

## CLIENT ADVISORY

## THE EMERGENCY ECONOMIC ACT CONTAINS SIGNIFICANT ENERGY PROVISIONS

### Strongest Federal Endorsement and Incentives for Renewable Energy to Date

The emergency economic legislation signed by President Bush on Friday, October 3, 2008 represents the most significant piece of federal energy legislation since the Energy Policy Act of 2005. The bill signed into law has a section entitled the “Energy Improvement and Extension Act of 2008” (the Act).<sup>1</sup> This section was not in the bill rejected by the House of Representatives on September 29, 2008. When the Senate took up the bill again just after that, it added, without much publicity or comment, energy provisions that both houses had been debating for some time without agreement. Those provisions were picked up verbatim in the version passed by the House and signed into law on October 3, 2008. Mainstream news reports noted that there were tax breaks for homeowners installing solar systems, but there has been little commentary on the numerous other energy-related aspects of the law. In fact, the new legislation contains significant energy provisions relating not only to homeowners, but also to commercial and industrial companies, electric utilities, and manufacturers of equipment and appliances. Taken together, these provisions provide the strongest federal endorsement and incentives ever for renewable energy in general and solar power in particular.

#### SUPPORT FOR SOLAR ENERGY

The expression of support in the Act for solar power is striking.

**Extension of Investment Tax Credit.** Prior to passage of the Act, taxpayers other than electric utilities were entitled to claim a 30% federal investment tax credit in equipment that uses solar energy to generate electricity or provide hot water for use in a structure.<sup>2</sup> This applied equally to companies in the business of owning solar generating or thermal assets, as well as to individual home and business owners. This credit has had a positive influence on the development of the solar market since it was introduced, but it was due to expire on December 31, 2008. The Act extends this credit for eight more years, through the end of 2016,<sup>3</sup> which means that all sorts of projects that might rely on the credit will now be able to plan for their implementation without having to worry about the short cut-off date. This long extension is a vigorous endorsement of solar power by the Congress.

**Electric Utilities Authorized to Claim Credit.** Even more significantly, the Act removes the prohibition on electric utilities claiming the credit.<sup>4</sup> In other words, electric

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utilities can now own solar generating and thermal assets and claim the 30% investment tax credit. Until now, electric utilities have been largely on the sideline of the solar energy surge. In many states they were required by regulation to increase the amount of renewable energy in their generating portfolios. By and large, they were moving to satisfy these requirements by entering into power purchase agreements with independent power producers at a pace that put into question whether they would satisfy the requirements of the various state renewable portfolio standards. Now, the Act provides electric utilities with a strong incentive to install their own solar generation capacity. Industry observers are viewing this as a tremendous boost to the solar industry, as well-capitalized utilities can make investments and claim investment tax credits against their income.

**Homeowner Limits Lifted.** Further, the Act removes limits on the amount of the tax credit that homeowners can claim on systems they install after December 31, 2008. Previously there was a US\$2,000 tax credit limit. Now, homeowners can claim as a tax credit the full 30% of the cost of a system. If a typical three-kilowatt array (about the average home's electricity usage) costs US\$25,000, a homeowner can claim a tax credit of US\$8,333. Previously, alternative minimum tax payers were not allowed to claim the credit against the alternative minimum tax (AMT). The new Act also eliminates this restriction.<sup>5</sup> The expansion of the homeowner tax credit and the removal of the AMT restriction are seen as providing another strong impetus to the development of the solar industry.

## PRODUCTION TAX CREDIT FOR WIND AND OTHER RENEWABLES.

Wind projects have not benefited from an investment tax credit, but since 1992 (with some interruptions), they have been accorded instead a production tax credit of US1.5¢ per kilowatt-hour of electricity produced and sold to a third party for a period of 10 years after a qualified facility is placed in service.<sup>6</sup> This production tax credit was scheduled to expire at the end of 2008. The new Act extends this credit for another year, until the end of 2009. Also, as a boost to local wind projects, the Act allows an investment tax credit for owners of small (under 100 kilowatt) wind projects, up

to a cap of US\$4,000.

The production tax credits for facilities using certain other types of renewable fuel sources have also been extended by the new Act for another two years, until the end of 2010 (placed-in-service date):

- Biomass (closed- and open-loop)<sup>7</sup>
- Geothermal
- Small Irrigation Power
- Landfill Gas
- Municipal Solid Waste
- Qualified Hydropower

With regard to hydropower, the Act clarifies that not only additions to existing hydro capacity qualify for the production tax credit, but also hydroelectric projects on an existing dam used for other purposes, starting for facilities placed in service after December 31, 2008.<sup>8</sup> This is of importance since the US Department of Energy estimates that of the almost 80,000 existing dams in the United States used for flood control, water supply, and navigation, only 2,400 are equipped with power generating turbines. Congress is recognizing in effect the tremendous potential for renewable baseload generation that can come from retrofitting existing dams with power generation.

