Energy Tax Reform Discussion Draft

Chairman Max Baucus
U.S. Senate Committee on Finance

12/18/13

As part of his work toward overhauling the U.S. tax code, Chairman Max Baucus is releasing a staff discussion draft today on energy tax reform. Tax incentives for domestic production of clean energy, whether from fossil fuels or renewables, serve important policy objectives. These include reducing damage from air pollution and greenhouse gas emissions, protecting the economy from price shocks, and enhancing national security.

Despite the importance of these goals, our current energy incentives are overly complex and far less effective than they could be. Today, there are 42 different energy tax incentives. More than half are too short-term to effectively stimulate investments. They also provide different subsidies to different technologies with no discernable policy rationale. On top of that, they result in significant revenue loss: if we continue to extend current incentives, they will cost nearly $150 billion over ten years.

To address these issues, this staff discussion draft proposes a dramatically simpler set of long-term energy tax incentives that are technology-neutral and promote cleaner energy that is made in the United States. The staff discussion draft extensively draws on proposals of a number of Senators, including Committee members Bennet, Brown, Cantwell, Cardin, Carper, Casey, Crapo, Enzi, Grassley, Menendez, Nelson, Rockefeller, Thune, and Wyden. Some of the significant proposals in the discussion draft include:

Tax Credit for Clean Electricity.

- Technology-neutral tax credit for domestic production of clean electricity. The cleaner the facility, the larger the credit.
- Open to all resources – renewable, fossil, or anything in between.
- Available as either a production tax credit of up to 2.23 cents/kwh or an investment tax credit of up to 20 percent.

Tax Credit for Clean Transportation Fuel.

- Technology-neutral tax credit for domestic production of clean transportation fuel. The cleaner the facility, the larger the credit.
- Open to all resources – renewable, fossil, or anything in between.
- Available either as a production tax credit of up to $1/gallon or an investment tax credit of up to 20 percent.

Long-Term, But Not Permanent. The two credits phase out once the greenhouse gas intensity of each market has declined by 25 percent.

Consolidated Provisions.

- Almost all existing energy tax incentives are consolidated into these two new credits, with appropriate transition relief.

Summary of Staff Discussion Draft: Energy Tax Reform

Chairman Max Baucus
U.S. Senate Committee on Finance

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Overview

As part of his work toward tax reform, Chairman Max Baucus is releasing a staff discussion draft today on energy tax reform. The Chairman and his staff are grateful to the Joint Committee on Taxation and Senate Legislative Counsel for their assistance with this draft.

The income tax has included energy-related incentives almost since its inception. Historically, the bulk of these incentives went to traditional fossil fuels, but since the 1970s an increasing share of tax preferences has gone to renewable energy. Tax incentives for the domestic production of clean energy, whether from fossil fuels or renewables, serve important policy objectives, including helping to prevent damage to our health, climate, and economy from air pollution and greenhouse gas emissions. By promoting the expansion and diversification of domestic energy production, they can also reduce our vulnerability to price shocks for specific energy sources and enhance national security.

Despite the importance of these objectives, our current collection of energy-related tax preferences is far less effective than it could be. And it has grown into a confusing and costly maze over time. Today, there are 42 different energy tax incentives, including more than a dozen preferences for fossil fuels, ten different incentives for renewable fuels and alternative vehicles, and six different credits for clean electricity. Of the 42 different energy incentives, 25 are temporary and expire every year or two. The credits for clean electricity alone have been adjusted 14 times since 1978 – an average of every two and a half years. Our current energy tax incentives also result in significant revenue loss. If we to continue to extend current incentives, they will cost nearly $150 billion over ten years.

Furthermore, our existing energy incentives provide different levels of subsidies for different technologies, picking winners and losers with no discernable policy rationale. For example, some clean energy production, such as generating electricity by capturing excess heat at manufacturing facilities, is ineligible for the production tax credit because it is not expressly listed in the code. Other types of energy production generating significant air pollution receive sizable tax subsidies.

We need more rational, targeted, and simple energy incentives to increase our energy security and ensure a clean and healthful environment for future generations.

Goals of the Staff Discussion Draft

Over the past three years, the Finance Committee has held six hearings related to energy tax reform. The Committee has also issued a paper on tax reform options under consideration in this area.

Drawing upon these efforts, this staff discussion draft proposes a streamlined, predictable, and technology-neutral set of energy tax incentives that focuses on promoting domestic energy production and reducing pollution. The proposed incentives are flexible enough to accommodate advances among fuels and technologies of any type – fossil or renewable. Specifically, the staff discussion draft promotes the following objectives:

- Eliminates current law incentives that are inefficient or no longer necessary, and replaces the remaining provisions with a small number of incentives that are simpler and more transparent.
- Focuses energy tax policy on stimulating domestic, clean production of electricity and transportation fuels, which account for 68 percent of energy consumed in the United States, in order to promote energy security and a clean environment.
- Ensures that all energy tax incentives are technology-neutral, and provides an equal credit to all resources or technologies based on how clean they are.
- Provides businesses and investors with more certainty by making incentives long enough to be effective, but phases incentives out once clearly defined goals have been met.

Summary of the Staff Discussion Draft

The staff discussion draft advances these goals through the reforms described below. While the Chairman believes tax reform as a whole should raise significant revenue for deficit reduction, the package of business reforms in this and other staff discussion drafts is intended to be revenue-neutral in the long-term (i.e., in a steady state), with corporate base broadeners paying for a significant reduction in the corporate tax rate. These proposals are meant to be considered as a package and not as stand-alone proposals.

Clean Electricity

As described further below, the staff discussion draft replaces the existing patchwork of incentives for clean electricity with a new tax credit that is technology-neutral and performance-based. The cleanliness of the generating technology determines the size of the credit. For any type of electricity generation, a business can choose whether it wants to receive the credit as a production tax credit, which is claimed each year, or an investment tax credit, which is claimed when the facility begins to operate. The tax credit expires when the cleanliness of the U.S. electricity market increases significantly.

This proposal draws upon S. 401 (113th), the Incentivizing Offshore Wind Act, sponsored by Sens. Carper, Brown, Cardin, Collins, Coons Cowan, Gillibrand, King, Lautenberg, Menendez, Mikulski, Reed, Schatz, Warren, and Whitehouse; S. 570 (113th), the Clean Energy Race to the Top Act, sponsored by Sen. Bennet; S. 2201 (112th), the American Energy and Jobs Promotion Act, sponsored by Sens. Grassley, Bennet, Brown, Franken, Harkin, Heller, Johnson, Merkley, Nelson, Mark Udall, and Wyden; and S. 3581 (112th), "A bill to… modify the credit for carbon dioxide sequestration," sponsored by Sens. Conrad, Enzi, and Rockefeller.

- **Clean electricity tax credit**.
    - Any facility producing electricity that is about 25 percent cleaner than the average for all electricity production facilities will receive a tax credit. The cleaner the facility, the larger the credit.
        - Cleanliness is defined by a simple ratio of the greenhouse gas emissions of a facility, as determined by the Environmental Protection Agency (EPA), divided by its electricity production.
    - Businesses can choose between claiming the credit as a production tax credit or an investment tax credit.
        - The maximum production tax credit for a zero emissions facility is $0.023 per kilowatt of generation, indexed for inflation. The production tax credit can be claimed on a single facility for a maximum of 10 years and cannot be claimed for facilities that begin to operate before January 1, 2017 (though such facilities may be eligible for the extended, current law production tax credit, described below).
        - The maximum investment tax credit is 20 percent of the cost of the investment. Generally the investment tax credit cannot be claimed for facilities that begin to operate before January 1, 2017. However, after

2016, a 20 percent investment tax credit can be claimed for existing facilities that undertake a carbon capture and sequestration retrofit that captures at least 50 percent of carbon dioxide emissions.

  - The credit phases out over four years once the greenhouse gas intensity of the U.S. electricity generation declines to the point that it is 25 percent cleaner than 2013.

  - In order to qualify for the credit, the electricity must be produced in the United States.

- **Transition rules**. The following three expiring provisions are allowed to continue through 2016 to provide a transition period for technologies that rely on current law incentives:

  - Section 45 credit for renewable electricity production

  - Section 48 investment tax credit for electricity

  - Section 25D credit for residential renewable electricity investments

- **Consolidated tax incentives**. This staff discussion draft consolidates seven different tax incentives for electricity generation. In addition, the staff discussion draft on cost recovery and tax accounting, which was released on November 21, 2013, proposed repealing another electricity generation incentive: accelerated depreciation for solar, wind, and other energy property.

Clean Fuels

Like electricity, the staff discussion draft also replaces the current patchwork of incentives for clean fuels with a new tax credit for clean transportation fuel that is technology-neutral and performance-based. The cleanliness of the fuel determines the size of the credit. Businesses can claim the credit as either a production tax credit or investment tax credit. The tax credit phases out when the cleanliness of the U.S. transportation fuel market increases significantly.

This proposal draws upon S. 656 (113th), the Natural Gas Energy and Alternatives Rewards Act, sponsored by Sen. Casey; S. 1564 (112th), the Renewable Fuel Parity Act, sponsored by Sens. Tom Udall and Crapo; and S. 1277 (112th), the Biodiesel Tax Incentive Reform and Extension Act, sponsored by Sens. Cantwell, Blunt, Franken, Grassley, Harkin, Johnson, Klobuchar, Murray, Shaheen, and Thune.

