

USDA/Natural Resources Conservation Service Programs/ On-Farm Energy Initiative

**Presented by David Faulkner, Natural
Resource Economist with the
USDA/NRCS/Richmond, Virginia
February 17th, 2015**

NRCS Programs/Energy Initiative

Our energy initiative is a part of the Environmental Quality Incentives Program (EQIP) with two program offerings related to on-farm energy use:

1) On-Farm Agricultural Energy Management Plans (financial assistance to procure energy management plans; also called energy audit reports); and

2) On-farm Energy Improvements (financial assistance in implementing energy audit report recommendations);

Who can benefit from an audit?

- Farms with old buildings, machinery, and equipment that use energy:
 - Poorly insulated and heated production facilities
 - Inefficient ventilation fans, motors, pumps, etc.
 - Inefficient milk cooling/other refrigeration equip.
 - Inefficient grain drying equipment
 - Inefficient tobacco curing barns
 - Inefficient maple syrup evaporators
 - Lack of electronic controllers in facilities

EQIP Process

- Client applies for financial assistance for either a CAP 128 energy audit of HQ & related facilities or for a field operations audit or potentially both;
- NRCS processes and ranks application then contacts client if/when their application gets approved and a contract is ready to be signed;

EQIP process continued

- After signing an EQIP contract the client gets a list of TSPs certified for CAPs in their state; the client then identifies and contacts the TSP of their choice and negotiates a contract for TSP services;
- Certified TSPs: the list of currently certified TSPs for CAP122s are available at:
<http://techreg.usda.gov/>

FY14 EQIP Summary

- We have funded well over 100 CAP122 energy audit reports w/ an added **50 in FY14**;
- We also had **46 contracts approved in FY14 to implement recommendations** included in audit reports;
- Combined in FY14 NRCS/VA dedicated over **\$1,142,000 of EQIP funds to our energy initiative**;

EQIP process continued

- TSP will send you a packet of information and start on-farm audit data collection; the TSP will need copies of your bills for propane, electricity, and any other energy you used over the last 12 months at a minimum;
- The TSP will also conduct a face to face or telephone interview with you (about 45 minutes to an hour and a half long) and schedule to send someone out to your farm to collect additional data;

EQIP process continued

- Data on existing equipment, lights, buildings and any other machinery that uses energy will be utilized by the TSP to prepare a draft audit report;
- Once submitted to the NRCS & client, the local NRCS planner will do a functional review then certify completion and process payment; you can then apply to implement improvements;

Estimated Payback Periods (range for avg. # of yrs. - shortest to longest)

- Poultry: 2.6 yrs – 15.9 yrs (average: 10.4)
- Tobacco: 0.6 yrs – 7.2 yrs (average: 4.30)
- Dairy: 1.9 yrs – 6 yrs (average: 4.4)
- Cash-grain: 3.7 yrs – 4.6 yrs (average: 4.3)

Farm Type	Typical Audit Recommendations								
Poultry	Seal air leaks	Seal attic inlets	Replace lighting	Replace ventilation fans	Replace brood heaters	Insulate dropped ceiling	Insulate brood curtains	Install electronic controls	Insulate foundation wall
Tobacco	Replace heat exchangers	Install new or retrofit dampers & install modulation controls	Add and/or replace insulation	Seal air leaks	Relocate existing motors to outside of barns	Replace electric motors	Improve O&M in curing barns	Replace obsolete curing barns	Insulate foundation wall
Dairy	Install variable speed drive vacuum pumps for milk collection	Install compressor heat recovery to augment the existing water heaters	Replace lighting	Replace electric motors	---	---	---	---	---
Cash-grain	Replace old grain dryers	---	---	---	---	---	---	---	---

EQIP-Funded on-farm Energy Improvements

- EQIP provides funds to help pay for on-farm energy improvements:
 - All of the offerings currently fall under the 374, 670 and 672 practice codes (Farmstead Energy Improvement, Lighting System Improvement and Building Envelope Improvement);
 - The key is that you have to have an audit report that meets the ASABE S612 Std. for Type 2 audits;

FY15 374 Offerings

Lighting, ventilation and motor upgrades as well as installation of variable speed drives to enhance operating efficiency of motors;

High efficiency heating systems, electronic controls, insulation and sealing of air leaks, thermal blankets, insulated curtains and screens; heat recovery vents;

Audit Take-away-points

- Farms with older equipment, machinery and buildings are the best candidates for realizing energy savings with short payback periods from implementing audit recommendations;
- Savings projections and payback periods are a function of the age and condition of existing equipment, machinery and buildings and assumed energy costs;

Audit Take-away-points (continued)

- Savings projections and payback periods should be evaluated on an individual improvement by individual improvement basis for each farm's situation;
- Improved operation and maintenance usually is cost-effective, i.e., pays for itself each year during the life of equipment, machinery and buildings;

Audit Take-away-points (continued)

- Improvements with payback periods longer than 10 years are not generally recommended (unless the expected useful life is greater than the projected payback period);
- NRCS will not fund improvements with payback periods greater than 10 years;

Added Value to Your Farm from an Audit

- The real value of an energy audit is derived from the specific deficiencies that are evaluated and the estimated costs and payback periods for each improvement. This information allows the farmer to evaluate and decide which specific investments are worth making and which ones aren't.

On-Farm Energy Improvement Take-away-points

On-farm improvements can make the cash-cost hurdle and payback/breakeven periods much easier to deal with (significantly reducing investment payback periods);

Conclusions

- The bottom-line is that an on-farm energy audit can be a great tool for making your farm operation more efficient and profitable.
- Farmstead energy improvement assistance can help you implement audit report recommendations;

Questions?



United States Department of Agriculture
Natural Resources Conservation Service

The U.S. Department of Agriculture (USDA) prohibits discrimination against its customers, employees, and applicants for employment on the bases of race, color, national origin, age, disability, sex, gender identity, religion, reprisal, and where applicable, political beliefs, marital status, familial or parental status, sexual orientation, or all or part of an individual's income is derived from any public assistance program, or protected genetic information in employment or in any program or activity conducted or funded by the Department. (Not all prohibited bases will apply to all programs and/or employment activities.)