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Taxes and incentives for renewable energy

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This report describes the 2012 taxes and incentives provided by 23 countries around the world to promote renewable energy from wind, solar, biomass, geothermal and hydropower. These policies also support other areas such as increased energy efficiency, smart-grid management, biofuels, carbon capture systems and storage technologies. Content includes an introduction on global trends in renewables, a summary of renewable energy production in the top five countries and a brief outline of renewable energy promotion policies in the 23 countries.

Contents

Introduction

Despite the turbulent global economy, the world of renewable energy continues to expand. This report describes current incentives provided by 23 countries around the world to promote renewable energy from wind, solar, biomass, geothermal and hydropower. These incentives also support related areas such as increased energy efficiency, smart-grid management, biofuels, carbon capture systems and storage technologies.

By all accounts, 2011 was a strong year for renewables, driven in part by an overall increase in global energy consumption following a decline during the global recession. According to the International Energy Outlook 2011[1], world marketed energy consumption in the IEO 2011 reference case is estimated to grow by 53 percent between 2008 and 2035. Much of this increase is occurring in countries outside the Organization for Economic Cooperation and Development (OECD) where demand is driven by strong, long-term economic growth. Energy use in non-OECD nations is expected to rise by 85 percent as compared to 8 percent for OECD economies.

In 2011, global investment in clean energy reached a new record of US dollars (USD)260 billion, up 5 percent on 2010 and almost five times the total of USD53.6 billion in 2004. Investments in solar far outstripped those for wind. Perhaps most importantly, US clean energy investment regained its leadership over China for the first time since 2008, according to Bloomberg New Energy Finance. Last year also saw the one trillionth dollar invested in clean energy globally since Bloomberg started compiling data in 2004.[2]

In fact, renewable energy sources are now the fastest growing sources of electricity generation in the world, with an estimated increase of 3.1 percent per year from 2008 to 2035.[3] The renewable share of total energy use is expected to increase over the same period from 10 to 14 percent.[4] The REN21 2011 Renewables Global Status Report,[5] states that renewables delivered close to 20 percent of global electricity supply in 2010. By early 2011, they comprised one quarter of global power capacity from all sources.

In the first half of 2012, ongoing economic uncertainty and changing government policies have led to reduced incentives for clean energy in many countries. As a result, the outlook for the government support of renewable energy remains uncertain. Nevertheless, regulations to reduce carbon emissions and achieve energy security remain in place, and governments still offer a wide variety of tax incentives to support renewable energy investment, including:

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

Governments 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, such as energy taxes, excise taxes or value added taxes (VATs).

Compared to 83 countries in 2009, at least 96 countries now have some type of policy target or renewable support policy to promote renewable power generation.[6] More than half of these countries are emerging economies. The 12 most common policies can be divided into three categories:

- **Regulatory policies:**

  Feed-in tariffs

  Electric utility quota obligation/ renewable portfolio standard (RPS)

  Net metering

  Biofuels obligation/mandate

  Heat obligation/mandate

  Tradable renewable energy credit (REC).

- **Fiscal incentives:**

  Capital subsidy, grant and rebate

  Investment and production tax credits

  Reductions in sales taxes, energy taxes, CO_2 taxes, VAT and other taxes

  Energy production payment.

- **Public financing:**

  Public investment, loans and grants

  Public competitive bidding.

(For additional information about these policies, see appendix A/page 47).

1 International Energy Outlook 2011, Highlights, 19 September 2011, HYPERLINK "http://www.eia.gov/forecasts/ieo/more_highlights.cfm" \l "world"http://www.eia.gov/forecasts/ieo/more_highlights.cfm#world
2 "Solar surge drives record clean energy investment in 2011," Bloomberg New Energy Finance, 12 January 2011
3 Op. cit., International Energy Outlook 2011
4 Ibid.
5 REN21 2011 Renewables Global Status Report, 12 July 2011, http://www.ren21.net/REN21Activities/Publications/GlobalStatusReport/GSR2011/tabid/56142/Default.aspx
6 Ibid.

2012 Industry trends

As mentioned above, economic stress from the recent global downturn and changing government policies have led to reduced incentives for clean energy in many countries, especially in the EU. In Asia, however, incentives have more often been maintained or even increased.

Overall, European countries remain committed to renewable energy production. The EU Emissions Trading Scheme (ETS) mandates significant reductions in CO_2 emissions by 2020, and most countries have met or, in the case of Sweden, even exceeded their regulatory requirements. In 2010, Germany doubled its solar photovoltaic (PV) generation capacity, and the rate of solar installations grew even faster in 2011. Renewable energy companies in France have outlined a plan that would increase the sector's share of the French energy market to 25 percent by 2020,[7] and some analysts say that solar energy in the sunnier regions of the Mediterranean is close to becoming cost-competitive with fossil fuels.[8]

However, persistent economic problems across the eurozone have caused many governments to reconsider or scale back their support for renewables. Germany has lowered its subsidies by 15 percent and policymakers indicate that they will make additional cuts of 29 percent in 2012.[9] The UK has reduced subsidies by 50 percent, and Italy has made similar cuts.[10] In Spain, some subsidies have been abandoned altogether, leading to a significant number of solar panel manufacturing plants being shuttered and thousands of employees laid off. The Czech energy regulatory office has said that support for renewables needs to be rethought and that aid might have to be cut or eliminated regardless of the country's EU commitments.[11]

In addition to governments trying to recover revenue, the cuts in subsidies for green products such as PV panels have been driven by falling prices – almost 50 percent for panels over the past three years.[12] This drop is mainly the result of soaring production in China, now the leader in PV panel manufacturing. Over 700 Chinese manufacturers produce an annual capacity of 40 GW of electricity, and almost 95 percent of this output is exported[13]. China has also become the world leader in wind energy with 60 manufacturers, although production is expected to drop in 2012 as demand decreases at home and energy tax credits in foreign countries are allowed to expire.[14]

China's commitment to renewable energy is reflected in other Asian countries. South Korea has pledged that 11 percent of its total energy will come from renewables by 2030[15]. Its "Green Growth" strategy includes initiatives for waste-management and air-quality as well as renewable energy from sources such as wind.

In India, renewable energy production is seen as a way to provide electricity in areas that lack a fully developed power grid.[16] Local solar PV panel installations or independent electrical generation plants running on biofuels can supply both homes and businesses.

As with many other industries, recent trends suggest that the "center of gravity" for the renewable energy sector is shifting from developed to emerging countries, both for manufacturing and for consumption. Whether this shift continues will be a matter of economic, technological and political factors related to green energy.

7 "French renewables industry plans to meet 25% of power use by 2020," Platts, The McGraw-Hill Companies, 20 February 2012
8 "Europe puts solar energy on standby," Washington Post, March 19, 2012
9 Ibid.
10 Ibid.
11 "Czech renewable firms protest new law, subsidies questioned," Platts, The McGraw Hill Companies, 13 January 2012
12 Op. cit., "Europe puts solar energy on standby"
13 "HYPERLINK "http://www.nytimes.com/2012/03/21/business/energy-environment/us-to-place-tariffs-on-chinese-solar-panels.html?pagewanted=all"A Measured Rebuttal to China Over Solar Panels," NYTimes.com, 20 March 2012
14 "China braced for wind turbine slow down," Financial Times, 23 October 2011
15 Korea passes legislative framework for Low Carbon Green Growth," www,greengrowth.org, May 2010
16 Op. cit., REN21 2011 Renewables Global Status Report

Global investment in renewable energy production

In 2010, global investment in renewable energy increased 32 percent to a record USD211 billion.[17] Worldwide, venture capital investment increased by 59 percent to USD2.4 billion and public market investment gained 23 percent to USD15.4 billion.[18]

For the first time, new investments in renewable energy in emerging countries (USD72 billion) surpassed investment levels in developed economies (USD70.5 billion).[19] Increases in emerging countries, as well as in the United States, were due to an increase in asset finance, dominated by wind, for which global asset finance rose by USD23 billion to USD90 billion.

Latin America (not including Brazil) saw the biggest absolute increase in renewable energy investment among the regions of the developing world. The largest gain in Latin America was achieved by Mexico (348 percent). This growth was a result of the successful financing of large wind projects and a major geothermal project following the Mexican government's 2009 announcement that it was increasing its renewables target from 3.3 percent to 7.6 percent by 2012. Argentina increased investments by 568 percent, to USD740 million. Peru's investment doubled to USD480 million, and Chile saw a 21 percent increase to USD960 million.

After China and India, Africa achieved the largest percent increase in renewable energy investment among emerging countries. Total investment in Africa rose from USD750 million to USD3.6 billion, largely as a result of strong performances in Egypt and Kenya.

India ranked eighth in the world for renewable energy investment. Investment rose 25 percent to USD3.8 billion, dominated by wind power projects (USD2.3 billion), followed by USD400 million each for solar and biomass power including waste-to-energy.

Global R&D for renewable energy rose to USD9 billion in 2010, with most R&D going into solar (USD3.6 billion) followed by biofuels (USD2.3 billion). For the first time, governments spent more on R&D for renewables (USD5 billion, up from USD2 billion in 2009) than the private sector did (USD3 billion, down from USD4 billion in 2009). This change was due to green stimulus funds that were still being spent during 2010, especially in the Asia Pacific region (not including China and India). The region's government R&D investments in renewable energy increased 27-fold, spurred by stimulus packages in Australia, Japan, and South Korea.

According to the REN21 2011 Renewables Global Status Report, the top 5 countries for total investments in renewable energy in 2010 were China, Germany, the United States, Italy and Brazil. (For additional information, see appendix B/page 50)

17 Global Trends in Renewable Energy Investment 2011, Bloomberg New Energy Finance
18 Ibid.
19 Statistics here and included below in this section are taken from REN21 2011 Renewables Global Status Report, cited previously on page 1.

China:

In 2010, China attracted USD49 billion in new investments, up 28 percent over 2009. This was more than two-thirds of emerging country investments and more than a third of global investments in renewable energy during 2010, making China the leader for the second year in a row. China's lead was due mainly to the growth in wind power capacity in 2010. China continued to benefit from a USD46 billion green stimulus package, which had been announced at the height of the financial crisis in 2008. By the end of 2010, 70 percent of the funds had been spent.

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, R&D incentives, and subsidies for energy conservation technologies improvement.

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Germany:

Germany enjoyed new investments of USD6.7 billion in 2010, but this was dwarfed by its USD34.3 billion in small-scale projects, mainly rooftop solar PV. In Germany, feed-in tariffs are available for wind, solar, geothermal, methane gas and hydro generation. The government-owned bank KfW provides various subsidies and support programs for renewable, offshore wind and energy efficiency and corporate environmental protection, housing, home modernization, and reducing carbon emissions.

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United States:

Even though the US ranked second for financial new investments, it ranked third overall in terms of total investments (i.e. including small scale projects) with just over USD25 billion, an increase of 58 percent over 2009, mainly in wind. The US government support for renewable energy includes 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 portion 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.

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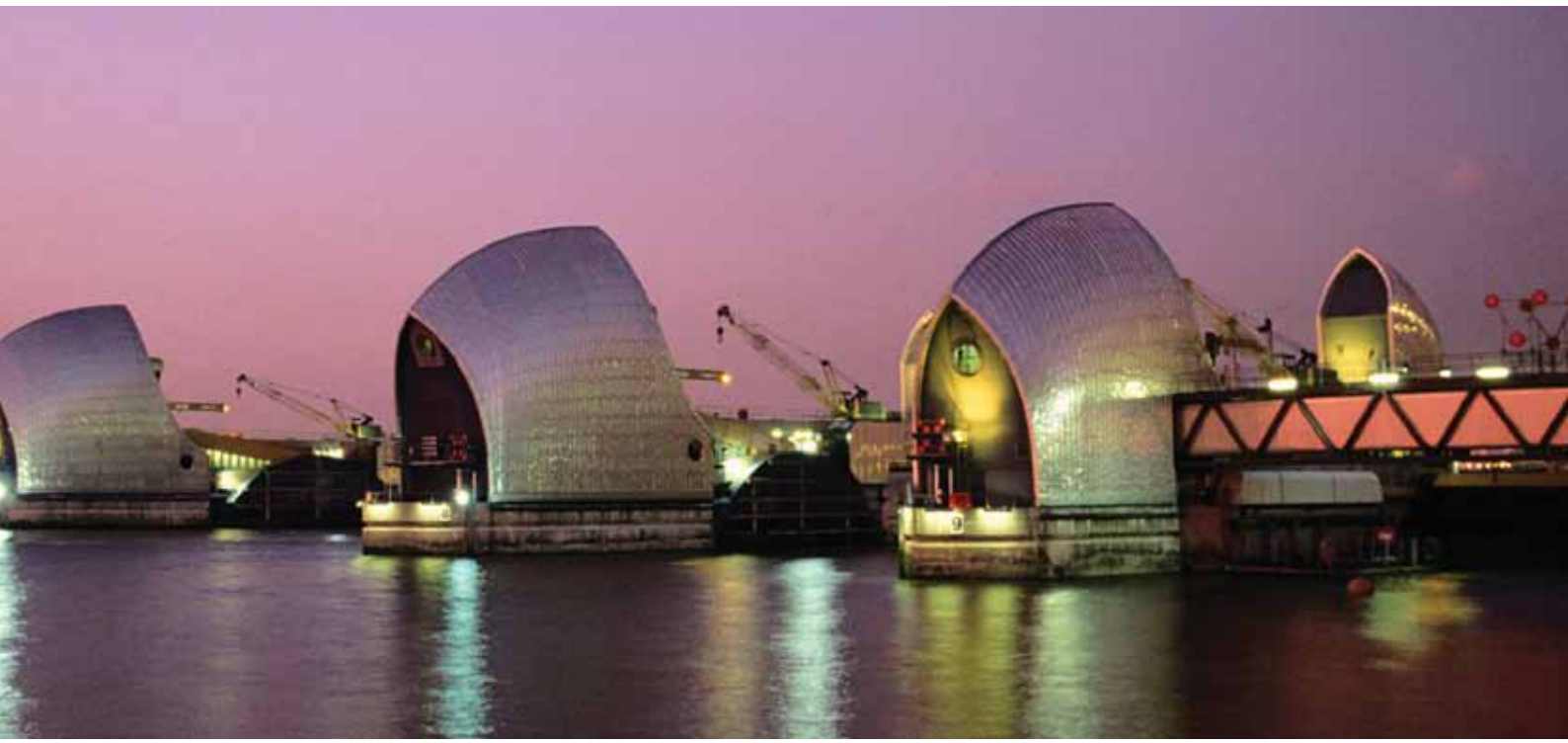

Italy:

In 2010 Italy moved from ninth to third place for financial new investments and ranked fourth overall in global renewable energy investment in 2010 as asset finance in solar PV surged on the back of generous feed-in tariffs. Italy has a well-developed system of incentives (mainly feed-in tariffs) for renewable energy generated from solar, wind and biomass. In particular, the government's Renewable Energy Decree, which entered into force on 29 March 2011, revises the system of incentives for the production of electricity from renewable sources and simplifies the authorization process for building new plants.

