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By Kevin Potter and Jeremy Demuth
Deloitte Tax LLP

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CREDITS & INCENTIVES TALK WITH DELOITTE

A "Hot" Incentive Companies May Be Missing

KEVIN POTTER is a Director in Deloitte Tax LLP's National Credits & Incentives practice. Kevin currently manages statutory credit and negotiated incentive reviews and other similar projects for large and mid-size multistate corporations. He is a graduate of Texas A&M University and is a Black Belt in Lean Six Sigma and a CPA, holding active licenses in Texas and New York. You can follow Kevin on Twitter at Kevin_S_Potter. JEREMY DEMUTH is a Senior Manager in Deloitte Tax's National R&D and Government Incentives group. Jeremy focuses on alternative energy, R&D, New Markets Tax Credits and various other federal incentives. He has managed multiple large tax credit studies, authored several successful applications for competitively awarded credits, and successfully represented clients before the IRS, the Treasury Department, and state tax authorities. Jeremy is a graduate of the University of Illinois Urbana-Champaign and the Illinois Institute of Technology Chicago-Kent College of Law. *The authors would like to acknowledge contributions by the following Deloitte Tax Professionals: Gary Hecimovich, Martin Karamon, Brian Americus, Joel Meister, and Megan La Tronica.*

For many people, a large industrial boiler burning natural gas to produce steam for use in a manufacturing process is not the image that comes to mind when considering green energy technologies. Utilization of these systems, however, is an important component of domestic alternative energy policy.[1] As with other environmentally friendly sources of energy such as solar panels, wind turbines, or fuel cells, these combined heat and power (CHP) systems can be eligible for significant federal, state, and local incentives.[2]

CHP systems benefit the environment by efficiently using energy from a single fuel source to simultaneously or sequentially produce (1) energy in the form of electricity or mechanical shaft power, and (2) energy used for a thermal application.[3] Rather than purchasing electricity from the grid and burning fuel in an on-site boiler to produce needed steam or hot water, a business can use CHP to provide both forms of

energy.[4] For example, in a manufacturing setting, a company can use the steam or heat to produce its products and to meet some of its electrical or mechanical shaft power needs by routing excess steam through turbines and generators.

CHP technology is not new and is fairly widespread across many types of industries such as refining, paper and pulp, chemicals, metals, manufacturing, and food processing. There has been a steady increase in investments in CHP systems both for new systems and for upgrades to current systems since 2009 when President Obama set a national goal of increasing CHP capacity by fifty percent by 2020.[5]

There are a number of broad factors contributing to the recent increase in CHP systems such as the deferral of capital expenditure projects during the recent recession, advances in technology, and a growing number of companies that are focusing on green initiatives. Two more recent drivers of this increased investment, however, have been (1) the January 31, 2016 implementation deadline for the EPA Boiler Maximum Achievable Control Technology (MACT) rules, which applies to thousands of industrial and commercial boilers across the country,[6] and (2) the pending expiration of the federal tax credit incentivizing investment in efficient boiler technologies.[7]

Combined heat and power systems technology

CHP systems, which are also sometimes referred to as cogeneration systems, are defined by the EPA as providing the simultaneous or sequential production of electricity and heat from a single fuel source, such as natural gas, biomass, biogas, coal, waste heat, or oil.[8] Therefore, unlike other forms of alternative energy generation, CHP is not a single technology, but rather an integrated system of multiple technologies that can differ based on the system's configuration.

The two most common CHP system configurations are "topping cycle systems" and "bottoming cycle systems." In a typical topping cycle system, fuel is combusted in a prime mover such as a gas turbine or a reciprocating engine to generate electricity. Energy normally lost in the prime mover's hot exhaust and cooling systems is, instead, recovered to provide heat for industrial processes (such as petroleum refining or food processing), hot water, or for other uses.

In a bottoming cycle system, also referred to as "waste heat recovery," fuel is combusted to provide thermal input to a furnace or other industrial process and heat rejected from the process is then used for electricity production.[9] This type of CHP system is also known as waste heat to power.[10]

Incentives for CHP systems—federal incentives

The primary incentive for CHP systems in the United States is the Internal Revenue Code (IRC) Section 48 federal investment tax credit (ITC) which provides a ten percent energy credit on the eligible basis of CHP system property a taxpayer places in service.[11] The ITC is a general business credit but, unlike most general business credits, it can be used to offset alternative minimum tax.[12]

If a taxpayer claims a credit on CHP system property, the taxpayer must reduce the basis of the property by one half of the amount of the credit.[13] For example, if a taxpayer claims a one million dollar ($1,000,000) credit on ten million dollars ($10,000,000) of CHP system property, the taxpayer must reduce the depreciable basis of the property by five hundred thousand dollars ($500,000).

