customers ready to take that power at a discount

GRID-CE as Credit Enhancement - con't

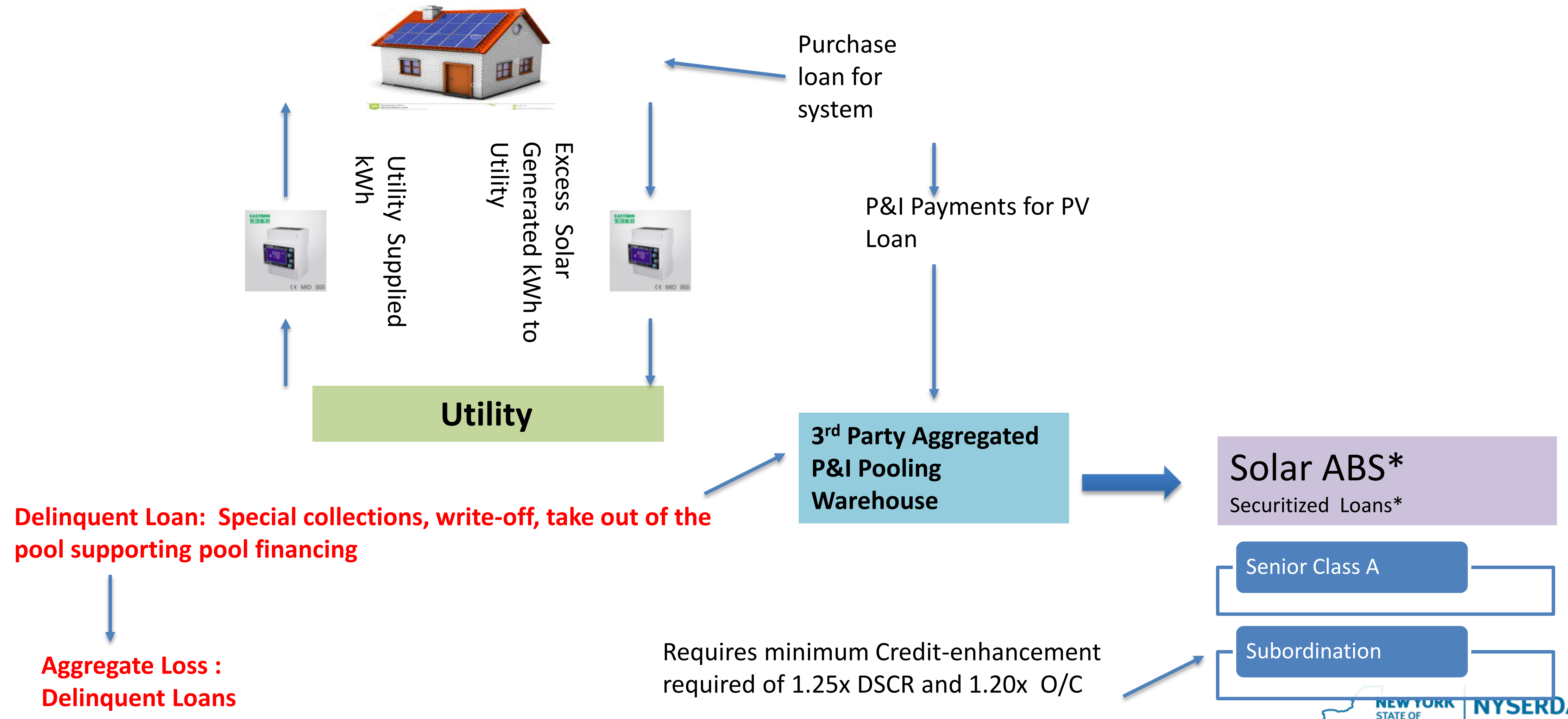
- Future Solar PV loans should be structured (term, loan amount, coupon) to offer a discount to utility rates (possibly at value of solar to the utility). This would insure that any loan that is defaulted or delinquent would be "in the money" for energy savings and have a ready customer for the kWh (bill credits)

- In the event the home is sold – Lender could reoffer the system to the new owner or the sale/foreclosure would capitalize the P&I and reimburse Lender upon sale of the property . Alternatively the utility or 3rd party owner buys the system and leases it back to the home owner