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Brazil:

In Brazil, new investments dropped 5 percent to USD7 billion in 2010. This seemingly weak performance can be explained by a strong focus on consolidating the biofuel sector. As a result, most money went into mergers and acquisitions, which does not count as new investment.

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.

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Renewable energy promotion policies by country

The following chart is a summary of the support schemes available in the 23 countries that are highlighted in this publication. Additional details regarding the investment and operating support schemes for each country can be found in the following pages.

	REGULATORY POLICIE						FISCAL INCENTIVES				PUBLIC FINANCING	
	Feed-in tariff (incl. premium payments)	Electric utility quota obligation/ RPS	Net metering	Biofuels obligation/ mandate	Heat obligation/ mandate	Tradable REC	Capital subsidy, grant, or rebate	Investment or production tax credits	Reductions in sales, energy, CO_2, VAT, or other taxes	Energy production payment	Public investment, loans, or grants	Public competitive bidding
Argentina	●			●			●	●	●	●	●	●
Australia	▲			▲		●	●				●	
Austria	●			●		●	●	●			●	
Brazil				●					●		●	●
Canada	▲	▲	●	●			●	●	●		●	●
China	●	●		●	●		●			●	●	●
France	●			●		●	●	●	●		●	●
Germany	●			●	●		●	●	●		●	
India	●	●		●		●	●	●	●		●	●
Italy	●	●	●	●	●	●	●	●	●		●	●
Mexico			●								●	●
Netherlands				●		●	●	●	●	●		
New Zealand							●					
Norway				●		●	●		●		●	
Peru	●			●				●	●	●		●
Poland		●		●		●	●		●		●	●
Romania		●		●		●			●		●	
South Korea[7]		●		●		●	●	●	●		●	
Spain[8]	●			●	●		▲	●	●		●	
Sweden		●		●		●	●	●	●	●		
Turkey	●											
United Kingdom	●	●		●		●			●	●	●	
United States	▲	▲	▲	●	▲	●	●	●	●	●	●	●

Source: 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 International Energy Agency (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.

20 In South Korea, the current feed-in tariff will be replaced by an RPS policy in 2012.
21 In Spain, the Value Added Tax (VAT) reduction is for the period 2010–12 as part of a stimulus package.

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.

KPMG's ENR Tax Services & Solutions – engaging the green agenda

KPMG firms can help you to review your regulatory and sustainability business strategies and your energy and emissions trading objectives. We can provide tax characteristics of carbon credits, resolve Clean Development Mechanism issues, and define implications of Certified Emission Reduction forward contracts from both trading and transfer pricing standpoints.

We can also help you navigate the wide array of available global and local government and municipal grant programs or tax incentives related to the production and sale and purchase of alternative energy and green products. These include feed-in tariffs, tax holidays, accelerated depreciation, carbon tax/pricing, trading schemes, energy taxes, excise taxes or VAT in relation to wind, solar, biomass, biofuels, geothermal and hydropower sources, as well as increased energy efficiencies, smart-grid technologies, and carbon capture and storage technologies.

Due to the impact of these incentives and taxes on your investment decisions, KPMG firms can factor them into tailored due diligence and tax modeling services. These services apply not only to production or sale/purchase of green goods but also to green investments and financing arrangements.

KPMG's Global ENR Tax network includes professionals who specialize in these tax practice areas:

- Financial Services Tax
- Global Indirect Tax
- Global Transfer Pricing Services
- International Corporate Tax
- Mergers & Acquisitions.

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.

Argentina

Support schemes

Investments and other subsidies
Support is available for renewable energy sources including biofuels, solar, wind, hydro and geothermal, among others.

At the local tax level:

- Anticipated VAT refunds for the new depreciable property (except for automobiles) included in the project
- Accelerated income tax depreciation. (Filing two claims for the same project is not allowed).

The property used for the project will not be part of the minimum presumed income tax taxable base. In addition, biofuel producers will not be subject to the hydric infrastructure tax, the tax on liquid fuels and the gasoil tax for the amount of fuel that is marketed in the national territory.

At the provincial level:

- Real estate tax exemption
- Stamp tax exemption
- Turnover tax exemption/deferral
- Tax stability.

The type of benefit depends on the geographic area in which the renewable energy plant operates, so the plant's specific location must be supplied for a proper tax classification.

Operating subsidies

Subsidies at the national level:

- Wind: 0.015 Argentine peso (ARS)/ kWh
- Solar: 0.9 ARS/kWh
- Hydro for less than 30 MW installed capacity: 0.015 ARS/kWh
- Other: 0.015 ARS/kWh.

Several provinces have different incentive feed-in tariffs according to the kind of energy they want to promote.

Quota obligation

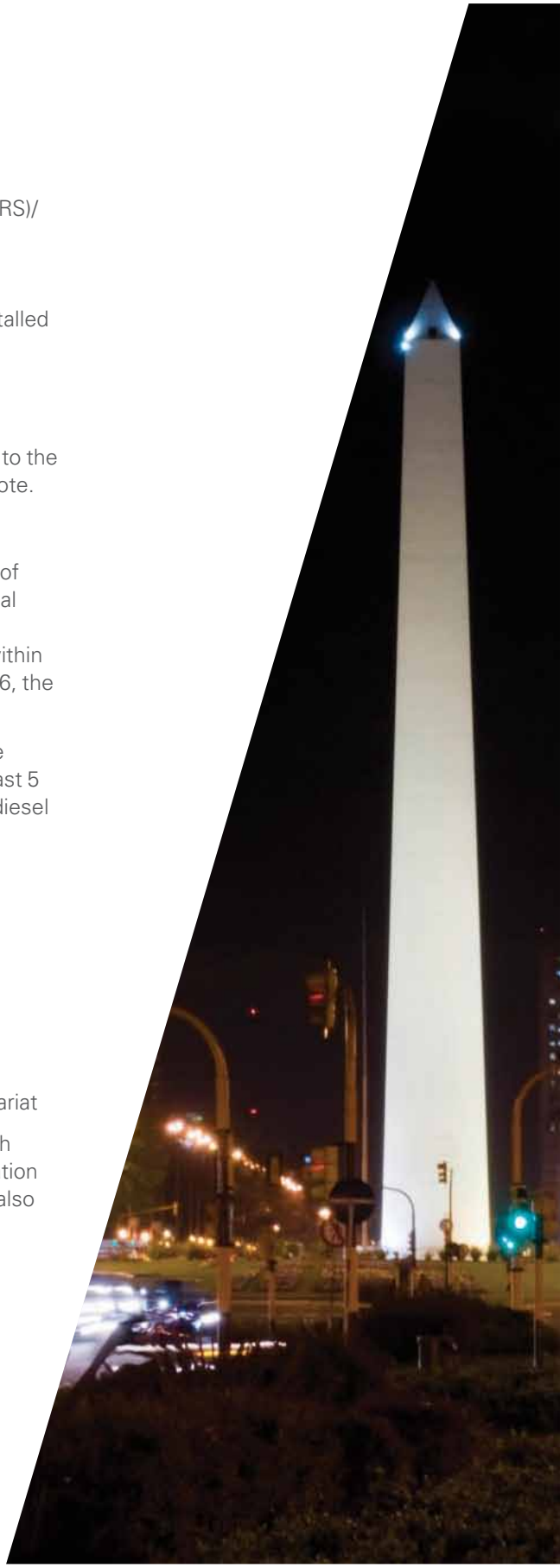
The aim is to reach a contribution of sources of renewable energy equal to 8 percent of the total national consumption of electric energy within a term of 10 years, starting in 2006, the effective date of the regime.

Quota obligations also include the use of fossil fuel mixed with at least 5 percent of biofuels, including biodiesel and bioethanol.

Additional information

The following authorizations are required for the construction of renewable energy plants:

- Authorization to use the land
- Environmental impact study
- Approval by the Energy Secretariat
- Bidding offer submitted through the Program of Electric Generation through Renewable Energies (also known by its Spanish acronym GENREN).



Australia

Support schemes

Investments and Other Subsidies

Australia's clean energy sector is expected to undergo significant change throughout 2012 with the Australian government's introduction of the Securing a Clean Energy Future Climate Change Plan (the Plan). The Plan has initiatives in four key areas – carbon pricing, renewable energy, energy efficiency and land management. The government has also released numerous federal funding initiatives within the Plan, many of which are applicable to renewable energy. There are also a number of policies, programs and incentives outside of the Plan.

The following is a selection of key initiatives specifically related to renewable energy:

Carbon Price Mechanism (CDM)

Central to the Plan is the introduction of a CDM. The mechanism is expected to drive innovation and investment into clean technology and clean energy research, development, demonstration, deployment and uptake. The carbon price will be introduced in a two-step process, starting with a fixed price period that runs from 1 July 2012 to 30 June 2015 before transitioning to an emissions trading scheme. In the fixed price stage the carbon price will start at Australian dollar (AUD)23 per tonne and rise by 2.5 percent a year in real terms. From 1 July 2015 onwards, the price will be set by the market and the number of permits issued by the government each year will be capped. The carbon price was passed by parliament on 8 November 2011 and will commence on 1 July 2012.

Australian Renewable Energy Agency (ARENA)

The anticipated changes in Australia's economy have driven the development of ARENA. ARENA will manage AUD3.2 billion for investment in renewable energy to promote the research and development (R&D), demonstration, commercialization and deployment of renewable energy projects to improve the sector's competitiveness and drive down its costs in an Australian context. ARENA will incorporate initiatives previously administered separately through a range of bodies, oversee existing government support and have responsibility for managing the unallocated funds from the following initiatives:

- Solar Flagships Program
- Australian Solar Institute
- Low Emissions Technology Demonstration Fund
- Renewable Energy Demonstration Program
- Australian Centre for Renewable Energy – Emerging Renewables Program
- Renewable Energy Venture Capital Fund
- Australian Biofuels Research Institute (ABRI)
- Geothermal Drilling Program
- Second Generation Biofuels Research and Development Program.

Around AUD1.7 billion of ARENA's funding is currently uncommitted and will be available to meet its objectives of improving the competitiveness of renewable energy technologies and increasing the supply of renewable energy. Of the initiatives listed above, many are in the management phase and no additional funding is expected to be announced. However, for others, funding is currently available or anticipated in the near future.

The Australian Centre for Renewable Energy (ACRE)

This initiative aims to promote the development, commercialization, and deployment of renewable energy and enabling technologies. 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. ACRE has an AUD126 million Emerging Renewables program, with funding available under two categories:

ACRE Projects – ACRE Projects offers funding for renewable energy and enabling technologies and products as they move through the technology innovation chain. The application process is undertaken in two phases and with funding allocations expected to fall within the range of AUD2 million to AUD30 million.

ACRE Measures –This program offers funding for projects which may involve a renewable energy industry capacity building activity, skills development activity or a preparatory activity for an ACRE Project. The application process is undertaken in one phase and is expected to fund up to AUD2 million, with a maximum funding pool of AUD10 million.

Of the total funding pool of AUD126 million, at least AUD40 million will be allocated to assist the development

of renewable energy and enabling technologies with potential to contribute to the generation of large-scale base load power, such as wave, geothermal and enabling technologies. A further AUD26.6 million will be allocated specifically to assist the geothermal energy sector.

Advanced Biofuels Investment Readiness (ABIR) Program

With a total funding pool of AUD15 million, this program aims to support the development of advanced biofuels technologies by seeking to progress the deployment of pre-commercial demonstration projects for the production of high energy, drop-in advanced biofuels in Australia. This program will fund projects which build the investment case for significant and scalable pre-commercial demonstration projects for the production of high energy, drop-in advanced biofuels in Australia. This is likely to include activities such as the following:

- Pre-feasibility studies
- Feasibility or front-end engineering design (FEED) studies to translate a pre-production process into a commercially viable configuration
- Trial production run and tooling up costs
- Trials and demonstrations
- Extensions to the operational demonstration of pilot-scale facilities with a clear pathway to commercialization.

Clean Energy Finance Corporation (CFEC)

The government will invest AUD10 billion in a commercially oriented CFEC. Expected to be established in 2013-2014, the CFEC will leverage private sector financing for renewable energy and clean energy enabling technologies. The funding will be distributed over a period of 5 years, divided into AUD5 billion for renewable energy and technology including geothermal, wave energy and large scale solar power generation. The remaining AUD5 billion will be allocated to the general clean energy stream which may also include renewable energy. It is uncertain at this point what the exact funding mechanisms will be, however they are anticipated to include loans on commercial or concessional terms and equity investments and potentially grants.

Other funding mechanisms

The major mechanism and program for fostering innovation is a R&D tax-based scheme. The scheme is a broad-based program accessible to all industry sectors. The R&D tax scheme has recently undergone a significant change from an R&D tax concession to the R&D tax incentive.

In many instances, activities conducted as a part of renewable energy development may be eligible for the R&D tax incentive. The program now offers the following two incentives:

- A 45 percent refundable tax offset (equivalent to a 150 percent deduction) for eligible entities with a turnover of less than AUD20 million per annum, provided they are not controlled by income tax exempt entities.
- A non-refundable 40 percent tax offset (equivalent to 133 percent deduction) for all other eligible entities. Unused non-refundable offset amounts may be able to be carried forward to future income years.

