

# **EVALUATION OF TAX INCENTIVES**

## **Analysis of Renewable Energy Systems Program**

A Report to the Legislature

Washington State Department of Revenue  
Cindi L. Holmstrom, Director

December 2009



STATE OF WASHINGTON  
**DEPARTMENT OF REVENUE**  
OFFICE OF THE DIRECTOR

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December 21, 2009

**TO:** Tom Hoemann, Secretary  
Washington State Senate

Barbara Baker, Chief Clerk  
Washington State House of Representatives

**FROM:** Cindi L. Holmstrom, Director

**SUBJECT:** EVALUATION OF TAX INCENTIVE FOR RENEWABLE ENERGY  
SYSTEMS

This report contains analysis of the public utility tax credit program for payments to utility customers who generate their own electric power via specified renewable energy systems. It was prepared in response to the requirement in RCW 82.16.140. Pursuant to Section 24 of Chapter 518, Laws of 2009, the report is being submitted to your offices in electronic format.

This tax incentive program was established in 2005 and is already helping to encourage the generation of electricity from renewable resources. There are 959 renewable energy systems that have benefited from the annual cost recovery payments. Twenty utility firms have benefited from the tax credit, with a benefit of \$340,000 to date. Employment in the renewable energy sector continues to increase.

The report was prepared by Ray Philen and Don Taylor, Tax Policy Specialists in our Research Division, under the direction of Kathy Oline, Assistant Director. Please contact Kathy at (360) 570-6076 if you have any questions concerning the analysis.

Attachments

cc: Christine Gregoire, Governor  
Members, Senate Environment, Water and Energy Committee  
Members, Senate Ways and Means Committee  
Members, House Finance Committee  
Members, House Technology, Energy and Communications Committee  
Members, House Ways and Means Committee

CHAPTER ONE

EXECUTIVE SUMMARY

This report is submitted to the Legislature pursuant to RCW 82.16.140. It contains the results of an evaluation of the tax incentive for generation of electricity via a renewable energy system. The incentive allows customers of a light and power company to apply to the company for recovery of costs incurred in generating electric power on their own property using renewable energy sources, including solar, wind, or anaerobic digester systems. The light and power company, in turn, may claim credits for these payments against their public utility tax liability. This program was adopted in 2005 and is codified as RCW 82.16.110 - 130.

RCW 82.16.140 requires that the Department report to the Legislature on the utilization of this tax incentive program. The statute specifies that the report must include the number of manufacturers of solar energy systems located in Washington and any change in this number over time. Also, the report must analyze the number of jobs in this state which can be attributed to this tax incentive program. The Department is not allowed to conduct any surveys to obtain the information required by this statute.

There are currently 20 light and power companies that participate in the program. The estimated amount of state public utility tax credit taken in the past three years (Fiscal Year 2007 – Fiscal Year 2009) is \$340,000.

There have been 959 renewal energy projects that have received payments from light and power companies to date. Participating projects have been located in 32 counties; the counties with the most projects have been: King, 288; Jefferson, 66; Whatcom, 57; and Clallam, 54.

In terms of the number of renewable energy systems, by far the largest number have been in the solar energy sector. In 2008, there were 118 businesses in the renewable energy system sector. Solar-related businesses account for 101 of the 118 total businesses.

Employment in the renewable energy sector continues to increase. In 2004, employment in this sector totaled 777 employees. By 2008, total employees had grown to 1,166. The majority of the employment in the solar manufacturing sector is within the polysilicon and silicon materials for the photovoltaic and electronics industries.

## CHAPTER TWO

### OVERVIEW OF TAX INCENTIVE PROGRAM

In recent years, Washington has adopted several tax incentives intended to encourage energy efficiency and the use of renewable energy resources. The renewable energy cost recovery program addressed by this report was adopted in 2005 (Chapter 300, Laws of 2005); it became effective on July 1, 2005. Major changes to the program were implemented in 2009 (see below). Like many of the similar tax incentives enacted in the past decade, the program is scheduled to terminate. Payments for power produced via renewable energy systems are not eligible for tax credits after June 30, 2020, and any public utility tax credits accrued prior to that date must be claimed by June 30, 2021.

