



David W. Hughes



Professor & Greever Endowed Chair in Agribusiness Development  
University of Tennessee, Dept. of Agricultural & Resource Economics

Rural Energy for America Program (REAP) Virtual Workshop

## Preparing Your REAP Proposal

February 9, 2021



# Program Goal and Some Terms

- REAP seeks to promote energy efficiency and renewable energy development for agricultural producers and rural small businesses by providing grants and guaranteed loans for eight different categories of renewable energy production (e.g., wind, solar, anaerobic digestion, hydro, and geothermal)
- Renewable Energy System (RES)
- It also seeks to promote energy efficiency improvements for agricultural producers and small rural businesses
- Energy Efficiency Improvements (EEI)

# REAP Funds may be used for renewable energy systems (RES)

- Biomass (for example: biodiesel and ethanol, anaerobic digesters, and solid fuels)
- Geothermal for electric generation or direct use
- Hydropower below 30 megawatts
- Hydrogen
- Small and large wind generation
- Small and large solar generation
- Ocean (tidal, current, thermal) generation

EEl Funds may be used for the purchase, installation and construction of energy efficiency improvements

- High efficiency heating, ventilation and air conditioning systems (HVAC)
- Insulation
- Lighting
- Cooling or refrigeration units
- Doors and windows
- Electric, solar or gravity pumps for sprinkler pivots
- Switching from a diesel to electric irrigation motor
- Replacement of energy-inefficient equipment

## What Types of Businesses are Eligible?

Farmers (anywhere) who get at least 50% of their net income from farming

OR

Small, Rural, Businesses

# Agricultural Producers Eligible Regardless of Location

- Agricultural producers may also use grant funds in helping to install energy efficient equipment and systems for agricultural production or processing
- Majority of gross income must come from farm to be considered an agricultural producer
- Determination made based on federal tax return

# Eligible Rural Business?

- Projects must be located in rural development areas, defined as an area not a city or town with 50,000 or more inhabitants as well as the urbanized areas surrounding the city or town.
- Project must be located in rural area; headquarters can be urban
- Can Check Eligibility at the below:
- <https://eligibility.sc.egov.usda.gov/eligibility/welcomeAction.do?pageAction=RBSmenu&NavKey=property@13>





ELIGIBILITY

Home

Tutorials

Single Family Housing Guaranteed

Single Family Housing Direct

Multi-Family Housing

Rural Business

Water and Environmental Guaranteed

Community Facilities Guaranteed

Property Eligibility

Loan Basics

What Kind Of Funding Am I Eligible For?

