

## Save Energy (and money) on the Farm

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If you run a farm, greenhouse or other agricultural operation you know that energy is one of your biggest operating costs. A farm can be a great place to generate energy, but it takes time to get that kind of project off the ground.

Meanwhile, here are some practical things you can do now to conserve energy:

- Reduce pesticide costs and staff time, minimize harmful effects on humans and the environment by using Integrated Pest Management (IPM). A 24% reduction in pesticide use can save about \$40 per acre in an orchard.
- Manage irrigation to prevent soil saturation and

runoff, saving water and energy to pump it.

- Manage the nutrients coming into your operation (fertilizer, soil amendments) and going out (manure, plant waste). Nutrient management includes timing and placement of applications to maximize soil health and minimize water pollution.
- Save on heat bills by planting windbreaks to cut evaporation and block wind stress and air leakage into buildings. While you're waiting for the plants to grow, don't forget to button up leaky cracks, windows and doors on all farm buildings.

- Maintain your equipment regularly, replacing aging motors with high efficiency models, especially in CAFOs
- Utilize no-till agricultural practices as often as you can. This includes leaving crop residue undisturbed, planting in narrow strips to minimize soil disturbance. No-till agriculture cuts evaporation and runoff by at least 70%; reduces tillage time by as much as two thirds and improves wildlife habitat—including earthworms so essential to soil quality.
- A prescribed grazing system saves on feed costs—and the energy it costs to grow it. □

Keep up with the news about NH Farm Energy Initiative at Southern NH RC&D's website (<http://www.nhrcd.net>)

## NH Farm Energy Initiative to Help Ag Operators' Energy Bottom Line



Winter is a great time to plan an energy audit, conservation strategy or sustainable power generation project for your farm or forest land.

Agriculture, one of the biggest drivers of NH's economic engine, is also one of the state's biggest users of energy. Whether it be heating barns and greenhouses, fueling farm and logging equipment, powering irrigation or trucking goods to market, NH

farmers use lots of energy.

Unfortunately, a statewide lack of appropriate technical resources makes it difficult for owners to assess their operation's energy use accurately and come up with a comprehensive plan to reduce costs and conserve energy.

On the other side of the energy equation, "Not only can NH farms find significant energy savings, they can be great locations for generating power," says Southern NH Resource Conservation & Development (SNHRC&D) Chair Webb Palmer.

Most NH farmers, however, find themselves stymied by a lack of information and technical services. In short, NH lags behind other states when it comes to the availability of information

and resources required to conserve energy and integrate sustainable energy generation into an agricultural operation.

Recently SNHRC&D Area Council began a statewide two-year Farm Energy Initiative to help NH farmers achieve better energy efficiency in their operations, lowering operating costs as it benefits the environment.

The project, funded by NH Public Utilities Commission's Regional Greenhouse Gas Initiative Fund, will use a two-pronged approach of education and professional energy audits to set the stage for creation of a long term, sustainable energy plan for NH's agricultural industry.

The educational component

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## Calling All Technical Service Providers: NRCS Wants You to Help NH Farmers

Energy audits—and the Technical Service Providers (TSPs) needed to conduct them—are a linchpin of the new Farm Energy Initiative described above.

The project is seeking experienced, certified TSPs to conduct farm audits and to plan, design and lay out

audit-based farm energy plans and check out completed conservation practices. Currently there are no TSPs for energy in the state

The Farm Energy Initiative would like to correct that deficit. "We're creating the agricultural energy

infrastructure for the state of NH" says Stacy Luke, District Manager of Merrimack County Conservation District, pointing out the need for local TSPs.

How does one become a certified Technical Service Provider? The short answer is

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"Not only can NH farms find significant energy savings, they can be great locations for generating power."

Webb Palmer,  
Chairman  
SNHRC&D  
Area Council Board

### NH Farm Energy Initiative Partners

- ◆ So. NH and North Country Resource Conservation & Development Area Councils
- ◆ NH Coalition for Sustainable Agriculture
- ◆ NH Department of Agriculture, Markets & Food
- ◆ NH Department of Environmental Services
- ◆ NH Office of Energy & Planning
- ◆ Merrimack County Conservation District
- ◆ NH Public Utilities Commission
- ◆ USDA Natural Resource Conservation Service
- ◆ USDA Farm Service Administration
- ◆ USDA Rural Development
- ◆ UNH Cooperative Extension Service
- ◆ EnSave



A comprehensive farm energy audit sets the stage for energy conservation, enabling producers to save money as alternative energy sources are developed.

## Why Should You Get a Farm Energy Audit?

As we go into the second decade of the 21st century, two of the conditions affecting agriculture are very plain. One is the increasing demand for petroleum-based energy and its increasing portion of the cost of agricultural production.

The other is the increasing world-wide demand for food and the consequent importance of a healthy and growing regional framing capacity with short transport requirement.

Unpredictable energy costs, which are beginning to stress some of the major farming regions of the US, makes the protection and expansion of our regional farming capacities even more important.

An important first step in this effort is the farm energy audit which can produce an analysis of your current operations and point out the aided steps you can take to make your energy use as efficient as possible. This can give you a production

cost saving while we develop other alternate non-petroleum energy sources for agricultural requirements, which could include bio-fuels, wind, solar and geothermal.

Several major farming states, including Wisconsin, Michigan, New York, Massachusetts, Maine and Maryland have active farm energy auditing programs. Let's go, New Hampshire!

