ASLEE Energy Worksheet
For Larger Scale Energy Efficiency Improvements Projects

Use this worksheet and your previously completed energy audit to gather information about your farm operation's existing energy usage and the estimated level of energy savings associated with your proposed project.

This completed Energy Worksheet must be submitted with your completed application, along with your previously completed energy audit (that meets the minimum requirements as outlined for a Detailed Energy Audit (Level 2) or equivalent).

GETTING STARTED

Provide a brief description of your farm operation **where the proposed energy efficiency improvement will occur** (e.g., specify types of livestock and approximate numbers on the farm business in the past twelve months, number of acres (owned/rented/leased/irrigated) and include typical crop rotations/permanent crops as applicable).

Livestock: Indicate the number and type of livestock over a twelve-month period on your farm operation

	Beef Cattle	**Dairy Cattle**	**Hogs**	**Poultry**	**Other Livestock (indicate type)**
EXAMPLE: Number and type		*60 – dairy* *20 – heifers* *20 – calves (Holstein)*		*80 - ducks*	
TOTAL		***100***		***80***	
Number and type					
TOTAL					

Farmland: Indicate the number of acres of farmland and typical crop rotation/ types of permanent crops grown associated with your farm business

	Acres Owned (Crop or Pasture	**Acres Owned (Non-crop or non-pasture)**	**Acres Rented/Leased**	**Acres Irrigated**
EXAMPLE: Number & Typical Crop Rotation/ Permanent Crops Grown	*200 acres corn-soybean-wheat* *20 acres pasture*	*5 acres bush/ woodlot*	*50 acres corn-soybean-wheat*	*5 acres strawberries*
TOTAL	***220***	***5***	***50***	***5***
Number and type				
TOTAL				

STEP 1 – **Determine the total annual Baseline energy usage associated with your whole farm operation where your energy efficiency improvement project is proposed**. ***This is your whole farm's existing energy usage before implementing the proposed improvement project***.

- Referring to your previously completed energy audit and considering all sources of energy associated with the farm operation, enter in the STEP 1 Tables below your energy usage for the past year, for a consecutive 12-month period (e.g., August 2024 to July 2025), by type of energy source.
    - If weather or other extreme events occurred in the past 12 months which would impact the energy consumption at your operation, an alternate 12-month period may be used. Indicate on your application worksheet if this applies to your operation.
- Use the conversion factors to **convert all energy usage to kWh**.
- Include the name of your energy provider in the tables below for each source pertaining to your farm operation.

Please enter the page numbers of your previously completed energy audit where the Baseline energy usage for your farm operation is described and quantified:

What is the consecutive 12-month period you have selected for your application?
_____ to _____ mm/yyyy mm/yyyy

Are you selecting an alternate or older 12-month period to refer to for your operation? If yes, describe what extreme event impacted your farm operation:
◯ Yes ◯ No
If yes, describe the extreme event:

STEP 1 TABLES:

Baseline Energy Usage, by Type of Energy Source, for your Whole Farm Operation

A. Energy Type: Electricity (kWh)		
Electricity Provider Name:		
Line A. Total Annual Amount of Electricity Used:		**(kWh)**

B. Energy Type: Natural Gas (m^3)		
Natural Gas Provider Name:		
Conversion Factor for m^3 to kWh. Multiply annual m^3 use by 10.82	Total annual Natural Gas Use over 12 months (m^3):	
	x 10.82 kWh/m^3 * = 0.00 (kWh)	
Line B. Total Annual Amount of Natural Gas Energy Used:	0.00	**(kWh)**

* Based on a caloric value of 38.97 MJ/m^3

C. Energy Type: Propane/LPG (L)		
Propane/LPG Provider Name:		
Conversion Factor for L to kWh. Multiply annual L use by 7.09	Total annual Propane/LPG Use over 12 months (L):	
	x 7.09 kWh/L * = 0.00 (kWh)	
Line C. Total Annual Amount of Propane/LPG Energy Used:	0.00	**(kWh)**

* Based on a caloric value of 25.53 MJ/L

D. Energy Type: Diesel (L)		
Diesel Provider Name:		
Conversion Factor for L to kWh. Multiply annual L use by 10.74	Total annual Diesel Use over 12 months (L):	
	X 10.74 kWh/L * = 0.00 (kWh)	
Line D. Total Annual Amount of Propane/LPG Energy Used:	0.00	**(kWh)**