The program allows individuals, businesses (except light and power or gas distribution companies), local governments, and community solar projects to receive payments of up to \$5,000 annually for producing electric power via their own renewable energy system located on their property. Community solar projects are a new type of participant in the program added in 2009; these are solar systems which are either (1) jointly owned by individuals, non-utility businesses, and nonprofit organizations and located on land owned by a participating local government entity, or (2) owned by the electrical utility and are voluntarily financed by ratepayers of the firm. The payments are denoted as “cost recovery incentive payments.” However, there is no relationship between the cost of the renewable energy system and the amount of the annual payment. Rather, the amount of the payment is determined by the type of system, equipment used, and the amount of energy generated each year.

Prior to applying for the annual payments, participants must apply for an initial certification of their renewable energy system to the Department of Revenue and the Climate and Rural Energy Development Center at Washington State University. This application describes the renewable energy system and indicates the date that the system received its permit to operate (see appendix for copy of the certification form). The Department notifies each applicant of their system’s eligibility for the program.

Application for the payment is made directly to the customers’ electricity providers each year; a copy of the application is included in the appendix. Light and power companies are not required to participate in the program. But those that do may claim a credit against their state public utility tax for the payments they make to their customers under this program. Applications from participants are due each year by August 1 and cover the prior fiscal year ending June 30. The annual applications must state the number of kilowatt-hours produced by their renewable energy system.

DETERMINATION OF ELIGIBLE PAYMENTS

The amount of the annual payment to participants depends upon the type of system and the amount of kilowatt-hours of energy generated. The calculation starts with the number of kilowatts of electrical energy produced by the renewable energy system; the statute refers to these as “economic development kilowatt-hours.” The formula to calculate the incentive payment is based on a payment of fifteen cents for each kilowatt-hour of energy (30 cents for a community solar project) and includes a factor which varies depending on equipment used. This factor gives preferential weighting to solar systems, particularly those which incorporate modules that are manufactured in Washington. These weighting factors and payment rates are:

| Customer-generated power applicable rates   | Base rate (0.15) multiplied by factor, equals incentive rate |
|---|--|
| Solar modules manufactured in Washington<br>Factor: 2.4 (two and four-tenths)                   | \$0.36   |
| Solar or wind equipment with a Washington inverter*<br>Factor: 1.2 (one and two-tenths)         | \$0.18   |
| Anaerobic digester, solar, or wind blades manufactured in Washington State<br>Factor: 1.0 (one) | \$0.15   |
| All other electricity produced by wind<br>Factor: 0.8 (eight-tenths)                            | \$0.12   |

\*Inverters convert the direct current generated by the system to an alternating current that is capable to be used by the owner of the system or for distributing via the distribution system of the electrical utility company.

The factors are cumulative. For example, if a system is solar and has both solar modules and an inverter manufactured in Washington, economic development hours are calculated by using the factor three and six-tenths (3.6) (computed 2.4 plus 1.2). The fifteen cent base rate per actual kilowatt-hour generated multiplied by three and six-tenths (3.6) equals the incentive payment rate.

As noted above, the amount paid to any one participant is capped at \$5,000 per fiscal year. Each member of an approved community solar project is eligible for payments up to the \$5,000 limit.

For community solar projects, the formula to calculate the incentive payment is based on a payment of 30 cents per kilowatt-hour and includes a factor which varies depending upon equipment used. These weighting factors and payment rates are:

| Customer-generated power applicable rates  | Base rate (0.30) multiplied by factor, equals incentive rate |
|--|--|
| Solar modules manufactured in Washington<br>Factor: 2.4 (two and four-tenths)                      | \$0.72   |
| Solar or wind equipment with a Washington inverter<br>Factor: 1.2 (one and two-tenths)             | \$0.36   |
| Anaerobic digester, solar, or wind blades<br>manufactured in Washington State<br>Factor: 1.0 (one) | \$0.30   |
| All other electricity produced by wind<br>Factor: 0.8 (eight-tenths)                               | \$0.24   |

**CERTIFICATION OF ELIGIBLE SYSTEMS**

Renewable energy system owners must apply for system certification to the Department of Revenue which consults with the Climate and Rural Energy Development Center at Washington State University's energy extension. Certification forms are found on the Department's Internet site. The certification form requires certain verifiable information, including the following:

