ENERGY & NATURAL RESOURCES

Taxes and Incentives for Renewable Energy

Tax

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June 2011
The world has seen much debate over the fluctuating price of fuel from conventional sources and the need to achieve energy security while reducing carbon emissions. For these and other reasons, there is a global focus on finding resource efficient, low-carbon ways to supply enough energy to ensure sustainable growth of economies across the world.
Introduction

According to a recent report from Bloomberg New Energy Finance,\(^1\) nearly US$243 billion was invested in low-carbon energy worldwide during 2010, representing a 23 percent increase over 2009 investments. This includes wind, solar, biomass, geothermal and hydropower, increased energy efficiencies and smart-grid technologies and biofuels, as well as carbon capture and storage technologies.

Along with new regulations to reduce carbon emissions and achieve energy security, many governments are turning to tax relief to promote renewable energy sources for power generation. Government support for renewable energy investment comes in a wide variety of tax incentives:

- Credits
- Grants
- Tax holidays
- Accelerated depreciation
- Non-tax incentives.

Likewise, government can also play a role in discouraging carbon emissions by enforcing taxes and penalties such as:

- Carbon tax and pricing
- Cap and trade schemes
- Indirect taxes (energy tax, excise tax or VAT).

At least 83 countries – 41 developed/transition countries and 42 developing countries – have some type of policy to promote renewable power generation. The 10 most common policy types are feed-in tariffs, renewable portfolio standards, capital subsidies or grants, investment tax credits, sales tax or VAT exemptions, green certificate trading, direct energy production payments or tax credits, net metering, direct public investment or financing, and public competitive bidding. (see appendix A/page 39).

The International Energy Agency estimated that government support worldwide in 2009 amounted to US$37 billion for electricity from renewables and US$20 billion for biofuels. According to the International Energy Outlook 2010, world renewable energy electricity generation will grow by an average of 3 percent per year from 2009 to 2035, and the renewable share of world electricity generation will increase from 18 percent in 2009 to 33 percent in 2035. Renewable energy comprised one quarter of the global power capacity during 2009. Much of this growth will be spurred by developing economies such as China, Brazil, Russia and India as they continue to grow as major energy consumers.

In terms of renewable energy production, the following countries contributed the most to the annual and total energy capacity from renewable energy resources. (see appendix B/page 41)

\(^1\) Bloomberg News: Low-Carbon Energy Investment Hit a Record $243 Billion in 2010, BNEF Says, 11 January 2011
Renewable Energy Production
Top Five Country Summary

China:
China now leads in a number of sectors in the renewables market. In 2009, China produced 40 percent of the world’s solar photovoltaic (PV) supply, 30 percent of the world’s wind turbines and 77 percent of the world’s solar hot water collectors. That same year, China added 37 GW of renewable power capacity, more than any other country in the world, to reach 226 GW of total renewables capacity.

The Chinese government’s support for renewables in China includes reduced corporate income taxes, significant reductions in value added taxes, other tax incentives, feed-in tariffs and subsidies to operators of renewable energy projects to compensate for their costs.

(see page 16).

US:
The US continues to be a significant producer of energy generated from renewables, including corn-based ethanol, wind, biomass and geothermal. In 2009, First Solar, Inc., headquarterd in the US, became the first firm ever to produce over 1 GW of solar PV in a single year. For wind power additions, the United States was second only to China in 2009, with 10 GW added. The country also led in the development of concentrating solar thermal power (CSP), producing 0.7 GW of CSP by early 2010.

US government support for renewables includes cash grant programs and tax credits for production and investments. In addition, a Renewable Portfolio Standards (RPS) program places an obligation on electric supply companies to produce a specified fraction of their electricity from renewable energy sources. Although no federal RPS legislation has been enacted, currently 29 states and the District of Columbia have an RPS.

(see page 38).

Germany:
In 2009, Germany was the leader in new capacity investment and the top market in solar PV additions with 3.8 GW – equal to more than half the global market. The country was also the leader in grid-connected solar PV systems. Germany has implemented a number of policies to encourage the use of energy from renewables, such as the Renewable Heating Law, which requires that at least 20 percent of heating for new residential buildings must come from renewable energy sources.

Germany has a well-developed system of incentives for renewable energy generated from solar, biomaterial heating and hydro extractor technology. The government-owned bank KfW provides various subsidies and support programs. In addition, feed-in tariffs are available for wind, solar, geothermal, methane gas and hydro generation.

(see page 21).
Spain:

In 2009, Spain led the European market for new installations of wind power systems. Although the US is still the leader in CSP, Spain has driven most of the growth in this area over the past few years. From March 2009 to March 2010, Spain added 220 MW of new CSP, for a total of 231 MW in operation. Spain is also a leader in the small but rapidly growing market for solar-assisted cooling.

Although not specifically created for renewable energies sector, a number of tax incentives are available in Spain to encourage sustainability. Incentives include tax-free depreciations, reductions of income from certain intangible assets, capital duty exemptions and tax allowances on local taxes. Operating subsidies are also available for projects employing wind, solar thermal and solar PV technologies.

(see page 33).

Brazil:

Brazil is considered to be the world’s sixth largest investor in renewable energy. The country produces virtually all of the world’s sugar-derived ethanol and has been adding new biomass and wind power plants. All fueling stations in Brazil sell both pure ethanol and gasohol, a 25 percent ethanol/75 percent gasoline blend. Flex-fuel cars, which can use pure ethanol, gasoline, or any blend of the two, now represent more than 95 percent of all new cars sold in Brazil. The country also has over 4.8 GW of biomass cogeneration plants at sugar mills, which generated more than 14 TWh of electricity in 2009. In addition, the government has announced an aggressive target for electric generation from renewables – 75 percent by 2030.

A special tax regime is applicable in Brazil for producers and importers of biodiesel. Producers and importers have two different programs: the Social Integration Program (Programa de Integração Social or PIS) and the Contribution to the Social Security Fund (Contribuição para o Financiamento da Seguridade Social or COFINS). Both programs offer significant reductions to support the development of the biodiesel industry. Feed-in tariffs are also available for electric generation from wind, biomass and hydro technologies.

(see page 9).
Renewable Energy Promotion Policies by Country

The following chart is a summary of the support schemes available in the 15 countries that are highlighted in this publication. Additional details regarding the investment and operating support schemes for each country can be found in the pages that follow.

<table>
<thead>
<tr>
<th>Country</th>
<th>Feed in tariff</th>
<th>Renewable Portfolio Standards/Quota</th>
<th>Capital subsidies, grants, rebates</th>
<th>Investment or other tax credits</th>
<th>Sales tax, energy tax, excise tax or VAT reduction</th>
<th>Tradable RE certificates</th>
<th>Energy production payments or tax credits</th>
<th>Net metering</th>
<th>Public investment, loans, or financing</th>
<th>Public competitive bidding</th>
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Sources: This section is intended only to be indicative of the overall landscape of policy activity and is not a definitive reference. Policies listed are generally those that have been enacted by legislative bodies. Some of the policies listed may not yet be implemented, or are awaiting detailed implementing regulations. It is obviously difficult to capture every policy, so some policies may be unintentionally omitted or incorrectly listed. Some policies may also be discontinued or very recently enacted. This report does not cover policies and activities related to technology transfer, capacity building, carbon finance, and Clean Development Mechanism projects, nor does it highlight broader framework and strategic policies—all of which are still important to renewable energy progress. For the most part, this report also does not cover policies that are still under discussion or formulation, except to highlight overall trends. Information on policies comes from a wide variety of sources, including the IEA Renewable Energy Policies and Measures Database, the U.S. DSIRE database, RenewableEnergyWorld.com, press reports, submissions from country-specific contributors to this report, and a wide range of unpublished data. Much of the information presented here and further details on specific countries appear on the “Renewables Interactive Map” at www.ren21.net. It is unrealistic to be able to provide detailed references to all sources here.
Market issues

To help clients address key challenges in today’s rapidly evolving renewable energy sector, KPMG member firms provide services backed by a global network of resources, information and experience. The KPMG Energy & Natural Resources practice has specialists in the field of renewable energy, based in key business locations around the world, acting as a single network. In each location, KPMG professionals can offer practical, in-depth, renewable energy experience. They can also draw on the KPMG global network of Energy & Natural Resources practitioners to provide clients with immediate access to the latest industry knowledge, skills, resources and technical developments.

With regular calls and effective communications tools, we can share observations and insights, debate new emerging issues and discuss issues that are critical to clients’ management agendas. This global network also produces regular surveys and commentary on key issues affecting the sector, business trends, changes in regulations and the commercial, risk and financial challenges of doing business.

Investing in the sector

KPMG member firms invest significant time and resources in deepening our understanding and knowledge of the sector. This enables us to provide clients with strategic and insightful services that are tailored to their specific needs and based on an understanding of their challenges.
Australia

Support Schemes

Investments and Other Subsidies
The Australian government has numerous federal initiatives that have provided subsidies for renewable energy over many years. Many of these programs, in particular specific grants programs, have now closed or have been restructured into new initiatives. The following information is a summary of major and current initiatives.

The Australian Centre for Renewable Energy (ACRE): This initiative is a component of the government’s AUD4.5 billion Clean Energy Initiative that aims to promote the development, commercialization, and deployment of renewable energy and enabling technologies. ACRE is planned to be a single, consolidated resource for Australian renewable energy businesses, bringing together a number of existing renewable energy programs. The ACRE Board prepared a consultation draft of the ACRE Strategic Directions and invited public comment by December 2010 on the key issues and proposed recommendations to the Australian government.

ACRE is focused on supporting renewable energy technology at the development, demonstration and supported commercial stages of the innovation chain. Ultimately the aim is to lower the cost of energy produced by renewable energy technologies to a point where they are better able to compete with traditional fossil-fuel technologies.

A preliminary overview of renewable energy subsectors and ACRE’s proposed focus within each subsector is provided below; ACRE will remain open to supporting “disruptive” technologies in any sub-sector.

ACRE’s Technology Priorities:
While ACRE is open to supporting any compelling technologies, it will favor projects and measures consistent with the priorities as outlined in the Strategic Directions for each sector:

- Solar – innovative enabling technologies, including storage, grid connections, and hybrid systems
- Geothermal – national coordination, resource discovery and proving, and pilot demonstration projects to enable hands-on learning as well as information gathering and dissemination
- Wind – technologies that may significantly improve grid connection issues, along with measures to broaden the understanding of wind development issues
- Ocean – the monitoring of international developments as well as the development of nationally consistent regulatory regimes around state and commonwealth ocean jurisdictions. ACRE may consider supporting selected pilot-scale ocean energy technology projects
- Bioenergy – the assessment of sustainable and economic pathways, R&D and pilot projects for second-generation biofuel projects, and biopower and bioheat projects
- Hybrid – projects that facilitate early commercial deployment of renewable energy technologies
- Enabling technologies selected technology concepts with breakthrough potential for Australian conditions.

ACRE currently has up to AUD120 million to invest, and it will establish a single new funding program: the Emerging Renewables Program. This program will feature a two-stage application process, commencing with a call for Expressions of Interest (EOI) to establish credentials, followed by invitations for shortlisted applicants to submit a full proposal.

Once this program is approved by the government, ACRE expects to announce an EOI call in mid-2011.

