



United States
Department of
Agriculture

Rural Development



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State Office RBS Specialist

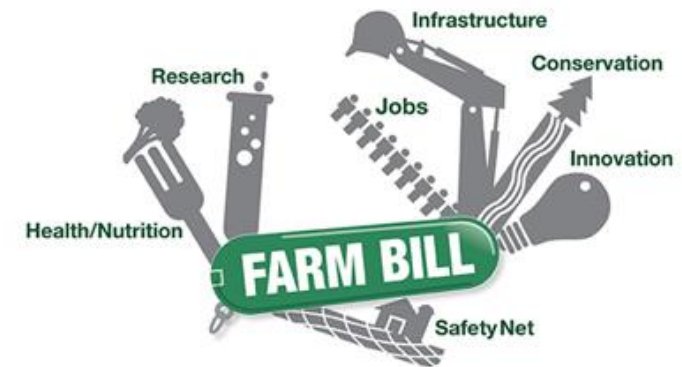
Rural Energy for America Program

MN Renewable Roundtable

October 27, 2016

Program History and Background

- Created in 2002 Farm Bill, renewed and expanded in 2008 and again in 2014
- Grants and loan guarantees for:
 - Renewable energy installations
 - Energy efficiency improvements to existing facilities or processes
- Minnesota
 - National leader since beginning of program
 - Started strong with wind, then grain dryers, now solar



"It's like a Swiss Army knife."

- President Obama 2/7/14

Eligible Applicants

Agricultural Producer



- **Individual or entity that receives 51 percent or more of their gross income from agricultural production** – crops, livestock, aquaculture, forestry operations, nurseries, dairies

Rural Small Business



- **For-profit small business** - as defined by the Small Business Administration (SBA)
- **Rural area or non-metro community of $\leq 50,000$**

* Non-profit organizations and public entities are NOT eligible

Eligible Projects

Energy Efficiency		Renewable Energy	
	Lighting		Solar
	Heating		Wind
	Cooling		Small Hydroelectric
	Ventilation		Anaerobic Digesters
	Fans		Biomass
	Automated Controls		Geothermal
	Insulation		Wave/Ocean Power