CHP system property is defined for tax credit purposes as "property comprising a system which 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)."[14] To be eligible for the ITC, a CHP system must meet other requirements including:

- produce at least 20% of its total useful energy in the form of thermal energy;
- produce at least 20% of its total useful energy in the form of electrical or mechanical power (or combination, thereof);
- have an energy efficiency percentage exceeding 60%;
- generate electrical capacity of no more than 50 MW, or a mechanical energy capacity of no more than 67,000 horsepower (or an equivalent combination of electrical and mechanical energy capacities); and
- be placed into service before January 1, 2017.[15]

There is also a reduction to the normally calculated ITC percentage for projects between 15 MW and 50MW.[16] For CHP projects exceeding 15 MW and less than 50 MW, the normally calculated ITC must be multiplied by the ratio of 15 MW over the denominator of the system's total capacity. For example, the ITC percentage for a 20 MW CHP system would be reduced by multiplying the normal ITC percentage (10%) by the ratio of fifteen over twenty (15/20), meaning the applicable ITC would be 7.5% (i.e., 10% * 15/20).[17]

For purposes of claiming the ITC, only property that satisfies the requirements outlined above constitutes "combined heat and power system property." In order to determine whether particular units of property are part of a system, the taxpayer must first determine which units of property are an integral part of the system. Under Treasury Regulations, property should generally be considered an integral part of the system where

such property uses the same energy source for the simultaneous or sequential production of useful electrical, thermal, and mechanical power and where such property is essential to the completeness of this activity.[18]

CHP system property must also be depreciable and meet the general ITC energy property requirements including being constructed, reconstructed or erected by the taxpayer, or acquired by the taxpayer as long as the property has not previously been placed in service.[19] CHP system property does not include property used to transport the energy source to the facility or to distribute energy produced by the facility.[20]

It's important to note that like many incentives, the ITC does include a clawback provision if the system "ceases to be energy property" within five years of a project's placed-in-service date.[21] For example, a taxpayer cannot dispose of or abandon ITC property within the recapture period without recognizing income equal to the benefit it received from the credit.[22] While this provision is somewhat onerous compared to the rules of other alternative energy incentives, such as the Production Tax Credit, the recapture amount decreases 20% each year the property remains in service. [23] Therefore, if a taxpayer disposes of CHP ITC property between one and two years after it is placed in service, the taxpayer is only required to recapture 80% of the credit amount.[24]

Incentives for CHP systems—select state and local incentives

CHP incentives are available in various state and local jurisdictions and although it's not possible to list all of them here, most are either modeled after the federal ITC or are claimed in conjunction with a local utility provider.

One noteworthy state incentive that was modeled in part after the federal ITC is the 35% North Carolina Renewable Energy Credit.[25] Although the North Carolina program recently expired at the end of 2015, it is still applicable for certain projects that have received pre-approval and satisfy a placed in service requirement before January 1, 2017.

A similar Energy Investment Tax Credit provided by the state of Montana has no expiration date.[26] Other states, such as Oregon employ a modified approach by offering a credit similar to the federal ITC, though a competitive application-based award process must be satisfied initially.[27]

The most common state and local incentives for CHP systems come in the form of utility administered grants or rebates. California's Self Generation Incentive Program is an application-based program

administered by Pacific Gas and Electric, Southern California Edison, the Southern California Gas Company, San Diego Gas and Electric and the Center for Sustainable Energy.[28] It provides a base incentive payment equal to $0.42 per watt of system capacity for conventional CHP systems.[29] For example, a 500 KW CHP system could be eligible for a total incentive of $210,000. For systems over 30 KW, 50% of the payment is made upon project completion and 50% is paid over time based on system performance.[30]

Baltimore Gas and Electric Smart Energy Savers Program provides incentives up to $2.5 million per project to its industrial and commercial customers who install an onsite CHP system and file a successful application.[31] One unique characteristic of the program is that it offers incentives in three stages of the CHP system lifecycle: system design, system installation, and system energy production.[32]

Barriers to claiming incentives for CHP systems

The primary reasons companies may be overlooking incentives for CHP systems include an overall lack of awareness that such incentives exist as well as the failure to identify equipment that the company is purchasing as potentially eligible for CHP incentives. For example, a review of a fixed asset list typically does not uncover the terms "Combined Heat and Power" or "CHP" because CHP system components may be referred to as boiler and/or heat recovery systems instead. In addition, some companies may only consider completely new CHP systems for tax credit eligibility and overlook capital improvements to existing eligible systems.

Finally, some companies too narrowly apply the CHP eligibility requirements and mistakenly determine that a system is not qualified. One common mistake is an incorrect application of the size limitation to an entire facility rather than to each separate CHP system inside the facility.

Leading practices for identifying CHP credit opportunities

Keep connected with business operations groups and facility managers—Simply asking "are we generating any of our own electricity?" can open the door.

Screen fixed asset lists for CHP-related terms—Frequently observed terms include: turbines, generators, boilers, furnaces, heat recovery systems and steam headers.

Build a process to include incentive searches as part of the capital request process—With increasingly restrictive capital budgets and higher hurdle rates, incentives may make the difference between approval and rejection of a capital project. Once operational employees understand the benefit the incentives can bring to a project's return on investment, they may be more likely to affirmatively reach out to a tax or accounting department with a potentially eligible capital investment.