- **Clean transportation fuel tax credit.** Any fuel that is about 25 percent cleaner than conventional gasoline will generally receive a credit. The cleaner and more energy efficient the fuel, the larger the credit.
    - Cleanliness is defined as how clean a given fuel production process is on a lifecycle emissions basis, as determined by the EPA.
        - In order to simplify the credit calculation and allow businesses to plan effectively, EPA has authority to group similar production processes together and is required to provide provisional credit amounts for new technologies within 12 months of application.
        - Energy efficiency is defined as the energy density of a fuel compared to conventional gasoline.
        - The credit per gallon of fuel is calculated by multiplying its cleanliness by its energy efficiency.
    - Businesses can choose between claiming the credit as a production tax credit or an investment tax credit.
        - The maximum production tax credit for a fuel with the same energy content as gasoline and with zero lifecycle emissions is $1 per gallon. It can be claimed for a maximum of 10 years after a facility begins to operate. It cannot be claimed for fuel produced before December 31, 2016 (though such fuel may be eligible for the extended, current law production tax credit, described below).
        - The maximum investment tax credit is 20 percent of the cost of the investment. It is only available for facilities that begin to operate after December 31, 2016.
    - In order to qualify for the credit, the fuel must be produced and sold within the United States.
    - The credit phases out over four years once the greenhouse gas intensity of all transportation fuels has declined to a level that is 25 percent cleaner than conventional gasoline.
- **Transition rules**. The following three provisions that expire at the end of 2013 under current law are extended through 2016 to provide a transition period for technologies that rely on current law incentives:

- Section 40, 40A, and 6426 credits for transportation-grade, renewable, and alternative fuels

Consolidated tax incentives. This staff discussion draft consolidates four different tax incentives for transportation fuels. In addition, the staff discussion draft on cost recovery and tax accounting, which was released on November 21, 2013, proposed repealing two additional fuel production tax incentives: accelerated depreciation for cellulosic biofuel refineries and for refinery property for certain qualified fuels.

Repeal of Other Energy Tax Provisions

The staff discussion draft on cost recovery and tax accounting proposed repealing 11 current energy-related tax incentives that are not targeted on domestic production of electricity or fuels. In addition, this staff discussion draft proposes repealing or allowing to expire the following 11 provisions:

- Section 25C credit for residential energy efficiency
- Section 30B credits for fuel cell motor vehicles
- Section 30D credits for electric plug-in vehicles
- Section 43 credit for enhanced oil recovery costs
- Section 45I marginal well production credit
- Section 45N mine rescue training credit
- Section 45Q carbon dioxide sequestration credit
- Section 45L credit for construction of energy-efficient new homes
- Section 45M credit for energy efficient appliances
- Section 48C credit for investment in advanced energy property
- Treatment of gain resulting from Federal Energy Regulatory Commission restructuring

Unaddressed Issues and Request for Comments

Comments are requested on all aspects of the staff discussion draft as well as other areas of energy tax reform. Comments on the additional issues listed below are of particular interest. All comments should be submitted to tax_reform@finance.senate.gov. While comments will be accepted at any time, the staff requests comments by January 31, 2014 in order to give them full consideration.

- This staff discussion draft focuses on developing two simple, technology-neutral tax incentives for domestic production of clean electricity and clean fuels. The draft does not include tax incentives for other parts of the U.S. energy economy, such as energy

efficiency, clean vehicles, transmission, combined heat and power, and storage. Staff made this choice in order to target tax incentives on areas that appear to have the largest bang-for-the-buck in reducing air pollution and enhancing energy security, given concerns about overlapping regulations and spending programs, compliance costs, and the potential for fraud or abuse. For example, the tax code currently includes investment tax credits for infrastructure to deliver clean fuels from the refinery to vehicles. While this infrastructure is a critical part of the fuel supply chain, staff believe that it is most important to build the supply of clean fuels first. Without this supply, the infrastructure to deliver clean fuels will not exist. As another example, staff is concerned about the abuse of energy efficiency tax credits for residential home improvements that was highlighted by a September 2011 report by the Treasury Inspector General for Tax Administration citing thousands of fraudulent tax returns claiming the credit. However, staff is interested in comments on whether some or all of the revenue devoted to the credits proposed in this draft should be directed at these other sectors of the energy economy instead. Comments are also requested on whether and how tax incentives for these sectors could be implemented on a technology-neutral basis.

- The staff discussion draft proposes two tax credits for clean energy production. An alternative would be to discourage energy production that is not clean. Comments are requested on the overall merits of approaching energy policy through a subsidy for clean technologies versus a tax or fee on heavy polluting technologies or air pollution. Additional comments are requested on how to design such a tax or fee so that it would not harm trade-exposed and energy-intensive industries, and would not disproportionately harm low-income households.

- The proposed tax credits for production of clean electricity and transportation fuel phase out once the electricity generation and transportation fuel markets reach certain benchmarks of cleanliness. Comments are requested on other ways to appropriately phase out the policies described in this draft.

- The staff discussion draft generally limits the proposed production and investment tax credits to facilities that begin to operate after 2016. Comments are requested on whether it is appropriate to make the credits available to facilities placed in service before 2016 that convert to clean generating facilities and, if so, how such a policy should be designed.

- The investment tax credits in the staff discussion draft are recaptured if a facility's actual emissions are significantly less clean than when the facility was originally placed in

service. Comments are requested about whether the proposed recapture provisions are appropriate.

- In the staff discussion draft, the amount of credits provided for various clean fuel and electricity technologies is based on their cleanliness as determined by the EPA. Comments are requested on how to most effectively design a pre-certification process for new technologies.

- The staff discussion draft proposes an investment tax credit for retrofitting existing facilities with carbon capture technologies that capture at least 50 percent of their previous carbon dioxide emissions. Comments are requested on whether 50 percent is an appropriate threshold, whether the credit should be performance-based, and whether this credit will effectively promote adoption of carbon sequestration technologies.

TECHNICAL EXPLANATION OF THE SENATE COMMITTEE ON FINANCE'S STAFF DISCUSSION DRAFT TO REFORM CERTAIN ENERGY TAX PROVISIONS

Prepared by the Staff
of the
JOINT COMMITTEE ON TAXATION

December 18, 2013
JCX-21-13

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INTRODUCTION

This document,[1] prepared by the staff of the Joint Committee on Taxation, provides a technical explanation of the Senate Committee on Finance Chairman's staff discussion draft to reform certain energy tax provisions. This document is prepared at the request of Senate Committee on Finance Chairman Max Baucus.

[1] This document may be cited as follows*: Joint Committee on Taxation, Technical Explanation of the Senate Committee on Finance Chairman's Staff Discussion Draft to Reform Certain Energy Tax Provisions (JCX-21-13*), December 18, 2013. This document can also be found on our website at www.jct.gov.

A. Clean Energy Production and Investment Tax Credits

Present Law

Renewable electricity production credit (sec. 45)[2]

In general

An income tax credit is allowed for the production of electricity from qualified energy resources at qualified facilities (the "renewable electricity production credit").[3] Qualified energy resources comprise wind, closed-loop biomass, open-loop biomass, geothermal energy, solar energy, small irrigation power, municipal solid waste, qualified hydropower production, and marine and hydrokinetic renewable energy. Qualified facilities are, generally, facilities that generate electricity using qualified energy resources. To be eligible for the credit, electricity produced from qualified energy resources at qualified facilities must be sold by the taxpayer to an unrelated person.

Credit amounts and credit period

In general

The base amount of the electricity production credit is 1.5 cents (indexed annually for inflation) per kilowatt-hour of electricity produced. The amount of the credit is 2.3 cents per kilowatt-hour for 2013. A taxpayer may generally claim a credit during the 10-year period commencing with the date the qualified facility is placed in service. The credit is reduced for grants, tax-exempt bonds, subsidized energy financing, and other credits.

Credit phaseout

The amount of credit a taxpayer may claim is phased out as the market price of electricity exceeds certain threshold levels. The electricity production credit is reduced over a three-cent phaseout range to the extent the annual average contract price per kilowatt-hour of electricity sold in the prior year from the same qualified energy resource exceeds eight cents (adjusted for inflation).

Reduced credit amount for certain facilities

In the case of open-loop biomass facilities (including agricultural livestock waste nutrient facilities), small irrigation power facilities, landfill gas facilities, trash combustion facilities, qualified hydropower facilities, and marine and hydrokinetic renewable energy facilities, the

[2] Unless otherwise stated, all section references are to the Internal Revenue Code of 1986, as amended (the "Code").

[3] Sec. 45. In addition to the renewable electricity production credit, section 45 provides income tax credits for the production of Indian coal and refined coal at qualified facilities.

otherwise allowable credit amount is 0.75 cent per kilowatt-hour, indexed for inflation measured after 1992 (1.1 cent per kilowatt-hour for 2013).

Other limitations on credit claimants and credit amounts

In general, to claim the credit, a taxpayer must own the qualified facility and sell the electricity produced by the facility to an unrelated party. Generally, the amount of credit a taxpayer may claim is reduced by reason of grants, tax-exempt bonds, subsidized energy financing, and other credits, but the reduction cannot exceed 50 percent of the otherwise allowable credit.

The credit for electricity produced from renewable resources is a component of the general business credit.[4] Generally, the general business credit for any taxable year may not exceed the amount by which the taxpayer's net income tax exceeds the greater of the tentative minimum tax or 25 percent of so much of the net regular tax liability as exceeds $25,000. However, this limitation does not apply to section 45 credits for electricity produced from a facility (placed in service after October 22, 2004) during the first four years of production beginning on the date the facility is placed in service.[5] Excess credits may be carried back one year and forward up to 20 years.

Qualified facilities

Wind energy facility

A wind energy facility is a facility that uses wind to produce electricity. To be a qualified facility, the construction of a wind energy facility must begin before January 1, 2014.

Closed-loop biomass facility

A closed-loop biomass facility is a facility that uses any organic material from a plant that is planted exclusively for the purpose of being used at a qualifying facility to produce electricity. To be a qualified facility, the construction of a closed-loop biomass facility must begin before January 1, 2014.

A qualified facility includes a new power generation unit placed in service after October 3, 2008, at an existing closed-loop biomass facility, but only to the extent of the increased amount of electricity produced at the existing facility by reason of such new unit.

Open-loop biomass (including agricultural livestock waste nutrients) facility

An open-loop biomass facility is a facility that uses open-loop biomass to produce electricity. For purposes of the credit, open-loop biomass is defined as (1) any agricultural

[4] Sec. 38(b)(8).

[5] Sec. 38(c)(4)(B)(ii).

livestock waste nutrients or (2) any solid, nonhazardous, cellulosic waste material or any lignin material that is segregated from other waste materials and which is derived from:

- forest-related resources, including mill and harvesting residues, precommercial thinnings, slash, and brush;
- solid wood waste materials, including waste pallets, crates, dunnage, manufacturing and construction wood wastes, and landscape or right-of-way tree trimmings; or
- agricultural sources, including orchard tree crops, vineyard, grain, legumes, sugar, and other crop by-products or residues.

