Renewable Energy Around the World: An Entrepreneur’s Windfall or Big Solar Flare?

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ABA Section of Environment, Energy, and Resources Sponsoring Committees
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Continuing Legal Education (CLE) Materials
Program Description

Growth in the renewable energy sector has skyrocketed over the past decade. Factors propelling this growth include rapid expansion of energy consumption; climate change and fuel security concerns; record oil prices; favorable policy environments, including subsidies; easy access to finance; and dramatic manufacturing and technology driven cost reductions. Renewables, however, could have a rocky road ahead. The financial crisis and reduced energy demand have impacted both access to finance and the willingness and ability of governments to support renewable technologies. Further, unconventional natural gas has lowered gas prices and abated fuel security concerns. Growth barriers may only be temporary though. This program will explore the sector through the eyes of an entrepreneurial investor’s attorney, sizing up the legal landscape for new projects. Counsel from around the world will discuss their regional legal, regulatory and policy climates as they compete to capture new renewable energy investment.
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Argentina

By Mariana Ardizzone, Maciel, Norman & Asociados, Buenos Aires, Argentina

I. General Public Policy Environment

A. Support to the Development of Renewable Energy

As with many other Latin American countries, Argentina has enacted and has in place legal frameworks promoting several forms of renewable energy: biofuels, biomass, geothermal, hydrogen, hydro, solar, tidal and wind. Argentina has a remarkable quantity and quality of resources capable of producing renewable energy:

- One of the world’s largest acreage of farming lands which have made Argentina a leading producer and exporter of biofuels;
- producer and exporter of biofuels;
- World class wind resources in its Southern Patagonia states (with a capacity utilization factor of over 40%) and estimated potential of over 5000MW;  
- Record sunlight in its western and northwestern states; and
- Plentiful watercourses capable of power generation along the western Andes and in its northeastern states.

In addition, Argentina has been a pioneer in the development of renewable energy in Latin America. Prompted by the worldwide oil crisis and a depression in the international price of sugar, as early as 1978, the Province of Tucuman in Northern Argentina started its own Alconafta Program to promote the mix of ethanol produced from sugar cane with gasoline, which soon lead to the use of a 12% mix of ethanol in gasoline adhered to by 12 Argentine provincial states. Argentina’s National Alconafta Plan was inspired by the larger Proálcool program started by the neighboring Republic of Brazil.

Although currently Argentina supports the development of small hydropower projects as a form of producing renewable energy, in the past, Argentina also developed large bi-national power generation facilities on the Paraná and Uruguay Rivers, together with Paraguay and Uruguay.

Also, the UN Climate Change Conference increased concern about the need to reduce CO2 emissions. The implementation of renewable energy sources presented an optimal way to

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1 Bolivia, Brasil, Chile, Colombia, Costa Rica, Guatemala, Honduras, Mexico, Nicaragua, Panamá, Paraguay, Perú, República Dominicana, Uruguay.
mitigate the emissions.4

Finally, more recently, Argentina lost its energy self-sufficiency and in 2004, the National State of Argentina began importing electric power, natural gas and NGL to satisfy and ultimately subsidize the domestic energy demand. The high costs of keeping up the subsidy system, reported to reach approximately 4% of the Argentine GDP,5 in the light of the shrinking world economy, renewed interest in and governmental programs and policies aimed at promoting renewable forms of energy.

B. Renewable Energy Definition

Argentina is a federal state. While national promotional laws have been enacted, concurrent state legislation is also in place in many states. “Renewable Energy” may be defined differently under the different pieces of applicable legislation for different purposes.

National Law 26190, called the Electric Power Generation from Renewable Sources Promotional Regime, embodies the widest set of rules applicable to renewable energy. Renewable energy sources eligible for the benefits provided thereunder are: “non-fossil renewable energy sources: wind, solar, geothermal, tidal, hydraulic (not exceeding 30 MW generation capacity), biomass, landfill gases, treatment plants’ gases and biogas (other than if used as a biofuel under the Biofuels Promotional Regime enacted under Law 25093).”

Nuclear power is not included in any of the renewable energy promotional regimes.

National Law 26,190 does not condition access to the benefits provided thereunder to the use of any specific technologies. However, the National Secretary of Energy will consider the use of capital goods manufactured in Argentina, provided those projects may partially contain imported capital goods, to the extent there was no competitive domestic technology available.6 In practice, in terms of wind power, the Secretary of Energy favors projects using domestic towers, even if turbines are manufactured abroad. This requirement was further loosened if the equipment supplier also provided financing for the purchase.

II. Laws and Regulations

A. Legal and Regulatory Overview

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4 1st and 2nd Communication of the Republic of Argentina to the UN Climate Change Conference.
National laws enacted in Argentina in connection with renewable energy have been progressive and, at times, source specific, as the following chart shows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Law Number</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 26, 1998</td>
<td>25,019</td>
<td>Wind and Solar Power Promotional Regime</td>
</tr>
<tr>
<td>January 2, 2007</td>
<td>26,190</td>
<td>Electric Power Generation from Renewable Sources Promotional Regime: sets target of 8% of power generation from renewable sources by 2016.</td>
</tr>
<tr>
<td>May 16, 2006</td>
<td>26,093</td>
<td>Biofuels Promotional Regime:</td>
</tr>
<tr>
<td>August 25, 2006</td>
<td>26,123</td>
<td>Hydrogen Promotional Regime</td>
</tr>
<tr>
<td>January 3, 2008</td>
<td>26,334</td>
<td>Bioethanol Promotional Regime</td>
</tr>
</tbody>
</table>

In addition to the above mentioned national laws, a number of state laws have been enacted to promote renewable energy, whether adhering to specific national laws or providing for autonomous state tax exemptions and/or fiscal stability.

Aside from the renewable energy promotional laws, renewable forms of energy, to the extent used for power generation, fit into the general legal framework governing power generation, which has its own complex standing.

In Argentina, the power market or wholesale electricity market (WEM) is managed and administered by CAMMESA (a private corporation in which the federal government holds a 20% interest and four associations representing generators, transmitters, distributors and large users hold an 80% interest). CAMMESA plans the operation of the national interconnected system throughout monthly seasonal periods every three months.

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7 Cordoba Biofuels Law 9397, La Pampa Law 2380, Mendoza Law 7822, Neuquén Law 2396.
9 National Law 15.336 specifically establishes national jurisdiction and licensing for hydropower projects. In turn, national Law 24065/1992 and its regulatory Decree 1398/92 set the general regulatory legal framework of the power industry and market.
The supervision and the general regulation of the electric power industry (in particular in matters of control of concessions, tariffs, verification, quality target control and resolution of conflicts) is under the authority of ENRE (Ente Regulador de la Energía Eléctrica), which is under the Secretary of Energy.

The Secretary of Energy regulates all of the electricity activity; within its scope, the Electric Power Federal Council deals with matters between the provinces and the administration of special funds for energy development in its territories.

B. RPS and RPS Penalties

The following national Renewable Portfolio Standards are in force in Argentina:

- The target is to generate 8% of the country’s power requirements from renewable sources by 2016. As of December 31, 2012 the different sources contributing to Argentina’s total power generation were:

<table>
<thead>
<tr>
<th>Source</th>
<th>GWh</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Fossil</td>
<td>7318</td>
<td>65,7%</td>
</tr>
<tr>
<td>Large Hydro</td>
<td>3175</td>
<td>28,5%</td>
</tr>
<tr>
<td>Nuclear</td>
<td>601</td>
<td>5,4%</td>
</tr>
<tr>
<td>Renewable (Solar, Wind &amp; Biogas)</td>
<td>38</td>
<td>0,3%</td>
</tr>
<tr>
<td>Imports</td>
<td>13</td>
<td>0,1%</td>
</tr>
</tbody>
</table>

- The target is to develop 300MW wind power generation capacity by 2012. Indeed, this target has not been fulfilled, since Argentina has a mere 112MW wind power capacity operating to date.

- There is a 7% biodiesel and 5% bioethanol content requirement in fossil diesel and fossil gasoline. The 5% bioethanol content requirement is hard to fulfill as the domestic market has an insufficient supply of bioethanol.

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11 National Strategic Plan for Wind Power.
No penalties were provided for failure to fulfill any of the above standards.
Also, several significant national bidding rounds and programs have been implemented to foster the development of renewable energy, as outlined below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Program</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999-</td>
<td>PERMER(^{14})</td>
<td>Renewable Energy for Rural Markets: Bidding Round for the procurement and installation of photovoltaic equipment and in rural households in several States of Argentina</td>
</tr>
<tr>
<td>2007</td>
<td>Vientos de la Patagonia I(^{15})</td>
<td>Agreement between National State and State of Chubut to build prototype windmills manufactured in Argentina (first phase 2 prototype windmills installed; second phase 60 MW wind power park projected)</td>
</tr>
<tr>
<td>2009</td>
<td>GENREN Resolution SE 712/2009(^{16})</td>
<td>ENARSA Bidding Round # EE 001/2009 to enter into 15-year PPAs with CAMMESA with feed in tariffs for renewable energy (600 MW awarded in total)</td>
</tr>
<tr>
<td>2010</td>
<td>Biogas Bidding Round</td>
<td>ENARSA Bidding Round # EE 001/2010 to enter into 15-year PPAs with CAMMESA with feed in tariffs for biogas (16,6MW awarded in total)</td>
</tr>
<tr>
<td>2011</td>
<td>Biomass Bidding Round</td>
<td>ENARSA Bidding Round # EE 001/2011 to enter into 15-year PPAs with CAMMESA with feed in tariffs for biomass (7,5 MW</td>
</tr>
</tbody>
</table>


III. **Litigation**

**A. Foreign Exchange Controls**

One example of the risks and problems faced by project developers in Argentina and their sponsors are foreign exchange restrictions and the ability to convert Argentine Pesos into foreign currency and to remit foreign currency abroad to pay dividends and to repay lenders and sponsors.\(^{18}\)

The most recent wind power project financings have not been devoid of the inherent risks of doing business in Argentina. The controversy among a Chilean subsidiary of Vestas and Genneia (the company that developed the Rawson I and II projects, being among the very few GENREN wind power projects that succeeded to operational stage) reached the headlines only months ago.\(^{19}\)

Vestas Chile Turbinas Eólicas Limitada and Vestas Argentina S.A. entered into an agreement in 2010 to provide financing to Genneia in an amount of over USD 102MM for the supply of wind turbines and ancillary services for the Rawson I and II projects. Allegedly affected by the foreign exchange clamp measures introduced by the Argentine Government and barred from purchasing U.S. Dollars to pay the Vestas companies, Genneia attempted to pay the Vestas companies a USD 19.866.000 tranach (VAT included) in Argentine Pesos at the official exchange rate. The Vestas companies allegedly refused to accept payment in Pesos and started an ICC arbitration proceeding against Genneia for breach of contract.

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\(^{18}\) After the Economic Emergency Law 25561 abrogated the Peso/Dollar 1=1 Convertibility in January 2002, foreign exchange controls were reinstated in Argentina. Beginning in October 2011, a maze of new regulations and discretionary de facto measures locally referred to as CEPO CAMBIARIO (FOREIGN EXCHANGE CLAMP) have been put in place by different bodies of the Argentine government, including the Argentine Federal Revenue Administration (AFIP), the Argentine Central Bank (BCRA), the Ministry of Economy, the National Securities Commission and the Superintendency of Insurance to hinder the drain of the Argentine Central Bank reserves, including limiting access to the foreign exchange market and remittances of funds abroad.

Finally, Genneia obtained an injunction on October 25, 2012 from the federal court based in the city of Rawson, Chubut Province, ordering the Vestas companies, pending final resolution of the international arbitration proceeding, to continue abiding by their contracts with Genneia, to ensure the proper and normal operation of Rawson wind parks. The Court ordered Vestas to refrain from any conduct that would limit the full and complete performance of the obligations and services committed under the contracts with Genneia, and refrain from any action that disrupts, obstructs or prevents the power generation operations of Genneia.  

B. Biofuels WTO Consultation

In connection with biofuels, “on 17 August 2012, Argentina requested consultations with the European Union and Spain concerning certain measures affecting the importation of biodiesels for accounting purposes with regard to the compliance with the mandatory targets for biofuels. The key measure challenged by Argentina is the Spanish Ministerial Order regulating allocation of quantities of biodiesel needed to achieve the mandatory target of renewable energy. This measure is the national implementation of the European Union regulatory framework for energy from renewable sources.

Argentina claimed that the Spanish measure is inconsistent with: Articles III:1, III:4, III:5 and XI:1 of the GATT 1994; Articles 2.1 and 2.2 of the TRIMs Agreement; and Article XVI:4 of the WTO Agreement.”

The WTO case numbered DS443 followed Argentina’s decision to expropriate the Spanish oil company Repsol’s 51% equity stake in YPF S.A. and YPF Gas S.A. and the Government of Spain’s instant reaction to cut imports of Argentine biodiesel in retaliation for the expropriation.

C. Bill introducing payments to the State of Chubut for wind power

On a different front, a bill was recently introduced in the Province of Chubut Chamber of Representatives whereby, if enacted into law, canon fees and royalties could become due to the provincial government in consideration for the use of wind power within the Province of Chubut belonging to the eminent domain of the Province.

IV. Permits

Power generation, in all its forms, is not considered a public service in Argentina but instead it is subject to free competition. Thus, it is not subject to concession granting by any state. However, it is governed by laws and regulations to ensure normal operations.

On the contrary, the use of certain resources belonging to the eminent domain of the federal or the provincial states is subject to specific licensing, as well as other specific projects for security or safety reasons. Unlike nuclear, tidal and hydropower projects\(^\text{24}\), power generation from wind and solar sources is not subject to prior licensing by the National State\(^\text{25}\).

Permits and authorizations required of all projects include:

a) **Access to the land:** The land of the project site must be secured by the developer. No mandatory easements or rights of way are available to developers to secure access to the lands with the best prospects. Developers can purchase the land, lease it for a maximum of ten years (or a longer term in limited cases, subject to court approval) or enter into usufruct agreements with the relevant landowners for up to twenty years.

b) **Tax Benefits Approval:** Resolution 113/2001 of the Secretary of Energy requires that wind power generators and solar power generators eligible to receive the tax incentives provided under Law 25019 be expressly approved by the Secretary of Energy. In turn, Joint Resolution 572/2011 and 172/2011 of the Ministry of Federal Planning and the Ministry of Economy require that renewable energy generators eligible to receive the tax incentives provided under Law 26130 be expressly approved by the Secretary of Energy.

c) **Secretary of Energy Authorization to become an agent of the WEM:** All power generators must apply for and obtain a Resolution of the National Secretary of Energy authorizing them to act as agents of the WEM. The approval process may take a few weeks and it is generally clerical.

d) **Certificate of Convenience and Necessity for Interconnection to the Grid:** Resolution 467/1999 of the ENRE requires that certain interconnections and expansions of the transmission and distribution networks (on account of their size, complexity or environmental sensitivity) be approved by the ENRE through a Certificate of Convenience and Necessity. This proceeding also involves an Environmental Impact Assessment of the specific interconnections and expansion work. Public hearings are typically conducted by the ENRE as part of this proceeding. The granting of this certificate may take a few months.

e) **Environmental Impact Assessment of the Power Generation Project:** According to Article 41 of the National Constitution, the National State is vested with the power to establish national minimum standards of environmental policy and the provincial states are vested with the power to complement those national minimum standards.

At the national level, the Secretary of Energy has been empowered to establish the environmental policies and setting environmental standards applicable to the power


industry in general. In turn, the ENRE is responsible for monitoring compliance with the obligations of the different market players in the national jurisdiction.

Resolution 475/87 of the Secretary of Energy requires companies to conduct environmental impact assessments from the pre-feasibility stage and establish surveillance and monitoring programs for the entire life of the project.

Resolution 718/87 of the Secretary of Energy regulates the procedures for environmental management of water works.

Resolution 304/99 of the Secretary of Energy requires wind power project developers to conduct an Environmental Impact Assessment and an Environmental Management Program comparable to those required for thermal power generators.

In practice, the vast majority of renewable energy projects in Argentina have been awarded or developed under the auspices of governmental programs and bidding rounds called for those ends. Moreover, Argentina’s renewable resources are mostly located in uninhabited rural areas far from populated areas. Unlike past experiences during the last century with the development of large hydro power projects, neither environmental issues nor issues with communities have arisen in connection with the development of renewable projects and the licensing process has been relatively smooth.

Public hearings may be required as part of the environmental licensing process by the ENRE and by other provincial state bodies.

The Environmental Impact Assessment proceeding may take a few months.

V. Incentives

A. Tax

The tax incentives package offered by Argentina includes the following.

1. National Level

Anticipated VAT Tax Refunds: Wind power and solar power energy companies generating energy to the WEM may defer VAT payment for a maximum of fifteen years without exceeding the period contemplated in the investment plan. In turn, renewable energy companies in general (including wind and solar) and biofuel companies are entitled to defer VAT levied on

27 Law 26190, supra note 7, Section 9, Paragraph 1 and Sections 1 and 4 & Law 25924, available at http://infoleg.gov.ar/infolegInternet/anexos/95000-99999/98271/norma.htm
the purchase, manufacture, processing or final importation of capital goods (automobiles excepted) or performance of infrastructure works after the expiration of at least three fiscal years commencing from the year in which the respective investments have been made. Thereafter, VAT levied on them will be credited against other national taxes levied or, failing that, will be returned in both cases within the period specified in the instrument of approval of the project and the conditions and guarantees in this regard established in the regulations. Such accreditation or refund shall proceed to the extent that the amount thereof has not been absorbed by the respective tax debits arising from the development of the activity.

The Federal Tax Bureau will administer separate individual registers of the tax deferral payment until cancellation of the debt. In turn, the Secretary of Energy will control and verify the installation of the relevant equipment.

Accelerated Depreciation under Income Tax: In connection with income tax, movable property can be depreciated in three to five years and infrastructure can be depreciated after reducing its depreciation period by 50% to 70%.29

Tax Stability for a period of fifteen years for solar and wind power projects: During this period, a stable fiscal burden is assured for investors. There can be no new taxes and no increase in the tax rates existing as of October 19, 1998, except for increases in VAT and social security payments30.

Three year Exclusion from Tax Base of Minimum Presumed Income Tax: The properties used for renewable energy generation will be excluded from the tax base for the purposes of the tax on minimum presumed income until the end of the third year, inclusive, after the date of implementation of the respective project.31

Other benefits for Biodiesel and Bioethanol: Biodiesel and Bioethanol are further exempted from the hydro infrastructure rate and the tax on liquid fuels and gasoil.32

2. State Level

Law 26190 invited provincial states to adhere to the promotional regime provided thereunder by adopting similar tax exemptions in their respective jurisdictions. Then, several provincial states have enacted stamp tax exemptions, real estate tax exemptions, turnover tax exemptions or deferrals and even tax stability franchises33.

29 Law 26190, supra note 7, Section 9, Paragraph 2 and Sections 1 and 5 & Law 25924, supra note 28, Section 15 & Law 26093, id.
30 Law 25019, supra note 26, Section 7 and its regulatory Decree 1597/99, supra note 27.
31 Law 26190, supra note 7, Section 9, Paragraph 2.
32 Law 26093, supra note 29, Section 15, paragraph 3.
33 Cordoba Biofuels Law 9397, supra note 8, La Pampa Law 2380, supra note 8, Mendoza Law 7822, supra note 8, Neuquén Law 2396, supra note 8, Buenos Aires City Solar Energy Law 4024, supra note 9, Buenos Aires Province
a) **Benefit of 0.01$/kWh** (One Peso Cent for kW per hour) to all generators, being agents, members of the WEM, or those whose production is for the public service.

b) **Fiscal stability** for a period of fifteen years which implies, during this period, a stable fiscal burden to the interested party. The interested party must nevertheless have previously filed a formal request at the Secretary of Energy following certain requisites.

c) **Invitation extended to all provinces to adopt similar tax exemptions** in their respective legislations.