The R&D tax incentive replaces the R&D tax concession for R&D in income years commencing on or after 1 July 2011.

Operating subsidies

Feed-in tariff

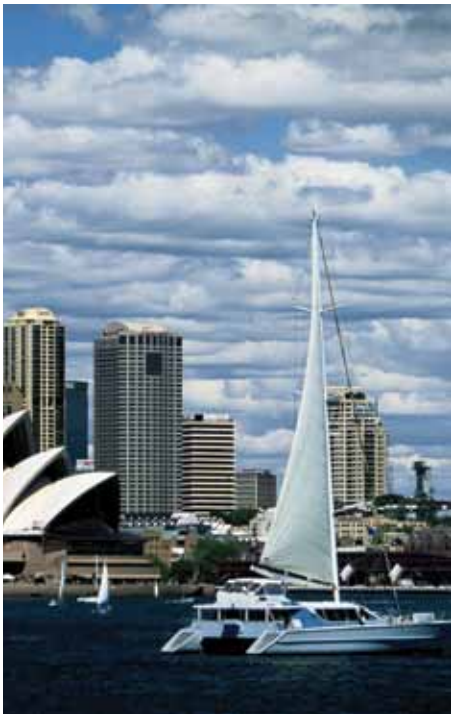
There are no national based feed-in tariffs. However, a number of state-based initiatives exist for small-scale generation. The Australian Capital Territory has recently called for applications for submission to the Large Scale Feed in Tariff Scheme (the Scheme) which provides the ACT government with power to grant feed in tariff entitlements up to 210MW of generation capacity.

Quota obligation

20 percent by 2020.

Additional information

In addition to the funding initiatives described above, the government also has a number of policy levers and numerous other programs.



Austria

Support schemes

Investments and other subsidies

Small solar plants

(less than 5 kWp Investment subsidies are granted for the following plants, sufficient for them to achieve a 6 percent capital yield.

Waste liquor plants

Maximum 30 percent of the investment (not including real estate costs)

Up to 100 MW: euros (EUR)300/kW

100 MW to 400 MW: EUR180/kW

More than 400 MW: EUR120/kW

Small hydro plants

Maximum 30 percent of the investment for 500 kW capacity: up to EUR1500/kW

Maximum 20 percent of the investment for 2 MW capacity: up to EUR1000/kW

Maximum 10 percent of the investment for 10 MW capacity: up to EUR400/kW

In between these set percentages, the maximum is calculated via linear interpolation.

Medium hydro plants

(less than
10 MW)

Maximum 10 percent of the investment

Maximum EUR400/kW and maximum EUR6 million per plant

Operating subsidies

Feed-in tariff [9]

Wind energy:

cents (ct) 9.6/kWh

Solar:

In buildings:

5 kWp to 20 kWp: ct27.6/kWh

More than 20 kWp: ct23/kWh

In open space

5 kWp to 20 kWp: ct25/kWh

More than 20 kWp: ct19/kWh

Geothermal:

ct7.5/kWh

Sewage gas

ct6/kWh

Landfill gas

ct5/kWh

Compact biomass

(such as forest woodchips or straw)

ct10/kWh to ct14.98/kWh, depending on the production capacity (declining tariff)

Waste with high biogenic contingent

Same as for compact biomass, minus 25 percent

Liquid biomass

ct5.8/kWh; surplus of 2 ct/kWh for production in an efficient power-heat cogeneration

Biogas from agrarian production

ct13/kWh to ct18.5kWh depending on the production capacity (declining tariff)

Additional information

Legal: The feed-in tariffs are regulated by the law for the promotion of electricity production from renewable energy resources ("Ökostromgesetz 2012"). The concrete feed in tariffs have to be determined each year in an decree of the Ministry of Economics.

Duration of the feed-in-tariffs: 15 years for liquid and concrete biomass or biogas; 13 years for all other renewable technologies.

Administrative procedures: Applications have to be filed with the Renewable Energy handling Center ("Ökostromabwickklungstelle", http://www.oem-ag.at/).

9 For applications filed in 2012

Brazil

Support schemes

Investments and other subsidies

- A special tax regime is applicable in Brazil for producers and importers of biodiesel. Producers and importers[10] 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). 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
  - A fixed price of PIS and COFINS by cubic meter of commercialized biodiesel —Brazilian real (BRL)31.75 (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.

In addition, producers of biodiesel under a non-cumulative regime for PIS and COFINS purposes are able to offset 4.62 percent of presumed credit on acquisition of inputs from individuals or legal entities that supply agribusinesses or agribusiness cooperatives.

- 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
  - 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
  - A fixed price of PIS and COFINS by cubic meter of commercialized ethanol—BRL21.43 (PIS) and BRL98.57 (COFINS).
- Ethanol sales carried out by retailers are not subject to PIS and COFINS. Ethanol sales carried out through the Future & Commodities Exchange (Bolsa de Mercadorias e Futuros or BM&F) are not subject to PIS and COFINS
- Biodiesel and ethanol sales are not subject to the Industrialized Products tax (Imposto Sobre Produtos Industrializados or IPI)
- The State Value-Added Tax on Sales and Services (Imposto Sobre a Circulação de Mercadorias e Serviços or ICMS) can possibly be exempted for some products used for biodiesel or ethanol production. In addition, the ICMS calculation basis can possibly be reduced for interstate operations related to ethanol and biodiesel production and distribution. This reduction depends on individual state law
- Ethanol sales are not subject to Contribution for Intervention in the Economic Domain (Contribuição 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, 2015
- IPI is exempted for equipment used in the energy generation process.

Operating subsidies

Feed-in tariff

Wind: N/A

Biomass: N/A

Hydro: N/A

"Brazil currently has no feed-in tariff policy."

10 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.

Additional information

Brazil is considered the world's sixth largest investor in renewable energy.[11] 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[12]. 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 was 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 applicable rates are 1.65 percent (PIS) and 7.6 percent (COFINS). Under 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 cubic meter.

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/MWh. The success of this auction has encouraged the government to hold additional auctions on an annual basis.

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.

11 Folha de São Paulo, March 2010
12 Ministry of Mines and Energy, March 2010, www.mme.gov.br/mme

Canada

Support schemes

Investments and other subsidies

Clean Energy Generation

Advantageous Accelerated Capital Cost Allowance (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 an ACCA. Eligible equipment includes:

- Electricity
  - o High-efficiency cogeneration equipment
  - o Small hydroelectric facilities
  - o Wind turbines
  - o Fuel cells
  - o Wave and tidal power equipment
  - o Photovoltaic equipment
  - o Equipment generating electricity from geothermal energy
  - o Equipment generating electricity from eligible waste fuel.
- Thermal energy
  - o Active solar equipment
  - o District energy equipment that distributes thermal energy from cogeneration
  - o Heat recovery equipment used in electricity generation and industrial processes
  - o Ground source heat pump equipment
  - o 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.

Sustainable Development Technology Canada (SDTC)

SDTC plays a significant role in bridging the gap between research and commercialization of clean technologies. It does this by fast-tracking clean technologies through their development and demonstration phases, in preparation for commercialization. SDTC is an arm's-length foundation that was created by the Federal government to invest CAD1.09 billion in innovative technologies and projects that deliver economic, environmental, and health benefits to Canadians.

The CAD590-million SD Tech Fund supports projects that address climate change, air quality, clean water and clean soil. The CAD500-million NextGen Biofuels Fund supports the establishment of first-of-kind large demonstration-scale facilities for the production of next generation renewable fuels.

SDTC acts as the primary catalyst in building a sustainable development technology infrastructure in Canada. The SDTC portfolio is currently comprised of 228 clean technology projects, for a total value of CAD1.9 billion, of which over CAD1.4 billion is leveraged primarily from the private-sector. In February 2012, SDTC announced its 21st call for applications, which was open until April 18th, 2012

ecoENERGY

The ecoENERGY program targets several areas including biofuels, energy efficiency and renewable energy.

ecoENERGY for Biofuels: The ecoENERGY for Biofuels initiative has a budget of CAD1.5-billion over nine years to boost Canada's production of biofuels. The program runs from 1 April 2008 to 31 March 2017, and recipients will be entitled to receive incentives for up to seven consecutive years.

ecoAGRICULTURE Biofuels Capital (ABC) Initiative: The ecoABC Inititive provides repayable contributions of up to CAD25 million per project. Funding is provided for projects that use agricultural feedstocks to produce biofuels and that have new agricultural producer equity investments in the projects equal to, at minimum, five percent (5 percent) of the total eligible project costs. The deadline for the construction or expansion of biofuels facilities funded by ecoABC has been extended from 31 March 2011 to 30 September 2012. This will provide more time for projects to secure necessary financing and complete construction.

Scientific Research & Experimental Development (SR&ED) Program

The Scientific Research & Experimental Development (SR&ED) Program is a federal tax incentive program administered by the Canada Revenue Agency that encourages Canadian businesses of all sizes, and in all sectors, to conduct R&D in Canada. The tax credit is based on money already committed and spent by the company. The program is the single largest source of Federal government support for industrial R&D, returning as much as a 35 percent federal cash refund.

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).

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, such as solar, wind, etc.

Quota obligation

The following policies are in effect for the province of Alberta.

Bioenergy producer credit program

To expand Alberta's bioenergy sector, the Bioenergy Producer Credit Program was established to provide production subsidies for a variety of bioenergy products, including renewable fuels, electricity, and heat using waste such as manure and wood chips. Funding under the Bioenergy Producer Credit Program has been extended until 2016. In coming years the government will double and then triple the amount of money going into renewable energy development, from CAD66 million this year to CAD162 million in 2013, then to CAD216 million the next year. To date, Alberta has invested more than CAD17-million in grants to bioenergy projects located throughout the province. The program is being revised to exclude stand alone operations producing ethanol from cereal grains. Budget 2012 includes CAD444 million in support for bioenergy initiatives over three years, including CAD66 million in 2012-13.

SR&ED tax credit

Alberta's refundable Scientific Research and Experimental Development (SR&ED) investment tax credit (ITC) is worth 10 percent of annual eligible expenditures up to CAD4 million, for a maximum credit of CAD400,000 for all corporations that carry on business at a permanent establishment situated in Alberta. Eligible expenditures are those that qualify for federal ITC purposes that were incurred in Alberta. Currently, the federal SR&ED investment tax credit associated with expenditures in Alberta reduces the eligible expenditure base used to calculate the Alberta credit in the following year. In the 2012 budget, in order to increase the effectiveness of the SR&ED program, it has been proposed that this "grind" will be eliminated, effective for tax years ending after 31 March 2012.

Bioenergy producer credit program

To expand Alberta's bioenergy sector, the Bioenergy Producer Credit Program was established to provide production subsidies for a variety of bioenergy products including renewable fuels, electricity, and heat. To date, Alberta has invested more than CAD17-million in grants to bioenergy projects located throughout the province. Funding under the Bioenergy Producer Credit Program has been extended for five years until 2016. The 2011 provincial budget allocated CAD336 million to the program over the next three years, including CAD58 million in 2011-12, to support bioenergy production in the province.

Carbon Capture and Storage (CCS) fund

The Alberta government has committed CAD2 billion to advance CCS technology. Approved projects can receive a maximum of 75 percent of the total incremental cost to capture, transport and store CO_2. A maximum of up to 40 percent of the approved funding will be distributed during the design and construction stage based on achieved milestones, and up to an additional 20 percent of the approved funding will be granted upon commercial operation. The remaining 40 percent of the funding will be provided as CO_2 is captured and stored over a maximum period of 10 years.

The government of Alberta has awarded funding for four projects from its CAD2 billion CCS fund and signed letters of Intent.

- Enhance Energy Integrated Carbon Capture, Pipeline and EOR (CAD495 million)
- Shell Canada Energy Quest Project (CAD745 million)
- Swan Hills Synfuels (CAD290 million)
- TransAlta Pioneer Project (CAD436 million).

Alberta Innovates – Technology Futures

Alberta Innovates - Technology Futures offers a number of programs targeted at building small and medium-sized enterprises (SMEs) in Alberta. These programs assist Alberta companies that are in the concept and formation stages of their business and help them move into the growth stage, preparing them for success.

Innovative Energy Technologies Programs (IETP)

The Innovative Energy Technologies Program (IETP) supports the Provincial Energy Strategy (PES), which identifies the need for innovation, research and technology development. Announced in 2004, the IETP supports innovative technology development in the production of Alberta's oil, oil sands, and gas resources. It also supports finding commercial technical solutions to the gas-over-bitumen issue to allow the efficient and orderly production of both resources. Over time, program costs will be recovered through additional recoverable reserves and increased royalties. Successful applicants in the program are provided with royalty adjustments up to a maximum of 30 percent of approved project costs. The industry must provide the remaining 70 percent or more of total project costs. The total industry/government commitment to important new technologies, assuming full subscription of the program, will be more than CAD800 million.

China

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. According to the new Administrative Measures Governing the Operation of CDM Projects in 2011, any project companies, except for 41 state-owned enterprises, shall apply for approval from the National Development and Reform Commission (NDRC) at the provincial level first, which would then submit preliminary review opinions to the central NDRC for further review. (According to the Old Measures, all CDM project companies applied directly to the central NDRC for approval.) The New Measure also changes the sharing percentage in the proceeds from the transfer of emission reductions units between the State and companies involved in N2O and PFC projects
- Three years' CIT exemption is followed by another three years' 50 percent reduction of the 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, garbage disposal and sludge 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
- In November 2011, the government authority expanded the scope of sales of self-produced goods/products by using the prescribed recycled materials, waste residuals and agricultural residuals that are eligible for VAT refund at rates ranging from 50 to 100 percent of the VAT payable. The rates may vary depending on the nature of recycled materials or residuals utilized.

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 Chinese yuan (CNY)240 per ton of standard coal saved. The standard rate at the provincial level is no less than CNY60 per ton of standard coal saved. In March 2011, the NDRC and Ministry of Finance jointly announced the second batch of qualified energy service companies (ESCO) consisting of 523 entities. These companies can apply for financial subsidies on energy preservation management contracts entered into on or after 1 January 2012. (The first batch of qualified ESCOs was announced in August 2010 covering 461 entities). These financial subsidies have been rolled out under the jurisdiction of Energy Performance Contracting (EPC). 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 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.

