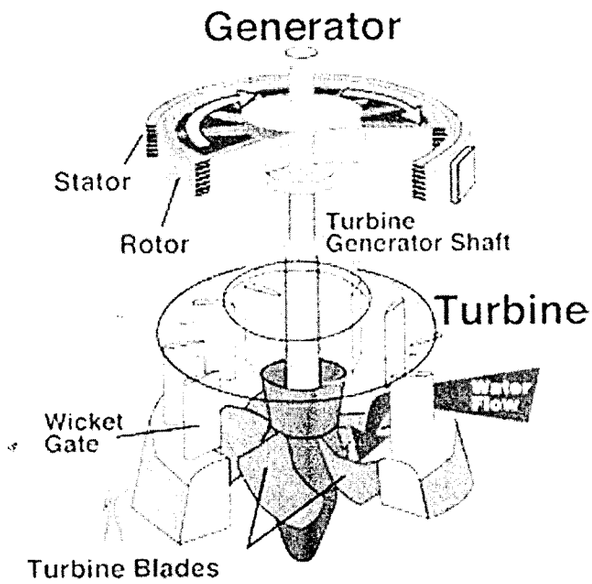
RENEWABLE ENERGY PRODUCTION TAX CREDIT: INSTRUCTIONS FOR REQUESTING CERTIFICATION OF INCREMENTAL HYDROPOWER PRODUCTION PURSUANT TO THE ENERGY POLICY ACT OF 2005



FEDERAL ENERGY REGULATORY COMMISSION

OFFICE OF ENERGY PROJECTS

DIVISION OF HYDROPOWER ADMINISTRATION & COMPLIANCE

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ENERGY POLICY ACT OF 2005
RENEWABLE ENERGY PRODUCTION TAX CREDIT

This paper was prepared by Commission's staff and does not necessarily reflect the views of other members of the Federal Energy Regulatory Commission.

SUMMARY

Section 45 of the Internal Revenue Code of 1986 provides a renewable energy tax credit to owners or operators of electric generation facilities that produce electricity from "qualified energy resources" at "qualified facilities," placed into service by specified dates.

Section 1301 of the Energy Policy Act of 2005 amends Code section 45 to apply the credit to incremental production gains from efficiency improvements or capacity additions to existing hydroelectric facilities placed into service after August 8, 2005 and before January 1, 2009.

Under Section 1301(c) the Commission is required to certify the "historic average annual hydropower production" and the "percentage of average annual hydropower production at the facility attributable to the efficiency improvements or additions of capacity" placed in service after August 8, 2005 and before January 1, 2009.

In this paper we will explain the requirements of the tax credit for incremental hydropower generation from efficiency improvements and the type of information the Commission would need to evaluate and certify such incremental increase in generation. For further information regarding this paper, please contact Mr. Mohamad Fayyad at (202) 502-8759 or by e-mail at mfayyad@ferc.gov.

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ENERGY POLICY ACT OF 2005
RENEWABLE ENERGY PRODUCTION TAX CREDIT

I. Changes to the Internal Revenue Service Code

Section 45 of the Internal Revenue Code of 1986[1] provides a renewable energy tax credit to owners or operators of electric generation facilities that produce electricity from "qualified energy resources" at "qualified facilities," placed into service by specified dates.[2] The credit, which is indexed for inflation, is currently about 1.8 cents per kilowatt-hour (kWh).

Section 1301 of the Energy Policy Act of 2005[3] (EPAct 2005) amends Code section 45 to apply the credit to:

1. Incremental production gains from efficiency improvements or capacity additions to existing hydroelectric facilities placed into service after August 8, 2005 and before January 1, 2009; and

2. With respect to non-hydroelectric dams, electricity from turbines or other generating devices placed into service after August 8, 2005 and before January 1, 2009.[4]

The credit for qualified hydropower production is one-half of the otherwise applicable credit amount (*i.e.*, currently about 0.9 cent per kWh).[5] The credit applies for

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[1] 26 U.S.C. § 45 (1994).

