

ENERGIZE MISSOURI

SCHOOLS AND LOCAL GOVERNMENTS

MISSOURI DEPARTMENT OF NATURAL RESOURCES

ENERGY LOANS

PROGRAM MANUAL

American Recovery and Reinvestment Act of 2009

State Energy Program

Mail Form to:

Missouri Department of Natural Resources

1101 Riverside Drive

P.O. Box 176

Jefferson City, MO 65102-0176



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

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I. Introduction

This document is meant to serve as a guide for applicants when preparing their applications under the School & Local Government Energy Loan Program.

On an as needed basis, the Department will provide technical assistance to applicants completing application forms (specifically calculating annual energy savings).

The following are examples and explanations on how to fill out each of the supporting documents (forms) that must be included in an application.

1. List of Supporting Documents

Applications must contain all of the elements listed below to be considered complete and eligible for funding.

Form A	Applicant Information
Form B	Project Information
Form C	Energy Usage Information
Form D	Efficiency Measures
Form E	Energy Metrics
Form F	Project Budget
Form G	Waste Stream
Form H	National Environmental Policy Act
Form I	National Historic Preservation Act

II. Form A – Applicant Information

This document should be the cover page of your submitted application. The form contains a summary of all important aspects of an application. **The signature pages MUST be signed (Page A-1 and A-4) by an authorized official to be considered complete.**

Applicant Information

Applicant Full Name: provide name of the entity applying for funds.

DUNS Number: applicant must obtain a Dun and Bradstreet (D & B) Data Universal Numbering System (DUNS) number. A DUNS number is a unique identifier used by the federal government to track distribution of federal funds. To obtain a DUNS number, visit <http://fedgov.dnb.com/webform> or call the D&B Government Customer Response Center (866) 705-5711.

Loan Funds Requested: provide the dollar amount of the loan funds requested. The minimum loan amount is \$30,000 and maximum loan amount is \$2,500,000.

Mailing Address: this is the mailing address for the applicant. The mailing address must reach the contact person listed in the Applicant Information section. Provide:

Mailing Address

City

ZIP Code + 4 (nine digits)

Primary Contact Name: name of contact person representing the applicant. This person will be the primary point of contact with the School & Local Government Energy Loan Program.

Title of contact: provide the title for the contact person.

Email address: provide the email address for the contact person.

Telephone number: provide the telephone number for the contact person.

Fax number: provide the facsimile number for the contact person.

Facility Ownership: indicate whether the applicant owns, rents (or leases) the facility. If other, please explain.

Financial Background

Applicants are required to provide sufficient financial background so that an accurate financial status of the applicant can be determined. Provide:

Most recent audit report

Taxpayer ID:

FEIN Number: provide the applicant's federal employer identification number (FEIN). This number, also sometimes referred to as a tax identification number, is a nine-digit

code that businesses use to identify themselves for tax reporting, banking, and other purposes.

Authorization to Obtain Credit Information

An authorized official must sign and date the authorization on page A-1.

Project Site Information

Project Title: provide a name for the proposed project.

Primary Activity: identify the primary function of the facility.

Project Site Address: this is the address where the project will take place. Provide:

Site Address

City

ZIP Code + 4 (nine digits)

Size of Facility (sq. ft.): provide the square footage of facility receiving energy efficiency improvements.

Electric Utility: provide the name of the electric utility (investor-owned, municipality, co-op) that currently supplies electricity to the proposed project site.

Gas Utility: provide the name of the gas utility that currently supplies gas to the proposed project site.

Applicant Background

Answer each question and provide justification or details as necessary to explain your answer. The intent is to develop a complete applicant background.

Applicant Signature

An authorized official must sign and date the application on page A-4. Applications that have not been signed will not be considered for funding.

III. Form B – Project Information

On this form the applicant shall provide a more detailed description of the proposed energy efficiency project. Applicants shall fill out all of the sections and provide sufficient information on the most important and relevant aspects of the proposed project.

