



WSARE Agricultural Renewable Energy Training Seminar Agenda

MT Weatherization Training Center, Bozeman, MT November 29-30, 2011

| November 29: Introduction to Renewable Energy | | |
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| Topic | Presenter | Duration |
| Introduction to Training <ul style="list-style-type: none"> • Purpose of Training • Introduction to E3A Toolkit • Review of Agenda and Speakers | Sarah Hamlen, MSUE and Tom Pick, NRCS | 8:00 to 8:15 |
| Basics of Energy <ul style="list-style-type: none"> • Energy Pyramid as Instructional Tool • Assessing Producer Needs and Objectives | Sarah Hamlen, MSUE | 8:15 to 8:30 |
| Farm Energy Audits <ul style="list-style-type: none"> • Components of Energy Audit • Understanding an Energy Audit & NRCS Energy Audits | Kip Pheil, NRCS | 8:30 to 9:30 |
| Break | | 15 Minutes |
| Irrigation Energy Efficiency & Water Conservation <ul style="list-style-type: none"> • Assessing Irrigation Systems for Efficiency and Pumping Requirements • Elements of System that Affect Efficiency • Determine Efficiency of System | Stefanie Aschmann, NRCS | 9:45 to 10:45 |
| Introduction to Renewables <ul style="list-style-type: none"> • Common Renewable Terms • Overview of Energy Sources & Uses • Resource assessment tools | Milt Geiger, UWE | 10:45 to 11:30 |
| Questions Re: Morning Session | | 11:30 to 12:00 |
| Lunch | | |
| Solar Thermal <ul style="list-style-type: none"> • Overview of Solar Thermal Systems • Sizing, economics, site considerations, etc. | Susan Bilò, MSUE | 1:00 to 1:30 |
| Small Wind <ul style="list-style-type: none"> • Overview of Small Wind Systems • Assessment Checklist | Sarah Hamlen, MSUE | 1:30 to 2:00 |
| Solar PV <ul style="list-style-type: none"> • Overview of Solar Electrical Systems • Sizing, economics, site considerations, etc. | Susan Bilò, MSUE | 2:00 to 2:30 |
| Micro-Hydro <ul style="list-style-type: none"> • Overview of Micro-hydropower Systems • Assessment Checklist | Milt Geiger, UWE | 2:30 to 3:00 |
| Questions Re: Afternoon Content | | 3:00 to 3:15 |
| Break | | 15 Minutes |
| Stock Water Systems (Solar and Wind) <ul style="list-style-type: none"> • Introduction to Remote Watering Systems • Storage, economics, site consideration | Kip Pheil, NRCS | 3:30 to 4:00 |
| Methane Digesters <ul style="list-style-type: none"> • Assessment Checklist • Key considerations for ag producers | Sarah Hamlen, MSUE | 4:00 to 4:15 |
| Bio Diesel <ul style="list-style-type: none"> • Overview of Biodiesel • Introduction to Biodiesel Spreadsheet | Joel Schumacher, MSUE | 4:15 to 4:30 |
| Wrap up | | |
| Optional Weatherization Training Center Tour and Hands-On Renewable System & Dinner | | |



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| November 30: In Greater Depth... | | |
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| Topic | Presenter | Duration |
| Introduction to Training <ul style="list-style-type: none">• Purpose of Training• Review of Agenda | Tom Pick, NRCS | 8:00 to 8:15 |
| Sizing and Design of Small Wind Systems | Dave Ryan, NCAT | 8:15 to 9:00 |
| Sizing and Design for Solar PV Systems | Stefanie Aschmann & Kip Pheil, NRCS | 9:00 to 9:45 |
| Break | | 15 Minutes |
| Sizing and Design of Stock Water Systems with Wind and Solar | Stefanie Aschmann & Kip Pheil, NRCS | 10:00 to 11:30 |
| Considerations for Geothermal Systems in Agricultural Buildings | Stefanie Aschmann & Kip Pheil, NRCS | 11:30 to 12:00 |
| Lunch | | 1 Hour |
| Variable Rate Pump Design <ul style="list-style-type: none">• Pumping plan evaluation | Stefanie Aschmann & Kip Pheil, NRCS | 1:00 to 2:00 |
| NRCS Programs <ul style="list-style-type: none">• Considerations for Field Offices• Details of NRCS programs | Tom Pick, NRCS | 2:00 to 2:30 |
| Wrap Up | | |