

# **Financial Risk Management Instruments for Financing Small Scale Renewable Energy Projects:**

## **Assessment, Recommendations & Mechanisms**

**Presented by:**

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Energy Projects**

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# Report Objectives

- Address issues:
  - how to mobilize commercial & devel. bank & MFI financing for SSRE equipment/project finance & business finance
  - how to use donor funds; program designs & mechanisms  
Inform design of new UNEP, GEF, donor programs
- Target audiences:
  - Policy makers & strategists in int’l development agencies
  - Program designers & implementers
  - Commercial actors: FIs, SSRE firms, investors, etc.; *report their views & experience*
- Definition of Small Scale Renewables:
  - Focus on rural/off-grid communities; “energy access”
- Provide practical guidance & resource materials

# Main Topics

- Main mandate: recommend & elaborate FRMI credit enhancement mechanisms supporting:
  - **consumer finance of SSRE equipment,**
  - **wholesale lending to MFI for SSRE equipment on-lending, and**
  - **SSRE business finance.**
- Additional/related topics:
  - Enterprise development & innovation funding methods
  - Market aggregation & scale-up strategies
  - Subsidies: justification & structure of “smart” subsidies
  - Technical assistance program designs
  - Carbon finance

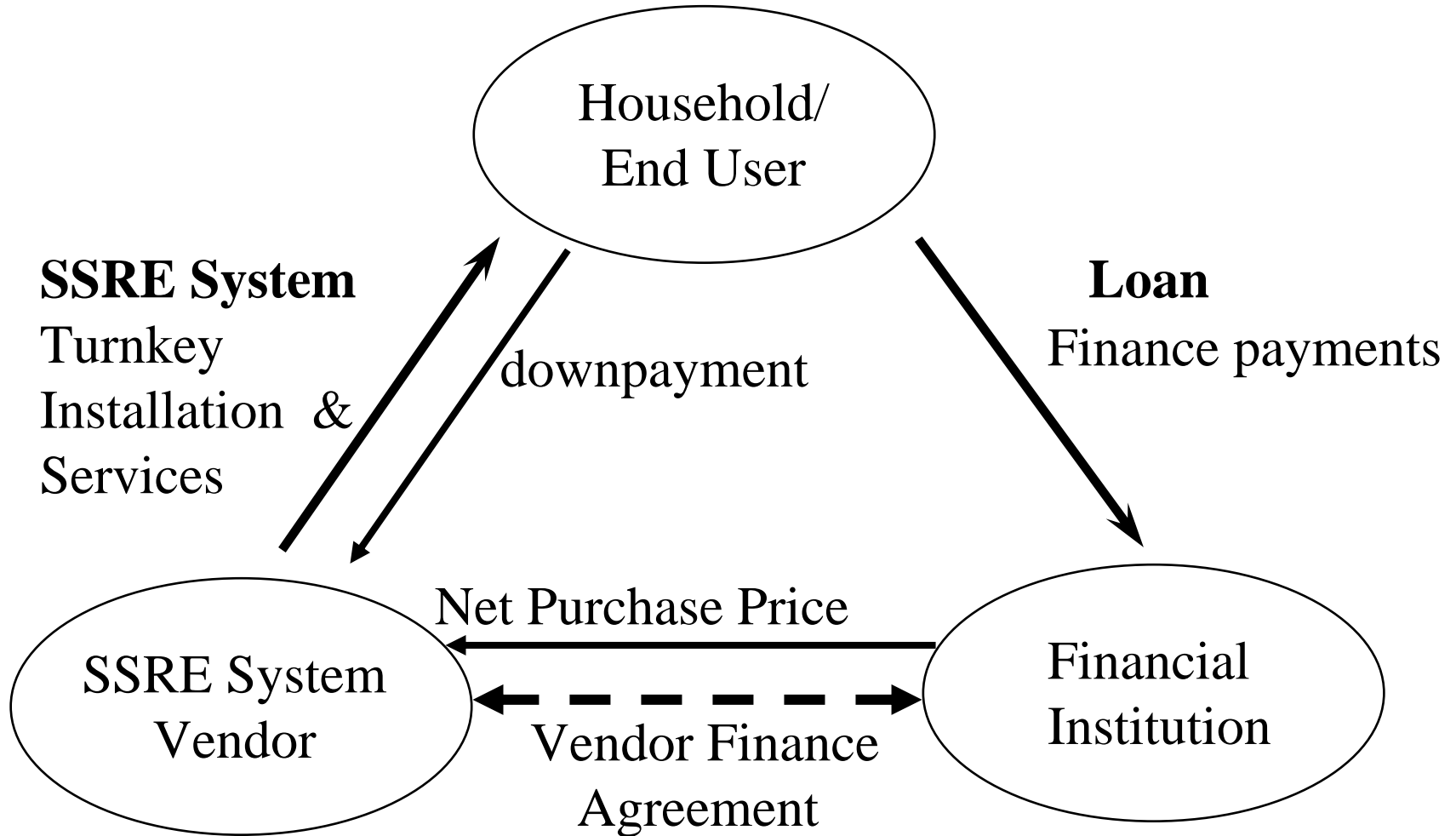
# Program Design Criteria & Lessons Learned

