



**Department of Commerce**  
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**Program Guidelines  
for the 2015 – 2017  
Energy Efficiency and  
Solar Grant Program**

**for Higher Education, Local  
Governments, State Agencies and  
Washington K-12 Public School Districts**



**2015 – 2017 Energy Efficiency and Solar Grant Program Guidelines Contents**

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**Program Contacts:**

Pat Gibbon  
[patricia.gibbon@commerce.wa.gov](mailto:patricia.gibbon@commerce.wa.gov)  
 360.725.3023

Tom Stiliz  
[tom.stiliz@commerce.wa.gov](mailto:tom.stiliz@commerce.wa.gov)  
 360.725.4045

**Minor Works Contact:**

Bill Cole  
[bill.cole@commerce.wa.gov](mailto:bill.cole@commerce.wa.gov)  
 360.725.3005

**Program Website**

<http://www.commerce.wa.gov/Programs/services/CapitalFacilities/Pages/EnergyEfficiencyGrants.aspx>



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## 2015 – 2017 Energy Efficiency and Solar Grants for Higher Education, Local Governments, State Agencies and Washington K-12 Public School Districts

### Program Guidelines

November 2015

Welcome to the Commerce 2015 - 2017 Energy Efficiency and Solar Grant Program. Our focus over the next two years is to fund “the best energy efficiency and solar projects” possible. To do this Commerce has revised its guidelines significantly.

Here are the **key** program changes:

- The program is now open to WA K-12 public school districts (school districts) per the legislation.
- The maximum simple paybacks allowed in the program are:
  - 35 years for energy efficiency projects
  - 20 years for lighting and municipal street lighting projects
  - 100 years for solar projects.

If your project exceeds these payback periods, it will not be considered cost effective and will not be eligible for our program. Commerce defines simple payback as the total project costs divided by the annual energy and/or water/sewer savings or generation for solar projects.

All grant applications will be scored on:

- Energy savings
- Leverage ratio (the higher the ratio of non-state funds to state funds, the higher the score).
- An investment grade audit (IGA) and/or a final Energy Service Proposal (ESP) or equivalent are required for all energy efficiency applications except lighting. Lighting applications may use lighting spreadsheets developed by utilities for their rebate programs.
- All solar applications are required to have at least a 1:1 leverage ratio, except for small cities and towns which are required to have at least a 0.5:1 ratio. If your project does not have this leverage ratio, it will not be considered.
- Solar applications will no longer be required to meet the EPA Energy Star score of 80 or above.
- Commerce is setting aside 10 percent of the solar funds for small cities and towns.



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- If a solar array will be roof mounted, the application is required to have a stamped structural engineering letter confirming the structural integrity of the roof.
- Commerce is now requiring **one** year of Measurement and Verification (M&V) for all internal and external lighting and municipal street lighting projects. All other energy efficiency and solar measures are required to have **three** years of M&V.
- Commerce has created specific application and M&V protocol for municipal street lighting and internal and external school lighting.
- Commerce will not fund street light projects in small cities and towns (population less than 5,000). The Transportation Improvement Board has funding for these local governments (<http://www.tib.wa.gov/grants/urban/LEDUrban.cfm>).
- Municipal street lights owned and maintained by an investor-owned utility are now eligible for a Commerce grant. The investor owned utility must have a specific tariff for LED street lights.
- All grant applications from higher education, local governments, state agencies, and school districts will be scored collectively. The exceptions are:
  - Small cities and towns (population of 5,000 or less) which will be scored in their own category
  - School districts will also be scored on the three additional criteria listed in the program's enabling legislation (see page 8)
  - All solar applications will be scored as a separate category.
- All applicants contracting with the Department of Enterprise Services (DES) for project review and oversight must have their DES project review completed **prior to** submitting an application. Commerce will receive notification from DES once a review is completed. If an application is submitted without DES review, it will not be considered.
- Only school districts may apply for a lighting only energy efficiency grant. This is because the legislation gives priority consideration to school districts that demonstrate improved health and safety through reduced exposure to polychlorinated biphenyl (PCBs). PCBs were historically used in magnetic ballasts serving T-12 lamps.