### B. Purchase Guarantees

As of December 31, 2012, the following PPAs were entered under the GENREN, Biogas and Biomass bidding rounds called by the national state-owned energy company ENERGÍA ARGENTINA S.A. – ENARSA:

<table>
<thead>
<tr>
<th>#</th>
<th>Source</th>
<th>Project</th>
<th>MW</th>
<th>Price -US$ MW/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wind Power</td>
<td>Mala Spina I</td>
<td>50</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mala Spina II</td>
<td>30</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puerto Madryn Oeste</td>
<td>20</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puerto Madryn I</td>
<td>50</td>
<td>129.22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puerto Madryn II</td>
<td>50</td>
<td>122.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puerto Madryn Sur</td>
<td>50</td>
<td>121.96</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puerto Madryn Norte</td>
<td>50</td>
<td>123.97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rawson I*</td>
<td>50</td>
<td>128.70</td>
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<tr>
<td></td>
<td></td>
<td>Rawson II*</td>
<td>30</td>
<td>124.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KoluelKayke I</td>
<td>50</td>
<td>133.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KoluelKayke II</td>
<td>30</td>
<td>133.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loma Blanca I</td>
<td>50</td>
<td>127</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>#</th>
<th>Source</th>
<th>Project</th>
<th>MW</th>
<th>Price -US$ MW/h</th>
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<tr>
<td></td>
<td>**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Loma Blanca II</td>
<td>50</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Loma Blanca III</td>
<td>50</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Loma Blanca IV</td>
<td>50</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Tres Picos I</td>
<td>50</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Tres Picos II</td>
<td>50</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td>760</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Thermal with Biofuels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bella Vista</td>
<td>8</td>
<td>190,91</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>San Lorenzo</td>
<td>34</td>
<td>207,83</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bragado</td>
<td>34</td>
<td>210,13</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Paraná</td>
<td>34</td>
<td>207,22</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>Subtotal</strong></td>
<td></td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Small Hydro</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>La Rápida</td>
<td>4</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>La Juanita</td>
<td>2</td>
<td>163,21</td>
<td></td>
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<td>3</td>
<td>Luján de Cuyo</td>
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<td>174</td>
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<tr>
<td>3</td>
<td>Los Algarrobo</td>
<td>2</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Las Pirquito</td>
<td>1</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Subtotal</strong></td>
<td></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Solar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Chimberá I</td>
<td>2</td>
<td>597,84</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Chimberá II</td>
<td>3</td>
<td>570,36</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Chimberá III</td>
<td>5</td>
<td>546,67</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cañada Honda I*</td>
<td>2</td>
<td>579,15</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cañada Honda II*</td>
<td>3</td>
<td>579,15</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cañada Honda III</td>
<td>5</td>
<td>588,49</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><strong>Subtotal</strong></td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Biogas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>San Martín Norte IIIA*</td>
<td>5,1</td>
<td>123,87</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>San Miguel Norte IIIIC*</td>
<td>11,5</td>
<td>123,97</td>
<td></td>
</tr>
</tbody>
</table>
It is noteworthy that out of the PPAs for a total of 906MW, a mere 101,5MW were installed and are in operation. Despite the power purchase agreements signed and the attractive energy prices offered when compared to energy prices paid to thermal power generators, financing these projects has proven more difficult than expected given the success of the bidding rounds.

C. Minimum Price Guarantees

Under the GENREN, Biogas and Biomass bidding rounds called by ENARSA, developers had the ability to bid the price at which they sought their power to be remunerated. The prices bid by each successful bidder are indicated above.

Under Resolution 108/2011 of the Secretary of Energy, unsolicited PPA proposals can be made by renewable energy generators to enter into PPAs with CAMMESA on a cost plus basis.

D. Other Incentives

The following subsidies are further paid to renewable energy generators by the Argentine national state for a term of fifteen years:\(^\text{34}\):

<table>
<thead>
<tr>
<th>Source</th>
<th>Subsidy paid in Argentine Pesos per Kw/h generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>0,015</td>
</tr>
<tr>
<td>Solar</td>
<td>0,9</td>
</tr>
<tr>
<td>Small Hydro (under 30MW)</td>
<td>0,015</td>
</tr>
<tr>
<td>Other Sources</td>
<td>0,015</td>
</tr>
</tbody>
</table>

VI.

Finally, wind power generators are dispatched with priority by CAMMESA, on conditions similar to those applicable hydro power generators.\(^\text{35}\)

\(^{34}\) Law 26190, supra note 7, Section 14.

\(^{35}\)
There are no restrictions on foreign investment in renewable energy nor any advantages granted to foreign investors in the field.

VII. Financing Issues

Argentina lacks sufficient internal financial resources to fund the needed energy and infrastructure expansions to keep pace with its economic growth. Local private and state owned banks have provided limited financing to energy projects.

After the 2002 devaluation, the World Bank and regional multilaterals, such as the Andean Development Corporation and the Inter-American Development Bank reduced their exposure in Argentina. Instead, project investment from China has increased.\(^36\)

The large majority of the successful GENREN bidders have failed to secure financing for their projects. This suggests that the investment community perceives the risks of doing business in Argentina to be high. Investments required to deploy all of the awarded projects are estimated to be over USD 2 billion. The foreign exchange restrictions increased recently by the Argentine government have only worsened this perception and discouraged foreign lenders.

Subject to the above caveats, both on and off balance sheet financing structures are used locally.

The GENREN PPAs have the additional advantage that CAMMESSA’s payment obligations to the generators are secured both by: (i) a Security Fund to be constituted by monthly contributions in an amount equal to five percent (5%) of the monthly payments under all GENREN PPAs up to an amount equal to 10% of all future obligations assumed by CAMMESA in all GENREN PPAs; and (ii) a National Treasury Guarantee for US$2 billion.\(^37\)

Thus, financial institutions lending to the GENREN projects require the developers to assign as security their rights to the said Security Fund and the National Treasury Guarantee. Additionally, financial institutions typically require sponsor guarantees, share pledges and collateral on equipment.

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\(^{35}\) Law 25019, *supra* note 26, Section 6, and its regulatory Decree 1597/99, *supra* note 27.

\(^{36}\) HydroChina agreed to supply and finance the Loma Blanca 80MW wind parks through the China Development Bank. The Beijing Construction and Engineering Group International (BCEGI) has agreed to supply and finance the Gastre wind parks (1350MW) at an estimated cost of USD 3500MM also through the China Development Bank.

\(^{37}\) GENREN Bidding Round Clarification Circular No. 18/09.
China

By Chen Bao, Fangda Partners, Beijing, China

VIII. General Public Policy Environment

A. Is the public policy environment in your jurisdiction generally supportive of the development of renewable energy?

Yes.

1. If so, which issues are the primary drivers of that support: (a, b, c, d)
   a. the need to expand the energy supply to satisfy future demand;
   b. concerns about the cost and availability of fossil fuels;
   c. environmental concerns;
   d. the need to meet a Renewable Energy Portfolio Standard (RPS) (or other similar standard); or
   e. other policy issues

B. Renewable Energy Definition

1. How is “renewable energy” defined in your jurisdiction?

   The PRC Renewable Energy Law (effective in 2006 and amended in 2009) defines renewable energy as non-fossil energy, including wind power, solar power, hydropower, biomass energy, geothermal energy, and ocean energy.

2. Which technologies qualify for the designation?

   See response to 1 above.

3. Is nuclear power included?

   No. Nuclear power is not defined as renewable energy under the PRC Renewable Energy Law, and thus the preferential treatment for renewable energy provided under the PRC Renewable Energy Law is not applicable for nuclear power.

IX. Laws and Regulations

A. Legal and Regulatory Overview
1. Please provide a brief overview of the legal and regulatory schemes in your jurisdiction as they relate to renewable energy.

a. What are the principal government agencies that license and monitor renewable energy projects?

The principal government agencies that license and monitor renewable energy projects in China include:

- The Development and Reform Commission ("NDRC"), which is China’s top economic planning agency and is responsible for development and policy planning with respect to sustainable economy, infrastructure investment, pricing, and other related areas;
- The National Energy Administration ("NEA") situated within NDRC, which was formed in March 2008 to replace the previous NDRC Energy Bureau, and is responsible for specific policy planning with respect to energy;
- The State Electricity Regulatory Commission ("SERC"), which was formed in 2003 and is responsible for regulating China’s power and electricity industry; and
- Other governmental agencies.

b. Does your regulatory system allow for power generation capacity payments? Unclear as to what “power generation capacity payments” is referring to.

2. Are there limitations on foreign investment in renewable energy projects?

According to the Catalogue of Industries for the Guidance of Foreign Investment of the People’s Republic of China (2011 Revision), the construction and operation of renewable power projects (including solar power, wind power, geothermal energy, tidal energy, wave energy and biomass energy) is categorized as an encouraged category for foreign investment in China and thus could enjoy certain preferential treatments. Foreign investors are also allowed to 100% own and control a renewable energy project.

B. RPS and RPS Penalties

1. Does your jurisdiction have an RPS or other standard?

(1) NDRC adopted a Medium and Long-Term Development Plan for Renewable Energy in 2007 to the following targets:

- Increase the portion of renewable energy in the energy consumption mix, targeting to reach 15% by 2020; and
• Increase the installed renewable energy capacity, including hydropower capacity to 300 GW, biomass power capacity to 30 GW, wind power to 30 GW, and solar power to 1.8 GW by 2020.

(2) The State Council promulgated a Renewable Energy Plan for the 12th Five-Year Period (2010-2015) to the following targets:

• Increase in the portion of renewable energy in the energy consumption mix by 2015, targeting to reach 11.4% by 2015;
• Increase in the installed renewable energy capacity, including wind power capacity to 100 GW, solar power capacity to 21 GW, and biomass power capacity to 13 GW (including 3 GW of city garbage power) by 2015; and
• Significant replacement of fossil energy for heating and conventional fuels by renewable energy by 2015.

2. If your jurisdiction has an RPS or other standard, are there penalties for failing to meet the standard?

No specific penalty is provided in the current plans in case of a failure to meet the above targets.

C. Litigation

1. Is there any significant litigation pending or settled that either impedes or enhances the development of particular renewable energy projects?

We are not aware of any significant litigation pending or settled that either impedes or enhances the development of particular renewable energy projects.

X. Permits

A. What are some of the typical permits necessary for renewable energy projects in your jurisdiction?

Generally speaking, the approvals and permits necessary for developing renewable energy projects in China are divided into several stages, i.e., preliminary stage, project approval stage, construction stage, completion stage and operation stage. Various approvals, consents and permits are required for each such stage, as set forth below.

(1) Preliminary stage

Before a developer can proceed to apply for the Project Approval (as defined below) for a renewable energy project, the developer must first obtain a series of pre-requisite approvals, consents or permits from various governmental authorities, including:

• In-Principle Agreement from the local government for the development of a renewable energy project;
ABA Section of International Law
Spring Meeting 2013

- Consent to Conducting Preliminary Work by NEA;
- Environmental Impact Assessment Approval from the relevant Environmental Protection Authority;
- Grid Connection Commitment Letter or Opinion by the grid company or a Coordination Opinion regarding grid connection issued by Provincial NEA; and
- To the extent required by the PRC laws for different renewable energy projects, other preliminary approval from various governmental authorities, including the Land Resource Authority, the Urban-Rural Planning Authority, the Water Resources Authority, the Safety Authority, etc.

(2) Project Approval Stage

After a developer completes the procedures and obtains the approvals for the preliminary stage, it may apply for the project approval from NDRC or its local counterparts for the renewable energy project (the “Project Approval”). Project Approval is a milestone in the government approval process and is a prerequisite approval to obtain all the approvals in the following stages.

(3) Construction Stage

Before commencement of construction of the renewable energy projects, the following approvals are required:
- Land Use Rights Certificate issued by the Land Resource Authority;
- Construction Land Planning Permit issued by the Construction Authority;
- Construction Project Planning Permit issued by the Planning Authority;
- Construction Commencement Permit by the Construction Authority; and
- To the extent required by the PRC laws for different renewable energy projects, other required approvals.

(4) Completion Stage

After the construction is completed and before the operation starts, the developer must apply for final completion acceptance to various authorities, including the Environmental Protection Authority, the Safety Authority, and the Construction Authority, etc.

(5) Operation Stage
Before the commercial operation of the renewable energy project, a developer must apply for the following permits for the operation of the project and the sale of electricity:

- Electricity Business Permit issued by SERC;
- Power purchase agreement with the relevant grid company;
- Grid connection and dispatch agreement with the relevant grid company; and
- To the extent required by the PRC laws for different renewable energy projects, other required approvals (e.g. the Certificate for Urban Domestic Garbage Treatment Service for a waste incineration project).

B. How does the permit process generally work in your jurisdiction?

1. What is the timeline for issuing permits?

As a general rule, a governmental authority shall decide on whether or not to issue an approval or permit within a maximum period of twenty days upon receipt of the complete set of application documents. For certain approvals, a developer needs to engage qualified professional firms to conduct evaluation and/or prepare relevant reports, which may take months. The authority may also require the applicant to provide supplemental documents upon its initial review, and the time for the initial review and for the provision of supplemental documents is not included in the foregoing twenty-day review period.

2. Do all timelines match those of leases, PPAs and loan documents? No.

3. Are public hearings required?

Normally, no public hearing is required for the issuance of such approvals, permits or licenses in the absence of special circumstances.

4. Are hearings necessary to gain public support?

Normally, it is not necessary in China.

XI. Incentives

A. Tax

1. Are tax advantages available for renewable energy projects and if so, does their availability depend upon the type of technology (for example, solar and wind, but not geothermal)?
The tax advantages under PRC law for renewable energy projects mainly include preferential treatment in corporate income tax and value added tax:

1. **Corporate Income Tax ("CIT") preferential treatment:**
   - Three years of CIT exemption followed by another three years of 50% reduction of the CIT rate for income derived from qualified environmental protection, energy or water conservation projects, or utility infrastructure projects.
   - Qualified high and new technology enterprises ("HNTE") are entitled to a reduced CIT rate of 15%. Fields eligible for certification as HNTEs include solar, wind, biomass and geothermal energy.

2. **Value-added Tax ("VAT") exemptions/reductions:**
   - 50% VAT refund on the sale of wind power;
   - 100% VAT refund on the sale of power generated from waste incineration power projects; and
   - Other products or services making a "comprehensive utilization of resources" through utilization of wastes under the relevant PRC laws.

**B. Purchase Guarantees**

1. **Does the legal or regulatory scheme provide a purchase guarantee for electricity generated by renewable energy projects and if so, is it limited to particular technologies?**

   The **PRC Renewable Energy Law** and other related regulations impose obligations on grid companies to purchase all the electricity generated from duly approved renewable energy projects (including wind power, solar power, hydropower, biomass energy, geothermal energy and ocean energy) that are within the coverage of their grids, and to provide grid connection services and install grid connection facilities. The following mechanisms are set forth in relevant laws and regulations to ensure mandatory connection and full off-take:
   - Establishing a “priority dispatch” system, in which renewable generators are given priority in the electricity dispatching sequence to guarantee the requirements of the mandatory connection and purchase policy;
   - Allowing the dispatcher to manage the renewable power generator (e.g., curtail transmission from a generator) in cases where grid stability is threatened, with prompt notification indicating an estimation of the non-purchased volume; and
• Imposing penalties for grid companies’ non-compliance with the mandatory connection and purchase policy.

For biomass energy, the purchase guarantee described above only applies to certain specific technologies - only electricity generated by the following biomass power technologies could enjoy such purchase guarantee: direct combustion power generation with agricultural and forestry waste, agricultural and forestry waste gasification power generation, waste incineration, landfill gas and biogas power generation.

C. Minimum Price Guarantees

1. Does the legal or regulatory scheme provide a minimum price guarantee for electricity generated by renewable energy projects and if so, is it limited to particular technologies?

Yes. Pursuant to the PRC Renewable Energy Law, the pricing authority under the NDRC is directed to set feed-in tariffs for different types of renewable energy. The feed-in tariff guarantees a rate higher than conventional fossil sourced energy.

Currently, only wind and biomass projects have nationwide feed-in tariffs which are described as follows:

• **Wind:** Prior to August 1, 2009, the feed-in tariff for wind power was set by governmental authorities through a competitive bidding process for each project; and after August 1, 2009, a nationwide feed-in tariff system was promulgated. The feed-in tariff is divided into four tiers ranging between 0.51 to 0.61 RMB/kWh. Areas with the least abundant wind resources receive the highest tariff and areas with the most abundant resources receive the lowest tariff.

• **Biomass:** The national feed-in tariff is the sum of 0.25 RMB/kWh and the 2005 benchmark desulfurized coal price.

D. Other Incentives

1. Are there other incentives for renewable energy projects?

In China, in addition to the tax incentives as described above, a renewable energy development special fund has also been established through a central government budget allocation for renewable energy projects. Such fund should be used to support the following activities:

• Research in the science and technologies associated with developing and deploying renewable energy, setting standards and demonstration projects;
• Renewable energy program for basic rural energy needs;
• Establishing stand-alone electricity projects in remote areas and islands;
• Exploration of renewable energy resources, evaluation, and relevant information system; and
• Encouraging the localization of production for equipment used in the deployment of renewable energy.

Projects seeking funding for research and development are required to apply through the national “863” and “973” High-Technology Development Research Programs under the Ministry of Science and Technology. All other activities seeking funding are required to submit applications to the local government, but final decisions are made by the Ministry of Finance at the central level.

E. Foreign Investors

1. Are the incentives available to foreign investors? Yes.

F. Foreign Investors Favored

1. Are there incentives for foreign investors that are not available to domestic investors? No.

XII. Financing Issues

A. Are there preferred financing structures for various renewable energy projects in your jurisdiction?

Given NDRC in its Project Approval will prescribe a debt/equity ratio at the project company level, typically, an investor, with an aim to increase the overall effective leverage ratio of the project, will try to structure some debt at the shareholder entity level.

B. Do tax advantages (if any) form a part of the project financing structure? Yes.

C. How is market risk managed?

D. What are the typical project documents that are included in the security package?

• Shareholders’ guarantee;

• Pledge agreement to create a pledge over (i) equity interests of the project company; (ii) account receivables (especially the receivables under the PPA); and (iii) fixed assets of the project company; and
• Mortgage agreement to create a mortgage over (i) real estate or (ii) other assets of the project company.

VI. Other Project Documents

A. What are some of the other key project documents in your jurisdiction?

• Concession agreement with the local government on the right of the project company to construct and operate the renewable energy project, usually in the form of BOT, TOT or BOO;

• EPC agreements with the relevant construction entities in respect of the engineering, procurement, and construction of the renewable energy project;

• Power purchase agreement with the relevant grid company; and

• Grid connection and power dispatch agreement with the relevant grid company.
Renewable Energy Project Checklist

I. Power Purchase Agreement (PPA)
   A. Most frequently used to support some form of project financing
   B. PPA must be financeable
   C. Critical that PPA (and revenues) remain in place for contemplated term of financing

II. Key Issues for PPAs
   A. Credit of offtaker
   B. Scale of project
   C. Utility offtaker
   D. Commercial offtaker
   E. Residential offtaker
   F. Ownership/sales structure
      1) Seller – Project Company
      2) Third Party
      3) Joint Ownership – Tenancy in Common
   G. Nature of Seller’s obligations
      1) obligation to sell delivered energy
      2) capacity/availability – applicable only in limited circumstances
      3) guaranteed energy quantities over a rolling period
      4) qualification for and transfer of RECs
         (a) Nature of buyer’s obligation – must take and pay for energy delivered
   H. Other Key Renewable PPA Issues
      1) pricing methodology
      2) term/renewals/extensions
      3) completion schedule and consequences for failure to meet schedule or milestones
      4) credit protection (downgrade, adequate assurances)
5) termination payments  
6) fuel risk  
7) maintenance requirements  
8) environmental credits (ownership and allocation)  
9) buyer option(s) to buy facility/decommissioning  
10) regulation and “reg out” provisions  
11) change of law  
12) grid access and interconnection  
13) transmission risk  
14) defaults  
15) security  
16) consent to assignment of PPA and facility  
17) step-in rights  
18) force majeure

I. Resource Specific Considerations  
1) biomass – capacity payment  
2) wind – stepped down commercial operation /milestones for wind farms  
3) solar – risk on site owner  
4) geothermal – asset/capacity degradation over time

III. Key Characteristics of Renewable Technologies  

A. WIND PPAS  
1) Intermittent resource  
   (a) “As-delivered energy” (timing/amount of delivery not guaranteed; no capacity/reliability value)  
   (b) Payments for energy only  
   (c) time-of-day/seasonal pricing  
   (d) Curtailment/transmission constraint issues  
   (e) allocation of risk  
   (f) Transmission instability/upgrade costs  
2) Availability/output guarantees  
   (a) ramp-up, rolling average, annual caps  
   (b) wind-adjusted
(c) COD issues
(d) no performance testing pre-COD
(e) Post-COD warranties are key

3) Incremental project size
(a) What is project size?
(b) project phasing for large projects
(c) shared facilities
(d) When is COD?

