



## Federal Tax Credit Programs Available for U.S. CCS Projects

	<b>§48A &amp; §48B Tax Credits</b>	<b>§45Q Sequestration Credit</b>	<b>§48C Advanced Energy Project Credit</b>	<b>Energy Conservation Bond</b>
Agency	<b>U.S. Treasury Department/IRS</b>	<b>U.S. Treasury Department/IRS</b>	<b>U.S. Treasury Department/IRS</b>	<b>U.S. Treasury Department/IRS</b>
Program details	<p><b>§48A - Power Sector Tax Credits:</b> Provides investment tax credits for IGCC and advanced combustion facilities.</p> <p><b>§48B - Industrial Gasification Tax Credit:</b> Provides investment tax credits for certified industrial gasification projects</p> <p><b>§§48A and 48B</b> were originally authorized in EAct 2005; additional credits and new qualifying criteria were included in H.R. 1424, the Emergency Economic Stabilization bill.</p>	<p><b>§45Q – Carbon Dioxide Sequestration Credit:</b> The 'Emergency Economic Stabilization Act of 2008' created a new carbon dioxide sequestration credit which provides a tax credit for each metric ton of qualified CO2 that is captured and disposed of in secure geological storage or used as a “tertiary injectant” in a qualified enhanced oil or natural gas recovery project</p>	<p><b>§48C – Advanced Energy Project Credit:</b> H.R.1, the “American Recovery and Reinvestment Act of 2009” established a 30% investment tax credit for qualified property used to manufacture equipment for use in specified energy facilities or vehicles.</p>	<p>The Energy Improvement and Extension Act of 2008 established a tax credit for holders of “<b>Energy Conservation Bonds</b>”. These credits are available for bonds issued to support research into carbon capture and sequestration (CCS) technologies and to fund CCS demonstration projects.</p>
Technical Eligibility Criteria and Project Requirements	<p><b>§48A – Power Sector Tax Credits:</b> All projects must achieve reductions in Sox, Nox, Hg and PM</p> <ul style="list-style-type: none"> <li>◆ IGCC (no add'l criteria)</li> <li>◆ Advanced combustion with a design net heat rate of 8,530 Btu/KWh (40% efficiency) adjusted for rank of coal and elevation</li> <li>◆ Retrofits must achieve minimum efficiency of 35% and an overall thermal design efficiency improvement, compared to the efficiency of the unit as operated</li> <li>◆ 75% energy input from coal (including anthracite, bituminous, subbituminous, lignite, and peat)</li> <li>◆ Minimum capacity of 400 MW</li> <li>◆ Must include equipment to capture 65% of a project’s CO2 emissions</li> </ul> <p><b>§48B – Industrial Gasification Tax Credit:</b></p> <ul style="list-style-type: none"> <li>◆ Industrial Gasification projects related to:               <ul style="list-style-type: none"> <li>○ Chemicals,</li> <li>○ Fertilizers,</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>Technical Eligibility Criteria:</b> <ul style="list-style-type: none"> <li>○ Available for each metric ton of qualified CO2 that is captured and disposed of by the taxpayer in secure geological storage (as defined by the Secretary, in consultation with the Administrator of the EPA); or</li> <li>○ Available for each metric ton of qualified CO2 used by the taxpayer as a “tertiary injectant” in a qualified enhanced oil or natural gas recovery project (as defined by cited sections to the tax code) and disposed of in secure geological storage.</li> </ul> </li> <li>◆ <b>Project Requirements:</b> <ul style="list-style-type: none"> <li>○ The qualified facility must be owned by the taxpayer</li> <li>○ The credit is available to the person that captures and “physically or contractually” ensures either the long-term storage or use of the CO2.