Solar Flagships Program: As a part of the clean energy initiative, this program provides funding to support construction and demonstration of large-scale solar power stations in Australia, which may include solar thermal, photovoltaic and energy storage technologies. Funding for the program totals AUD1.5 billion and will be allocated in two rounds. The target size at the completion of both rounds is 1000 MW of electricity generation. Final applications for the first round were received on 15 December 2010, and the government intends to announce the outcome in mid-2011. For the first round, the government is seeking to select two commercially viable projects – one photovoltaic and one solar thermal – with a minimum electricity generation capacity of 150 MW for each project.

Carbon Capture Storage (CCS) Flagships Program: As a part of the clean energy initiative, this program provides funding to support construction and demonstration of large-scale integrated carbon capture and storage projects in Australia, which may include gasification, post-combustion capture, oxy-firing, transport and storage technologies. The target is to create 1000 MW of low emission fossil fuel generation. In January 2011 the Prime Minister released a media statement indicating a reduction and deferral of funding from the CCS Flagships Program.
The independent assessment process of projects shortlisted under the CCS Flagships Program is continuing, and the government intends to fund one or more projects under the program\(^1\).

**Australian Solar Institute (ASI):** ASI is a component of the Australian government’s Clean Energy Initiative and has a AUD100 million allocation for the period 2008–2012\(^2\). The program aims to advance and accelerate innovation in solar thermal and solar photovoltaic technologies in Australia, including research support to improve the efficiency and cost effectiveness of these technologies. The majority of the institute’s research funding is allocated through a competitive grants program. In 2010 there were two funding rounds. In round one, five projects were supported for a total ASI funding of AUD11.1 million, including total project values of AUD30.9 million. Round two applications have been submitted, although details of winners are not yet available.

**R&D Tax Concession:** The major mechanism and program for fostering innovation is the R&D tax concession. The objectives of the R&D tax concession are to provide a tax incentive, in the form of a deduction, to encourage R&D activities in Australia and make eligible companies more internationally competitive by encouraging the development of innovative products, processes, and services. In many instances, activities conducted as a part of renewable energy development may be eligible for the R&D tax concession. The R&D tax concession offers the following four options:

- A tax deduction of up to 125 percent of eligible expenditure incurred on R&D activities
- An R&D tax offset for companies with group turnover under AUD5 million and a grouped expenditure of up to AUD1 million for the year
- An R&D incremental (175 percent premium) tax concession for those companies increasing their R&D expenditure above a rolling, three-year average of expenditure
- An R&D incremental (175 percent international premium) tax concession for those companies belonging to a multinational enterprise group for additional R&D expenditure on behalf of grouped foreign companies above a rolling, three-year average of expenditure.

A number of changes are planned for the R&D tax concession scheme to meet the recommendations made in the Venturous Australia Report. These changes have yet to be passed by the Australian Government.

**Operating Subsidies**

**Feed-in Tariff**
There are no national based feed-in tariffs. However, a number of state-based initiatives exist for small-scale generation.

**Quota Obligation**
20 percent by 2020, including biomass, geothermal, hydropower, solar PV and wind power\(^3\).

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Additional Information

The Australian Government is implementing an integrated and comprehensive response to climate change. In addition to the funding initiatives described above, the government also has a number of policy levers and other programs. A selection of recent programs have been described below.

**Mandatory Renewable Energy Target (MRET):** A federal government program that introduces mandatory targets to take up renewable energy. Requires retailers to acquire and annually surrender Renewable Energy Certificates (RECs). RECs are created from renewable energy or may be purchased on the market. In June 2010, the Parliament passed legislation to separate the MRET into two parts which commenced on 1 January 2011 – the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES). The changes are intended to provide greater certainty for households, large-scale renewable energy projects, and installers of small-scale renewable energy systems. Combined, the new LRET and SRES are expected to deliver more renewable energy than the existing 45,000 GWh target in 2020.

**Carbon Price:** The Australian Commonwealth Government does not currently have a scheme in place to put a price on carbon. However, in February 2011 the government announced its plan to cut carbon pollution through a carbon price. The two-stage plan for a carbon price mechanism will start with a fixed price period for three to five years before transitioning to an emissions trading scheme. The government proposes that the carbon price commences on 1 July 2012.

However, any scheme will be subject to the ability to negotiate agreement with a majority in both houses of Parliament and pass legislation.

**National Climate Change Adaptation Framework:** This framework covers a range of cooperative actions between all Australian governments to begin to address key demands from business and the community for information on climate change impacts and how to prepare for them.

**Climate Change Research Programs:**

The Australian Government is also supporting a broad range of climate change science research activities through the Australian Climate Change Science Program. The program has been allocated AUD31 million of funding to support a better understanding of global and regional climate change and its potential impact on Australia’s natural and managed systems. In addition, the government is adopting a new National Framework for Climate Change Science to set climate change research priorities over the next decade. An additional AUD387 million has been invested to further enhance research in marine and climate science through the Marine and Climate Super Science Initiative, by funding high-performance computing, new observing systems, and the replacement of key facilities.
Support Schemes

Investments and Other Subsidies

- A special tax regime is applicable in Brazil for producers and importers of biodiesel. Producers and importers have two different programs: the Social Integration Program (Programa de Integração Social or PIS) and the Contribution to the Social Security Fund (Contribution para o Financiamento da Seguridade Social or COFINS). Under this tax regime, they can choose:
  - a 6.15 percent PIS rate and a 28.32 percent COFINS rate levied on gross revenues derived from biodiesel sales or
  - a fixed price of PIS and COFINS by cubic meter of commercialized biodiesel—BRL31.75 (PIS) and BRL146.20 (COFINS).

In specific cases, producers opting for the second choice can obtain certain reductions and exemptions of the amounts due, depending on the supplier of raw material or input applicable to the production (for example, acquisition from castor bean producers or from family farmers). The PIS and COFINS taxes due by producers and importers are definitive, meaning that the resale of biodiesel by wholesalers, distributors and retailers is not subject to PIS and COFINS.

- PIS and COFINS taxes are exempted in the sale of sugarcane for ethanol production under the PIS and COFINS non-cumulative regime

- The producer or importer of ethanol has a choice of two different regimes:
  - A 1.5 percent PIS rate and a 6.9 percent COFINS rate levied on gross revenue of ethanol sales or
  - A fixed price of PIS and COFINS by cubic meter of commercialized ethanol—BRL8.57 (PIS) and BRL39.43 (COFINS).

- Ethanol distributors can choose from two different PIS and COFINS regimes:
  - A 3.75 percent PIS rate and a 17.25 percent COFINS rate levied on gross revenue of ethanol sales or
  - A fixed price of PIS and COFINS by cubic meter of commercialized ethanol—BRL21.43 (PIS) and BRL98.57 (COFINS).

- Ethanol sales are not subject to Contribution for Intervention in the Economic Domain (Contribution de Intervenção no Domínio Econômico or CIDE)

- ICMS can possibly be exempted for operations involving equipment used in the generation of wind and solar energy, applicable up to 31 December 2013

- IPI is exempted for equipment used in the energy generation process.

Operating Subsidies

Feed-in Tariff

Wind: 0.23 Real/kWh
Biomass: 0.104 Real/kWh
Hydro: 0.134 Real/kWh for less than 30 MW installed capacity

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1 Producers and importers are legal entities that are beneficiaries of concessions or authorizations from the National Petroleum Agency (ANP). They are registered as producers or importers of biodiesel in the Special Register held by the Brazilian Internal Revenue Service.


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Additional Information

Brazil is considered the world’s sixth largest investor in renewable energy. Nationwide, 43.9 percent of the Internal Energy Supply (Oferta Interna de Energia or OIE) is renewable, whereas the world’s average is 14 percent and in developed countries only 6 percent. Furthermore, the National Bank for Economic and Social Development (Banco Nacional do Desenvolvimento Econômico Social or BNDES) provides a variety of financial programs to stimulate the production of renewable energy. The development of the renewable energies in Brazil is increasing, and almost half of the energy consumed in Brazil is now generated by renewable sources. In 2002, the Brazilian government created the Incentive Program for Alternative Sources of Energy (Programa de Incentivo às Fontes Alternativas de Energia Elétrica or PROINFA). This program is designed to support electric production from wind, biomass, and small, centralized hydroelectric energy sources and to promote the diversity of the Brazilian Energy Matrix (Matriz Energética Brasileira).

Brazil is especially well situated for becoming a major producer of biodiesel, according to the Ministry of Mines and Energy. The country contains a vast amount of arable land, much of which has the right soil and climate for growing a variety of oilseeds. The growth of biodiesel as an alternative energy source in Brazil is supported by Federal Law 11.097/05, which mandates a minimum of 5 percent of biodiesel to be mixed with diesel and the monitoring of this mixture in the marketplace. Additionally, a Brazilian financial program has been introduced that supports biodiesel investments, including all phases of production, including the acquisition of equipment and technology.

Taxes and Regulations (General Definitions): ICMS is a state, value-added tax levied on the import of products and certain transitions involving goods, intermunicipal and interstate transportation services, and also communication services. The applicable rates may vary from 7 percent to 30 percent. The average is 18 percent.

IPI is a federal tax levied on the import and manufacturing of goods. The applicable rate depends on the product and its classification under the IPI tax rates (TIPI). In general, PIS and COFINS are federal taxes charged on revenues, on a monthly basis, under two regimes. The applicable rates are 0.65 percent (PIS), and 3 percent (COFINS) for the cumulative regime. For the non-cumulative regime, the taxpayer can recognize PIS and COFINS credits over certain costs and expenses. CIDE is a contribution levied on the import and sale of oil and gas related products, including ethanol. The applicable rate varies from zero to BRL230 by meter cubic.

Important Concerns: Recently, the Commission of Infrastructure Services (CI) approved PLS 311/09, a federal law that establishes the Special Regime of Taxation to encourage the development and production of electric power from alternative sources (Regime Especial de Tributação para o Incentivo ao Desenvolvimento e à Produção de Fontes Alternativas de Energia or REINFA). The law foresees several tax benefits such as exemptions of PIS and COFINS, import taxes and IPI for companies operating under the regime. It is important to emphasize that this law is not yet in force. At the present time, it is awaiting internal procedures in the Federal Senate.

In a related matter, a wind energy auction was held at the end of 2009. The government bought 1805 MW of wind energy at a price of BRL148.39/ per MWh. The success of this auction encouraged another auction, held in June 2010, regarding renewable energy. The government now intends to hold auctions annually.

After COP-15, Brazil formalized its commitment to reduce carbon emissions and increased its goal by 2.8 percent. Under the National Policy on Climate Change (law 12.187/09), Brazil has pledged to reduce carbon emissions 38.9 percent by 2020. According to this law, Brazil could grant several tax benefits to encourage the use of renewable energy. At this point in time, these benefits have not yet been implemented.

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3 Folha de São Paulo, March, 2010
Bulgaria

Support Schemes

Investments and Other Subsidies

Applicable for: solar, wind, small hydro power plants (HPPs) up to 10 MW installed capacity and biomass

Operating Subsidies

Feed-in Tariff

• The feed-in tariff system was introduced in 2006
• The State Energy and Water Regulatory Committee (SEWRC) determines the feed-in tariff for the sale of electricity produced by renewable energy sources (RES) annually at the end of March
• The approved feed-in tariffs valid for the period of 1 April 2011 to 1 April 2012 are included in the SEWRC Decision No. -010, dated 30 March 2011.

Pricing Method

(two components)

Base component: 80 percent of the average electricity price of supply companies to end users for the preceding calendar year.