The new law also adds wave energy facilities (called "marine and hydrokinetic renewable energy") to this list of facilities eligible for production tax credits. This should provide a boost to wave energy developers. The placed-in-service cut-off for new facilities is December 31, 2011, meaning that wave energy projects have an extra year (compared to the renewable sources mentioned above) to be placed in service to qualify.

## FUEL CELLS

Fuel cells fared well in the Act. Prior to its passage, qualified fuel cell property was eligible for a tax credit of US\$500 for each 0.5 kilowatt of capacity.<sup>9</sup> The Act triples the credit for qualified fuel cells to US\$1500 per 0.5 kilowatt of capacity and extends the credit to the end of 2016.<sup>10</sup> The Act also eliminates a special rule that did not allow the credit for

fuel cells used predominantly in the business of furnishing telephone service. This is of importance because data and call-switching centers of telecommunications companies use tremendous amounts of electricity and these companies have been experimenting with fuel cells to provide on-site and back-up power for facilities that have very high reliability requirements.

### **COMBINED HEAT AND POWER**

The Act also contains recognition by Congress of the efficiency benefits of combined heat and power generation equipment, which is where thermal energy is made from the waste heat of power generation. Prior to the passage of the Act, certain “microturbines” (those under two megawatts of capacity) were eligible for an investment tax credit of 10%. The Act now extends that investment tax credit to larger combined heat and power systems whose efficiency is greater than 60%.<sup>11</sup> The credit applies to equipment placed in service through the end of 2016.<sup>12</sup> The credit covers up to 15 megawatts of the power capacity of the system. It does not apply at all to systems over 50 megawatts in capacity.

### **CLEAN RENEWABLE ENERGY BONDS AND ENERGY CONSERVATION BONDS**

In 2005, as part of the Energy Policy Act of 2005, Congress authorized the issuance of up to US\$800 million in Clean Renewable Energy Bonds whose purpose was to finance renewable energy projects undertaken by governmental bodies and municipal and cooperative power companies. These bonds are known as “tax credit bonds” because the holder of the debt instrument receives a federal tax credit in lieu of interest paid by the issuer. As a result, the issuer of the bond is able to borrow money at a 0% interest rate. The tax credit may be applied against the bondholder’s regular and alternative minimum tax liability. The rate of the credit is determined by the Secretary of the Treasury.

***New Clean Renewable Energy Bond Program.*** The 2008 Act creates a new Clean Renewable Energy Bond program of US\$800 million, one-third of which will be allocated to projects of public power providers, one-third to governmental bodies, and one-third to cooperative electric companies.<sup>13</sup> The Secretary of the Treasury has the authority to make

allocations of the new bond allocation among qualified projects, which are defined to be wind, closed and open-loop biomass, geothermal, solar, small irrigation power, landfill gas, trash combustion, new hydropower, and wave energy.<sup>14</sup> As a result of the new program, additional funds will be available to these categories of issuers to finance renewable energy projects. The previous December 31, 2008 cut-off date for issuing bonds has been extended to December 31, 2009.

***Energy Conservation Bonds.*** The 2008 Act also creates a new category of tax credit bond for qualified energy conservation purposes, also in the amount of US\$800 million.<sup>15</sup> The Energy Conservation Bonds can only be issued, however, by State or local governments. The Energy Conservation Bonds are to be allocated by the Secretary of the Treasury among the States in proportion to the population of the States. There are special provisions with States with “large local governments.” These large local governments are entitled to a portion of the State’s allocation in the ratio of its population to the population of the State. In other words, if New York City with its population of approximately 8.2 million represents 42.5% of the population of New York State of 19.3 million, then New York City would be entitled to 42.5% of the Energy Conservation Bonds allocated to the State of New York.

