



Welcome!

Solar Panels & Your Farm

Local Educational Event

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United States Department of Agriculture

USDA Rural Development Business Program Funding Opportunity

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United States Department of Agriculture

Rural Business Programs

- Business & Industry Guaranteed Loans (B&I)
- Rural Energy for America Program (REAP)
- Rural Economic Development Loans/Grants (REDLG)
- Intermediary Relending Program (IRP)
- Rural Business Development Grants (RBDG)
- Value Added Producer Grants (VAPG)

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Rural Energy for America Program (REAP)

- Farmers and rural small businesses eligible
- Purchase renewable energy system or make energy efficiency improvements
- 25% grant – eligible project costs
- Guaranteed Loans available

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Grant Funding

- Grants may be made for up to 25% of *eligible* project costs
- Renewable energy max grant: \$500,000
 - Minimum: \$2,500
- Energy efficiency max grant: \$250,000
 - Minimum: \$1,500

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REAP Guaranteed Loans

- Normally 80% guarantee
 - 85% for loans \$600,000 or less
 - 70% for loans greater than \$5 million
- Loan amount limited to 75% of total eligible project costs
- Maximum guaranteed loan amount: \$25 million

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Rural Energy for America Program (REAP)

- Grain dryer replacement
- Biomass furnaces (thermal conversion)
- Geothermal (heat pump) HVAC
- Anaerobic digesters
- Solar
- Small wind
- Biomass pelletizer (mfg pellet fuel)
- Energy Efficiency building improvements (lights, insulation, windows, HVAC)

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Rural Energy for America Program (REAP)

- Ineligible uses
 - Residential
 - Agricultural equipment
 - Used equipment
 - Vehicles
 - Expenses incurred before application is received

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Rural Energy for America Program (REAP)

Application deadlines:

October 31, 2018 for grant requests of \$20,000 or less

April 1, 2019 for over and under \$20,000 grant requests

Open application cycle

Apply before you start project

Application templates

Competition for funds – 2 or 5 times

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Rural Energy for America Program (REAP)

Funding:

FY '17 – Allocation \$824,000

FY '17 – Obligated \$962,000 on 49 projects

FY '17 – most REAP grants in the country

FY '18 -- \$832,000 allocation

FY '18 -- \$866,797 obligated – 52 projects

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Rural Energy for America Program (REAP)

Applicants will need to obtain a DUNS (Data Universal Numbering System) number and register that number in the System for Awards Management (SAM.gov) prior to submitting an application.

Obtain a free DUNS number by calling 1-800-234-3867 or go to: <http://fedgov.dnb.com/webform>

SAM Registration Cage Code, register at no charge at: <https://www.sam.gov> or call 1-866-705-5711

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Rural Energy for America Program (REAP) Energy Audit Assistance

<https://reap.missouri.edu/>

(573) 882-2731

mufsbreap@missouri.edu

Grant writers are available upon
request

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Rural Energy for America Program (REAP)

Scoring:

- 1.) Quantity of Energy Generated, Replaced or Saved – 25 points
per grant or loan dollar requested
- 2.) Percent energy replaced or saved -- 15 points
- 3.) Environmental benefits – 5 points
- 4.) Commitment of funds – 20 points
- 5.) Size of REAP request – 10 points
EEL grant request of less than \$125,000
RES grant request of less than \$250,000
- 6.) Previous grantee or borrower – 15 points
- 7.) Simple payback – 15 points
- 8.) State Director/Administrator – 10 points

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Websites

- Missouri USDA Rural Development:

<http://www.rd.usda.gov/mo>

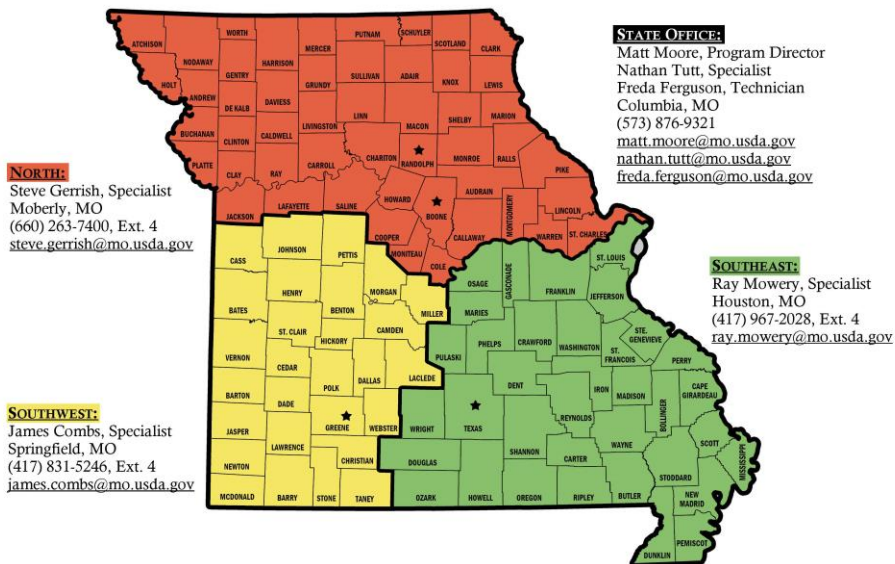
- Missouri Business Webpage:

<https://www.rd.usda.gov/programs-services/all-programs/business-programs>

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USDA RURAL DEVELOPMENT — MISSOURI BUSINESS PROGRAM CONTACTS



Questions?