Price premium: Variable supplement determined by the SEWRC depending on technology and installed capacity. The premium for the next calendar year should not be less than 95 percent of the premium for the current year.

Feed-in Tariff Rates 2011 (EUR/MWh)

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<tr>
<th>Solar Power Plants (SPPs)</th>
<th>2011 (EUR/MWh)</th>
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<td>SPPs with installed capacity of up to 5 kWp</td>
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<td>SPPs with installed capacity of over 5 kWp</td>
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<td>WPPs with induction generator and cage rotor</td>
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<tr>
<td>WPPs with up to 2,250 operating hours per year</td>
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<tr>
<td>WPPs with over 2,250 operating hours per year</td>
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<td>Micro HPPs with installed capacity of up to 200 kW</td>
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<td>Low-pressure run-of-river, derivation, impoundment and derivation HPPs with an annual compensating basin that has a net fall of up to 30 m and an installed capacity between 200 kW and 10,000 kW</td>
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<td>Mid-pressure derivation, impoundment and derivation HPPs with an annual compensating basin that has a net fall between 30 m and 100 m and an installed capacity between 200 kW and 10,000 kW</td>
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<td>High-pressure derivation, impoundment and derivation HPPs with an annual compensating basin that has a net fall above 100 m and an installed capacity between 200 kW and 10,000 kW</td>
<td>87.52</td>
</tr>
<tr>
<td>Penstock derivation HPPs with an annual compensating basin that has an installed capacity of up to 10,000 kW</td>
<td>129.60</td>
</tr>
<tr>
<td>Pumped storage micro HPPs</td>
<td>57.51</td>
</tr>
<tr>
<td>HPPs of up to 10 MW, put in commercial operation before 19 June 2007</td>
<td>57.51</td>
</tr>
</tbody>
</table>

Operating Incentives:
Based on the regulations of the Renewable and Alternative Energy Sources and Biofuels Act, electricity distribution companies are obliged to purchase the electricity generated from geothermal and solar energy for 25 years. From the other sources of RES, the offtake obligation is fixed at 15 years.

End suppliers are obliged to offtake the electricity produced by RES. Failure to do so will result in a penalty amounting to between BGN7,000 (approximately EUR3,600) and BGN20,000 (approximately EUR10,225).

To implement the provisions of Directive 2009/28/EC on the Promotion of the Use of Energy from Renewable Sources, the Bulgarian Government proposed a draft of a new Renewable Energy Act (REA), which is currently being reviewed by the Bulgarian Parliament. It is expected that the new law will enter into force by the end of April 2011.

The new REA is expected to revoke the current Alternative Energy Sources and Biofuels Act. However, the REA will retain the major incentives for production of electricity from renewable energy sources, including:

- Feed-in tariff as the main operational subsidy for renewable electricity
- Long-term power purchase agreements (25 years for solar and geothermal energy and 15 years for energy from other renewable sources)

Annual determination of the offtake price by the SEWRC is expected by the end of June. However, the pricing method will most likely be amended and the method of
determining the offtake price will no longer be set in the law.

The draft law provides that the feed-in tariff will be fixed for the entire period of mandatory offtake of electricity produced from renewable sources. SEWRC will determine the feed-in tariff annually. However, the new prices will be applicable to new projects only. Once an offtake price is determined for a project on the basis of an effective feed-in tariff, these prices will be applicable to such a project for the entire period of mandatory offtake.

The draft REA also introduces certain incentives for small renewable projects and for the construction of integrated photovoltaic (PV) projects. The draft REA mentions the promotion of renewable energy for cooling and heating. However, it does not specify the promotion measures.

On the other hand, the draft of the new REA aims to introduce certain restrictions on the development of renewable projects to limit the excessive development of such projects in Bulgaria as seen over the past few years. The draft also aims to ensure that the new electricity production capacities to be built will be adequate for the existing grid capacity in the country. Accordingly, the new draft law stipulates that on the basis of information provided by the grid operators, SEWRC will announce annually the maximum capacity of the existing grid for connecting new facilities for next year’s production of electricity from renewable sources. Developers should apply to the respective grid operator for connection to the grid in the area where development is planned. Once the maximum capacity is reached, any further applications for the respective year will not be accepted.

The draft law requires that the developers pay part of the fee for connection to the grid at an early stage, specifically upon signing a preliminary grid connection agreement. (Currently there is no such a requirement). The discussed amount of the advance is about BGN50,000 per intended MW of installed capacity. This measure is designed to separate serious investors with actual development intentions from land speculators.

To promote RES, the country has implemented the Bulgarian Energy Efficiency and Renewable Energy Credit Line (BEERECL). BEERECL has been established to support industrial energy efficiency and small renewable energy projects in the private sector by using funding from the Kozloduy International Fund, which was created by the European Bank for Reconstruction and Development (EBRD) in May 2002.

BEERECL provides grants of up to 20 percent of the disbursed loan principle for RES projects financed prior to 30 September 2009, and up to 15 percent grants for financing received after the latter date. However, there are some requirements for eligible projects:

- Investments in new hydro power plants with installed capacity less than 10 MW
- Investments in new and second-hand wind turbines with installed capacity of less than 5 MW
- Investments in biomass with installed capacity of less than 5 MW of electric output.

In addition, investments in biomass heat-only boilers with a thermal input higher than 10 MWh are subject to EBRD approval. No restrictions apply for thermal solar, biogas and geothermal plants.

RES projects could alternatively be financed under the European Union (EU) operational programs.

**Administrative Procedures:** The administrative procedures are complex and lengthy. Investors should obtain various certificates, permissions and licenses issued by different authorities. These include:

- Planning permission
- Permission for changes in the purpose of the land (where the project is developed over agricultural land)
- Positive resolution on the environment impact assessment of the project
- Water permits in the case of hydro power projects
- Construction permits
- Generation licenses.

**Grid Access:** Current legislation requires connection to the electricity grid. The new REA will most likely introduce the principle of determining annual limits to the capacity available for connection of new projects for the production of electricity from renewable sources.
Canada

Support Schemes

Investments and Other Subsidies
The Budget and the Clean Tech Industry

The Canadian 2011 federal budget allocated approximately CAD3 billion in additional funding to the Clean Air Agenda and to clean energy demonstration projects and green infrastructure projects over the next five years. The budget also renews the commitment to transition federal corporate tax rates to 15 percent. Should the provinces reduce their rates as desired by the federal government, the combined federal/provincial rate would be approximately 25 percent.

Accelerated Capital Cost Allowance (CCA)

Clean Energy Generation

Advantageous CCA rates are available for certain types of assets used for renewable energy:

- **Class 43.2 (50 percent declining balance basis)** for specified clean energy equipment acquired before 2020 and meeting higher efficiency standards
- **Class 43.1 (30 percent declining balance basis)** for specified clean energy equipment that meets lower efficiency standards
- Equipment acquired before 2020 and meeting higher efficiency standards.

Recent federal budgets continue to expand the list of renewable assets that qualify for accelerated CCA. Eligible equipment includes:

- **Electricity**
  - High-efficiency cogeneration equipment
  - Small hydroelectric facilities
  - Wind turbines
  - Fuel cells
  - Wave and tidal power equipment
  - Photovoltaic equipment
  - Equipment generating electricity from geothermal energy
  - Equipment generating electricity from eligible waste fuel.

- **Thermal energy**
  - Active solar equipment
  - District energy equipment that distributes thermal energy from cogeneration
  - Heat recovery equipment used in electricity generation and industrial processes
  - Ground source heat pump equipment
  - Equipment generating heat for industrial processes or greenhouses, using an eligible waste fuel.
• Fuels from waste
  o Equipment that recovers landfill gas or digester gas
  o Equipment used to produce biogas through anaerobic digestion
  o Equipment used to convert biomass into bio-oil.

Carbon Capture and Storage
The government proposed public consultations for possible accelerated CCA for assets used in carbon capture and storage.

**Canadian Renewable and Conservation Expense (CRCE)**
To promote development and conservation of sources of renewable energy, many start-up expenditures on renewable projects are grouped in a CRCE pool. CRCE can include intangibles (feasibility studies, negotiation, regulatory, site approval costs, site prep and testing, etc.) expenses on projects where 50 percent or more tangible costs are included in Class 43.1 or 43.2. CRCE is fully deductible in any year, can be carried-forward indefinitely and can be transferred to investors through the flow-through share rules.

**Research and Development**
The Government of Canada has added additional funds to research, development and demonstrations of clean energy efficiency.

**Clean Energy Fund**
The Government of Canada has committed that Canada’s total greenhouse gas (GHG) emissions be reduced by 20 percent from 2006 levels by 2020 and that 90 percent of Canada’s electricity be provided by non-emitting sources such as hydro, nuclear, clean coal, and wind power by 2020. In support of these goals, the 2009 Clean Energy Fund provides CAD1 billion over five years for clean energy technologies. Funding includes CAD850 million over five years for the demonstration of promising technologies such as large-scale carbon capture and storage (CCS) projects, and renewable energy and clean energy systems demonstrations. The fund also provides CAD150 million over five years for clean energy research and development (R&D). The 2011 federal budget proposes additional funds for these measures.

**ecoENERGY Programs**

**for Renewable Power**
The ecoENERGY for Renewable Power program provides CAD1.48 billion to increase Canada’s supply of clean electricity from renewable sources such as wind, biomass, low-impact hydro, geothermal, solar photovoltaic, and ocean energy. The program encourages the production of 14.3 TW hours of new electricity from renewable energy sources, enough electricity to power about one million homes. Accordingly, the program provides an incentive of one cent per kilowatt-hour for up to 10 years, applied to eligible low-impact, renewable electricity projects constructed over four years, 1 April 2007 to 31 March 2011.

**for Home Owners**
In 2011, CAD400 million was allocated to the ecoENERGY Retrofit program to help homeowners make their homes more energy efficient, extending an earlier expired program.

**Operating Subsidies**

**Feed-in Tariff**
Tariffs are different depending on the province (10 provinces and 3 territories) of activity and the nature of the renewable activity (solar, wind, etc.)

**Quota Obligation**
Various state/province level policies.
Support Schemes

Investments and Other Subsidies

Corporate Income Tax (CIT)
- A reduced CIT rate of 15 percent is given for qualified advanced and new technology enterprises. Applicable fields include solar energy, wind energy, biomaterial energy, and geothermal energy.
- The Clean Development Mechanism (CDM) Fund is exempted from CIT on the following income:
  - The portion of Carbon Emissions Reductions (CERs) proceeds that are shared by the government.
  - Donations from international financial organizations.
  - Interest income derived from capital deposit or national bonds.
  - Donations from domestic and foreign entities or individuals.
- Enterprises operating CDM projects are allowed to deduct before CIT the CER proceeds that are shared by the government.
- Three years’ CIT exemption is followed by another three years’ 50 percent reduction of CIT rate for income derived from specified CDM projects including hydrofluorocarbons (HFC), perfluorocarbons (PFC), and nitrous oxide (N2O) projects, starting from the year in which the revenue from the transfer of greenhouse gas emission reductions is first received.
- Three years’ CIT exemption is followed by another three years’ 50 percent reduction of CIT rate for income derived from qualified environmental protection and energy or water conservation projects, starting from the year in which the first revenue is generated. Applicable fields include biomaterial energy, synergistic development and utilization of methane, and technological innovation in energy conservation and emission.
- Ten percent of the amount invested in the qualified equipment is credited against CIT payable for the current year, with any unutilized investment credit eligible to be carried forward for the next five tax years if such equipment is qualified as special equipment related to environmental protection, energy, or water conservation and production safety.
- Only 90 percent of the revenue derived from the transaction is taken into account for CIT computation purposes if such revenue is derived from the use of specific resources associated with the synergistic utilization of resources as raw materials in the production of goods.
- A deduction is given of 150 percent of qualified R&D expenses incurred for CIT computation purposes.