[2] Qualified energy sources include wind, biomass, geothermal energy, solar energy, small irrigation power, municipal solid waste and poultry waste brought into service before specified dates.

[3] Pub. L. No. 109-58 § 1301, 119 Stat. 594, (2005), and Pub. L. No. 109-432 Title II, § 201, 120 Stat. 2922, (2006).

[4] Section 1301 modifies the definition of "qualified energy resources" in Code section 45(c)(1) to include "qualified hydropower production." The latter term is defined in new subsection 45(c)(8).

[5] 26 U.S.C. § 45(b)(4)(A). This credit rate also applies to certain other qualified facilities not relevant here.

ten years, and begins on the in-service date of the qualifying efficiency improvement or capacity addition.[6]

Section 1301 amends Code section 45 to provide that the incremental hydropower production at an existing facility for any taxable year is equal to the percentage of average annual hydropower production at the facility attributable to the efficiency improvements or additions of capacity placed in service after the date of enactment, determined by using the same water flow information used to determine an historic average annual hydropower production baseline for such facility. The incremental hydropower production may not be based on operational changes unless they are directly associated with the efficiency improvements or additions of capacity. The Commission is required to certify the percentage and the baseline.[7]

In order for a capacity addition to a non-hydroelectric dam to qualify, the dam must be licensed by the Commission, have been placed into service before the date of enactment, and not have produced power on the date of enactment. In other words, the dam must have been placed in service prior to the enactment of EPAct 2005, but did not generate hydroelectric power before that date, and is included in a licensed project. There can be no enlargement of the diversion structure, construction or enlargement of a bypass channel, or any impoundment or withholding of additional water from the stream.[8] A licensee or exemptee is apparently eligible to apply this credit without documentation from the Commission, because revised Code section 45 does not require the Commission to certify capacity additions at non-hydroelectric dams.

II. Certification Procedures

A. Certification of Baseline Annual Hydropower Production

Section 1301 does not specify a method of determining the historic average annual hydropower production baseline, referring only to the use of "water flow information." Water flow often does not correspond directly to power production, because many projects are operated in a storage and release mode, have instream flow, fish passage, or other flow requirements that preclude or restrict generation at certain times to address environmental concerns, and because flows at certain times of the year may exceed the hydraulic capacity of the project's turbines.

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[6] New subparagraph 45(d)(9), added by EPAct 2005 section 1301(c)(4).

[7] Code section 45(c)(8)(B)(i) and (ii), as revised by EPAct 2005 section 1301(c)(3).

[8] Code section 45(c)(8)(C), as revised by EPAct 2005 section 1301(c)(3).

Under these circumstances, we will not establish a formula for calculating the baseline. Rather, licensees should submit for Commission review and certification the historic average annual hydropower production baseline they believe to be appropriate for the facility in question, along with the supporting calculation and water flow data. The Commission may request additional or revised data if that is necessary to complete its analysis.

B. Percentage of Annual Hydropower Production Attributable to Efficiency Improvements or Additions of Capacity

Calculating the percentage of annual hydropower production attributable to efficiency improvements or additions to capacity is a straightforward matter once project's average annual generation with and without the efficiency improvements or capacity addition is established.

Section 1301 does not define "efficiency improvements" or "additions of capacity," except by excluding "operational changes . . . not directly associated with the efficiency improvements or additions of capacity." We construe "efficiency improvements" to encompass additional generation from existing equipment in the form of upgrades to generators or turbines. Examples include rewinding generators, replacing turbines with more efficient units, and computerizing control of turbines and generators to optimize regulation of flows for generation. We construe "additions of capacity" to mean any increase in generating capacity other than an addition resulting from an efficiency improvement or an addition resulting from an operational change. An example of addition of capacity is of installation of a minimum flow generating unit. Examples of operational changes not directly associated with efficiency improvements or additions to capacity include raising the pond level to increase head[9] and reducing spill flows required for environmental protection.