Project Information

Proposed Project Start Date: provide the proposed start date for the project.

Proposed Project Completion Date: provide the estimated completion date for the project. All projects must be completed no later than eighteen months after both parties sign Loan Agreement.

Brief Project Description: provide a short description of the proposed energy efficiency improvement(s). The description must fit within the allocated area.

Metrics Activity

Details for completing the metrics activity portion of the application can be found in **Section V. Form E – Energy Metrics** of this Program Manual.

Note that all calculations in this program manual use kWh. To calculate energy savings resulting from gas projects, the applicant is to use the following conversions:

1 Therm Natural Gas \approx 29.30 kWh
1 Gallon Propane \approx 27.98 kWh

Project Narrative and Benefits

Provide a description of the proposed project, including:

- Brief applicant background
- Goals and objectives
- Statement of work (required tasks and activities)
- Information on the proposed project location, licenses and permits required (if applicable)
- Current status of the project

Discuss the merits of the project per the evaluation criteria provided in the School & Local Government Energy Loan Program Guidelines:

- Identify expected project outcomes including job creation/retention, energy savings, greenhouse gas (GHG) emission reductions, etc.
- Identify any additional benefits to the community, such as economic, environmental, etc.

If necessary, applicants may add up to one additional page (one-sided) for their project description.

Project Timeline

Provide a proposed timeline for project milestones or events. Examples of possible milestones or events include:

- Design phase
- Identify equipment
- Procure contractor/subcontractor
- Purchase equipment and materials
- Equipment arrives on site
- Begin installation or construction
- Project completion

IV. Form C – Energy Usage Information

This form allows the applicant to submit information about past energy usage and costs.

Energy Usage

Provide information regarding the energy cost and usage of the facility. The applicant should refer to past utility bills, statements, receipts, and invoices to identify and calculate energy costs and usage.

Monthly paid for the last 12 months (\$): means the dollar amount the applicant paid for energy.

Monthly usage for the last 12 months: means the amount of energy used by the applicant.

V. Form D – Efficiency Measures

Energy Efficiency Measures

The applicant must provide information on the proposed energy efficiency measures by completing the table on Form D. This should include calculations to verify energy savings.

The applicant must include a **copy of the manufacturer’s specifications for every proposed item** for which funds are being requested.

$$\text{Simple Payback (years)} = \frac{\text{Total Cost (\$)}}{\text{Annual Dollar Savings } \left(\frac{\$}{\text{year}} \right)}$$

$$\text{Annual Dollar Savings } \left(\frac{\$}{\text{year}} \right) = \text{(D) Annual Energy Savings (kWh)} \times \text{(E) Average Utility Rate } \left(\frac{\$}{\text{kWh}} \right)$$

The applicant may add as many additional tables as necessary to list all of the proposed equipment to be purchased.

Bundled Simple Payback

Under the School & Local Government Energy Loan Program, the applicant has the opportunity to bundle energy efficiency measures to meet the simple payback requirement of 10 years or less.

(A) Total Cost: sum the total cost of column (F) from the Efficiency Measures table.

(B) Sum of Annual Energy Savings x Average Annual Utility Rate: sum the annual energy savings from column (D) and multiply by the average annual utility rate from column (E) in the Efficiency Measures table.

Bundled Simple Payback: the amount of time it will take to recover the project’s investment through reduced or avoided energy costs. This is calculated by dividing the total cost (\$) by the annual energy savings (kWh) multiplied by the average annual utility rate (\$/kWh). The bundled simple payback must be less than 10 years.

$$\text{Bundled Simple Payback (years)} = \frac{\text{Total Cost (\$)}}{\text{Annual Energy Savings (kWh)} * \text{Average Annual Utility Rate } \left(\frac{\$}{\text{kWh}} \right)}$$