Agricultural livestock waste nutrients are defined as agricultural livestock manure and litter, including bedding material for the disposition of manure. Wood waste materials do not qualify as open-loop biomass to the extent they are pressure treated, chemically treated, or painted. In addition, municipal solid waste, gas derived from the biodegradation of solid waste, and paper that is commonly recycled do not qualify as open-loop biomass. Open-loop biomass does not include closed-loop biomass or any biomass burned in conjunction with fossil fuel (co-firing) beyond such fossil fuel required for start up and flame stabilization.

In the case of an open-loop biomass facility that uses agricultural livestock waste nutrients, a qualified facility is one that has a nameplate capacity rating which is not less than 150 kilowatts and the construction of which begins before January 1, 2014. In the case of any other open-loop biomass facility, a qualified facility is one the construction of which begins before January 1, 2014. A qualified facility includes a new power generation unit placed in service after October 3, 2008, at an existing open-loop biomass facility, but only to the extent of the increased amount of electricity produced at the existing facility by reason of such new unit.

Geothermal facility

A geothermal facility is a facility that uses geothermal energy to produce electricity. Geothermal energy is energy derived from a geothermal deposit that is a geothermal reservoir consisting of natural heat that is stored in rocks or in an aqueous liquid or vapor (whether or not under pressure). To be a qualified facility, the construction of a geothermal facility must begin before January 1, 2014.

Solar facility

A solar facility is a facility that uses solar energy to produce electricity. To be a qualified facility, a solar facility must be placed in service after October 22, 2004, and before January 1, 2006.

Small irrigation facility

A small irrigation power facility is a facility that generates electric power through an irrigation system canal or ditch without any dam or impoundment of water. The installed capacity of a qualified facility must be at least 150 kilowatts but less than five megawatts. To be a qualified facility, the construction of a small irrigation facility must be originally placed in service after October 22, 2004, and before October 3, 2008. Marine and hydrokinetic renewable

energy facilities, described below, subsume small irrigation power facilities after October 2, 2008.

Landfill gas facility

A landfill gas facility is a facility that uses landfill gas to produce electricity. Landfill gas is defined as methane gas derived from the biodegradation of municipal solid waste. To be a qualified facility, the construction of a landfill gas facility must begin before January 1, 2014.

Trash combustion facility

Trash combustion facilities are facilities that use municipal solid waste (garbage) to produce steam to drive a turbine for the production of electricity. To be a qualified facility, the construction of a trash combustion facility must begin before January 1, 2014. A qualified trash combustion facility includes a new unit that increases electricity production capacity at an existing trash combustion facility. A new unit generally would include a new burner/boiler and turbine. The new unit may share certain common equipment, such as trash handling equipment, with other pre-existing units at the same facility. Electricity produced at a new unit of an existing facility qualifies for the production credit only to the extent of the increased amount of electricity produced at the entire facility.

Hydropower facility

A qualifying hydropower facility is (1) a facility that produced hydroelectric power (a hydroelectric dam) prior to August 8, 2005, at which efficiency improvements or additions to capacity have been placed in service after such date and before January 1, 2014, that enable the taxpayer to produce incremental hydropower or (2) a facility placed in service before August 8, 2005, that did not produce hydroelectric power (a nonhydroelectric dam) on such date, and to which turbines or other electricity generating equipment have been placed in service after such date and before January 1, 2014. For purposes of qualifying under these rules, a facility will be treated as placed in service if the construction of such facility begins before January 1, 2014.

At an existing hydroelectric facility, the taxpayer may claim credit only for the production of incremental hydroelectric power. Incremental hydroelectric power for any taxable year is equal to the percentage of average annual hydroelectric power produced at the facility attributable to the efficiency improvement or additions of capacity determined by using the same water flow information used to determine an historic average annual hydroelectric power production baseline for that facility. The Federal Energy Regulatory Commission will certify the baseline power production of the facility and the percentage increase due to the efficiency and capacity improvements.

Nonhydroelectric dams converted to produce electricity must be licensed by the Federal Energy Regulatory Commission and meet all other applicable environmental, licensing, and regulatory requirements.

For a nonhydroelectric dam converted to produce electric power before January 1, 2009, there must not be any enlargement of the diversion structure, construction or enlargement of a

bypass channel, or the impoundment or any withholding of additional water from the natural stream channel.

For a nonhydroelectric dam converted to produce electric power after December 31, 2008, the nonhydroelectric dam must (1) have been placed in service before October 3, 2008, (2) have been operated for flood control, navigation, or water supply purposes and (3) not have produce hydroelectric power on October 3, 2008. In addition, the hydroelectric project must be operated so that the water surface elevation at any given location and time that would have occurred in the absence of the hydroelectric project is maintained, subject to any license requirements imposed under applicable law that change the water surface elevation for the purpose of improving environmental quality of the affected waterway. The Secretary, in consultation with the Federal Energy Regulatory Commission, shall certify if a hydroelectric project licensed at a nonhydroelectric dam meets this criteria.

Marine and hydrokinetic renewable energy facility

A qualified marine and hydrokinetic renewable energy facility is any facility that produces electric power from marine and hydrokinetic renewable energy, has a nameplate capacity rating of at least 150 kilowatts, and the construction of which begins before January 1, 2014. Marine and hydrokinetic renewable energy is defined as energy derived from (1) waves, tides, and currents in oceans, estuaries, and tidal areas; (2) free flowing water in rivers, lakes, and streams; (3) free flowing water in an irrigation system, canal, or other man-made channel, including projects that utilize nonmechanical structures to accelerate the flow of water for electric power production purposes; or (4) differentials in ocean temperature (ocean thermal energy conversion). The term does not include energy derived from any source that uses a dam, diversionary structure (except for irrigation systems, canals, and other man-made channels), or impoundment for electric power production.

Energy investment credit (sec. 48)

In general

A nonrefundable, 10-percent business energy credit[6] is allowed for the cost of new property that is equipment that either (1) uses solar energy to generate electricity, to heat or cool a structure, or to provide solar process heat or (2) is used to produce, distribute, or use energy derived from a geothermal deposit, but only, in the case of electricity generated by geothermal power, up to the electric transmission stage. Property used to generate energy for the purposes of heating a swimming pool is not eligible solar energy property.

The energy credit is a component of the general business credit.[7] An unused general business credit generally may be carried back one year and carried forward 20 years.[8] The

[6] Sec. 48.

[7] Sec. 38(b)(1).

[8] Sec. 39.

taxpayer's basis in the property is reduced by one-half of the amount of the credit claimed. For projects whose construction time is expected to equal or exceed two years, the credit may be claimed as progress expenditures are made on the project, rather than during the year the property is placed in service. The credit is allowed against the alternative minimum tax for credits determined in taxable years beginning after October 3, 2008.

Special rules for solar energy property

The credit for solar energy property is increased to 30 percent in the case of periods prior to January 1, 2017. Additionally, equipment that uses fiber-optic distributed sunlight to illuminate the inside of a structure is solar energy property eligible for the 30-percent credit.

Fuel cells and microturbines

The energy credit applies to qualified fuel cell power plants, but only for periods prior to January 1, 2017. The credit rate is 30 percent.

A qualified fuel cell power plant is an integrated system composed of a fuel cell stack assembly and associated balance of plant components that (1) converts a fuel into electricity using electrochemical means, and (2) has an electricity-only generation efficiency of greater than 30 percent and a capacity of at least one-half kilowatt. The credit may not exceed $1,500 for each 0.5 kilowatt of capacity.

The energy credit applies to qualifying stationary microturbine power plants for periods prior to January 1, 2017. The credit is limited to the lesser of 10 percent of the basis of the property or $200 for each kilowatt of capacity.

A qualified stationary microturbine power plant is an integrated system comprised of a gas turbine engine, a combustor, a recuperator or regenerator, a generator or alternator, and associated balance of plant components that converts a fuel into electricity and thermal energy. Such system also includes all secondary components located between the existing infrastructure for fuel delivery and the existing infrastructure for power distribution, including equipment and controls for meeting relevant power standards, such as voltage, frequency and power factors. Such system must have an electricity-only generation efficiency of not less than 26 percent at International Standard Organization conditions and a capacity of less than 2,000 kilowatts.

Geothermal heat pump property

The energy credit applies to qualified geothermal heat pump property placed in service prior to January 1, 2017. The credit rate is 10 percent. Qualified geothermal heat pump property is equipment that uses the ground or ground water as a thermal energy source to heat a structure or as a thermal energy sink to cool a structure.

Small wind property

The energy credit applies to qualified small wind energy property placed in service prior to January 1, 2017. The credit rate is 30 percent. Qualified small wind energy property is

property that uses a qualified wind turbine to generate electricity. A qualifying wind turbine means a wind turbine of 100 kilowatts of rated capacity or less.

Combined heat and power property

The energy credit applies to combined heat and power ("CHP") property placed in service prior to January 1, 2017. The credit rate is 10 percent.

CHP property is property: (1) that uses the same energy source for the simultaneous or sequential generation of electrical power, mechanical shaft power, or both, in combination with the generation of steam or other forms of useful thermal energy (including heating and cooling applications); (2) that has an electrical capacity of not more than 50 megawatts or a mechanical energy capacity of not more than 67,000 horsepower or an equivalent combination of electrical and mechanical energy capacities; (3) that produces at least 20 percent of its total useful energy in the form of thermal energy that is not used to produce electrical or mechanical power, and produces at least 20 percent of its total useful energy in the form of electrical or mechanical power (or a combination thereof); and (4) the energy efficiency percentage of which exceeds 60 percent. CHP property does not include property used to transport the energy source to the generating facility or to distribute energy produced by the facility.

The otherwise allowable credit with respect to CHP property is reduced to the extent the property has an electrical capacity or mechanical capacity in excess of any applicable limits. Property in excess of the applicable limit (15 megawatts or a mechanical energy capacity of more than 20,000 horsepower or an equivalent combination of electrical and mechanical energy capacities) is permitted to claim a fraction of the otherwise allowable credit. The fraction is equal to the applicable limit divided by the capacity of the property. For example, a 45 megawatt property would be eligible to claim 15/45ths, or one third, of the otherwise allowable credit. Again, no credit is allowed if the property exceeds the 50 megawatt or 67,000 horsepower limitations described above.

Additionally, systems whose fuel source is at least 90 percent open-loop biomass and that would qualify for the credit but for the failure to meet the efficiency standard are eligible for a credit that is reduced in proportion to the degree to which the system fails to meet the efficiency standard. For example, a system that would otherwise be required to meet the 60-percent efficiency standard, but which only achieves 30-percent efficiency, would be permitted a credit equal to one-half of the otherwise allowable credit (*i.e.*, a 5-percent credit).