4) RECs, PTCs and ITCs available for financing
(a) RECs: need to define ownership and examine ability to separate them from delivered electricity – state law issue
(b) PTCs
   (i) tax structuring (see Rev Proc. 2007-65)
   (ii) limitation on buy-outs
   (iii) sales to unrelated third party
   (iv) no guaranteed returns
(c) ITCs
   (i) change in control/early buy-out issues
   (ii) assignment issues
   (a) Tax Credit Sunset
   (iii) Currently January 1, 2013 for wind (1.1.2017 for “small wind”)
   (iv) Affects credits as well as completion date for 1603 Cash Grants

5) PPA Damages should include tax and other non-cash losses

6) No fuel supply contracts
(a) No fuel pass-throughs
(b) Force majeure issues

B. SOLAR PPAS
1) Intermittent resource
   (a) Same issues as wind PPAs
2) Incremental project size
(a) Same issues as wind PPAs

3) RECs, PTCs, ITCs and Cash Grants available for financing
   (a) Generally same issues as wind PPAs
   (b) Tax Credit Sunset January 1, 2017
   (c) State credits/incentives typically important
   (d) Section 1603 Cash Grants have expired but may be available in future

4) No fuel supply contracts
   (a) Same issues as wind PPAs

5) Current paradigms: customer (retail) PPAs and utility PPAs
   (a) Customer PPAs: rooftops and parking lots

6) leaves ownership, operation issues to seller

7) end of term/transfer of underlying real estate issues
   (a) Utility PPAs

8) mimics traditional wind PPA structures

C. GEOTHERMAL PPAS

1) Non-intermittent resource
   (a) Receive both capacity payments and energy payments
   (b) Must demonstrate capacity and other performance measures at COD and during contract (usually annually)
      (i) Non-intermittent resource

2) Resource degradation
   (a) Must be incorporated into capacity/output guarantees
   (b) Force majeure for unexpected depletion of resource

3) Station service requirements
   (a) Can be significant in order to use geothermal resource, need to ensure associated RECs run to project

4) RECs, PTCs, ITCs and Cash Grants available for financing
   (a) Generally same issues as wind PPAs
   (b) Tax Credit Sunset January 1, 2017
   (c) Section 1603 Cash Grants have expired but may be available in future

D. BIOMASS PPAS

1) Non-intermittent resource
   (a) Same issues as geothermal PPAs
2) Fuel storage and supply
   (a) Supply logistics extremely complex
   (b) Shortage requirements can be burdensome
   (c) Ability to claim force majeure for third party supplier acts/omissions critical

3) ECs, PTCs, ITCs and Cash Grants available for financing
   (a) Generally same issues as wind PPAs
   (b) Open loop biomass attracts 50% of the PTC credit
   (c) Tax Credit Sunset January 1, 2014 for all biomass (closed and open loop)
   (d) Section 1603 Cash Grants have expired but may be available in future

IV. Project Documents

A. Good Standing Certificate
B. UCC Searches
C. Certified Copies of Insurance Policies
D. Balance Sheet and Financial Statements
E. Project Budget
F. Project Schedule
G. Notice of Establishment of Accounts and Account Numbers from Depository
H. Notice to Proceed
I. USDA Loan Guarantee Materials
J. USDA Grant Material
K. Warranty, Maintenance and Service Agreement
L. Renewable Energy Credit Purchase and Sale Agreement (may be integrated with Power Purchase Agreement)
M. Project Interconnection Agreement
N. Transmission and Operating Agreement
O. Agency Agreements
P. Engineering, Procurement and Construction (EPC) Agreement
Q. Agreement Performance Guaranty Agreement (in favor of power purchaser)
R. Land Contracts
   1) Purchase & Sale Agreement
   2) Site Lease
      (a) Lease is real property interest
(b) Can be secured by a leasehold mortgage
(c) Eligible for leasehold title insurance
(d) Notice of lease can be recorded

3) License
   (a) License is personal property interest
   (b) Contractual right only
   (c) Can be secured by UCC lien

4) Sublease or sublicense
   (a) Often used for tax purposes

5) Access, ROW and Easement Agreements
   (a) Typically non-exclusive
   (b) Supply
   (c) Operational

6) Mortgages can be granted on any real property interest
   (a) Fee ownership
   (b) Leasehold interest
   (c) Underlying interest must be recorded in official records in order to encumber

S. Supply Agreements
1) Solar & Wind are Free
2) Easement to ensure non-interruption
3) Lease or License
   (a) E.g. landfill gas, geothermal
4) Purchase Agreement
   (a) E.g. biomass, digester gas

T. Operations
1) Engineering, Procurement & Construction Agreement
   (a) Turn-key facility vs component construction
   (b) Scope of Work/Project Schedule
   (c) Compensation
   (d) Terms of Payment
   (e) Warranties
   (f) Indemnification
(g) Insurance
(h) Termination and Cancellation
(i) Completion and Transfer
(j) Guarantees
(k) Dispute Resolution

2) Operation and Maintenance Agreements
   (a) Well field O&M
   (b) Pipeline O&M
   (c) Turbine O&M
   (d) PV O&M

3) Interconnection Agreements
   (a) http://www.ferc.gov/industries/electric/indus-act/gi/small-gen/agreement.doc
   (b) Construction
   (c) Distribution
   (d) sending energy directly to utility
   (e) sending energy via utility’s system to 3P off taker
   (f) Term & Renewals
   (g) Point of Interconnection/Access
   (h) Allocation of Responsibility
   (i) PUC guidelines/tariff
   (j) Disconnection of Unit
   (k) Invoicing & Payment
   (l) Security
   (m) Governing Law

4) Transmission/Distribution Agreements

U. Permits
   1) Typical Permits Necessary
      (a) Building Permits
      (b) CUPs/LUPs
      (c) Environmental
      (d) Special Disposal Requirements
      (e) Emissions
(f) Generator/USTS

2) Permit Process
   (a) What is the timeline for issuing permits?
   (b) Do all timelines match those of leases, PPAs and loan documents?
   (c) Are public hearings required?
   (d) Are hearings necessary to gain public support?

V. Financing and Security
   1) Financing Agreement
   2) Promissory Note
   3) Depository Agreement
   4) Security Agreement
   5) Membership Interest Pledge Agreement
   6) Real Property Security Documents
   7) Inter-creditor Agreement
   8) Consents
   9) UCC-1 Financing Statement
   10) Guaranty Agreement (in favor of Lender)
   11) Forbearance and Non-disturbance (SND) agreements

V. Strategies For Negotiation
   A. What is the market for Renewable Energy?
      1) RPS and other required Standards
      2) Green Building/LEED Certification
      3) Voluntarily Green
   B. Why does the lessor/seller/grantor want to contract with you?
      1) Royalty
      2) Recipient of clean energy
   C. Initial Stage of Development vs. Established Facility
   D. Who is the Off taker? And will the Off taker help you?
      1) IOU
      2) Local power company
      3) Private User
E. Long Term v. Short Term - Guessing Future Markets

1) REC prices
2) Energy Prices
I. General Public Policy Environment

A. Is the public policy environment in your jurisdiction generally supportive of the development of renewable energy?

Historically, yes - the Australian Government has developed a comprehensive plan to move to a clean energy future, with renewables playing a prominent role in the energy mix. The key driver of investment is the renewable energy targets, and the subsidiary drivers are the renewable funding programs and the introduction of a carbon price. These are set out in some detail below.

The public policy environment in Australia is, however, becoming increasingly uncertain in respect of the energy sector generally in the lead up to the Federal election, which will take place on 14 September of this year. This is particularly the case in respect of wind turbine power generation, where the divisions of public opinion and policy positions are receiving extensive coverage.

Renewable Energy Targets

The current policy targets are for large scale generators to supply 41,000 gigawatts of renewable energy annually by 2020 and for 20 per cent of Australia’s electricity to come from renewable sources by 2020.

The Government’s long-term target for carbon pollution reduction has been raised from 60 percent to 80 percent below 2000 levels by 2050.

Funding

On 10 July 2011, the Australian Government announced the establishment of the $3.2 billion Australian Renewable Energy Agency (ARENA) to fund research, development and commercialisation of renewable energy at an early stage, as a part of its “Clean Energy Future” package.

More recently, the Government has allocated $10 billion over a 5 year period towards the commercialisation and deployment of clean technologies through the commercially oriented ‘Clean Energy Finance Corporation’, with the intention of unlocking significant new private investment into clean energy projects. The Carbon Price, set out in further detail below, is a further policy tool by which the Government is attempting to channel investment towards the renewables sector. It is important to note this package is not solely allocated towards
renewable technologies. Funding is split with $5 billion being allocated towards renewable energy and technology (including geothermal, wave energy and large scale solar power generation) and $5 billion being allocated to the general clean energy stream, which may also include renewable energy. It is interesting to note that carbon capture and storage technologies have been specifically excluded from this package due to their perceived alignment with the coal industry.

**Carbon Price**

An important part of Australia’s clean and renewable energy roadmap has been the introduction of a carbon price. This had been a sensitive and turbulent political issue for much of the past decade. When the Greens assumed the balance of power in the Senate following the 2010 election it became inevitable that a carbon price of some kind would soon be introduced.

On the 1st of July 2012 the Australian Federal government introduced the carbon price, a price of $23AUD per tonne of emitted CO2-e on selected fossil fuels consumed by major industrial emitters only.

The Australian carbon price is technically an emissions trading scheme (ETS), as it operates on the basis of permits that can be traded, but initially the price of permits is fixed and the quantity unlimited. The fixed price of $23AUD in the initial financial year of 2012–2013 is scheduled to rise by 5% (nominal) per year, until transitioning to a flexible-price ETS in 2015–16 when the available permits will be limited in line with a pollution cap.

**The “Buyer’s Strike”**

Very recently, and despite recent reaffirmation of the government’s support for the renewable sector, two of Australia’s largest electricity retailers (Energy Australia and Origin Energy) have evinced a reluctance to sign long term power purchase agreements with wind and other renewable energy suppliers. Given the extent of their respective market share, this has the potential to stall growth in the sector.

3. If so, which issues are the primary drivers of that support:

(a) the need to expand the energy supply to satisfy future demand;

(b) concerns about the cost and availability of fossil fuels;

(c) environmental concerns;

(d) the need to meet a Renewable Energy Portfolio Standard (RPS) (or other similar standard); or

(e) other policy issues
B. Renewable Energy Definition

1. How is "renewable energy" defined in your jurisdiction?

   “Renewable energy technologies” is defined in the Australian Renewable Energy Agency (ARENA) Act 2011 to include:
   - hybrid technologies; and
   - technologies (including enabling technologies) that are related to renewable energy technologies.

2. Which technologies qualify for the designation?

   This definition is obviously not prescriptive and simply takes the ordinary meaning of renewable energy. It includes the application of sources of renewable energy such as solar, wind, hydro, wave, geothermal, biomass and biofuels to qualify for the designation, and at the same time allows the legislation to remain current by recognising that the ordinary meaning can change over time as technologies evolve.

3. Is nuclear power included?

   No. It should be mentioned that nuclear power generation in Australia is a heavily debated concept.

   Australia has no nuclear facilities generating electricity. Australia does, however, hold approximately 31% of the world’s uranium deposits and is the world’s third largest producer of uranium after Kazakhstan and Canada.

   The incumbent Labor Party firmly opposes nuclear power in Australia. The Coalition, when last in power under John Howard, was sympathetic to a nuclear led power platform.

II. Laws and Regulations

A. Legal and Regulatory Overview

1. Please provide a brief overview of the legal and regulatory schemes in your jurisdiction as they relate to renewable energy.

   (a) What are the principal government agencies that license and monitor renewable energy projects?

   **Federal Framework**

   In Australia at a federal and very broad level, the ‘Clean Energy Regulator’ oversees the implementation of:
• the **Large-scale Renewable Energy Target**, which sets out renewable energy targets which must be achieved over the period 2001 to 2030, liability requirements and eligibility requirements for renewable energy sources and power stations; and

• the **Small-scale Renewable Energy Scheme**, which sets out liability requirements, like the quarterly surrender of Small-scale Technology Certificates (STCs) and outlines eligibility requirements for solar water heaters, heat pump water heaters and small generation units (small-scale solar – photovoltaic, wind and hydro electricity systems).

These are implemented through the following legislation and regulations:

- *Renewable Energy (Electricity) Act 2000*
- *Renewable Energy (Electricity) (Large-scale Generation Shortfall Charge) Act 2000*
- *Renewable Energy (Electricity) (Small-scale Technology Shortfall Charge) Act 2010*
- *Renewable Energy (Electricity) Regulations 2001*
- *Renewable Energy (Electricity) Amendment (Transitional Provision) Regulations 2010*

Eligible renewable energy sources are entitled to create certificates based on the amount of electricity they produce or displace. These certificates can be created in the REC Registry and sold to buyers. This process creates an incentive for the growth in large-scale and small-scale renewable energy systems. From 1 January 2011 Renewable Energy Certificates (RECs) were reclassified as large-scale generation certificates (LGCs) and small-scale technology certificates (STCs).

**State and Local Council Regulations**

The regulation of particular projects is done at both the State and local council level. Whilst the approach varies from state to state, it generally includes planning approvals and environmental licensing regulations.
(b) Are there limitations on foreign investment in renewable energy projects?

Aside from the standard Foreign Investment Review Board limitations that apply to foreign investment in Australia generally, there are no specific limitations that apply to renewable energy projects.

B. RPS Penalties

1. If your jurisdiction has an RPS or other standard, are there penalties for failing to meet the standard?

The Renewable Energy (Electricity) Act 2000 contains a number of civil penalty provisions. These provisions apply in respect of contraventions of the Act by individuals, companies, executive officers of companies and other persons involved in contraventions of the Act.

Specific provisions relate to the improper creation of large-scale generation certificates (LGCs) and small-scale technology certificates (STCs) as follows:

- Under subsection 24A(1), a person must not create a certificate if the person is not entitled to create the certificate. A "person" includes an individual and a body corporate.

  - Under subsection 24A(2), it is also unlawful for a person to:
    - aid, abet, counsel or procure a contravention of subsection 24A(1);
    - induce, whether by threats or promises or otherwise, a contravention of subsection 24A(1);
    - be in any way, directly or indirectly, knowingly concerned in, or party to, a contravention of subsection 24A(1); or
    - conspire with others to effect a contravention of subsection 24A(1).

A person who is involved in a contravention of subsection 24A(1) in any of the ways described above commits what is called an 'ancillary contravention'.

A person who contravenes subsection 24A(1) or 24A(2) may be taken to court and ordered to pay a civil penalty. Enforceable undertakings and injunctions can also apply in respect of these contraventions.

Examples:

An accredited power station which creates LGCs in respect of energy generated from sources other than 'eligible energy sources' contravenes subsection 24A(1).
A person who creates STCs in respect of a solar water heater, which is not capable of heating water from the sun or is not an approved model on the Register of Solar Water Heaters contravenes s24A(1).

There are further provisions in respect of:

- the improper creation of STCs for solar water heaters and small-scale solar panel, wind or hydro systems; and
- executive officers of bodies corporate involved in such conduct.

C. Litigation

1. Is there any significant litigation pending or settled that either impedes or enhances the development of particular renewable energy projects?

Wind Power Litigation

Objections to wind farm approvals on the basis of noise issues has been a recurring theme in Australia and has impacted upon many proposed projects, particularly those close to residential areas.

Example: In 2012, energy retailer AGL ended more than three years of community-led litigation over the proposed development of its $180 million Hallett 3 (Mt Bryan) wind farm by abandoning its approved plans for the site. Residents had been opposing the 33 turbine Project on the basis of noise issues in the Environment, Resources and Development (ERD) Court in South Australia.

New South Wales Coal Seam Gas

As a consequence of extensive activism and litigation by certain environmental groups in New South Wales, the future of exploration and production of coal seam gas in New South Wales is becoming increasingly precarious. This will potentially (though not necessarily) cause greater emphasis to be placed on renewable energy projects in New South Wales in the future.

III. Permits

A. What are some of the typical permits necessary for renewable energy projects in your jurisdiction?

Again this varies from state to state, and broadly speaking the permits necessary for renewable energy projects are the same as for other projects, requiring development consent (or equivalent planning approval), and in some cases an environmental protection licence.
B. How does the permit process generally work in your jurisdiction?

1. What is the timeline for issuing permits? 6 months to 2 years.

2. Do all the timelines match those of leases, PPAs and loan documents? No.

3. Are public hearings required?

   Not always, but there is a mechanism for public hearings to occur.

4. Are hearings necessary to gain public support?

   Not necessarily. Project operators generally engage in a robust community consultation regime.

IV. Incentives

A. Tax

1. Are tax advantages available for renewable energy projects and if so, does their availability depend upon the type of technology (for example, solar and wind, but not geothermal)?

   **Tax Incentives**

   The major mechanism and program for fostering innovation in the renewables sector in Australia is a Research & Development tax-based scheme. The scheme is a broad-based program that has recently changed from a tax concession to a tax incentive. In many instances, activities conducted as part of renewable energy development across all of the technology types may be eligible for the tax incentive. The program offers the following two incentives:

   - A 45% percent refundable tax offset (equivalent to a 150% deduction) for eligible entities with a turnover of less than $20 million per annum, provided they are not controlled by income tax exempt entities.

   - A non-refundable 40% tax offset (equivalent to 133% deduction) for all other eligible entities. Unused non-refundable offset amounts may be able to be carried forward to future income years.
Other

The geothermal industry in Australia enjoys tax deduction for exploration activities and receives the same income tax treatment as that which already applies to the exploration of traditional hydrocarbon energy sources.

B. Purchase Guarantees

1. Does the legal or regulatory scheme provide a purchase guarantee for electricity generated by renewable energy projects and if so, is it limited to particular technologies?

Renewable Energy Certificates provide an incentive for renewable generation projects. One REC is equivalent to one megawatt hour of electricity generation. A renewable energy certificate can then be traded for cash. The value of these certificates fluctuates according to market conditions.

There are also take or pay arrangements built in to various contractual agreements between private renewable energy generators and government or quasi government bodies.

C. Minimum Price Guarantees

1. Does the legal or regulatory scheme provide a minimum price guarantee for electricity generated by renewable energy projects and if so, is it limited to particular technologies?

Feed in Laws

Feed in laws are a mechanism designed to guarantee market access for renewable energy at a guaranteed price for a reasonable time.

Feed in tariffs in Australia are limited to electricity generated by solar photovoltaic (PV) systems and are all state based initiatives. There are solar power feed in tariffs in place in the states of Victoria, Queensland, New South Wales and Victoria (however many of these schemes are now closed to new projects).

In 2012 the Australian Capital Territory called for applications for submission to the Large Scale Feed in Tariff Scheme which provided the ACT government with the power to grant feed in tariff entitlements up to 210MW of generation capacity.

There are no national based feed-in tariffs, and a Bill for a national feed-in tariff did not progress after the Rudd government indicated it would not support such legislation.
D. Other Incentives

1. Are there other incentives for renewable energy projects?
   - Incentives for the commercialisation and deployment of clean technologies are provided through the commercially oriented $10 billion Clean Energy Finance Corporation.
   - Incentives for the research, development and commercialisation of renewable energy at an early stage are provided through the $3.2 billion Australian Renewable Energy Agency. Incentives for the research and development of clean technologies are also provided through the $200 million Clean Technology Innovation Program.
   - Incentives for the increased use of renewable energy are provided through the carbon price and the Renewable Energy Target.