VI. Form E – Energy Metrics

Jobs Created or Retained

Full-time equivalent (FTE) is a metric used by the U.S. Office of Management and Budget (OMB) to convert full-time, temporary and part-time jobs into comparable metrics. FTEs are calculated as total hours worked in jobs created or retained, divided by the number of hours in a full-time schedule, as defined by the applicant. Job created means a new position created and filled or an existing unfilled position that is filled as a result of Recovery Act funding. Jobs retained means an existing position that is now funded by the Recovery Act, i.e. a job for which the wages or salaries are either paid for or will be reimbursed with Recovery Act funding. Jobs created and retained must be reported in full-time equivalents, or FTE. For further information please see OMB SEP Notice 10-07 http://www1.eere.energy.gov/wip/pdfs/wap10-14_sep10-07_eecbg10-08.pdf.

For each labor activity, provide the requested information:

(A) Proposed Start Date: provide the date the labor activity is anticipated to begin.

(B) Proposed Completion Date: provide the date the labor activity is anticipated to be completed. Projects must be completed on or before the project completion deadline of eighteen months after both parties sign Loan Agreement.

(C) Working Days between Start Date and Completion Date (days): provide the number of working days between the start date and completion date.

(D) Cumulative Hours on a Full-Time Schedule (hrs): provide the cumulative hours on a full-time schedule by multiplying the (C) working days between start date and completion date by 8 hours.

(E) Hours Worked on Labor Activity (hrs): provide the total number of hours worked on the labor activity.

(F) Full-Time Equivalent (FTE): convert full-time, temporary and part-time jobs into comparable metrics. FTEs are calculated as total hours worked in jobs created or retained divided by the number of hours in a full-time schedule. Provide the number of FTE positions by dividing (E) the total number of hours worked on the labor activity by (D) number of quarterly hours. For example, an electrician works 78 hours on the project in a reporting quarter. Assuming a full time schedule of 520 hours in the quarter (40 hours/week x 13 weeks/quarter), the electrician would be reported as 0.15 FTE (78 hours/520 hours).

$\text{Full - Time Equivalent (FTE)} = \frac{\text{(E) Hours Worked on Labor Activity (hrs)}}{\text{(D) Number of Quarterly Hours (e.g. 520)}}$

Example:

1. An activity will begin Jan. 4, 2010 and be completed by March 31, 2010. Working days between Jan. 1 and March 31, 2010 are 63 days, and workers have 8-hour days.

Quarterly hours in a full-time schedule = 65 days x 8 hours/day = 520 hours

If workers spend 1,250 hours working on installing an approved energy efficiency measure, then the number of full-time equivalents equal:

$$\text{FTEs} = \frac{1,250 \text{ hrs}}{520 \text{ hrs}} \text{ or } 2.40 \text{ FTEs}$$

2. An activity will begin Oct. 3, 2010 and be completed by March 25, 2011.

Project spans two reporting quarters on a full-time schedule = 2 x (65 days x 8 hours/day) = 1,040 hours.

If workers spend 1,160 hours working on installing an approved energy efficiency measure, then the number of full-time equivalents equal:

$$\text{FTEs} = \frac{1,160 \text{ hrs}}{1,040 \text{ hrs}} \text{ or } 1.12 \text{ FTEs}$$

The applicant should report the total FTEs on the “Metrics Activity” section of Form B.

Annual Energy Savings and GHG Emissions Reduced

Annual energy savings (kWh) represents the difference between the current energy use of equipment, a facility or a building, and the estimated future energy use of that equipment, facility or building.

(A) Annual Energy Savings (kWh): provide the expected annual energy savings (in kWh) to be achieved by replacing existing equipment with the proposed equipment. For new construction, provide the expected annual energy savings (in kWh) to be achieved above the ASHRAE 90.1 baseline standard.

$$\text{Annual Energy Savings (kWh)} = \text{Current Energy Use (kWh)} - \text{Estimated Future Energy Use (kWh)}$$

The applicant should report the total annual energy savings on the “Metrics Activity” section of Form B.