Election of energy credit in lieu of section 45 production tax credit

A taxpayer may make an irrevocable election to have certain qualified facilities placed in service in 2009 through 2013 be treated as energy property eligible for a 30-percent investment credit under section 48. For this purpose, qualified facilities are facilities otherwise eligible for the renewable electricity production tax credit with respect to which no credit under section 45 has been allowed. A taxpayer electing to treat a facility as energy property may not claim the production credit under section 45.

Advanced nuclear power credit (sec. 45J)

Taxpayers producing electricity at a qualifying advanced nuclear power facility may claim a credit equal to 1.8 cents per kilowatt-hour of electricity produced for the eight-year period starting when the facility is placed in service.[9] The aggregate amount of credit that a taxpayer may claim in any year during the eight-year period is subject to limitation based on allocated capacity and an annual limitation as described below.

A qualifying advanced nuclear facility is an advanced nuclear facility for which the taxpayer has received an allocation of megawatt capacity from the Secretary and is placed in service before January 1, 2021. The taxpayer may only claim credit for production of electricity equal to the ratio of the allocated capacity that the taxpayer receives from the Secretary to the rated nameplate capacity of the taxpayer's facility. For example, if the taxpayer receives an allocation of 750 megawatts of capacity from the Secretary and the taxpayer's facility has a rated nameplate capacity of 1,000 megawatts, then the taxpayer may claim three-quarters of the otherwise allowable credit, or 1.35 cents per kilowatt-hour, for each kilowatt-hour of electricity produced at the facility (subject to the annual limitation described below). The Secretary may allocate a total of up to 6,000 megawatts of capacity.

A taxpayer operating a qualified facility may claim no more than $125 million in tax credits per 1,000 megawatts of allocated capacity in any one year of the eight-year credit period. If the taxpayer operates a 1,350 megawatt rated nameplate capacity system and has received an allocation from the Secretary for 1,350 megawatts of capacity eligible for the credit, the taxpayer's annual limitation on credits that may be claimed is equal to 1.35 times $125 million, or $168.75 million. If the taxpayer operates a facility with a nameplate rated capacity of 1,350 megawatts, but has received an allocation from the Secretary for 750 megawatts of credit eligible capacity, then the two limitations apply such that the taxpayer may claim a credit equal to 1 cent per kilowatt-hour of electricity produced (as described above) subject to an annual credit limitation of $93.75 million in credits (three-quarters of $125 million).

An advanced nuclear facility is any nuclear facility for the production of electricity, the reactor design for which was approved after 1993 by the Nuclear Regulatory Commission. For this purpose, a qualifying advanced nuclear facility does not include any facility for which a substantially similar design for a facility of comparable capacity was approved before 1994.

In addition, the credit allowable to the taxpayer is reduced by reason of grants, tax-exempt bonds, subsidized energy financing, and other credits, but such reduction cannot exceed 50 percent of the otherwise allowable credit. The credit is treated as part of the general business credit.

[9] The 1.8-cents credit amount is reduced, but not below zero, if the annual average contract price per kilowatt-hour of electricity generated from advanced nuclear power facilities in the preceding year exceeds eight cents per kilowatt-hour. The eight-cent price comparison level is indexed for inflation after 1992.

Carbon dioxide sequestration credit (sec. 45Q)

A credit of $10 per metric ton is available for qualified carbon dioxide that is captured by the taxpayer at a qualified facility, used by such taxpayer as a tertiary injectant (including carbon dioxide augmented waterflooding and immiscible carbon dioxide displacement) in a qualified enhanced oil or natural gas recovery project and disposed of by such taxpayer in secure geological storage.[10] In addition, a credit of $20 per metric ton is available for qualified carbon dioxide captured by a taxpayer at a qualified facility and disposed of by such taxpayer in secure geological storage without being used as a tertiary injectant. Both credit amounts are adjusted for inflation after 2009.

Secure geological storage includes storage at deep saline formations, oil and gas reservoirs, and unminable coal seams. The Secretary, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, and the Secretary of the Interior, is required to establish regulations for determining adequate security measures for the secure geological storage of carbon dioxide such that the carbon dioxide does not escape into the atmosphere.

Qualified carbon dioxide is defined as carbon dioxide captured from an industrial source that (1) would otherwise be released into the atmosphere as an industrial emission of greenhouse gas, and (2) is measured at the source of capture and verified at the point or points of injection. Qualified carbon dioxide includes the initial deposit of captured carbon dioxide used as a tertiary injectant but does not include carbon dioxide that is recaptured, recycled, and re-injected as part of an enhanced oil or natural gas recovery project process. A qualified enhanced oil or natural gas recovery project is a project that would otherwise meet the definition of an enhanced oil recovery project under section 43, if natural gas projects were included within that definition.

A qualified facility means any industrial facility (1) which is owned by the taxpayer, (2) at which carbon capture equipment is placed in service, and (3) which captures not less than 500,000 metric tons of carbon dioxide during the taxable year. The credit applies only with respect to qualified carbon dioxide captured and sequestered or injected in the United States[11] or one of its possessions.[12]

Except as provided in regulations, credits are attributable to the person that captures and physically or contractually ensures the disposal, or use as a tertiary injectant, of the qualified carbon dioxide. Credits are subject to recapture, as provided by regulation, with respect to any qualified carbon dioxide that ceases to be recaptured, disposed of, or used as a tertiary injectant in a manner consistent with the rules of the provision.

The credit is part of the general business credit. The credit sunsets at the end of the calendar year in which the Secretary, in consultation with the Administrator of the

[10] Sec. 45Q.

[11] Sec. 638(1).

[12] Sec. 638(2).

Environmental Protection Agency, certifies that 75 million metric tons of qualified carbon dioxide have been captured and sequestered.

Advanced coal project credit (sec. 48A)

In general

An investment tax credit is available for power generation projects that use integrated gasification combined cycle ("IGCC") or other advanced coal-based electricity generation technologies.

First round of credit allocations

For the first round of credit allocations, the credit amount is 20 percent for investments in qualifying IGCC projects and 15 percent for investments in qualifying projects that use other advanced coal-based electricity generation technologies.

To qualify, an advanced coal project must be located in the United States and use an advanced coal-based generation technology to power a new electric generation unit or to retrofit or repower an existing unit. Generally, an electric generation unit using an advanced coal-based technology must be designed to achieve a 99-percent reduction in sulfur dioxide and a 90-percent reduction in mercury, as well as to limit emissions of nitrous oxide and particulate matter.[13]

The fuel input for a qualifying project, when completed, must use at least 75 percent coal. The project, consisting of one or more electric generation units at one site, must have a nameplate generating capacity of at least 400 megawatts, and the taxpayer must provide evidence that a majority of the output of the project is reasonably expected to be acquired or utilized.

Credits are available only for projects certified by the Secretary of Treasury, in consultation with the Secretary of Energy. Certifications are issued using a competitive bidding process. The Secretary of Treasury must establish a certification program no later than 180 days after August 8, 2005,[14] and each project application must be submitted during the three-year period beginning on the date such certification program is established. An applicant for certification has two years from the date the Secretary accepts the application to provide the Secretary with evidence that the requirements for certification have been met. Upon certification, the applicant has five years from the date of issuance of the certification to place the project in service.

[13] For advanced coal project certification applications submitted after October 2, 2006, an electric generation unit using advanced coal-based generation technology designed to use subbituminous coal can meet the performance requirement relating to the removal of sulfur dioxide if it is designed either to remove 99 percent of the sulfur dioxide or to achieve an emission limit of 0.04 pounds of sulfur dioxide per million British thermal units on a 30-day average.

[14] The Secretary issued guidance establishing the certification program on February 21, 2006 (IRS Notice 2006-24).

The Secretary of Treasury may allocate $800 million of credits to IGCC projects and $500 million to projects using other advanced coal-based electricity generation technologies. Qualified projects must be economically feasible and use the appropriate clean coal technologies. With respect to IGCC projects, credit-eligible investments include only investments in property associated with the gasification of coal, including any coal handling and gas separation equipment. Thus, investments in equipment that could operate by drawing fuel directly from a natural gas pipeline do not qualify for the credit.

In determining which projects to certify, the Secretary must allocate power generation capacity in relatively equal amounts to projects that use bituminous coal, subbituminous coal, and lignite as primary feedstock. In addition, the Secretary must give high priority to projects which include greenhouse gas capture capability, increased by-product utilization, and other benefits.

All first round credits have been allocated.

Second round of credit allocations

Under the second round of credit allocations, the credit rate is increased to 30 percent for new IGCC and other advanced coal projects and the Secretary is permitted to allocate an additional $1.25 billion of credits to qualifying projects.[15]

Under the second round of credit allocations, qualifying projects must include equipment which separates and sequesters at least 65 percent of the project's total carbon dioxide emissions. This percentage increases to 70 percent if the credits are later reallocated by the Secretary. The Secretary is required to recapture the benefit of any allocated credit if a project fails to attain or maintain these carbon dioxide separation and sequestration requirements.

In selecting projects, the Secretary must give high priority to applicants who have a research partnership with an eligible educational institution. In addition, the Secretary must give the highest priority to projects with the greatest separation and sequestration percentage of total carbon dioxide emissions. The Secretary must also disclose which projects receive credit allocations, including the identity of the taxpayer and the amount of the credit awarded.

All second round credits have been allocated.

Gasification project credit (sec. 48B)

An investment credit is available for qualified projects that use gasification technology. Qualified projects convert coal, petroleum residue, biomass, or other materials recovered for their energy content into a synthesis gas for direct use or subsequent chemical or physical conversion. Credits are allocated by the Secretary. First round allocations are capped at $350 million. Second round allocations are capped at $250 million. First round projects are generally

[15] The second round of credit allocations were authorized on October 3, 2008, the date of enactment of the Energy Improvement and Extension Act of 2008 (Pub. Law 110-343, Div. B).

limited to industrial applications; second round projects include projects designed to produce motor fuels. Second round projects must generally sequester 65 percent of total carbon dioxide emissions. The credit rate is 20 percent for first round projects and 30 percent for second round projects. All credits have been fully allocated.