Value-Added Tax (VAT)
- 50 percent refund of VAT is paid on the sale of wind power.
- 100 percent refund of VAT is paid on the sale of biodiesel oil generated by the utilization of abandoned animal fat and vegetable oil.
- VAT paid on the sale of goods produced from recycled materials or waste residuals is refundable.
- VAT is exempt on the sale of self-produced goods including recycled water, qualified powdered rubber made out of obsolete tires, retrodden tires, and certain construction materials made from waste residuals (with a minimum percentage of 30 percent).
- VAT is exempt on sewage treatment services.
- VAT is refundable on sale of recycled resources from 1 January 2009 to 31 December 2010. The refund rate for 2009 and 2010 is 70 percent and 50 percent, respectively. Up to now, however, we are not aware of any regulations that extend this treatment.

Financial Subsidies And Tax Incentives Available To Energy Performance Contracting (EPC) Projects
- Financial subsidies will be granted by the central and provincial government agencies respectively. The standard rate of subsidies at the central level is CNY240 per ton of standard coal saved. The standard rate at the provincial level is no less than CNY60 per ton of standard coal saved. However, such financial subsidies should be taxable with an energy service company (ESCO) for CIT purposes. We are not aware of any prevailing rules that grant exemption on such subsidies.
- A qualified ESCO taking part in an EPC project will be eligible for a tax exemption in the first three years and a tax reduction by half (an effective rate of 12.5 percent) over the next three years, starting from the tax year in which the revenue from the project first arises.
- An enterprise that invests in special equipment for energy conservation will obtain a credit against its tax payable that equals 10 percent of the investment amount in the year in which
the investment is made. Where there is not sufficient tax payable to absorb the credit in the year, the excess credit may be carried forward up to five tax years.

- A qualified ESCO taking part in an EPC project will be provisionally exempt from the business tax on revenues received in respect of the project.
- A qualified ESCO taking part in an EPC project will be provisionally exempt from the VAT on the transfer to the energy user of goods related to the project.
- When, at the end of the term of the energy management contract (EMC), the ESCO transfers to the energy user the assets that have materialized in the course of executing the EPC project, the ESCO can do so as if these assets had been fully depreciated or amortized for CIT purposes. In the same way, when the energy user receives the project assets from the ESCO, the energy user can do so as if these assets had been so depreciated or amortized.
- When the ESCO transfers the project assets to the energy user at the end of the term of the EMC, the ESCO will not have to recognize any revenue to take into account the contributions the energy user has made to the price of the assets.
- An energy user in an EPC project can deduct the reasonable expenses actually incurred in accordance with the EMC as and when they are incurred for CIT purposes. There is no need to differentiate between service fees and asset prices in claiming such a deduction.

Operating Subsidies

Feed-in Tariff
With the Renewable Energy Law as revised in April 2010, the State Bureau of Energy and other departments of the State Council will promulgate guidelines on the full purchase of electricity generated by new energies. According to the revised law, the price of on-grid electricity generated by renewable energies shall be determined by the competent price department of the State Council. The council will consider the difference in areas and the electricity generated by different types of renewable energy companies.

Premium
The National Development and Reform Commission will grant subsidies to operators of renewable energy projects to compensate their costs. A detailed subsidy plan will be reviewed on a semiannual basis.

In addition to the financial subsidies, special fundings are made available by the government to facilitate the development of renewable energy relating to the following activities:

- Renewable energy resource surveys, evaluation and construction of information systems
- Localization of manufacturing facilities used in the renewable energy sector.

Applicants may apply for such funding with the local finance bureaus and the government agencies in charge of renewable energy projects.

Additional information
Quota Obligation: The guidelines for quotas in the renewable energy sector have been included in the work plan of the State Bureau of Energy and are expected to be issued by 2011.
Support Schemes

Investments and Other Subsidies

An accelerated depreciation regime over a 12 month period was applicable to equipment used for the production of renewable energy that was acquired or constructed until January 2011 (article 39 AB of the French General Tax Code).

With respect to the expiration of this derogatory regime (which has not been renewed), companies can still apply a declining-balance method to certain equipment used to produce renewable energy. This method, which is optional, consists of multiplying the depreciation rate for the straight-line method by a coefficient determined by law, based on the asset’s expected useful life. In practice, when a company applies the declining depreciation method at the beginning of the depreciation period, it can obtain a tax depreciation higher than the accounting depreciation.

Biofuels

Biofuels benefit from a partial exemption of the internal tax on petroleum products and of the general tax on polluting activities to compensate for the additional costs arising from biofuel production. (Biofuels in gasoline include bioethanol and ethyl tertiary butyl ether or ETBE). This partial exemption is applicable for the period between 2011 and 2013.

Research Tax Credit

Companies may be granted a research tax credit on their environmental investments if the expenses they incur while carrying on such projects correspond to research activities eligible to this tax credit. The tax credit will be equal to 30 percent of the eligible research expenses that do not exceed EUR100 million and to 5 percent for the eligible R&D expenses exceeding EUR100 million. (This tax credit equals 40 percent for the first year and 35 percent for the second year for a company that has not benefited from the R&D tax credit during the five previous years and that is not held by another company also benefiting from the R&D tax credit). The research tax credit will be offset against the corporate income tax due during the year the expenses are incurred. Any surplus tax credit will constitute a receivable for the company that can be used to pay the corporate income tax for the three following years and may be reimbursed afterwards.

Operating Subsidies

Feed-in Tariff

Remuneration is available for electricity produced.

Wind

- Onshore wind power plants: EUR0.082/kWh for 10 years and between EUR0.028/kWh and EUR0.082/kWh for the next five years depending on the location of the wind farms
- Offshore wind power plants: EUR0.13/kWh for 10 years, and between EUR0.03 and EUR0.13/kWh for the next 10 years, depending on the location of the wind farms.
Solar

Due to several recent changes in the law, different tariffs apply to photovoltaic (PV) power plants, depending on the stage of development of the projects.

- **Ground-based photovoltaic power plants:** EUR0.12/kWh
- **Simplified building-integrated generating facilities:** EUR0.3035/kWh or EUR0.2885/kWh
- **Building-integrated generating facilities:** EUR0.46/kWh, EUR0.40/kWh, EUR0.4025/kWh or EUR0.352/kWh depending on the use and the power of the plant

As of 1 July 2011, the above-mentioned tariffs will be adjusted quarterly by the Ministry in charge of energy, depending on the number of grid connection applications received by the distribution system operators over the previous quarter.

Geothermal

- **France:** EUR0.12/kWh, in addition to an energy efficiency bonus of up to EUR0.03/kWh
- **French overseas departments:** EUR0.10/kWh, in addition to an energy efficiency bonus of up to EUR0.03/kWh.

Biomaterial

- **Between EUR0.075 and EUR0.09/kWh** depending on the power of the plant, in addition to an energy efficiency bonus of up to EUR 0.03/kWh.

Hydro

- **EUR0.0607/kWh** in addition to a bonus between EUR0.005/kWh and EUR0.025/kWh for small power plants in addition to a bonus of up to EUR0.0168/kWh for electricity produced during the winter.
- **EUR0.015/kWh** for sea hydraulic energy (wave energy, tidal energy and other hydrokinetic energy sources).

Électricité de France (EDF) and other electricity distributors must purchase the electricity produced by a renewable energies producer at fixed tariffs and for a minimum duration. For example, there is a purchase obligation for EDF during a 15 year period for onshore wind power, geothermal power, and biomaterial power and a 20 year period for offshore wind power, solar power (subject to the date of the operational start up of the facilities) and for hydro power. The tariffs mentioned above correspond to the tariff applied to the power plants located in metropolitan France. Increased tariffs apply with respect to Corsica and overseas departments.

Additional Information

**Building and Construction Authorization and Permission (BCAP):** The construction of a power plant is subject to the issuance of a building permit.

However, solar power plants (subject to certain conditions) and wind turbines smaller than 12 meters are not subject to the issuance of a building permit.

Specific authorizations exist for hydro and biomaterial power stations.

In addition to the building permit, an exploitation authorization issued by the Minister of Energy is required for power plants with an installed load/installated power higher than 4.5 MW. For power plants with an installed power lower or equal to 4.5 MW, only a declaration is required.

It should be noted that the French Government has published new rules that foresee the organization of proposals or “invitations to tender” for photovoltaic projects with a capacity exceeding 100 kW that will start during summer 2011. In practice, the projects will be separated into two groups, with a simplified tender for projects between 100 kW and 250 kW, and a more conventional tender for projects greater than 250 kW. The projects selected as part of the tenders will be based on several different factors, including environmental criteria. A preference will be given to the use of space with a “low competitive value” such as brownfield sites. To date, practical details concerning how the future tender calls will be organized have not been given.

**Renewal Of The Hydroelectric Concessions In France:** Pursuant to the liberalization of the electricity sector decided by the European Union (EU), the French government launched bidding rounds to renew before the end of 2015 the concessions for 10 lots that represent 49 power structures/stations and two power-increase systems with a total power capacity of 5,300 MW.

The concessions due for renewal are located in the Alps, the Pyrenees and in the center of France. The hydropower stations are currently run by EDF and by a GDF-Suez subsidiary, the Société Hydroélectrique du Midi.

According to a statement issued by the French Ministry in charge of Energy, the selection will be made pursuant to the following three criteria:
- The energetic efficiency of the bidders to modernize the existing structures or to create additional equipment
- The financial remuneration to be paid to the State by the concessionaire, since a capped royalty proportional to the turnover made with the hydropower stations will be paid to the French State and to the local authorities
- The protection of the ecosystems. (The bidders shall especially respect the commitments convention for the development of a sustainable hydropower, signed on 23 June 2010).

**Offshore Wind Energy In France:** France has set a target plan for installing 6,000 MW of offshore wind energy by 2020 through a tender process.

To begin this process, a first tender will be launched in May 2011 for an installed capacity of up 3,000 MW. At this stage, five geographical zones covering a total area of 533 km have been selected for the tender.

In practice, the selection criteria of the bidders will be:

- The tariff of the electricity sold under the purchase contract
- The quality of the industrial and social project in particular with respect to the benefits for the wind industry
- The impact on the maritime environment.

The selected operators must sell the electricity produced by the facilities at the fixed tariff bid by the operator. Some adjustments will be made, most notably to take into account the actual price of connection to the grid.

The selection of the winning tenders will occur during the first half of 2012. The second call for tenders for the remaining 3,000 MW capacity is expected to be issued in 2014.

**Grid Access:** The producer/owner of a new power plant has to apply for a grid connection to the public distribution system such as Réseau de Transport d’Electricité (RTE), Electricité Réseau Distribution France (ERDF) or a local distributing company. Some agreements have to be made by the owner of the power plant for the distribution of the electricity that it produces:

- Public grid contract (Contrat d’accès au réseau public)
- Grid connection contract (Contrat de raccordement)
- Contract regarding the use of the equipment necessary for the grid connection (Contrat d’exploitation des ouvrages de raccordement).
Support Schemes

**Investments and Other Subsidies**
Applicable for solar, biomaterial heating and hydro extractor.

In Germany, two programs are in place:
- Incentives for renewable energy ("Marktanreizprogramm") supported by BAFA (Bundesamt für Wirtschaft und Ausfuhrkontrolle) and KfW
- KfW programs.