- (a) Name, address, and the address of the renewable energy system;
- (b) Department of Revenue tax registration number;
- (c) A statement that the renewable energy system generating electricity is located on the owner's real property and that the property is served by a participating light and power business;
- (d) A statement that the renewable energy electric generation system uses:
  - Any solar inverter or modules manufactured in Washington State;
  - A wind generator powered by blades manufactured in Washington State;
  - A solar inverter manufactured in Washington State;
  - A solar module manufactured in Washington State;
  - Solar or wind equipment manufactured outside Washington State; or

- An anaerobic digester which processes manure from cattle into biogas and dried manure using microorganisms in a closed oxygen-free container.

The amount of the annual payment to participants depends upon the type of system equipment used. Systems which include equipment manufactured in Washington receive a higher reimbursement rate than other systems. Inverters manufactured in Washington are available; however, other equipment types are not available as of June 2009.

### PUBLIC UTILITY TAX CREDIT

The public utility tax credit claimed by a light and power company in any single fiscal year is limited to the greater of (1) \$100,000 or (2) 1 percent of the firm's total sales of electrical power. There is a further limitation for community solar projects: the credit taken on these payments may not exceed 25 percent of the total allowable credit for the utility firm. Credits may not exceed the firm's public utility tax liability, and no refunds are provided for unused credits. Credits not claimed against tax liability for any fiscal year may not be carried over to future years.

There are currently 20 light and power companies that participate in the program. The amount of public utility tax credit taken during the latest year (Fiscal Year 2009) was \$188,000. The total credit taken to date is \$340,000.

### 2009 AMENDMENTS TO THE PROGRAM

Legislation adopted in 2009 – Chapter 469, Laws of 2009 – made significant changes to the programs, including:

- Extending the payments to community solar projects and increasing the base rate to \$0.30 for community solar projects;
- Raising the maximum allowable annual payment from \$2,000 to \$5,000;
- Removal of the prior requirement that a customer-generated renewable energy system not be connected to the utility firm's electrical distribution system;
- Increasing the cap for the public utility tax credit (previously, 0.25 percent of the utility's power sales up to a maximum of \$25,000; now, 1 percent of the firm's power sales up to a maximum of \$100,000); and
- Extension of the expiration date of the program by five years.

CHAPTER THREE

UTILIZATION AND IMPACT OF THE PROGRAM

The renewable energy cost recovery program has been in effect since July 1, 2005. The following table shows the number of light and power companies that have claimed the tax credit and the amounts each year. In total, the credit has reduced state tax revenues by \$340,000 over the life of the program.

**Table 3.1  
Utilization of the Public Utility Tax Credit**

| Light and Power Businesses Taking the Renewable Energy Cost Recovery PUT Credit |                      |              |
|---|----------------------|--------------|
| Fiscal Year   | Number of Businesses | Credit Taken |
| 2009  | 20                   | \$188,000    |
| 2008  | 14                   | \$99,000     |
| 2007  | 10                   | \$53,000     |
| 2006  | No credit users      |              |

The law provides preferential weighting to solar systems, particularly those which incorporate modules that are manufactured in Washington. The following table shows the type of renewable energy systems which have qualified for the cost recovery payments and the number that incorporate equipment produced in this state.