***Qualified Conservation Investments.*** Qualified conservation purposes include capital expenditures for reducing energy consumption in publicly-owned buildings by at least 20%, implementing green community programs, and financing renewable energy facilities, which are defined to be the same as the ones eligible under the Clean Renewable Energy Bond program (e.g., wind, closed and open-loop biomass, geothermal, solar, small irrigation power, landfill gas, trash combustion, new hydropower, and wave energy). Energy Conservation Bonds can also be used to support research to develop cellulosic ethanol, carbon sequestration technologies, battery technologies or

technologies to reduce energy use in buildings, as well as to allocate funding to mass commuting facilities to avoid the use of vehicles for commuting or demonstration projects for green building technology, conversion of agricultural waste, advanced battery technologies, technologies to reduce peak use of electricity, technologies for capture and sequestration of carbon dioxide, and public education campaigns to promote energy efficiency.

### ENERGY EFFICIENT COMMERCIAL BUILDINGS DEDUCTION

The Energy Policy Act of 2005 created a new type of tax deduction related to the cost of energy efficiency improvements. For owners, the deduction can be up to US\$1.80 per square foot of the building to which the energy efficiency improvements are made. Among the qualified energy improvements are interior lighting systems, heating, cooling, ventilation and hot water systems, and building envelope improvements meeting certain specified technical standards.<sup>16</sup> The placed-in-service cut-off date for these improvements to qualify for the deduction was December 31, 2008. The Act extends this deduction for another five years, making December 31, 2013 as the cut-off for improvements to be placed in service. This gives commercial building owners a much longer time horizon to plan for improvements and represents a strong federal policy in favor of building energy efficiency.

### GREEN BUILDING AND SUSTAINABLE DESIGN PROJECTS

In 2004, Congress passed a law allowing certain large-scale green building and sustainable design projects to qualify for issuing tax-free exempt facility bonds to finance the cost of the project.<sup>17</sup> The aggregate amount of bonds the Secretary of the Treasury is authorized to allocate is US\$2 billion. This overall amount has not been increased, but the cut-off date for issuance has been extended for three years, from September 30, 2009 until September 30, 2012.<sup>18</sup>

### SMART METERS AND SMART GRID SYSTEMS

The Act also includes new federal support for smart meters and what is termed a “smart electric grid system.” Smart meters are those that do more than simply record the

number of kilowatt hours used by the customer. They also break down the electricity used into segments, so as to allow the customer to modulate energy usage depending on when rates are highest (usually mid-afternoon) and to allow an exchange of information between the customer and the utility.

**Accelerated Depreciation for Smart Meters.** The Act allows suppliers of electric energy (meaning electric utilities and alternate energy suppliers in deregulated markets) and providers of energy services to take accelerated depreciation for qualified smart meters.<sup>19</sup> The 150% declining balance method is permitted.<sup>20</sup> To be qualified, smart meters must be able to break down electricity usage data into 24 daily segments, allow for the exchange of information between the supplier of electricity and the customer, and provide for net metering.<sup>21</sup> The purpose of these qualifications is to support the development of demand response programs. These are programs that have been put into place by certain utilities and other energy service companies where smart meters are installed on customer premises at the expense of the provider. In some places, the cost of the new meters has been controversial and state utility commissions have been unwilling to allow the costs to be passed through rates. The way the programs work is that the provider is able to control certain aspects of the customer’s energy usage remotely; for instance, by raising the temperature on the customer’s air conditioning unit for 20 minutes every hour during peak summer usage times. This can greatly relieve peak load stress on the grid and also save the customer money when electricity rates are highest. The more detailed information provided by the smart meter also empowers the customer to make better energy usage decisions. The idea is that when the customer is aware of how much electricity is being used at a certain time, electricity consumption tends to decrease. Certain studies are demonstrating that this tends to be the case and the savings can be significant (15-20%). The new provisions of the Act are meant to accelerate the development of smart meter programs.

**Net Metering Obligation.** The net metering qualification is meant to encourage the development of on-site renewable energy generation, such as solar, fuel cells and geothermal,

and also combined heat and power. There may be instances where the on-site generation resources produce more than what the customer needs at a given time. In that case, the on-site generator will want to put electricity back on the grid, in effect selling it to the local utility or to an organized power market in the area. Not all meters have the capacity to “run backwards”, meaning to accurately record the amount of electricity going back to the grid. The new provisions are an expression of a policy favoring sales back into the grid.

#### ***Accelerated Depreciation for Smart Grid Systems.***

Smart grid systems are those that more fully automate the control mechanisms that electric distribution companies use on their grids. Most grid control systems today use fairly old technology and are not digitally automated. More modern technology allows a grid operator to have much greater information about demand on the grid so as to allow it more control over the flows, thus increasing reliability. Smart grid systems also record the information on the amount of electricity coming back on the grid from customers with on-site generation resources. With existing technology, balancing the flows of electricity on and off the grid is challenging. The Act also grants accelerated depreciation advantages to suppliers of electricity and energy services companies for installing smart grid control systems. Thus, this is also an expression of Congressional policy favoring greater use of on-site generation.

