



**EESI**  
Environmental and  
Energy Study Institute



# On-Bill Financing and Beneficial Electrification for Rural Electric Cooperatives

NAACP RURAL ELECTRIC CO-OP CONVENING

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# ENVIRONMENTAL AND ENERGY STUDY INSTITUTE

## ABOUT US



### 01 **NON-PROFIT**

Founded in 1984 by a bipartisan Congressional caucus as an independent non-profit organization (but receives no federal funding)

### 02 **NON-PARTISAN**

Source of non-partisan information on energy and environment policy development

### 03 **DIRECT ASSISTANCE**

In addition to policy work, EESI provides direct assistance to utilities to develop “on-bill financing” programs



01

**ON-BILL INFORMATION**  
FINANCING, REPAYMENT, TARIFF

02

**USDA RURAL ENERGY SAVINGS PROGRAM**  
(RESP)

03

**BENEFICIAL ELECTRIFICATION**

SECTION 01

# ON-BILL INFORMATION

FINANCING, REPAYMENT, AND TARIFFS

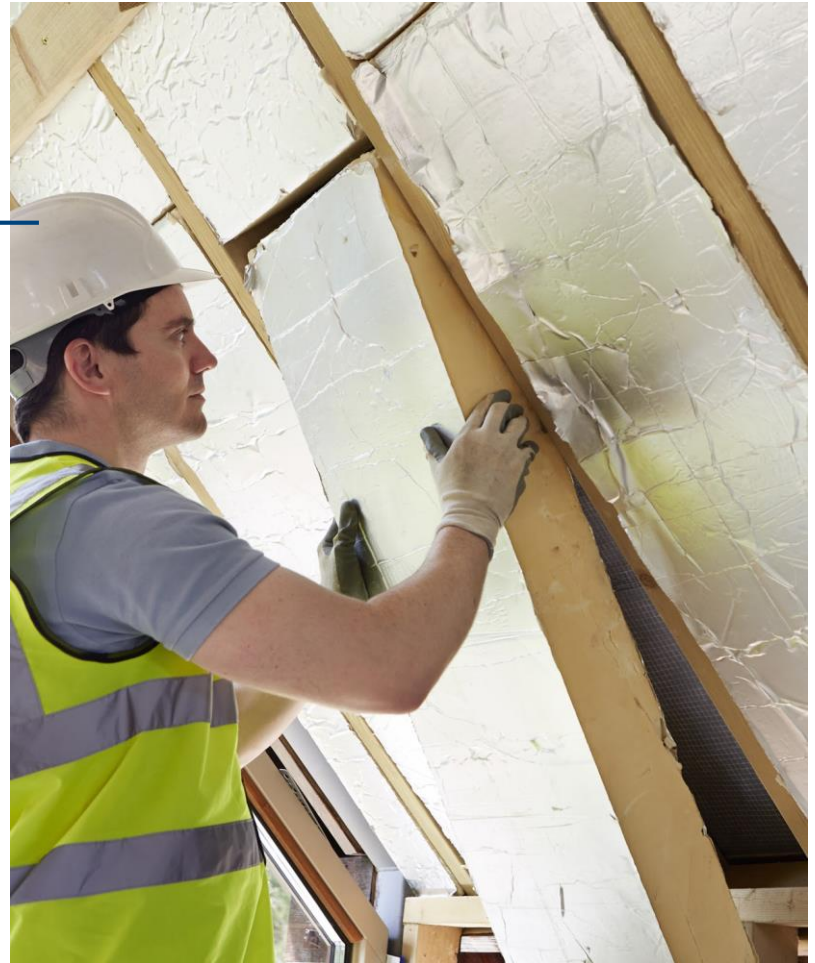


(OBF)

## ON-BILL FINANCING

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- 01 Utilities finance energy/water improvements to customers' homes (or facilitate 3<sup>rd</sup> party financing)
- 02 Loans (or tariff charges) are repaid on the customer's monthly utility bill
- 03 Payments are partially/completely offset by savings from the financed improvements
- 04 At least 75 Co-ops in 21 states offer OBF in some form, with many variations





# ON-BILL FINANCING

## SIMPLE OBF MODEL



\* Utility may partner with a bank or other lender to directly pay for the energy updates. The utility then “passes on” the payments to the lender.