**Table 3.2  
Equipment Utilized in Renewable Energy Systems**

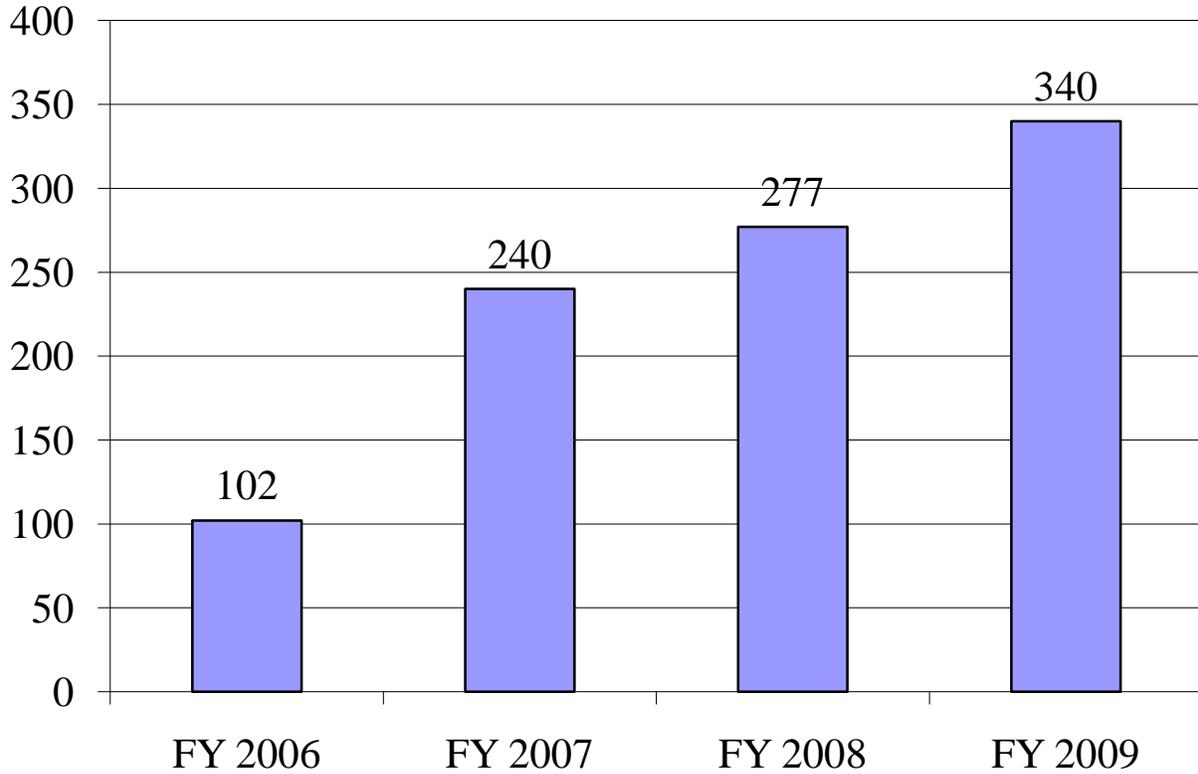
| Fiscal Year                                    | 2006       | 2007       | 2008       | 2009       |
|--|------------|------------|------------|------------|
| Solar inverters and modules manufactured in WA | 3          | 4          | 3          | 4          |
| Wind blades in WA                              |            | 3          |            |            |
| Solar inverter in WA                           | 26         | 50         | 37         | 23         |
| Solar modules manufactured in WA               | 1          |            |            |            |
| Solar or wind outside WA                       | 79         | 186        | 241        | 320        |
| Anaerobic digester                             |            | 1          |            |            |
| <b>Total</b>                                   | <b>109</b> | <b>244</b> | <b>281</b> | <b>347</b> |

Note: Some systems appear in more than one category.

A total of 959 renewable energy system certification applications were received by the Department of Revenue during fiscal years 2006 through 2009. All but one of these systems was