Discuss projects with local utilities—Reaching out to a utility either directly or through a consultant can potentially result in significant savings on an existing or planned CHP system. Utilities are often required to provide incentives for CHP projects and if the source is public funding, utilities are not necessarily out of pocket if they provide financial incentives for a qualifying project.

[1] *See* U.S. EPA Office of Air and Radiation and U.S. DOE Advanced Manufacturing Office, *Combined Heat and Power: A Clean Energy Solution* at 8 (Aug. 2012), https://www.epa.gov/sites/production/files/2015-07/documents/combined_heat_and_power_a_clean_energy_solution.pdf. A 10 MW combined heat and power system is estimated to save 42,751 tons of CO^2 annually.

[2] *Id.* at 3.

[3] Office of Energy Efficiency and Renewable Energy, DOE/EE-1328, *Combined Heat and Power (CHP) Technical Potential in the United States*, (March 2016), http://www.energy.gov/sites/prod/files/2016/04/f30/CHP%20Technical%20Potential%20Study%203-31-2016%20Final.pdf.

[4] U.S. EPA Office of Air and Radiation and U.S. DOE Advanced Manufacturing Office, *A Clean Energy Solution Combined Heat and Power* at 7 (Aug. 2012), https://www.epa.gov/sites/production/files/2015-07/documents/combined_heat_and_power_a_clean_energy_solution.pdf.

[5] Katrina Pielli, *Energy Department Turns Up the Heat and Power on Industrial Energy Efficiency* (March 13, 2013), http://www.energy.gov/articles/energy-department-turns-heat-and-power-industrial-energy-efficiency.

[6] 40 C.F.R. pt.63 (2016). *See also* National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 78 Fed. Reg. 7,138 (Jan.

31, 2013) (providing: "The final rule affects 1,700 existing major source facilities with an estimated 14,136 boilers and process heaters and the EPA projects an additional 1,844 new boilers and process heaters to be subject to this final rule.")

[7] I.R.C. § 48(c)(3)(A)(iv). Currently, eligible investment for projects placed in service through December 31, 2016 would qualify for this federal tax credit.

[8] EPA, Combined Heat and Power Partnership, *Combined Heat and Power: Frequently Asked Questions,* https://www.epa.gov/sites/production/files/2015-07/documents/combined_heat_and_power_frequently_asked_questions.pdf (last visited May 11, 2016).

[9] Regulations under Sections 201 and 210 of the Public Utility Regulatory Policies Act of 1978 with regard to Small Power Production and Cogeneration, 18 C.F.R. § 292.101 and 18 C.F.R. § 292.201-210 (2016).

[10] Office of Energy Efficiency and Renewable Energy, DOE/EE-1328, *Combined Heat and Power (CHP) Technical Potential in the United States,* (March 2016), http://www.energy.gov/sites/prod/files/2016/04/f30/CHP%20Technical%20Potential%20Study%203-31-2016%20Final.pdf.

[11] I.R.C. § 48(a)(2)(A)(ii).

[12] I.R.C. § 38(c)(4)(B)(viii).

[13] I.R.C. § 50(c)(3)(A).

[14] I.R.C. § 48(c)(3).

[15] I.R.C. § 48(c)(3)(A)(iv). Unlike the ITC for solar energy, the ITC for Combined Heat and Power systems was not extended as part of the Protecting Americans from Tax Hikes (PATH) Act of 2015. However, an extension has been discussed as part of a future legislative package.

[16] I.R.C. § 48(c)(3)(B)(i).

[17] I.R.C. § 48(c)(3)(B).

[18] Treas. Reg. § 1.48-1(d)(4).

[19] I.R.C. § 48(a)(3)(B), (C) and (D).

[20] I.R.C. § 48(c)(3)(C)(iii).

[21] I.R.C. § 50(a)(1)(A).

[22] *Id.*

[23] I.R.C. § 50(a)(1)(B).

[24] *Id.*

[25] *See* Credit for investing in renewable energy property, N.C. Gen. Stat. § 105-19.16A (a), (e), and (f) (2016).

[26] Alternative energy investment tax credit, Mont. Code Ann. § 15-32-401 et seq. (2016).

[27] *See* Or. Rev. Stat. § 315.331(1) and § 469B.110-118 and Or. Admin. R. 330-210 (2016).

[28] Self Generation Incentive Program, *2016 Self-Generation Incentives Program Handbook, Vol. 1,* (Feb. 8, 2016), https://www.selfgenca.com/documents/handbook/2016.

[29] *Id.* at 36.

[30] *Id.*

[31] BGE Smart Energy Savers Program, *Combined Heat and Power*, http://www.bgesmartenergy.com/business/chp (last visited May 11, 2016).

[32] BGE Combined Heat and Power Program, *Fact Sheet*, http://www.bgesmartenergy.com/sites/default/files/public/BGE_IC_FactSheet_CHP.pdf (last visited May 11, 2016).