Financial funds/allowance

Special funds are made available to facilitate the development of renewable energy relating to the following activities:

- Scientific and technical research, standardization processes and model engineering projects
- Renewable energy projects in rural and pastoral areas
- Construction of stand-alone electricity generation system in remote areas and islands
- Renewable energy resource surveys, evaluation and construction of information systems
- Localization of manufacturing facilities used in the renewable energy sector.

The special funds may also be deployed to compensate as addition to revenue of electricity generation from renewable energy resources, to recover the cost deficiencies suffered by renewable energy plants and indirectly borne by the grid for purchase of the electricity from renewable energy plants. Applicants may apply for such funds with the local finance bureaus and the government agencies in charge of renewable energy projects.

Financial subsidies for energy conservation technologies improvement

During the State 12th Five-Year Plan period, the central government will continue to arrange special subsidies to support the projects to improve the energy conservation technologies.

In order to achieve optimum energy conservation goals, the financial subsidies are closely linked to the quantity of energy conserved on a project basis. The project companies shall be granted financial subsidies if they fully complete the expected goals of energy conservation.

For projects in the eastern regions of China, companies may be granted a one-off reward subsidy of CNY240 per ton of standard coal based on the annual energy consumption after the completion of the projects; for the projects in the central and western regions of China, one-off reward subsidies of CNY300 per ton of standard coal.

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 2012.

France

Support schemes

Investments and other subsidies

The accelerated tax depreciation has not been renewed as of 1 January 2011. However, 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 2012 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 in the first year and 35 percent in 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 from the following sources.

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 and the hours of electricity production
- 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 and the hours of electricity production.

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 (tariffs for the first quarter 2012).

- Ground-based photovoltaic power plants: EUR0.1108/kWh
- Simplified building-integrated generating facilities: EUR0.2249/kWh or EUR0.2137/kWh
- Building-integrated generating facilities: EUR0.3880/kWh, EUR0.3395/kWh, EUR0.3009/kWh or EUR0.2609/kWh depending on the use and the power of the plant

As of 1 July 2011, the above-mentioned tariffs are 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: EUR0.20/kWh, in addition to an energy efficiency bonus of up to EUR0.08/kWh
- French overseas departments: EUR0.10/kWh, in addition to an energy efficiency bonus of up to EUR0.03/kWh.

Biomaterial (Biogaz)

- Between EUR0.0.8121 and EUR0.09745 /kWh, depending on the power of the plant, in addition to an energy efficiency bonus of up to EUR0.04/kWh.

Hydro

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

Biomass

- EUR0.043/kWh in addition to a bonus between EUR0.0771/kWh and EUR0.1253/kWh depending on the energy efficiency, the nature of the resources used and the power of the plant.

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/installed 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.

The French government launched "invitations to tender" for photovoltaic projects with a capacity exceeding 100 kW in 2011. In practice, the projects are 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 are 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.

Renewal of hydroelectric concessions: 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 hydroelectricity, signed on 23 June 2010).

Offshore wind energy: France has set a target plan for installing 6,000 MW of offshore wind energy by 2020 through a tender process. A first tender was launched in July 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 selected according to the following criteria:

- 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 operators. 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 2012.

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).

Germany

Support schemes

KfW Programs

KfW Renewable energies program

- Investments are available in two programs:
  - "Standard": in plants for electricity generation from renewable energies (photovoltaic, biogas, hydro, wind (onshore), geothermal energy) and heat generation in combined heat and power (CHP) systems
  - "Premium": in large plants for heat generation from renewable energies (solar panels, biomass, biogas, deep geothermal energy) as well as CHP installations and heat networks/pumps not promoted under the standard program.
- Premium funding was initiated to strengthen the establishment of the renewable technologies in the heat market (in the context of the Market Incentive Program by the Federal Ministry for the Environment). These technologies include:
  - Solar panel systems with more than 40 square meters gross collector area for the purpose of water heating and/or space heating of properties with three or more residential units or non-residential properties with minimum 500 square meters of usable area
  - Biomass plants for the combustion of solid biomass with an rated heat capacity of more than 100 kW
  - Beat-controlled biomass CHP with a maximum of 2 MW
  - Heat networks with a minimum of 50 percent of heat generated by renewable energies or with a minimum of 20 percent of heat generated by solar energy and with heat sales of a minimum of 500 kWh per year and meter of route
  - Heat storages with more than 20 cubic meters
  - Biogas processing plants (to upgrade biogas to natural gas quality)
  - Heat pumps with a rated heat capacity of more than 100 kW
  - Facilities for the development and use of deep geothermal energy with a drilling depth of more than 400 meters and a minimum thermal fluid temperature of 20°C.
- The funding shall be granted as a long-term, interest-reduced loan up to 100 percent of the investments costs (excluding VAT), maximum total lending of EUR25 million/project (Standard) and EUR10 million/project (Premium), respectively
- Additional reduced interest rates are available for small to medium-sized enterprises (Premium)
- Eligibly for funding depends on the program part.
- In 2011, KfW provided a total credit volume of around EUR500 million for Premium. Since initiating the program, over 10 years ago, credit volume over EUR2 billion for both programs has been granted
- Loan-term: 5, 10 or 20 years with a repayment-free start-up period of up to 3 years.

KfW Offshore wind energy program

- Special promotion of offshore wind energy projects (German North and Baltic Sea within the German Exclusive Economic Zone (EEZ)
- Project financing (up to 10 offshore wind parks) in the form of direct loans granted by bank syndicates (a maximum of EUR400 million/project), finance packages (up to 70 percent of the total debt capital required/project) or direct loans to finance unforeseen additional costs (a maximum of EUR100 million/project)
- Eligible to apply: all project companies investing in the German EEZ or in the 12 nautical mile zone of the North Sea and the Baltic Sea
- Maximum funding: EUR5 billion
- Loan-term: up to 20 years with a repayment-free start-up period of up to 3 years.

Incentives for energy efficiency and corporate environmental protection, housing, home modernization and the reduction of carbon emissions

- Low interest rates on loans and grants used for the efficient production of energy, usually accessed by SMEs
- Subsidies for new privately owned buildings or buildings which are brought to a new standard in renewable energy or energy savings
- Reduced interest rates, abatement of installment payments on loans, direct subsidies for modernizing buildings and reducing carbon emissions
- Budget: around EUR900 million for energy-efficient house modernization in 2011.

Sources: KfW Bankengruppe, Berliner Morgenpost (9 April 2011), BMWi Förderdatenbank

Operating subsidies

Feed-in tariff

Remuneration is available for electricity produced. All tariffs and ranges apply to plants commissioned in 2012. Plants commissioned prior to 1 January 2012 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 MW: ct6.3/kWh to ct12.7/kWh
  - More than 5 MW: ct3.4/kWh to ct5.5/kWh.
- Degression: 1 percent per annum (p.a.).

Biomethane

- Basic premiums depending on nominal generation capacity of the individual plant: ct6.0/kWh to ct12.7/kWh
- Additional premiums depending on the feed-stock boiled up to ct8/kWh
- Using the fermentation of organic waste, depending on nominal generation capacity of the individual plant: ct14.0/kWh to ct16.0/kWh
- Additional gas preconditioning bonus (up to ct3/kWh) for all above available if nominal generation capacity of plant does not exceed 5 MW
- Using fermentation of manure: ct25.0/kWh
- Degression: 2 percent p.a.

Other Methane Gas (Mine, Landfill, Sewage Sludge Gas, etc.)

- Depending on nominal generation capacity of the individual plant: ct3.98/kWh to ct8.60/kWh
- Degression 1.5 percent p.a.
- Additional gas preconditioning bonus for all the above (up to ct3/kWh).

Geothermal

- ct25.0/kWh
- Degression: 5 percent p.a. from 2018 onward
- Additional premium for using petrothermal technologies: ct5/kWh.

Wind

Onshore

- Basic for a wind turbine company (WTC) commissioned in 2012: ct4.87/kWh
- Increased feed-in tariff for a WTC fulfilling technical requirements for system intervention of the TSO ("Systemdienstleistungsbonus"):
  - ct0.48/kWh for a WTC commissioned before 1 January 2015
  - ct0.7/kWh if commissioned between 1 January 2002 and 31 December 2008.
- First five years: ct8.93/kWh (extendable)
- Degression: 1.5 percent p.a., when commissioned after 2012
- Repowering bonus of ct0.5/kWh granted for sites where a WTC with higher nominal capacities were commissioned (pre-degression)
- Direct distribution at higher markets rates pursuant to Sec 33a-33f EEG possible.

Offshore

- Basic: ct3.50/kWh
- First 144 months: ct15/kWh (extended depending on water depth and distance from shore)
- Degression: 0 percent p.a. until 2017; 7 percent p.a. from 2018 onward
- Grid connection from the offshore switch station to the shore born by the TSO (Sec 17 par 2a EnWG).

If a WTC has been commissioned before 1 January 2018, the plant operator can claim a feed-in tariff of ct19/kWh for the first 96 months. This is not contrast to the regular feed-in tariff of ct15/kWh for the first 144 months.

Solar

In 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.

- ct21.11/kWh to ct22.07/kWh
- Degression: 9 percent plus up to a maximum of 15 percent in case a pre-defined threshold of nominal additional generation capacity added in 2012 is exceeded.

In buildings

- For plants commissioned (after 1 January, 2012)
- Depending on the amount of nominal generation capacity: ct21.56/kWh to ct28.74/kWh
- Degression: 9 percent in addition to a maximum of 15 percent p.a. if a pre-defined threshold of nominal generation capacity added in 2012 is exceeded.

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.

Reduction in subsidies for solar power: Reduction of the feed-in tariffs for solar power effective on 1 April 2012 are planed but not yet approved by the legislators. Planed tariffs: ct13.5/kWh to ct19.5/kWh. Feed-in tariffs will be only granted for the first 85 percent to 90 percent of the produced electricity. The remaining percentage may be sold at market prices.

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

India

Support schemes

Investment and other subsidies

Foreign Direct Investment ('FDI')

The growth of clean energy sector in India is immense. India permits FDI up to 100 per cent in the sector under the automatic route in Renewable Energy Generation and Distribution projects subject to the provisions of the Electricity Act, 2003 i.e. no prior approval of regulatory authorities required.

Tax holiday under the domestic income tax law

Undertakings engaged in generation or generation and distribution of power have been offered a 10-year tax holiday for renewable energy plants if it begins to generate power before 31 March 2013. However, they have to pay a minimum alternative tax at the rate of approximately 20 percent, which can be offset in future years.

It is likely that a new direct taxes code will be made effective from 1 April 2013. The draft provisions of direct taxes code provides for alternative mechanism for providing tax incentives to power companies.

Alternative incentive mechanism provides for expenditure based incentive to business of generation, transmission or distribution of power. As regards this incentive, all revenue and capital expenditure (except few) will be allowed as tax deduction upfront instead of claiming amortisation / depreciation on the capital expenditure and there would be no tax holiday available.

Financing

The Indian Renewable Energy Development Agency has been set up under Ministry for Non-Conventional Energy Sources and is a specialized financing agency to promote and finance renewable energy projects.

Operating Subsidies

Feed-in tariff

Generation Based Incentives ('GBI')

In order to attract foreign investors, the Government has taken several initiatives such as introducing GBI scheme for to promote projects under Independent Power Producers ('IPP') mode as follows:

Wind power @ INR 0.5 per kWh

Solar power @ INR 12.41 per kWh

Accelerated depreciation

Under the domestic income-tax law, Renewable companies (Solar as well as wind power) were provided with accelerated depreciation at 80 percent. However, recently, the government has restricted the accelerated depreciation of 80 percent to windmills installed on or before 31 March 2012. Windmills installed after 31 March 2012 will be eligible for depreciation of 15 percent instead of 80 percent on written down value method.

It may be noted that 80 percent depreciation is still available for solar power projects.

Further, power companies have been provided with an option to claim depreciation under straight line method.

However, a company can claim either accelerated depreciation or GBI but not both.

Quota obligations

Renewable Purchase Obligation ('RPO')

India aims to derive 15 percent of its energy requirements from renewable energy sources by the year 2020. RPO is one of the tools of implementing this ambitious goal. Under these rules, distribution companies, open access consumers and captive consumers are obligated to buy a certain percentage of their power from renewable sources of energy.

We believe that going forward enforcement of RPO will create the volumes needed for the Renewable Energy Certificate market.

Additional information

Jawaharlal Nehru National Solar Mission ('JNNSM')

JNNSM has been commissioned with 22,000 Mega Watt (MW) target for solar power by the year 2022. The Government has also launched Payment Security Mechanism for Grid Connected Solar Power Projects and Renewable Energy Certificate Mechanism and created Amendment in National Tariff Policy for enabling Solar specific Renewable Portfolio Obligation (RPO).

The Jawaharlal Nehru National Solar Mission (JNNSM) is a transformational initiative for solar energy development in India. The mission targets to propel India as a solar hub with 20,000 MW of grid connected solar power capacity by 2022.

The program has been envisaged to be a three stage process with targets set under each phase. Under Phase-1 of the program, to be implemented by March 2013, a target to set up 1,100 MW grid connected solar plants, including 100 MW as rooftop and other small-scale applications, has been set. Besides the national program, State level solar programs also exist.

The policy framework has generated tremendous interest in this space. In fact, the response JNNSM program has received from the market is overwhelming.

The Jawaharlal Nehru National Solar Mission (JNNSM) recognizes the potential of off-grid applications and mentions that:

"…there are a number of off-grid solar applications particularly for meeting rural energy needs, which are already cost-effective and provides for their rapid expansion."

"The immediate aim of the Mission is to focus on setting up an enabling environment for solar technology penetration in the country both at a centralized and decentralized level. The first phase (up to 2013) will focus on capturing the low hanging options in solar thermal; on promoting off-grid systems to serve populations without access to commercial energy and modest capacity addition in grid-based systems."