Advanced energy manufacturing project credit (sec. 48C)

A 30-percent investment credit is available for qualifying advanced energy projects. A qualifying advanced energy project is a project that re-equips, expands, or establishes a manufacturing facility for the production: (1) property designed to be used to produce energy from the sun, wind, or geothermal deposits (within the meaning of section 613(e)(2)), or other renewable resources; (2) fuel cells, microturbines, or an energy storage system for use with electric or hybrid-electric motor vehicles; (3) electric grids to support the transmission of intermittent sources of renewable energy, including storage of such energy; (4) property designed to capture and sequester carbon dioxide; (5) property designed to refine or blend renewable fuels (but not fossil fuels) or to produce energy conservation technologies (including energy-conserving lighting technologies and smart grid technologies); (6) new qualified plug-in electric drive motor vehicles, qualified plug-in electric vehicles, or components which are designed specifically for use with such vehicles, including electric motors, generators, and power control units, or (7) other advanced energy property designed to reduce greenhouse gas emissions as may be determined by the Secretary. Qualified property does not include property designed to manufacture equipment for use in the refining or blending of any transportation fuel other than renewable fuels.

Credits are allocated by the Secretary and are capped at $2.3 billion. All credits have been fully allocated. Credits for projects that fail to meet certain benchmarks may be reallocated by the Secretary.

New clean renewable energy bonds and energy conservation bonds (sec. 54C and D)

In general

Tax-credit bonds provide tax credits to investors to replace a prescribed portion of the interest cost. The borrowing subsidy generally is measured by reference to the credit rate set by the Treasury Department. Unlike tax-exempt bonds, qualified tax-credit bonds generally are not interest-bearing obligations. Rather, the taxpayer holding a qualified tax-credit bond on a credit allowance date is entitled to a tax credit. The amount of the credit is determined by multiplying the bond's credit rate by the face amount on the holder's bond. The credit rate for an issue of qualified tax credit bonds is determined by the Secretary and is estimated to be a rate that permits issuance of the qualified tax-credit bonds without discount and interest cost to the qualified issuer.[16] The credit accrues quarterly and is includible in gross income (as if it were an interest payment on the bond), and can be claimed against regular income tax liability and alternative minimum tax liability. Unused credits may be carried forward to succeeding taxable years. In

[16] However, for new clean renewable energy bonds and qualified energy conservation bonds, the applicable credit rate is 70 percent of the otherwise applicable rate.

addition, credits may be separated from the ownership of the underlying bond similar to how interest coupons can be stripped for interest-bearing bonds.

Qualified tax-credit bonds are subject to a maximum maturity limitation. The maximum maturity is the term which the Secretary estimates will result in the present value of the obligation to repay the principal on a qualified tax-credit bond being equal to 50 percent of the face amount of such bond. The discount rate used to determine the present value amount is the average annual interest rate of tax-exempt obligations having a term of 10 years or more which are issued during the month the qualified tax-credit bonds are issued.

For qualified tax-credit bonds, 100 percent of the available project proceeds must be used within the three-year period that begins on the date of issuance. Available project proceeds are proceeds from the sale of the bond issue less issuance costs (not to exceed two percent) and any investment earnings on such sale proceeds. To the extent less than 100 percent of the available project proceeds are used to finance qualified projects during the three-year spending period, bonds will continue to qualify as qualified tax-credit bonds if unspent proceeds are used within 90 days from the end of such three-year period to redeem bonds. The three-year spending period may be extended by the Secretary upon the qualified issuer's request demonstrating that the failure to satisfy the three-year requirement is due to reasonable cause and the projects will continue to proceed with due diligence.

Qualified tax-credit bonds also are subject to the arbitrage requirements of section 148 that apply to traditional tax-exempt bonds. Principles under section 148 and the regulations there under apply for purposes of determining the yield restriction and arbitrage rebate requirements applicable to qualified tax-credit bonds. However, available project proceeds invested during the three-year spending period are not subject to the arbitrage restrictions (i.e., yield restriction and rebate requirements). In addition, amounts invested in a reserve fund are not subject to the arbitrage restrictions to the extent: (1) such fund is funded at a rate not more rapid than equal annual installments; (2) such fund is funded in a manner reasonably expected to result in an amount not greater than an amount necessary to repay the issue; and (3) the yield on such fund is not greater than the average annual interest rate of tax-exempt obligations having a term of 10 years or more that are issued during the month the qualified tax-credit bonds are issued.

Issuers of qualified tax-credit bonds are required to report issuance to the IRS in a manner similar to the information returns required for tax-exempt bonds. In addition, issuers of qualified tax-credit bonds are required to certify that applicable State and local law requirements governing conflicts of interest are satisfied with respect to such issue, and if the Secretary prescribes additional conflicts of interest rules governing the appropriate Members of Congress, Federal, State, and local officials, and their spouses, such additional rules are satisfied with respect to such issue.

New clean renewable energy bonds

New clean renewable energy bonds ("New CREBs") may be issued by qualified issuers to finance qualified renewable energy facilities.[17] Qualified renewable energy facilities are facilities that: (1) qualify for the tax credit under section 45 (other than Indian coal and refined coal production facilities), without regard to the placed-in-service date requirements of that section; and (2) are owned by a public power provider, governmental body, or cooperative electric company.

The term "qualified issuers" includes: (1) public power providers; (2) a governmental body; (3) cooperative electric companies; (4) a not-for-profit electric utility that has received a loan or guarantee under the Rural Electrification Act; and (5) clean renewable energy bond lenders. There was originally a national limitation for New CREBs of $800 million. The national limitation was then increased by an additional $1.6 billion in 2009. As with other tax credit bonds, a taxpayer holding New CREBs on a credit allowance date is entitled to a tax credit. However, the credit rate on New CREBs is set by the Secretary at a rate that is 70 percent of the rate that would permit issuance of such bonds without discount and interest cost to the issuer.[18]

Qualified energy conservation bonds

Qualified energy conservation bonds may be used to finance qualified conservation purposes.

The term "qualified conservation purpose" means:

1. capital expenditures incurred for purposes of reducing energy consumption in publicly owned buildings by at least 20 percent; implementing green community programs;[19] rural development involving the production of electricity from renewable energy resources; or any facility eligible for the production tax credit under section 45 (other than Indian coal and refined coal production facilities);

2. expenditures with respect to facilities or grants that support research in: (a) development of cellulosic ethanol or other nonfossil fuels; (b) technologies for the capture and sequestration of carbon dioxide produced through the use of fossil fuels; (c) increasing the efficiency of existing technologies for producing nonfossil fuels; (d)

[17] Sec. 54C.

[18] Given the differences in credit quality and other characteristics of individual issuers, the Secretary cannot set credit rates in a manner that will allow each issuer to issue tax credit bonds at par.

[19] Capital expenditures to implement green community programs include grants, loans and other repayment mechanisms to implement such programs. For example, States may issue these tax credit bonds to finance retrofits of existing private buildings through loans and/or grants to individual homeowners or businesses, or through other repayment mechanisms. Other repayment mechanisms can include periodic fees assessed on a government bill or utility bill that approximates the energy savings of energy efficiency or conservation retrofits. Retrofits can include heating, cooling, lighting, water-saving, storm water-reducing, or other efficiency measures.

automobile battery technologies and other technologies to reduce fossil fuel consumption in transportation; and (e) technologies to reduce energy use in buildings;

3. mass commuting facilities and related facilities that reduce the consumption of energy, including expenditures to reduce pollution from vehicles used for mass commuting;

4. demonstration projects designed to promote the commercialization of: (a) green building technology; (b) conversion of agricultural waste for use in the production of fuel or otherwise; (c) advanced battery manufacturing technologies; (d) technologies to reduce peak-use of electricity; and (e) technologies for the capture and sequestration of carbon dioxide emitted from combusting fossil fuels in order to produce electricity; and

5. public education campaigns to promote energy efficiency (other than movies, concerts, and other events held primarily for entertainment purposes).

There was originally a national limitation on qualified energy conservation bonds of $800 million. The national limitation was then increased by an additional $2.4 billion in 2009. As with other qualified tax credit bonds, the taxpayer holding qualified energy conservation bonds on a credit allowance date is entitled to a tax credit. The credit rate on the bonds is set by the Secretary at a rate that is 70 percent of the rate that would permit issuance of such bonds without discount and interest cost to the issuer.[20]

Explanation of Provision

Clean energy production and investment credits

The provision creates a new production credit for "clean" electricity and a new investment credit for property used to produce such electricity. The production credit rate is 1.5 cents per kilowatt-hour (indexed for inflation from 1992; 2.3 cents for 2013, but possibly higher when the credit becomes effective) for power generation that produces no greenhouse gas emissions. The production credit is available during the 10-year period commencing on the date the clean electricity facility is placed in service. The provision also creates a new 20-percent investment credit for zero emission power generation property that may be claimed in lieu of the production credit. Zero emission power includes electricity produced from wind, solar, hydroelectric, and nuclear energy.

The production and investment credits are available at a reduced rate for electricity produced (or related property originally placed in service) at a facility that emits, with respect to greenhouse gases, between one and 372 grams of equivalent carbon dioxide per kilowatt-hour ("CO_2e per KWh"). As CO_2e per KWh approaches 372 grams, the credit rate is reduced linearly in increments of one-tenth of one cent, in the case of the production credit, and one percentage point, in the case of the investment credit. Thus, under the provision, a facility that emits 93

[20] Given the differences in credit quality and other characteristics of individual issuers, the Secretary cannot set credit rates in a manner that will allow each issuer to issue tax credit bonds at par.

grams of CO_2e per KWh (*i.e.* 75 percent less than 372 grams) qualifies for a production credit of 1.7 cents per kilowatt-hour (2.3 times 0.75, rounded to the nearest tenth of a percent) or an investment credit equal to 15 percent of the basis of any qualified property originally placed in service.

For the investment credit, the credit rate is based on the power facility's anticipated emissions. If a facility's actual emissions are significantly worse than the anticipated emissions at the time the facility was placed in service, the investment credit is subject to recapture. The basis of any property on which the investment credit is claimed is reduced by the amount of the credit. Rules similar to the rules of subsection (c)(4) and (d) of section 46 (relating to certain progress expenditures) (as in effect on the day before the date of enactment of the Revenue Reconciliation Act of 1990) apply for purposes of the clean fuel investment credit.[21]

In the case of electricity produced from biomass, CO_2e per KWh is calculated based on net emissions. The Secretary, in consultation with the Administrator of the Environmental Protection Agency ("EPA") is required to issue guidance to implement this rule by January 1, 2016, and to establish an elective greenhouse gas emissions rate safe-harbor for types or categories of qualified facilities.