* Based on a caloric value of 38.68 MJ/L

E. Energy Type: Heating Oil (L)	
Heating Oil Provider Name:	

Conversion Factor for L to kWh. Multiply annual L use by 10.21	Total annual Heating Oil Use over 12 months (L):		
	X 10.21 kWh/L * = 0.00		(kWh)
Line E. Total Annual Amount of Heating Oil Energy Used:		0.00	**(kWh)**

* Based on a caloric value of 36.72 MJ/L

F. Energy Type:	**(unit of measure):**		
Provider Name:			
Conversion Factor for (unit of measure) to kWh. Specify conversion unit of measure to kWh * _____	Total annual _____ Use over 12 months (_____):		
	X _____ * = 0.00		(kWh)
Line F. Total Annual Amount of _____ Energy Used:		0.00	**(kWh)**

* Consult with OSCIA for conversion factors where required.

G. Energy Type:	**(unit of measure):**		
Provider Name:			
Conversion Factor for (unit of measure) to kWh. Specify conversion unit of measure to kWh * _____	Total annual _____ Use over 12 months (_____):		
	X _____ * = 0.00		(kWh)
Line G. Total Annual Amount of _____ Energy Used:		0.00	**(kWh)**

* Consult with OSCIA for conversion factors where required.

CALCULATION: The total annual baseline energy usage (in kWh equivalent) for your whole farm operation is calculated by adding the annual energy usage for each different energy source (all converted to kWh) applicable to your farm over the historical 12-month period. *Reminder: Retain copies of the monthly energy bills as OSCIA may request copies to validate this application.*

Total annual baseline energy use (in kWh) for whole farm operation (BASELINE). Add Total Use over 12 months in kWh for Lines A, B, C, D, E, F, and G (as applicable) from above tables.

Energy Type	**Total Use over 12 months (kWh)**	
Line A. Electricity	0.00	(kWh)
Line B. Natural Gas	0.00	(kWh)
Line C. Propane/LPG	0.00	(kWh)
Line D. Diesel	0.00	(kWh)

Line E. Heating Oil	0.00	(kWh)	
Line F. _____	0.00	(kWh)	
Line G. _____	0.00	(kWh)	
*** TOTAL:**	0.00	**(kWh)**	

*You will need to enter your response above on your application form for **question 12**.

STEP 2 – **Estimate the change in annual energy usage associated with implementation of the proposed energy efficiency improvement project, considering all sources of energy that may be impacted by the proposed change**. *This is the estimated annual project-specific energy savings (kWh savings)*.

- Refer to your previously completed energy audit to complete the tables below specific to your proposed energy efficiency improvement project.
- In Table STEP 2A you will report your current energy usage associated with your proposed project (baseline energy usage of specific project) and the estimated energy use after the implementation of the proposed large scale energy efficiency project. This will allow you to calculate the anticipated energy savings associated with the proposed project.
- Actual energy usage values required to operate your current system should be used where available (e.g., from monitoring conducted during your energy audit).
- All energy usage must be in kWh. Use the conversion factors from STEP 1 to convert to kWh if not already done in your previously completed energy audit.
- Note: Calculations for your project may be completed on a monthly basis but be sure to record your project-specific savings on an annual basis in the tables below (e.g., multiply by 12 if the system is used year-round).

TABLE STEP 2A

Estimated Energy Usage SAVINGS anticipated as a result of implementing your proposed Project

Type of Energy Source	A. Electricity (kWh)	B. Natural Gas (kWh)	C. Propane/ LPG (kWh)	D. Diesel (kWh)	E. Heating Oil (kWh)	F. Other (specify) (kWh)	G. Other (specify) (kWh)	Total Change in Energy Usage Resulting from Proposed Project (add all columns A to G) (kWh)
***Example*: Lighting change from high pressure sodium to LED**								
Current Annual Energy Usage associated with Project Specific System (high pressure sodium lights)	*50 kWh*							*50 kWh*
Estimated new Energy Usage after proposed project implemented (LED lights)	*30 kWh*							*30 kWh*
Estimated annual project-specific energy savings	*20 kWh*							*20 kWh total savings*