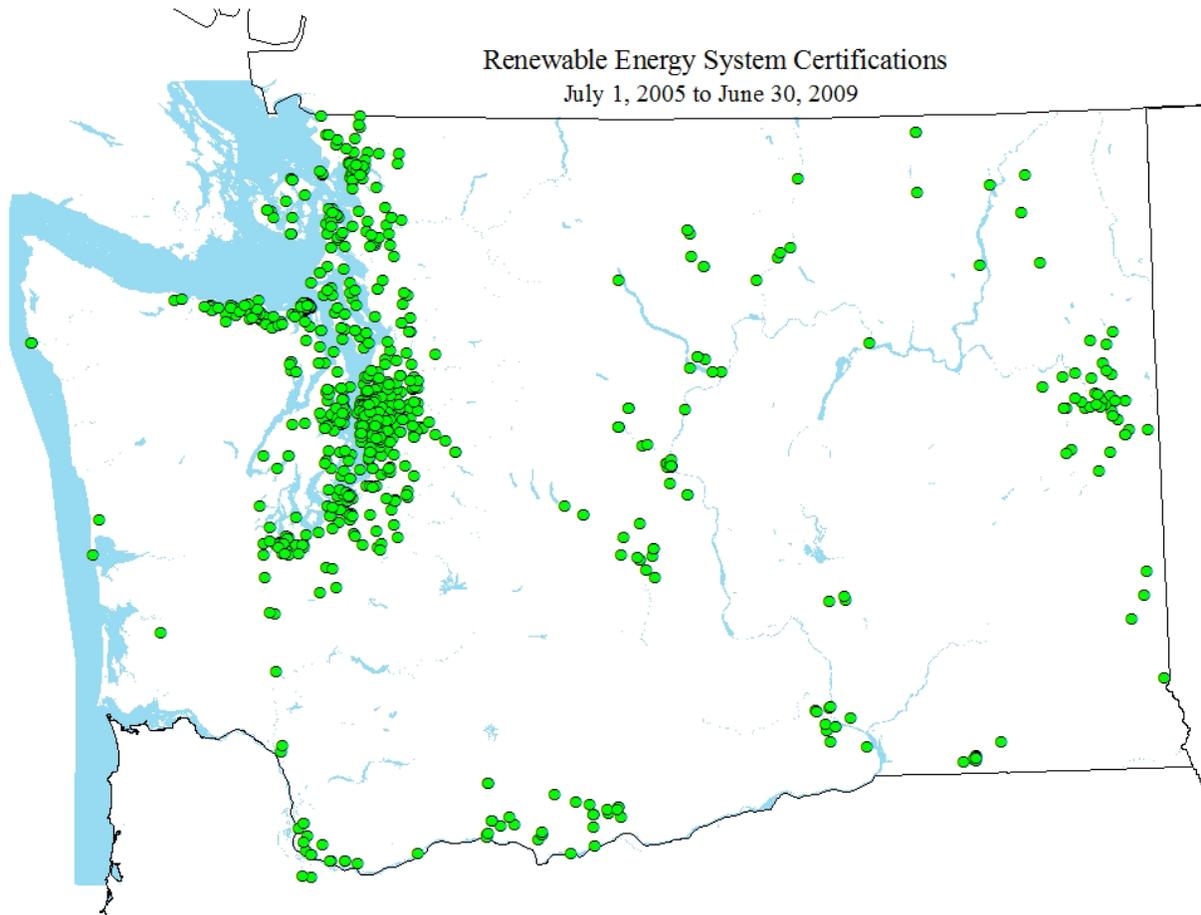
approved for incentive payments. The following chart shows the increase in number of applications received over time.

**Chart 3.A**  
**Renewable Energy Certifications Received**



System certification requests have been distributed throughout the state in proportion to population centers. Areas with more homes and businesses have a higher number of renewable energy systems, as illustrated in Chart 3.B.

**Chart 3.B**



Renewable energy systems are located in 32 counties. King County has the most approved systems with 30 percent of the total. Jefferson, Whatcom, and Clallam counties rank second, third, and fourth, respectively, in the number of systems. These three counties are assumed to have a higher number of systems relative to other counties with higher population levels due to the weather patterns in these areas caused from the rain shadow provided by the Olympic Mountains. Table 3.3 contains a breakdown of the number of systems by county.

**Table 3.3**  
**Location of Renewable Energy Systems**

|           |    |             |     |              |    |          |    |
|-----------|----|-------------|-----|--------------|----|----------|----|
| Adams     | 3  | Asotin      | 1   | Benton       | 10 | Chelan   | 44 |
| Clallam   | 54 | Clark       | 14  | Cowlitz      | 2  | Douglas  | 1  |
| Ferry     | 5  | Franklin    | 1   | Grays Harbor | 2  | Island   | 36 |
| Jefferson | 66 | King        | 288 | Kitsap       | 49 | Kittitas | 14 |
| Klickitat | 33 | Lewis       | 3   | Mason        | 5  | Okanogan | 12 |
| Pacific   | 1  | Pierce      | 51  | San Juan     | 26 | Skagit   | 41 |
| Skamania  | 1  | Snohomish   | 46  | Spokane      | 44 | Stevens  | 4  |
| Thurston  | 35 | Walla Walla | 7   | Whatcom      | 57 | Whitman  | 3  |