Eligible Project Costs

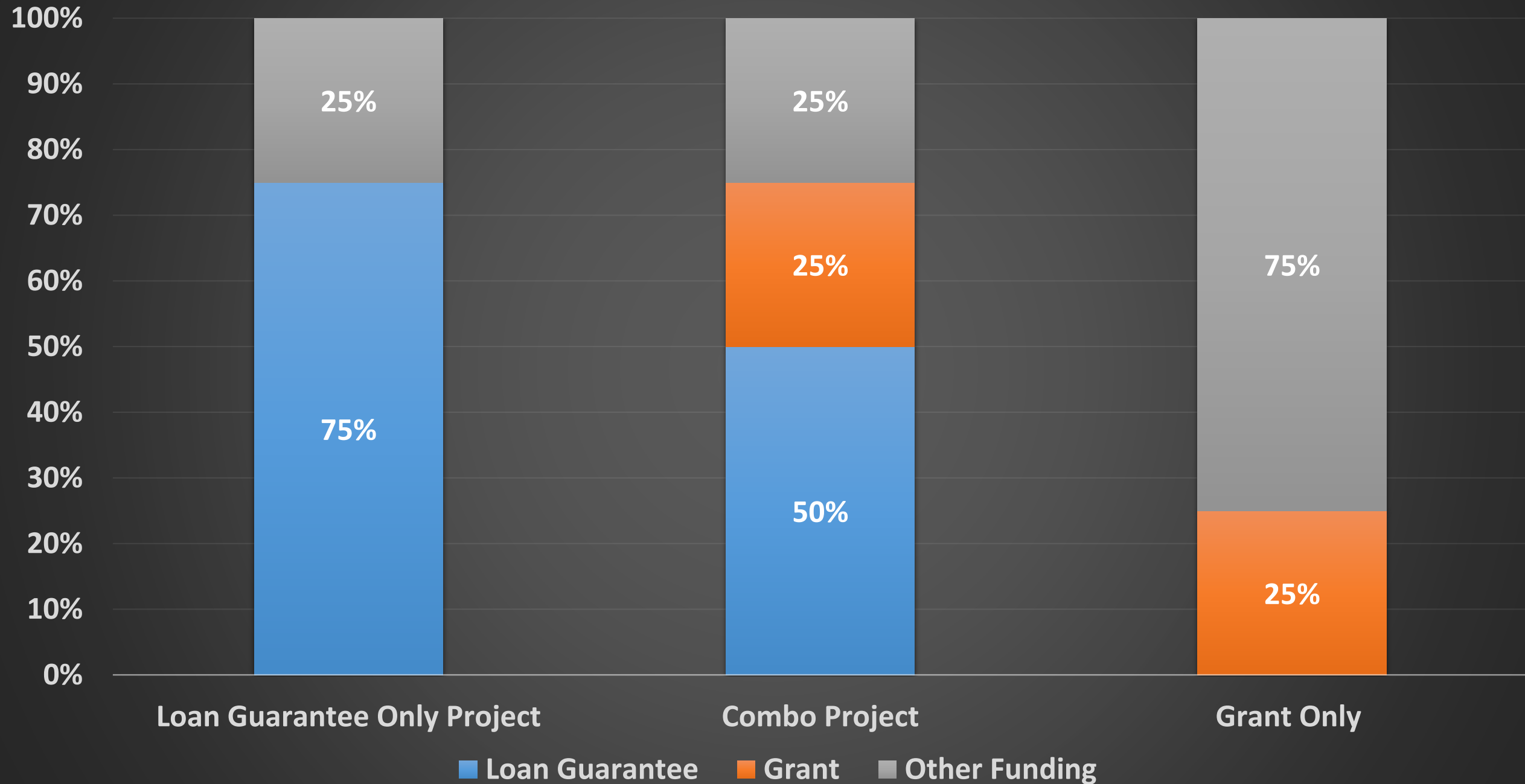
- **Equipment:**
 - Purchase & installation
 - New or refurbished
- **Post-application construction & facility improvements**
- **Retrofitting**
- **Professional service fees**
- **Permits & license fees**
- **Working capital, land acquisition (Guarantee loan ONLY with restrictions)**