E. Foreign Investors

1. Are the incentives available to foreign investors?
   No, there are no specific incentives for foreign investors.

F. Foreign Investors Favored

1. Are there incentives for foreign investors that are not available to domestic investors?
   No.

V. Financing Issues

A. Are there preferred financing structures for various renewable energy projects in your jurisdiction?
   Traditional project finance is still the preferred financing approach for renewable energy projects throughout Australia.

B. Do tax advantages (if any) form a part of the project financing structure?
   None particular to project finance.

C. Power Purchase Agreements (PPAs)

1. Are power purchase agreements (PPAs) a key element of the project financing structure?
   Traditionally PPAs have been a key element of the project financing structure. However, renewable project developers have had difficulty securing PPAs in Australia as a
consequence of the sharp fall in REC prices in 2010 due to State Government policies promoting household based solar installations. The fall in REC prices created uncertainty in the market and threatened to deter potential investment in large-scale renewable energy projects.

In response, the Government split the Renewable Energy Target scheme into two, the Large-scale Renewable Energy Target (LRET) for large-scale projects, such as wind farms, and the Small-scale Renewable Energy Scheme (SRES), for small-scale installations, such as rooftop solar.

Since that time REC prices have recovered, although there is still an overhang of certificates which is causing continued price uncertainty. This challenge has prompted the financing market to develop alternative approaches to funding renewable projects, such as bridging structures and financing structures dealing with projects with lower coverage from PPAs.

2. What are some of the key issues to be addressed in a PPA in your jurisdiction regardless of the project’s technology?

Operationally, there is nothing particularly unique to Australia. However, of course, Australian PPAs for generation sets dispatching to the National Grid need to be dovetailed to the regulatory environment in which they are operating.

3. What are some of the technology-specific considerations?

   **Wind Power**

   Noise considerations are particularly sensitive in Australia at the moment for wind power projects. Wind power projects need to comply to strict noise standards which vary from state to state.

   **Geothermal**

   Land access and environmental regulations concerning drilling programmes are a hot issue in Australia at the moment. Investors need to ensure they have a robust community and stakeholder liaison regime in place (including with respect to the rights of indigenous groups).

VI. **Other Project Documents**

4. Are there other typical project documents that are included in the security package?

   As a common law, developed country, Australian projects are structured along customary international project finance standards.
Europe

By Alex McLean, Head of Projects and Energy, Arthur Cox, Ireland

I. General Public Policy Environment

A. Is the public policy environment in your jurisdiction generally supportive of the development of renewable energy?

The public policy environment within the European Union ("EU") is extremely supportive of renewable energy with every EU member state having binding individual targets in relation to the gross final consumption of energy from renewable sources in that member state. In aggregate, these targets amount to a target of 20% of gross final consumption of energy in the EU to come from renewable sources by 2020.


The effect of this policy measure has been to substantially increase the development of renewable generation in Europe. Figure 1, below, shows that every year from 2000 to 2011, the volume of renewable capacity installed each year has increased.

Figure 1: New Installed EU Generation Capacity by Fuel Type

As further evidence of the success of this measure, in 2012, Figure 2, below, demonstrates that more solar and wind capacity was installed in the EU in 2012 than any other generation type, with gas being the only non-renewable generation type to see a net increase in installed capacity over the course of the year.

**Figure 2: EU Installed and Decommissioned Capacity 2012 (MW)**


There are multiple policy drivers for these imposed renewable targets, including energy security from diversity and use of indigenous resources, price stability by minimizing exposure to fossil fuel prices and decarbonizing electricity generation for environmental reasons.

In the latter case, the development of renewable generation in the EU is facilitated by a binding legal obligation to reduce carbon emissions by 20% over 1990 levels by 2020, implemented pursuant to Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community ("EU ETS Directive"). Figure 3, below, shows the progress to date towards achieving this target.
Figure 3: Progress towards 2020 Carbon Emission Reduction Targets


B. Renewable Energy Definition

1. How is “renewable energy” defined in your jurisdiction?

‘Energy from renewable sources’ is defined in Article 2(a) of the RED as energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

2. Which technologies qualify for the designation?

The technologies that qualify as ‘energy from renewable sources’ are set out in the definition, above, certain of which are further defined as follows:

‘aerothermal energy’ means energy stored in the form of heat in the ambient air.

‘geothermal energy’ means energy stored in the form of heat beneath the surface of solid earth.

‘hydrothermal energy’ means energy stored in the form of heat in surface water.
‘biomass’ means the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste.

3. **Is nuclear power included?**

Nuclear power is not classified as ‘energy from renewable sources’ within the definition of the RED.

### II. Laws and Regulations

#### A. Legal and Regulatory Overview

1. **Please provide a brief overview of the legal and regulatory schemes in your jurisdiction as they relate to renewable energy.**

   a. **What are the principal government agencies that license and monitor renewable energy projects?**

   See Appendix 1.

   b. **Does your regulatory system allow for power generation capacity payments?**

   Some jurisdictions provide for explicit capacity payments as part of their market design (e.g. Ireland). However, where jurisdictions have some form of feed in tariff or other fixed price out of market support regimes, renewable energy projects are unlikely to receive such payments.

2. **Are there limitations on foreign investment in renewable energy projects?**

   We are not aware of any limitations on foreign investment in renewable energy projects within the EU, save for general restrictions in relation to retain jurisdictions.

#### B. RPS and RPS Penalties

1. **Does your jurisdiction have an RPS or other standard?**

   Yes. As is noted above, the RED sets binding 2020 renewable energy targets for every member state in the EU. The 2020 targets for each jurisdiction (% of gross final consumption of electricity from renewable sources) and the progress towards meeting those targets is set out in Figure 4, below.

   The manner in which member states meet their individual targets is up to them, but the RED requires member states to report to the EU on their plans to meet their renewable energy targets, each such plan being called a Renewable Energy Action Plan (“NREAP”). The anticipated investment in renewable generation to
enable member states to meet their renewable energy targets, as reflected in their individual NREAPs is set out in Figure 5, below.

Figure 4: Progress towards legally binding Renewable Generation Targets

Figure 5: NREAP Projections of RES-E Capacity by technology type 2010 – 2020

(1) Legally binding targets for 2020.
Source: Eurostat (online data code: t2020_31)
2. If your jurisdiction has an RPS or other standard, are there penalties for failing to meet the standard?

The RED is silent as to the legal consequences for an EU member state which fails to meet its binding target for the production of renewable energy in 2020. However, under the EU Treaties, the European Commission (the “Commission”) could commence infringement proceedings against the member state in these circumstances for failing to comply with EU law. The member state would then have the opportunity to make submissions to the Commission, after which the Commission would issue a reasoned opinion on the matter. If the member state did not comply with the reasoned opinion within the timeframe set by the Commission, the matter would be referred to the European Court of Justice (the “ECJ”). At this point, the ECJ could declare that the member was in breach of EU law, and could ultimately impose financial penalties for failure to comply with the member state’s obligations under the RED.

C. Litigation

Is there any significant litigation pending or settled that either impedes or enhances the development of particular renewable energy projects?

A number of jurisdictions in the EU have suspended or withdrawn subsidies or grants available to renewable energy producers, which has led to pending litigation on this issue in member states. In Spain, the government suspended subsidies for all new power plants using renewable energy, and retrospectively cut subsidies for existing solar projects. Legal action is pending against the Spanish government on the grounds that the government’s actions violate renewable energy investors’ contracts and will eliminate the profits for renewable power sources.

Furthermore, there is threatened litigation in Bulgaria following grid access fees imposed on renewable energy producers by the Bulgarian energy regulator.

III. Permits

A. What are some of the typical permits necessary for renewable energy projects in your jurisdiction?

While the precise nature of the permits required differs from jurisdiction to jurisdiction in Europe, within the EU, Directive 2009/72/EC (the “Internal Market in Electricity Directive”) requires that member states implement an authorisation procedure for the development of new generating capacity, meaning that anyone can be permitted to develop a new generating station subject to satisfying transparent, non-discriminatory
criteria. The Internal Market in Electricity Directive outlines criteria by which the grant of an authorisation for the development of a generation capacity may be determined, including:

- the safety and security of the electricity system, installations and associated equipment;
- the protection of public health and safety;
- the protection of the environment;
- land use and siting;
- the use of public ground;
- energy efficiency;
- the nature of the primary sources;
- the characteristics particular to the applicant, such as technical, economic and financial capabilities;
- the contribution of the generating capacity to meeting the overall Community target of at least a 20% share of energy from renewable sources in the Community’s gross final consumption of energy in 2020 referred to in Article 3(1) of the RED on the promotion of the use of energy from renewable sources; and
- the contribution of generating capacity to reducing emissions.

The Internal Market Electricity Directive also requires that member states ensure the possibility of providing for new capacity or energy efficiency measures through a tendering procedure. This is to ensure security of supply across member states. Tendering procedures (or equivalent) may, however, be launched only where, on the basis of the authorisation procedure, the generating capacity to be built or the energy efficiency/demand-side management measures to be taken are insufficient to ensure security of supply.

B. **How does the permit process generally work in your jurisdiction?**

1. **What is the timeline for issuing permits?**

   This depends on the nature of the permit and the jurisdiction.

   Codified Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment ("EIA Directive") governs the law relating to environmental impact assessments ("EIAs") within the EU. Any public or private project likely to have significant effects on the environment by virtue of its nature, size or location requires an assessment with regard to the project’s direct and indirect effects to be carried out prior to consent being granted.

   In the case of renewable energy projects, member states may determine whether the project is to be made subject to an environmental assessments
either through a case by case examination, thresholds or criteria set by each of the individual member states themselves.

The EIA Directive does not impose timelines for the issuing of permits. Rather, it is solely concerned with obliging member states to submit specified projects which are likely to have a significant impact on the environment to EIA prior to any consent being granted. In Ireland, for example, we have chosen a threshold-based system for the purposes of determining which projects must be subject to EIA.

2. Do all timelines match those of leases, PPAs and loan documents?

No.

3. Are public hearings required?

This depends on the nature of the permit and the jurisdiction.

The EIA Directive

On a European level, the EIA Directive does not specifically require that public hearings must be held. However, it does provide for consultation with the public, public authorities likely to be concerned by a project and other member states in the case of transboundary development.

The Public

In so far as the public is concerned, they must be informed by public notices, electronic media or other appropriate means of the following information early in the decision making procedure, or at the latest as soon as the information can reasonably be provided:

- the request for development consent;
- whether the project is subject to an EIA;
- details of the competent authorities responsible for taking the decision, of the authorities from which information can be obtained, of the authority to which comments/questions can be submitted; and of the time schedule for transmitting comments/questions;
- the nature of possible decisions or draft decisions;
- an indication of the availability of information gathered pursuant to the preparation of the EIA;
- an indication of the times; places and means by which the information will be made available; and
- details of the arrangements for public participation.
The public must be given effective opportunities to participate in the environmental decision making procedures and is entitled to express comments and opinions before the decision for development consent is taken. The detailed arrangements for informing the public must be determined by the member state. Reasonable time frames for this consultation process must be provided.

**Other EU Member States**

Where a member state is aware that a project is likely to have significant effects on the environment in another member state, the member state in which the development is being carried out must as soon as possible send certain information to the affected member state. This information includes a description of the project together with any information on possible transboundary impact and information on the nature of the decision to be taken.

The affected member state must be given reasonable time to indicate whether it wishes to participate in the decision making process and where it chooses to participate in this process it must be provided with all the information which must be given to the public as set out above.

Furthermore the public in the affected member state and the public authorities likely to be concerned by the development in the affected member state must be provided with the same information as the affected member state and must also be given an opportunity before development consent is granted to forward their opinion on the information supplied. The member states must enter into consultations regarding the potential transboundary effects of the project and the measures envisaged to reduce or eliminate these effects. The member states must also agree on a reasonable time frame for the consultation process.

The decision maker must take account of the outcome of the consultation procedure in making its decision. When a decision in relation to development consent has been made, the competent authority must inform the public of: (i) the content of the decision; (ii) the main reasons and considerations on which the decision is based; and (iii) a description of the main measures to avoid or reduce the major adverse effects. The outcome of the decision and the information disclosed to the public must also be forwarded to the competent authority consulted in any affected Member State.

**The Aarhus Convention**

On an international stage, the United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the “Aarhus Convention”), like the EIA Directive, guarantees the possibility of public consultation in decision-making in environmental matters and requires that public participation procedures are put in place. Renewable Energy Projects are deemed to fall within such environmental matters.
The Aarhus Convention does not mandate the convening of public hearings as part of the decision-making process on environmental matters. It does, however, acknowledge that a public hearing or inquiry might provide an appropriate mechanism for receiving comments from the public.

The requirement for public participation in decision making under the Aarhus Convention includes the following elements:

- Public notice of the application;
- Access to all information relevant to the decision making;
- Opportunity for the public to submit comments, information, analyses or opinions;
- An obligation on the decision maker to take account of the outcome of public participation; and
- Prompt notice of the decision made along with reasons and considerations on which the decision is based.

The European Union itself is a party and signatory to the Aarhus Convention.

4. **Are hearings necessary to gain public support?**

Public hearings can often be very valuable in ensuring that the public are accepting, if not supportive, of a decision to permit a project.

**IV. Incentives**

**A. Tax**

*Are tax advantages available for renewable energy projects and if so, does their availability depend upon the type of technology (for example, solar and wind, but not geothermal)?*

See Appendix 1.

**B. Purchase Guarantees**

*Does the legal or regulatory scheme provide a purchase guarantee for electricity generated by renewable energy projects and if so, is it limited to particular technologies?*

See Appendix 1.

**C. Minimum Price Guarantees**
Does the legal or regulatory scheme provide a minimum price guarantee for electricity generated by renewable energy projects and if so, is it limited to particular technologies?

See Appendix 1.

D. Other Incentives

Are there other incentives for renewable energy projects?

See Appendix 1 for other incentives at individual jurisdiction level. In addition, for EU member states a number of other EU wide support regimes are available including:

- **FP7 (Seventh Framework Programme):** The objective of this programme is to incentivise energy research to aid the creation and establishment of the technologies necessary to adapt the current energy system into a more sustainable, competitive and secure one, which depends less on imported fuels and uses a diverse mix of energy sources, in particular renewables, energy carriers and non-polluting sources. The FP7 programme is available until 2013, and is open to research teams from all EU countries.

- **NER300:** This is a financing instrument managed jointly by the European Commission, European Investment Bank and member states. NER300 was established because Article 10(a) 8 of the revised Emissions Trading Directive 2009/29/EC contains provision to set aside 300 million allowances for subsidising installations of innovative renewable energy technology and carbon capture and storage (CCS). The allowances will be sold on the carbon market and the money raised will be made available to renewable energy projects as they operate.

E. Foreign Investors

Are the incentives available to foreign investors?

See Appendix 1.

F. Foreign Investors Favored

Are there incentives for foreign investors that are not available to domestic investors?

See Appendix 1.

V. Financing Issues

A. Are there preferred financing structures for various renewable energy projects in your jurisdiction?

While there may be differences from jurisdiction to jurisdiction, within Europe, it is common for renewables to be financed either on balance sheet or as part of a stand-alone or portfolio project finance. Sources of debt include multilateral bodies,
infrastructure funds as well as private banks. Investment of equity can be facilitated through favourable tax treatment (see below). Basel III, lack of liquidity in the project finance space and the scale of offshore wind are prompting a shift to capital market funding in appropriate circumstances, with the EU taking the lead on a project bond initiative to facilitate investment in renewables generally.

B. Do tax advantages (if any) form a part of the project financing structure?

See Appendix 1.

C. How is market risk managed?

The mechanisms that are adopted for managing market risk vary according to the market design in each jurisdiction. Means of managing price and volume risk include:

- **Price Risk**: Many EU jurisdictions have introduced price support regimes to minimize or eliminate market price risk associated with the development of renewables (see Appendix 1). They have taken forms including feed-in tariffs, supplier support regimes and tradable certificates. The contractual structure, if any, required to manage price risk in light of these measures depends on both the measure adopted and the relevant market design, but may include power purchase agreements or contracts for difference.

- **Volume Risk**: Within the EU, Article 16 (2) of the RED enshrines the principle of priority dispatch for renewable energy sources. The RED provides that when dispatching electricity generating installations, transmission system operators and distribution system operators must give priority to generating installations using renewable energy sources insofar as the secure operation of the national electricity system permits and based on transparent and non-discriminatory criteria. EU member states must also provide for either priority access or guaranteed access to the grid-system of electricity produced from renewable energy sources, and must ensure that appropriate grid and market-related operational measures are taken in order to minimise the curtailment of electricity produced from renewable energy sources. Notwithstanding this, in certain jurisdictions, such as Ireland, the penetration of renewables has reached a level that is requiring curtailment to limit the instantaneous penetration of renewables to 50%, the greatest level that can currently be safely accommodated on the system.

D. What are the typical project documents that are included in the security package?

In addition to Industry Codes/Agreements and Authorisations (e.g. Grid Connection Agreements), the documentation typically included in the security package includes land title and access agreements; turbine supply/civil works/electrical balance of plant or EPC contracts; O&M/LTSA/LTMA or equivalent; and fuel supply and transportation (if applicable).
Europe Appendix 1: Overview of Renewable Energy Support Regimes in 41 Jurisdictions

The information in the table below was first published in the European Energy Handbook 2013 (http://www.herbertsmithfreehills.com/insightsguides/european-energy-handbook-2013) and is reproduced with the consent of the publisher, Herbert Smith Freehills. The material in this table was prepared by the authors on the final page of this Appendix, who may be contacted for any further information in relation to anything in this table.