#### **ADVANCED COAL TECHNOLOGY INCENTIVES**

Since 2005, certain advanced coal technologies, principally integrated gasification combined cycle (IGCC) and more efficient coal equipment, have benefited from an investment tax credit for projects meeting certain criteria.<sup>22</sup> For IGCC, the credit was 20%, while it was 15% for other technologies. The aggregate amount of credits the Secretary of the Treasury was authorized to allocate was US\$1.3 billion-\$800 million to IGCC and US\$500 million to the other technologies. Priority was given to projects that sequester at least 65% of the project’s carbon dioxide emissions. Recovery of the credits by the Internal Revenue Service was allowed if the project did not sequester the required amount of carbon. The 2008 Act increases the aggregate amount of credits

available to US\$2.55 billion and authorizes another period in which applications can be made for advanced coal-based generation technology projects.<sup>23</sup> US\$1.25 billion is allocated to this third category and the investment tax credit is increased to 30%. The credit recapture provisions for failure to attain the sequestration goals remain in place.

Similarly, coal gasification projects have benefited from a 20% investment tax credit since 2005.<sup>24</sup> The 2008 Act expands this credit to 30% and adds another US\$250 million in tax credit authorizations for coal gasification projects that include equipment that separates and sequesters at least 75% of the project’s total carbon dioxide emissions.<sup>25</sup> The Act also allows the recapture of the credits if the carbon sequestration goals are not met.

#### **CARBON DIOXIDE SEQUESTRATION**

The Act adds an entirely new investment tax credit called a “carbon dioxide sequestration credit.”<sup>26</sup> A taxpayer that captures “qualified” carbon dioxide at a facility and disposes of it in “secure geological storage” is eligible for a tax credit of US\$20 per metric ton of carbon dioxide captured and sequestered. If the carbon dioxide is captured and used by the taxpayer as a “tertiary injectant” in an enhanced oil or natural gas recovery project, the taxpayer is entitled to a US\$10 per metric ton credit. The amounts of the credits are adjusted for inflation in future years. “Qualified” carbon dioxide is carbon dioxide captured from an industrial source which would otherwise be released into the atmosphere as a greenhouse gas and is measured at the source of capture and verified at the point of disposal or injection. Only facilities that capture at least 500,000 metric tons of carbon dioxide during a taxable year are eligible for the credit. An aggregate limit of 75 million metric tons of carbon dioxide captured in a given year is placed on the credit.<sup>27</sup>

#### **TRANSPORTATION PROVISIONS**

Since 2005, taxpayers owning various types of alternative vehicles have benefited from tax credits.<sup>28</sup> These include electric, fuel cell, lean-burn, hybrid, and alternative fuel vehicles. The Act adds a new category, namely plug-in electric drive vehicles.<sup>29</sup> The amount of the credit is

US\$2,500 plus US\$417 for each kilowatt-hour of “traction battery capacity” in excess of four kilowatt hours. The overall amount of the credit that can be claimed goes from US\$7,500 to US\$15,000 per vehicle, depending on the weight of the vehicle. There is a cap of 250,000 placed on the number of eligible vehicles and the credit phases out once that number has been reached. There are detailed provisions in the Act as to what constitutes a qualified plug-in electric drive vehicle.

As for vehicle fuels, the Act provides further support to the development of biofuels. Producers of biodiesel have been entitled since 2005 to a credit of US\$0.50 per gallon of qualified biodiesel mixtures.<sup>30</sup> The Act increases this credit to US\$1 per gallon.<sup>31</sup> It also increases an excise tax credit from US\$0.50 to US\$1 per gallon.

#### OTHER RESIDENTIAL AND COMMERCIAL INCENTIVES

Finally, the Act contains a number of tax credits aimed towards homeowners, including:

- A 10% investment tax credit (up to US\$2000) for geothermal heat pump systems replaced in service by December 31, 2016.<sup>32</sup>
- Adds a 10% tax credit for biomass stoves to heat residences (or hot water) with thermal efficiencies of at least 75%<sup>33</sup> and adds asphalt roofs “with appropriate cooling granules” to the list of building envelope improvements that qualify for the tax credit.
- Up to a US\$4,000 per taxpayer credit for qualifying small wind turbine (up to 100 kilowatt) placed in service by December 31, 2016.<sup>34</sup>
- The credits available for purchases of residential energy efficient appliances meeting certain standards have been extended.<sup>35</sup> The eligible appliances are (depending on their level of efficiency):
  - dishwashers: US\$45–75
  - clothes washers: US\$75–250
  - refrigerators: US\$50–200