James H. Moore, Secretary  
Board of Directors SNHRC&D

## NH Farm Energy Initiative

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features a series of daylong and evening workshops in each county. The meetings will educate an estimated 200 NH agricultural operators about techniques to reduce farm energy use. Topics include how to conduct a farm energy audit; identifying options for change; evaluating the risks and benefits of various options and developing a farm energy plan.

As part of the second "prong" of the project, 25 NH agricultural operations will receive full professional farm energy audits. The audits—to be conducted by EnSave, a

Vermont-based firm which has conducted over 2000 agricultural energy audits in the past 20 years—will be used as a basis for in-depth, realistic solutions to individual farm's energy challenges.

The audits are a first-step requirement for applying the Rural Energy for America Program (REAP). Additionally, "NRCS will be rolling out cost-share Conservation Activity Plans focused on energy in 2010," says Merrimack County Conservation District Manager and Farm Energy Initiative Program Manager Stacy Luke.

REAP helps ag producers in

rural areas reduce energy use and expand opportunities for renewable energy. The program issues grants, guaranteed loans, or a combination of the two to a variety of projects. (See stories, Page 3)

The project kicked off with a daylong workshop January 12 in Concord. As the year unfolds the NH Farm Energy Initiative will unroll ten county-specific evening meetings; training workshops for technical service providers (TSPs); ten county TSP-led county workshops and three workshops at the 2010 NH Farm & Forest Expo. □

## Calling All TSPs

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to contact NRCS NH TSP Coordinator Rachael Phillips-Tibbetts at (603) 868-9931 ext. 129 or by e-mail at [rachael.phillips@nh.usda.gov](mailto:rachael.phillips@nh.usda.gov).

While you're on line you might want to do some preliminary research about TSP

requirements, rewards and responsibilities on the NRCS NH website. Go to <http://www.nh.nrcs.usda.gov> and click on the Technical Service Provider (TSP) Quick Access link on the left side of the page. This leads you to a page that explains what a

TSP is and what one does.

Other links, including a NH Quick Guide, on the lower part of the page lead to further information about the roles TSPs, NRCS and agricultural cooperators play in conservation planning. □



Technical Service Providers are needed to conduct energy audits for the NH Farm Energy Initiative

"We're creating the agricultural energy infrastructure for the state of N.H."  
Stacy Luke, Manager  
Merrimack County  
Conservation District

## The Importance of Being Audited: A First Step towards Conserving Energy

Apple grower Rob Larocque learned the hard way about the unique needs of a farm energy audit. His local electric company conducted a free energy audit which proved inadequate in addressing the needs of his orchard.

An energy audit is the first step in energy conservation and planning. Larocque had hoped to use his audit results to develop a cost-effective plan for his orchard. Larocque needs specific information to calculate break-even points for various energy-saving options. "We've probably got 35 motors running here," says Larocque. "I don't know if

running a 110 motor is cheaper than a 220."

Many power companies offer free audits to their business and residential customers. But, as any farmer can tell you, the challenges of an agricultural operation, with heated and unheated buildings, different kinds of motors, animals and plants in residence are different from those of a factory or home. "What I'd like to see is a five-year plan."

The NH Farm Energy Initiative will be conducting a series of comprehensive energy audits, with specific, in-depth energy

solutions, on 25 farms or ag operations. Each farmer will make a \$100 deposit, refundable upon completion of at least one audit finding; the audits are worth \$1500 apiece. There will be two rounds of energy audits, with deadlines of January 29 and March 31, respectively.

Please contact Ann Bowes at Southern NH RC&D by phone (603-223-0083) or e-mail ([nhfarmenergy@gmail.com](mailto:nhfarmenergy@gmail.com)) if you would like to learn more about participating in an energy audit or visit <http://www.nhrccd.net> to download the application. □

## Reap the Benefits of REAP on Your Farm

USDA Rural Development's Rural Energy for America Program (REAP) helps farmers and other agricultural operators install energy conservation measures and purchase renewable energy systems through a variety of grants, loans and loan guarantees.

Ag producers in most areas of NH are eligible for REAP help with renewable energy and conservation projects. The latter requires a full energy audit for \$50K+ projects; projects below \$50K with a completed audit get five extra points in the scoring criteria. REAP gives priority to

small (less than \$20K) projects.

Contact Steve Epstein at 603-223-6045 or consult the Rural Development website ([www.rurdev.usda.gov/vt](http://www.rurdev.usda.gov/vt)) to learn more about REAP. Meanwhile, take the first step by considering an energy audit for your operation. □

## Energy Generation: Power to the People on Farm, Forest or Orchard

While energy conservation is the initial focus of the NH Farm Energy Initiative, the ultimate goal is greater freedom from petroleum-based energy. Given the appropriate infrastructure, NH farms could generate energy—and income if operators are able to sell any excess.

Generation of alternative energy necessitates a regional approach. The following

methods are likely to be more feasible for NH:

- Small hydro: Water is abundant; permitting and maintenance are issues.
- Wind: As in real estate "location, location, location"
- Manure: A challenge for NH because it requires a relatively large amount of raw material, the ability to keep the pile hot in winter and appropriate soils to

absorb the liquid manure by-product

- Solar: Promising in the right locations
- Bio-mass: Limited cropland is a challenge, but wood biomass is abundant; NH is 83% forest.
- Thermal/Geothermal with pump: A lot of potential, especially for thermal heating of water. □

"I don't know if running a 110 motor is cheaper than running a 220 motor."

Rob Larocque, Owner  
Carter Hill Orchard



Given an optimal location, wind power offers potential for energy generation on New Hampshire farms.



NH's abundant forests can provide wood biomass for wood chips or pellets use in energy generation.