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>‘Qualified Advanced Energy Project’ Eligibility Criteria :</b> <ul style="list-style-type: none"> <li>○ A “qualified advanced energy project” is a project that re-equips, expands, or establishes a manufacturing facility for the production of:               <ul style="list-style-type: none"> <li>▪ Property designed to be used to produce energy from the sun, wind, or geothermal deposits, or other renewable resources;</li> <li>▪ Fuel cells, microturbines, or an energy storage system for use with electric or hybrid-electric motor vehicles;</li> <li>▪ Electric grids to support the transmission of intermittent sources of renewable energy, including storage of such energy;</li> <li>▪ Property designed to capture and sequester carbon dioxide;</li> <li>▪ 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;</li> <li>▪ Projects designed to manufacture any new</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>Qualifying purposes include:</b> <ul style="list-style-type: none"> <li>○ Capital expenditures incurred by state and local governments for qualified energy conservation purposes (i.e., programs and initiatives that reduce greenhouse gases), used to:               <ul style="list-style-type: none"> <li>▪ Reduce energy consumption in public buildings,</li> <li>▪ Implement green community programs,</li> <li>▪ Develop rural areas using renewable energy sources; and</li> </ul> </li> <li>○ Research expenditures or demonstration projects related to:               <ul style="list-style-type: none"> <li>▪ cellulosic ethanol or other non-fossil fuels</li> <li>▪ efficiency of non-fossil fuel production technologies</li> <li>▪ automobile battery technology</li> <li>▪ building energy consumption</li> </ul> </li> <li>○ Mass commuting facilities</li> <li>○ Research in fossil-based CCS technologies</li> </ul> </li> </ul>



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	<ul style="list-style-type: none"> <li>○ Glass,</li> <li>○ Steel,</li> <li>○ Petroleum residues,</li> <li>○ Forest products,</li> <li>○ Agriculture, including feedlots and dairy operations</li> <li>○ Transportation grade liquid fuels</li> <li>○ As well as any project that that converts a solid or liquid product from coal, petroleum residue, biomass, or other materials recovered for their energy/ feedstock value into a synthesis gas composed primarily of carbon monoxide and hydrogen.</li> </ul> <ul style="list-style-type: none"> <li>◆ Located in the U.S.</li> <li>◆ New or retrofit</li> <li>◆ 90% of fuel required for production of chemical feedstocks, liquid transportation fuels, or co-production of electricity</li> <li>◆ Must include equipment to capture 75% of a project's CO2 emissions</li> </ul>	<ul style="list-style-type: none"> <li>○ Project must include carbon capture equipment that has been placed in service and capturing not less than 500,000 metric tons of CO2 during the taxable year</li> <li>○ The credit is subject to recapture for any qualified carbon dioxide which ceases to be captured, "disposed of in secure geological storage, and/or used as a tertiary injectant"</li> </ul>	<ul style="list-style-type: none"> <li>○ qualified plug-in electric drive motor vehicle or any component which is designed specifically for use with such vehicles, including any electric motor, generator, or power control unit; or               <ul style="list-style-type: none"> <li>▪ Other advanced energy property designed to reduce greenhouse gas emissions as may be determined by the Secretary.</li> </ul> </li> <li>○ Qualified property must be depreciable (or amortizable) property</li> <li>○ Only tangible personal property and other tangible property (not including a building or its structural components) are credit-eligible.</li> <li>○ Qualified property <i>does not include</i> property designed to manufacture equipment for use in the refining or blending of any transportation fuel other than renewable fuels.</li> </ul> <ul style="list-style-type: none"> <li>◆ <b>Project Selection Criteria:</b> <ul style="list-style-type: none"> <li>○ Must demonstrate commercial viability.</li> <li>○ Provide domestic job creation</li> <li>○ Avoid or reduce air pollutants or anthropogenic emissions of greenhouse gases;</li> <li>○ Have potential for technological innovation and commercial deployment;</li> <li>○ Have low levelized cost of generated or stored energy, or measured reduction in energy consumption or greenhouse gas emission; and</li> <li>○ Have short project time from certification to completion.</li> </ul> </li> </ul>	<p>and demonstration projects promoting the commercialization of CCS technologies.