13 Point Carbon

Carbon Credits and Clean Development Mechanisms (CDMs):
The Clean Development Mechanism (CDM) is an arrangement under the Kyoto Protocol allowing industrialized countries with a GHG reduction commitment (called Annex 1 countries) to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries.

Under the CDM, a developed country can invest in a GHG mitigation project in a developing country. Developed country would get credit, while developing country would get capital and clean technology.

India is the second largest seller of carbon credits.

India a leading destination among non Annex-I countries with regards to CDM implementation.

It has the highest rating of any CDM host country (Source: Point Carbon). India accounts for 32 percent of the world total of 1081 projects registered with CDM EB followed by China with 20 percent & Brazil 10 percent (Source: UNFCCC).

Tax and fiscal incentives

Tax cost forms a substantial part of the overall EPC Project cost which ranges from 10 percent to 20 percent of the total renewable energy project cost. Considering the special focus on renewable energy, the Central Government has given various incentives on setting up the renewable energy power project which includes exemption from customs and excise duties on specific goods required for setting up the renewable energy projects.

However, these exemptions are subject to fulfillment of prescribed conditions and compliances to be undertaken by the EPC contractor or IPP.

Furthermore, some of the state governments have provided the incentives in the form of levy of VAT at reduced rate (i.e. 5 percent) whereas the other states levies VAT @ 12.5 percent.

Given the vast variety of tax and fiscal incentives available, one needs to quantify the tax cost and explore the structuring options, before investing into the solar sector.

Tax planning

At the outset, for a player based overseas, entry strategy would carry a lot of importance. In order to achieve tax efficiency with regard to taxability of gains on sale of shares, many companies opt to route the investments through an intermediate entity in a tax friendly jurisdiction.

Typically, renewable energy companies in India procure the equipment and services from overseas i.e. offshore supply and services. In such a scenario, contract structuring from a tax perspective helps renewable energy companies upfront achieve major tax efficiency. Further, in case of multiple parties coming together and bidding as a consortium, contract structuring assumes deep importance to avoid the risk of the consortium being taxed as an Association of persons.

In India, based on the nature of operation, different forms of entity could be established in India. Operating through a Limited Liability Company by forming a Joint Venture/ Wholly owned subsidiary could be one of the possible options in a situation where the foreign company is looking at a long term presence in India. However, one needs to rule out other forms before concluding.

Further, renewable energy sector being a capital the intensive sector, investing companies would need to strategise the options available for funding the project vis-à-vis the repatriation of profits/ return on investments.

Hence, various tax planning avenues could be explored by the solar sector companies while planning their investments in India in renewable energy sector.

Engineering Procurement and Construction Contracts ('EPC')

The taxation of EPC contract offers various challenges and opportunities.

The EPC Contract can be structured as a single contract or divisible contracts. The selection of the any of the above option causes a huge impact on the indirect tax costs and working capital of the project.

The selection of schemes for payment of indirect tax liability on construction of renewable energy power plant offers various tax planning avenues for renewable energy power project. Furthermore, the above scheme has various attributes which sometime becomes cumbersome to comply (i.e. restriction on procurement of goods outside the state etc).

The manner of procurement of goods and supply chain structuring plays vital role in the solar power project costs, since the tax rates are different for procurement of goods from outside India, from other state and from the same state.

Generally, EPC contractor also undertakes operation and maintenance of renewable energy power plant. The taxability of Operation and Management ('O&M') contract has been subject matter of disputes in various decisions.

The exemption provided under the i.e. customs and excise act are subject to various conditions and compliances. Hence, it is utmost important to ensure compliance of the respective conditions as otherwise the benefits envisaged may not be available.

The proposed introduction of 'Goods and Services Tax' will also play a major role in costing of renewable energy power project as the government intends to limit the various exemptions available to the renewable power projects.

Given the vast variety of tax and fiscal incentives available, one needs to quantify the tax cost and explore the structuring options, before planning the capex, at the tender\bid stage and also at the time of awarding contracts, so that tax costs are optimized.

Italy

Support schemes

Investment and other subsidies

Italy has a well-developed system of incentives for renewable energy generated from solar, wind and biomass. In particular, the Renewable Energy Decree, which entered into force on 29 March 2011, revises the system of incentives for the production of electricity from renewable sources (described under 'Operating Subsidies') and simplifies the authorization process for building new plants.

Operating subsidies

Feed-in tariff premiums

Solar plants that started to operate before 31 May 2011:

- According to the Ministerial Decree of 6 August 2010 (the "Third Energy Incentive") there is a fixed premium (a bonus on top of the market price of electricity)
- The size of the premium depends on:
  - o the type of plant
  - o its nominal output
  - o when the plant started to operate.
- The premium ranges from EUR0.251/kWh to EUR0.402/kWh
- The premium will be paid for 20 years after the plant starts operating. For thermodynamic plants, the premium will be paid for 25 years.

Solar plants which started operating between 31 May 2011 and 31 December 2012.

- According to the Ministerial Decree of 5 May 2011 (the "Fourth Energy Incentive") a fixed premium computed on the basis of the type and the nominal power of the plant is available up to 31 December 2012
- In the first six months of 2012 the premium ranges from EUR0.148 / kWh to EUR0.274/kWh and in the second six months of 2012 the premium will range from EUR0.133/kWh to EUR0.252/kWh
- This type of subsidy will expire on 31 December 2012 and will be replaced by a feed-in tariff system
- The Central government set the maximum amount of public expenditure for this incentive program for plants with a production power that exceeds certain levels at EUR580 million for 2012.

The premium will be paid for 20 years after the plant starts operating, as long as it does so by 31 December 2016. For thermodynamic plants, the premium will be paid for 25 years.

Feed-in tariff

Solar plants

Feed-in tariffs apply to solar plants that started operating between 31 May 2011 and 1 January 2013.

- According to the Ministerial Decree of 5 May 2011 (Fourth Energy Incentive), a feed-in tariff, including a premium based on the type of plant and its nominal output, will be available until 31 December 2016
- In the first six months of 2013 the feed-in tariff, including the premium, will range from EUR0.121/kWh to EUR0.375./kWh.

Wind plants

- The incentive scheme for wind plants is based on the two-fold mechanism of an all-inclusive tariff (Tariffa Onnicomprensiva) for microgeneration plants with an output of up to 200 kWp and green certificates (certificati verdi) for larger plants. These certificates are issued for free to those producing energy from wind power and can be sold at a market price to enable conventional producers to increase their production power from conventional sources
- The Tariffa Onnicomprensiva, which is a type of feed-in tariff, includes both a premium and the sale price for electricity. This tariff will be paid for 15 years after the plant starts operating, as long as it does so by 31 December 2012
- Green certificates will be abolished after 2015. The ministerial decrees implementing future incentive systems will establish how the transition will be coordinated from the green certificates system to a new system based on feed-in tariffs.

Biogas and biomass

- Like the wind energy sector, the incentive scheme for the biogas and biomass energy sector is based on the Tariffa Onnicomprensiva for plants with an output of up to 1 MWp and green certificates for larger plants
- The tariff will be paid for 15 years after the plant starts operating, as long as it does so by 31 December 2012.

As for all other renewable energy plants, a new feed-in tariff system will be introduced for biogas and biomass plants on 1 January 2013. The ministerial decrees that will implement this new system will consider the origin and the traceability of the raw materials in order to channel each specific product toward its most productive use. The decrees will also consider how to promote the efficient use of waste products, the construction of co-generation plants, and the construction of micro and mini co-generation plants.

Additional information

Limit on public expenditure to support renewable energy: The overall public expenditure for 2012 (and until the end of 2016) should not exceed EUR6 billion per year. However, based on a bill currently considered by parliament, the government intends to reduce this expenditure to between EUR5 billion to EUR5.5 billion per year.

Authorization procedures: To accelerate the overall authorization process the Renewable Energy Decree simplified the procedures for building and operating renewable energy plants.

The new Single Authorization procedure (Autorizzazione Unica or AU) now takes only 90 days rather than 180 days. However, this period does not include the time required for the environmental impact assessment (Valutazione di Impatto Ambientale). The regulations that implemented the Renewable Energy Decree identified which "substantial modifications" to a project require a new AU and which modifications can be authorized by following a simplified procedure.

The new provisions of the AU apply to all authorization procedures that started after the Renewable Energy Decree came into force. Authorization procedures that started before then will continue to be subject to the previous authorization procedure. The Renewable Energy Decree also introduces a new simplified authorization procedure for small plants (the "PAS"). However, where specific environmental or landscape authorizations are required, the AU procedure remains mandatory.

Taxation: Corporations are subject to IRES (a corporate income tax) which is levied at 27.5 percent and to IRAP (a regional business income tax) with a rate that varies from 3.9 percent to 4.82 percent.

- Robin Hood Tax

Law Decree no. 138/2011 (the Mid-August measure) sets out certain significant changes to the corporate income tax surcharge for the energy industry (the so-called "Robin Hood Tax").

The Robin Hood Tax applies to the solar and wind farm business if the following thresholds are both exceeded in the previous fiscal year:

- EUR10 million of gross revenues
- EUR1 million of corporate income tax base.

Such surcharge applies to companies involved in the following business activities:

- transmission and distribution of electricity
- transportation and distribution of gas
- production of renewable energy (biomass, photovoltaic, wind).

The rate of the surcharge has been increased by 4 percent (i.e. from 6.5 percent to 10.5 percent) for fiscal years 2011, 2012 and 2013. As a result, the aggregate Corporate Income Tax rate which was applicable to companies involved in the energy business and was originally at 34 percent (27.5 percent plus 6.5 percent) starting from fiscal year 2009, is now fixed at 38 percent (27.5 percent plus 10.5 percent) for years 2011, 2012 and 2013.

- Non-operating or Dormant Companies

The Mid-August Measure also introduced the following changes to the rules governing "dormant" companies, to take effect as of 2012:

- an increase of IRES to 38 percent for companies that are considered as dormant
- an extension of this rule to companies that have incurred in fiscal losses (included in their tax returns) for three consecutive years.

If a company is considered dormant, the following applies:

- it is subject to a minimum tax charge as far as IRES and IRAP are concerned
- limits are in effect to the off-setting or a refund request for any VAT credit accrued.

The minimum income level is calculated by applying specific percentages to certain balance sheet items. In addition, a specific test is conducted to determine whether a company is dormant, comparing the actual values reported in the statement of income with presumed values. If the actual values are below the presumed ones, the company is deemed to be dormant.

- Depreciation

Wind and solar plants are subject to ordinary amortization/depreciation tax rules.

Mexico

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 Mexican peso (MXN)3 billion (USD250 million) to the fund. For fiscal year 2011, this amount has been increased to USD260, based on the Consumer Price Index (INPC).

Companies or individuals compete for cash incentives from the fund by submitting proposals for projects that involve renewable energies and energy transition. Last year's announcement, "Bioeconomy," calls for projects that promote the production and use of alternative fuels in primary sectors. The official announcement for this year is yet to be published.

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 MXP1 billion (USD84 million). After the official announcement (Yet to be expected during 2012), 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 center 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 such as ocean waves, ocean currents, hydraulic equipment, nuclear energy and the measurement of gas emissions. The call for new proposals has not yet been announced.

government Projects Funded for 2011 include the following:

- ***Municipal Street Lighting National Program:*** For 2011, the Fund has authorized MXP120 million (USD10 million) for the execution of street lighting-saving energy projects.
- ***Sustainable Light Program:*** This program aims to decrease the energy consumption in homes by substituting 45.8 million lights during 2011 and 2012. The first stage of the program is to be concluded within the first months of 2012. The second stage aims to substitute double the number of lights by the end of this year.
- ***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 energy 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.

The Netherlands

Support schemes

Investment 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 (Energie-investeringsaftrek, "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 EUR 118 million. Pro rata calculation applies in the case of transparent entities
- total amount of qualifying investments must be more than EUR 2,300 per calendar year
- a granted EIA will be revoked partially or in full (added back to the fiscal profit) on alienation of the assets within a five-year period
- no prior use of the asset that is invested is permitted
- the EIA and the environmental investment allowance (see below) 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 (Milieu-investeringsaftrek, "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 costs. The maximum investment costs that are taken into account are EUR 25 million per qualifying asset
- investments must be included on the 'environmental list' to be qualifying assets
- total amount of qualifying investments must be more than EUR 2,300 per calendar year
- a granted MIA will be revoked partially or in full (added back to the fiscal profit) on alienation of the assets within a five-year period
- no prior use of asset that is invested is permitted
- 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.

Free depreciation/depreciation at will is granted on qualifying environmentally friendly assets (Willekeurige afschrijving milieu-investeringen, "VAMIL"):

- Investments must be included on the "environmental list" to be qualifying assets
- free depreciation of up to 75 percent of the investment costs of the qualifying asset. The maximum investment costs that are taken into account are EUR 25 million per qualifying asset
- no prior use of the asset that is depreciated is permitted
- 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 56,420
- tax credit of 0.7 percent of the invested capital, with a maximum amount of invested capital of EUR 56,420 on an individual basis.

Operating subsidies

Feed-in tariff

As of 13 March 2012, the new regulation for the Feed-in Tariff (Stimulering Duurzame Energieproductie, "SDE+") is applicable. The key features of this new regulation are:

- a maximum amount of 0.15 EUR/kWh (or 1.035 EUR/Nm3 or 41.67 EUR/GJ) for all types of renewable energy such as wind, geothermal, solar photovoltaic, biomass and hydro
- phased opening
- a 'free category' to enhance investments in certain technologies
- feed-in tariff granted for a certain period (5, 12 or 15 years)
- a maximum subsidy amount for the Netherlands, to be determined annually (EUR 1.7 billion in 2012).

New Zealand

Support schemes

Investment and other subsidies

Schemes are applicable for solar, wind, hydro and biomaterial energy sources.

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 required to be bid into the market. However, it is automatically dispatched 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.

Norway

Support schemes

Investment and other subsidies

Energy Fund

The state-owned corporation Enova is the driving force for an environmentally friendly energy conversion by private and public enterprises. Enova's main commission is through the Energy Fund that supports environmental change in the use and production of energy. The management of the Energy Fund is governed by an agreement between the Ministry of Oil and Energy and Enova. In addition, Enova manages the EU program "Intelligent Energy-Europe" and the IEA program ETDE in Norway.