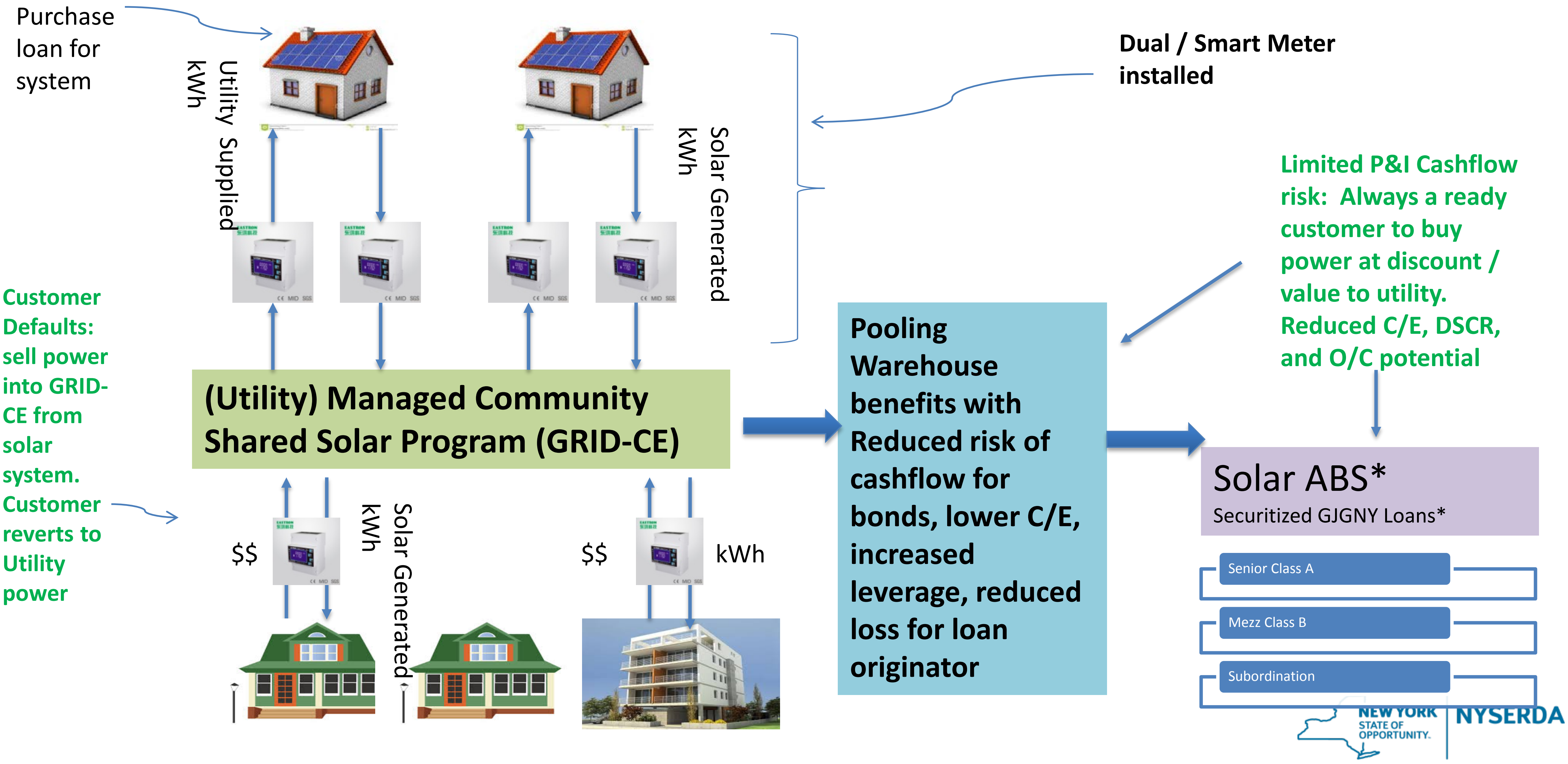
- Using the GRID-CE as a credit backstop would eliminate (reduce) the impact on the P&I of the loan and eliminate (reduce) defaults .

- Using the GRID-CE as a credit backstop could eliminate (reduce) the need for Overcollaterization (OC) for future funding (refinancing).

3rd Party PV Loans Financing (BEFORE)

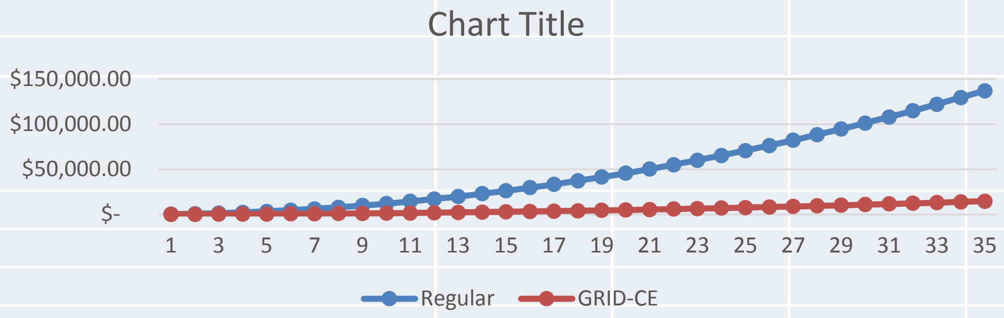


GRID-CE as Credit-Enhancement (AFTER)



Basic Analysis

REGULAR LOANS		GRID - CE	
Loans per Month	15	Loans per Month	15
Duration (years)	20	Duration (years)	20
Loan Ammount	$12,000	Loan Ammount	$12,000
Default Rate (cum)	29%	Default Rate (cum)	29%
Deliquency Period (months)	3	Deliquency Period (months)	3
Recovery Rate	0%	Recovery Rate	90%
Cost of Capital	0	Cost of Capital	0
Interest Rate	0.0349	Interest Rate	0.0349
		Meter Cost	$800



Results - 3 Year Holding Period

	Total Loaned Capital	Expected Losses
GJGNY	$6,480,000	$(137,025)
GRID - CE	$6,912,000	$ (14,616)