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<tr>
<td>AUSTRIA</td>
<td>E-Control GmbH</td>
<td>Verband Hydropower AG</td>
<td>The feed-in tariffs paid by the green power clearing and settlement agent ÖeMAG in the first half of 2010 ranged from 5.5cent/kWh to 56.1cent/kWh. On average, hydropower received 3.5cent/kWh, wind 7.8cent/kWh, solid biomass 13.6cent/kWh, biogas 14.2cent/kWh (2008 and 2009 saw a raw material subsidy of 3.9cent/kWh and 3cent/kWh, respectively) and photovoltaics 56.1cent/kWh. The trend for feed-in tariffs in 2010 was increasing for wind power (9.7cent/kWh) and biogas (up to 22.5cent/kWh including CHP and technology markup), but pointed steeply downwards for photovoltaics (25 to 30cent/kWh) and remained stable for solid biomass (up to 14.98cent/kWh).</td>
<td>Austria has formally used a Tradable Green Certificate (&quot;TGC&quot;) scheme for only a short period of time (2000 to 2002), linked to its obligations to small-scale hydro production. Under this TGC-scheme, small hydro generators were obliged to issue so-called &quot;Small Hydro Certificates&quot; in denominations of 100kWh, with all distributors having to purchase certificates representing 8% of their total power sales. However, the system was never fully operational and faced certain difficulties (in particular, it lacked homogeneity due to different support schemes in each federal state, meagre market fluidity, opposition to the allocation of the equalisation fund, and doubts concerning compliance with Community law.). Thus, the TGC-system was replaced in 2003 by a new feed-in tariff scheme introducing uniform support for renewables across</td>
<td>Null</td>
<td>Null</td>
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<td>Compared to 2010, the final energy consumption in 2011 decreased by 3.9% to 1,089,184TJ. The share of renewable energy increased slightly from 36.6% in 2010 to 31.0% in 2011. In 2005 the share of renewable energy was 23.8%. Consequently, Austria is well on track to reach its renewables target of 34% according to the EU Renewables Directive 2009/28/EC by the year 2020. Hydropower is the leading source for domestic energy production. In 2011, the share of hydropower amounted to 57.4%. Thermal power sources (solid fuels and derivates, biofuels and other fuels) accounted for 39.3% of the domestic energy production in 2011. Wind power, photovoltaics and geothermal power together added 3% to the gross energy generation mix.</td>
<td>Verbund Hydropower AG</td>
<td>Verband Renewable Power</td>
<td>Vienna EnergienettAG</td>
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### OVERVIEW

<table>
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<tr>
<th>NATIONAL REGULATORY AUTHORITY</th>
<th>PERCENTAGE OF ENERGY GENERATION FROM RENEWABLE SOURCES WITH BREAKDOWN (WIND, SOLAR, HYDRO, GEOTHERMAL POWER, BIOFUELS, WASTE TO ENERGY ETC.) AND 2020 TARGET FOR RENEWABLE ENERGY</th>
<th>KEY GENERATORS OF RENEWABLE ENERGY</th>
<th>FEED-IN TARIFFS</th>
<th>GREEN CERTIFICATES (NAME OF THE SCHEME)</th>
<th>TAXATION</th>
<th>OTHER</th>
</tr>
</thead>
</table>
| **BELGIUM** 
Federal: CREG 
Regional: VREG, Brugel and CWaPE | 2012: 5.5% of energy is generated from RES of which approximately: 55% is biomass; 30% is wind; 13% is solar; 0.5% is hydro-power; and 1.5% is waste  
2020 target: 13% | Aspiravi Belwind Electrawinds | N/A | Green Power Certificates and CHP Certificates in Flanders; Green Certificates in Brussels-Capital and Wallonia.  
For off-shore wind and hydro installations there are federal green certificates. | Federal tax reduction on energy-saving investments (scope was limited as from 1 January 2012). | Contribution to the financing of connection costs for offshore projects (federal)  
Favourable imbalance regime for offshore wind parks (federal)  
Energy premiums schemes (regional)  
Contribution to the financing of connection costs (Region of Flanders) |
| **BOSNIA** 
Authorities in the electricity sector are divided between the central level government and the entities. Central government does not have authorities in other energy sectors (renewables, oil, gas). 
In the Republic of Srpska ("RS"):  
2006: renewable energy provided 29.18% of the total energy consumption (of this 29.18% electricity accounted for 69.32%, heating/cooling for 19.04 %, and transport for 0%)  
2020 target: renewable energy to | The main source of energy from renewables in Bosnia is hydropower. Key generators are enterprises directly or indirectly owned by the state.  
In the RS: Mixed Holding Electric | | | | | |

**Note:** The Federal territory ("Green Electricity Act"). Feed-in tariffs are support schemes for promoting the use of renewable energy. They provide a fixed price incentive wherein a fixed tariff is granted for each kWh of renewable energy that is fed into the grid. Nevertheless, Austria was the first EU country to introduce the Guarantees of Origin ("GO"), as required by the RES Directive, and to allow foreign certificates meeting the GO requirements to be imported.
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<td>Central level:</td>
<td>account for 35.98% of the total energy consumption with electricity at 76.90%, heating/cooling at 52.50 %, and transport at 10%): In the Federation of Bosnia and Herzegovina (“FBH”): 2005: No information 2012: 5% of electricity from RES and 0.5% of electricity produced from efficient cogenerations (“CHP”) 2020: to be established by the Action Plan which has not yet been adopted</td>
<td>Power Company of the Republic of Srpska (“EPC”) through its subsidiaries. In the FBH: Electric Power Company of BH (“EPCBH”), and Electric Power Company of Croatian Community of Herzeg Bosnia (“EPCUBH”).</td>
<td>• Solar power plants, regardless of installed capacity,  • CHPs installed capacity of up to 30MW. Mechanism: The mandatory take-off of the entire produced quantities of energy from renewable energy sources except for hydro power plants with capacity exceeding 10MW and photovoltaic power plants with effect from 1 July 2012. With regard to photovoltaic power plants the effective feed-in tariff applies as of 1 September 2012. The feed-in tariffs are updated by the State Energy and Water Regulatory Commission every year or (ii) by 30 June every year or (ii) whenever there is a significant change (exceeding 10%) in a component for calculation of the feed-in tariff compared to its rate, considered in calculation of the previous feed-in tariff.</td>
<td>from this general option, there are no further provisions of this law or any other regulations which regulate granting of the “green certificates” in any detail.</td>
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<td>(i) 6% of the total energy consumption with electricity at 76.90% and 20% of heating/cooling at 52.50 %, and transport at 10%): In the Federation of Herzegovina and Federation of Serbia (“FBH”)</td>
<td>Republic of Serbia (“RS”): 2006: 5% of electricity from RES 2007: 6% of electricity from RES</td>
<td>• Feed-in tariff: CHPs installed capacity of up to 10MW are eligible for the feed in tariff. Facilities using RES for the generation of electricity and CHPs, regardless of their installed capacities. Exceptionally, with respect to the installed capacity are established for hydro power plants (“HPPs”).Only HPPs installed capacities of up to 10MW are eligible for the feed in tariff. Mechanism: Mandatory take-off of the entire produced quantities of energy under 12 year PPAs concluded with the RSE Operator. Other limitations: The RSE Operator will conclude PPAs with eligible generators only whilst the quantities of electricity and the installed capacity do not reach the prescribed targets. In the FBH: Facilities eligible for feed-in tariff: Facilities using RES for the generation of electricity and CHPs, regardless of their installed capacities. Exceptionally, with respect to the installed capacity are established for hydro power plants (“HPPs”).Only HPPs installed capacities of up to 10MW are eligible for the feed in tariff. Mechanism: Mandatory take-off of the entire produced quantities of energy under 12 year PPAs concluded with the RSE Operator. Other limitations: The RSE Operator will conclude PPAs with eligible generators only whilst the quantities of electricity and the installed capacity do not reach the prescribed targets.</td>
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<td>CHPs installed capacity of up to 30MW. Mechanism: The mandatory take-off of the entire produced quantities of energy from renewable energy sources except for hydro power plants with capacity exceeding 10MW and photovoltaic power plants with effect from 1 July 2012. With regard to photovoltaic power plants the effective feed-in tariff applies as of 1 September 2012. The feed-in tariffs are updated by the State Energy and Water Regulatory Commission every year or (ii) by 30 June every year or (ii) whenever there is a significant change (exceeding 10%) in a component for calculation of the feed-in tariff compared to its rate, considered in calculation of the previous feed-in tariff.</td>
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<td>2016: Total is 4461GWh (12.9% of the electricity generated) of which  • Wind: 722GWh  • Solar: 15GWh  • Hydropower: 3706GWh  • Biomass is 16GWh In 2011 the total share of</td>
<td>NEK EAD (hydro power plants with installed capacity of 271MW)  • AES (wind power plant St. Nikola with installed capacity of 156MW)  • ASTROENERGY, part of CHINT</td>
<td>Summary: Feed-in tariff for electricity from renewable energy sources except for hydro power plants with capacity exceeding 10MW and photovoltaic power plants with effect from 1 July 2012. With regard to photovoltaic power plants the effective feed-in tariff applies as of 1 September 2012. The feed-in tariffs are updated by the State Energy and Water Regulatory Commission either (i) by 30 June every year or (ii) whenever there is a significant change (exceeding 10%) in a component for calculation of the feed-in tariff compared to its rate, considered in calculation of the previous feed-in tariff. Mechanism: The public provider and end suppliers are required to purchase all electricity, certified with guarantee of</td>
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**BULGARIA**

State Energy and Water Regulatory Commission
Minister of Economy, Energy and Tourism Agency for Sustainable Energy Development

| 2016: Total is 4461GWh (12.9% of the electricity generated) of which  • Wind: 722GWh  • Solar: 15GWh  • Hydropower: 3706GWh  • Biomass is 16GWh In 2011 the total share of:  | NEK EAD (hydro power plants with installed capacity of 271MW)  • AES (wind power plant St. Nikola with installed capacity of 156MW)  • ASTROENERGY, part of CHINT | Summary: Feed-in tariff for electricity from renewable energy sources except for hydro power plants with capacity exceeding 10MW and photovoltaic power plants with effect from 1 July 2012. With regard to photovoltaic power plants the effective feed-in tariff applies as of 1 September 2012. The feed-in tariffs are updated by the State Energy and Water Regulatory Commission either (i) by 30 June every year or (ii) whenever there is a significant change (exceeding 10%) in a component for calculation of the feed-in tariff compared to its rate, considered in calculation of the previous feed-in tariff. Mechanism: The public provider and end suppliers are required to purchase all electricity, certified with guarantee of | N/A | N/A | N/A |
### Croatia

<table>
<thead>
<tr>
<th>Key Generators of Renewable Energy</th>
<th>Feed-in Tariffs</th>
<th>Green Certificates (Name of the Scheme)</th>
<th>Taxation</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vjetroelektrana Triu - Kitolin d.o.o.</td>
<td>As of 6 June 2012 the incentive price is regulated by the Tariff system for electricity production from RES and cogeneration. The tariff is now composed of two parts: (i) a fixed part, which depends on the type of the RES or cogeneration plant and sources used for electricity production and the installed capacity of the plant; and (ii) a variable part of the tariff item, which is based on a measurable contribution to the local community, development of economic activity, employment, development of public services and improving the quality of life (&quot;PMAX&quot;) which may not exceed 15% of the fixed part of the tariff item. The tariff is also indexed to inflation and granted for a period of 14 years. The tariff will be adjusted annually.</td>
<td>Note: No Green Certificate schemes have been introduced in Croatia yet. Proposals for reform: A state aid scheme to promote the production of electricity from RES and cogeneration pursuant to the state aid rules is expected to be put in place in the upcoming period.</td>
<td>Note: Eligible generators of electricity generated from renewable energy plants with bigger capacity (eg, wind power plants with an installed capacity of more than 1MW) are obliged to pay a fee of HRK0.0001/kWh (approx. €0.0013) of the delivered electricity to the local communities.</td>
<td>Summary: On 9 August 2012 the new Ordinance on the use of RES and cogeneration (Pravilnik o korištenju OIE i kogeneracije, Official Gazette of the RoC &quot;Narodne Novine&quot; No. 88/12) came into force. Amendments to the existing legal framework aim to remove administrative barriers in relation to RES-authorisation procedures. Mechanism: A generator of electricity from RES and/or cogeneration plants that falls under the category of so-called...</td>
</tr>
<tr>
<td>Country</td>
<td>National Regulatory Authority</td>
<td>Percentage of Energy Generation from Renewable Sources with Breakdown (Wind, Solar, Hydro, Geothermal Power, Biofuels, Waste to Energy etc.) and 2020 Target for Renewable Energy</td>
<td>Key Generators of Renewable Energy</td>
<td>Feed-in Tariffs</td>
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<tr>
<td>Cyprus</td>
<td>Cyprus energy regulation authority (&quot;CERA&quot;)</td>
<td>The European Union RES target (2020) for Cyprus is 13%</td>
<td>There are various RES generators in Cyprus</td>
<td>N/A</td>
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<td>Czech Republic</td>
<td>Energy Regulatory Office (Energetický regulační úřad)</td>
<td>2011: 7.25 TWh of electricity from renewable sources generated, with 597.903 MWh from wind power plants, 1.937 TWh from hydropower plants, 932.576 MWh from biogas and LPG power plants, 1.687 TWh from biomass power plants, 2.185 TWh from photovoltaic power plants (three times more than in 2010) and 90.190 from biowaste power plants, ie, 10.28% of the gross national electricity consumption.</td>
<td>ČEZ ecoenerg Windkraft GmbH &amp; Co. KG</td>
<td>Feed-in tariffs or green bonuses. The generators of &quot;green&quot; electricity can either sell the electricity at a regulated purchase price (feed-in tariff) or sell it at market price and receive a bonus (green bonus) later. Regional distribution system operators are legally required to pay feed-in tariffs and green bonuses to the energy producers located within their licensed areas. The costs incurred are then reflected in the regulated prices paid by end customers.</td>
</tr>
<tr>
<td>Denmark</td>
<td>The Danish Energy Regulatory Authority (&quot;DERA&quot;) (Energistyrelsen)</td>
<td>2011: Total is 13.633 GWh (41.1% of the electricity generated). Wind: 71.6%, water and solar: 0.1%, wood: 14.7%, straw: 4.9%, biogas: 2.6%, biodegradable waste: 6.1%</td>
<td>DONG Energy A/S Vattenfall A/S</td>
<td>Summary: Production from RES is subsidised via PSO funds, which all electricity consumers pay via the electricity bill. The subsidy depends on what technology is used to produce the electricity, eg, regarding wind turbines, the subsidy varies depending on whether it's offshore or onshore, the size of the wind turbine generator, size of the blades, and the date of the connection to the grid.</td>
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<tr>
<th>Year</th>
<th>Electricity tax</th>
<th>Electricity saving payment</th>
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<tbody>
<tr>
<td>2011</td>
<td>62.4</td>
<td>0.6</td>
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<tr>
<td>2012</td>
<td>63.5</td>
<td>0.6</td>
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<tr>
<td>2013</td>
<td>64.7</td>
<td>0.6</td>
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<tr>
<td>2014</td>
<td>65.0</td>
<td>0.6</td>
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<td>FINANCIAL INCENTIVES</td>
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<td>KEY GENERATORS OF RENEWABLE ENERGY</td>
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<tr>
<td>FINLAND</td>
<td>The Finnish Energy Market Authority (&quot;FEMA&quot;), a subordinate to the Finnish Ministry of Employment and the Economy. FEMA enhances and monitors the activities of the electricity and natural gas market.</td>
<td>2011: Consumption of energy produced from renewable energy sources was approximately 107TWh which accounts for less than 28% of the total energy consumption.</td>
</tr>
<tr>
<td>ESTONIA</td>
<td>Estonian Competition Authority</td>
<td>In 2010 24.3% of the final consumption of energy was generated from renewable resources. The EU target for Estonia's final consumption of energy from renewable resources is 25% by 2020. Waste and biomass account for 66%, wind energy for 31% and hydro energy for 3%.</td>
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<td>A fixed price for each kWh generated from a renewable source (at the rate of 0.057€/kWh) or in an efficient co-generation plant (at the rate of 0.026€/kWh) is payable by the TSO in addition to the price received upon sale of the electricity on the market. The relevant cost is passed on in the network charges and thus the support is financed by all consumers in proportion to their volume of consumption of network services. The support is payable for 12 years following commencement of production. Certain restrictions also apply. For example, wind energy producers may use the subsidy for up to a maximum of 600GWh of electricity produced in a calendar year, plants using biomass will qualify for the subsidy only if they are also qualifying co-generation plants. It is expected that the support payable for projects established after July 2012 will be reduced. The relevant draft act is currently being discussed at parliament.</td>
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<td>There are no separate tax incentives. However, generation of electricity from renewable sources is not subject to environmental charges which are applied to non-renewable energy production (e.g., charges for use of resources, emissions).</td>
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<td>Summary: There is no national scheme on green certificates in Finland. However, consumers are offered green-electricity options by electricity companies.</td>
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<td>Summary: Under the new Production Subsidy Act, with effect from 1 January 2011, and a Government Decree, with effect from 25 March 2011, the following are accepted in the feed-in tariff scheme:</td>
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<td>wind power: plants with minimum nominal output capacity of 500kW until the total generator output exceeds 2,500MW;</td>
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<td>forest chips: plants with minimum nominal output capacity of 100kW;</td>
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<td>wood fuel: plants with minimum output capacity of 100kW and not more than 8MW until the total generator output exceeds 150MW and the number of power plants exceeds 30);</td>
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<td>biogas: plants with minimum output capacity of 100kW.</td>
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<td>Summary: Taxation of electricity is based on excise taxes levied on the consumption of electricity. Fuels consumed in energy generation are tax exempt. In 2011 an energy taxation reform was carried out. The taxes for the consumption of fossil fuels and peat were increased in order to make CO2 neutral energy sources more competitive. Further, the energy content of and the emissions from fuels were better taken into account in fuel taxation.</td>
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<td>Other production subsidies: A production subsidy for small-sized energy wood is expected to enter into force in late 2012 or early 2013 after scrutiny by the Commission. Investment subsidies: The Ministry of Employment and the Economy grants energy subsidies for eg, investments made in-</td>
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<td>France</td>
<td>16.3% of total electricity generation (83.70TWh) which corresponds to 13.1% of gross final electricity consumption to generation of heat</td>
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| Federal Network Agency (Bundesnetzagentur) Network Agencies of the Federal States | 2011: total renewable energy produced: 300.9 TWh 20.3% of total electricity generation  - water power: 15%  - biomass: 30%  - wind: 40%  - photovoltaic: 16% 11.0% of total heat generation:  - biomass: 91%  - geothermal: 5%  - solar: 4% 5.5% of total fuel generation:  - biofuels: 100% 2020 target: 35% of electricity consumption (18% target pursuant to the Renewable Energy Directive) | Various – no key generators | Summary: statutory feed-in-tariffs paid per KWh for a period of 15 to 20 years plus year of commissioning of facility; subject to an annual reduction depending on year of commissioning of facility. energy source and overall installed capacity.  
Mechanism: facility operator is paid feed-in-tariff by distribution network operator; the latter is compensated by transmission system operator; inter transmission system operator compensation scheme, depending on total feed-in remuneration paid by each transmission system operator; purchase obligation for energy supply undertakings; levy on end consumer.  
As an alternative, plant operators may claim a market premium for electricity they sell directly, to be calculated each month. In general, plant operators are free to choose between the regular feed-in tariff and the market premium for direct selling. Operators of biogas plant who sell their electricity directly may be entitled to a market premium of 20 cent/kWh.  
Green-Power-Trader- Scheme: privilege for “green power traders” - partial exemption from purchase obligation for energy supply undertakings if more than 50% of electricity supplied is from renewable sources within the meaning of sec. 23-33 of the Federal German Act on Energy from Renewable Sources.  
Biofuel Obligations: circulators of petrol and diesel fuel must ensure that these fuels contain a certain amount of biofuel.  
Exemptions of 20cent/kWh from the electricity levy are available for RES generated electricity.  
Heat pump installations of heat pumps in both old and new buildings receive subsidies.  
Turnover tax exemption for market premium pursuant to per §33g EEG.  
Offshore wind park connection: obligation of Transmission System Operators to connect offshore wind parks at their expenses.  
Loan programme by state-owned KfW bank and investment supplement programme by BAFA, combined volume of EUR 366 million in 2012.  
Plants for the generation of electricity from renewable sources shall be given priority connection to the grid. Furthermore, grid operators are obliged to give priority to electricity from renewable sources when purchasing and transmitting electricity. Moreover, those | | | | |
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**Greece**<br>
Regulatory Authority for Energy ("RAE"): 2012: RES production accounts for 15% of the energy generated. The breakdown per RES technology for this 15% is:<li>Wind: 50%<li>PV: 41% (including rooftop PVs)<li>Biofuels: 1.5%<li>Hydro: 7.5%<li>Total RES power produced in MWs: approximately 2930MW<br>**2020 Target:** 20%<li>ROKAS<li>TERNA<li>EDF<li>ELTECH WIND<li>PPC<li>QUEST<li>ENEL<li>EUNICE<

The FIT scheme provides electricity producers from RES a guaranteed selling price for their produced electricity, along with a guaranteed buyer for their production. The selling price differs depending on whether the RES electricity producers are located on a Greek island or not and on the type of RES technology used.

The National Development Law (Law 3908/2011) covering all private investments (with the exemption of PVs) in Greece provides for tax breaks of up to 100% of the maximum allowable amount of aid. The relevant tax relief comprises exemption from payment of income tax on pre-tax profits which result from any and all of the enterprise’s activities.