Enova offers financial support based on defined programs for various renewable energy and environmentally friendly projects based on an application principle.

Other allowances

The General Tax Act includes regulations regarding tax allowances known as SkatteFUNN to support R&D project costs. Under the SkatteFUNN scheme, any type of business enterprise engaged in R&D activities may apply to the Research Council for tax allowances. R&D projects under the SkatteFUNN scheme comprise a limited and targeted project aimed at obtaining new knowledge or new technical skills that are believed to be of benefit to the company in connection with the development of new or improved goods, services or ways of production. Total tax allowance may not exceed Norwegian krone (NOK)11 million per company per year.

Operating subsidies

Feed-in tariff

There are no national based feed-in tariffs in Norway. However, there is a green certificate scheme.

Premium

Green certificates

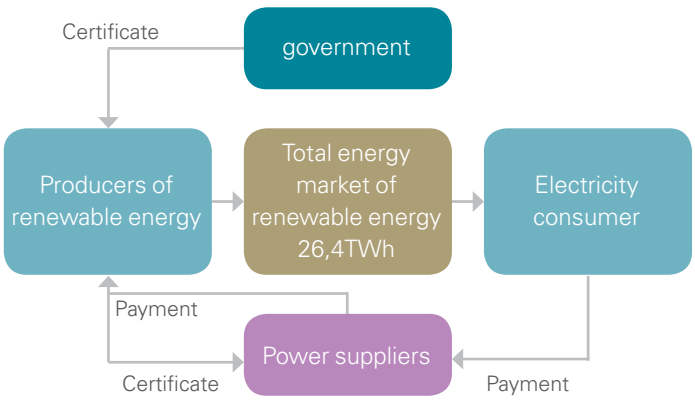
The issuance of Green certificates is an economic subsidy scheme that will make it more remunerative to invest in power production based on renewable energy sources such as hydro, wind, solar and bio energy. The scheme is regulated by the Green Certificates Act.

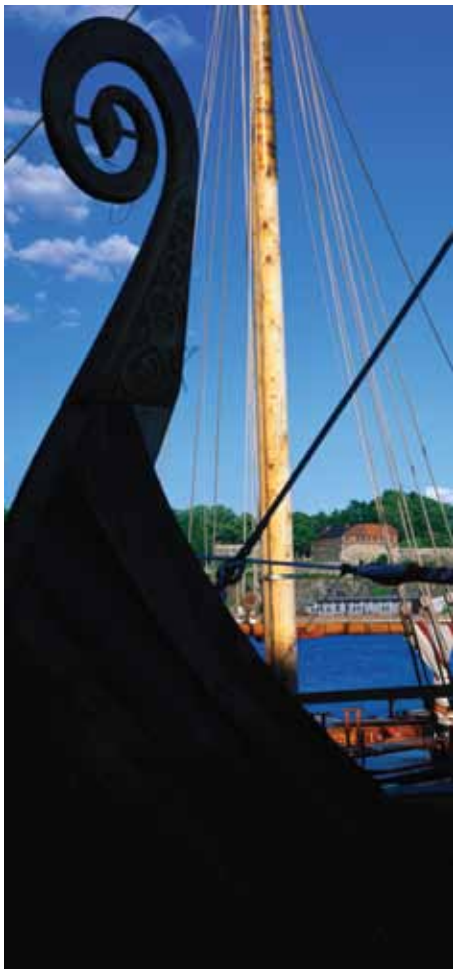
The Norwegian government has entered into an agreement with the Swedish government establishing a common green certificate market for electricity that willl contribute to increased production of renewable energy. Power plants that are included in the scheme receive green certificates that can be sold in the Norwegian-Swedish green certificates market. Power suppliers and certain power users are required to purchase green certificates for a share of the electricity they sell or use.

The following power producers may apply, subject to certain requirements, for green certificate approval for whole or parts of its production based on its total production:

- Power plants based on renewable energy sources and built after 7 September 2009
- Hydro plants generating 1 MW and built after 1 January 2004
- Existing renewable power plants that permanently increase their electricity production with new construction beginning on or after 7 September 2009.

Any entity that delivers power to end consumers is obliged to purchase green certificates, and it is the end consumer who finances the scheme through increased costs when invoiced for usage.





Quota obligation

Starting in 2008, the Norwegian emissions trading system for greenhouse gases has expanded to include nearly 40 percent of the emissions related to Norway. It is also affiliated with the European system for quotas. The Norwegian system for quota obligation applies to greenhouse gas emissions in Norway and to emissions from activities on the Norwegian part of the continental shelf.

The quota system applies to emissions in connection with:

- energy production
- refining of mineral oil
- coke production
- production and processing of iron and steel including roasting and sintering of iron ore
- production of cement, lime, glass, glass fiber and ceramic products
- production of paper, board and pulp from timber or other fibrous materials
- Aviation activities.

Any person engaged in any of the activities mentioned is required to surrender allowances corresponding to any emissions to which the duty to surrender allowances applies. The Norwegian Emissions Trading Registry shall contain information on the allocation, issue, holding, transfer, surrender and cancellation of allowances. An operator will by 30 April each year transfer a number of allowances corresponding to the volume of emissions for which reporting is mandatory, generated by the installation in the previous calendar year to a specified settlement account in the registry.

Additional information

Indirect taxes: Indirect taxes are used as a policy instrument to reduce the consumption of products that are detrimental to the environment.

CO_2 tax: Gasoline, mineral oil, gas for inland usage and petroleum activities are subject to a CO_2 tax. A CO_2 tax related to petroleum activities shall be paid per liter of oil and natural gas liquids and per standard cubic meter of gas burnt off or emitted directly to air on platforms, installations or facilities used in connection with the extraction or transportation of petroleum on the Norwegian continental shelf. The tax is classified as a deductible operating cost associated with petroleum activities, which contributes to reducing the ordinary tax and special tax actually paid by the oil companies.

The CO_2 tax was reduced according to the estimated emissions trading price when the Norwegian emissions trading system was introduced.

Nitrous Oxide (NOx)tax: The NOx tax is calculated per kg for NOx emissions generated during the production of energy from the following energy sources:

- propulsion machinery with a total installed capacity of over 750 kW
- motors, boilers and turbines with a total installed capacity of more than 10 MW
- flares on offshore installations and on facilities on land.

Enterprises that join the Environmental Agreement on NOx are entitled to a tax exemption from the date when they joined. From the same date, the enterprise will have a payment obligation vis-a-vis the business sector's NOx Fund. According to the Participant Agreement, affiliated enterprises will develop a measure plan identifying possible NOx reducing measures within two years after affiliation. The purpose with the measure plan is to identify profitable measures the enterprise can implement on its own accord, and to identify cost-effective NOx reducing measures whose implementation are dependent on support from the NOx Fund. As of December 2011, a total of 656 enterprises had joined the Environmental Agreement on NOx 2011-2017.

The European Commission has finalized a white paper, SEC(2011) 1052, regarding the review of Directive 1999/32/EC related to the sulphur content of certain liquid fuels and on further pollutant emission reduction from maritime transport. In this paper, the Commission recommended that industry and public sector establish a fund similar to the Norwegian NOx Fund.

Peru

Investment and other subsidies

Peru has not implemented subsidies, but it has implemented certain tax incentives for energy producers generating energy from renewable resources.

Additional information

Peru is a country with abundant natural resources. However, which resources are considered renewable is determined only by a general consensus rather than legal definitions. This consensus appears to be changing, and resources like water, which was once considered renewable, are no longer considered as such.

Apart from issues related to water, no clear tax policy exists that might promote investment into renewable energy. However, a number of benefits can be identified in the Peruvian taxation system.

Geothermic resources law: The Peruvian government grants a 30-year concession to explore and/or exploit above-ground and underground geothermic resources that are not based on hydrocarbons.

Income tax stability: Geothermic concessionaires will be subject to the 30 percent Income Tax regime in force at the time of signing the concession agreement during the term of the concession.

Income tax assessment: Geothermic concessionaires having more than one geothermic resource concession agreement that may also perform activities related to geothermic resources and connected activities shall severally and annually assess their income tax liability by each contract and activity.

If one of the contracts generates tax losses that carry forward, such losses could be offset against the profits derived from another contract or geothermic related activities.

Investments applied to a geothermic resource concession agreement that may not have reached the exploitation stage can be accumulated with the same kind of investment made with another contract that may have reached the exploitation stage. These accumulated investments can be amortized either on a production basis or proportionally over a 5-year period on a straight line method.

Import of goods: Import of goods and inputs required to exploit geothermic resources under concession are exempt from all existing or future taxes provided such goods or inputs were included in the specific list approved by the Energy and Mining Ministry.

Investments in generating electricity through hydro and other Renewable Energetic Resources (RERs): Electricity generation through hydro, wind, solar, geothermic, biomass, wave or tidal powers or other RERs is subject to an annual maximum 20 percent accelerated depreciation regime for Income Tax purposes.

Accelerated depreciation is applicable to electricity plants entering into operation as of 29 June 2008. Accelerated depreciation is applicable to machinery, equipment and building infrastructures required for the installation and operation of electricity plants generating power through renewable resources.

Electricity generated with RERs is considered when it is first delivered into the electricity distribution network.

Early recovery of the input VAT derived by electricity-generating corporations: Concessionaires of electricity-generating activities through RERs are entitled to the early recovery of the Input VAT paid for capital expenditures, services and building contracts directly related to the electricity generating activities, provided they do not enter into the productive stage.

Selective Consumption Tax (Impuesto Selectivo al Consumo or ISC): The ISC excise tax is applicable to the consumption of fuels. Beginning 1 January, 2008 and extending until 1 January 2016, the Peruvian government has established a schedule for applying a specific amount of Peruvian nuevo sols (PENs) as an ISC on certain fuels such as diesel 2, kerosene and others that contain harmful contaminants like sulfur.

Poland

Support schemes

Investment and other subsidies

- Support schemes are applicable for solar, wind, geothermal, hydro, biomaterial and offshore technologies
- Renewable energy is exempt from excise tax
- Agriculture tax payers 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 Srodowiska I Gospodarki Wodnej).

Currently the following sources of financing for renewable energy projects are available:

- Green Investment Scheme Part 2. – support for agricultural biogas power plants of at least Polish zloty (PLN)10 million investment costs
  - Maximum level of support – 30 percent of eligible costs in the form of cash grant and 45 percent of eligible costs in the form of a loan
  - Application round – 3Q 2012.
- Green Investment Scheme Part 3. – support for biomass power and heat plants (up to 20 MWt) of at least PLN 2 million investment costs
  - Maximum level of support – 30 percent of eligible costs in the form of cash grant and 45 percent of eligible costs in the form of a loan
  - Application round – 3Q 2012.
- Green Investment Scheme Part 4. support for connection of wind farms to the grid of at least PLN 8 million investment costs
  - Maximum level of support – from 30 percent up to 50 percent of eligible costs depending on the location of the project
  - Application round – April 2012.

Additional sources for smaller renewable energy projects under the Regional Operational Programs in the following regions: Lubuskie, Wielkopolskie, Warminsko-Mazurskie, Lubelskie, Podlaskie and Dolnoslaskie.

Operating subsidies

Green certificate system

Remuneration for electricity produced: PLN195.32/MWh since the end of March 2011. (In 2010, remuneration was PLN197.21/MWh.)

Quota obligation

2010 or 2011 Rates: 10.4 percent of all energy produced (floors relate to all types of renewable energy). The quota is increasing in stages and will reach 12.9 percent in 2017.

Additional information

Legal basis: The Act of Energy Law enacted 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 2012, 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/MWh. The renewable electricity producers have priority over other producers with regards to the distribution of produced energy.

Romania

Support schemes

Investment and other subsidies

Tax incentives

In Romania, the following tax incentives may be applicable to energy produced from the following renewable sources: wind, solar, geothermal, hydro, biomass and residues fermentation gas.

- Electricity from renewable sources is excise duties exempt.
- Accelerated depreciation for tax purposes can be used for technological equipment, computers and related peripheral equipment.
- Buildings and land used within hydroelectric, thermoelectric and nuclear power plants, as well as buildings and land relating to transformation and connection posts, are not subject to local taxes.
- Reinvested dividends can be dividend tax exempt, provided the dividends are used for the purpose of creating new work places or for developing the activities of Romanian entities.
- Incentives (for example, exemption from payment of contribution to unemployment fund, monthly grants, etc.) are also available, provided certain conditions are met, to companies which provide places of work for students, recent graduates or disabled persons.

Operating subsidies

Green certificate system

The price of a green certificate has been set between the Romanian new leu (RON) equivalent of 27 EUR/ General Collateral (GC) and 55 EUR/GC. Currently, the price of a green certificate is equivalent with the maximum value of 55 EUR/GC, since the demand of GC is higher than the offer.

Quota obligation

In December 2011, ANRE has calculated the estimated quota of GCs acquisition for 2012 for the electricity suppliers as 0.11 GC/MWh supplied to final consumers.

Additional information

Legal basis: Electricity Law 13/2007 and Law 220/2008 for approval of the support scheme for electricity from renewable sources (Law 220/2008) and the secondary relating legislation issued by the Romanian Regulatory Authority in the Field of Energy (ANRE).

Administrative procedures: The activity of production of electricity from renewable sources requires a license granted by ANRE. Such a license can be obtained by an entity which meets certain requirements (relating to its financial position, technical resources, etc) and provides a specific set of documentation.

The license is granted for a fixed term, but no longer than 25 years. In case of production of electricity from renewable sources, the maximum period during which ANRE should issue the relating license is reduced to 30 days (from 60 days).

Green certificate scheme: In order to promote investments in renewable electricity production capacities, a Tradable Green Certificates (TGC or GC) system has been in place in Romania since 2004, coupled with a supplier quota obligation system. Under this framework, energy producers are entitled to receive a set amount of GCs according to the amount of electricity generated by them from renewable sources. The revenue from GC sales represents additional revenue for eligible renewable producers on top of electricity sales on the market.