To be eligible for the production or investment credits, the facility or investment credit property must be located in the United States. New power production units, efficiency improvements, and additions to capacity that increase power production at a qualified facility are eligible for the production or investment credit to the extent of the increase. Special rules allow for the beneficiaries of trusts and estates, and the patrons of agricultural cooperatives, to benefit from the production credit.

In the case of the production credit, credit-eligible electricity must either be sold to a third party or metered and monitored by an independent third party.

Special rules for carbon dioxide sequestration property

Carbon dioxide sequestration can be used to meet the lower emissions standard, and related property is eligible for an investment credit. However, to qualify, the carbon dioxide

[21] Former section 46(c)(4) and (d) provides the rules for claiming the investment tax credit on qualified progress expenditures (as defined in former section 46(d)(3)) made by a taxpayer during the taxable year for the construction of progress expenditure property (as defined in former section 46(d)(2)). In the case of any self-constructed property, "qualified progress expenditures" means the amount properly chargeable during the taxable year to capital account with respect to that property. Former sec. 46(d)(3)(A). Amounts paid or incurred are chargeable to capital account if they are properly includible in computing basis under the taxpayer's method of accounting. Treas. Reg. sec. 1.46-5(h)(1). In the case of non-self-constructed property, "qualified progress expenditures" means the lesser of (1) the amount paid during the taxable year to another person for the construction of such property, or (2) the amount which represents that proportion of the overall cost to the taxpayer of the construction by such other person which is properly attributable to that portion of such construction which is completed during such taxable year. Former sec. 46(d)(3)(B). For purposes of former section 46(d), "self-constructed property" means property more than half of the construction expenditures for which it is reasonable to believe will be made directly by the taxpayer, and "non-self-constructed property" means property which is not self-constructed property. Former sec. 46(d)(5)(A) and (B).

must be put in secure geological storage, under rules established by the Secretary, in consultation with the EPA Administrator, the Secretary of Energy, and the Secretary of the Interior. In addition, the carbon dioxide must (1) be captured from an industrial source that would otherwise be released into the atmosphere as an industrial emission of greenhouse gas and (2) be measured at the source of capture and verified at the point or points of injection. The carbon dioxide must be captured and sequestered in the United States or one of its possessions.

In addition to these rules, in the case of a facility placed in service before 2017, the 20-percent investment credit is available for newly installed carbon dioxide sequestration property, if as result of the addition of such property at least 50 percent of the carbon dioxide emissions are sequestered, regardless of whether CO_2e per KWh falls below 372 grams. This special rule does not apply to new facilities placed in service after 2016.

Table 1.−Examples of Possible Production and ITC Credit Rates Based on 2009 Emissions Estimates

Category	Fuel	PTC (cents per KWh)*	ITC	Avg. $CO2_e$ g/KWh**
Baseline	About 25% cleaner than national average	0.0	0%	372
Biomass	Agricultural Byproducts with combined heat and power	1.8	15%	88
	100% Solid Wood Waste	2.0	17%	48
	60% Digester Gas with 40% Natural Gas with combined heat and power	1.5	13%	129
	100% Landfill Gas	2.3	20%	0
Natural Gas	100% Natural Gas	0.0	0%	445
Wind	Wind - Onshore	2.3	20%	0
	Wind - Offshore	2.3	20%	0
Solar	Solar - Photovoltaic	2.3	20%	0
	Solar - Concentrated Solar Power	2.3	20%	0
Geothermal	Geothermal	2.2	19%	17
Nuclear	Nuclear	2.3	20%	0
Hydropower	Hydropower	2.3	20%	0
Coal	100% bituminous	0.0	0%	2224
	Bituminous with 40% biomass with combined heat and power	0.4	3%	308

Prepared by the Majority staff of the Senate Committee on Finance using EPA eGRID Version 1.0 data (http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html)

** Amounts reflect inflation adjustments through 2013. These amounts may be higher in 2017, when the provision becomes effective.*

*** Emissions data is averaged from existing power plants in 2009. New plants put online since that time may have efficiency and/or process improvements that result in lower emissions.*

The clean electricity credit phases down over three years once the Secretary of the Treasury, in consultation with the Secretary of Energy and the EPA Administrator, certifies that

the annual average greenhouse gas emissions rate for electrical production facilities in the United States is equal to or less than 372 grams of CO_2e per KWh. The otherwise allowable investment credit is reduced 25 percent the first year following the certification, 50 percent the second year, and 75 percent the third year. No investment credit is allowed thereafter. In the case of the production credit, the 10-year credit period remains for facilities placed in service following the Secretary's certification, but the credit rate for electricity produced during the 10-year period is reduced by 25 percent for facilities placed in service the first year following certification, 50 percent the second year, and 75 percent the third year. Facilities placed in service thereafter are not eligible for the production credit.

Extensions, modifications, and repeals of various energy provisions

Renewable electricity production credit

Under the provision, the renewable electricity production credit is extended to include facilities placed in service through December 31, 2016. Facilities the construction of which began prior to January 1, 2014, must also be placed in service by the end of 2016 to be credit-eligible. The provision also extends through 2016 the election to claim a 30-percent investment credit in lieu of the renewable electricity production credit.

Advance nuclear power credit

The provision changes the date by which qualified facilities must be placed in service from December 31, 2020, to December 31, 2016.

Carbon dioxide sequestration credit

The provision limits the carbon dioxide sequestration credit to facilities placed in service before 2017.

Energy credit

The provision terminates, for property placed in service after December 31, 2016, the energy credits available for geothermal and solar property.

Advanced coal, coal gasification, and advanced energy project credits

The provision terminates these credits for periods after December 31, 2016.

New clean renewable energy bonds and energy conservation bonds (sec. 54C and sec. 54D)

Under the provision, no new clean renewable energy bonds or energy conservation bonds can be issued after December 31, 2016. If an issuer has an allocation of authority to issue such bonds and such bonds are not issued by December 31, 2016, the allocation is cancelled and Treasury may not reallocate such authority to other projects. All authority to issue new clean renewable energy bonds and energy conservation bonds terminates after December 31, 2016.

Effective Date

The clean energy production credit is effective for qualified facilities placed in service after December 31, 2016. The clean energy investment credit is effective for property placed in service after December 31, 2016, under rules similar to the rules of section 48(m) as in effect on the day before the enactment of the Revenue Reconciliation Act of 1990.

The extensions, modifications, and repeals of the various energy provisions are effective on the date of enactment.

B. Clean Fuel Tax Credits

Present Law

Biodiesel (secs. 40A, 6426(c) and 6427(e))

The Code provides an income tax credit for biodiesel fuels (the "biodiesel fuels credit").[22] The biodiesel fuels credit is the sum of three credits: (1) the biodiesel mixture credit, (2) the biodiesel credit, and (3) the small agri-biodiesel producer credit. The biodiesel fuels credit is treated as a general business credit. The amount of the biodiesel fuels credit is includable in gross income. The biodiesel fuels credit is coordinated to take into account benefits from the biodiesel excise tax credit and payment provisions discussed below. The credit does not apply to fuel sold or used after December 31, 2013.

Biodiesel is monoalkyl esters of long chain fatty acids derived from plant or animal matter that meet (1) the registration requirements established by the EPA under section 211 of the Clean Air Act (42 U.S.C. sec. 7545) and (2) the requirements of the American Society of Testing and Materials ("ASTM") D6751. Agri-biodiesel is biodiesel derived solely from virgin oils including oils from corn, soybeans, sunflower seeds, cottonseeds, canola, crambe, rapeseeds, safflowers, flaxseeds, rice bran, mustard seeds, camelina, or animal fats.

Biodiesel may be taken into account for purposes of the credit only if the taxpayer obtains a certification (in such form and manner as prescribed by the Secretary) from the producer or importer of the biodiesel that identifies the product produced and the percentage of biodiesel and agri-biodiesel in the product.

Biodiesel mixture credit

The biodiesel mixture credit is $1.00 for each gallon of biodiesel (including agri-biodiesel) used by the taxpayer in the production of a qualified biodiesel mixture. A qualified biodiesel mixture is a mixture of biodiesel and diesel fuel that is (1) sold by the taxpayer producing such mixture to any person for use as a fuel, or (2) used as a fuel by the taxpayer producing such mixture. The sale or use must be in the trade or business of the taxpayer and is to be taken into account for the taxable year in which such sale or use occurs. No credit is allowed with respect to any casual off-farm production of a qualified biodiesel mixture.

Per IRS guidance a mixture need only contain 1/10th of one percent of diesel fuel to be a qualified mixture.[23] Thus, a qualified biodiesel mixture can contain 99.9 percent biodiesel and 0.1 percent diesel fuel.

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[22] Sec. 40A.

[23] Notice 2005-62, I.R.B. 2005-35, 443 (2005). "A biodiesel mixture is a mixture of biodiesel and diesel fuel containing at least 0.1 percent (by volume) of diesel fuel. Thus, for example, a mixture of 999 gallons of biodiesel and 1 gallon of diesel fuel is a biodiesel mixture." *Ibid*.

Biodiesel credit (B-100)

The biodiesel credit is $1.00 for each gallon of biodiesel that is not in a mixture with diesel fuel (100 percent biodiesel or B-100) and which during the taxable year is (1) used by the taxpayer as a fuel in a trade or business or (2) sold by the taxpayer at retail to a person and placed in the fuel tank of such person's vehicle.

Small agri-biodiesel producer credit

The Code provides a small agri-biodiesel producer income tax credit, in addition to the biodiesel and biodiesel fuel mixture credits. The credit is a 10-cents-per-gallon credit for up to 15 million gallons of agri-biodiesel produced by small producers, defined generally as persons whose agri-biodiesel production capacity does not exceed 60 million gallons per year. The agri-biodiesel must (1) be sold by such producer to another person (a) for use by such other person in the production of a qualified biodiesel mixture in such person's trade or business (other than casual off-farm production), (b) for use by such other person as a fuel in a trade or business, or, (c) who sells such agri-biodiesel at retail to another person and places such agri-biodiesel in the fuel tank of such other person; or (2) used by the producer for any purpose described in (a), (b), or (c).