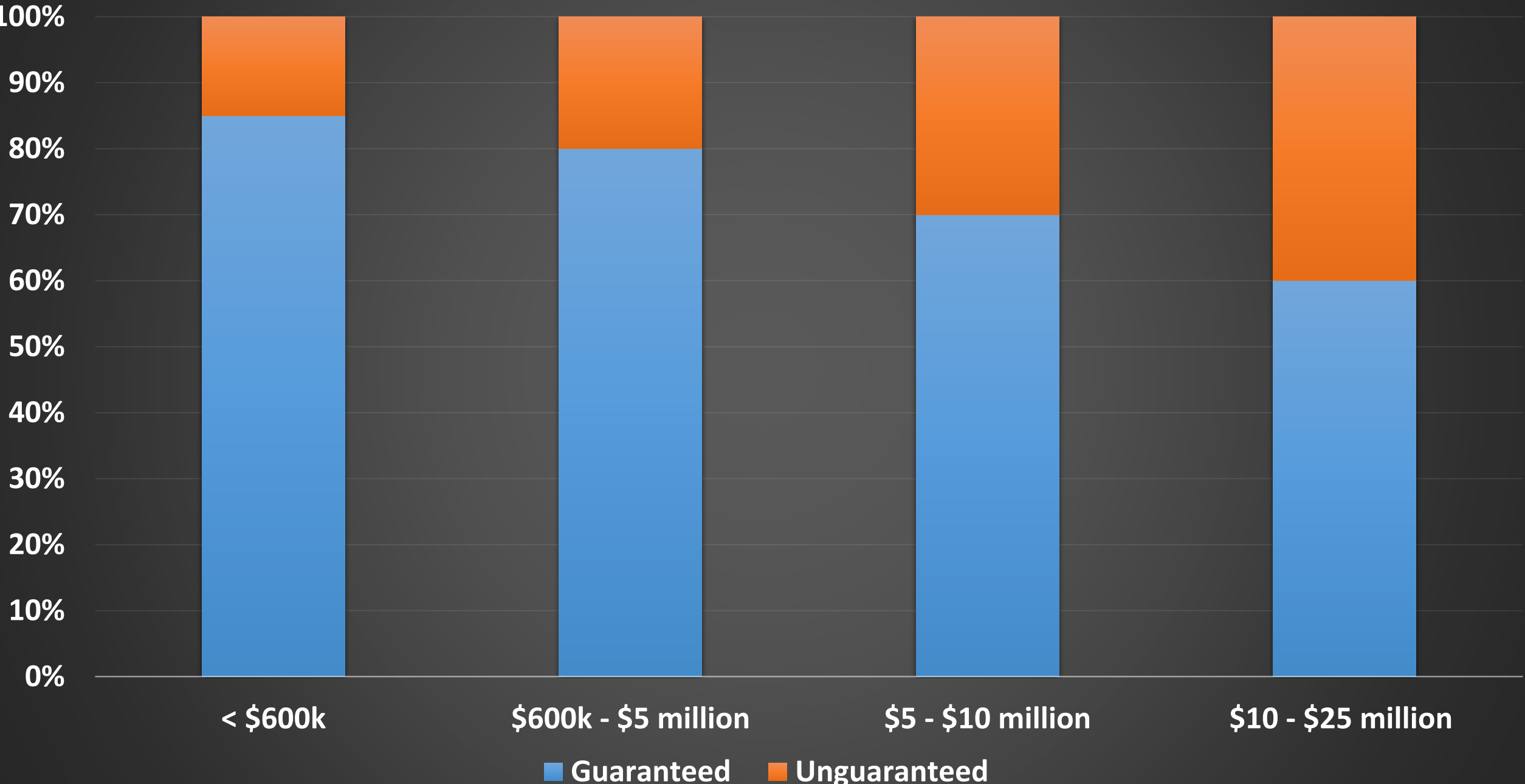
Ineligible Project Costs

- **Residential energy projects**
- **Equipment:**
 - Farm tillage equipment
 - Used equipment
 - Vehicles
- **Pre-application construction & facility improvements**
- **Application preparation or grant writer fees**
- **Line of credit**
- **Lease payments**
- **Payment to the applicant/business owner, beneficiary, or relative**

Funding Basics



REAP Loan Guarantee Percentages by Loan Size



Application Deadlines

October 31, 2016	➤ Grant Request \$20,000 or less (First Set-aside Competition)
March 31, 2017	➤ Grant Request \$20,000 or less (Second Set-aside Competition) ➤ Grant Request > \$20,000 ➤ Combination Grant/Loan Request
Continuous Application Cycle	➤ Guaranteed Loans *Loan must score a minimum of 50 to compete monthly