Businesses involved with renewable energy systems were identified through various sources, including:

- Washington State Energy Marketplace Directory, Directory of Renewable Energy, Energy Efficiency, and Sustainable Products Companies, June 2009, prepared by Washington Community, Trade and Economic Development, Energy Policy Division, State Energy Program.
- Department of Revenue combined excise tax returns and business registration information.
- Employment Security Department, quarterly unemployment insurance name and address information.
- Northwest Solar Center, a project of Washington State University and Shoreline Community College.

As seen in Table 3.4, during the latest year there were 123 companies involved in the renewable energy sector. The majority of these firms are engaged in the sale and installation of solar energy systems.

**Table 3.4  
Number of Businesses in the Renewable Energy System Sector  
Calendar Years 2004 – 2008**

|  | 2004 | 2005 | 2006 | 2007 | 2008 |
|--|------|------|------|------|------|
| Solar Manufacturing                              | 9    | 9    | 8    | 8    | 8    |
| Solar Components, System Sales, and Installation | 44   | 50   | 61   | 76   | 93   |
| Bio-Systems Development                          | 2    | 2    | 3    | 3    | 3    |
| Wind Power Systems Design                        | 7    | 9    | 9    | 13   | 14   |

Employment in the renewable energy sector has shown steady growth for the past five years, in large part due to manufacturing of silicon in various forms for use in solar modules. Locations where silicon production takes place are Vancouver and Moses Lake. Power inverters are manufactured by a business located in Arlington. “Inverters manufactured in Washington” is one of the equipment categories allowing a solar system owner to receive an increased production incentive payment.

The number of jobs in manufacturing of solar equipment has increased significantly in the past five years. The number of workers involved in the sale and installation of solar systems has also increased.

**Table 3.5  
Employment in the Renewable Energy System Sector**

|  | 2004         | 2005 | 2006 | 2007 | 2008 |
|--|--------------|------|------|------|------|
| Solar Manufacturing                                | 544          | 553  | 572  | 696  | 782  |
| Solar Components and System Sales and Installation | 212          | 221  | 230  | 294  | 336  |
| Bio-Systems Development                            | Confidential |      |      |      |      |
| Wind Power Systems Design                          | 22           | 29   | 41   | 74   | 48   |
| Total Employment                                   | 777          | 803  | 844  | 1063 | 1166 |

Note: The above table does not include persons employed by light and power businesses.

## CONCLUSION

There are currently 20 light and power companies that participate in the program. The estimated amount of state public utility tax credit taken in the past three years (Fiscal Year 2007 – Fiscal Year 2009) is \$340,000.

There have been 959 renewal energy projects that have received payments from light and power companies to date. Participating projects have been located in 32 counties; the counties with the most projects have been: King, 288; Jefferson, 66; Whatcom, 57; and Clallam, 54.

In terms of the number of renewable energy systems, by far the largest has been solar. In 2008, there were 118 businesses in the Renewable Energy System Sector. Solar-related industries account for 101 of the 118 businesses.

Employment in the renewable energy sector continues to increase. In 2004, employment in the renewable energy sector totaled 777 employees. By 2008, total employees had grown to 1,166. The majority of the employment in solar manufacturing is within the polysilicon and silicon materials for the photovoltaic and electronics industries.

The Department of Revenue has seen steady growth in the number of applications for energy system cost recovery certifications. Annual applications have risen from 102 in the first year of the program to 340 in Fiscal Year 2009. This trend should continue in future years.

## **APPENDIX**



## Community Solar Project Renewable Energy System Cost Recovery Annual Incentive Payment Application

Fiscal year: July 1, 20\_\_ - June 30, 20\_\_.

*First, contact the utility serving your property to confirm it is participating in this program and to receive its application procedures for this incentive payment.*

**Due to your light and power business by August 1.**

DOR Tax Reporting Number (TRN): \_\_\_\_\_

Light and Power Company Account No: \_\_\_\_\_

Customer Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone No: \_\_\_\_\_

Address of Community Solar Project: (If different from address above) \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Date of the letter, from the Department of Revenue, certifying that your renewable energy system is eligible for the incentive payment. \_\_\_\_\_ (Please attach a copy of the letter.)