(B) GHG Emission Factor (MT CO₂e/kWh): this GHG emission factor is provided in the table and was derived from eGrid for SERC Midwest Region.

GHG emission reductions are tied to energy savings. One way to simplify the GHG calculation is to assume that all energy savings are reductions in electricity usage. This electricity reduction then is converted into emission reductions based upon the electricity

emission profile for the sub-region. See SERC Midwest using Environmental Protection Agency (EPA) eGrid data (<http://cfpub.epa.gov/egridweb/view.cfm>):

(C) GHG Emissions Reduced (MT CO₂e): provide the GHG emissions reduced by multiplying (A) annual energy savings (kWh) by (B) GHG emission factor (0.00083462 MT CO₂e/kWh).

$\text{GHG Emissions Reduced (MT CO}_2\text{)} = \text{(A) Annual Energy Savings (kWh)} \times \text{(B) 0.00083462 } \left(\frac{\text{MT CO}_2\text{}}{\text{kWh}} \right)$
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The applicant should report the total GHG emissions reduced on the “Metrics Activity” section of Form B.

VII. Form F – Project Budget

Budget Summary

The budget summary table provides a snapshot of the proposed budget for the project, as well as how the different budget items will be funded by the School & Local Government Energy Loan Program. For each line item, provide the information requested.

Equipment and Materials:

Loan Funds Requested (\$): provide the total amount of requested School & Local Government Energy Loan Program funds that will be utilized for the purchase of eligible equipment and materials necessary for the proposed project.

Direct Labor/ Contractual Services:

Loan Funds Requested (\$): provide the total amount of requested School & Local Government Energy Loan Program funds that will be utilized to pay direct labor or contractual services necessary for the proposed project.

Other:

Loan Funds Requested (\$): School & Local Government Energy Loan Program funds requested for other costs not included in the above categories. The Department reserves the right to not provide loan funds for other costs not included in the above categories.

Total:

Loan Funds Requested (\$): provide the total amount of requested School & Local Government Energy Loan Program funds. This is the sum of funding requested for equipment and materials, direct labor and contractual services, and other costs, as applicable.

Other budget items: explain the other budgeted items.

Detailed Budget

Equipment/Materials: list all equipment and materials to be purchased for the project.

Quantity: list quantity of equipment and materials required.

Unit Cost (\$): cost per unit.

Total Cost (\$): provide the total dollar amount for each item, this can be calculated as:

Total (\$) = Quantity (units) × Unit Cost (\$/unit)

Loan Funds Requested (\$): provide the dollar amount of School & Local Government Energy Loan Program funds requested for the particular equipment/material.

If additional rows are required to list the equipment, please include a table with the additional items as an attachment.

Direct Labor/Contractual Services

The direct labor/ contractual services table lists all applicable costs for design, technical assistance, and installation of energy efficiency measures. For each line item, provide the information requested.

Title/Job Classification: list the title/job classification of the laborer or service provider. Examples of job classifications include:

- Electrician
- Sheet metal worker
- HVAC technician
- Plumber

Direct Labor Yes/No: indicate if the labor is provided by the applicant's existing employees.

Number of Hours: list the number of hours that the proposed laborer or service provider will be working on the project.

Billing Rate (\$/hr): hourly billing rate for the proposed laborer or service provider.

Total Cost (\$): provide the total dollar amount for each laborer or service provider, this can be calculated as

$$\text{Total Cost (\$)} = \text{Billing Rate} \left(\frac{\$}{\text{hour}} \right) \times \text{Number of Hours (hours)}$$

Loan Funds Requested (\$): provide the dollar amount of School & Local Government Energy Loan Program funds requested for the direct labor or contractual services.

VIII. Form G – Waste Stream

Prior to the expenditure of federal funds to dispose of sanitary or hazardous waste, the Missouri Department of Natural Resources is required to provide documentation to the U.S. DOE demonstrating that an adequate disposal plan has been prepared for sanitary or hazardous waste generated by the proposed activities.