**Incentives for Renewable Energy**
- Photovoltaic plants:
  - Increase of the base subsidy for photovoltaic plants for combined residential water boiling and heating
  - Incentives for replacing the boiler
  - Incentives for combined plants (photovoltaic plus hydro extractor or photovoltaic plus biomass).
- Biomass plants (boiler):
  - Re-introduction of subsidies for emission-reduced boilers
  - All existing subsidies for pellet heating remain in place.
- Hydro extractor:
  - Technical requirements were adjusted. The level of subsidies remains stable.
- Additional incentives by KfW:
  - Large hydro extractors supported for the first time
  - No further incentives for Biogas-Circuits (Biogasleitungen)
  - Extension of incentive program for small biomass plants.
- Efficiency bonus:
  - Photovoltaic and biomass plants and hydro extractors can achieve an additional efficiency bonus.
- Innovation bonus:
  - Innovative technology in relation to photovoltaic and biomass plants receives an additional bonus.

**KfW Programs**
- Various subsidies for new privately owned buildings or buildings which are brought to a new standard in renewable energy or energy savings.
- Support for photovoltaic plants.
- Reduced interest rates on KfW loans that are used for the primary protection of the environment, such as the efficient production of energy. These can usually be accessed by small and medium sized enterprises (SMEs).
- Modernizing buildings and reducing carbon emissions:
  - Reduced interest rates
  - Abatement of installment payments on loans
  - Direct subsidies.
- Program to increase hydro power: reduced interest rates on KfW loans.
- Program to increase wind power: reduced interest rates on KfW loans.

**Operating Subsidies**

**Feed-in Tariff**
Remuneration is available for electricity produced.

All tariffs and ranges apply to plants commissioned in 2011. Plants commissioned prior to 1 January 2011 are subject to the feed-in tariffs that were in force in the year of first commissioning.

**Hydro**
- Depending on nominal generation capacity of the individual plant:
  - Up to 5 Megawatt: 7.65 ct/kWh–12.67 ct/kWh
  - More than 5 Megawatt: 3.43 ct/kWh–7.14 ct/kWh
- Degression: 1 percent per annum (p.a.) for plants less than 5 MW; no degression for smaller plants.

**Biomethane**
- Depending on nominal generation capacity of the individual plant:
  - 7.63 ct/kWh–11.44 ct/kWh
- Degression: 1 percent p.a.
- Additional premiums granted depending on the feed-stock boiled (for example, formaldehyde, CHP or the so-called “NAWARO” bonus).

**Other Methane Gas (for example, mine, landfill or sewage sludge gas)**
- Depending on amount of electricity produced:
  - 4.04 ct/kWh–8.73 ct/kWh.
- Degression 1.5 percent p.a.
- Additional premiums available (up to 2 ct/kWh).
Geothermal
- Depending on nominal capacity of the respective plant:
  - 10.29 ct/kWh–15.68 ct/kWh.
- Degression 1 percent p.a.
- Additional premium available (for innovative technology: up to 4 ct/kWh; for early market entrants another 4 ct/kWh).

Wind
Onshore
- Basic for WTC commissioned in 2011: 4.92 ct/kWh.
- Increased FIT for WTC fulfilling technical requirements for system intervention of the TSO (“Systemdienstleistungsbonus”):
  - 0.49 ct/kWh for WTC commissioned in 2011
  - 0.7 ct/kWh if commissioned between 1 January 2002 and 31 December 2008.
- First five years: 9.02 ct/kWh (extendable)
- Degression: 1 percent p.a., when commissioned after 2011
- Repowering bonus of 0.5 ct/kWh granted for sites where WTC with higher nominal capacities were commissioned (pre-degression)
- Direct distribution at higher markets rates pursuant Sec 17 EEG possible.

Offshore
- Basic 3.50 ct/kWh
- First 144 months: 13 ct/kWh (extended depending on water depth and distance from shore)
- Additional premium available: 2 ct/kWh “Sprinterbonus” (premium for early entrants in this market will be granted for the same period the higher initial rate is available, but only if WTC is commissioned before 31 December 2015)
- Degression: 0 percent p.a. until 2014, 5 percent p.a. from 2015 onwards
- Grid connection from the offshore switch station to the shore born by the TSO, if the project was begun before 31 December 2015 (Sec 17 par 2a EnWG and Sec 118 EnWG).

Solar
On open space (the Renewable Energy Act distinguishes between farmland, land to be devoted to different usage [“Konversionsfläche“] and other open spaces. Plants on farmland are not subsidized. Other open spaces and “Konversionsflächen” are subsidized.
- 21.11 ct/kWh – 22.07 ct/kWh
- Degression: 9 percent plus up to a maximum of 4 percent in case a predefined threshold of nominal additional generation capacity added in 2011 is exceeded, effective 1 September 2011.

On buildings (for plants commissioned after 1 January 2011)
- Depending on the amount of nominal generation capacity
  - 21.56 ct/kWh –28.74 ct/kWh
- Degression: 9 percent in addition to a maximum of 4 percent p.a. if a pre-defined threshold of nominal generation capacity added in 2011 is exceeded. This is effective 1 July 2011.

Additional Information
Legal: The feed-in tariffs are regulated in the Renewable Energy Act (Gesetz für den Vorrang Erneuerbarer Energien (Erneuerbare-Energien-Gesetz)).

Duration of Feed-in Tariffs: Usually 15 to 20 years.

EEG-Novelle: The Renewable Energy Act will be amended in 2011, effective 1 January 2012. Since details are now only partly available to the public, this summary needs to be updated during 2011.

Administrative Procedures: Applications must be filed with the Ministry of Environment or the governmental-owned bank KfW.
Support Schemes

Incentives Available
According to Law 3908/2011, the following incentives are available:

- Tax relief. It is noted that the tax relief incentive constitutes an income tax exemption on profits before taxes as determined on the basis of tax legislation. The amount of the tax relief granted becomes a tax free reserve for the equivalent amount.
- Cash grants provided by the State that cover part of the expenses of the investment project.
- Leasing subsidies provided by the State that cover part of payable installments related to the leasing of new equipment. It is noted also that the leasing subsidies do not exceed a seven-year period.

These incentives may be granted solely or in combination. However, apart from tax relief (which is available to all investments qualifying for incentives under Law 3908/2011), cash grants and leasing subsidies may not be available to all qualifying investments.

General Eligibility Requirements:
According to Law 3908/2011, certain criteria should be met in order for the aforementioned incentives to be granted. In general, these criteria include the following:

- The investment should be initiated after the official eligibility approval. Under certain conditions, the investment may be initiated prior to the official approval as above but in any case after the filing of the respective application.
- The minimum amount of the investment is set at EUR1 million for large enterprises, EUR500,000 for medium-size enterprises, EUR330,000 for small enterprises and EUR200,000 for very small enterprises.
- The above minimum amounts are reduced to 50 percent for General Business Investments.
- The enterprises must be established in Greece and have the form of either a sole trader, a commercial entity/partnership or co-operative and must maintain double-entry accounting books or an income and expenses book (category B of the Code of Books and Records).
- Also, businesses which submit business plans exceeding EUR300,000 (instead of EUR200,000 which was provided by the prior investment scheme of Law 3908/2011).
3299/2004) must operate in the form of a commercial entity or co-operative:

- Investor’s own participation of at least 25 percent is required for investments for which cash grants or tax relief is provided.
- Certain requirements exist in respect to loans received that are to be used for the subsidized investment.
- Special requirements may apply depending on the nature of each investment project.

### Operating Subsidies

According to the provisions of the relevant legislation (laws 3468/2006, 3734/2009 and 3851/2010) the following apply:

### Feed-in Tariff

**Price of energy (EUR/MWh)**

<table>
<thead>
<tr>
<th>Electricity generated by:</th>
<th>Electricity Price (EUR/MWh)</th>
<th>Connected System</th>
<th>Non-connected Islands</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(a)</em> Wind energy generated from onshore wind farms with capacity above 50 kW</td>
<td>87.85</td>
<td>99.45</td>
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</tr>
<tr>
<td><em>(b)</em> Wind energy generated from stations with capacity of less than or equal to 50 kW</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(c)</em> Photovoltaic systems with capacity up to 10 kW peak used in the household sector and in small enterprises (i.e. installed on buildings – Ministerial Decision 12323/175/4.6.2009)</td>
<td>550</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(d)</em> Hydroelectric plants with a capacity up to 15 MWe</td>
<td>87.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(e)</em> Solar energy from solar thermal stations</td>
<td>264.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(f)</em> Solar energy from solar thermal stations with storage system which ensures at least 2 hours of operation in the nominal capacity</td>
<td>284.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(g)</em> Geothermal energy of low temperature (25˚ to 90˚ C)</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(h)</em> Geothermal energy of high temperature (above 90˚ C)</td>
<td>99.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(i)</em> Biomass from stations with installed capacity of 1 MW or less (excluding the biodegradable fraction of household waste)</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(j)</em> Biomass from stations with installed capacity of less than 1 MW and 5 MW or less (excluding the biodegradable fraction of household waste)</td>
<td>175</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(k)</em> Biomass from stations with installed capacity of less than 5 MW (excluding the biodegradable fraction of household waste)</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(l)</em> Gas released from landfills and biological cleaning installations and biogas produced by biomass (including the biodegradable fraction of waste) with installed capacity of 2 MW or less</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(m)</em> Gas release from landfills and biological cleaning installations and biogas produced by biomass (including the biodegradable fraction of waste) with installed capacity of less than 2 MW</td>
<td>99.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(n)</em> Biogas from biomass (animal farm and feed stock organic waste) with installed capacity of 3 MW or less</td>
<td>220</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(o)</em> Biogas from biomass (animal farm and feed stock organic waste) with installed capacity of less than 3 MW</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(p)</em> High-efficiency co-generation of electricity and heat</td>
<td>87.85 x Natural Gas Factor</td>
<td>99.45 x Natural Gas Factor</td>
<td></td>
</tr>
<tr>
<td><em>(q)</em> Other RES (including the stations for the energy exploitation of the biodegradable fraction of municipal waste which meet the requirements of the European legislation as in force from time to time)</td>
<td>87.85</td>
<td>99.45</td>
<td></td>
</tr>
</tbody>
</table>
### Solar energy produced by photovoltaic units

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>(mainland grid)</th>
<th>(autonomous island grids)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A (greater than 100 kW)</td>
<td>B (100 kW or less)</td>
</tr>
<tr>
<td>2009</td>
<td>February</td>
<td>400.00</td>
<td>450.00</td>
</tr>
<tr>
<td>2009</td>
<td>August</td>
<td>400.00</td>
<td>450.00</td>
</tr>
<tr>
<td>2010</td>
<td>February</td>
<td>400.00</td>
<td>450.00</td>
</tr>
<tr>
<td>2010</td>
<td>August</td>
<td>392.04</td>
<td>441.05</td>
</tr>
<tr>
<td>2011</td>
<td>February</td>
<td>372.83</td>
<td>419.43</td>
</tr>
<tr>
<td>2011</td>
<td>August</td>
<td>351.01</td>
<td>394.89</td>
</tr>
<tr>
<td>2012</td>
<td>February</td>
<td>333.81</td>
<td>375.54</td>
</tr>
<tr>
<td>2012</td>
<td>August</td>
<td>314.27</td>
<td>353.55</td>
</tr>
<tr>
<td>2013</td>
<td>February</td>
<td>298.87</td>
<td>336.23</td>
</tr>
<tr>
<td>2013</td>
<td>August</td>
<td>281.38</td>
<td>316.55</td>
</tr>
<tr>
<td>2014</td>
<td>February</td>
<td>268.94</td>
<td>302.56</td>
</tr>
<tr>
<td>2014</td>
<td>August</td>
<td>260.97</td>
<td>293.59</td>
</tr>
</tbody>
</table>

For every year from 2015 onwards: 1.3 x SMCn-1, 1.4 x SMCn-1, 1.4 x SMCn-1

SMCn-1 = System Marginal Cost during the previous year n-1

Law 3851/2010 provides that the electricity produced by stations developed without use of a public grant (except for photovoltaic and solar thermal stations) is priced on the basis of the feed-in tariffs mentioned above with an increase of:

(a) 20 percent for technologies listed under (a), (d), (g), (h) and (q);
(b) 15 percent for technologies listed under (i) to (o);
(c) as regards the technology listed under (p), the 15 percent increase applies to the stable part of the pricing, provided that the investment is made without a grant from any national, European or international program or incentive law and it is not subject to any kind of tax relief (including the non taxed reserves).