Amount of kilowatt-hours generated by the renewable energy system for fiscal year ending June 30, 20\_\_.

| Customer-generated power applicable rates   | Base rate (0.30) multiplied by applicable factor, equals incentive payment rate | Kilowatt-hours generated | Incentive payment amount equals incentive payment rate multiplied by kilowatt-hours generated<br>Total may not exceed \$5,000 |
|---|---|--------------------------|---|
| Solar modules manufactured in Washington State<br><b>Factor: 2.4</b> (two and four-tenths)                                      | \$0.72  |                          |   |
| Solar or wind generating equipment with an inverter manufactured in Washington State<br><b>Factor: 1.2</b> (one and two-tenths) | \$0.36  |                          |   |
| Other solar equipment<br><b>Factor: 1.0</b> (one)   | \$0.30  |                          |   |

I acknowledge that my renewable energy system:

- Has been operable throughout the fiscal period, from \_\_\_\_\_<sup>(date)</sup> to \_\_\_\_\_<sup>(date)</sup>.
- Will have reasonable access for my light and power business. Allowing them to read my electric production meter in order to calculate the kilowatt-hours generated during the prior fiscal year beginning July 1 and ending on June 30.

I understand that this information is provided to the Department of Revenue in determining whether the light and power business correctly calculates its credit allowed for customer incentive payments and that my statements are true, complete, and correct to the best of my knowledge and belief under penalty of perjury.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

For tax assistance, visit [dor.wa.gov](http://dor.wa.gov) or 1-800-647-7706. To inquire about the availability of this document in an alternate format for the visually impaired, please call (360) 705-6715. Teletype (TTY) users may call 1-800-451-7985.

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## Renewable Energy System Cost Recovery Annual Incentive Payment Application

Fiscal year: July 1, 20\_\_ - June 30, 20\_\_.

*First, contact the utility serving your property to confirm it is participating in this program and to receive its application procedures for this incentive payment.*

**Due to your light and power business by August 1.**

DOR Tax Reporting Number (TRN): \_\_\_\_\_

Light and Power Company Account No: \_\_\_\_\_

Customer Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone No: \_\_\_\_\_

Address of Renewable Energy System:  
(If different from address above) \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Date of the letter, from the Department of Revenue, certifying that your renewable energy system is eligible for the incentive payment. \_\_\_\_\_ (Please attach a copy of the letter.)

Amount of kilowatt-hours generated by the renewable energy system for fiscal year ending June 30, 20\_\_.

| Customer-generated power applicable rates   | Base rate (0.15) multiplied by applicable factor, equals incentive payment rate | Kilowatt-hours generated | Incentive payment amount equals incentive payment rate multiplied by kilowatt-hours generated<br><b>Total may not exceed \$2,000</b> |
|---|---|--------------------------|--|
| Solar modules manufactured in Washington State<br><b>Factor: 2.4</b> (two and four-tenths)  | \$0.36  |                          |  |
| Solar or wind generating equipment with an inverter manufactured in Washington State<br><b>Factor: 1.2</b> (one and two-tenths)                 | \$0.18  |                          |  |
| Anaerobic digester or other solar equipment or wind generator equipped with blades manufactured in Washington State<br><b>Factor: 1.0</b> (one) | \$0.15  |                          |  |
| All other electricity produced by wind<br><b>Factor: 0.8</b> (eight-tenths)   | \$0.12  |                          |  |

I acknowledge that my renewable energy system:

- Has been operable throughout the fiscal period, from \_\_\_\_\_<sup>(date)</sup> to \_\_\_\_\_<sup>(date)</sup>.
- Will have reasonable access for my light and power business. Allowing them to read my electric production meter in order to calculate the kilowatt-hours generated during the prior fiscal year beginning July 1 and ending on June 30.

I understand that this information is provided to the Department of Revenue in determining whether the light and power business correctly calculates its credit allowed for customer incentive payments and that my statements are true, complete, and correct to the best of my knowledge and belief under penalty of perjury.

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