- Successful SSRE delivery requires *all elements*: FIs for financing + SSRE firms to deliver equipment/services
- Programs must be designed for market conditions: e.g., target market, transaction size, end-user economics, existing financial system & SSRE business capacities, etc.
- Build on existing capacities within financial system for loan delivery & SSRE business capacities
- Achieve leverage of donor funds
- Support market actors; use commercial, market-based mechanisms; define commercialization path
- Address the full sales & finance cycle; intervene where needed, where there are gaps or barriers
- Combine finance with TA & market organizing initiatives
- Credit enhancement must match terms of loan products

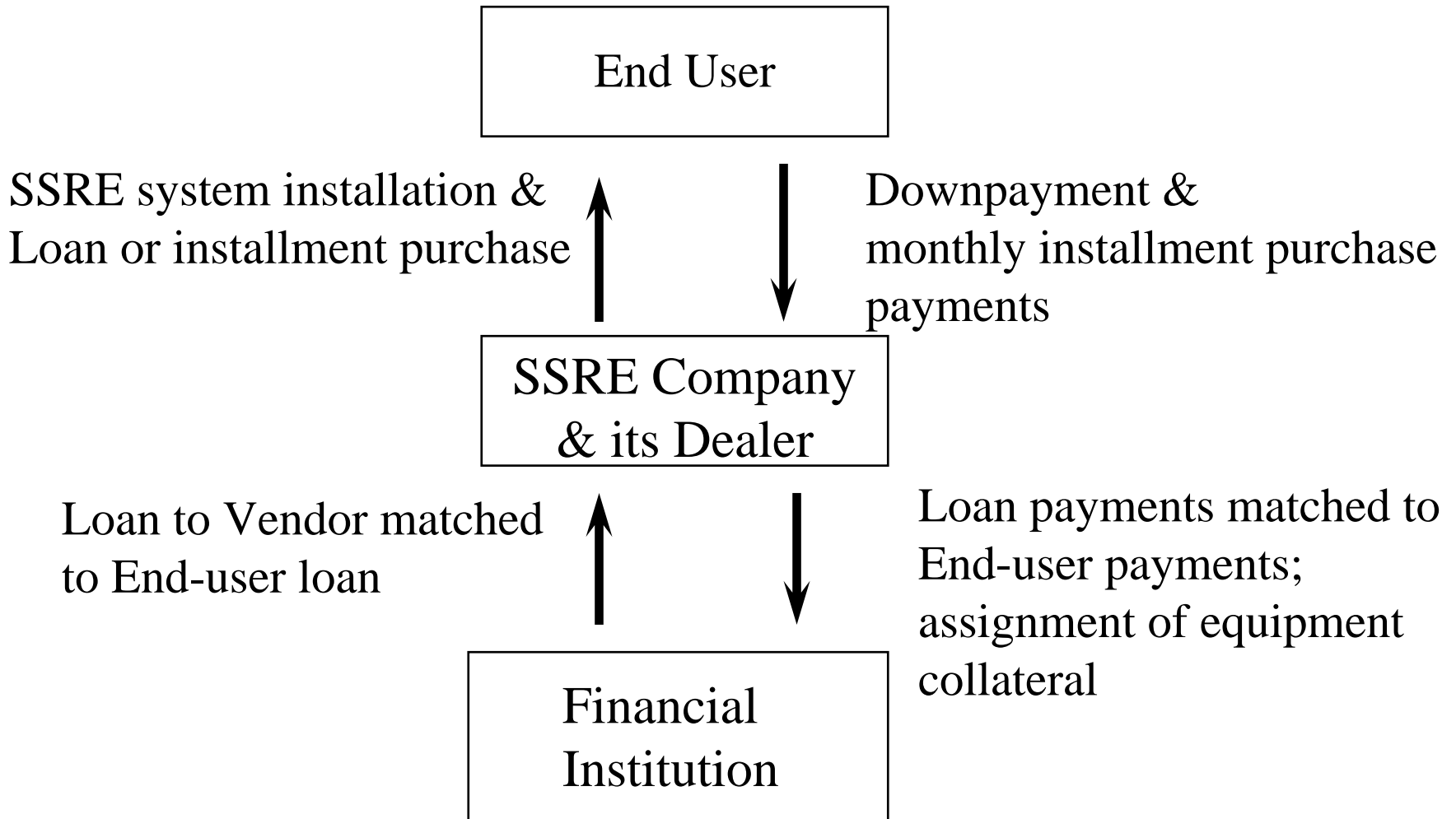
# Consumer Loan Product

- Target markets: households, micro-enterprises as end-users. May include: community end-users, SSRE businesses, others