Biodiesel mixture excise tax credit

The Code also provides an excise tax credit for biodiesel mixtures.[24] The credit is $1.00 for each gallon of biodiesel used by the taxpayer in producing a biodiesel mixture for sale or use in a trade or business of the taxpayer. A biodiesel mixture is a mixture of biodiesel and diesel fuel that (1) is sold by the taxpayer producing such mixture to any person for use as a fuel or (2) is used as a fuel by the taxpayer producing such mixture. No credit is allowed unless the taxpayer obtains a certification (in such form and manner as prescribed by the Secretary) from the producer of the biodiesel that identifies the product produced and the percentage of biodiesel and agri-biodiesel in the product.[25]

The credit is not available for any sale or use for any period after December 31, 2013. This excise tax credit is coordinated with the income tax credit for biodiesel such that credit for the same biodiesel cannot be claimed for both income and excise tax purposes.

Payments with respect to biodiesel fuel mixtures

If any person produces a biodiesel fuel mixture in such person's trade or business, the Secretary is to pay such person an amount equal to the biodiesel mixture credit.[26] The biodiesel fuel mixture credit must first be taken against tax liability for taxable fuels. To the extent the biodiesel fuel mixture credit exceeds such tax liability, the excess may be received as a payment.

[24] Sec. 6426(c).

[25] Sec. 6426(c)(4).

[26] Sec. 6427(e).

Thus, if the person has no section 4081 liability, the credit is refundable. The Secretary is not required to make payments with respect to biodiesel fuel mixtures sold or used after December 31, 2013.

Renewable diesel (secs. 40A, 6426(c) and 6427(e))

"Renewable diesel" is liquid fuel that (1) is derived from biomass (as defined in section 45K(c)(3)), (2) meets the registration requirements for fuels and fuel additives established by the EPA under section 211 of the Clean Air Act, and (3) meets the requirements of the ASTM D975 or D396, or equivalent standard established by the Secretary. ASTM D975 provides standards for diesel fuel suitable for use in diesel engines. ASTM D396 provides standards for fuel oil intended for use in fuel-oil burning equipment, such as furnaces. Renewable diesel also includes fuel derived from biomass that meets the requirements of a Department of Defense specification for military jet fuel or an ASTM for aviation turbine fuel.

For purposes of the Code, renewable diesel is generally treated the same as biodiesel. In the case of renewable diesel that is aviation fuel, kerosene is treated as though it were diesel fuel for purposes of a qualified renewable diesel mixture. Like biodiesel, the incentive may be taken as an income tax credit, an excise tax credit, or as a payment from the Secretary.[27] The incentive for renewable diesel is $1.00 per gallon. There is no small producer credit for renewable diesel. The incentives for renewable diesel expire after December 31, 2013.

Second generation biofuel (sec. 40(b)(6))

The "second generation biofuel producer credit" is a nonrefundable income tax credit for each gallon of qualified cellulosic biofuel production of the producer for the taxable year. The amount of the credit is generally $1.01 per gallon.

"Second generation biofuel production" is any second generation biofuel that is produced by the taxpayer and which during the taxable year is: (1) sold by the taxpayer to another person (a) for use by such other person in the production of a qualified second generation biofuel mixture in such person's trade or business (other than casual off-farm production), (b) for use by such other person as a fuel in a trade or business, or (c) who sells such second generation biofuel at retail to another person and places such second generation biofuel in the fuel tank of such other person; or (2) used by the producer for any purpose described in (1)(a), (b), or (c).

"Second generation biofuel" means any liquid fuel that (1) is derived from qualified feedstocks, (2) produced in the United States and used as fuel in the United States, and (3) meets the registration requirements for fuels and fuel additives established by the Environmental Protection Agency ("EPA") under section 211 of the Clean Air Act. (2) is derived from any Qualified feedstocks means any lignocellulosic or hemicellulosic matter that is available on a renewable or recurring basis and any cultivated algae, cyanobacteria, or lemna. The second generation biofuel producer credit cannot be claimed unless the taxpayer is registered by the IRS as a producer of second generation biofuel.

[27] Secs. 40A(f), 6426(c), and 6427(e).

Second generation biofuel does not include certain unprocessed fuel. Unprocessed fuels are fuels that (1) are more than four percent (determined by weight) water and sediment in any combination, or (2) have an ash content of more than one percent (determined by weight).[28] Second generation biofuel eligible for the second generation biofuel credit is precluded from qualifying as biodiesel, renewable diesel, or alternative fuel for purposes of the applicable income tax credit, excise tax credit, or payment provisions relating to those fuels.[29]

The second generation biofuel producer credit is part of the general business credits in section 38. However, unlike other general business credits, the second generation biofuel producer credit can only be carried forward three taxable years after the termination of the credit. The credit is also allowable against the alternative minimum tax. Under section 87, the credit is included in gross income. The second generation biofuel producer credit terminates on December 31, 2013.

Alternative fuel and alternative fuel mixtures (sec. 6426(d) and (e) and sec. 6427(e)(2)

The Code provides two per-gallon excise tax credits with respect to alternative fuel, the alternative fuel credit, and the alternative fuel mixture credit. For this purpose, the term "alternative fuel" means liquefied petroleum gas, P Series fuels (as defined by the Secretary of Energy under 42 U.S.C. sec. 13211(2)), compressed or liquefied natural gas, liquefied hydrogen, liquid fuel derived from coal through the Fischer-Tropsch process ("coal-to-liquids"), compressed or liquified gas derived from biomass, or liquid fuel derived from biomass. Such term does not include ethanol, methanol, or biodiesel.

For coal-to-liquids produced after September 30, 2009 through December 30, 2009, the fuel must be certified as having been derived from coal produced at a gasification facility that separates and sequesters 50 percent of such facility's total carbon dioxide emissions. The sequestration percentage increases to 75 percent for fuel produced after December 30, 2009.

The alternative fuel credit is allowed against section 4041 liability, and the alternative fuel mixture credit is allowed against section 4081 liability. Neither credit is allowed unless the taxpayer is registered with the Secretary. The alternative fuel credit is 50 cents per gallon of alternative fuel or gasoline gallon equivalents[30] of nonliquid alternative fuel sold by the taxpayer

[28] Water content (including both free water and water in solution with dissolved solids) is determined by distillation, using for example ASTM method D95 or a similar method suitable to the specific fuel being tested. Sediment consists of solid particles that are dispersed in the liquid fuel and is determined by centrifuge or extraction using, for example, ASTM method D1796 or D473 or similar method that reports sediment content in weight percent. Ash is the residue remaining after combustion of the sample using a specified method, such as ASTM D3174 or a similar method suitable for the fuel being tested.

[29] See secs. 40A(d)(1), 40A(f)(3), and 6426(h).

[30] "Gasoline gallon equivalent" means, with respect to any nonliquid alternative fuel (for example, compressed natural gas), the amount of such fuel having a Btu (British thermal unit) content of 124,800 (higher heating value).

for use as a motor fuel in a motor vehicle or motorboat, sold for use in aviation or so used by the taxpayer.

The alternative fuel mixture credit is 50 cents per gallon of alternative fuel used in producing an alternative fuel mixture for sale or use in a trade or business of the taxpayer. An "alternative fuel mixture" is a mixture of alternative fuel and taxable fuel that contains at least 1/10 of one percent taxable fuel. The mixture must be sold by the taxpayer producing such mixture to any person for use as a fuel, or used by the taxpayer producing the mixture as a fuel. The credits generally expire after December 31, 2013 (September 30, 2014, for liquefied hydrogen).

The alternative fuel credit must first be applied to excise tax liability for special and alternative fuels, and any excess alternative fuel credit may be taken as a payment. Excess alternative fuel mixture credits are not refundable. The payment provision generally expires after December 31, 2013. With respect to liquefied hydrogen, the payment provisions expire after September 30, 2014.

Explanation of Provision

Overview

The provision creates a production tax credit for transportation fuels.[31] The credit is a per-gallon credit allowable to the producer of the fuel that (1) sells the fuel to another, unrelated, person (a) for use by such person in the production of a fuel mixture that will be used as a transportation fuel, (b) for use by such person as a transportation fuel in a trade or business, or (c) sells such fuel at retail to another person and places such fuel in the fuel tank of such other person or (2) the producer uses such fuel for a purpose described in (a), (b) or (c). A producer may elect to forgo the production tax credit and elect to take the clean fuel investment tax credit.

Clean fuel production credit

The clean fuel production credit is based on two factors: (1) the BTU content (British thermal unit) of the fuel as compared to a gallon of gasoline and (2) the emissions factor as compared to conventional ethanol using a natural gas pathway. Specifically the credit is the product of $1.00,[32] the total gallons of transportation fuel produced by the taxpayer at a qualified facility and sold or used by the taxpayer for the purposes discussed above ((a), (b) or (c)), the BTU factor of such fuel and the emissions factor for such fuel. If the emissions factor of the fuel has higher emissions than conventional ethanol using a natural gas pathway, the fuel is ineligible for the credit. The fuel measurements are made for the fuel as a standalone product, not as a fuel blend. For example, the BTU cellulosic ethanol is determined based on the ethanol alone, not the BTU when blended into gasoline.

[31] "Transportation fuel" is a fuel suitable for use as a fuel in a highway vehicle or aircraft.

[32] The $1.00 is adjusted for inflation for the calendar year in which the fuel is used or sold and rounded to the nearest multiple of one cent.

A "qualified facility" is a facility used for the production of transportation fuels and only qualifies as a qualified facility for the 10 year period beginning on the date the facility is originally placed in service (or, if less, the portion of such 10-year period occurring after December 31, 2016).

The BTU factor of a transportation fuel is the amount equal to the quotient of (1) an amount equal to the total BTU per gallon of such fuel, divided by 115,000. If any amount determined is not a multiple of 0.001, the amount is rounded to the nearest multiple of 0.001.

The emissions factor of a transportation fuel is an amount equal to the quotient of an amount (not less than zero) equal to 77.23 minus the emissions rate for such fuel divided by 77.23. The emissions rate of a transportation fuel shall be determined on the amount of lifecycle greenhouse gas emissions (as described in section 211(o)(1)(H) of the Clean Air Act) for such fuel, expressed as kilograms of CO_2e (equivalent carbon dioxide) per mmBTU (1,000,000 British thermal units).