According to Law 220/2008, the producers of electricity from renewable sources benefit from a different number of green certificates depending on the fuel used (e.g. between 0.5 and 3 GC/ Mw for hidroelectric power, varying on the capacity of the plant; 2 GC/Mwh for wind power, until 31 December 2017, 1 GC/Mwh for wind power, starting with 1 January 2018; 6 GC/Mwh for solar power).

The support scheme is granted between 3 and 15 years, depending on the age of the plants and the installed capacity. Eligible electricity producers will be able to enter the scheme only if the commissioning/refurbishment of the power plant is done until 31 December 2016.

Sale: The annual mandatory GCs acquisition quota is established based on the quantity of renewable electricity produced and on the final electricity consumption of the previous year, without exceeding the level corresponding to the mandatory quota for the electricity produced from renewable sources.

The quantity of electricity for which the annual mandatory GCs acquisition quota is established includes the electricity purchased by electricity suppliers for their own consumption or for the sale to final consumer, the electricity used by the electricity producers for their own consumption (other than CPT) and for the direct supply of final consumers directly connected to the power plant.

Electricity suppliers and electricity producers previously mentioned have the obligation to acquire annually a number of GCs which is equivalent to the product between the annual mandatory GCs acquisition quota and the quantity of electricity detailed in the paragraph above, supplied annually to final consumers.

For 2012, the estimated quota of acquisition of GCs for the electricity suppliers is 0.11 GC/MWh delivered to final consumers. Any supplier that fails to fulfill this obligation must pay the equivalent value of the GC at a premium of EUR110 per each non-purchased certificate.

The GCs are issued by the transmission system operator and are valid for 16 months. The trading value of a GC has been established by ANRE between the RON equivalent of EUR 27/GC and EUR 55 EUR/GC. Currently, the price of a green certificate is equivalent with the maximum value of 55 EUR/GC, as the demand of GC is higher than the offer.

South Korea

Support schemes

Investment and other subsidies

In 2004, the South Korean government passed the Act on the Promotion of the Development, Use And Diffusion of New And Renewable Energy (the Act). With the goal of becoming one of the five largest producers of new and renewable energy, the government has announced that a total of South Korean won (KRW)40 trillion (EUR25.8 billion, USD34.2 billion) will be invested in renewable energy by 2015. This includes KRW22.4 trillion invested by the nation's 30 largest industrial groups by 2013, KRW7 trillion of government contribution, and KRW10.6 trillion from other private sectors. South Korea has already seen substantial financial investment in renewable energy in recent years, including KRW2 trillion (EUR1.3 billion, USD1.7 billion) from the government in the last two years.

To reach this goal, the government is implementing initiatives in four major areas:

- strategic R&D and commercialization
- promotion of industrialization and market creation
- promotion of exports of new and renewable energy products
- infrastructure development.

Operating subsidies

Feed-in tariff

- The Feed-in tariff was abrogated at the end of 2011 due to introduction of a renewable portfolio standard (RPS) in 2012. (The government maintains a feed-in tariff only for existing recipients.)
- Among the 11 energy sources selected by the Act, solar energy, wind energy, water energy, marine energy, landfill gas and waste energy had their standard prices calculated by the government and had been purchased mandatorily.
- Due to the lack of a domestic track record for solar energy during the enactment, the standard price for solar energy was fixed at 120 percent of the German price and announced as KRW716.4/kWh. (The German standard price was KRW597/kWh.).
- The utilization ratio was calculated by the government as the avoided cost of heavy oil generation for wind energy, water energy, landfill gas and waste energy.
- In 2004, the Korean government determined the official price for marine energy through cost analysis of the Sihwaho tidal power station.

Standard price of feed-in tariff

Power Source	Installed Capacity	Standard Price (KRW/kWh) Private	Standard price (KRW/kWh) Public
Solar	More than 3 kW	716.40	716.40
Wind	More than 10 kW	SMP+CP	107.66
Water	Less than 3 MW	SMP+CP	73.69
Marine	More than 50 MW	62.81	62.81
Waste (Including RDF)	Less than 20 MW	SMP+CP	SMP+CP

Note: Excluded from the standard price target, if the government's grant rate is higher than 30 percent.

CP: Capacity Payment

SMP: System Marginal Price

RDF: Refuse Derived Fuel

Premium

The R&D tax credit program is applied for renewable energy technologies. Import duties are reduced by 50 percent for all components and /equipment used in renewable energy power plants. The government also provides subsidies up to 60 percent to local governments for the installation of renewable energy facilities, and it offers low interest loans (5.5 percent to 7.5 percent) to renewable energy projects, including a 5-year grace period followed by a 10-year payment period.

Quota Obligation

- The government created a solar energy market of 101.3 MW through an RPS pilot project operating from 2009 to 2011.
- In 2012, the existing feed-in tariff was replaced by an RPS that was approved by the government assembly in March 2010.
- The RPS requires 13 state-run and private power utilities with a capacity in excess of 500 MW to generate 2 percent of the energy production from renewable sources by 2015. This percentage will be increased in stages to 10 percent by 2022.

Additional information

One Million Green Homes Project: As a part of the 2009 budget, the government appropriated KRW94.3 billion (USD72 million) for the One Million Green Homes Project. The intent is to build one million homes by 2020 that use one of the following five, renewable energy technologies: solar thermal, solar photovoltaic, geothermal, biomass and wind energy. Each year, the government will set a new budget for the coming year.

The green homes being built are environment-friendly and use new and renewable energy resources. In addition, green homes create no carbon emissions and use relatively less energy, water and natural resources.

Other support programs: The government will support 10 major green projects that have impressive promotional and installation effects.

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 subsidies

Applicable for solar, wind, geothermal, hydro, CHP and biomaterials, under 50 MW of installed capacity.

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).

Other 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 for the plants entering in the system after September 2008, are specifically governed by RD 1578/2008 and refer only to feed-in tariffs.

Until January 2012, incentives to new renewable plants were granted provided to that projects that were filed with the "registry for pre-allocation", subject to limitations on the total capacity defined.

However, all incentives granted to new renewable plants which are not yet included in the registry of pre-allocation (for instance, those wind power plants envisaged to enter after 1 January 2013) are currently suspended by the RD 1/2012. The registry of pre-allocation has been cancelled as well, leaving open the establishment of new special economic regimes for certain installations and the right to receive a specific economic system under certain assumptions.

Considering the last technical report issued by National Electricity Grid operator Red Electrica de España, new plants not yet approved were not expected to start operations until 2014.

Prior to this RD-L 1/2012, relevant regulatory changes concerning the renewable energy production of existing or under construction power plants 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 that are entitled for feed-in tariffs and premiums:
  - For wind, a number of hours for all the plants under this technology is established (2,589 hours per year), provided that an overall average of production hours for whole installed wind power is reached (2,350 hours per year)
  - For solar, the hourly limits are considered individually and depend on technology, as follows:

Solar thermal technology	Hour Limitation Per Year
Parabolic cylinder without storage capacity	2,855
Parabolic cylinder with storage capacity of 9 hours (h)	4,000
Parabolic cylinder with storage capacity of 7 h	3,950
Parabolic cylinder with storage capacity of 4 h	3,450
Saturated Steam Tower	2,750
Salt tower with 15 h storage capacity	6,450
Fresnel	2,450
Stirling	2,350

Source: KPMG International, Taxes and Incentives for Renewable Energy, 2011

Once exceeding such limitations, pool prices should apply.

- 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 the amounts will be reduced 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.
  - Furthermore, RD 1614/2010 clarified that the revisions of premiums, caps and floors mentioned at article 44.3 of RD 661/2007 shall not affect those wind and SCP Plants included in the pre-register.
  - 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).

Solar Photovoltaic Technology (RD 1565/2010 and RD-Law 14/2010)

- 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:

	Hourly Limitation Per Year				
Technology	Area I	Area II	Area III	Area IV	Area V
Fixed Support	1.232	1.362	1.492	1.632	1.753
Single Axis Tracker	1.602	1.770	1.940	2.122	2.279
Dual Axis Tracker	1.664	1.838	2.015	2.204	2.367

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

Technology	Hourly Limitation Per Year
Fixed Support	1.250
Single Axis Tracker	1.644
Dual Axis Tracker	1.707

- 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 (RD 1565/2010):
    - 5 percent decrease for type I.1 installations
    - 25 percent decrease for type I.2 installations
    - 45 percent decrease for type II installations.

Cancellation of the registry of pre-allocation of new special regime installations (RD-Law 1/2012)

- Due to the deficit problem generated by the Spanish electrical system, and based on a possible excess of renewable capacity considering the objectives of 2020, the government has decided to temporarily suspend the registration of new special-regime plants along with the special regime of incentives for these plants. As a result, developers who wish to construct new plants in this situation will not receive incentives but only the market price
- This new policy change will apply only for those special-regime facilities that would not have been entered in the registry of pre-allocation according to RD Law 6/2009 and RD 1578/2008 for photovoltaic technologies. This change was made with the intention of avoiding the retroactive character of the measure
- Regulated tariffs, premiums and limits laid down are cancelled for new plants, as well as the supplement for efficiency and reactive energy.

Additional information

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: The 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, chronologically ordered, about project development and guarantees will 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 will only be denied by grid operators in the case of a lack of capacity according to security, quality supply and regularity criteria.

Sweden

Support schemes

Depreciation of wind turbines

Swedish tax law allows tax payers to depreciate windmills for (corporate) income tax purposes at a rate faster than the actual loss in economic value. The maximum depreciation allowance is 30 percent of the aggregate book value at the beginning of the tax year, plus the building or acquisition costs that have been made during the year. Should a straight-line depreciation of 20 percent per annum result in a lower aggregate book value in any year, the annual depreciation allowance may be increased accordingly. The depreciation allowance is calculated on a pool basis, with the book value of all the taxpayer's assets taken into account in order to calculate the maximum depreciation allowance.

Operating subsidies

For each MWh produced by renewable sources (solar, geothermal, wind, wave, bio fuels or hydro) the producer receives one tradable renewable energy certificate (REC). (Some limitations exist for hydro power generation.) A distributor is obliged to buy RECs up to a certain percentage of the power distributed.

To support the transition to more sustainable energy sources for heating and transportation, no taxes are levied on renewable fuels while energy taxes, CO_2 taxes and sulphur taxes are levied on fossil fuels.

There is also a fee-based system for the reduction of greenhouse gas emissions.

Turkey

Support schemes

Investments and other subsidies

General Investment Incentive Regime is applicable to ENR investments, mainly by providing the following:

- VAT exemption on purchase (or import) of investment equipment
- customs duty exemption on import of investment equipment
- exemptions from other funds and surcharges.

Operating subsidies

Feed-in tariff

Resources:

Hydro: USD cent(ct)7.3KWh

Wind: ct7.3/KWh

Geothermal: ct10.5/KWh

Solar: ct13.3/KWh

Biomass (including landfill): ct13.3/KWh

Additional information

If the mechanical and electro-mechanical equipment used in renewable energy facilities that have started operation before 31 December 2015 are manufactured in Turkey, an additional incentive of between 0.4 and 2.4 USD cents per kWh for five years will be provided to such facilities.

United Kingdom

Support schemes

Investments and other subsidies

Exemptions are in effect from the Climate Change Levy and Emissions Trading Scheme.

Operating subsidies

Renewable obligation scheme

Long term banded quota mechanism designed to support renewable electricity generation.

Feed-in tariff (small scale generation)

Introduced on 1 April 2010 for small-scale electricity generation from a variety of technologies.

Renewable heat incentive

Long term tariff support payments for renewable heat generation; two phase implementation, the first phase (aimed at large users) of which began in December 2011.

Additional information

Energy market reform: The UK government announced details of reforms to the UK market in late June 2011. Key features of the paper included:

- The introduction of a two way, Feed-in tariff with Contracts for Difference for each low carbon generation technology, likely to replace the Renewable Obligation Scheme by 2017
- Disincentives on fossil fuel generators such as the Carbon Price Floor (a proposal that the effective price of carbon should be GBP70/tCO2 in 2020) and an Emissions Performance Standard (EPS) (set at 450g CO2/kWh).

Renewable Obligation (RO) scheme: This requires electricity suppliers to source a specific percentage of electricity from renewable sources (target of 15 percent by 2020). Renewable generators receive Renewable Obligation Certificates (ROCs) for each MWh of electricity generated, and these ROCs can be traded independently of the electricity generated.

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).

ROC Banding Regime

Band	Technologies	Current	Proposed Banding (2013-2017) *
Established 1	• Landfill gas	0.25	0.00
Established 2	• Sewage gas • Co-firing of regular biomass	0.50	0.50
Reference	• Onshore wind • Hydro-electric • Co-firing of energy crops • EfW with CHP • Geopressure • Co-firing of Biomass with CHP • Standard Gasification and Pyrolysis	1.00	0.90 0.50 1.00 0.50 1.00 1.00 0.50
Post-Demonstration	• Offshore wind (2014/5) • Dedicated regular biomass • Co-firing of energy crops (with CHP)	1.50	2 (2014/5) / 1.9 (2015/6) / 1.8 (2016/7) 1.50 (to 03/16) / 1.4 (thereafter) 1.50
Engineering Technologies	• Offshore wind (2013/4) • Wave and tidal stream • Tidal barrage(<1GW) and lagoon (<1GW) • Advanced conversion technologies (anaerobic digestion, gasification and pyrolysis) • Dedicated energy crops • Dedicated biomass with CHP • Solar photovoltaic • Geothermal	2.00	2.00 5.00 (up to 30 MW) / 2.00 (above cap) 2.00 (2013-5) / 1.9 (2015/6) / 1.8 (2016/7) 2.00 (2013-5) / 1.9 (2015/6) / 1.8 (2016/7) 2.00 (2013-5) / 1.9 (2015/6) / 1.8 (2016/7) 2.00 (2013-5) / thereafter sat. consultation 2.00 (2013-5) / 1.9 (2015/6) / 1.8 (2016/7) 2.00 (2013-5) / 1.9 (2015/6) / 1.8 (2016/7)

Renewables Obligation Banding Review 2013-17 – DECC Public Consultation, Oct 2011

The government has proposed that applications for the RO regime can be made until 2017, thereby extending the scheme until at least 2037. Late in 2011, the government consulted on proposals for the level of banded support available for renewable energy generation under RO for the period 2013-17, and it plans to report back on this in the spring of 2012.