- Typical size: \$250-500 for household systems (e.g., SHS, bio-gas); same loan product/structure may apply to loans up to \$ \_\_\_\_\_ [\$5,000?, \$10,000]
- Transaction structure: end-user or SRE firm is borrower
- Tenor & affordability: longer tenors needed; radical extensions?
- Downpayment requirements; indoor/outdoor approach
- Loan security: borrower repmt commitment, security deposits, equipment lien (collateral value varies), vendor recourse & other credit enhancements. Payroll deduction where possible.
- Simple & quick documentation
- Vendor finance programs common; Vendor provides: finance marketing, origination, after-sale services, equipment buyback, partial/full recourse. Vendors typically drive the market.

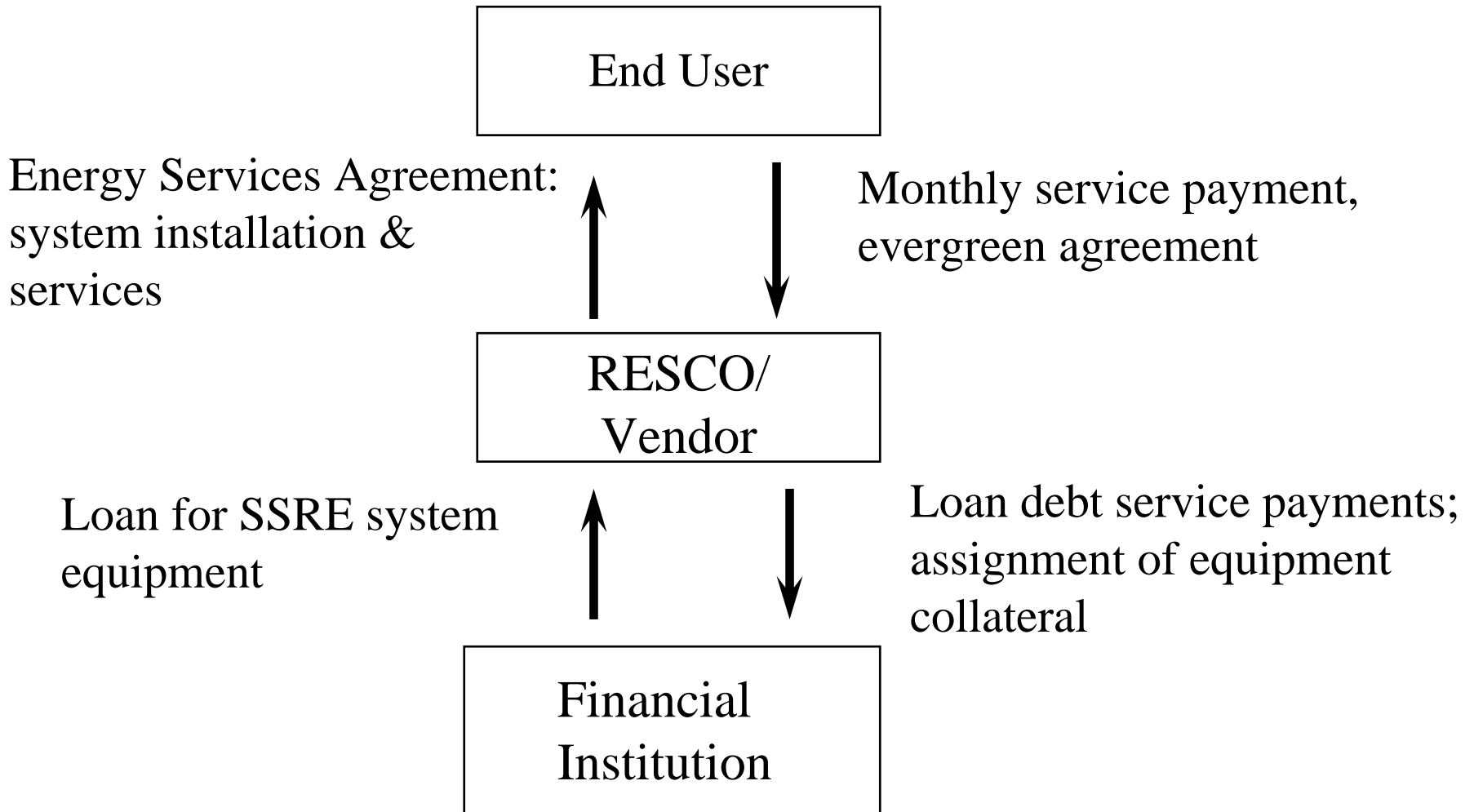
# Model 1: End-User as Borrower: Vendor Finance Program