Especially for RES stations installed on non-interconnected islands and rocky islets throughout the country that are connected with the System through an independent undersea cable necessary for the transmission of the electricity to the System (note that the construction cost of the undersea connection is exclusively borne by the producers), there is a special increase on the pricing tariff which may vary from 10 percent up to 25 percent depending on the length of the connection line and the installed capacity of the RES stations. This increase will continue to apply after the interconnection of the island to the System and is added to the increase that may be applicable in accordance with the above paragraph.

**Additional Information**

**Operating Incentives:** Law 3468/2006 implemented the EU directive 2001/77 concerning the promotion of renewable energy sources and regulates the production of electricity from renewable energy sources in Greece, as amended by Laws 3734/2009 and 3851/2010. The feed-in tariffs referred to in the previous table were introduced by Law 3851/2010.

**Duration:** In general, the sale agreement for electricity produced by stations using renewable resources is valid for 20 years and may be extended under conditions. The sale agreement for electricity produced by solar thermal stations is valid for 25 years and may be extended under conditions.

**Update:** The tariffs mentioned in the table are revised annually by a decision of the Minister of Development based on the weighted adjustment of the approved bills of the Public Power Corporation (PPC). In case no approval of the PPC bills is required, the tariffs will be adjusted by the ministerial decision at 80 percent of the consumer price index as determined by the Bank of Greece. The said adjustment is effected in a unified way and is applied to all tariffs. Tariffs for photovoltaic stations are readjusted annually by 25 percent of the Consumer Price Index for the previous year, and are set by the Bank of Greece. If the tariff readjusted as above is lower than the System Marginal Cost of the previous year readjusted by 30 percent, 40 percent, and 40 percent for each category of the above table respectively, the invoicing will be based on the System Marginal Cost of the previous year, readjusted by the indexes referred to above.

**Administrative Procedures:** The specific licenses required depend on the installed power. Main licenses and authorizations are:

- Production license
- Establishment/installation license
- Operation license
- Approval of environmental terms
- Conclusion of connection agreement with Public Power Corporation (PPC)
- Conclusion of sale agreement of electric power with the Administrator (DESMIE or PPC).

**Grid Access:** Generally, priority access to the grid is provided to renewable energy producers for connection to the mainland grid, subject to the fulfillment of all conditions and requirements provided by the Code of Grid’s Administration.
Support Schemes

Mexico’s Income Tax Law (ITL) provides a 100 percent deduction incentive for taxpayers who carry out investments in renewable energy equipment. Qualifying sources like sun, wind, water and geothermal energies, as well as biomass fuel equipment, are eligible for this incentive.

Additional Information

**Fund for Energy Transition and Sustainable Exploit of Energy:** In 2008, the Renewable Energies Exploit and Energy Transition Financing Law (also known by its Spanish acronym LAERFTE) was released. It establishes Mexico’s strategy to favor policies, programs, actions and projects oriented to increase the usage of renewable energy sources and clean technologies, promote energy efficiency and sustainability, and decrease oil dependency as the main source of energy.

To finance sustainability projects, the Fund for Energy Transition and Sustainable Exploit of Energy was created in 2009. The Federal Expenditure Budget for this fiscal year assigned MXN3 billion (US$250 million) to the fund. For fiscal year 2011, this amount has been updated according to the Consumer Price Index (INPC) to US$260 million.

Following an official announcement, both companies or individuals compete for cash incentives from the fund by submitting proposals for projects that involve renewable energies and energy transition. This year’s announcement, “Bioeconomy,” calls for projects that promote the production and use of alternative fuels in primary sectors.

**Fund for Energy Sustainability:** Every fiscal year, the Ministry of Energy (SE) and the National Council of Science and Technology (CONACYT) establish a special fund for energy sustainability projects in which universities and research centers are the potential participants and beneficiaries. The resources for the fund are provided by the Mexican Oil Company (PEMEX) and are calculated every three months as a percentage of their total income. The projected balance for fiscal year 2011 is approximately MXN$1 billion (US$84 million). After the official announcement (expected to be in June of this fiscal year), participants will compete for cash incentives by submitting their proposals to the Committee, which will then evaluate the proposals and decide on the cash distributions.

The fund for energy sustainability supports four kinds of projects:

- **Applied research.** Research regarding energetic sustainability technology
- **Technology development.** Universities and/or research centers working together with enterprises in technology development projects such as pilot tests or prototyping. In such cases, the enterprises must provide at least 30 percent of the resources for the project development
- **Technology packages.** Documentation, business planning, feasibility studies and other activities designed to link universities and/or research centers projects with an enterprise partner
- **Technology assimilation.** Universities and/or research centers working together with enterprises in order to introduce a current developed technology into Mexico. In such cases, the enterprises must provide at least 30 percent of the resources for the project development.

**Fund for R&D in Energy:** The Electricity Federal Commission (CFE) and the CONACYT created a fund to provide resources for R&D projects in the electric sector. The distribution of resources was carried out by a competition among participants, and the CONACYT released one program in 2010, which ended in February 2011. This program involved seven types of projects related to specific categories related to sea waves, ocean currents, hydraulic equipment, nuclear energy and the measurement of gas emissions. The call for proposals 2011 has not yet been announced.

**Fund for International Cooperation:** The SE is under negotiations with the World Bank to create an international cooperation fund for transnational projects of energy sustainability. Funding is expected to be released during 2012, along with a description of available resources and the fund’s operating rules.

**Government Projects for 2011**

- **Municipal Street Lighting National Program:** For 2011, the Fund has authorized MXN$120 million (US$10 million) for the execution of street lighting-saving energy projects
- **Sustainable Light Program:** This program aims to decrease the energy consumption in homes substituting 45.8 million of lamps during 2011 and 2012
• **Integral Energy Services Program:** This program is designed to provide a greater percentage of rural populations in Mexico with electricity through renewable energy and small-scale generation. The program will be supported by the Global Environmental Fund (GFE), the Bank of Reconstruction and Promotion (BIRF) and the National Committee for Indigenous Towns Development (CDI).

• **National Sustainable Energy Exploit Program:** A review carried out by the National Sustainable Energy Exploit Program (PRONASE) identified several areas in which energy efficiency might be increased over a medium to long-term period. These areas include transportation, lighting, industrial motors and home equipment. PRONASE is now defining new strategies to encourage the use of renewable energy for Mexico in these areas.
Support Schemes

**Investments and Other Subsidies**

Applicable for: solar, wind, geothermal, hydro, biomaterial, and offshore technologies.

An additional deduction of 41.5 percent of the amount invested in qualifying assets is available. Under the energy investment allowance (EIA):

- Investments must be included on the “energy list” to be qualifying assets
- Maximum amount of investment for which EIA can be claimed per calendar year per taxpayer is EUR116 million. Pro rata calculation applies in the case of transparent entities
- Minimum cost per asset is EUR450. Total cost of qualifying investments must be more than EUR2,200 per calendar year
- No addition is given to the fiscal profit on alienation of the assets after a five-year period
- No prior use of the asset that is invested is permitted
- The EIA and the environmental investment allowance cannot be applied simultaneously
- Certain formal conditions apply to requests for the EIA.

**Applicable for:** Not directly applicable to renewable energy, although assets for which this tax incentive is applicable can be used as part of the production of energy from renewables.

An additional deduction is granted of up to 36 percent of the amount invested in qualifying environmentally friendly assets. Under the environmental investment allowance (MIA):

- Depending on the asset, the amount that can be deducted from the fiscal profit is 13.5, 27, or 36 percent of the investment cost
- Investments must be included on the “environmental list” to be qualifying assets
- Cost per asset: a minimum of EUR450. Total amount of qualifying investments must be more than EUR2,200 per calendar year
- No addition to the fiscal profit on alienation of the assets after a five-year period
- No prior use of asset that is invested
- The EIA and the MIA cannot be applied simultaneously
- Certain formal conditions apply to requests for the MIA.

**Applicable for:** Not directly applicable to renewable energy, although assets for which this tax incentive is applicable can be used as part of the production of energy from renewables.

An accelerated depreciation is granted on qualifying environmentally friendly assets:

- Investments must be included on the “environmental list” and be designated as qualifying assets
- Free depreciation of up to 75 percent of the production or development costs of the qualifying asset
- No prior use of the asset that is depreciated
- Certain formal conditions apply to requests for the accelerated depreciation.

**Applicable for:** Not directly applicable to renewable energy, although assets for which this tax incentive is applicable can be used as part of the production of energy from renewables.
Capital invested in “green funds” (appropriated funds invested in environmentally friendly projects) is exempt from personal income tax:

- A private investor will not be taxed for capital invested in green funds
- Maximum amount of invested capital exempted on an individual basis is EUR 55,476 (in 2011)
- Tax credit of 1 percent of the invested capital, with a maximum amount of invested capital of EUR 55,476 on an individual basis.

Operating Subsidies

Feed-in Tariff
As of 1 January 2011, the existing regulation for the Feed-in Tariff (“SDE”) is no longer applicable. A new regulation (“SDE+”) is expected to take effect as of 1 July 2011.

The key features of this new regulation are expected to be:

- A maximum amount of 0.15 EUR/kWh for all types of renewable energy such as wind, geothermal, solar photovoltaic, biomass and hydro. This corresponds to 1.32 EUR/Nm3 for green gas
- Phased opening
- A “free category” to enhance investments in certain technologies
- Feed-in tariff granted for a certain period (under the old SDE regulation: 15 years for solar, hydro and wind, and 12 years for biomaterial and green gas)
- A maximum subsidy amount for the Netherlands, to be determined annually.
New Zealand

Support Schemes

Investments and Other Subsidies
Applicable for: solar, wind, hydro and biomaterial.

Historically, renewable generation projects may have qualified for free allocation of carbon credits. Current policy is that generation which results in greenhouse gas emissions will incur a carbon cost under the NZ Emissions Trading Scheme. This includes geothermal generation.

Operating Subsidies

Feed-in Tariff
Remuneration is available for electricity produced.