Also to be noted is that the Energy Policy Act of 2005 created another category of general business credit for

manufacturers of energy efficient dishwashers, clothes washers, and refrigerators. The total amount of the credit that could be claimed by any manufacturer was capped at US\$20 million for any taxable year and US\$75 million for all prior taxable years. The 2008 Act does not change the annual amount, but allows the aggregate credit to be counted for taxable years starting after December 31, 2007. This means, in effect, that the aggregate limit is being increased to encourage manufacturers to make more energy efficient appliances.<sup>36</sup> There are also numerous changes to the applicable energy standards in the Act.

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*We hope that you have found this client advisory useful. If you have additional questions, please contact your Arnold & Porter attorney or:*

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#### Endnotes

- 1 P.L. 110-343, [The Energy Improvement and Extension Act of 2008](#). Section cites are to sections of this Act, which is Division B of the legislation signed into law on October 3, 2008, and to the relevant provisions of the Internal Revenue Code of 1986.
- 2 26 U.S.C. § 48(a)
- 3 §103(a)(1). Solar Energy Property
- 4 §103(e). Public Utility Property Taken into Account
- 5 §103(b). Allowance of Energy Credit against Alternative Minimum Tax
- 6 26 U.S.C. §45(a)
- 7 A “closed-loop” biomass facility is one that uses organic material from a plant which is cultivated exclusively for purposes of being used at a qualified facility to produce electricity. An “open-loop” biomass facility is one that uses waste materials such as livestock waste and other types of existing biomass, such as wood waste and agricultural sources. 26 U.S.C. §45(c)(3). Regarding biomass, the Act clarifies that additions to capacity at existing biomass facilities also qualify for the credit. §101(d)
- 8 §101(e). Modification of Rule for Hydropower Production

- 9 Qualified fuel cell property means a fuel cell power plant that has a nameplate capacity of at least 0.5 kilowatt of electricity using an electrochemical process and has an electricity-only generation efficiency greater than 30%. 28 U.S.C. §48(c)
- 10 §103(a)(2). Extension of Credit
- 11 Efficiency of power generation generally refers to the amount of energy converted into electricity. The average efficiency of central station generation in the United States is about 33%. The act defines the energy efficiency percentages as the fraction “(I) the numerator of which is the total useful electrical, thermal, and mechanical power produced by the system at normal operation rates and expected to be consumed in its normal application, and (II) the denominator or which is the lower heating value of the fuel sources for the system.”
- 12 §103(c)(3). Energy Credit for Combined Heat and Power System Property
- 13 § 107. New Clean Renewable Energy Bonds
- 14 Curiously, fuel cells and combined heat and power projects are absent from this list, probably because they tend to run on natural gas, not considered to be a “renewable” resource. This omission is somewhat inconsistent with the policy of allowing a new investment tax credit for combined heat and power. The inclusion of fuel cells and combined heat and power would have helped spur the development of efficient local district energy systems.
- 15 §301. Qualified Energy Conservation Bonds
- 16 26 U.S.C. §179D
- 17 American Jobs Creation Act of 2004 (P.L. 108-357), §701(b)
- 18 §307(a). Qualified Green Building and Sustainable Design Projects
- 19 §306. Accelerated Recovery Period for Depreciation of Smart Meters and Smart Grid Systems
- 20 §306(c)
- 21 §306(b). Definitions - Qualified Smart Electric Meters
- 22 26 U.S.C. §48A
- 23 §111. Expansion and Modification of Advanced Coal Project Investment Credit
- 24 26 U.S.C. §48B
- 25 §112. Expansion and Modification of Coal Gasification Investment Credit
- 26 §115. Tax Credit for Carbon Dioxide Sequestration
- 27 §115(e)
- 28 26 U.S.C. §30A & §30B
- 29 §205. Credit for New Qualified Plug-in Electric Drive Motor Vehicles
- 30 26 U.S.C. 40A
- 31 §202 Credits for Biodiesel and Renewable Diesel
- 32 §105(a)
- 33 §302(b) Qualified Biomass Fuel Property
- 34 §104(c)
- 35 §305. Modification of Energy Efficient Appliance Credit for Appliances Produced after 2007
- 36 §305(d). Aggregate Credit Amount Allowed