# Model 2: Vendor as Lender



# Model 3: RESCO Fee-for Service



# Consumer Finance Guarantee Mechanism

- *Portfolio approach* to credit structure
- Guarantee structures as first loss portfolio guarantee or loss reserve scheme
- Event of loss & definition of loss: net losses after collateral value; principal only or P&I
- Claims payment procedures must be reliable, clear & rapid
- Risk sharing formula
  - Def. of “first” or “planned” loss, e.g. 10% of portfolio
  - Share of first loss, typically 75-100%
  - Risk sharing by FI & Vendor(s)
- This scheme has broad application if end-user is borrower.
- Programs must be designed for market conditions; modifications required if RESCO is borrower.

# Consumer Finance Program Examples

## *Commercial Bank & MFI Financing:*

- SELCO India
- UNEP India Solar Loan Program
- SEEDS, Sri Lanka
- Grameen Shakti

## *Fee-for-Service:*

- Soluz, Dominican Republic

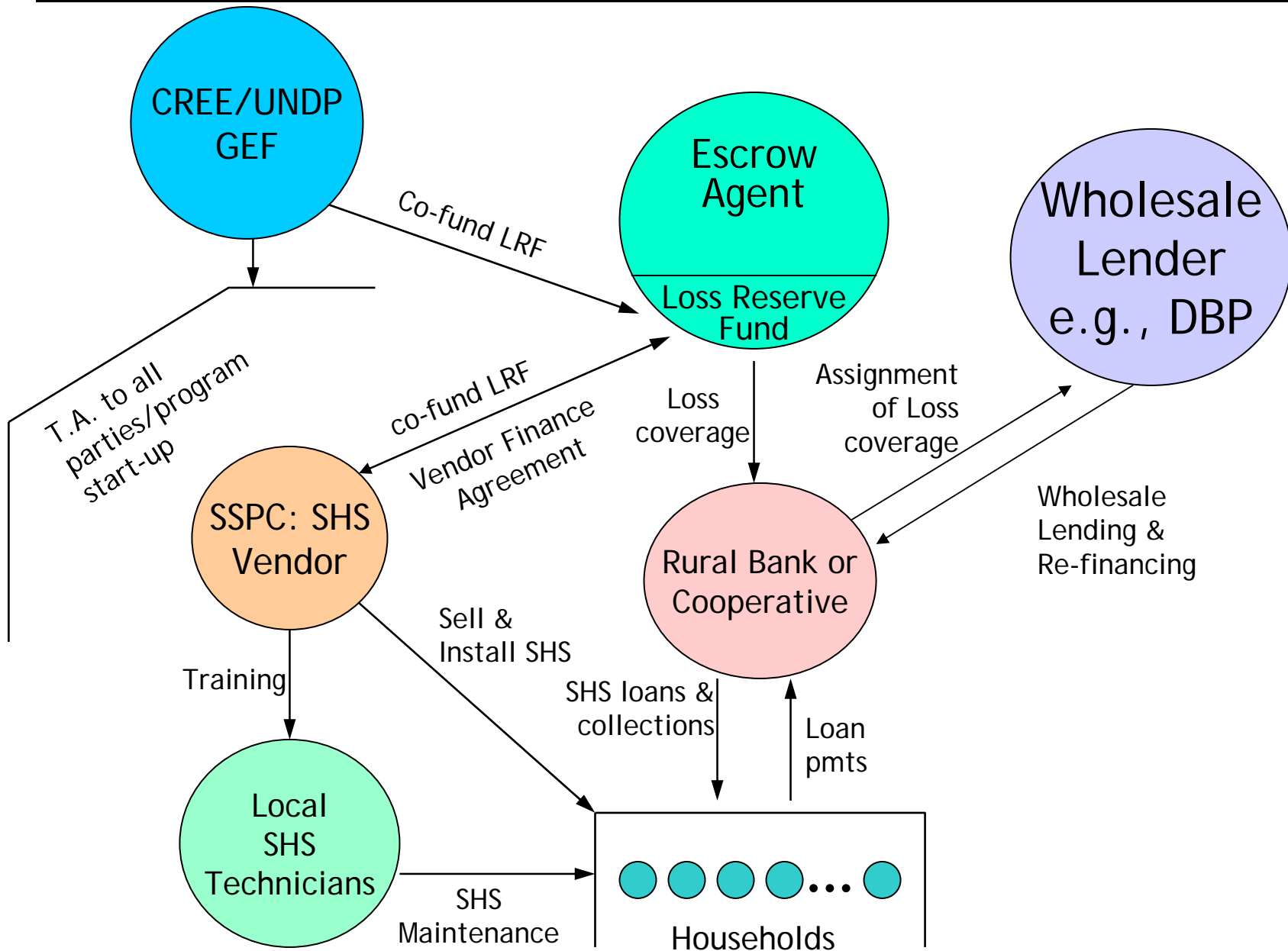
## *With Credit Enhancements:*

- UNDP/GEF Palawan, Philippines; follow-on WB/UNDP program
- Solar Development Group Triodos Indonesia

# **Consumer Finance: How to Motivate FIs?**

- **Guarantees & credit enhancements address credit risk, but other barriers are important. Guarantees can be packaged with other programs & tools, for example:**
- **Marketing & deal flow: most important, via quality SSRE companies or other marketing means**
- **Transaction cost support, e.g., closing fees (output based)**
- **Incentives that can be offered to customers, for example: UNDP India Solar Loan Program “interest rate subsidy”**
- **Training for bankers through to branch level**
- **Incentives for bankers; performance bonuses**