The applicant is therefore required to submit information on the expected waste stream of the proposed project. Sanitary or hazardous waste includes, but is not limited to, old light bulbs, lead ballasts, piping, roofing material, discarded equipment, debris, asbestos, etc.

The applicant should:

- Indicate if the proposed project will generate a waste stream
- Describe the identified waste stream, if applicable
- Provide an estimated quantity of waste that will be generated by type
- Describe the proposed methodology for waste handling and disposal. For example, how would mercury or sodium vapor lamps be disposed of? How will potentially hazardous material (e.g. asbestos containing materials, polychlorinated biphenyl (PCBs), etc.) be handled and disposed of?

IX. Form H – National Environmental Policy Act

The National Environmental Protection Act of 1970 (NEPA), as amended (42 U.S.C. 4371, *et seq.*) requires federal agencies to consider the potential environmental impacts of their proposed actions. Awards issued under School & Local Government Energy Loan Program will be funded pursuant to a grant from U.S. DOE to the Missouri Department of Natural Resources. U.S. DOE must comply with NEPA when awarding grants to states. Accordingly, Subgrantees may not take action using federal funds for projects that may have an adverse effect on the environment prior to U.S. DOE providing a final NEPA determination regarding the selected projects.

For more information regarding NEPA see U.S. DOE's NEPA Web site:
<http://www.gc.energy.gov/NEPA/>

Based on a review of the list of activities that funds can be utilized for under the State Energy Program (SEP), U.S. DOE has determined that projects that meet certain criteria and conditions will likely be classified as categorical exclusions and will not require a NEPA review.

The following activities are considered Categorical Exclusions from NEPA:

1. Funding energy efficiency retrofits, provided that:
 - Projects Are Limited To: installation of insulation; installation of energy efficient lighting; HVAC upgrades; weather sealing; purchase and installation of ENERGY STAR appliances; replacement of windows and doors; high efficiency shower/faucet upgrades; and installation of solar powered appliances with improved efficiency.

2. Development, implementation, and installation of onsite renewable energy technology that generates electricity from renewable resources, provided that:
 - Projects Are Limited To:
 - Solar Electricity/Photovoltaic - appropriately sized system or unit on existing rooftops and parking shade structures; or a 60 KW system or smaller unit installed on the ground within the boundaries of an existing facility.
 - Wind Turbine - 20 KW or smaller.
 - Solar Thermal - system must be 20 KW or smaller.
 - Solar Thermal Hot Water - appropriately sized for residences or small commercial buildings.
 - Ground Source Heat Pump - 5.5 tons of capacity or smaller, horizontal/vertical, ground, closed-loop system.
 - Combined Heat and Power System - boilers sized appropriately for the buildings in which they are located.
 - Biomass Thermal - 3 MMBTUs per hour or smaller system with appropriate Best Available Control Technologies (BACT) installed and operated.

3. Development, implementation and installation of energy efficient or renewable energy-powered emergency systems (lighting, cooling, heat, shelter) installed in existing buildings and facilities.

4. Installation of alternative fueling pumps and systems (but not underground storage tanks) installed on existing facilities (other than a large biorefinery).

Categorical Exclusions are not absolute. A project activity that falls within a categorical exclusion may require additional NEPA review if it involves “extraordinary circumstances” that may affect the significance of its environmental effects. “Extraordinary Circumstances” are defined as “unique situations presented by specific proposals, such as scientific controversy about the environmental effects of the proposal; uncertain effects or effects involving unique or unknown risks; or unresolved conflicts concerning alternate uses of available resources within the meaning of section 102(2)(E) of NEPA [42 U.S.C. §4332(e)].

Applicants proposing projects that fall within the categories included above will not be required to submit any NEPA documentation at this time.