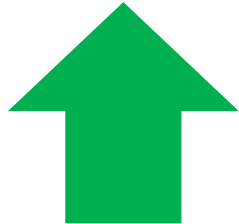
Application Timeline



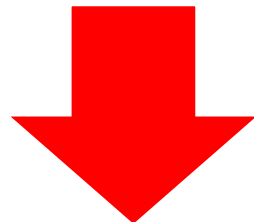
Project Scoring



8 Criteria = 100 points max



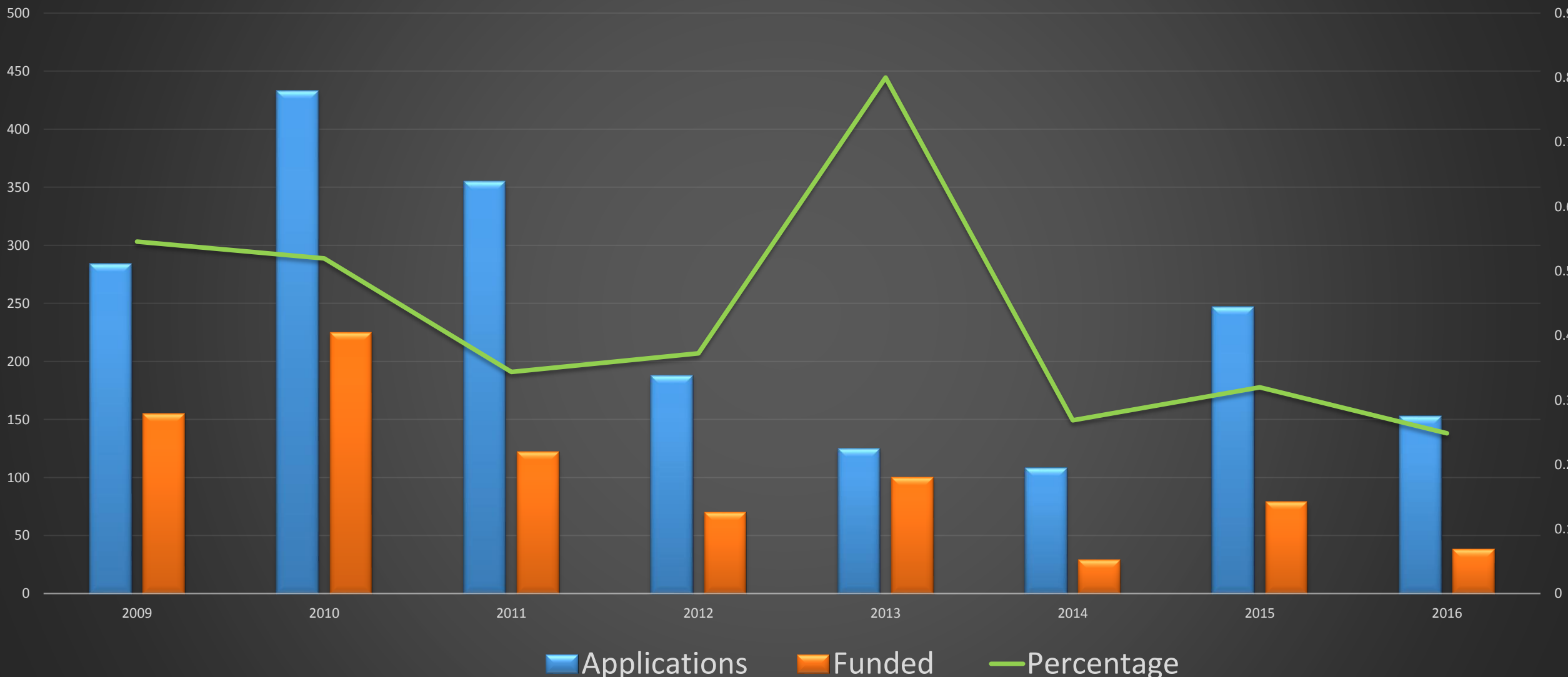
- Replacing Most Energy Usage
- Short Payback
- Small Size of Applicant (Income/Employees)



- Energy Generation
- Small Replacement
- High Cost v. Value Received
- “Large” Size of Applicant

Program Trends – Minnesota Funded Projects

REAP Applications Submitted v. Awarded



Program Results: Biomass

William Koenig

2016 REAP Grant Awardee Albany, MN

Biomass Furnace for Broiler Chicken Barn (\$132,380)

2 barns on site (one control and one to use biomass)

Site Assessment provided by Fritz Ebinger (CERTS)

- Predicted saving of 13,000 gallons propane/year

Results: Five flocks have been run through in 2015/2016

- 11,262 gallon saving of propane (between 61-77%)