# UNDP/GEF SHS Direct Sales Finance Scheme, Palawan



## Loss Reserve Scheme: Sample Risk Sharing Formula & Program Sizing

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1	Planned Loss, % original portfolio principal	20.00%	
2	Equipment collateral value, realized	50.00%	per Vendor Agmnt
3	Net Planned Loss, % original principal	10.00%	

	<b>Party</b>	<b>Sharing of Planned Losses</b>	<b>1st Loss liability as % original principal</b>
4	Donor share	80.00%	8.00%
5	Vendor share	0.00%	0.00%
6	FI share	20.00%	2.00%

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## Guarantee Program Sizing

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7	Donor funds for Loss Reserve, maximum liability	\$1,000,000
8	First Loss Liability as% original principal	8.00%
9	Maximum portfolio that can be supported	\$12,500,000
10	Average loan size	\$500
11	Total number of loans in portfolio	25,000
12	customer down payment, % project cost	20.00%
13	Subsidies, as % project cost	0.00%
14	Total SSRE equipment investment	\$15,625,000

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# **Mobilizing MFIs for SSRE Equipment Finance**

- **Can MFI capacities be used to deliver SSRE financing? This potential being examined. Strong mission synergies.**
- **Examples: Sri Lanka, Grameen Shakti, FINCA, SEWA. These demonstrate models, but penetration of SSRE finance is *far* below its potential.**
- **Wholesale lending/investing in MFIs is rapidly advancing; wholesale lenders can be channel for engaging MFI networks. Opportunity for scale-up & lower cost of wholesale funds.**
- **Issues & possible mismatches:**
  - **urban vs. rural**
  - **productive use vs. consumption loan**
  - **Tenor requirements for SSRE equipment**
  - **security structure**