## Background and Purpose

Second Engrossed House Bill 1115, Chapter 3, Laws of 2015, Section 1035 (<http://leap.leg.wa.gov/leap/budget/lbns/1517Cap1115-SL.pdf>) as passed by the 2015 Legislature includes an appropriation of \$21,775,000 million to the Washington State Department of Commerce for an energy efficiency and solar cost saving grants program. The appropriation sets aside \$5,775,000 for projects that involve the purchase and installation of solar energy systems, including solar modules and inverters, with a preference for Washington-manufactured products. The legislation directs Commerce to award at least 10 percent of each competitive grant round to small cities and towns with a population of fewer than 5,000 residents.



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The legislation also includes \$3 million for energy efficiency improvements for minor works and stand-alone projects at state-owned facilities. These guidelines do not cover minor works.

The Commerce grants will be awarded through a competitive process and may be used solely for energy cost savings improvements. Related work that is directly necessary to implement energy efficiency improvements may also be considered for funding.

Grants will be awarded for projects using Energy Savings Performance Contracting (ESPC) or equivalent <http://www.des.wa.gov/services/facilities/Energy/ESPC/Pages/default.aspx>. In order to be considered, applicants must demonstrate they have the expertise to manage their own projects or are working with DES on the project and all applicants must follow the ESPC guidelines.

## Program Eligibility

Public higher education institutions, local agencies, public school districts and state agencies are eligible to apply.

Commerce defines local agencies as: any city and any town, county, special district, municipal corporation, agency, port district or authority, or political subdivision of any type, or any other entity or authority of local government in corporate form or otherwise. Commerce will be using the list of small cities and towns determined annually by the Office of Financial Management (OFM) Please reference the official *April 1, 2015 Population Determination*, released June 30, 2015, through the following website: <http://www.ofm.wa.gov/pop/april1/default.asp>

State agencies may not submit applications for leased facilities. Local agencies and higher educational facilities may submit applications for leased facilities as long as there is a minimum 10 year lease from the time of the final Commerce grant payment.

The Commerce program is **not** open to new construction projects.

## Application Categories and Grant Amounts

The Commerce 2015 - 2017 Energy Efficiency and Solar Grant program has two grant categories available:

- Energy Efficiency
- Solar

## Energy Efficiency Grants

The maximum energy efficiency grant amount any applicant can receive (combination of applications if more than one) is \$350,000 **per biennium**.

Commerce will accept applications for two types of lighting only projects:

- Municipal street lighting projects are for lights that are served by utility street lighting tariff and/or light the public right of way. Outdoor lighting served by a facility utility meter is not street lighting. Municipal street lights owned and maintained by an investor owned utility are now eligible for a Commerce grant. The investor owned utility must have a specific tariff for LED street lights. Please see the Frequently Asked Questions (linked on this site by mid-November) for more details. Commerce will not be funding street lighting



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projects in small cities and towns. The Transportation Improvement Board has funding for these local governments: <http://www.tib.wa.gov/grants/smallcity/LEDSmallcity.cfm>

- School Lighting and PCB mitigation: School lighting only projects that include the removal of ballasts with PCBs will be accepted. These are most commonly found in old systems with T-12 lamps.

## Solar Grants

The maximum solar grant amount any applicant can receive (combination of applications if more than one) is \$500,000 **per biennium**.

The minimum solar grant amount (regardless if it is a solar photovoltaic (PV) or a non-PV system - solar thermal) is based on the project providing a minimum of 20,000 kilowatt hour (kWh) or equivalent Btu/year of generation. For small cities and towns (with populations of 5,000 or less) the minimum solar grant amount is based on the project providing a minimum of 10,000 kWh or equivalent Btu/year of generation.

## Funding Availability and Timing

2015 - 2017 grants will be awarded in two rounds (one in each fiscal year of the biennium). Applications for the first round are due by **March 3, 2016** by 5:00 p.m. Applications for the second round will be due in March 2017. Applications must be submitted through *ZoomGrants*. The online application may be accessed later in November through a link on the Commerce 2015 - 2017 Energy Efficiency and Solar Grant program website:

[www.commerce.wa.gov/Programs/services/CapitalFacilities/Pages/EnergyEfficiencyGrants.aspx](http://www.commerce.wa.gov/Programs/services/CapitalFacilities/Pages/EnergyEfficiencyGrants.aspx)

If an applicant receives an award(s) in round one of the 2015 - 2017 competition, they may submit application(s) in round two **only** if they have not yet received the maximum of \$350,000 for energy efficiency and/or \$500,000 for solar grant awards in round one.