🔍

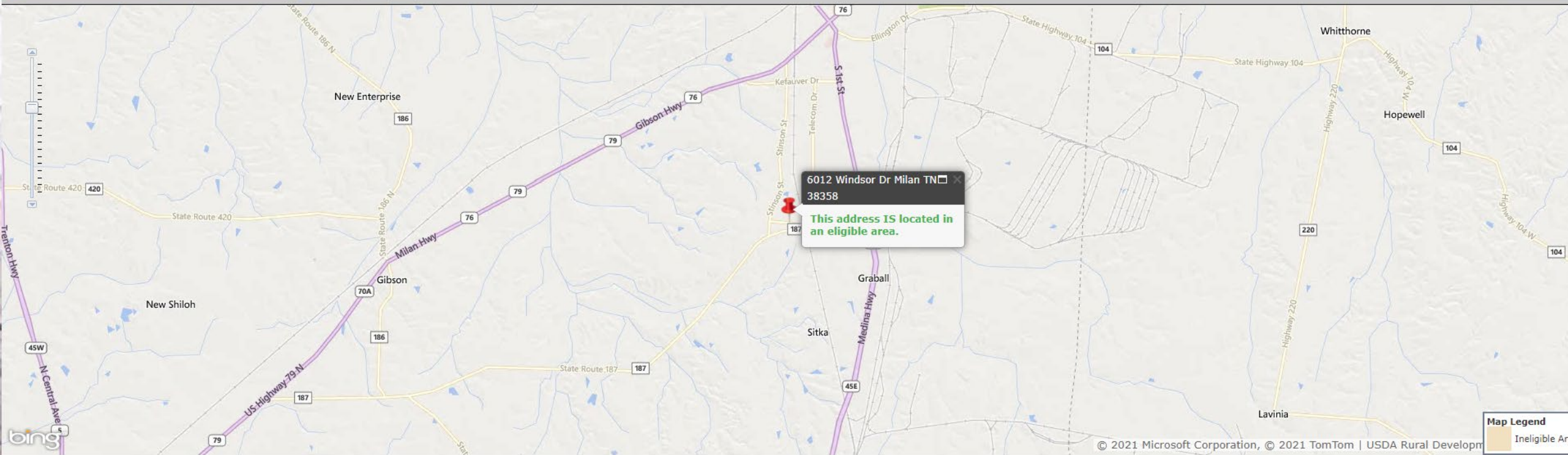
6012 Windsor Dr. Milan, TN

GO!

🗺

📶

► Switch Basemap





# With a Few Exceptions Must be a Small Rural Business

- Most non-profits are not eligible
- For example, Associations (like a Soybean Board) are not eligible
- Non-profits that are eligible:
  - Cooperative,
  - Electric utility,
  - Tribal corporation or other tribal business entity

# Size Designation for Small Rural Businesses

- Meet the SBA size designation for your NAICS (based on gross revenue or employment)
- Small is based on determination for your given industrial classification (that is your North American Industry Classification System(NAICS) code)
- Determination is either based on number employees or gross income
- <https://www.sba.gov/document/support--table-size-standards>
- Franchises are usually based on numbers for parent company but discuss with Tennessee USDA-RD (see Chuck Morris Presentation)
- Or meet the following two requirements:
  - Your maximum tangible net worth is not more than \$15 million AND
  - Your average net income after Federal income taxes for the 2 full fiscal years before the date of application is not more than \$5 million

# SBA Small Example Based on Employment

<b>NAICS codes</b>	<b>NAICS U.S. industry title</b>	<b>Size standards in millions of dollars</b>	<b>Size standards in number of employees</b>
311111	Dog and Cat Food Manufacturing		1,000
311119	Other Animal Food Manufacturing		500
311211	Flour Milling		1,000
311212	Rice Milling		500
311213	Malt Manufacturing		500
311221	Wet Corn Milling		1,250
311224	Soybean and Other Oilseed Processing		1,000
311225	Fats and Oils Refining and Blending		1,000

# SBA Small Example Based on Gross Revenue

<b>NAICS codes</b>	<b>NAICS U.S. industry title</b>	<b>Size standards in millions of dollars</b>	<b>Size standards in number of employees</b>
444110	Home Centers	\$41.5	
444120	Paint and Wallpaper Stores	\$30.0	
444130	Hardware Stores	\$8.0	
444190	Other Building Material Dealers	\$22.0	
444210	Outdoor Power Equipment Stores	\$8.0	
444220	Nursery and Garden Centers	\$12.0	
445110	Supermarkets and Other Grocery (except Convenience) Stores	\$35.0	
445120	Convenience Stores	\$32.0	
445210	Meat Markets	\$8.0	
445220	Fish and Seafood Markets	\$8.0	
445230	Fruit and Vegetable Markets	\$8.0	
445291	Baked Goods Stores	\$8.0	

# Requirements

# Renewable Energy System, Energy Efficiency Grants: General Requirements

- Applicants must provide at least 75 percent of the project cost if applying for a grant only
- Applicants must provide at least 25 percent of the project cost if applying for loan
- All projects must have technical merit and utilize commercially available technology
- Energy efficiency projects require an energy audit



# Minimum, Maximum \$s, Renewable Energy System, Energy Efficiency Grants (25% cost-share)

## Renewable Energy System (RES) Grants:

- \$2,500 minimum. So total eligible project costs must be at least \$10,000
- \$500,000 maximum. To get maximum total eligible project costs must be at least \$2 million

## Energy Efficiency Improvement (EEI) Grants:

- \$1,500 minimum. So total eligible project costs must be at least \$6,000
- \$250,000 maximum. To get maximum total eligible project costs must be at least \$1 million