# **Credit Enhancement for MFI Financing**

- **Given strong payment performance track record of MFIs, is credit enhancement needed? Discussion question.**
- **Credit enhancement can help MFIs pioneer new products.**
- **Role of credit enhancement at two levels:**
  - **MFI credit risk exposure to end-borrowers**
  - **Wholesale lender exposure to MFIs for SSRE on-lending**
- **Consumer finance guarantee mechanism applies @ 1<sup>st</sup> level**
- **Security for wholesale lender can include sub-loans & all related security, + assignment of buybacks & guarantee**
- **Additional reserves can be established for benefit of wholesale lender; structure to be determined. Could be liquidity support, given nature of MFI credit risk.**
- **Foreign exchange risk (wholesale loans in hard currency vs. MFI sub-loans in local currency), also target for a FRMI**

# **MFI Initiative Concept**

- **Complete research on & coalesce efforts in this field**
- **Develop integrated financial product for MFI SSRE equipment lending & related wholesale lending**
- **Market through wholesale lenders/investors**
- **R&D needed: work with wholesale lenders and their related MFI networks**
- **Support with credit enhancements, TA, SSRE business develop**
- **Key issue: will there be demand for financing? “Chicken & egg” issue. Find ready markets to test, where SSRE business capacities exist or can be developed, & where right combination of elements exist.**

# **Consumer Finance Mechanism: Implementing Agreements & Resource Materials**

- Sample Guarantee Agreement and related term sheet
- Escrow Agreement & Term Sheet, Loss Reserve Fund
- Vendor Finance Agreement and related term sheets
- Loan product term sheet
- Request for Proposal (RFP) or guide to qualify Vendors
- Escrow Agent and/or Guarantor RFP
- Term sheets & agreements for Wholesale loan facilities to MFIs

# **SSRE SME Business Loan Guarantee Concept**

- **Access to finance for SMEs: major program area**
- **Many SME loan guarantee programs & agencies exist**
- **Concept: “piggyback” on these existing capacities to offer a SSRE SME loan guarantee program**
- **Donor funds are guarantee reserves, in 1<sup>st</sup> loss position**
- **Pilot strategy:**
  - **SSRE Business development services is leading edge of program; need strong program manager to deliver services**
  - **make it easy to engage Guarantors; be transaction oriented**
  - **Seek best firms to support; availability of finance can drive development of good proposals**
- **Strong SSRE firms can be platform for scale up via growth, franchisees, dealers, etc.**

# **SSRE SME Business Loan Product**

- **Loan sizes: \$20,000-50,000 at small end; \$250-500,000 at larger end, expected**
- **Loan uses:**
  - **Working capital; stable facilities**
  - **Plant & equipment term loans**
  - **End-user finance**
  - **Dealer finance**
- **Define underwriting criteria**
- **With lender & guarantor, define financial covenants & performance targets in loan agreement that allow SSRE business borrower to graduate to larger loans with lesser guarantee levels**

# SSRE SME Business Loan Guarantee

- *Pari passu* partial credit guarantee
- **Guarantee percentages: to be determined on market conditions, e.g., 50-80%; higher for “seed” capital loans**
- **Maximum term: e.g., 5 years**
- **Maximum loan size: t.b.d., \$500,000 to \$1,000,000**
- **Loan security: as much as possible, cashflow & business based, not just based on fixed asset collateral**

## *Start-up:*

- **Recruit & select Guarantor**
  - **Guarantee Program Management Agreement**
  - **Leverage issue; mngmt of donor guarantee reserves**
- **Recruit & select lenders; lender training**
- **Qualify & select SSRE businesses; start here; demonstrate potential deal flow when recruiting other parties**

# **SSRE SME Business Development Services**

- **Identify & qualify SSRE firms**
- **Assist in preparing business plans, financial planning & projections & loans proposals**
- **Financial management & reporting training & upgrades; audits**
- **Understand & improve working capital cycle; valuation of inventory & receiveables**
- **Loan structuring**
- **Help raise equity; business valuation**
- **Develop end-user finance programs**
- **Marketing & innovation funding; franchise strategies**
- **Peer information exchanges**