# ON-BILL FINANCING

## EXPANDING ACCESS WITH OBF

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### 01 **OBF PROGRAMS FEATURE**

- No upfront costs to participants
- Alternative loan underwriting (i.e. good bill payment history in lieu of credit check)

### 02 **LOW DEFAULT RATES**

Loan default rates are typically low, even with alternative underwriting

### 03 **GIVING OPPORTUNITY**

Gives cash-strapped and credit-poor households a better opportunity to access energy savings

### 04 **BENEFITS**

Provides a wide range of benefits





# ON-BILL FINANCING OPPORTUNITIES + CHALLENGES

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## 01 ON-BILL OPPORTUNITIES

- Reduce barriers to clean energy programs
- Deeper energy savings
- Low risk defaults
- Improved utility-customer relationships

## 02 ON-BILL CHALLENGES

- Where does capital come from?
- Utility capacity
- Contractors
- “We don’t want to be a bank”

ON-BILL  
FINANCING

# SOUTH CAROLINA CO-OPS



## ON-GOING OBF PROGRAM

- 2012-Present
- 5 Co-ops, around 750 homes
- Loan pool from additional USDA REDLG and RESP loans

## OBF PILOT

- 2011-2012
- 8 Co-ops, 125 homes
- Loan pool from USDA REDLG loans
- 34% energy savings

- Tariff program: loan is tied to the meter, not the occupant
- Participants need good bill payment history (no credit checks)

ON-BILL  
FINANCING

# AVERAGE HELP MY HOUSE HOME



\$1,157		\$288	ANNUAL NET SAVINGS
	ANNUAL ENERGY SAVINGS	\$869	ANNUAL LOAN REPAYMENT

All values are per home averages for a typical meteorological year.

# ON-BILL TARIFF PROGRAM **OPALCO (WA) SWITCH UP**



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## 01 **BENEFICIAL ELECTRIFICATION FINANCING**

- Air-source heat pumps: ducted and ductless
- Heat pump water heaters
- EV charging stations

## 02 **REPAYMENT ATTACHED TO THE METER**

## 03 **BILL PAYMENT HISTORY**

## 04 **CAPITAL: \$5.7M RESP NO-INTEREST LOAN**

## 05 **80 PROJECTS PER YEAR; LAUNCH: EARLY 2Q 2019**

# ON-BILL TARIFF PROGRAM HOLY CROSS ENERGY (CO)



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## 01 **BENEFICIAL ELECTRIFICATION FINANCING**

- Space and water heating conversions
- Whole-house energy efficient retrofits
- Solar PV and battery storage devices
- EV charging stations

## 02 **REPAYMENT TIED TO THE METER**

## 03 **BILL PAYMENT HISTORY**

## 04 **CAPITAL: \$11M RESP ZERO-INTEREST LOAN**

## 05 **100 PROJECTS PER YEAR; LAUNCH: LATE 3Q 2019**

# ON-BILL FINANCING

## WHERE'S THE CAPITAL



- 01 USDA LOAN PROGRAMS FOR RURAL UTILITIES**
- Energy Efficient + Conservation Loan Programs (EECLP)
  - Rural Energy Savings Programs (RESP)
  - Rural Economic development Loan + Grant (REDLG) Program

**02 COOPERATIVE BANKS**

**03 CREDIT UNIONS**

**04 COMMUNITY DEVELOPMENT FINANCE INSTITUTE (CDFIs)**

**05 UTILITY INTERNAL FUNDS**

**06 LARGE PRIVATE LENDERS?**

# ON-BILL FINANCING PROGRAM ASSISTANCE



## EESI OFFERS NO-COST ASSISTANCE

- Assistance to utilities to design OBF programs and access funding
- Details, case studies, and lessons learned from other working OBF programs
- Resource identification, help overcoming barriers to launching projects
- Advice on program implementation
- [OBF Primer](#) and [OBF How-to-Guide](#)