Additional Information

Operating Incentives:
Wind generation is automatically dispatched. It does not need to be bid into the market, and the generator receives the same pool price as other dispatched generation.

Generation from all other renewable sources is treated the same as generation from carbon (the lowest bid price is dispatched first).
Support Schemes

**Investments and Other Subsidies**
Applicable for: solar, wind, geothermal, hydro, biomaterial and offshore technologies

- Renewable energy is exempt from excise tax
- Taxpayer of agriculture tax may claim for refund of investment costs if the investment relates to renewable energy (up to 25 percent)
- Subsidies and grants from the EU Structural Fund in Poland or other domestic institutions (for example, Narodowy Fundusz Ochrony Środowiska i Gospodarki Wodnej).

**Operating Subsidies**

**Green Certificate System**
Remuneration for electricity produced: PLN195.32/1MWh (last year it was PLN197.21/1MWh).

**Quota Obligation**
2010 or 2011 Rates: 10.4 percent of all energy produced (floors relate to all types of renewable energy).

**Additional Information**

**Legal Basis:** The Act of Energy Law dated on 10 April 1997 and the respective decrees from the Ministry of Economy.

**Administrative Procedures:** Business activity in the area of production of renewable energy is a licensed activity and requires a permit granted by the president of Energy Regulatory Office. Such a permit can be sought by an entity that meets requirements specified in the Energy Law, especially the ability to provide the financial, organizational and technical resources required to perform the licensed activity. As a rule, permission is given for the fixed term but not longer than 50 years.

**Grid Access:** Priority access is granted over nonrenewable electricity producers. The costs of connecting to the electricity grid are determined by the actual costs incurred to construct the line. Those costs may be partially refunded to the investor, depending on the year and production capacity.

**Green Certificates Scheme:** Electricity producers may apply to the president of Energy Regulatory Office for green certificates (also known as certificates of origin), if they have produced renewable energy or if they are required to pay substitute fees calculated in line with the energy law. The green certificates are similar to securities; they are transferable and tradable on the Polish Power Exchange.

**Sale:** Electricity distributors have a legal obligation to acquire a certain amount of renewable energy generated in Poland. For the period of 2010 to 2014, the above percentage limit of renewable energy will amount to 10.4 percent. Otherwise, the electricity distributor is obliged to buy the missing amount of renewable energy (by means of green certificates) on the market. The prices of renewable energy have been determined based on average prices of energy in the previous year; the amount for 2010 was PLN195.32/1MWh. The renewable electricity producers have priority over other producers with regards to the distribution of produced energy.
Spain

Support Schemes

**Tax Incentives**

The following includes a brief description of certain tax incentives that have not been created specifically for the renewable energies sector. Careful tax planning is therefore required to take advantage of these tax incentives.

**Tax-Free Depreciation**

As a result of the modifications introduced by Royal Decree (RD) 13/2010, the CIT Law foresees the possibility of freely depreciating the new tangible and real estate assets used in economic activities that are made available to the taxpayer in the tax periods beginning between 2011 and 2015.

**Reduction Of Income From Certain Intangible Assets**

The income derived from the license of the right to use or exploit certain intangible assets defined in article 23 of the CIT Law, shall be included in the CIT taxable base with a reduction of 50 percent, if certain requirements are met.

This 50 percent reduction shall not be applicable from the tax period following the tax period when the total income derived from the license of each intangible asset that has benefited from the reduction, calculated from the date of the license exceeds six times the cost of the intangible created.

**Capital Duty Exemption**

As a result of the modifications introduced by RD 13/2010, the Spanish Transfer Tax Law foresees an exemption of the Capital Duty regarding:

- Incorporation of companies
- Increase of share capital
- Contributions of shareholders that do not constitute an increase of share capital
- Transfer to Spain of the office of effective management of a company not previously located in the EU.

**Tax Allowances On Local Taxes**

For certain local taxes such as construction and urban canon, tax allowances could be agreed with the corresponding local authority. The tax allowances to be agreed would depend on each local authority, and should be negotiated on a case-by-case basis.

**Operating Incentives**

Applicable for: solar, wind, geothermal, hydro and biomaterials.

**Feed-in Tariff**

Fixed remuneration is available for electricity produced by power plants.

**Premium**

Spot price with a fixed premium (fixed with an overall cap and floor, depending on technology).

**Operating Incentives:**

**Operating Subsidies:**

General regulation of the legal regime of electricity production from renewable sources is contained in RD 661/2007. As per operating subsidies for renewable energy (except photovoltaic), they are determined
by RD 661/2007 governing renewable technologies. Solar photovoltaic technology incentives are specifically governed by RD 1578/2008 and refer only to feed-in tariffs.

New incentives to renewable plants are granted provided that projects are filed with an incentives registry subject to limitations on the total capacity that can be registered. This regulation establishing the incentives’ registry establishes the calendar to start operation of plants under RD 661/2007 or any new approved incentives’ program.

All incentives granted to new renewable plants are currently under review and expected to be approved during 2011 based on National Action Plan 2011-2020, which was derived from the European Union’s Renewables Directive. Considering the last technical report issued by National Electricity Grid operator Red Electrica de España, new plants developed under new incentives and not yet approved are not expected to start operations until 2014.

Furthermore, relevant regulatory changes concerning the renewable energy production and mainly focused on wind, solar photovoltaic and solar thermal technologies have been recently introduced by RD 1614/2010, RD 1565/2010 and RD-Law 14/2010. Some of the legal changes substantially modify the legal regime (both economic and operational) of the plants under operation and under construction. The following sections provide an outline of some of these changes.

**Wind and Solar Thermal Technologies (RD 1614/2010)**

- Operational hourly limits entitled to feed-in tariffs and premiums:
  - In wind a number of hours for all the plants under this technology is established (2,589 hours per year) always provided that an overall average of production hours for whole installed wind power is reached (2,350 hours per year).
  - Regarding solar thermal, the hourly limits are considered individually and depend on technology, as follows:

<table>
<thead>
<tr>
<th>Solar thermal technology</th>
<th>Hour Limitation Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parabolic cylinder without storage capacity</td>
<td>2,855</td>
</tr>
<tr>
<td>Parabolic cylinder with storage capacity of 9h</td>
<td>4,000</td>
</tr>
<tr>
<td>Parabolic cylinder with storage capacity of 7h</td>
<td>3,950</td>
</tr>
<tr>
<td>Parabolic cylinder with storage capacity of 4h</td>
<td>3,450</td>
</tr>
<tr>
<td>Saturated Steam Tower</td>
<td>2,750</td>
</tr>
<tr>
<td>Salt tower with 15 h storage capacity</td>
<td>6,450</td>
</tr>
<tr>
<td>Fresnel</td>
<td>2,450</td>
</tr>
<tr>
<td>Stirling</td>
<td>2,350</td>
</tr>
</tbody>
</table>


Once exceeding such limitations, pool prices should apply.

These hour limitations could be amended by the new National Action Plan 2011-2020.

- A review of incentives granted by RD 661/2007 includes the following:
  - For wind technology, review of the feed-in tariff and the fixed premium under RD 661/2007 by decreasing in a 35 percent the amounts until 1 January 2013 (being excluded plants under RD 436/2004 by virtue of First Transitory regulation article of RD 661/2007). From 1 January 2013 the amount to be applied will be the ones set under regulation Order ITC/3519/2009.
  - As with solar thermal, during the 12 month period after the start-up of these plants, the energy produced will have to be sold to the market mandatorily under feed-in tariffs. Furthermore, a time extension is granted for the start-up of solar thermal plants filed in the Incentives’ Registry under phase 4 (until 31 December 2013).


- Operational hourly limitation with the right to be granted feed-in tariffs, depending on tracking technology and individual considerations. In this regard, a two-stage limitation is expected:

A general hourly limitation for all photovoltaic (PV) plants is approved with the following conditions, with Spain divided into five irradiation areas:

<table>
<thead>
<tr>
<th>Technology</th>
<th>Hourly Limitation Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Support</td>
<td>1.232</td>
</tr>
<tr>
<td>Single Axis Tracker</td>
<td>1.602</td>
</tr>
<tr>
<td>Dual Axis Tracker</td>
<td>1.664</td>
</tr>
</tbody>
</table>

For those PV plants under RD 661/2007 economic regime, a special and extraordinary limitation has been approved until 31 December 2013:

<table>
<thead>
<tr>
<th>Technology</th>
<th>Hourly Limitation Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Support</td>
<td>1.250</td>
</tr>
<tr>
<td>Single Axis Tracker</td>
<td>1.644</td>
</tr>
<tr>
<td>Dual Axis Tracker</td>
<td>1.707</td>
</tr>
</tbody>
</table>


As compensation for the hourly limitation set out above, feed-in tariffs are extended from 25 to 30 years.

- New relevant technical obligations are established for PV plants to permit a global technical management of the grid.
- Decrease of the feed-in tariffs established under RD 1578/2008 with the Incentives Registry:
  - 5 percent decrease for type I.1 installations
  - 25 percent decrease for type I.2 installations
  - 45 percent decrease for type II installations.

Additional Information

Other Considerations Regarding Operating Subsidies for Renewables

Duration: From 15 to 25 years. Afterwards, depending on the technology, with a substantial reduction after the initial 15 to 25-year period.

Update: Subsidies are updated annually according to the Consumer Price Index (established by the Spanish National Statistics Institute), with certain reductions (-0.25 percent until 31 December 2012 and -0.50 percent afterwards).

Payment: Part of the total subsidies amount is liquidated by the CNE (Spanish National Energy Commission) and paid by the energy distributors. The remainder is liquidated and paid by the market and system operator.

Recognition of Operating Subsidies:
Incentives’ Registry has been established by RD-Law 6/2009 and RD 1578/2008 in order for new projects to be eligible for the operating incentives. Certain documentation, that is chronologically ordered, regarding project development and guarantees shall be filed to be entitled to the subsidies. Projects will be filed until fulfillment of the power quotas determined for each of the technologies. Once quotas are reached, the subsidy amounts are reviewed.

Administrative Procedures: Main permits and authorizations are (i) electric sector authorizations, (ii) municipal permits and licenses, and (iii) environmental procedures. At an environmental level, it should be emphasized that public tenders are carried out for onshore wind and photovoltaic projects to determine locations that are environmentally friendly. As per offshore wind, a national map has been approved with possible project locations.

Grid Access: Access priority is given over other nonrenewable electricity producers. Full access is not guaranteed but depends on the technical management of the grid and demand. The costs concerning the access to the grid will be paid by the energy producers. Access to the grid shall only be denied by grid operators in case of a lack of capacity according to security, quality supply and regularity criteria.
United Kingdom

Support Schemes

Investments and Other Subsidies
Exemptions from Climate Change Levy and Emissions Trading Scheme.

Operating Subsidies

Feed-in Tariff
Introduced on 1 April 2010 for small-scale electricity generation from a variety of technologies.
An additional feed-in tariff for renewable heat generation is expected to be introduced in 2011.

Premium
Renewable Obligation Scheme.

Quota Obligation
Renewable Obligation Scheme.

Additional Information

Renewable Obligation (RO) regime:
This requires electricity suppliers to source a specific percentage of electricity from renewable sources (target of 15 percent by 2020), whereby renewable generators receive Renewable Obligation Certificates (ROCs) for each MWh of electricity generated. ROCs can be traded independently of the electricity generated. The RO regime has been extended until at least 2037.
There is a banded ROC mechanism whereby different renewable electricity technologies receive different levels of support according to their technological maturity and levelized costs (see table below). A supplier who does not obtain sufficient ROCs over a year has to make ‘Buy out’ payments at GBP38.69 per MWh (2011 to 2012 rate).