</p> <ul style="list-style-type: none"> <li>◆ <b>Technical Eligibility Requirements:</b> <ul style="list-style-type: none"> <li>○ The bond must be issued by a state or local government,</li> <li>○ The issuer must designate the bond as a Conservation Bond, and</li> <li>○ 100% of the proceeds must be used for qualified conservation purposes (includes CCS).</li> </ul> </li> <li>◆ <b>Bond Issuance Conditions:</b> <ul style="list-style-type: none"> <li>○ Allocated to the states based on their population</li> <li>○ States must allocate their shares to any large local governments within the state according to their percentage of the state population.</li> </ul> </li> </ul> <p>State or large local government may only use 30 percent of its allocation for capital expenditures on private activity bonds</p>
Award Instrument	◆ Investment Tax Credits	◆ Carbon Sequestration Tax Credit	◆ Investment Tax Credit	◆ Tax Credit Bond



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Total/ Maximum Funding Available	<p><b>§48A - Power Sector Tax Credits:</b></p> <ul style="list-style-type: none"> <li>◆ \$1.25 billion in credits total</li> <li>◆ 30% ITC</li> </ul> <p><b>§48B – Industrial Gasification Tax Credit:</b></p> <ul style="list-style-type: none"> <li>◆ Gasification projects:               <ul style="list-style-type: none"> <li>◆ 30% tax credit</li> <li>◆ \$250 million in credits                   <ul style="list-style-type: none"> <li>○ Restriction: Credit can only be given to a maximum of \$650 million for qualifying gasification equipment</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>◆ <b>EOR:</b> \$10 per metric ton of CO<sub>2</sub> used for enhanced oil or gas recovery and disposed of in “secure geological storage” (not yet defined by IRS)</li> <li>◆ <b>Non-EOR:</b> \$20 per metric ton of CO<sub>2</sub> stored in secure geological reservoirs</li> <li>◆ Program limited to 75 million metric tons of qualified CO<sub>2</sub> captured and stored or used.</li> </ul>	<ul style="list-style-type: none"> <li>◆ 30% ITC</li> <li>◆ \$2.3 billion in credits</li> </ul>	<ul style="list-style-type: none"> <li>◆ Holders of such bonds may claim a tax credit equal to 70% of the credit that would be applicable if the bonds were Clean Renewable Energy Bonds               <ul style="list-style-type: none"> <li>○ Amount determined by multiplying a credit rate (determined by the Secretary of the Treasury) by the face value of the bonds.</li> </ul> </li> <li>◆ Bonds limitation is \$3.2 billion nationwide</li> </ul>
Application Deadline & Anticipated Award Dates	Legislation to provide tax credits passed in October 2008; the IRS is expected to release guidelines on how to apply for the credits in March 2009.	Legislation to provide tax credits enacted in October 2008; the IRS is expected to release guidelines on how to apply for the credits in March 2009.	Legislation to provide tax credits enacted in February 2009. Guidelines on how to apply have not yet been released by IRS.	Legislation to provide tax credits enacted in February 2009. Guidelines on how to apply have not yet been released by IRS.
URL Link for more information	<p>Guidelines on how to apply for the <b>§§48A and 48B under the 2008 bill</b> have not yet been released. To view EPAAct 2005 <b>§§48A and 48B</b> submission guidelines, please use the following links:</p> <p><a href="http://www.irs.gov/irb/2008-44_IRB/ar10.html">http://www.irs.gov/irb/2008-44_IRB/ar10.html</a></p> <p><a href="http://www.irs.gov/irb/2008-09_IRB/ar11.html">http://www.irs.gov/irb/2008-09_IRB/ar11.html</a></p> <p><a href="http://www.irs.gov/irb/2007-26_IRB/ar11.html#d0e3590">http://www.irs.gov/irb/2007-26_IRB/ar11.html#d0e3590</a></p> <p><a href="http://www.irs.gov/irb/2006-11_IRB/ar09.html">http://www.irs.gov/irb/2006-11_IRB/ar09.html</a></p> <p><a href="http://www.irs.gov/irb/2006-11_IRB/ar10.html">http://www.irs.gov/irb/2006-11_IRB/ar10.html</a></p>	Guidelines on how to apply have not yet been released by IRS.	Guidelines on how to apply have not yet been released by IRS.	Guidelines on how to apply have not yet been released by IRS.