# Must Demonstrate Effect Project

- Demonstrate that the RES or EEI will operate or perform over the project's useful life in a reliable, safe, and a cost-effective manner
- Such demonstration shall address project design, installation, operation, and maintenance
- Can submit a separate EEI and REI in a given federal year (October 1-September 30)
- But an applicant can submit only one type of funding request (grant-only, guaranteed loan-only, or combined funding) for each project in a given Federal Fiscal Year

# Proposed Scope of Work

- A brief summary including a project title describing the proposed project
- Goals of the proposed project
- Geographic scope or service area of the proposed project and the method and rationale used to select the service area
- If supplying others:
  - Identification of the specific needs for the service area and the target audience to be served. The number of Agricultural Producers and/or Rural Small Businesses to be served must be identified including name and contact information, if available, as well as the method and rationale used to select the Agricultural Producers and/or Rural Small Businesses

# Timeline and Marketing Strategy for RES

- Timeline describing the proposed tasks to be accomplished and the schedule for implementation of each task. Include whether organizational staff, consultants, or contractors will be used to perform each task.
- If supplying others:
  - Marketing strategies to include a discussion on how the Applicant will be marketing and providing outreach activities to the proposed service area ensuring that Agricultural Producers and/or Rural Small Businesses are served

# Your Experience

- Your experience in completing similar activities, including the number of similar projects the Applicant has performed and the number of years the Applicant has been performing a similar service.
- Indicate relevant experience
- Discuss any Energy Audit Awards in last 5 years please describe achievements of the award (such as energy sold or saved)

# Matching Funds

- Identify the amount of Matching Funds and other funds and the sources the Applicant is proposing to use for the project. Provide written commitments for Matching Funds and other funds at the time the application is submitted
- If your funds must demonstrate with bank statement
- If a third party is providing financial assistance to the project, the Applicant must submit a commitment letter signed by an authorized official of the third party. The letter must be specific to the project and identify the dollar amount being provided.
- Meaning: need a letter from your lender with all of the specifics (amount and terms of loan, stating loan is specifically for the project).



# Any Prior REAP Projects

- an applicant who has received one or more grants under this program must have made satisfactory progress towards completion of any previously funded projects before being considered for subsequent funding.
- The Agency interprets satisfactory progress as at least 50 percent of previous awards being expended by January 31, 2021

# Energy Audit for EEI

- USDA does not maintain a list of qualified energy auditors
- Regulation do define the credentials for an auditor or assessor
- A good idea is to contact your local power company and have them set up TVA to do the audit
- All of the following qualify:
  - An Energy Auditor certified by the Association of Energy Engineers
  - An Energy Manager certified by the Association of Energy Engineers
  - A licensed Professorial Engineer in the state where the audit will be conducted with at least 1 year experience and who has completed at least 2 similar energy audits
  - An individual with a 4-year engineering or architectural degree with at least 3 years experience and who has completed at least 5 similar energy audits

# Total Project Costs

- Use total project costs on the form (sum of all costs associated with the completed project, including ineligible costs and regardless of the source of the funds)
- Wind Turbine as an example: must include all the costs associated with a completed project including the turbine, tower, foundation, and electrical.
- Total Project Costs for retrofitting an existing Renewable Energy System would include the costs associated with the modifications or replacement of the existing components. For example, if the tower is already in place but the turbine needs to be replaced, then the costs integral to the replacement of the turbine would be considered as Total Project Costs.

# Eligible Project Cost

- Purchase and installation of new or Refurbished equipment
- Construction, Retrofitting, replacement, and improvements
- EEI identified in the applicable Energy Assessment or Energy Audit
- Fees for construction permits and licenses
- Professional service fees for Qualified Consultants, contractors, installers, and other third-party services
- When a residence is closely associated with the Rural Small Business or agricultural operation the installation of a second meter to separate the residence from the portion of the project that benefits the Rural Small Business or agricultural operation

# Ineligible Project Cost

- Agricultural tillage equipment, used Equipment, and vehicles
- Residential projects
- Construction or equipment costs that would be incurred regardless of the installation of project. For example, the foundation for a building where a RES is being installed, storage only grains bins connected to drying systems, and the roofing of a building where solar panels are being attached
- Business operations that derive more than 10 percent of annual gross revenue from gambling activity or operations deriving income from activities of a sexual nature or illegal activities
- Lease payments
- Any project that creates a conflict of interest or an appearance of a conflict of interest
- Funding of political or lobbying activities
- To pay off any Federal direct or guaranteed loans or other Federal debts