We encourage applicants to aggregate energy measures and submit them as a single project whenever possible. Qualified applicants may also submit more than one grant application per round – provided the applications are for different measures. However, Commerce will not consider applications that seek funding for more than one project in the same building in the same round.

In Round One, Commerce will have \$7,760,000 available for energy efficiency grants and \$4,000,000 for solar grants. A minimum of \$776,000 will be set aside for energy efficiency grants and a minimum of \$400,000 for solar grants for small cities and towns.

Projects that enter into a contract for construction on or after July 1, 2015, are eligible to apply for a grant.

**Note:** Commerce reserves the right to modify grant request amounts based on application demand levels. Additionally, final awards may take into account fair and equitable geographical distribution and the applicant's access to other sources of funds necessary to complete the project.



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## Scoring Basics

All Commerce energy efficiency and solar project applications will be awarded through a competitive process. Applications will be scored on energy savings and leverage ratio, per Second Engrossed House Bill 1115, Chapter 3, Laws of 2015, Section 1035.

All energy efficiency grant applications from higher education, local governments, state agencies and school districts will be scored collectively. The exception to this is small cities and towns (population of 5,000 or less) which will be scored in their own category.

School district applicants will also be scored on additional three criteria listed in the authorizing legislation:

- Reduced exposure to PCBs
- Replacing outdated heating systems that use oil or propane as fuel sources as identified by the Washington State University Extension Energy Program
- Prior grant award: Priority consideration must be given to applicants that did not receive grant awards from appropriations provided in section 5023, chapter 19, Laws of 2013 2nd sp. session (OSPI awards March 31, 2014 including subsequent revisions to those awards)

All solar grant applications will be scored separately from energy efficiency projects and 10 percent of the solar funds are being set aside for small cities and towns.

## Energy Savings Scoring

Because Commerce is looking for the “best energy efficiency and solar projects possible” we have chosen to use simple payback to equalize all projects across the state. Simple payback is defined as total project costs divided by the annual energy and/or water/sewer savings or generation for solar projects.

Total project costs include all costs required to implement the project. In other words, “what the customer has to pay to do the project.” Currently, operational cost savings are not included in the savings calculation. This is because operational costs vary all over the state and Commerce has no way of verifying and equalizing the cost savings across the state. The cost of water saving measures may be included in the total project costs.

Energy savings are based on current operating conditions as compared to the proposed operating conditions. Commerce does not allow modified baselines. Commerce will be using the following statewide average energy rates in determining the project’s simple payback:

- Electricity \$0.08/kWh
- Gas \$0.89/therm
- Fuel Oil \$3.34/gal
- Propane \$1.98/gal
- Wood Pellets \$9.00/MMBtu

Applicants must submit their water/sewer rates to verify savings. If the local government applicant (i.e. city, county, water/sewer district) is a water purveyor, it must submit a sample



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billing showing the rate(s) it charges itself or other departments or other entities which buy water from it.

These average Washington rates come from the most recent commercial rates reported by the Energy Information Administration. State average wood pellet costs come from the Pellet Fuels Institute: <http://www.forestry.state.al.us/Biomass/Pellets%20Commercia%20IBrochure3.pdf>

The program allows the following maximum simple paybacks:

- 35 years for energy efficiency projects
- 20 years for lighting and municipal street lighting projects
- 100 years for solar projects

Our program is about saving energy and not about repairing buildings or paying for basic operations and maintenance, such as maintaining existing weatherization measures. We understand that in some instances the building must be repaired before an energy efficiency measure is installed. Building repairs and operation and maintenance and/or weatherization measures must represent a small fraction of the total project cost. When you are applying for energy efficiency and a solar grant for the same building, a project proposal to only maintain weatherization measures and/or operations and maintenance measures is not acceptable.