Applicants proposing projects in support of other activities NOT listed above may also qualify for categorical exclusion status. However, this determination cannot be made without a NEPA review. **Therefore, all applicants proposing projects NOT included in the list above must submit a completed EF-1 Environmental Questionnaire (Exhibit E).**

If US DOE determines that NEPA requires the preparation of an Environmental Assessment (EA) or Environmental Impact Statement (EIS) for a proposed project, the **applicant will be responsible for paying the cost of preparing an EA or EIS.** Preparation and review of NEPA documents can require 6-24 months. Accordingly, applicants should carefully consider whether such programs are consistent with the objectives of the ARRA and will allow the expenditure of funds within the allowable timelines.

Applicability of NEPA to the Proposed Project

All applicants must fill out Form I, by selecting the box applicable to their project:

- The proposed project is categorically excluded from NEPA because it falls within the following category and does not involve "extraordinary circumstances" within the meaning of 10 C.F.R. Section 1021.410.
- Funding energy efficiency retrofits, provided that projects are limited to: Installation of insulation; installation of energy efficient lighting; HVAC upgrades; weather sealing; purchase and installation of ENERGY STAR appliances; replacement of windows and doors; high efficiency shower/faucet upgrades; and installation of solar powered appliances with improved efficiency.
- Development, implementation, and installation of onsite renewable energy technology that generates electricity from renewable resources, provided that projects are limited to:

- Solar Electricity/Photovoltaic - appropriately sized system or unit on existing rooftops and parking shade structures; or a 60 KW system or smaller unit installed on the ground within the boundaries of an existing facility.
 - Wind Turbine - 20 KW or smaller.
 - Solar Thermal - system must be 20 KW or smaller.
 - Solar Thermal Hot Water - appropriately sized for residences or small commercial buildings.
 - Ground Source Heat Pump - 5.5 tons of capacity or smaller, horizontal/vertical, ground, closed-loop system.
 - Combined Heat and Power System - boilers sized appropriately for the buildings in which they are located.
 - Biomass Thermal - 3 MMBTUs per hour or smaller system with appropriate Best Available Control Technologies (BACT) installed and operated.
- The proposed project falls within the categories listed above but may involve "extraordinary circumstances" within the meaning of 10 C.F.R Section 1021.410.
- The proposed project is not categorically excluded.

If the project involves “extraordinary circumstances” or if the project is not categorically excluded, then the applicant must **provide the reasons** for this. In addition, the applicant **must fill out Exhibit D – Environmental Questionnaire (EF-1)** when the project is not categorically excluded.

X. Form I– National Historic Preservation Act

Prior to the expenditure of federal funds to alter any structure or site, the Missouri Department of Natural Resources is required to comply with the requirements of Section 106 of the National Historic Preservation Act (NHPA). Section 106 applies to historic properties that are listed in or eligible for listing in the National Register of Historic Places (NRHP).

In order for the department to evaluate whether or not a proposed project requires additional submittals of information, **all applicants are required to provide background information on their proposed project sites by filling out Form I.**

All Applicants MUST include a photo of the façade of the existing facility as well as a map showing its exact locations as attachments to Form I.

Description of Project Site

Applicants MUST indicate if their proposed project involves a building or structure included in the NRHP or one eligible for inclusion in the NRHP.

If the applicant is unsure whether the building is included, it must request a record search from the Missouri State Historical Preservation Office (SHPO) by contacting:

State Historic Preservation Office

<http://www.dnr.mo.gov/shpo/index.html>
P.O. Box 176, Jefferson City, MO 65102
800-361-4827 / 573-751-7858
E-mail: shpo@dnr.mo.gov

If the proposed project involves a building or structure listed on or eligible for the NRHP, the applicant must submit additional information by completing Item 5 of the EF-1 Environmental Questionnaire (Exhibit D of the Program Guidelines).

Applicants MUST provide information on the proposed project site by completing the following table:

Site Name	Site Address	Age of Original Structure (Year of Completion)
A	B	C

- A** Include the name of the facility where energy efficiency work will be performed.
- B** Provide the address for said facility, including street address, city, county and ZIP code + 4.
- C** Provide the estimated year of original construction completion.