SECTION 02

# USDA RESP

RURAL ENERGY SAVINGS PROGRAM





# USDA RESP

## RURAL ENERGY SAVINGS PROGRAM



### ABOUT RESP

- Authorized by Congress in 2010; introduced by **Rep. James Clyburn (D-SC)**
- Passed as part of 2014 Farm Bill; reauthorized in 2018 Farm Bill
- Up to \$75 million authority for credit subsidy leverages millions in loans
- **\$100M in zero-interest loans** available to rural utilities to support EE financing programs
- Additional funding available in FY'19



# USDA RESP

## RESP ELIGIBLE MEASURES



- **WHOLE-HOUSE ENERGY EFFICIENCY RETROFITS**
- **HVAC SYSTEMS**
- **WATER HEATERS**
- **PROPERTY-ATTACHED APPLIANCES**
- **WATER + WASTE EFFICIENCY IMPROVEMENTS**
- **FUEL SWITCHING PROJECTS**
- **PERMANENTLY-INSTALLED ENERGY STORAGE DEVICES**
- **ON- AND OFF-GRID RENEWABLE ENERGY SYSTEMS**
- **ELECTRIC CHARGING STATIONS**
- **REPLACED MANUFACTURED HOUSING**

# USDA RESP

## RURAL ENERGY SAVINGS PROGRAM



<b>Total Funding</b>	~ \$100M per year
<b>Eligibility</b>	Entities that provide electric service to rural areas
<b>Purpose</b>	To help rural families & rural small businesses reduce energy costs or consumption
<b>Interest Rate</b>	0%
<b>Maximum Loan size</b>	Not specified; largest to-date to single utility is \$11M
<b>Mark-up to end user</b>	Capped at 5%
<b>Loan term</b>	Up to 20 years
<b>Acceptable financial structures/ investments</b>	Re-lending such as on-bill financing, tariff charge, PACE programs, traditional consumer loans

**Application window currently open for \$100M!**

*Source: USDA Rural Utilities Service*

# USDA RESP

More than  
\$50M loaned  
out to **19**  
**utilities** in  
**10 states**

State	Borrower	Amount	Use
Ohio	Northeast Ohio Public Energy Council	\$1 million	Energy Efficiency
South Carolina	KW Savings (7 co-ops)	\$13 million	Energy Efficiency
Washington	Orcas Power & Light Cooperative	\$5.8 million	All
Virginia	BARC Electric	\$1.77 million	Solar
Arkansas	Ouachita Electric Cooperative	\$8 million	All
Arkansas	Woodruff Electric Cooperative	\$1 million	Energy Efficiency
Wisconsin	Adams-Columbia Electric Cooperative	\$1 million	Energy Efficiency
North Carolina	Pee Dee Electric Membership Corporation	\$.2 million	Energy Efficiency
Colorado	Holy Cross Energy	\$11 million	All
Colorado	Highline Electric Association	\$.5 million	Solar & Energy Efficiency
Arkansas	Southwest Arkansas Electric Cooperative	\$1 million	Energy Efficiency
Tennessee	Appalachian Electric Cooperative	\$5 million	Energy Efficiency
Oregon	Umatilla Electric Cooperative	\$1.5 million	Energy Efficiency
<b>Total</b>		\$51 million	
<b>*All: Energy Efficiency, solar PV, energy storage, EV charging stations</b>			

SECTION 03

# BENEFICIAL ELECTRIFICATION

INFORMATION, STRATEGIES AND ASSISTANCE





## BENEFICIAL ELECTRIFICATION

# WHAT IS IT?

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**Beneficial Electrification** is the process of switching from another fuel source to electricity in order to benefit:

- The energy user
- The co-op/utility
- The environment

### EXAMPLES

- Propane or oil heated homes to electric heat pumps
- Gasoline or diesel vehicles to electric vehicles
- Community storage with electric water heaters

# BENEFICIAL ELECTRIFICATION

## THE BIG PICTURE

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### SPECIFIC ACTIONS

- Electrify as much as possible while cleaning the grid
- Focus first on measures that save people money
- More electricity use is okay. It reduces overall carbon emissions – let's strike a grand bargain with electric utilities





Great River Energy

@GREnergyNews

Follow

David Ranallo: We believe electricity is a smart choice- Beneficial electrification. We're making history w/ this #ElectricSchoolBus