# Must Include all Environmental Review Documents with supporting Documentation

- Recommend you first this with the USDA-RD field specialist (regional office)
- State office will have a checklist document
- Use that to work through the process
- Covers possible impacts on wetlands, trees, historic sites, endangered species, farmland, hazardous materials, state-federal parks, water resources, minority or low income populations, municipal wastewater, location in non-compliant air quality area
- USDA or Form will indicate additional documentation as needed
  - For example, if there threatened or endangered species or critical habitats within the project area, then a IPAC (Information of Planning and Consultation) report must be attached <https://ecos.fws.gov/ipac/>



**U.S. DEPARTMENT OF AGRICULTURE RURAL DEVELOPMENT**

7/29/20

**ENVIRONMENTAL INFORMATION**

The purpose of this document is to assist RD staff in collecting adequate information to determine what level of environmental review is necessary. Depending on the information provided, the Agency may request additional information. All answers need to be supported by appropriate documentation, check marks are not sufficient support. Potentially helpful links are provided in blue, these are not an exhaustive or comprehensive list of resources.

Yes

No

**1. APPLICANT NAME:****2. ADDRESS: Physical location of the property (include legal description if farmland):****3. MAP.** Please provide an aerial map showing the building /lot/exact location for all project types, please indicate on map any potential trenching or other ground disturbance. electrical connections. or other relevant information. Is map attached?☐☐**4. DETAILED PROJECT DESCRIPTION** (Describe how proposed funds will be used. If project involves construction, whether interior or exterior or renovations, please describe in detail. For renewable energy systems such as solar panels be specific on type of system (fixed tilt, tracking, mounting & structure, i.e. ballasted, 3" pile driven, concrete, screws, etc.):**5. SIZE OF THE PROJECT & SITE:** Please indicate the size (acres) of your project and how the project will impact the site including roads, right of ways, utilities, or other impacts. Example: Renewable energy solar project should include sq. ft, linear ft, number of installed units/panels/buildings, and details regarding any trenching or ground disturbance to be completed.**6. Will the project involve construction without any ground disturbance? (i.e. roof mounted solar)**☐☐**6a. If no ground disturbance, please provide land use, land ownership, & description (i.e. industrial, residential, wooded, grasslands, etc.).****6b. If ground disturbance is expected, provide descriptive info, including if the project site was previously disturbed (i.e. previous structure, excavation, cultivation).**

Award amount considerations. In determining the amount of a RES or EEI grant awarded, the Agency will take into consideration the following six criteria:

- The type of RES to be purchased
- The estimated quantity of energy to be generated by the RES
- The expected environmental benefits of the RES
- The quantity of energy savings from the EEI expected to be derived from the activity, as demonstrated by an Energy Audit;
- The estimated period of time for the energy savings generated by the activity in comparison to the cost of the activity
- The expected energy efficiency of the RES

# Project Scoring

# Scoring Criteria Existing Business

- A maximum of 5 points will be awarded for an existing agricultural producer business or rural small business that has been in operation for at least 1 full year
- Tax return is the best documentation
- If no historical a pro forma financial statement with projections

# Scoring Criteria Simple payback: A maximum of 15 points

- EEl projects simple payback = (total project costs) ÷ (dollar value of energy saved).
- Energy Saved: Historic energy consumed minus projected energy consumed

- Score Sheet Energy Calculations Tab 2 RD Instruction 4280 B  
Appendix E

Energy Saving						
B. Energy Generation						
Proposed System	Amount of Energy Proposed to be Generated			BTU Value	\$ Value of Energy per Unit	Gross Income from Energy Sale
Solar		kwh		0		0
Wind		kwh		0		0
Geothermal		kwh		0		0
Biomass		kwh		0		0
Hydrogen		kwh		0		0
Hydro-electric		kwh		0		0
Natural Gas	300,000	MMBTU		3000000000000.00	15	4,500,000.00
Propanol		gal		0		0
Diesel	-	gal		-		-
Total	300,000.00			=SUM(E13:E21)		4,500,000.00
C. Energy Replacement						