Bio-electricity review: Sustainability criteria are being introduced in 2011 for bio-electricity. Eligibility criteria are applicable from 1 April 2011, with no ROCs being issued where the criteria is not met from 1 April 2011 for bioliquids, and is expected from April 2013 for biomass and biofuels.

Climate Change Levy (CCL), Renewables Exemption: The CCL is a specific energy tax on nondomestic users of electricity in the United Kingdom. Most electricity generated from renewables is exempt from the CCL. Renewable Levy Exemption Certificates (LECs) are issued to renewables generators for each MWh of electricity supplied and LECs transfer along with the electricity and can be used by electricity suppliers to claim the CCL exemption.
A Carbon Price Floor, to be introduced from 1 April 2013, will apply a levy for electricity generators based on the carbon content of each fuel type. Such supplies will be charged at the relevant carbon price support rate depending on the type of fossil fuel used, which will be determined by the average carbon content of each fossil fuel equivalent to GBP4.94 per tonne of carbon dioxide for 2013-2014. Proposed rates for 2014 to 2015 and 2015 to 2016 are GBP7.28/tCO2 and GBP9.86/tCO2.

Incentives for small-scale electricity/heat generation: On 1 April 2010 Feed-in Tariffs were introduced for small-scale, low-carbon electricity generated by private/business users (maximum capacity 5 MW) providing payment of up to 41.3p per kilowatt hour generated plus a guaranteed 3p/kWh sold on to the UK electricity grid. A Renewable Heat Incentive is expected to be launched in summer 2011, aimed at individuals, communities and businesses, providing payment for replacing existing fossil fuel heating systems with renewable technology.

Current ROC Banding Regime (subject to review during 2011 for 2013/14 onwards)

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<td>Post-Demonstration</td>
<td>Offshore wind (see note below); wave; tidal stream; advanced conversion technologies (anaerobic digestion; gasification and pyrolysis); dedicated biomass burning energy crops (with or without CHP); dedicated regular biomass with CHP; solar photovoltaic; geothermal; tidal lagoons (less than 1 GW), tidal barrages (less than 1 GW)</td>
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Note: Certain offshore wind projects (broadly if accredited between April 2010 and March 2014) qualify for two ROCs.

Feed-in Tariffs for Solar Installations:
On 18 March 2011 the UK government announced its intention to reduce feed-in tariffs for all new photovoltaic (PV) installations larger than 50 kW and stand alone installations. The UK government is consulting on the reductions at the time of writing and intends to make changes effective from August 2011.

EU Emissions Trading Scheme Exemption: Renewable generators are exempted from the requirement to purchase carbon allowances in order to generate electricity, as required by the EU Emissions Trading Scheme.

Energy Market Reform: The UK government is expected to announce details (in a white paper) of reforms to the UK energy market in late spring 2011. The reforms could affect many of the items above. In particular, the government may phase out the RO regime and replace it with a new feed-in tariff regime.

Other Direct Tax Allowances/Incentives Potentially Relevant to Renewables Generators:
- Capital allowances of 20 percent, reducing the balance for capital expenditures on plant and machinery (reduced to 10 percent if the asset’s useful expected economic life exceeds 25 years). From 1 April 2012, rates will be reduced to 18 percent and 8 percent respectively
- Enhanced capital allowances (a 100 percent First Year Allowance for specified energy-saving plant and machinery)
- Contaminated land remediation tax relief on qualifying expenditure, attracting an additional 50 percent tax deduction (or a 16 percent cash tax credit for loss-making businesses). In March 2011, the UK government announced their intention to abolish this relief, expected from April 2012 onwards.
United States

Support Schemes

**Investments and Other Subsidies**

**Production Tax Credit (PTC)**

Applicable for: wind, geothermal, landfill gas, trash combustion, open-loop biomass, closed-loop biomass, hydropower and wave tide.

- The PTC provides a tax credit for the production of electricity from renewable sources and the sale of that electricity to an unrelated party.
- Credit amount is:
  - 2.2 cents per kilowatt hour for wind, closed-loop biomass and geothermal
  - 1.1 cents per kilowatt hour for other renewable energy resources.
- Available for facilities placed in service before 1 January 2014 (2013 for wind).
- Available for 10-year period beginning the year the facility is placed in service.

**Investment Tax Credit (ITC)**

Applicable for: solar, geothermal, qualified fuel cell or micro turbine property, combined heat and power system, small wind, geothermal heat pumps and PTC eligible facilities placed in service after 2008 and before 2014 (2013 for wind).

- Provides a credit for qualifying energy property.
- ITC for any taxable year is the energy percentage of the basis of each energy property placed in service during the taxable year.
- Credit amount is:
  - 30 percent of eligible costs for fuel cell, solar, and small wind property
  - 10 percent of eligible costs for combined heat and power, microturbine property and geothermal heat pumps.
- ITC generally available for eligible property placed in service on or before 31 December 2016.

**Grant in lieu of PTC and ITC**

Applicable for: tangible personal property or other property that is an integral part of a qualified facility (as defined by the PTC and ITC rules).

- The American Recovery and Reinvestment Act (ARRA) enacted a new grant program which provides a cash grant in lieu of the PTC or ITC.
- Permits PTC or ITC qualifying projects to elect a grant of up to 30 percent of costs of construction of PTC or ITC energy property in lieu of tax credits.
- Projects must begin construction before 2012 and submit a grant application no later than 1 October 2012.
- Projects must be placed in service before their PTC or ITC credit expires:
  - PTC before 2014 (wind 2013)

Operating Subsidies

**Quota Obligation**

**Renewable Portfolio Standards (RPS)**

- Generally places an obligation on electric supply companies to produce a specified fraction of their electricity from renewable energy sources and enumerates mechanisms that are permitted to achieve compliance, such as renewable energy credits (RECs).
- Currently no federal RPS legislation has been enacted.
- 29 states and the District of Columbia have an RPS:
## Appendix A: Renewable Energy Promotion Policies by Country

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<th>EU-27</th>
<th>Feed-in tariff</th>
<th>Renewable Portfolio Standards/Quota</th>
<th>Capital subsidies, grants, rebates</th>
<th>Investment or other tax credits</th>
<th>Subsidy for energy tax/excise tax or VAT reduction</th>
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### Developing Countries

| Algeria  | ✓              | ✓                                  | ✓                                 | ✓                              | ✓                                                | ✓                        | ✓                                       |               | ✓                                     |                          |
| Argentina| ✓              | ✓                                  | ✓                                 |                                |                                                  | ✓                        | ✓                                       |               | ✓                                     |                          |
| Bolivia  | ✓              |                                    |                                    |                                |                                                  | ✓                        | ✓                                       |               | ✓                                     |                          |
### Appendix A: Renewable Energy Promotion Policies by Country

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Notes: Entries with an asterisk (*) mean that some states/provinces within these countries have policies at the state or province level but not at the national level. Only enacted policies are included in the table. For some policies shown, however, regulations may not yet be implemented or in effect. Policies known to be discontinued have been omitted. Many feed-in policies are limited in scope or technology. Some policies shown may apply to other markets beside power generation for example, solar hot water and biofuels.

Sources: This section is intended only to be indicative of the overall landscape of policy activity and is not a definitive reference. Policies listed are generally those that have been enacted by legislative bodies. Some of the policies listed may not yet be implemented, or are awaiting detailed implementing regulations. It is obviously difficult to capture every policy, so some policies may be unintentionally omitted or incorrectly listed. Some policies may also be discontinued or very recently enacted. This report does not cover policies and activities related to technology transfer, capacity building, carbon finance, and Clean Development Mechanism projects, nor does it highlight broader framework and strategic policies—all of which are still important to renewable energy progress. For the most part, this report also does not cover policies that are still under discussion or formulation, except to highlight overall trends. Information on policies comes from a wide variety of sources, including the IEA Renewable Energy Policies and Measures Database, the U.S. DSIRE database, RenewableEnergyWorld.com, press reports, submissions from country-specific contributors to this report, and a wide range of unpublished data. Much of the information presented here and further details on specific countries appear on the “Renewables Interactive Map” at www.ren21.net. It is unrealistic to be able to provide detailed references to all sources here.
## Appendix B: Top five countries

### Annual amounts for 2009

<table>
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<tr>
<th>Category</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
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<tr>
<td>New capacity investment</td>
<td>Germany</td>
<td>China</td>
<td>United States</td>
<td>Italy</td>
<td>Spain</td>
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<tr>
<td>Wind power added</td>
<td>China</td>
<td>United States</td>
<td>Spain</td>
<td>Germany</td>
<td>India</td>
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<tr>
<td>Solar PV added (grid-connected)</td>
<td>Germany</td>
<td>Italy</td>
<td>Japan</td>
<td>United States</td>
<td>Czech Republic</td>
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<tr>
<td>Solar hot water/heat added(^1)</td>
<td>China</td>
<td>Germany</td>
<td>Turkey</td>
<td>Brazil</td>
<td>India</td>
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<tr>
<td>Ethanol production</td>
<td>United States</td>
<td>Brazil</td>
<td>China</td>
<td>Canada</td>
<td>France</td>
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<td>Biodiesel production</td>
<td>France</td>
<td>Germany</td>
<td>United States</td>
<td>Brazil</td>
<td>Argentina</td>
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</table>

### Existing capacity as of end-2009

<table>
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<th>Category</th>
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<th>#3</th>
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<tbody>
<tr>
<td>Renewables power capacity (including only small hydro)</td>
<td>China</td>
<td>United States</td>
<td>Germany</td>
<td>Spain</td>
</tr>
<tr>
<td>Renewables power capacity (including all hydro)</td>
<td>China</td>
<td>United States</td>
<td>Canada</td>
<td>Brazil</td>
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<tr>
<td>Wind power</td>
<td>United States</td>
<td>China</td>
<td>Germany</td>
<td>Spain</td>
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<tr>
<td>Biomass power</td>
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<td>Brazil</td>
<td>Germany</td>
<td>China</td>
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<tr>
<td>Geothermal power</td>
<td>United States</td>
<td>Philippines</td>
<td>Indonesia</td>
<td>Mexico</td>
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<tr>
<td>Solar PV (grid-connected)</td>
<td>Germany</td>
<td>Spain</td>
<td>Japan</td>
<td>United States</td>
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<tr>
<td>Solar hot water/heat(^3)</td>
<td>China</td>
<td>Turkey</td>
<td>Germany</td>
<td>Japan</td>
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</table>

Notes: Rankings are based on absolute capacities and production; per-capita rankings would be quite different for many categories.  
\(^1\)Renewables power capacity figures rounded to nearest 5 GW. Renewables power capacity (including only small hydro) counts small hydro < 10 MW; this is a change from prior versions of this report. Capacity figures would be higher for other definitions of small hydro with higher limits. Excluding small hydro entirely, rounded capacity figures would be 160 GW, 195 GW, and 245 GW, for years 2007 through 2009, respectively.  
\(^2\) Feed-in policies total for 2009 also includes early 2010.  
\(^3\) Solar hot water / heating numbers are for 2008. Many figures in the above table and throughout the report are rounded to two significant digits, so some totals may not exactly reflect underlying data due to rounding.