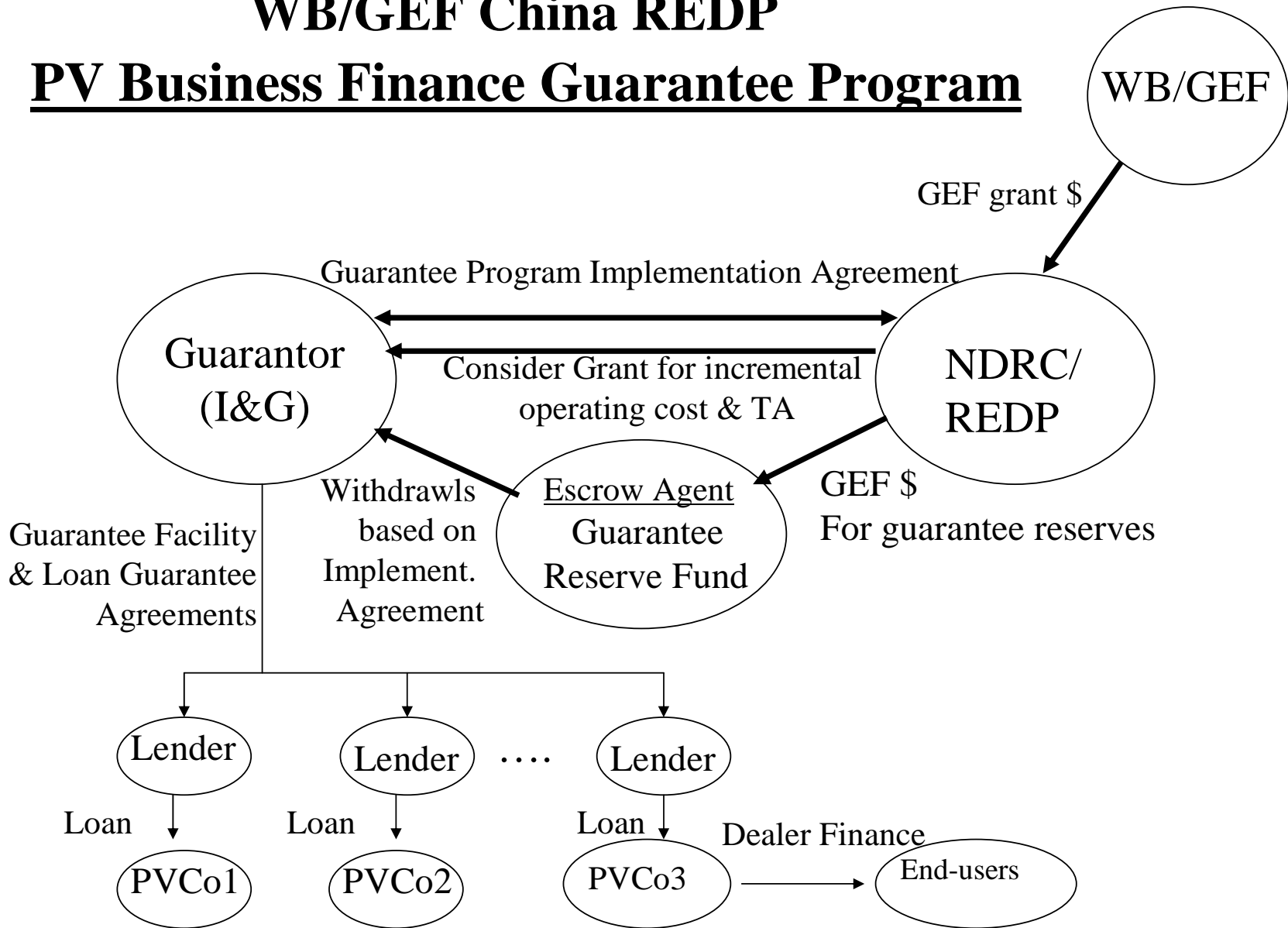
# **SSRE SME Loan Guarantee Mechanism:**

## **Sample Program Sizing**

<b>SSRE Business Finance Guarantee Program</b>	<b>\$</b>
1 Donor Guarantee Reserves	\$1,000,000
2 Leverage ratio	3
3 Total guarantee liability capacity	\$3,000,000
4 Guarantee percentage, average	75.00%
5 Total Debt that can be supported	\$4,000,000
6 Average size loan transaction	\$250,000
7 Number of loans that can be supported	16.00

# WB/GEF China REDP

## PV Business Finance Guarantee Program



# **SSRE SME Loan Guarantee Mechanism: Implementing Agreements & Resource Materials**

- Guarantee Agreements & Term sheet, matched to SSRE SME loan product, (between Guarantor & Lenders)
- Loan Agreements (between lenders & borrowers)
- Guarantor RFP
- Guarantee Program Implementation Agreement (between donor & guarantor)
- Escrow Agreement governing use of the guarantee reserve funds, as applicable
- SME Loan application form
- Sample Loan underwriting criteria
- SSRE SME finance needs assessment survey & other TA tools