The Secretary, in consultation with the Environmental Protection Agency ("EPA"), will provide a table regarding the applicable BTU/emission factors for certain categories of transportation fuel and established lifecycle pathways for use in determining the credit for the provision. The Secretary is authorized to group transportation fuels with similar profiles into appropriate categories (for example, fuels within 10 percent increments of the baseline measurement could be grouped together). Final guidance for implementation of the clean fuel production credit must be issued by January 1, 2016. For fuels not covered in the table prescribed by the Secretary, a taxpayer may petition the Secretary for a determination. The Secretary, in consultation with EPA, is directed to provide a provisional safe-harbor determination within 12 months of the petition filed by the taxpayer seeking a determination, and to provide a final determination within 24 months.

In order to claim the production tax credit, the producer must be registered with the IRS at the time of production of the qualifying fuel. The credit is a nonrefundable general business credit. The credit is not included in gross income. Only fuel produced in the United States and used in the United States qualifies for the credit (exported fuel does not qualify). Cooperatives may pass through the credit to their patrons.

If the Secretary, in consultation with the Secretary of Energy and the EPA Administrator, determines that the average emissions rate for the total amount of transportation fuel produced and sold at retail annually in the United States is less than 77.23 kilograms of CO_2e per mmBTU, the amount of the clean fuel production credit is subject to a phase-out percentage, which is the amount of the credit determined without regard to the phase out multiplied by the phaseout percentage. The phaseout percentage is equal to: for a facility placed in service during the first calendar year following the Secretary's determination, 75 percent; for the second calendar year following, 50 percent; for the third calendar year following, 25 percent, and zero percent for subsequent calendar years thereafter.

Clean fuel investment credit

The clean fuel investment credit for any taxable year is equal to the clean fuel percentage of the qualified investment for such taxable year with respect to any qualified facility. The clean fuel percentage is equal to the product of 20 percent, the BTU factor for the transportation fuel produced by the taxpayer and the emissions factor for such fuel. If any clean fuel percentage determined under this paragraph is not a multiple of one percent, such amount is rounded to the nearest multiple of one percent.

Qualified investment with respect to any qualified facility for any taxable year is the basis of any qualified property placed in service by the taxpayer during such taxable year which is part of a qualified facility. Qualified property is defined in the same manner as it is for the clean energy investment credit (new 48E(b)(2), discussed above).

The terms qualified facility, BTU factor, and emission factor are the same as those terms are defined above in connection with the clean fuel production credit. Rules similar to the rules of subsection (c)(4) and (d) of section 46 (relating to certain progress expenditures) (as in effect on the day before the date of enactment of the Revenue Reconciliation Act of 1990) shall apply for purposes of the clean fuel investment credit.[33]

If it is determined that the BTU factor or emissions factor for the transportation fuel produced at the qualified facility is significantly lower than the BTU factor or emissions factor claimed by the taxpayer for purposes of the investment credit then the facility ceases to be investment credit property in the taxable year in which the determination is made and the credit is subject to recapture.

If the Secretary, in consultation with the Secretary of Energy and the EPA Administrator, determines that the average emissions rate for the total amount of transportation fuel produced and sold at retail annually in the United States is less than 77.23 kilograms of CO_2e per mmBTU, the amount of the clean fuel investment credit is subject to a phase-out percentage, which is the amount of the credit determined without regard to the phase out multiplied by the phaseout percentage. The phaseout percentage is equal to: for a facility placed in service during the first calendar year following the Secretary's determination, 75 percent; for the second calendar year

[33] Former section 46(c)(4) and (d) provides the rules for claiming the investment tax credit on qualified progress expenditures (as defined in former section 46(d)(3)) made by a taxpayer during the taxable year for the construction of progress expenditure property (as defined in former section 46(d)(2)). In the case of any self-constructed property, "qualified progress expenditures" means the amount properly chargeable during the taxable year to capital account with respect to that property. Former sec. 46(d)(3)(A). Amounts paid or incurred are chargeable to capital account if they are properly includible in computing basis under the taxpayer's method of accounting. Treas. Reg. sec. 1.46-5(h)(1). In the case of non-self-constructed property, "qualified progress expenditures" means the lesser of (1) the amount paid during the taxable year to another person for the construction of such property, or (2) the amount which represents that proportion of the overall cost to the taxpayer of the construction by such other person which is properly attributable to that portion of such construction which is completed during such taxable year. Former sec. 46(d)(3)(B). For purposes of former section 46(d), "self-constructed property" means property more than half of the construction expenditures for which it is reasonable to believe will be made directly by the taxpayer, and "non-self-constructed property" means property which is not self-constructed property. Former sec. 46(d)(5)(A) and (B).

following, 50 percent; for the third calendar year following, 25 percent, and zero percent for subsequent calendar years thereafter.

Illustration of BTU and emission factors for purposes of the clean fuel credit and clean fuel investment credit

The table below illustrates how the BTU and emission factors might operate in determining the credits:

Table 2.−Examples of Possible Production and ITC Credit Rates Based on Estimated Emissions and Btu Content

Category	Fuel Type	PTC (per gallon)	ITC	Total Emissions (kg CO2/mmBtu)	BTU (per gallon)
Gasoline	Conventional Gasoline*	$0.000	0%	98.21	115000
Corn Ethanol	Avg Dry Mill processed with Natural Gas**	$0.000	0%	77.23	77000
	Avg Dry Mill processed with Coal	$0.000	0%	97.06	77000
	Avg Dry Mill processed with Biomass	$0.134	3%	60.61	77000
Sorghum Ethanol	Avg Dry Mill processed with Natural Gas	$0.067	1%	66.97	77000
	Avg Dry Mill processed with Biogas and combined heat and power	$0.201	4%	46.42	77000
Sugarcane Ethanol	Avg Sugarcane Ethanol	$0.335	7%	38.08	77000
Corn Butanol	Base Dry Mill processed with Natural Gas	$0.087	2%	67.70	99837
Cellulosic Ethanol	Energy Grass - biochemical	$0.737	15%	-10.09	77000
	Energy Grass - thermochemical	$0.402	8%	27.24	77000
	Residue - biochemical	$0.870	17%	-28.97	77000
	Residue - thermochemical	$0.603	12%	7.49	77000
Diesel	Diesel	$0.000	0%	97.01	130000
Biodiesel	Biodiesel from soybeans, algal oil, non-food grade corn oil, Camelina sativa oil	$0.410	8%	42.16	118000
	Biodiesel from canola oil	$0.308	6%	48.06	118000
	Biodiesel from waste grease	$0.821	16%	13.76	118000
Cellulosic Diesel	Energy Grass - Fischer-Tropsch	$0.678	14%	28.58	130000
	Residue - Fischer-Tropsch	$0.904	18%	8.95	130000

Prepared by the Majority staff of the Senate Committee on Finance using public data from the EPA.

**BTU baseline*

***Emissions baseline (approximately 25 percent fewer emissions than gasoline).*

Temporary extension of existing fuel incentives

The provision continues certain present law incentives as they relate to transportation-grade fuel (*i.e.* suitable for use in vehicles using the highways). The present law incentives for biodiesel and renewable diesel and the second generation biofuel credit through December 31, 2016. For renewable diesel, the ASTM standard D396 is eliminated. For the second generation biofuel credit, second generation biofuel must be a liquid suitable for use in a highway vehicle, rather than non-road vehicles and non-road applications. The alternative fuel credit and alternative fuel mixture credit (including liquefied hydrogen) are also continued through December 31, 2016, but only for transportation-grade fuels. Thus, an alternative fuel or alternative fuel mixture must be sold by the taxpayer for use as a fuel in a highway vehicle, motor boat, in aviation, or so used by the taxpayer. The payments for alternative fuel are continued through December 31, 2016.

Effective Date

The new production tax credit is effective for fuel sold or used after December 31, 2016 and the investment tax credit alternative is effective for facilities placed in service after December 31, 2016, under rules similar to the rules of section 48(m) as in effect on the day before the enactment of the Revenue Reconciliation Act of 1990.

The extensions, and modifications, of the incentives for biodiesel, renewable diesel, and second generation biofuel producer credits are effective for fuel sold or used after December 31, 2013. The extension and modification of the alternative fuel and alternative fuel mixture credit are effective for fuels sold or used after December 31, 2013.

C. Repeal of Certain Oil Production Incentives

Present Law

Enhanced oil recovery credit (sec. 43)

A 15-percent credit is available for expenses associated with an enhanced oil recovery ("EOR") project. Qualified EOR costs consist of the following designated expenses associated with an EOR project: (1) amounts paid for depreciable tangible property; (2) intangible drilling and development expenses; (3) tertiary injectant expenses; and (4) construction costs for certain Alaskan natural gas treatment facilities. An EOR project is generally a project that involves increasing the amount of recoverable domestic crude oil through the use of one or more tertiary recovery methods (as defined in section 193(b)(3)), such as injecting steam or carbon dioxide into a well to effect oil displacement. The credit is reduced as the price of oil exceeds a certain threshold and is currently phased out.

Marginal wells credit (sec. 45I)

The Code provides a $3-per-barrel credit for the production of crude oil and a $0.50 credit per 1,000 cubic feet of qualified natural gas production. In both cases, the credit is available only for production from a "qualified marginal well."

A qualified marginal well is defined as a domestic well: (1) production from which is treated as marginal production for purposes of the Code percentage depletion rules; or (2) that during the taxable year had average daily production of not more than 25 barrel equivalents and produces water at a rate of not less than 95 percent of total well effluent. The maximum amount of production on which credit could be claimed is 1,095 barrels or barrel equivalents.

The credit is treated as a general business credit. Unused credits can be carried back for up to five years rather than the generally applicable carryback period of one year. The credit is indexed for inflation.

The credit is not available to production occurring if the reference price of oil exceeds $18 ($2.00 for natural gas). The credit is reduced proportionately as for reference prices between $15 and $18 ($1.67 and $2.00 for natural gas). Currently the credit is totally phased out.

Explanation of Provision

The provision repeals the enhanced oil recovery credit and the marginal wells credit.

Effective Date

The repeal of the enhanced oil recovery credit is effective for costs paid or incurred after December 31, 2016. The repeal of the marginal wells credit is effective for crude oil or natural gas produced after December 31, 2016.