## **Energy Efficiency Projects**

Commerce uses simple payback to score energy savings. The total maximum points possible for energy savings are 30 unless the project receives additional points for exceeding the energy code and/or using premium equipment. Our original legislation specified deep energy retrofits. Projects with short paybacks are not considered deep energy retrofits and should be funded through state loans or other public or private funds. Projects with long paybacks indicate the project includes too many elements that do not provide energy savings.

## **Energy Efficiency Additional Points**

As mentioned above, energy efficiency projects may receive additional points for going beyond the energy code and/or using premium equipment. The maximum additional points an applicant can receive are 10. The total maximum points possible for energy efficiency projects are 40.

To receive the additional points, applicants must demonstrate efficiency improvements by selecting equipment from recognized efficiency programs. For example, when replacing a heat pump, specify equipment that exceeds the minimum federal standards by specifying an Energy Star Heat pump. When replacing lighting, use lights approved by: Northwest utility programs or the Seattle Lighting Design Lab, or CEE High-Performance T8 Specification rather than conventional T-8 ballast and lamps.

The program also recognizes the use of advanced designs and controls that exceed minimum code requirements. For example, add heat recovery not otherwise required by code; incorporate Luminaire Level Lighting Controls. Applicants must document how the efficiency element exceeds code and the anticipated savings.





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## Street Lighting Project Scoring

Commerce uses simple payback to score energy savings for street lighting projects. The lowest simple payback receives the highest score. The total maximum points possible for energy savings is 30.

## K-12 Public School District Project Scoring

After school districts have received their energy savings and leverage scores, they will be scored on the three additional criteria listed in the legislation for energy savings:

- **Lighting Only Projects**  
Lighting upgrade projects that include replacement of existing ballasts with PCBs are awarded an additional 10 points. To qualify for these additional 10 points, a minimum of 10 percent of the existing ballasts must have PCBs
- **Outdated Heating Projects**  
Replacing outdated heating systems which use oil or propane as fuel sources (as identified by WSU-Energy Programs) are awarded an additional 10 points
- **Prior Grant Award**  
School districts which did not receive a prior award (from appropriations provided in section 5023, chapter 19, Laws of 2013 2<sup>nd</sup> sp. session (OSPI awards March 31, 2014 including subsequent revisions to those awards) are awarded an additional five points

The total maximum points possible for K-12 public school districts' lighting only energy savings is 45.

The total maximum points possible for K-12 public school districts' (projects which include lighting replacements with no PCBs, and other energy efficiency and water saving measures) energy savings is 55.

## Solar Project Scoring

Commerce uses simple payback to score energy savings (production). The maximum points possible for energy production is 30. To acknowledge the use of made in Washington solar equipment, an additional 10 points will be added to the base score. The total maximum solar points awarded are 40.

## Leverage Ratio Scoring

Leverage ratios are based on the amount of non-state funds an applicant contributes to a project divided by the grant amount. The maximum points possible for leverage are 30. The higher the leverage ratio the higher the points.

Commerce has the following program **GOALS**:

- Commerce energy efficiency and lighting and street lighting grants are to constitute 25 percent or less of the total project cost (leverage ratio of 3:1)
- Applicants are encouraged to provide funding equivalent to at least seven years' worth of energy savings



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Commerce has the following program **REQUIREMENTS**:

- Commerce solar grants must have **at least** a 1:1 leverage ratio, **except for**
- Solar grants for small cities and towns, which must have **at least** a 0.5:1 leverage ratio

The following sources of funds **cannot be used** as leverage for any applicant:

- Any funds that originated as an appropriation from the Legislature are considered state funds. (These funds cannot be used to supplant other funds obtained through the private sector – e.g. payoff loans)
- In-house labor (employee time, benefits and overhead)

All leveraged funds must be capital.