- **Score Sheet Energy Calculations Tab 2 RD Instruction 4280 B Appendix E**

4	Total Current	0	0	Total Proposed	0
5	6. Simple Payback				
6					
7	Total Project Costs	4,859,764.00			
8				Income Calculation:	
9	Total Eligible Project Costs	4,859,764.00		Gross Income:	
0				Energy Sales	4,500,000.00
1	Dollar Value of Energy Saved (EEI)	0		Other Income (byproducts)	
2				Operating and Maintenance	1,000,000.00
3	Dollar Value of Energy Replaced	0.00		EBITDA	3,500,000.00
4					
5	Dollar Value of Energy Sold	4500000			
6					
7					
8					
9					
<div> <div>Score Sheet</div> <div>Energy Calculations</div> <div>Sheet1</div> <div>+</div> </div>					

EBITDA: Earnings before Interest, Taxes, Depreciation, and Amortization



- Grants are competitive
- Advantages go to the best scoring applications

# Example of Simple Payback Calculation: Anaerobic Digester

<i>Total Project Costs</i>	<i>\$2,500,000</i>	
<i>Annual Earnings:</i>		
<i>Electrical Sales</i>	<i>\$470,900</i>	
<i>Compost Sales</i>	<i>\$138,300</i>	
<i>Total Earnings</i>		<i>\$609,300</i>
<i>Annual Expenses:</i>		
<i>Operating Expenses</i>	<i>\$155,600</i>	
<i>Total Annual Expenses</i>		<i>\$155,600</i>
<i>EBITDA</i>		<i>\$453,600</i>
<i>Simple Payback (years) = Total Project costs / EBITDA</i> <i>\$2,500,000 / \$453,600 = 5.5 years</i>		<i>5.5 years</i>

EBITDA: Earnings before Interest, Taxes, Depreciation, and Amortization

# Simple Payback Point Scoring: RES

- Less than 10 years, 15 points will be awarded;
- 10 years up to but not including 15 years, 10 points will be awarded;
- 15 years up to and including 25 years, 5 points will be awarded; or
- Longer than 25 years, no points will be awarded.

# Simple Payback Point Scoring: EEI

- Less than 4 years, 15 points will be awarded;
- 4 years up to but not including 8 years, 10 points will be awarded;
- 8 years up to and including 12 years, 5 points will be awarded; or
- Longer than 12 years, no points will be awarded.

# Scoring Criteria Size of request

- For grant applications requesting less than \$250,000 for RES, or less than \$125,000 for EEI, an additional 10 points may be awarded such that a maximum score of 100 points is possible.
- All other applications will have a maximum possible score of 90 points.

# Commitment of Funds for the Total Project Cost

- If the Applicant proposes to match 50 percent or more of the grant funds requested, 20 points will be awarded
- If the Applicant proposes to match 20 percent or more but less than 50 percent of the grant funds requested, 15 points will be awarded.
- If the Applicant proposes to match 5 percent or more but less than 20 percent of the grant funds requested, 10 points will be awarded.
- If the Applicant proposes to match less than 5 percent of the grant funds requested, no points will be awarded.

# Environmental score: Maximum 5 points

- Most benefits in any of three impact areas: resource conservation (water, soil, forest); public health (potable water, air quality) and the environment (compliance with EPA rules regarding greenhouse gases, emissions, particulate matter)
- A positive impact on all 3 areas, 5 points awarded
- A positive impact in 2 areas, 3 points awarded
- A positive impact in 1 area, 1 point awarded
-

# Experience of Organization Conducting Energy Audit for EEI or the RES Project

- A maximum of 25 points will be awarded forth is criterion based on the experience of the organization in providing energy audits or doing the proposed renewable energy development project
- More than 10 years of experience, 25 points will be awarded
- At least 5 years and up to and including 10 years of experience, 20 points will be awarded.
- At least 2 years and up to and including 5 years of experience, 10 points will be awarded
- Less than 2 years of experience, no points will be awarded.



Questions, Comments,  
Thank You!  
David W. Hughes  
[dhughe17@utk.edu](mailto:dhughe17@utk.edu)

**UT EXTENSION**  
INSTITUTE OF AGRICULTURE  
THE UNIVERSITY OF TENNESSEE