Revised Code section 45 requires the Commission to certify the percentage of annual power production attributable to the efficiency improvements or additions of capacity. We interpret this to require us to certify the percentage just once, using the established average annual generation baseline and the incremental generation calculated when the project operator seeks authorization for the efficiency upgrade or addition to capacity. For instance, if the historic average annual generation has been 1,000,000 kWh and an efficiency upgrade would enable the project to generate 1,100,000 kWh, we would

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[9] Because new Code section 45(c)(8) distinguishes "operational changes" from "additions of capacity," we conclude that Congress did not intend to apply the credit to additions of capacity resulting solely from operational changes such as increasing the reservoir level or switching from run-of-river to peaking operation.

certify that ten percent of the average annual generation is attributable to the upgrade. We will allow a one-time recertification of the percentage if applicants can demonstrate such a need due to fluctuations in generation attributable to the efficiency improvements.

III. Instructions for Requesting Certification

Licensees and exemptees that intend to seek a renewable energy production tax credit for efficiency improvements or additions of capacity at existing facilities pursuant to Internal Revenue Service Code section 45 are required to provide the Internal Revenue Service with certification from the Commission. The Commission is required to certify the "historic average annual hydropower production" and the "percentage of average annual hydropower production at the facility attributable to the efficiency improvements or additions of capacity" placed in service after August 8, 2005 and before January 1, 2009. For this purpose, licensees should submit a request for certification that includes the following information:

A. Historic Average Annual Hydropower Production (baseline):

1. A calculation of the historic average annual hydropower production baseline for the facility, along with the supporting **water flow information** and any corresponding actual annual power production data for the period of record.

B. Percentage of Average Annual Hydropower Production Attributable to Efficiency Improvements or Additions of Capacity

1. Additions of Capacity: The additional installed capacity and the anticipated annual generation for the facility **based on the <u>same</u> water flow information** used to support the calculation of Historic Average Annual Hydropower Production baseline in item (A).
2. Efficiency improvements: The manufacturer's calculation of efficiency improvements to the upgraded generating equipment and the anticipated annual generation for the facility based on the same water flow data used to support the calculation of Historic Average Annual Hydropower Production baseline.
3. Calculations showing the percentage of average annual hydropower production attributable to the efficiency improvements or additions of capacity.
4. Proposed in-service date.

Any requests for Certification must be filed with the Commission's Secretary, in one original and 3 copies. The applicants must allow for no less than 90 days for the Commission to process their request.

IV. Appendix A
Sample Order Certifying Incremental Hydropower Generation

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Hydropower Company | Project No. 12345-001

SAMPLE
ORDER CERTIFYING INCREMENTAL HYDROPOWER GENERATION FOR IRS SECTION 45 PRODUCTION TAX CREDIT UNDER SECTION 1301(c) OF THE ENERGY POLICY ACT OF 2005

(Issued XXXX)

On [Month, Day, Year], [Company Name], licensee for the [Project Name, FERC No. xxxxx], located on [Name of water body], [County], [State], filed a request for certification for a renewable energy production tax credit for efficiency improvements or additions of capacity at existing facilities pursuant to Internal Revenue Service Code section 45. The licensee is required to provide the Internal Revenue Service with certification from the Commission of the "historic average annual hydropower production" and the "percentage of average annual hydropower production at the facility attributable to the efficiency improvements or additions of capacity" placed in service after August 8, 2005 and before January 1, 2009. The Commission is required to certify both figures.

CERTIFICATION

(A) Based on our review of the information provided by the licensee/exemptee we certify the following:

Type of Improvement	Additional Capacity ☐	Improved Efficiency ☐
Date of Operation		
Historical Generation Baseline (kWh)		
Generation with Improvements (kWh)		
Incremental Generation (kWh)		
Percentage of Generation Due to Improvements (%)		

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

[Official's Signature]