## Sources of Leverage Funds

*Higher education may use the following funds as leverage:*

- Lease/Purchase program through the Office of the State Treasurer <http://www.tre.wa.gov/government/leasePurchaseProgram.shtml>
- Utility incentives
- Student fees
- Private donations
- Private lenders
- Federal funds
- Non-state appropriated funds

*Local governments may use the following funds as leverage:*

- Local Option Capital Asset Lending (LOCAL) program through the Office of the State Treasurer <http://www.tre.wa.gov/LOCAL/index.shtml>
- Private lenders
- Utility incentives
- Local and federal funds
- Non-state appropriated funds

*State agencies may use the following funds as leverage:*

- Lease/Purchase program through the Office of the State Treasurer <http://www.tre.wa.gov/government/leasePurchaseProgram.shtml>
- Utility incentives
- Federal funds
- Private donations
- Non-state appropriated funds

*School districts may use the following funds as leverage:*

- Local Option Capital Asset Lending (LOCAL) program through the Office of the State Treasurer <http://www.tre.wa.gov/LOCAL/index.shtml>
- Revenues from the sale of bonds



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- Revenues from special levies
- Private lenders
- Private donations/grants
- Federal funds
- Utility incentives

## Energy Star Portfolio Manager for Energy Efficiency Grants

All energy efficiency grant applications, except municipal street lighting only projects, are required to create a Portfolio Manager account, document the baseline energy use of the facility, set target energy use, and share the account with Commerce. The successful grantee shall update energy use each utility billing period until all M&V requirements are completed. See the DES website for more information on Portfolio Manager

<http://www.des.wa.gov/services/facilities/Energy/EnergyStar/Pages/default.aspx>

### 1. Create a Portfolio Manager Baseline

- For projects that include a single facility or multiple facilities with independent metering, create a Portfolio Manager account for each of the facilities.  
<http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/get-started-benchmarking>
- For projects that include multiple facilities served by campus metering, create a Portfolio Manager account using the campus option.  
<http://www.energystar.gov/buildings/tools-and-resources/how-benchmark-campus-campus>

### 2. Share the Portfolio Manager Account with Commerce

- Follow the Energy Star sharing instructions
- Create a Contact with the user name: *ComGrants*
- Share the account data using the "Read Only" option  
Instructions: <http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/share-and-request-data>

## Measurement and Verification of Energy Savings Requirements

All projects must submit M&V reports to Commerce. After the project has been completed and the Notice of the Commencement of Energy Savings has been issued, ongoing M&V begins, in order to verify that energy savings are occurring.

Commerce is now requiring one year of M&V for all internal and external lighting and municipal street lighting projects. All other energy efficiency and solar measures are required to have three years of M&V.

Commerce is no longer making a distinction between projects that use Energy Service Companies and those who do not.

Specific M&V requirements for municipal street lighting and lighting projects are in these guidelines. The contract Commerce has with the grantee also contains specific M&V requirements.



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## Specific Solar Grant Requirements

Commerce solar grants are open to new solar energy systems and to the expansion of existing systems.

Commerce solar grants **cannot** be used for:

- Replacing existing solar energy systems
- Community solar projects (as defined by WAC 458.20.273)
- Leased equipment
- Solar power purchase agreement projects

Commerce solar grants are available for solar PV electric generation systems and solar thermal water heating systems:

- PV solar electric generation technologies (roof-mounted, ground-mounted and building-integrated PV)
- Solar thermal energy displacing systems (solar water heaters, solar space heating, and solar cooling systems)

## PV Systems

All PV systems must have a mandatory minimum of 20,000 kWh/year of generation. The exception to this is applications from small cities and towns. Small cities and towns (with populations of 5,000 or less) must have a minimum 10,000 kWh/year of generation.

## Solar Thermal Systems

All solar water heaters must have a mandatory minimum of 20,000 kWh or equivalent Btu/year of generation. The exception to this is applications from small cities and towns which must have a minimum 10,000 kWh or equivalent Btu/year of generation.

## PV Electrical Generating Systems and Solar Thermal Systems

Applicants applying for both PV and solar hot water systems must meet all the requirements listed above.

The following companies comply with the legislation's preference for Washington-manufactured products.