Describe your proposed energy efficiency project (i.e., include a description of your current baseline (existing conditions) and what changes are proposed to achieve the new energy efficient condition, and any changes you are proposing to make from the recommendations outlined in your detailed energy audit (if any changes):

***You will need to refer to your response above in your application form for question 16.**

Type of Energy Source	A. Electricity (kWh)	B. Natural Gas (kWh)	C. Propane/ LPG (kWh)	D. Diesel (kWh)	E. Heating Oil (kWh)	F. Other (specify) (kWh)	G. Other (specify) (kWh)	Total Change in Energy Usage Resulting from Proposed Project (add all columns A to G) (kWh)
Current Annual Energy Usage associated with Project–Specific System (a)								**Total (a)** 0
Estimated Annual New Energy Usage after proposed Energy Efficient Project is Implemented (b) [Note: use section i) in the box below to provide a detailed explanation of how the energy savings have been estimated for the proposed project and use section ii) of the box to list all supporting documentation that is being provided with the application to support the energy savings estimations. This supporting documentation is in addition to the completed Energy Audit that is to accompany the application.]								**Total (b)** 0
Estimated Annual Project-Specific Energy Savings (c) = (a) - (b)	0	0	0	0	0	0	0	**Total (c)** 0
Estimated **total annual energy saving** after implementing your proposed energy efficiency improvement project (from all energy sources) (**SAVING**) *								**Total (c) *** 0 **kWh**

* You will need to enter your response above on your application form for **question 13**.

i) Indicate what page(s) of your previously completed energy audit were consulted to support the completion of Table STEP 2A above (provide the page number references of the energy audit with the data) explain how you determined your estimated energy savings* associated with your proposed energy improvement project. Include additional information or supporting documentation* with your application in addition to providing your completed Energy Audit documentation.

ii) List any additional information or supporting documentation* with your application in addition to providing your completed Energy Audit documentation.
This can include energy efficiency improvement calculations/documents provided by equipment contractor/supplier, quotations outlining equipment size, efficiency rating, application, etc.

*You will need to refer to your responses in boxes i) and ii) above on your application form for **question 17.**

Using the information reported in Table **STEP 2A above** calculate the estimated percent (%) energy savings on an annual basis associated with your project.

TABLE STEP 2B

Estimated Percent Energy Savings on an annual basis associated with your proposed Energy Efficiency Improvement Project

Enter your result from Table Step 2A – **SAVING** Total (c) – Estimated total annual energy savings after implementing your proposed energy efficiency improvement project	Total (c) 0	kWh
Enter your Total (a) result from Table Step 2A (Current Annual Energy Usage associated with Project-Specific System)	Total (a) 0	kWh
Calculate: **Percent (%) Energy Savings- Project-Specific** by dividing Total (c) by Total (a) and multiplying by 100 *		%

* You will need to use your response above (Percent Energy Savings – Project-Specific) to select the appropriate range on your application form for **question 14**. You will also be asked to provide the specific value of the percentage calculated above on your application form for **question 15**.

STEP 3 - Estimate the savings in energy usage for your whole farm operation after implementing your proposed Project

- Estimate the annual energy usage savings associated with your **whole farm operation** after implementing your proposed energy efficiency project.
- Where applicable, consider if your proposed project may result in a change in another type of energy usage. For example: change in lighting type from high pressure sodium lights to LED lights results in a reduction in electrical energy usage; however, this change could result in an increase in natural gas usage to replace heat previously generated by high pressure sodium lighting. For this example, the estimated increase in natural gas usage should be considered when completing TABLE STEP 3.
- All energy usage must be in kWh and reported on an annual basis.