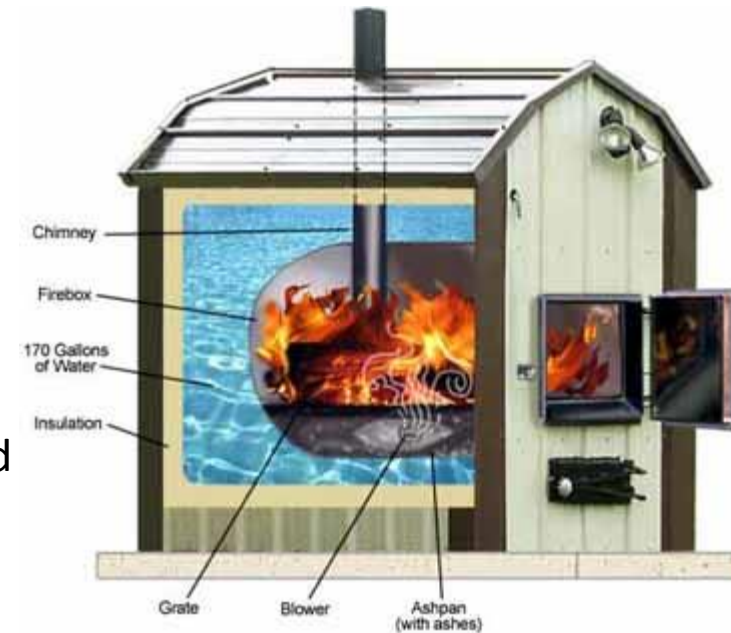
Program Results: Biomass

15 REAP Funded Projects

- Biomass Burners
- Small Ethanol and Biodiesel Plants
- Pellet Production

Overall results:

- Little data to be confident
- Energy savings seems to be realized
- Cost savings dependent on delivered fuels markets and access to feedstock



Program Results: Solar

Janaki Fisher-Merritt

- Operates Food Farm
 - Organic Vegetable Farm
 - South of Duluth
 - 10kw Solar PV = 12,960 kwh annual production

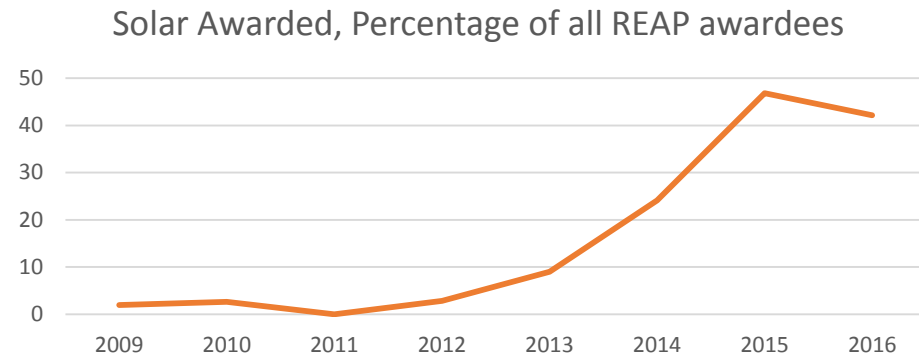
Project results:

- Actual production = 13,500 kwh/year
- Replacing 75% of farm usage
- Energy produced used for food cellar, greenhouse and tractor



Program Results: Solar

Percentage awarded has increased dramatically



Performance have been at or above projections:

- Analysis of 12 awardees
 - All produced at least 95% of projections
 - 75% produced over projects
 - Average over 100% of predicted production