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Luke Phelps

SunPower, LLC



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Sun Power
LLC



Sun Power Staff



Sun Power LLC

Our Commitment

- Clean Affordable Energy
- Dependable Service
- Jobsite Excellence



General Terminology and Equipment

- Solar Module/Panel
- Inverter
- Racking
- Ground Mount v. Roof Mount
- Grid vs. Off-Grid
- Annual vs. Monthly Net Metering



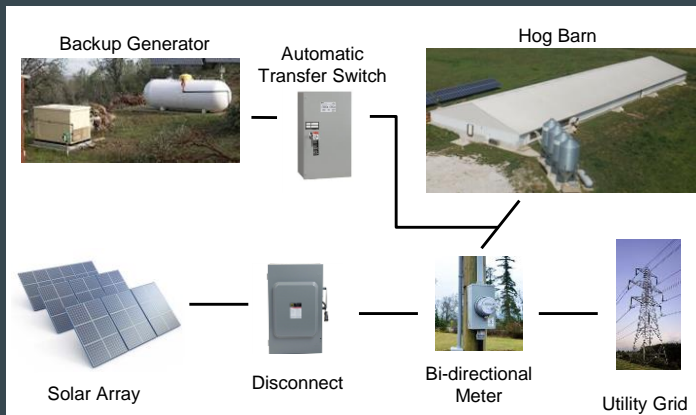
Solar System Basics



- No moving parts
- No input cost for fuel
- Long warranties
- Proven technology
- Production guaranteed
(Backed by Van Meter Inc.)



Common Hog Facility Setup



How Does The System Work

- Solar modules convert sunlight to electricity
- Inverter converts DC to AC
- AC power from the solar system supplies power to your hog barn, etc.
- The grid supplies power to cover your remaining needs
- When the grid is down, the inverter shuts down the solar system
- Your transfer switch engages and your generator backs up your power
- Generator is your backup supply in emergencies
- Our goal is to offset 65-90% of your electricity needs.
- Grid supplies the rest



Net Metering

- Your total power usage
- Your total solar production
-
- You pay the difference

(or goal is to produce 65-90% of your needs)





Real World Financial Example



- 25% REAP Grant
- Depreciation
- 30% tax credit
- Ameren Rebate (\$0.50/watt)