**Other financial instruments for the promotion of RES in Greece (with the exemption of PVs), according to the National Development Law (Law 3908/2011) are:**<li>a. Subsidy: Gratis payment by the State of a sum of money to cover part of the subsidised expenditure of the investment<li>b. Leasing subsidy: Includes payment by the State of a portion of the instalments paid under a leasing agreement executed to acquire new machinery and/or other equipment<li>c. Soft loans by...
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<td>PERCENTAGE OF ENERGY GENERATION FROM RENEWABLE SOURCES WITH BREAKDOWN (WIND-SOLAR-HYDRO-GEOTHERMAL POWER, BIOFUELS, WASTE TO ENERGY ETC.) AND 2020 TARGET FOR RENEWABLE ENERGY</td>
</tr>
<tr>
<td>HUNGARY</td>
<td>Hungarian Energy Office (Magyar Energia Hivatal)</td>
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<tr>
<td>ICELAND</td>
<td>National Energy Authority (Orkustofnun)</td>
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<tr>
<td>IRELAND</td>
<td>Commission For Energy Regulation (&quot;CER&quot;)</td>
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</table>

**ETEAN (National Fund for Entrepreneurship and Development)** The amount to be covered by a bank loan may be funded by soft loans from credit institutions that cooperate with ETEAN enterprises.
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<th>KEY GENERATORS OF RENEWABLE ENERGY</th>
<th>FEED-IN TARIFFS</th>
<th>GREEN CERTIFICATES (NAME OF THE SCHEME)</th>
<th>TAXATION</th>
<th>OTHER</th>
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<tbody>
<tr>
<td>2020 Target: 16% pursuant to the Renewable Energy Directive.</td>
<td>• Authority</td>
<td>open to new projects are REFIT 2 and REFIT 3. Successful generators accepted into the REFIT 2 or 3 Schemes receive a letter of offer and must contract with a supplier licensed by the CER. Aid is granted to suppliers in the form of: (i) payments for every kWh contracted under a REFIT Power Purchase Agreement; and (ii) market price equalisation compensation below a floor price (not indexed).</td>
<td></td>
<td></td>
<td>biomass technology categories and approved by the Minister.</td>
<td>support innovative domestic and commercial schemes using biomass technology categories and approved by the Minister.</td>
</tr>
</tbody>
</table>

- Relief from stamp duty on transfers of greenhouse gas emissions allowances.
- Employment and Investment Incentive Scheme allows individual investors to obtain income tax relief on investment made into EII-certified qualifying companies, which include renewable energy companies.
- Carbon Tax on the supply of Fossil Fuels with a partial relief available to holders of greenhouse gas permits.
- The securitisation regime under Section 110 of the Taxes Consolidation Act 1997, as amended, includes greenhouse gas emissions allowances. The regime was extended in 2011 to include carbon credits and in 2012 further extended to include forest carbon offsets.
- Funding programs offered through the Sustainable Energy Authority of Ireland. Currently, there is a fund to stimulate the development and
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<th>TARGET FOR RENEWABLE ENERGY</th>
<th>KEY GENERATORS OF RENEWABLE ENERGY</th>
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<tr>
<td>ITALY</td>
<td>Ministry of Economic Development Authority for Electricity and Gas (Autorità per l’Energia Eletrica ed il Gas, “AEEG”)</td>
<td>Antitrust Authority (Autorità Garante della Concorrenza e del Mercato, “AGCM”)</td>
<td>2011 Total is 82,961GWh (23.5% of the total gross final consumption in 2011)</td>
<td>Electricity production from renewable sources breakdown (GSE 2011 data): Wind: 9,856GWh, Biomass, bioliquids and biogases: 10,832GWh, Hydroelectric: 45,822GWh, Solar: 10,795GWh, Geothermic: 5,654GWh</td>
<td>2020 target 26.4% of the total consumption (17% target pursuant to the Renewable Energy Directive)</td>
<td>New Feed-in tariff Scheme applicable to renewable plants other than the photovoltaic plants entering into operation after 1 January 2013: - Plants up to 5MW: Feed-in tariff depending on the type of renewable sources employed and the power capacity bracket to which the relevant plant belongs. The tariff applying on the date of entry of operations of the plant shall be maintained throughout the entire incentive period. Amounts of tariffs defined in Annex 1 MED Decreto 6 July 2012. - Plants over 5MW: feed in tariff the amount of which will be determined on the basis of a system of auctions by reduction held by the GSE as defined in MED Decreto 6 July 2012.</td>
<td>The incentive regime applicable to renewable plants (other than photovoltaic plants) entering into operation before 31 December 2012 is based on Green Certificates.</td>
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<td>Feed-in tariff: For photovoltaic plants entering into operation after 1 January 2013 the tariffs will include both an incentive component and an electricity output valorisation component.</td>
<td>The Green Certificate Scheme has been progressively phased out and in no longer applicable to plants entered into operation after 31 of December 2012. A transitional regime is contemplated until 2015. Starting from 2016, renewable plants for which the GSE-based incentive period are still on-going will switch to the new Feed-in tariff scheme for the remainder of the relevant incentive period, and will not be subject to the auction mechanism.</td>
<td>The Green Certificate Scheme has been progressively phased out and in no longer applicable to plants entered into operation after 31 of December 2012. A transitional regime is contemplated until 2015. Starting from 2016, renewable plants for which the GSE-based incentive period are still on-going will switch to the new Feed-in tariff scheme for the remainder of the relevant incentive period, and will not be subject to the auction mechanism.</td>
<td>Summary: The production and the sale of electricity arising from renewable sources is in principle transactions taxable on the basis of the Italian taxation rules. In general, there are two main kinds of incentives for the producers of electricity: (i) premium Feed-in Tariff, and (ii) the Green Certificates (now replaced). (i) the premium Feed-in Tariff is paid to the producers of electricity arising from a photovoltaic source. It is not relevant for VAT purposes (not falling within the scope of VAT), but it is relevant for income tax purposes being taxable as business income and subject to an advance withholding tax at a rate 4%; (ii) the Green Certificates were granted by the entity managing the electric system (GSE) to producers of electricity (greater than 1MW) arising from renewable sources. For VAT purpose the sale of such certificates is considered as a supply of services subject to VAT with the ordinary rate of 21%. For direct tax purposes, the profits arising from the sale of green certificates is considered business income, taxable as capital gains.</td>
<td>Note: an ad hoc favourable tax regime is provided for the deployment of Ocean Energy devices and systems.</td>
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<td><strong>KEY GENERATORS OF RENEWABLE ENERGY</strong></td>
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<td><strong>TAXATION</strong></td>
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<td><strong>KAZAKHSTAN</strong></td>
<td>Government of the Republic of Kazakhstan</td>
<td>2012 less than 1% of energy consumption in Kazakhstan stems from renewable sources, but it is expected that RES consumption will surpass 1% by 2015 and will reach 5% by 2024.</td>
<td>Bukhtarmainsk, Shullinsk, Ust-Kamenogorsk, Kapchagai, Muyuk Hydro-Power Plants. Kordai Wind Power Plant. Biishim Biofuel Plant. Otar Solar Power Plant.</td>
<td>Regional network companies are required to purchase electricity produced using RES in order to compensate for the standard transmission losses in their networks, up to a maximum of 50% of such losses. KEGOC has committed to purchase energy from RES companies that are fully connected to the grid. Qualified RES generation companies can independently set the selling price for their electricity. provided such a price does not exceed a rate specified in the feasibility study of the relevant RES construction project. Such companies are also exempt from payment to power transmission organisations for the transfer of electricity or thermal energy.</td>
<td>There is currently no “green” or “white” certificate trading system in place in Kazakhstan. However, in 2007 initial steps were taken when a regulatory framework was developed by the United Nations Development Programme and the Government, in cooperation with the Renewable Energy and Energy Efficiency Partnership and the Global Opportunities Fund. Under this framework, electricity producers would be obliged to possess renewable energy certificates to cover a certain share of their annual output. These certificates would be issued and initially sold by producers of ‘green energy’. However, since the market for the trade of these certificates does not yet exist in Kazakhstan, the certificates would have to be purchased by green energy providers from the Agency for Renewable Energy (which is yet to be created) for resale to electricity distributors.</td>
<td>Investment preferences: Entities engaged in the design, construction and operation of renewable energy facilities can apply for investment preferences. They are granted on the basis of a contract between the company carrying out the investment project and the competent authority, which is the Ministry of Industry and New Technologies of the Republic of Kazakhstan in the form of: i) exemption from customs duties (for up to five years from the registration of the contract on imported equipment; and ii) government grants in-kind (provision of land, buildings, machinery, etc. as a maximum amount of not more than 30% of the volume of investment in fixed assets). Tax investment preferences: deduction of the value of the energy production facilities and subsequent cost of their reconstruction and modernisation. The application of privileges shall be carried out by using one of the following methods: ii) method of deduction after putting a facility into operation; iii) method of deduction prior to putting a facility into operation.</td>
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<td><strong>LATVIA</strong></td>
<td>Ministry of Economics, Public Utilities Commission</td>
<td>2018: Total was 32.5% (mostly large scale hydro-energy) 2020 target: 40%</td>
<td>AS Latvenergo (large scale hydro-energy)</td>
<td>The Electricity Market Law requires the public trader (entity having the distribution licence with the largest area of operation and the largest number of users switched to its network) to purchase a certain amount of electricity generated from renewable energy resources (excluding hydroelectric power plants with capacity in excess of 5MW). The criteria for the electricity generators to become eligible to participate in the scheme, the total quantity of the electricity to be purchased by the public trader and the price at which the public trader entities producing electricity by using renewable energy resources may acquire the right to sell the produced electricity to the public trader, provided that they have received a special permit from the Ministry of Economy. Such a permit also confirms</td>
<td>Certain tax benefits are granted to biofuel producers in the form of reduced tax excise rates.</td>
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**Note:** The table provides an overview of renewable energy generation targets and financial incentives and other provisions in Kazakhstan and Latvia. The information is based on the provided text and is subject to change.
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<tr>
<td>2009: Total is 1,386GWh (8% of the electricity generated). 2020 target: 23% (pursuant to the Renewable Energy Directive)</td>
<td>KEY GENERATORS OF RENEWABLE ENERGY</td>
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<td>✓ Vėjų spektras UAB</td>
<td>✓ Renerga UAB</td>
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### Overview

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<th>National Regulatory Authority</th>
<th>Percentage of Energy Generation from Renewable Sources with Breakdown (Wind, Solar, Hydro, Geothermal Power, Biofuels, Waste to Energy ETC) and 2020 Target for Renewable Energy</th>
<th>Key Generators of Renewable Energy</th>
<th>Feed-in Tariffs</th>
<th>Green Certificates (Name of the Scheme)</th>
<th>Taxation</th>
<th>Other</th>
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<tr>
<td><strong>Macedonia</strong></td>
<td>2011: 29% (2020 target 20%) Hydro - 5%, Biomass - 28%, Solar - 47%, Geothermal - 3%</td>
<td>Geothermal power plants, hydroelectric plants</td>
<td>Feed-in tariffs varying according to the technology, the capacity of the plant and the year of commissioning.</td>
<td>Feed-in tariffs vary according to the technology, the capacity of the plant and the year of commissioning.</td>
<td>Luxembourgeois d’énergie régulée</td>
<td>Compensation mechanism: contribution levied on consumers to fund public service obligations and renewable energies. Income from certain photovoltaic systems is exempt from income tax based on administrative guidelines.</td>
</tr>
<tr>
<td><strong>Former Yugoslavia</strong></td>
<td>2010: 2.8% (2020 target 11%) Hydro - 29%, Biomass - 47%, Solar - 24%, Geothermal - 0%</td>
<td>Geothermal power plants, hydroelectric plants</td>
<td>Feed-in tariffs vary according to the technology, the capacity of the plant and the year of commissioning.</td>
<td>Feed-in tariffs vary according to the technology, the capacity of the plant and the year of commissioning.</td>
<td>SEO (directly and through subsidiaries)</td>
<td>Compensation mechanism: contribution levied on consumers to fund public service obligations and renewable energies. Income from certain photovoltaic systems is exempt from income tax based on administrative guidelines.</td>
</tr>
</tbody>
</table>

### Financial Incentives

- **Country**: Macedonia, Former Yugoslavia
- **Program**: Feed-in Tariffs
- **Incentives**:
  - **Renewable Sources**: Geothermal, Hydro, Biomass, Solar, Geothermal
  - **Tariffs**: Vary based on technology, plant capacity, and year of commissioning.
  - **Green Certificates**: Available for certain renewable energy sources.
  - **Taxation**: Compensation mechanism for consumers to fund public service obligations.
  - **Other**: Investment grants for certain projects.
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<td>MALTA</td>
<td>Sources of Energy in the Republic of Macedonia until 2020 the target for energy from renewable sources from the total energy consumption in 2020 amounts to 21%.</td>
<td>Hydroelectric plant Kozjak, Sv. Petka and Matka. Most of the major hydropower plants in Macedonia are operated by the 100% state-owned company Macedonian Power Plants (&quot;ELEM&quot;).</td>
<td>up to 2000kW. Note: These tariffs are applicable only to the installations which were granted authorisation/approval for construction after the entry into force of the decisions with which these tariffs were established. Different tariffs apply to the facilities that gained authorisation/approval for construction before the entry into force of the decisions with which these tariffs were established.</td>
<td>in the Republic of Macedonia.</td>
<td>&quot;Green Certificates&quot; were introduced by the Biofuels (Sustainability Criteria) Regulations, 2010; so far no such certificates have been issued and the relevant schemes still need to be announced.</td>
<td>Under the Deduction (Electric Vehicles) Rules, 2011, a company that carries on a trade or business is entitled to a deduction equivalent to 125% of expenditure of a capital nature incurred on the acquisition of electrical vehicles or a maximum of €25,000 in respect of each vehicle against the tax charged for the year of assessment.</td>
<td>2012: PVs Domestic: 50% rebate of expenditure capped at €3,000 per consumer. PVs Industrial: 50% rebate of expenditure capped at €100,000 per entity. Solar water Heaters: 40% rebate of expenditure capped at €60. Roof Thermal/Double Glazing:</td>
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<td>MONTENEGRO Regulatory Agency for Energy</td>
<td>2012: 27% of energy consumption is from RES (biomass and hydropower). 2020 target: 33% target pursuant to the Renewable Energy Directive</td>
<td>EPCG Zeta Energy d.o.o. Dankevgrad</td>
<td>Decrease on the Tariff System for the Establishment of Preferential Prices of Electricity from Renewable Sources of Energy and Efficient Co-generations. The Electricity Market Operator (&quot;EMO&quot;) is required to agree with eligible generators terms for the payment of the feed-in tariff. For small hydro power plants tariffs have been set between 5.04 and 10.44c€/kWh, for biomass power plants, between 12.31 and 13.71c€/kWh, for biogas power plants, 15c€/kWh, for waste fired power plants, 8c€/kWh and for landfill and sewage gas power plants 9c€/kWh, for solar power plants constructed at the roofs of the buildings 15c€/kWh, and for wind power plants 9.6c€/kWh.</td>
<td>The Guarantees of Origin (&quot;GO&quot;) are issued by the Regulatory Agency for Energy and are valid for a period of 12 years.</td>
<td>No tax incentives</td>
<td>15.25% of eligible costs up to a maximum of €1,000 Plug-In Vehicles: 25% rebate of the purchase price of new electric power vehicles for personal use capped at €4,000.</td>
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<tr>
<td>NETHERLANDS Office Of Energy Regulation</td>
<td>2010: 4.2% of the Dutch demand of energy is produced from No complete / verified information currently</td>
<td></td>
<td>Summary: Feed-in premium Incentive Scheme for Sustainable Energy Production (SDE+) a governmental</td>
<td>Summary: The Guarantee of Origin Scheme (Garantie van</td>
<td>Summary: Since 2005 renewable energies are no longer exempted from the regular energy taxes. The SDE+ system</td>
<td>N/A</td>
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**OVERVIEW**

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<td>NLD (Energiekamer)</td>
<td>renewable sources (9.8% of total electricity consumption): Wind: 18.4% Solar: 1.5% Hydro: 0.4% Biomass: 74.2% 2020 target: 16%</td>
<td>available</td>
<td>subsidies scheme for the electricity, gas and heat sector. Mechanism: The subsidy covers the quantity of energy produced by a particular project multiplied by the difference between the costs of generating green energy and the price of regular energy. The subsidy can be allocated on a first-come-first-served basis or through a tender system (the most 'competitive' request wins). Overrev) creates a system of green certificates. A supplier needs these certificates to (i) be eligible for SDE+ subsidies and (ii) to advertise it is supplying 'green electricity'. Discussions between the authorities and the industry are on-going with regards to an obligation for suppliers (starting in 2015) to obtain green certificates for a share of the electricity they supply. Note: Certiq B.V. is in charge of administrating the Guarantee of Origin Scheme. It is a fully owned subsidiary of the Dutch TSO (TenneT).</td>
<td>compensates through subsidies the competitive disadvantage for renewable energy producers.</td>
<td></td>
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<td>NORWAY (Norwegian Water Resources and Energy Directorate (&quot;NVE&quot;), not for upstream gas activities)</td>
<td>Energy generation from renewable energy sources in general approx. 61% (percentage of electricity production from renewable energy sources more specifically approx. 96%) 2020 target: 67.5%</td>
<td>Statkraft</td>
<td>N/A</td>
<td>Summary: A joint Norwegian-Swedish electricity certificate market for investments in electricity production from renewable energy sources has been introduced in 2012. The certificate scheme provides incentives for eligible investments in electricity production from RES (as defined in the Renewable Energy Directive) in both Sweden and Norway</td>
<td>N/A</td>
<td>Investment support scheme handled by Enova SF.</td>
</tr>
<tr>
<td>POLAND (The President of the Energy Regulatory Authority (Prezes Urzędu Regulacji Energetyki))</td>
<td>Total is 8488GWh (approx. 9.65% of the electricity generated). 2020 target: 15% pursuant to the Renewable Energy Directive</td>
<td>No data available</td>
<td>Currently a feed-in-tariffs scheme is not applied in Poland. According to the latest version of Renewable Energy Sources Law Bill which is expected to replace the Energy Law Act in 2013 a feed-in-tariffs regime is to be introduced for small scale generation and micro-sources (below 10 to200KW depending on the source) Producers of renewable energy sources, traders which sell electricity to final customers or commodity brokers are obliged to either obtain &quot;certificates of origin&quot; issued by the Polish Energy Authority and submit them for redemption or else pay a &quot;substitution fee&quot;</td>
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<td>PORTUGAL</td>
<td>2021: 48.1% (correction of hydraulicity) / 46.2% (non-correction of hydraulicity); 2020: 66% (correction of hydraulicity) / 55.2% (non-correction of hydraulicity)</td>
<td>• Eucop 2º;</td>
<td>Tariff (indicative average) – Renewable Energy (DL nº 325/2007, 31 May as subsequently amended)</td>
<td>No specific scheme is approved under Portuguese legislation, new legislation is planned to be approved.</td>
<td>1. Pursuant to the memorandum of understanding on specific economic policy conditions concluded on 17 May 2011 (as subsequently amended and updated) between the Portuguese State, the European Commission, the European Central Bank (the “ECB”) and the International Monetary Fund (“IMF”) (the “MoU”), the following support schemes were established for production of energy under the special regime (co-generation and renewables):</td>
<td>The MoU, the Review and the approval of the State Annual Budget for 2013 (Orçamento de Estado de 2013) may impact on these aspects of the Renewables energy legal framework which is in process of revision and amendment.</td>
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<td></td>
<td>Governmental Directorate of the Ministry of Economy: (Dpeg - Direcção-Geral de Energia e Geologia or &quot;DGEG&quot;)</td>
<td>• Iberwind*;</td>
<td>Source: <a href="http://www.apren.pt/">http://www.apren.pt/</a></td>
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<td></td>
<td></td>
<td>• EDP Renováveis*;</td>
<td>Wind</td>
<td>74-75</td>
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<td></td>
<td></td>
<td>• Genery*;</td>
<td>Hydro up to 10MW</td>
<td>75-77</td>
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<td></td>
<td></td>
<td>• EEVMP;</td>
<td>Photovoltaic</td>
<td>310-317</td>
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<td></td>
<td></td>
<td>• EDF EN PortugaIP;</td>
<td>&gt; 5kW</td>
<td>450</td>
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<td></td>
<td>• Eneros;</td>
<td>Photovoltaic</td>
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<td>• GDF Suzz Energia Portuga*;</td>
<td>&lt;= 5kW</td>
<td>267-273</td>
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<td></td>
<td></td>
<td>• Portucel*;</td>
<td>Solar thermoelectrical &lt;= 10MW</td>
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<td></td>
<td></td>
<td>• Accima*;</td>
<td>PV micro generation &lt;= 5kW</td>
<td>470</td>
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<td></td>
<td></td>
<td>• EDP - GPE*;</td>
<td>PV micro generation &gt; 5kW e &lt;= 150kW</td>
<td>355</td>
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<tr>
<td></td>
<td></td>
<td>• Biomass (forest)</td>
<td>Biomass (animal)</td>
<td>107-109</td>
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<td></td>
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<td>• Biogas digestion anaerobic RSU, ETAR and from effluents and waste of mixed farming and food agriculture</td>
<td>Gas of landfill</td>
<td>102-104</td>
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<td>OVERVIEW</td>
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<tr>
<td>NATIONAL REGULATORY AUTHORITY</td>
<td>PERCENTAGE OF ENERGY GENERATION FROM RENEWABLE SOURCES WITH BREAKDOWN (WIND, SOLAR, HYDRO, GEOTHERMAL POWER, BIOFUELS, WASTE TO ENERGY ETC.) AND 2020 TARGET FOR RENEWABLE ENERGY</td>
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<tr>
<td>KEY GENERATORS OF RENEWABLE ENERGY</td>
<td>FEED-IN TARIFFS</td>
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<td>GREEN CERTIFICATES (NAME OF THE SCHEME)</td>
<td>TAXATION</td>
<td>OTHER</td>
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| | | | |
| RSU | 53-54 | |
| CdR | 74-76 | |
| Waves (Demonstration up to 4MW) | 260 | |
| Waves (Pre-commercial up to 20MW) | 191 | |
| Wave (Commercial) | |
| first 100MW | 131 | |
| following 150MW | 101 | |
| following MWs | 76 | |

<table>
<thead>
<tr>
<th>Sources/Technologies</th>
<th>Tariff (indicative average) (€/MWh)</th>
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</thead>
<tbody>
<tr>
<td>Geothermic (high depth and enthalpy) up to 3MW, per project and per entity and up to a national limit of 6MW</td>
<td>270</td>
</tr>
<tr>
<td>Other projects up to 3MW, per project and per entity and up to a national limit of 10MW</td>
<td>170 - 246</td>
</tr>
</tbody>
</table>

2. In relation to the Energy policy instruments and taxation, the MoU set out the following:

- "Review existing energy related instruments, including taxation and energy efficiency incentives. In particular, evaluate the risk of overlapping or inconsistent instruments";
- "Based on the results of the review, modify energy policy instruments to ensure that they provide incentives for rational use, energy savings and emission reductions;"
- "Increase VAT tax rate in electricity and gas as well as excises for electricity."