8:25 AM - 14 Jul 2017

## BENEFICIAL ELECTRIFICATION **WHY NOW**

- Grid is becoming greener
- Many electric utilities are seeing flat growth and thinking towards the future
- Need to avoid sunk investments in carbon infrastructure
- Technical innovations in end-use electric equipment





## BENEFICIAL ELECTRIFICATION **STRATEGIES**

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- 01 Air-source heat pumps
- 02 Ductless heat pumps or mini split heat pumps
- 03 Grid-connected water heaters
- 04 Financing electric vehicle charging stations

## BENEFICIAL ELECTRIFICATION

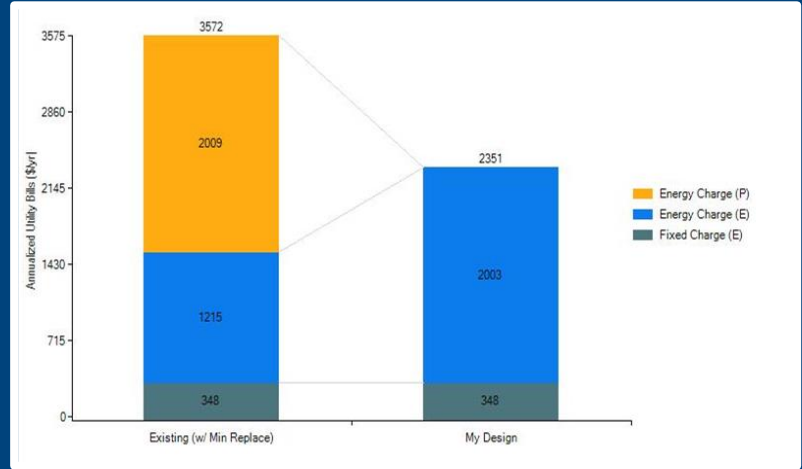
# QUALIFYING THE BENEFITS IN ONE HOME

### A \$14,000 Home Retrofit

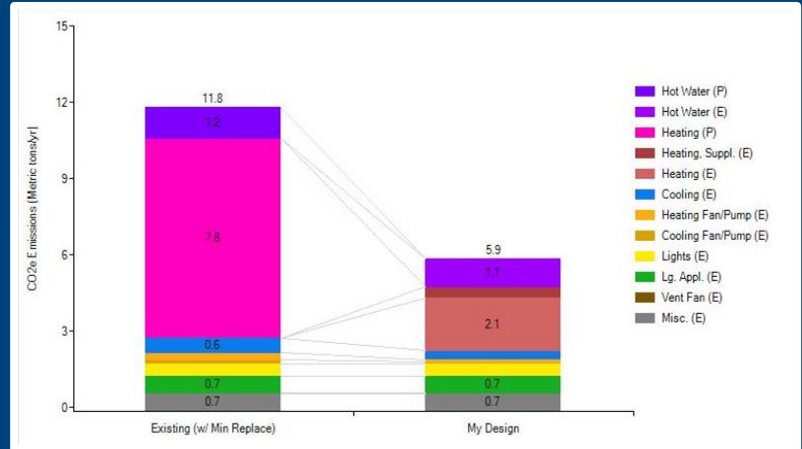
Propane heat and hot water converted to electric (plus some insulation and air sealing)

*Source: Collaborative  
Efficiency analysis  
(funded by EESI)*

### Predicted Utility Bills: Existing vs Retrofit



### Predicted CO2 Emissions: Existing vs Retrofit



# BENEFICIAL ELECTRIFICATION PROGRAM ASSISTANCE



## EESI OFFERS NO-COST ASSISTANCE

- Provide utilities as assessment on potential for beneficial electrification program
- Assistance in program design
- Can help blend on-bill financing into a beneficial electrification program





The U.S. Department of Agriculture has recently announced an additional \$100 million in funding available nationally for the [RESP]. I hope cooperatives and other utilities across the country will look to the model here in South Carolina for ***lowering energy costs for consumers, reducing electricity consumption to help the environment, and creating jobs in rural communities.***

**REP. JIM CLYBURN**

(D-SC) OCTOBER 2018



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**THANK YOU**

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