Program Results: Geothermal

Andy Henning

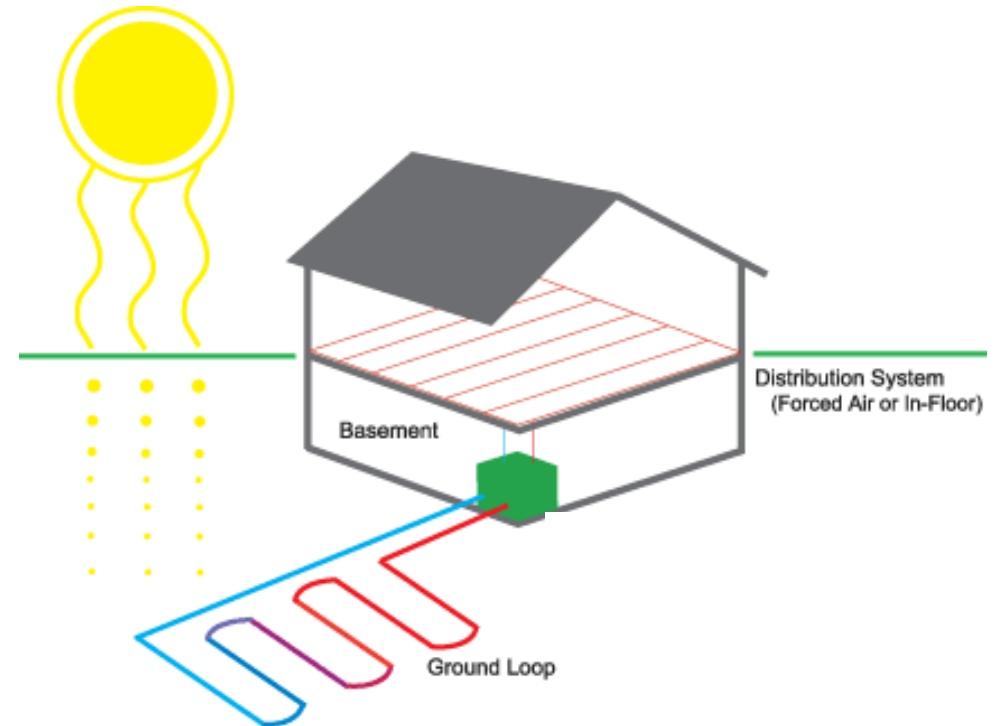
New Farm Shop

Decided to install geothermal instead of propane

Eliminated the need for block heaters on equipment and 1144 gallons of propane/year

Estimated to save \$2000/year in heating costs (\$2.00/gallon propane)

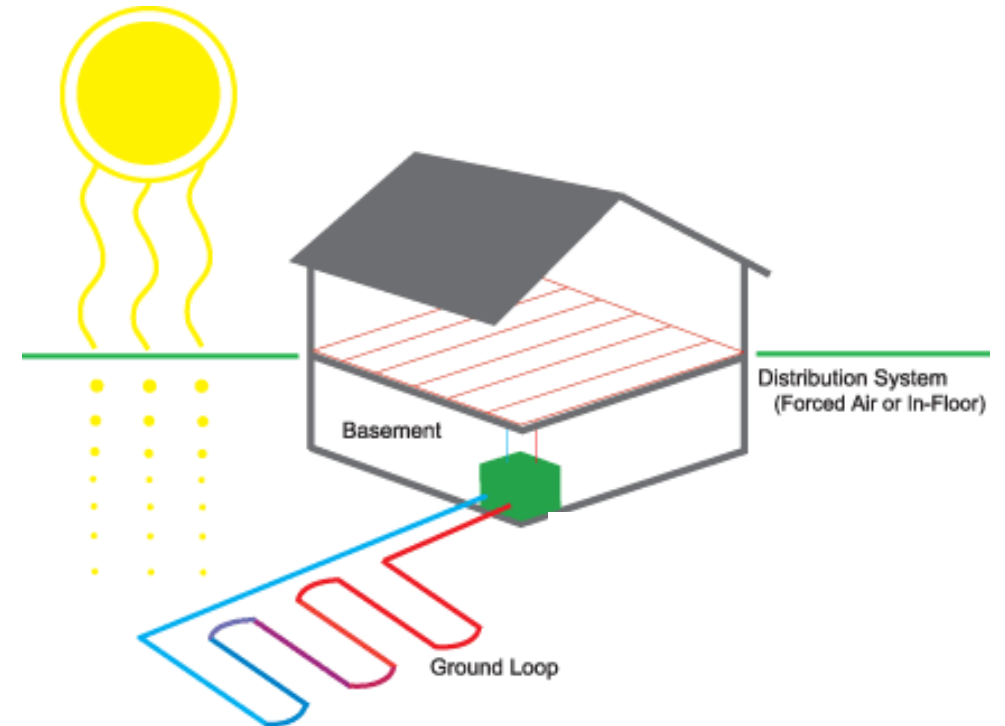
Meeting expectations based on performance reporting



Program Results: Geothermal

Overall performance results

- Most projects have reported performance as equal to projections
 - Generally new farm shops
 - Difficult to compare (no meter)
- Recipients are pleased with the results
 - In-floor heat
 - Relatively passive system



Program Results: Energy Efficiency

Country Pork LLP

Farrow to Finish Hog Operation

New controllers to automatically adjust the heat output to match the needs of the baby pigs (\$32,946)

Energy audit detailed the cost and energy savings

- Predicted 35% energy savings/year
- \$8282/year

Meeting expectations based on performance reporting



Program Results: Energy Efficiency

Overall Results:

- Dominated by energy efficiency grain dryers
 - Energy savings are weather dependent (wet year v. dry year)
 - Cost saving dependent on propane cost
- Overall people are pleased with system as the modern system requires less monitoring
- More capacity allows drying to be done in less time





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