3. According to the “European Commission: Occasional Paper - The Economic Adjustment Programme for Portugal - Fourth Review – Spring 2012” (the “Review”) highlighted as measures to be implemented in a mid-term in relation to the renewables:

- "the government has announced that it will hold negotiations with the generators to limit the policy costs of renewables, for capacity that is not awarded within tender procedures";
- Preparation of a "proposal on measures to be used to correct excessive rents in special (co-generation and renewables) and standard regimes (CMECs, PPA), and power guarantee mechanism. The proposal will consider the merits of a full range of measures and cover all sources of rents’;"
- "ensure that the reduction of the energy dependence and the promotion of renewable energies is made in a way that limits the additional costs associated with the production of electricity under the ordinary
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<td></td>
<td></td>
<td>Tariff (indicative average) – Renewable Energy (Portaria nº 105, October)</td>
<td>Sources/Technologies</td>
<td>Tariff (indicative average) (€/MWh)</td>
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<td></td>
<td></td>
<td>Sources/Technologies</td>
<td>Photovoltaic of Concentration (“CPV”) ≤ 1 MW, up to a limit of installed power national level of 5MW</td>
<td>380</td>
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<td>Tariff (indicative average) – Renewable Energy (Decreto-Lei nº 126/2010, 23 November)</td>
<td>Sources/Technologies</td>
<td>Tariff (indicative average) (€/MWh)</td>
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<td></td>
<td></td>
<td>Sources/Technologies</td>
<td>Hydro up to 10MW</td>
<td>91 - 95</td>
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<td></td>
<td></td>
<td>Sources/Technologies</td>
<td>Photovoltaic Solar Plant (“PV”)</td>
<td>257</td>
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</table>

and special (co-generation and renewables) regimes”;

- “Implement the announced measures to limit the policy costs of renewables under the special regime – excluding those granted under tender mechanisms, in particular (i) the compensation to be paid by the generators (yielding a NPV of €75 to 150 million); and (ii) the introduction of a maximum duration for the feed in tariff in small hydro plants (yielding an NPV of €200 to 250 million)”;

- “For new contracts in renewables, revise downward the feed-in tariffs and ensure that the tariffs do not over-compensate producers for their costs and they continue to provide an incentive to reduce costs further, through depressive tariffs. For more mature technologies develop alternative mechanisms (such as feed-in premiums)”;

- “Decisions on future investments in renewables, in particular in less mature technologies, will be based on a rigorous analysis in terms of its costs and consequences for energy prices. International benchmarks will be used for the analysis and an independent evaluation will be carried out”.


4. Average taxation for the eolic energy is estimated at 35% (above the 19% of the national tax average). Source: [http://www.apren.pt/cs/?id=319](http://www.apren.pt/cs/?id=319)
**OVERVIEW**

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<th>AND 2020 TARGET FOR RENEWABLE ENERGY</th>
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</thead>
</table>
| **ROMANIA**                  | The Romanian Energy Regulatory Authority – Autoritatea Nationala de Reglementare in domeniul Energiei – ("ANRE") | 2011: 16.142TWh of electricity from renewable sources  
2011: 60.385GWh of electricity generated, out of which: 27.71% hydro, 2.07% wind, 1.18% biomass, and 1.86GWh solar.  
2020 target: 24% (same as pursuant to the Renewable Energy Directive) |

**FINANCIAL INCENTIVES**

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<thead>
<tr>
<th>FEED-IN TARIFFS</th>
<th>GREEN CERTIFICATES (NAME OF THE SCHEME)</th>
<th>TAXATION</th>
<th>OTHER</th>
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</thead>
</table>
| Tariff (indicative average) – Renewable Energy (Decreto-Lei nº 5/2011, 10 January) | Sources/Technologies  
Biomass (forest) | N/A | |

**Feed-in tariff for “small scale” generation of up to 1MW:** suppliers in the same area as the producer are required to acquire electricity generated at regulated tariffs, determined per each technology type. Producers receiving this feed-in-tariff will no longer benefit from green certificates.

**Trading of green certificates combined with the mandatory quota system:** producers of renewable electricity receive green certificates for the electricity produced and fed into the system and have the right to sell such green certificates independently from the electricity generated and electricity traders (as well as certain producers) are obliged to acquire a definitive and mandatory quota of green certificates, proportional to the amount of the traded electricity. green certificates are further invoiced by electricity traders to end consumers, not for their actual cost.

**Support scheme for high efficiency cogeneration from RES:** a tariff granted for each MW of electricity produced from high efficiency cogeneration and fed into the system or at the producer's

**Source:** [http://www.dgeg.pt/](http://www.dgeg.pt/) (dated 2011.07.15)
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<tr>
<td>RUSSIA</td>
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<tr>
<td>There is no single authority regulating electricity and gas sectors in Russia. The major regulating bodies are: (i) the Ministry of Energy; (ii) the Federal Tariffs Service; (iii) the Federal Antimonopoly Service; (iv) the Federal Service for Ecological, Technological and Nuclear Supervision; (v) the Ministry of Natural Resources; (vi) the Federal Service on Supervision in the Sphere of the Use of Natural Resources; and (vii) the Ministry of Economic Development.</td>
<td>2010: approximately 1% of the electricity generated (excluding major hydro power plants with capacity more than 25MW). 2020 target: 4.5% of the electricity generated (excluding major hydro power plants).</td>
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</table>

| SERBIA | Energy Agency | 2012: 21.2% of energy consumption is from RES (biomass and hydropower). 2020 target: 27% target pursuant to the Renewable Energy Directive. | EPS | Summary: New Feed-in tariffs are to be determined by the Government of Serbia by the end of 2012. Mechanism: Execution of a long term power purchase agreement with the public supplier (Serbian national electric utility "EPS"). For small hydro power plants, tariffs have been set between 5.9 and 9.7€/kWh, for biomass power plants between 11.4 and 13.6€/kWh, for biogas power plants between 12 and 16€/kWh, for fossil fuel fired CHP plants (combined heat and power) | Summary: The Guarantees of Origin ("GO") are instruments issued by the TSO issued upon a request from the RES electricity producer. The GOs allow producers to export green energy from Serbia. | |

| | | | | | N/A | N/A |

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<tbody>
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<td>SLOVENIA</td>
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<td>Energy Agency of the Republic of Slovenia</td>
<td><strong>2010:</strong> the share of energy in the gross final consumption of energy in 2010 was approx. 20%</td>
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<td><strong>2020 target:</strong> 25% pursuant to Slovenian Action Plan for Renewable Energy and to the Renewable Energy Directive</td>
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<td>Power plants between 5.6 and 10.40€/kWh, for waste feed power plants between 8.5 and 9.20€/kW and for landfill and sewage gas power plants, wind power plants, solar power plants and geothermal power plants 6.7, 9.5, 23 and 7.5€/kWh respectively (regardless of their installed capacity). Only power plants with a capacity of less than 10MW (save wind, landfill and sewage gas, solar, and geothermal) can be eligible for the application of feed-in tariffs.</td>
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<td><strong>Feed-in tariffs are managed by the Centre for Support within Borzen d.o.o.</strong> The centre promotes supporting schemes for electricity production from renewable energy sources and high efficiency cogeneration.</td>
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<td>There are two basic forms of feed-in tariffs, namely the operation support (financial aid business) and guaranteed purchase.</td>
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<td>Under the guaranteed purchase price scheme, a generator (with a production capacity of a maximum of 5MW) is entitled to sell all of the electricity to Borzen for a guaranteed price for 15 years. Under the financial support scheme, the generator receives a contribution covering the difference between production costs and the expected market price.</td>
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<td>If a certain amount of electricity is generated from renewable sources the Energy Agency (Javna agencija Republike Slovenije za energije) issues guarantees of the origin of electricity and RECS green certificates (one for every 1MWh of energy).</td>
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<td><strong>The Excise Duty Act (Zakon o trošarinh) provides an exemption from payment of excise duties for all biofuels which are used as engine fuels. However, if such biofuels are mixed with other energy producing sources, there is a possible payment dispensation of up to 5%.</strong></td>
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<td>The Energy Efficiency and Renewable Energy Sources Division (Sektor za učinkovito rabo in obnovljive vire energije) of the Ministry of the Economy promotes the use of renewable energy sources by providing funds for investment projects in a public tender procedure. Moreover, Eco Fund (Eko sklad) encourages the development of environmental protection by providing loans or guarantees for environmental investments.</td>
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<p>| SLOVAKIA |                                                                 |            |                 |                                         |        |      |
|----------|----------------------------------------------------------------|            |                 |                                         |        |      |
| The Ministry of the Slovak Republic and The Regulatory Office for Network Industries | <strong>2009:</strong> energy generation from renewable energy sources was 7.4% of total generation of energy |            | <strong>Summary:</strong> The feed-in tariff scheme applies to electricity generation from renewable energy sources and high efficiency cogeneration with a total installed capacity up to 10MW. | <strong>Mechanism:</strong> The feed-in tariff scheme is based on an additional payment on top of the basic electricity price set for a certain type of renewable energy, e.g., for solar energy. The additional payment is equal to the difference between the basic price and the price of electricity set for the electricity to cover losses or imbalances in the distribution grid. | <strong>Summary:</strong> A green certificate, pursuant to the Slovak law (a guarantee of origin of electricity from renewable sources of energy) is issued in electronic form for each 1MW of electricity generated from renewable energy sources or by cogeneration upon request of the electricity producer. A certificate is issued for 12 months and is also tradable in other EU Member States. | <strong>Summary:</strong> Electricity generated from renewable energy sources is exempt from the consumption tax generally levied on electricity. |</p>
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<tbody>
<tr>
<td>SPAIN</td>
<td>CNE (Comisión Nacional de la Energía) Ministry of Industry, Tourism and Trade (Ministerio de Industria, Turismo y Comercio)</td>
<td>In 2011 the total energy generation from renewable sources represented 11.6% of the total primary energy production (86,600GWh). The forecast of energy generation from renewable sources for 2020 is expected to be 22.7% of the total energy production. Breakdown for the different renewable sources are (according to CNE sources):</td>
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<td></td>
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<td>- Hydroelectric: o 2011: 17,567MW o 2020: 22,672MW</td>
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<td>- Onshore wind energy: o 2011: 21,059MW o 2020: 35,000MW</td>
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<td>- Offshore wind energy: o 2011: 0MW o 2020: 750MW</td>
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<td>- Solar thermoelectric: o 2011: 999MW o 2020: 4,800MW</td>
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<td>- Solar photovoltaic: o 2011: 4,244MW o 2020: 7,250MW</td>
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<td></td>
<td></td>
<td>- Biomass</td>
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<td></td>
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<td>- Abengoa, S.A.</td>
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<td>- Acciona Energía, S.A.</td>
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<td>- Endesa Cogeneración y Renovables, S.A. – ECYR</td>
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<td>- Iberdrola, S.A.</td>
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<td></td>
<td><strong>Feed-in tariff for small scale generators under 50MW.</strong></td>
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<td><strong>The mechanisms</strong> are as follows:</td>
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<td><strong>Sell to the System:</strong> they may transfer all the electricity produced to the system for a regulated tariff (ie, single fixed amount for all the planned periods, which is determined, on the basis of the category, group and sub-group to which the facility in question belongs, its installed capacity and, as appropriate, the length of time elapsed since it started operating.</td>
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<td><strong>Free market:</strong> they may freely sell their production by submitting offers to the pool or by entering bilateral contracts, enjoying the same conditions as Generator Market Agents under the Ordinary Regime and, as applicable, further additional premium elements (ie, new features are included for certain technologies, cap and floor price limits for the sum of the hourly price of the daily market, plus a reference premium, so that the premium to be received every hour can be limited according to such values).</td>
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<td>Such conditions are regulated in the Regulation on payment of excise duty for energy products to which bio fuels are added (Pravilnik o plačilu trošarine za energente, ki so jim dodana biogoriva). Motor Vehicle Tax Act (Zakon o davku na motorna vozila) provides an incentive to purchase motor vehicle with lower CO₂ emissions.</td>
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<td>A draft bill of tax measures for energy sustainability, published on 28 September 2012, although still subject to amendments by the parliament, establishes the following measures:</td>
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<td>- Tax on radioactive waste produced as a result of the generation of nuclear power and on the storage of nuclear waste in centralised plants.</td>
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<td>- Duty on hydroelectric water.</td>
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<td>- Creation of the so called “green cents” on natural gas, fuel-oil, coal and diesel.</td>
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<td>- Electricity production tax over the total income received from the power produced by each of the tax payer's installations.</td>
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<td>SWEDEN</td>
<td>The Energy Markets Inspectorate (Sw. Energiomarknadsinspektionen).</td>
<td>2011: total is just below 90TWh (approximately 60% of the electricity generated in Sweden that year) of which approximately 66TWh is hydropower, 6TWh is wind power and the rest is biofuel.</td>
<td>2020 target: 50% of total energy consumption (49% target pursuant to the Renewable Energy Directive).</td>
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<td>N/A</td>
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<td>The electricity certificate system is a market based support system designed to assist expansion of production of electricity from renewable sources. Electricity certificates are issued to operators of approved plants and demand for the certificates is created by the fact that all electricity suppliers, and certain electricity users, are required to buy certificates corresponding to a certain proportion of their electricity sale or use. Since 1 January 2012 Norway and Sweden have a common market for an electricity certificate system based on the Swedish model.</td>
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<tr>
<td>SWITZERLAND</td>
<td>Electricity Commission (&quot;ElCom&quot;).</td>
<td>2010: 57% of energy generation of which: Hydro: 54.8% ● Waste: 1.52% ● Wind: 0.057% ● Solar: 0.13% ● Biomass: 0.287% ● Sewage gas at 0.19%</td>
<td>Target 2030: 10% increase (3400GWh) of energy generation from RES (excluding large hydropower plants)</td>
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<td>Certified green electricity is sold by power companies to consumers willing to receive green power. Producers of RES have to choose between this model and the cost-covering remuneration. The green-certificates model is not compulsory for electricity generators in Switzerland. However, the Stiftung Klimarappen (founded by principal members of the petroleum industry) has committed itself to reduce CO2 emissions by the purchase of green electricity. A CO2 fee was introduced in 2008. It amounts CHF56 per 1 tonne of exhausted CO2. The feed-in tariffs are to be considered as a tax.</td>
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| TURKEY                        | Energy Market Regulatory Authority (Enerji Piyasasi Düzenleme Kurulu - EPDK)                    | • Borsan Enerji Yatirimlar ve Üretim A.Ş.  
• Enerjisa Enerji Üretim A.Ş.  
• Zorlu Energy Group | Feed-in Tariff                                                                                   | Renewable Energy Support Scheme (Yenilenebilir Enerji Destek Mohanzimisi) | Transactions contemplated under the RES Law (including establishment of generation facilities and R&D related incentives) may benefit from tax related incentives upon a decision to be adopted by the Council of Ministers. Please see the Turkish chapter for more information in relation to the Turkish energy sector. |       |
|                               | According to the data obtained from the website of the Energy Market Regulatory Authority:      |                                   |                 |                                      |         |       |
|                               | • Natural gas: 45% (in 2011)  
• Wind: 2% (in 2011)  
• Geothermal: 0.2% (in 2008)  
• Hydro: 23% (in 2011)  
• Hydro: Use of all technically and economically possible hydro potential  
• Wind: Increase established capacity to 20,000MW  
• Geothermal: Use of 600MW potential that has been determined suitable for electricity generation  
• Solar: Popularise the use of solar sources for electricity generation. | Fee in Tariff                                                                                   |                                      |         |       |
|                               |                                                   | Type of Renewable Source Used in the Generation Facility | Additional incentive if a component manufactured in Turkey is used in the facility (US cents/kWh) |                                           |         |       |
|                               |                                                   |                                                   |                                              |                                       |         |       |
|                               |                                                   | Hydro                                             | 2.3                                          |                                       |         |       |
|                               |                                                   | Wind                                              | 2.7                                          |                                       |         |       |
|                               |                                                   | Geothermal                                        | 10.5                                         |                                       |         |       |
|                               |                                                   | Biomass (including land fill gas)                 | 6.6                                          |                                       |         |       |
|                               |                                                   | Solar (Photovoltaic)                              | 6.7                                          |                                       |         |       |
|                               |                                                   | Solar (Condensed)                                 | 9.2                                          |                                       |         |       |
|                               |                                                   | Other Incentives                                   |                                               |                                       |         |       |
|                               |                                                   | The additional incentive to be applied in the event a component manufactured in Turkey is used in the facility as per the type of the component used. The legislation provides a breakdown of applicable incentives based on the different components. Please see Annex 2 in the framework article in the Turkish chapter for the complete list. |                                           |                                      |         |       |
| UKRAINE                       | Ministry of Energy and Coal Industry, National Electricity Regulation Commission, State Service of Geology and Subsoil Use | • Active Solar GmbH  
• Wind Parks of Ukraine, LLC  
• Fuhrlander AG | Summary: The “green” tariff for generated electricity depends on the source of renewable energy. It is effective until 1 January 2030. Starting from 1 January 2012 this tariff is granted under condition of 15% “Ukrainian component” (ie, amount of materials and services of Ukrainian origin) of the total cost of construction of power generating facilities. The percentage of “Ukrainian component” is set to increase to 30% for power generating facilities commissioned after 1 January 2013, and to 50% after 1 January 2014. For solar facilities | N/A                                              |         |       |
|                               | 2005: Total is 332,865GWh (0.17% of the electricity generated)  
2020 target: 1.6% (target pursuant to the Energy Strategy of Ukraine) | Summary: income received from business activities of energy companies producing electricity from renewable sources, is released from income tax during ten years starting from 1 January 2011. Up to 1 January 2020 the income tax is also cancelled for producers of bioliquids. Mechanism: the taxation scheme is applied only if the exempted costs are used for upgrade of equipment or a repayment of loans within three years from the end of tax repayment. |                                           |                                      |         |       |

**Note:** Figures and data are sourced from official emergency measures and policy documents related to renewable energy in Turkey and Ukraine.
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*Commissioned* after 1 January 2013 additionally 30% of solar modules shall be of Ukrainian origin and 50% after 1 January 2014.

**Mechanism:** The NERC establishes monthly "green" tariffs for each producer by multiplying a coefficient, the value of which depends on the source of energy, by the January 2009 general retail tariff for low-voltage electricity consumers (in €). The product is converted to UAH in accordance with an effective exchange rate.