TABLE STEP 3

Estimated Annual Change (reduction/increase) in Energy Usage for your **whole farm operation** anticipated as a result of implementing your proposed Project

Type of Energy Source	**A. Electricity (kWh)**	**B. Natural Gas (kWh)**	**C. Propane/ LPG (kWh)**	**D. Diesel (kWh)**	**E. Heating Oil (kWh)**	**F. Other (specify) (kWh)**	**G. Other (specify) (kWh)**	**Total Change in Energy Usage Resulting from Proposed Project (add all columns A-G) (kWh)**
From Step 1 – Total Baseline Whole Farm Energy Use for each Energy Type - **BASELINE**		0.00	0.00	0.00	0.00	0.00	0.00	**Baseline** 0.00
From Step 2: Estimated Annual Project Specific Energy Savings after implementing your proposed energy efficiency project - **SAVING**	0	0	0	0	0	0	0	**Total (c)** 0
Optional: **Estimated Annual Energy Use Savings in Other Areas** of the Farm Operation as a result of Implementing your Proposed Energy Efficiency Project *[This may not be applicable to all projects – only provide information in this row if it applies to your project]*								**Total (d) Optional** 0

Optional: **Estimated Annual Energy Use Increases** in Other Areas of the Farm Operation as a result of Implementing your Proposed Energy Efficiency Project [*This may not be applicable to all projects – only provide information in this row if it applies to your project]*								**Total (e) Optional** 0
Estimated New Total Annual Whole Farm Energy Usage After Implementing Your Proposed Energy Efficiency Project **[Calculated as Baseline minus Total (c) minus Total (d) plus (Total e)**								**Total (f)** 0
Total Whole Farm Operation Estimated Annual Energy Usage after implementing your proposed Project (combined for all types of energy source) (**AFTER**) *								**Total (f) *** 0

* You will need to enter your response above (AFTER) on your application form for **question 18**.

Describe any anticipated annual energy use savings or energy use increases <u>in other areas of the farm</u> operation as a result of implementing your proposed energy efficiency project.

STEP 4 - Estimate the energy savings of your proposed energy efficiency improvement project for your whole farm operation

- Use information from **STEPS 2 and 3 above** to determine the percent (%) energy savings for your whole farm operation.

Line 1. Calculate the **WHOLE FARM SAVINGS** Total Annual Energy Use Savings for the Whole Farm after implementing your proposed energy efficiency improvement project **Calculated as Total (c) plus Total (d) minus Total (e)**	WHOLE FARM SAVINGS (Line 1) kWh
Line 2. Enter your result from STEP 1 (**BASELINE**) Total annual baseline energy usage – whole farm operation)	BASELINE (Line 2) 0.00 kWh
STEP 4 RESULT: **Percent (%) Energy Savings for Your ~~Whole~~ Farm Operation*** calculated by dividing WHOLE FARM SAVINGS (Line 1) by BASELINE (Line 2) then multiplying by 100	Line 1 / Line 2 x 100 %

* You will need to use your response above (**Percent Energy Savings – Whole Farm Operation**) to select the appropriate range on your application form for **question 19**. You will also be asked to provide the specific value of the percentage calculated above on your application form for **question 20**.

STEP 5 - Estimating Reduction in Fossil Fuel Energy Usage as a result of your proposed Project

If your proposed Project is anticipated to reduce the use of fossil fuel energy sources (natural gas, propane, diesel, heating oil) on your farm, complete the table below.

- Consider only the use of fossil fuel energy sources as reported in Step 2A to determine the estimated annual reduction in fossil fuels as a result of implementing your project. Do not include savings from electricity or any other non-fossil fuel in this step.

TABLE STEP 5

Estimated Annual Reduction in Fossil Fuel Energy Usage (Project Specific) anticipated as a result of implementing your proposed Project.

Type of Energy Source	**A. Electricity (kWh)**	**B. Natural Gas (kWh)**	**C. Propane/ LPG (kWh)**	**D. Diesel (kWh)**	**E. Heating Oil (kWh)**	**F. Other (specify) (kWh)**	**G. Other (specify) (kWh)**	**Total Annual Reduction in Fossil Fuel Energy Usage resulting from proposed Project** **Total (add all columns B to E, plus F and/or G if applicable)** **(kWh)**
From STEP 2: Estimated Annual Project-specific Energy Savings						Include only if fossil fuel usage reduced	Include only if fossil fuel usage reduced	0
Total Estimated Annual Project-Specific Energy Savings as a result of implementing your proposed Project (considering only fossil fuel energy sources) *								0 **kWh**

* You will need to enter your response above on your application form for **question 7**.