- Itek Energy
- Outback Power
- Samson Solar
- Silicon Energy
- Silk Road

## Solar Application Submission Requirements

All solar applicants must submit:

- An on-line application through *ZoomGrants*
- A stamped structural engineering letter confirming the roof's structural integrity, if a solar array will be roof mounted
- A M&V plan
- A site plan



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- A preliminary electrical one-line diagram
- A shade analysis from Solar PathFinder, Solmetric SunEye or an equivalent
- Expected annual generation (kWh)
- A list of equipment (modules, inverter(s), and racking for PV)
- A list of Washington-manufactured solar/thermal PV equipment
- Interconnection agreements with the utility, if the project is not net-metered
- For agencies working with the Department of Enterprise Service (DES), please submit a copy of your current Interagency Agreement with DES
- If your agency *is not* using a DES project consultant, then a copy of the Request for Proposal (RFP) or Request for Qualifications (RFQ) that was used to select your ESCO or energy consultant is required
- Governor's Executive Order 05-05 review is required if your project has the potential to affect a building (or buildings) over 50-years old and/or proposes ground altering activities. Please provide the Department of Archaeology and Historic Preservation, and local area tribes, the opportunity to review and comment prior to submitting your application
- A letter from the Department of Archaeology and Historic Preservation (DAHP) stating that the project complies with Executive Order 05-05 requirements, or proof that consultation on your application is on-going  
<http://www.dahp.wa.gov/governors-executive-order-05-05>

## Energy Efficiency Application Submission Requirements

All energy efficiency applicants must submit:

- An on-line application through *ZoomGrants*
- An investment grade audit (IGA) and/or a final Energy Service Proposal or equivalent except lighting. Lighting applications may use lighting spreadsheets developed by utilities for their rebate programs. ASHRAE Level III IGA is the standard for comprehensive facility audits
- Water/sewer rates for projects involving water saving measures. If the local government applicant (i.e. city, county, water/sewer district) is a water purveyor, it must submit a sample billing showing the rate(s) it charges itself or other departments or other entities which buy water from it.
- A letter from the applicant's utility(s) stating the approximate rebate/incentive level
- Energy Star Documentation and Sharing or Street lighting audit forms. The building(s) current EPA ENERGY STAR Portfolio Manager® score and/or energy use intensity (EUI) (except for street lighting-only projects) - please provide printout from the website
- A M&V plan
- For agencies working with the Department of Enterprise Service (DES), please submit a copy of your current Interagency Agreement with DES
- If your project includes water savings, please submit a copy of the water rates used in calculating the savings
- **If your agency *is not* using a DES project consultant**, then a copy of the Request for Proposal (RFP) or Request for Qualifications (RFQ) that was used to select your ESCO or energy consultant **is required**
- Governor's Executive Order 05-05 review is required if your project has the potential to affect a building (or buildings) over 50-years old and/or proposes ground altering activities. Please provide the Department of Archaeology and Historic Preservation



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(DAHP), and local area tribes, the opportunity to review and comment prior to submitting your application

- A letter from the Department of Archaeology and Historic Preservation stating that the project complies with Executive Order 05-05 requirements, or proof that consultation on your application is on-going

<http://www.dahp.wa.gov/governors-executive-order-05-05>

## Documentation for Municipal Street Lighting Projects

Municipal street lighting projects shall be documented using lighting spread sheets developed to support electric utility rebate programs. The applicant shall use the lighting worksheet used by the serving utility. The energy savings estimates provided in the spread sheets will be used by Commerce to determine the energy savings. Municipal street lighting projects may include credit for reduction in fixture watts, decommissioning of fixtures and control strategies that reduce energy use compared to the baseline. Any new lighting fixtures added during the project must also be accounted for and will reduce the total project energy savings.

Provide a complete copy of the lighting worksheet reports with the application. The lighting worksheets shall include itemized descriptions of the existing lighting fixtures and controls based on actual fixture counts, not estimates. The proposed replacement fixtures and controls shall also be itemized.

Include a separate description of the existing and proposed control strategy. The utility spread sheets do not always provide good detail on the control strategies. Add a short paragraph describing the change in control strategies and how they will result in energy savings.

Provide documentation that the project will result in energy cost savings to the applicant.

Provide information based on the change in per unit utility rates for non-metered lighting or verify that the lighting system is on a metered rate and will benefit from reduction in energy use. Provide a copy of the utility tariffs applicable to the project baseline and the completed project.