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Biographies
Mariana Ardizzone
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Mariana Ardizzone is a partner an international full-service law firm founded in 1991, with headquarters in Buenos Aires and associated offices in Brazil, Bolivia, and Uruguay. She has structured several transnational gas pipeline projects and power generation projects in the Southern Cone of South America. She has advised and negotiated a major international swap of assets and shares involving refineries, E&P assets, and retail stations in Argentina and Brazil. She regularly advises on mergers and acquisitions of companies and assets in the energy and natural resources industries.

Education

- University of Buenos Aires, School of Law (J.D., 1995; Postgraduate Studies, Oil & Gas, 1996)
- University of Michigan Law School (LL.M., 1999)
- Instituto Tecnológico de Buenos Aires-ITBA (Business Administration in Natural Gas and Power, 2004)

Professional Qualification / Bar Admissions

- Argentina
- New York

Memberships

- Buenos Aires Bar Association
- American Bar Association (ABA)
- New York State Bar Association (NYSBA)
- Rocky Mountain Mineral Law Foundation (RMMLF)
- Association of International Petroleum Negotiators (AIPN)

Languages

- Spanish
- English
- Italian

Professional Background

- Legal Counsel, Bridas SAPIC / Pan American Energy LLC, 1995-2000
- Assistant Professor of Natural Resources and Agricultural Law, University of Buenos Aires, 2005-2007
Caryl Ben Basat
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Weston, Florida, United States
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Caryl Ben Basat uses her unique background in business management, in-house law practice and private law practice to assist clients in achieving their business goals while managing their legal risks. She concentrates her practice on equipment finance and leasing in the aviation, maritime and energy industries, international commercial transactions and general corporate and commercial matters.

Significant Representations

- Negotiated agreements with airframe and engine manufacturers and international leasing companies for the purchase and lease of up to 85 new Airbus aircraft worth over US$5 billion for U.S. carrier.
- U.S. counsel to foreign export credit agencies for the financing of new Airbus aircraft order worth over US$100 million for Latin American airline.
- Acted for Russian airline in the acquisition of four Boeing aircraft out of U.S. EETC structure; negotiated purchase, finance and refinance agreements and found vendors to store and ferry the aircraft to Europe.
- Played key role in taking Swedish company public through successful U.S. IPO that raised over US$40 million.
- Counseled purchaser on the acquisition and finance of vessels for a Caribbean day cruise operation.
- Advised lender in the refinancing of a multimillion dollar loan to a turbine maintenance and repair company.

Professional Experiences

- Vedder Price, P.C., Washington, D.C., Shareholder in the Equipment Finance Group
- Akerman Senterfitt, P.A., Ft. Lauderdale, Florida, Shareholder in the Corporate Department
- Greenberg Traurig, P.A., Miami, Florida, Of Counsel in the Corporate Department
- Indigo Airlease Corp. (now AerCap USA), Ft. Lauderdale, Florida, Vice President & Corporate Counsel
- Volvo Aero Services (formerly The AGES Group, ALP), Boca Raton, Florida, Vice President & Assistant General Counsel
- World Airways, Oakland, California
- Director of Contracts
- Manager of Administration/ Labor Relations
- Planning Supervisor
- Senior Buyer / Surplus Parts Sales Coordinator
Professional Memberships and Board Positions

- American Bar Association
  - International Law and Practice Section
    - International Commercial Transactions, Franchising and Distribution Committee, Co-Chair, 2011-2013, Vice Chair, 2010-2011
    - International Energy & Natural Resources Committee, Steering Group, 2010-2012, Vice Chair, 2012-2013
    - Section Liaison to the ABA JOURNAL, 2010-2013
    - Section Liaison to the Business Law Section, 2011-2013
    - Section Liaison to the Section of Environment, Energy and Resources, 2012-2013
  - Business Law Section • Forum on Air and Space Law
- American Society of International Law

Publications and Presentations

- *Waste-to-Energy – A 21st Century Solution or a Costly Detour that will Derail Recycling in its Wake?*, ABA Section of International Law Spring Meeting, April, 2012 (New York, New York).
- *Big Ticket Equipment Leasing – Will Ireland Retain its Status as a Global Leader after the Debt Crisis?*, ABA Section of International law Fall Meeting, October, 2011 (Dublin, Ireland).

Education

- J.D., cum laude, Pace University School of Law
  - Editor-in-Chief, PACE INTERNATIONAL LAW REVIEW
  - Certificates in International Law and International Trade Law
- B.A., magna cum laude, English, San Francisco State University

Professional Qualifications / Bar Admissions

- Connecticut
- District of Columbia
- Florida
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Chen Bao is a partner in one of the first truly private partnership Chinese law firms. His primary practice areas include cross-border mergers and acquisitions, private equity and venture capital financing, capital markets, and general corporate and commercial matters.

Private Equity / Venture Capital

Chen has regularly represented leading private equity clients, such as TPG, Sequoia, CVCI, Capital Today, Unitas Capital, EQT, Affinity Equity Partners, Citic Capital, Boyu Capital, Gold Stone and CITIC PE in a wide range of their China deals, including investments into offshore holding companies and directly into onshore companies, minority investment in preferred stock and buyout or control transactions, equity or equity-linked debt investments involving public companies and private companies; equity joint ventures and foreign invested joint stock companies.

Chen also has considerable experience representing Chinese sellers in connection with private equity driven M&A transactions.

In terms of industry and sector experience, Chen has worked on many deals in the TMT, consumer & retail, pharmaceutical & hospital, power & renewable energy as well as traditional manufacturing space. Chen also has experience in investments in the financial services sector.

Strategic M&A /Foreign Direct Investment

In addition to transactions driven by financial investors, Chen has advised many multinational strategic investors in connection with their acquisitions and investments in China, including some large public listed as well as privately held companies in the U.S. and Europe, such as Siemens, State Street, Gain Capital, Norbert Dentressangle, Skaugen Marine and TitanX.

Capital Market

Chen has substantial experience in capital markets transactions, ranging from IPOs (U.S. and Hong Kong), follow-on offerings, Rule 144A/Reg S offerings to high yield bond offerings.

Education

- Seton Hall Law School in New Jersey, U.S.A, J.D. (Chancellor Scholar; Magna Cum Laude)
- University of International Business and Economics, Beijing, LLM (with Honors)
- University of International Business and Economics, Beijing, LLB (with Honors)
Professional Qualifications / Bar Admissions

- People’s Republic of China
- State of New York

Professional Background

Prior to joining Fangda Partners, Mr. Bao was a partner at another leading PRC law firm and before that, he worked at the Hong Kong and Beijing offices of Milbank Tweed Hadley & McCloy LLP. Prior to that, he worked at the Hong Kong office of Baker & McKenzie.
Keith Casto’s practice focuses on energy and environmental regulatory and transactional consultation, environmental and toxic tort litigation, and white-collar environmental criminal defense. His energy and environmental law expertise stems from his 10 years of practice at the U.S. Environmental Protection Agency (EPA) at the Atlanta Regional Office and over 20 years in private practice in Northern California and Atlanta, Georgia. He is an expert in conventional and renewable energy projects, greenhouse gas emissions credit trading, green technology financing and renewable energy project development, and is an international speaker on these issues. He is also an expert on electronic discovery. Mr. Casto has been included in the 2011 and 2012 editions of The Best Lawyers in America.

Mr. Casto’s practice encompasses both conventional and renewable energy project financing, entitlements and regulatory compliance. His environmental regulatory and litigation practice includes regulatory compliance counseling for all environmental media, due diligence investigation in real estate transactions and corporate mergers and acquisitions, domestic and international environmental audits, environmental management system consultation, civil litigation, including cost recovery for soil and ground water contamination under Superfund and various common law theories and toxic tort defense. In addition, he represents industrial clients, real estate developers and individuals in defense of civil enforcement actions and criminal prosecutions at federal, state and local levels in California and throughout the United States.

Mr. Casto has practiced extensively before a number of energy and environmental agencies throughout California, the United States and Europe, including the EPA; the U.S. Department of Justice; the Federal Energy Regulatory Commission; the California Public Utilities Commission; the California Energy Commission; the Bay Area Air Quality Management District; the Regional Water Quality Control Boards; the U.S. Army Corps of Engineers; the San Francisco Bay Conservation and Development Commission; the State Water Resources Control Board; the California Air Resources Board; the California Department of Toxic Substances Control; and numerous hazardous material management regulatory agencies and water districts.

Memberships

Mr. Casto is a member of the State Bars of Florida, California and Georgia. He is also active in the Environmental Law Institute; the American Bar Association’s Section of Environment, Energy, and Resources Law and Section on International Law; the environmental law sections of the Florida, Georgia and California State Bars; the Bar Association of San Francisco; and the Santa Clara County Bar Association.
Licenses

Mr. Casto is admitted to practice before the state courts of Florida, Georgia and California; the U.S. District Courts for the Middle, Northern, and Southern Districts of Florida, the Northern, Middle and Southern Districts of Georgia, and the Northern, Central and Southern Districts of California; and the U.S. Courts of Appeals for the Fifth, Eleventh and Ninth Circuits.

Education

1973   J. D., Stetson University College of Law
1969   B. A., Stetson University

Community Involvement

Mr. Casto is on the Board of Directors of the Bay Area Council, the United Way of Silicon Valley Advisory Board, and the President’s National Advisory Council of the United Church of Christ.
Renee Dopplick
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Renee Dopplick works at ACM as a senior public policy analyst on technology-related issues. She is Co-Chair of the International Energy and Natural Resources Committee of the ABA Section of International Law.

She previously worked at the World Wildlife Fund on issues related to energy, endangered marine mammals, and international law. In 2010, she assisted WWF, the Deepwater Horizon Study Group, and other nonprofits with their submissions to the Presidential Oil Spill Commission. The Deepwater Horizon Study Group was a global expert group organized by the Center for Catastrophic Risk Management at the University of California, Berkeley.

She also has worked as a consultant with the U.S. Institute of Peace (USIP), the National Institutes of Health (NIH), and the National Oceanic and Atmospheric Administration (NOAA).

During the Abuja Peace Talks on the North/South conflict in the Sudan, she worked at the Embassy of the Sudan in Washington, D.C.

Education

- Georgetown University Law Center, J.D., cum laude
- Michigan State University, Master of Science
- University of California, Los Angeles, Bachelor of Science

Professional Qualifications / Bar Admissions

- District of Columbia
- Maryland

Publications

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Chris is a partner in Gilbert + Tobin's Corporate Advisory and Energy + Resources groups.

Chris specialises in a broad range of corporate transactions in the energy and resources sector, including acquisitions, divestitures, listings, debt facilities, structured and project financings, restructurings and joint ventures.

His experience spans throughout Australia and more than 50 other countries. Chris has recently advised:

- Pura Vida Energy NL on its farm-out of a 52% operating participating interest in the Mazagan permit, offshore Morocco to Plains Exploration & Production Company;
- Neconde Energy Limited on its reserve based lending refinancing in respect of its 45% participating interest in the world-class hydrocarbons field OML42, onshore Nigeria; and
- NSW Treasury on the Network Electricity Reform Program involving the integration of the three NSW electricity distributors, Essential Energy, Endeavour Energy and Ausgrid.

He advises private and government clients in oil and gas, coal, power (renewable and non-renewable) and public international law and was recognised in the 2007 Legal 500.

He presents and has been asked to comment on these areas at leading international universities and conferences, and by international print and broadcast media (including Bloomberg, Reuters, the BBC World Service and Fairfax).

Previously he worked as a senior member of an oil and gas team at a leading international law firm in London, and as Vice President Business Development & General Counsel at a Canadian upstream international oil and gas company.

Education

Chris holds a Master of Letters from the University of St Andrews (taken as a Chevening Scholar), a Master of Laws in International Law from the University of Sydney and Bachelors degrees in Law and Commerce from Griffith University in Brisbane.

Professional Qualification / Bar Admissions

Chris is admitted to practice in New South Wales, Queensland and England & Wales.
Chris is also a member of the Legal Advisory Task Force for the Energy Charter Treaty in Brussels.
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Alex is Head of the Arthur Cox Projects and Energy Group. He has a broad based infrastructure and utilities practice, with particular expertise in the energy sector. Alex has more than fifteen years energy regulatory, transactional and major projects experience in Ireland and Australia and has been centrally involved in the liberalisation of the energy markets in both jurisdictions. He has extensive experience acting for government, regulators, financiers, market participants and customers, both on the island of Ireland and internationally, and combines broad industry expertise with a strong background in energy regulation and reform. Prior to joining Arthur Cox, Alex spent six years in the Projects Group of a leading Australian law firm.

Experience

- Conventional Power Projects, including the 343MW CCGT Huntstown Phase I Power Project (first IPP in Ireland); the 401.5MW CCGT Huntstown Phase II Power Project; the 445MW CCGT Whitegate Power Project; the 431MW CCGT Great Island Power Project; and the 300MW Lumcloon Power Project.
- Renewable Power Projects including the €400M Dublin Waste to Energy PPP Project (FT.com Innovative lawyers commendation 2008; Finance Magazine Project Finance Deal of the Year 2008); multiple onshore wind projects in Ireland and Northern Ireland for clients including EcoWindPower and Bord Gais Eireann; multiple CHP projects and advising the State in relation to the consenting of all offshore wind projects in Ireland.
- Electrical Interconnectors, including advising Moyle Interconnector Limited on all aspects of its ownership, operation and funding of the 500MW HVDC Moyle Interconnector; and EirGrid on the €150 million Phase 1 and €600 million Phase 2 funding of the 500MW HVDC East West Interconnector (Finance Magazine Loans and Finance Deal of the Year 2011) and a bidder on the Basslink Interconnector Project (Australia).
- Upstream gas including advising the State in connection with the consenting and regulation of upstream petroleum including all offshore consents for the Corrib Gas Field and the CER on development and implementation of the Petroleum Safety Framework and, funders and market participants in relation to the Seven Heads Gas Field; market participants in relation to exploration acreage;
- Downstream gas including advising on the development of the Islandmagee Gas Storage Project; Premier Transmission on its ownership, operation and funding of the Scotland to Northern Ireland Gas Pipeline; the CER & NIAUR on the Common Arrangements for Gas; the CER in relation to downstream gas regulation including establishment of an all-island system operator; implementation of Entry/Exit; development of the Unified Code of Operations and licensing of gas storage.
Energy Market Reform, including advising government, regulators and market participants in relation to the implementation of the Common Arrangements for Gas (Ireland and NI); the Single Electricity Market (Ireland and NI); MAE (Ireland); BETTA (GB); the National Electricity Market (Australia); Gas Entry/Exit (Ireland); NTS Exit Reforms (GB); and Gas Retail Market Implementation (Australia).

Energy Trading Arrangements including physically and financially settled wholesale and retail electricity contracts (Ireland, NI and Australia); establishment of IIPEX (Ireland); wholesale and retail gas contracts (Ireland, NI and GB); gas storage contracts (Ireland and GB); gas capacity contracts (Ireland, NI and GB); electricity interconnector capacity contracts (NI); and emissions trading arrangements (Ireland).

PPP/PFI including advising bidders and awarding authorities in Ireland and Northern Ireland on projects in the roads, health, communications, waste and energy sectors, including advising the successful bidder on the €400 million Dublin Waste to Energy PPP Project (FT.com Innovative lawyers commendation 2008; Finance Magazine Project Finance Deal of the Year 2008).

Corporatisation and Privatisation including in respect of the Ministry of Electricity and Water (Bahrain), TransGrid (Australia), Snowy Mountains Hydro-electric Authority (Australia), ACT Electricity and Water Corporation (Australia); and the Government Supplies Department (Fiji).

Mergers & Acquisitions including Viridian Group in respect of its £1.62 billion acquisition by Arcapita; the acquisition of a majority interest in Tynagh Energy by GE; the acquisition of EcoWindPower by Viridian; the disposal by DONG Energy Generation A/S of a majority interest in the Dublin Waste to Energy Project to Covanta Holdings.

Energy Sector Financing including advising EirGrid on the €150 million Phase 1 and €600 million Phase 2 funding of the 500MW HVDC East West Interconnector; EcoWindPower on the cross collateralised portfolio financing of its wind projects in Ireland and Northern Ireland; BNP Paribas on the £100 million funding of the Kilroot Clean Coal & FGD Project; the €400 million funding of the Dublin Waste to Energy Project (Finance Magazine Project Finance Deal of the Year 2008); Viridian in connection with £1.877 billion in acquisition and credit facilities; Viridian on the €200 million funding of the 343MW Huntstown Power Project (first major IPP project financed in Ireland).

Education

- Graduate Diploma of Legal Practice, 1995, UTS
- BComm, LL B, 1993, University of New South Wales

Professional Qualification / Bar Admissions

- Admitted as a solicitor in Northern Ireland, 2004
- Admitted as a solicitor in Ireland, 2003
- Admitted as a barrister and solicitor in New Zealand (non-practising), 2002
- Admitted as a legal practitioner in New South Wales (non-practising), 1995
Roger D. Stark is a partner in the Business and Finance Department and a member of the Energy and Project Finance, Mergers and Acquisitions/Private Equity, and P3/Infrastructure Groups, and the Climate Change and Sustainability Initiative.

For more than 20 years, Mr. Stark has advised clients on the structuring and financing of a wide assortment of domestic and international energy projects, including traditional, renewable, and clean technology projects and related financings that were firsts in the industry. For example:

- In 2012, he represented a multinational wind energy manufacturer in the acquisition of an approximately 440 MW wind project in Central America.
- In 2009-10, he represented a South American national oil company in a proposed restructuring of a large energy generation facility co-located with an oil refinery on the island of Curacao, and in a proposed project financing.
- In 2009, he led the team that acted as Program Counsel to the U.S. Department of Energy (DOE) in connection with a DOE loan guarantee authorized for an approximately $530 million financing of a California solar panel facility.
- In 2008, he represented one of the largest U.S. renewable energy sponsors in connection with an approximately $200 million refinancing of wind farms in three U.S. states.
- In 2003, he represented an international finance institution in connection with the structuring and negotiation of an approximately $185 million credit facility for two electric distribution companies in the Dominican Republic.
- In 2001, he was part of a World Bank team that advised the Government of Argentina regarding alternative approaches for restructuring energy and infrastructure concessions in the wake of the Argentine economic crisis.
- In 1999, he represented an international financing institution in connection with the structuring and negotiation of an approximately $90 million electric generation facility in Panama (at that time, the first privately financed facility in the country).
- Mr. Stark has worked on projects using hydrocarbon and renewable energy resources, and other infrastructure projects, in over 30 U.S. states and 25 foreign countries, 18 of which are Latin American. He has represented clients before the Federal Energy Regulatory Commission and state electric utility commissions, and has also represented clients on a wide range of energy...
mergers and acquisitions and public-private partnerships in both the United States and Latin America.

Practice Areas

- Business and Finance
- Climate Change and Sustainability
- Energy and Project Finance
- Mergers and Acquisitions/Private Equity
- P3/Infrastructure

Professional Activities

- American Bar Association, Section of Environment, Energy, and Resources
- Committee on Renewable, Alternate and Distributed Energy Resources (RADER), Co-Chair
- Committee on Energy and Environmental Markets and Finance, Vice Chair

Professional Qualification / Bar Admissions

- New York State Bar Association
- District of Columbia Bar
- U.S. District Court for the District of Columbia
- U.S. Court of Appeals for the Ninth Circuit
- U.S. Court of Appeals for the District of Columbia Circuit

Education

- Vanderbilt University Law School (J.D. 1984)
  - Associate Editor, Vanderbilt Journal of Transnational Law
- Queens College, City University of New York (B.A. 1981, cum laude, with departmental honors in economics)

Community Involvement

- Chilean-American Chamber of Commerce, Member, Board of Directors, 2005-2010
- Inter-American Dialogue, Member, Board of Advisors, 2001-2011

Languages

- English
- Fluent in Spanish
- Proficient in Portuguese
- Proficient in French
Continuing Legal Education Materials

Renewable Energy Around the World: An Entrepreneur’s Windfall or Big Solar Flare?
April 24, 2013

American Bar Association
Section of International Law
Spring Meeting 2013