Climate Change Levy (CCL), renewables exemption: The CCL is a specific energy tax on non-domestic 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. 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 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/tCO2 for 2013-2014. Proposed rates for 2014 to 2015 and 2015 to 2016 are GBP7.28/tCO2 and GBP9.86/tCO2.

Feed-in tariffs (small scale generation): Feed-in tariffs are available for small-scale, low-carbon electricity generated by private/business users (maximum capacity 5 MW) providing payment of up to 41.3p/kWh generated (depending on the type and size of the system used to generate renewable energy) plus a guaranteed 3p/kWh sold on to the UK electricity grid. Typically the tariffs last for 20 years (the exception is the Solar PV tariff which currently lasts for 25 years).

Feed-in Tariffs (solar installations): In February 2012, the government reduced the feed in tariff from 41.3p/kWh to 21p/kWh and stipulated an efficiency requirement for Solar PV schemes registered after March 2012.

The UK government is currently consulting on the following:

- Generation tariffs for the four non-PV technologies currently eligible for FITs (wind, hydro, anaerobic digestion and micro-CHP) and special arrangements for community projects, including greater tariff stability
- Generation tariffs to be applied to solar PV installations with an eligibility date on or after 1 July 2012. The mechanism should be applied to the degression of tariffs thereafter and to the reduction from 25 to 20 years of the period for which tariffs for PV installations are applied.

Heat incentive: A two phase long term tariff support for renewable heat generation:

- Phase 1, which began in December 2011, provides tariff support to big emitters in the non domestic sector. Phase 1 also introduced the RHI Premium payment, which is a GBP15 million fund for households that install renewable heating. In return for the payments, participants will have to provide feedback on how the equipment performs in practice
- Phase 2, expected to begin in October 2012 when the Green Deal is introduced, extends the scheme to tariffs for domestic properties.

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

Other direct tax allowances/ incentives potentially relevant to renewables generators:

- Capital allowances of 20 percent reducing 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). A 19 percent tax cash credit is available for loss- making companies up to GBP250,000 or the company's PAYE and NIC's liabilities, whichever is less
- 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)
- R&D tax relief of an enhanced tax deduction of 130 percent (225 percent for SMEs from 1 April 2012) for revenue expenditure on qualifying projects seeking to achieve an advance through the resolution of scientific or technological uncertainty. The UK Government is currently consulting on the detail of an 'above the line' R&D credit for large companies, which will be of particular interest to companies which do not have a current Corporation Tax liability, and will be introduced from April 2013.
- 100 percent allowance on capital expenditure on R&D in the year of expenditure.

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:
  - o 2.2 cents per kWh for wind, closed-loop biomass and geothermal
  - o 1.1 cents per kWh for other renewable energy resources.
- Available for facilities placed in service before 1 January 2014 (2013 for wind)
- Available for a 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 systems, small wind, geothermal heat pumps and PTC-eligible facilities placed in service after 2008 and before 2014 (2013 for wind).

- The ITC provides a credit for qualifying energy property
- The 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:
  - o 30 percent of eligible costs for fuel cell, solar, and small wind property
  - o 10 percent of eligible costs for combined heat and power, microturbine property and geothermal heat pumps.
- The ITC is generally available for eligible property placed in service on or before 13 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
- ARRA permits PTC or ITC 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:
  - o PTC before 2014 (2013 for wind)
  - o ITC before 2017.

Operating subsidies

Quota obligation

Renewable Portfolio Standards (RPS)

These standards generally place 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.

A total of 29 states and the District of Columbia have an RPS. The states include Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Indiana, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, Washington and Wisconsin.

TOP FIVE COUNTRIES	1	2	3	4	5
Annual additions in 2010					
New capacity investment	China	Germany	United States	Italy	Brazil
Wind power	China	United States	India	Spain	Germany
Solar PV	Germany	Italy	Czech Republic	Japan	United States
Solar hot water/heat[15]	China	Germany	Turkey	India	Australia
Ethanol production	United States	Brazil	China	Canada	France
Biodiesel production	Germany	Brazil	Argentina	France	United States
Existing capacity as of end-2010					
Renewables power capacity (not including hydro)	United States	China	Germany	Spain	India
Renewables power capacity (including hydro)	China	United States	Canada	Brazil	Germany/India
Wind power	China	United States	Germany	Spain	India
Biomass power	United States	Brazil	Germany	China	Sweden
Geothermal power	United States	Philippines	Indonesia	Mexico	Italy
Solar PV	Germany	Spain	Japan	Italy	United States
Solar hot water/heat	China	Turkey	Germany	Japan	Greece

Notes: Rankings are based on absolute amounts of power generation capacity or biofuels production; per capita rankings would be quite different for many categories. Country rankings for hydropower would be different if power generation (TWh) were considered rather than power capacity (GW) because some countries rely on hydropower for baseload supply while others use it more to follow the electric load and match peaks.

Renewable Energy Policy Network, Renewables 2011 Global Status Report, page 15

Table 2. Renewable energy support policies

	REGULATORY POLICIES						FISCAL INCENTIVES				PUBLIC FINANCING	
	Feed-in tariff (incl. premium payment)	Electric utility quota obligation/ RPS	Net metering	Biofuels obligation/ mandate	Heat obligation/ mandate	Tradable REC	Capital subsidy, grant, or rebate	Investment or production tax credits	Reductions in sales, energy, CO_2, VAT, or other taxes	Energy production payment	Public investment, loans, or grants	Public competitive bidding
HIGH-INCOME COUNTRIES												
Australia	▲			▲		●	●				●	
Austria	●			●		●	●	●			●	
Belgium		▲	●	●		●	●	●	●			
Canada	▲	▲	●	●			●	●	●		●	●
Croatia	●						●				●	
Cyprus	●						●					
Czech Republic	●			●		●	●	●	●			
Denmark	●		●	●		●	●	●	●		●	●
Estonia	●			●			●		●	●		
Finland	●			●		●	●		●	●		
France	●			●		●	●	●	●		●	●
Germany	●			●	●		●	●	●		●	
Greece	●		●				●	●			●	
Hungary	●			●			●		●		●	
Ireland	●				▲	●						●
Israel	●				●				●			●
Italy	●	●	●	●	●	●	●	●	●		●	●
Japan	●	●	●			●	●				●	
Latvia	●			●					●		●	●
Luxembourg	●						●					
Malta			●				●		●			
Netherlands				●		●	●	●	●	●		
New Zealand							●					
Norway				●		●	●		●		●	
Poland		●		●		●	●		●		●	●
Portugal	●	●	●	●	●		●	●	●		●	●
Singapore											●	
Slovakia	●						●					
Slovenia	●					●	●	●	●		●	●
South Korea[1]		●		●		●	●	●	●		●	
Spain[2]	●			●	●		▲	●	●		●	
Sweden		●		●		●	●	●	●	●		
Switzerland	●						●		●			
Trinidad & Tobago							●	●	●			
United Kingdom	●	●		●		●			●	●	●	
United States	▲	▲	▲	●	▲	●	●	●	●	●	●	●

▲ Some states/ provinces within these countries have state/provincial-level policies but there is no national-level policy.

Table 2. Renewable energy support policies (continued)

	REGULATORY POLICIES						FISCAL INCENTIVES				PUBLIC FINANCING	
	Feed-in tariff (incl. premium payment)	Electric utility quota obligation/ RPS	Net metering	Biofuels obligation/ mandate	Heat obligation/ mandate	Tradable REC	Capital subsidy, grant, or rebate	Investment or production tax credits	Reductions in sales, energy, CO_2, VAT, or other taxes	Energy production payment	Public investment, loans, or grants	Public competitive bidding
UPPER-MIDDLE INCOME COUNTRIES												
Algeria	●											
Argentina	●			●			●	●	●	●	●	●
Belarus									●		●	
Bosnia & Herzegovina	●											●
Botswana									●			
Brazil				●					●		●	●
Bulgaria	●			●			●		●		●	
Chile		●					●		●		●	
Colombia				●			●					
Costa Rica	●			●								
Dominican Rep.	●						●	●	●			
Iran								●		●		
Kazakhstan	●					●						
Lithuania	●										●	
Macedonia	●										●	
Malaysia	●										●	
Mauritius							●					
Mexico			●					●			●	●
Panama	●									●		●
Peru	●			●				●	●	●		●
Romania		●		●		●			●		●	
Russia						●	●					
Serbia	●											
South Africa	●					●	●					●
Turkey	●											
Uruguay		●		●					●			●

Note: Countries are organized according to per capita income level as follows: "high" is USD$12,196 or more, "upper-middle" is USD3,946 to USD12,195, "lower-middle" is USD996 to USD3,945, and "low" is USD995 or less. Per capita income levels from World Bank, 2010. Only enacted policies are included in table; however, for some policies shown, implementing regulations may not yet be developed or effective, leading to lack of implementation or impacts. Policies known to be discontinued have been omitted. Many feed-in policies are limited in scope or technology.

1 In South Korea, the current feed-in tariff will be replaced by an RPS policy in 2012.

2 In Spain, the Value Added Tax (VAT) reduction is for the period 2010–12 as part of a stimulus package.

3 In Mozambique, the biofuel blend mandate approved but not yet specified.

Source: See Endnote 37 for this section.

Table 2. Renewable energy support policies (continued)

	REGULATORY POLICIES						FISCAL INCENTIVES				PUBLIC FINANCING	
	Feed-in tariff (incl. premium payment)	Electric utility quota obligation/ RPS	Net metering	Biofuels obligation/ mandate	Heat obligation/ mandate	Tradable REC	Capital subsidy, grant, or rebate	Investment or production tax credits	Reductions in sales, energy, CO_2, VAT, or other taxes	Energy production payment	Public investment, loans, or grants	Public competitive bidding
LOWER-MIDDLE INCOME COUNTRIES												
Armenia	●											
Bolivia									●			
China	●	●		●	●		●			●	●	●
Ecuador	●											
Egypt							●		●		●	●
El Salvador								●	●	●	●	●
Guatemala			●					●	●			●
Honduras	●							●	●			●
India	●	●		●		●	●	●	●		●	●
Indonesia	●						●	●	●		●	●
Jordan			●						●			
Marshall Islands									●			
Moldova	●								●		●	
Mongolia	●											●
Morocco											●	
Nicaragua	●							●	●			
Pakistan			●				▲				●	
Palestinian Ter.*									●			
Philippines	●	●	●	●			●	●	●	●	●	●
Sri Lanka	●											
Thailand	●			●							●	
Tunisia							●		●		●	
Ukraine	●											
Vietnam							●	●	●			
LOW INCOME COUNTRIES												
Bangladesh							●				●	
Ethiopia				●					●		●	
Gambia									●			
Ghana						●			●			
Kenya	●								●			
Kyrgyzstan		●					●		●			
Mali									●			
Mozambique[3]				●							●	
Nepal							●	●	●		●	●
Rwanda									●		●	
Tanzania	●						●		●			
Uganda	●						●		●			
Zambia									●			

▲ Some states/ provinces within these countries have state/provincial-level policies but there is no national-level policy.

* The Palestinian Territories are not included in the World Bank country classification, they have been placed using the 2008 "Occupied Palestinian Territory" GNI per-capita provided by the UN ($1,595)

Renewable Energy Policy Network, Renewables 2011 Global Status Report

SELECTED INDICATORS AND TOP FIVE COUNTRIES

SELECTED INDICATORS		2008	→	2009	→	2010
Global new investment in renewable energy (annual)	*billion USD*	130	→	160	→	**211**
Renewables power capacity (existing, not including hydro)	*GW*	200	→	250	→	**312**
Renewables power capacity (existing, including hydro)	*GW*	1,150	→	1,230	→	**1,320**
Hydropower capacity (existing)	*GW*	950	→	980	→	**1,010**
Wind power capacity (existing)	*GW*	121	→	159	→	**198**
Solar PV capacity (existing)	*GW*	16	→	23	→	**40**
Solar PV cell production (annual)	*GW*	6.9	→	11	→	**24**
Solar hot water capacity (existing)	GW_{th}	130	→	160	→	**185**
Ethanol production (annual)	*billion liters*	67	→	76	→	**86**
Biodiesel production (annual)	*billion liters*	12	→	17	→	**19**
Countries with policy targets	#	79	→	89	→	**96**
States/provinces/countries with feed-in policies[1]	#	71	→	82	→	**87**
States/provinces/countries with RPS/quota policies	#	60	→	61	→	**63**
States/provinces/countries with biofuels mandates	#	55	→	57	→	**60**

TOP FIVE COUNTRIES – Annual additions in 2010

	New capacity investment	Wind power	Solar PV	Solar hot water/heat[2]	Ethanol production	Biodiesel production
1	China	China	Germany	China	United States	Germany
2	Germany	United States	Italy	Germany	Brazil	Brazil
3	United States	India	Czech Republic	Turkey	China	Argentina
4	Italy	Spain	Japan	India	Canada	France
5	Brazil	Germany	United States	Australia	France	United States

TOP FIVE COUNTRIES – Existing capacity as of end-2010

	Renewables power capacity (not including hydro)	Renewables power capacity (including hydro)	Wind power	Biomass power	Geothermal power	Solar PV	Solar hot water/heat[2]
1	United States	China	China	United States	United States	Germany	China
2	China	United States	United States	Brazil	Philippines	Spain	Turkey
3	Germany	Canada	Germany	Germany	Indonesia	Japan	Germany
4	Spain	Brazil	Spain	China	Mexico	Italy	Japan
5	India	Germany/ India	India	Sweden	Italy	United States	Greece

Notes: Rankings are based on absolute amounts of power generation capacity or biofuels production; per capita rankings would be quite different for many categories. Country rankings for hydropower would be different if power generation (TWh) were considered rather than power capacity (GW) because some countries rely on hydropower for baseload supply while others use it more to follow the electric load and match peaks.

1 Feed-in policies total for 2010 also includes early 2011.

2 Solar hot water/heating numbers are for 2009. 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.

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