At a minimum, municipal street lighting projects shall provide the following M&V:

### Installation M&V:

*Fixture Watts:* The contactor shall measure the total watts of a sample of the existing fixtures and the replacement fixtures. For each fixture type and size, five percent of the fixtures shall be included in the sample. It is recommended that a third party representing the owner observe some of the testing.

*Control Operation:* A functional test protocol for the lighting control system which clearly describes the individual systematic test procedures, the expected systems' response or acceptance criteria for each procedure shall be developed and provided to the installing electrician. At a minimum, the contractor shall implement the test protocol on no less than five percent of the controls. It is recommended that a third party representing the owner observe some of the testing.

*Energy Use Compared to Proposed Energy Use:* Provide documentation of the actual energy use compared to the proposed energy use and cost.



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## Annual M&V:

*Fixture performance:* Report the annual maintenance required to maintain fixture operation and energy savings. Including fixture failure rates or other required maintenance.

*Control changes and performance:* Report changes in the control strategies that increase or decrease energy use. Report the annual maintenance required to maintain control operation and the energy savings.

*Energy Use Compared to Proposed Energy Use:* Provide documentation of the actual energy use compared to the proposed energy use, demand and cost.

Any street light fixtures being replaced with LED lights must be recycled and disposed of properly. They cannot be reused in other street light fixtures or sold to a third party for reuse.

## Documentation of School Lighting Projects

Schools in the United States built before 1979 may have PCB-containing fluorescent tube ballasts. WA State Department of Ecology has identified removing PCB ballasts as a priority. Schools may submit an application for lighting only retrofits when existing lighting systems include PCBs. At a minimum, 10 percent of the existing fixtures targeted for retrofit must have ballasts with PCBs. Only the T12 magnetic fluorescent tube ballasts (not T8 or T5) will possibly contain PCBs.

It is anticipated replacement lighting systems will include electronically ballasted T8 or T5 fluorescent or LED lighting and advanced controls. School lighting projects shall be documented using lighting spread sheets developed to support electric utility rebate programs. The applicant shall use the lighting worksheet used by the serving utility. The energy savings estimates provided in the spread sheets will be used by Commerce to determine the energy savings. Lighting projects may include credit for reduction in fixture watts and control strategies that reduce energy use compared to the baseline. Any new lighting fixtures added during the project must also be accounted for and will reduce the total project energy savings.

Provide a complete copy of the lighting worksheet reports with the application. The lighting worksheets shall include itemized descriptions of the existing lighting fixtures based on actual fixture counts, not estimates. The proposed replacement fixtures and controls shall also be itemized.

Provide an audit of the facility that identifies all lighting fixtures, and all lighting fixtures that contain PCBs.

Include a separate description of the existing and proposed control strategy. The utility spread sheets do not always provide good detail on the control strategies. Add a short paragraph describing the change in control strategies and how they will result in energy savings.



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At a minimum, school district lighting projects shall provide the following M&V:

## Installation M&V:

*Fixture Watts:* The installing electrician shall measure the total watts of a sample of the existing fixtures and the replacement fixtures. For each fixture type and size, five percent of the fixtures shall be included in the sample. It is recommended that a third party representing the owner observe some of the testing.

*Control Operation:* A functional test protocol for the lighting control system which clearly describes the individual systematic test procedures, the expected systems' response or acceptance criteria for each procedure shall be developed and provided to the installing electrician. At a minimum, the installing electrician shall implement the test protocol on no less than five percent of the controls. It is recommended that a third party representing the owner observe some of the testing.

*Energy Use Compared to Proposed Energy Use:* Provide documentation of the actual energy use compared to the proposed energy use, demand and cost.

## Annual M&V:

*Fixture performance:* Report the annual maintenance required to maintain fixture operation and energy savings. Include fixture failure rates or other required maintenance.

*Control changes and performance:* Report changes in the control strategies that increases or decreases energy use. Report the annual maintenance required to maintain control operation and the energy savings.

*Energy Use Compared to Proposed Energy Use:* Provide documentation of the actual energy use compared to the proposed energy use, demand and cost.

The audit or assessment must indicate all PCB ballasts being removed. At the completion of the project, a disposal manifest accounting for all the PCB ballasts removed must be submitted to Commerce.