# **Enterprise Development & Innovation Funding**

- **SSRE business development central to market & deliver energy services; consumer financing follows & supports**
- **Mixed experience with international development efforts**
- **High levels of program costs & TA business development support needed, combined with lending/investment**
- **Most accepted investment methods: debt with equity kickers; equity hard to exit; “patient” capital not VC**
- ***Streamlined* funding cycles needed, esp. for seed funding**
- **Innovation funding needed to develop & penetrate new markets; grants can be output based**
- **Contingent “reimburseable” grant methods**
- **Large volumes of new private equity capital organized recently for clean energy investment: how to tap this?**
  - **UNEP SCAF concept: TA, transaction cost support, “buy-up” returns; prepare seed investees for growth investments**

# Subsidies

- **Rationale for Subsidies**
  - **Social & economic benefits from delivering energy services; essential to meet MDGs; social equity**
  - **Large subsidies for urban energy infrastructure**
- **Issues**
  - **Market distortion concerns**
  - **How to work with commercial parties on market basis?**
  - **Temporary or steady subsidies; subsidies from who?**
- **Capital subsidies**
  - **grants & buydowns; sizing of subsidies to hit affordability target**
  - **Per system subsidy not per Wp recommended to target poor**
  - **China REDP methods well developed: qualify vendors, track systems & subsidies, couple with business devel. services**
  - **Indoor/outdoor concept**

# **Market Aggregation Strategies**

- **Concession contracts, via utilities or government agencies**
- **Use of request for proposal (RFP) processes to organize purchasers at community or regional levels; businesses (SSRE firms & FIs) compete to meet this organized demand. Example: Depts. of Education and Health let RFP to energize schools & clinics**
- **Build up “super” RESCO firms, which can expand through franchising and spawning series of local/micro enterprises**
- **Market & finance energy systems through existing MFI and cooperative networks**
- **Pooled finance programs via industry associations, e.g., small hydro in Peru**
- **Utilities as aggregators & marketing agents**
- **FIs as aggregators**

# Additional/Related Topics

- **SSRE Project Finance, for stand-alone & community power**
  - e.g., small scale agri-business bio-mass cogen & community hydro
  - Subordinated debt mechanism suggested: supports senior debt & substitutes for sponsor equity
  - Donor funds provide higher risk tier funding within sub-debt fund
- **Technical Assistance program designs**
  - Banker training programs
  - Business development programs
- **Carbon finance, how to integrate**
  - FIs as aggregators

# Discussion Topics & Questions

- 1) What consumer finance programs been most successful & why?
- 2) Is end-user borrower credit risk really the primary barrier to SSRE financing, or are there other more important barriers, such as transaction costs and affordability?
- 3) In what market conditions do guarantees work and make a critical difference to mobilize local financing?
- 4) Given strong payment performance track record of MFIs, is credit enhancement needed for consumer finance?
- 5) What are appropriate levels & forms of recourse from Vendors?
- 6) What is the best way to motivate FIs to enter this market?
- 7) *Seeking comments on recommended consumer finance FRMI.*
- 8) How can the consumer finance guarantee mechanism be adapted to cases where RESCO is borrower?
- 9) Do MFIs need wholesale funding? Is wholesale funding to MFIs for SSRE on-lending, a good focus, packaged with other tools?

## Discussion Topics & Questions (2)

- 10) Do MFIs need wholesale funding? Is wholesale funding to MFIs for SSRE on-lending, a good focus, packaged with other tools?
- 11) How can the capacities of micro-finance institutions be harnessed to deliver financing and sales of SSRE equipment? What types of support are needed? Who is active in this field?
- 12) Is “piggyback” & pilot strategy for SSRE SME business loan guarantee reasonable?
- 13) Which is primary, finance or SSRE business capacities?
- 14) *Seeking comments on SSRE SME loan guarantee design.*
- 15) Subsidies: rationale and best structures & methods.
- 16) Market aggregation strategies: strategies & methods.
- 17) How can these mechanisms be packed into an effective program design? Can a global program be established, ready to apply where conditions are ready? Can a global target be set?

Seeking advice, criticisms, resource materials, etc. to make Report useful