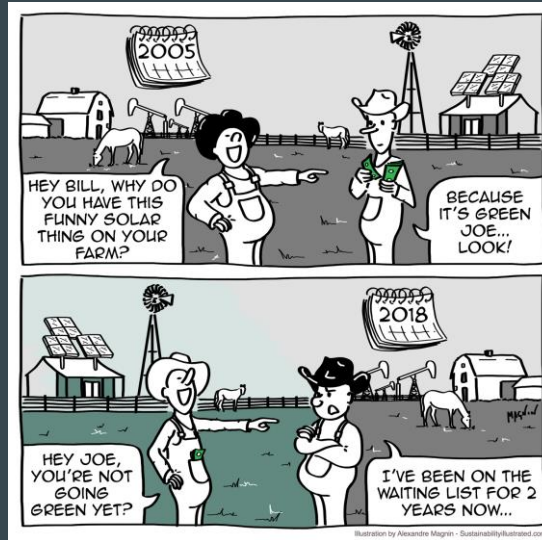


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Assumes a 2% inflation of retail energy costs									
YEAR	COST	FED TAX CREDIT	REAP GRANT	DEPRECIATION	ENERGY I'M NOT BUYING	CASH FLOW	ECONOMIC SUMMARY	CUSTOMER:	5000 HEAD OPEN AIR/TUNNEL
								DATE:	
1	\$ (90,188)	\$ 27,056	\$ -	\$ 12,626	\$ 8,775	\$ (41,730)			
2	\$ (41,730)				\$ 8,951	\$ (32,780)			
3	\$ (32,780)				\$ 9,130	\$ (23,650)			
4	\$ (23,650)				\$ 9,312	\$ (14,338)			
5	\$ (14,338)				\$ 9,498	\$ (4,840)			
6	\$ (4,840)				\$ 9,688	\$ 4,849			
7	\$ 4,849				\$ 9,882	\$ 14,731			
8	\$ 14,731				\$ 10,080	\$ 24,811			
9	\$ 24,811				\$ 10,281	\$ 35,092			
10	\$ 35,092				\$ 10,487	\$ 45,579			
11	\$ 45,579				\$ 10,697	\$ 56,275			
12	\$ 56,275				\$ 10,911	\$ 67,186			
13	\$ 67,186				\$ 11,129	\$ 78,315			
14	\$ 78,315				\$ 11,351	\$ 89,666			
15	\$ 89,666				\$ 11,578	\$ 101,245			
16	\$ 101,245				\$ 11,810	\$ 113,055			
17	\$ 113,055				\$ 12,046	\$ 125,101			
18	\$ 125,101				\$ 12,287	\$ 137,388			
19	\$ 137,388				\$ 12,533	\$ 149,921			
20	\$ 149,921				\$ 12,784	\$ 162,704			
21	\$ 162,704				\$ 13,039	\$ 175,744			
22	\$ 175,744				\$ 13,300	\$ 189,044			
23	\$ 189,044				\$ 13,566	\$ 202,610			
24	\$ 202,610				\$ 13,837	\$ 216,447			
25	\$ 216,447				\$ 14,114	\$ 230,561			
							ENERGY NEEDS	\$	100,000
							SOLAR PRODUCTION	\$	73125
							PERCENTAGE PRODUCED BY SOLAR		73%
							SYSTEM COST	\$	90,188
							FEDERAL TAX CREDIT	\$	27,056
							STATE TAX CREDIT	\$	-
							TOTAL DEPRECIATION (COMMERCIAL)	\$	12,626
							FIRST YEAR ENERGY SAVINGS	\$	8,775
							NET COST AFTER YEAR ONE	\$	(41,730)
							HOW MUCH DOES RETAIL ENERGY COST ME TODAY?	\$0.12	PER KWH
							HOW MUCH DOES IT COST ME TO MAKE MY OWN ENERGY?	\$ 0.032	PER KWH



Assumes a 2% inflation of retail energy costs

YEAR	COST	FED TAX CREDIT	REAP GRANT	DEPRECIATION	ENERGY I'M NOT BUYING	CASH FLOW	ECONOMIC SUMMARY	CUSTOMER: 5000 HEAD OPEN AIR/TUNNEL			
								DATE:			
1	\$ (90,188)	\$ 27,056	\$ 22,547	\$ 12,626	\$ 8,775	\$ (19,183)					
2	\$ (19,183)				\$ 8,951	\$ (10,233)					
3	\$ (10,233)				\$ 9,130	\$ (1,103)					
4	\$ (1,103)				\$ 9,312	\$ 8,209					
5	\$ 8,209				\$ 9,498	\$ 17,707					
6	\$ 17,707				\$ 9,688	\$ 27,396					
7	\$ 27,396				\$ 9,882	\$ 37,278					
8	\$ 37,278				\$ 10,080	\$ 47,357					
9	\$ 47,357				\$ 10,281	\$ 57,639					
10	\$ 57,639				\$ 10,487	\$ 68,126					
11	\$ 68,126				\$ 10,697	\$ 78,822					
12	\$ 78,822				\$ 10,911	\$ 89,735					
13	\$ 89,735				\$ 11,129	\$ 100,862					
14	\$ 100,862				\$ 11,351	\$ 112,213					
15	\$ 112,213				\$ 11,578	\$ 123,792					
16	\$ 123,792				\$ 11,810	\$ 135,602					
17	\$ 135,602				\$ 12,046	\$ 147,648					
18	\$ 147,648				\$ 12,287	\$ 159,935					
19	\$ 159,935				\$ 12,533	\$ 172,468					
20	\$ 172,468				\$ 12,784	\$ 185,251					
21	\$ 185,251				\$ 13,039	\$ 198,290					
22	\$ 198,290				\$ 13,300	\$ 211,580					
23	\$ 211,590				\$ 13,566	\$ 225,156					
24	\$ 225,156				\$ 13,837	\$ 238,994					
25	\$ 238,994				\$ 14,114	\$ 253,108					



@FCSFinancial

Miles Cameron

Vice President, FCS Financial

Loan & Lease Options



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Loan Options

- **Term:** 1-10 year loan
- **Interest Rate:** Fixed or adjustable rate
- **Payment Frequency:** Monthly or annual, payment matched to income
- **Collateral:** Real estate, equipment
- **Loan Process:** Application, gather financials (balance sheet, tax returns, scope of operation and cash flow)

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Lease Options: Farm Credit Leasing

- **Term:** Typically 36-84 months
- **Interest Rate*:** 5.95%*
- **Payment Frequency:** Monthly or annual
- **Collateral:** Equipment

*As of 10/15/18



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Thank-you!

Please complete
the surveys and
leave on tables.



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