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## Focus On Renewable Energy

Significant Changes in German Employment Law and Social Security System p. 6 >>  
Notes for Europeans Entering the U.S. Wind Energy Market p. 14 >>

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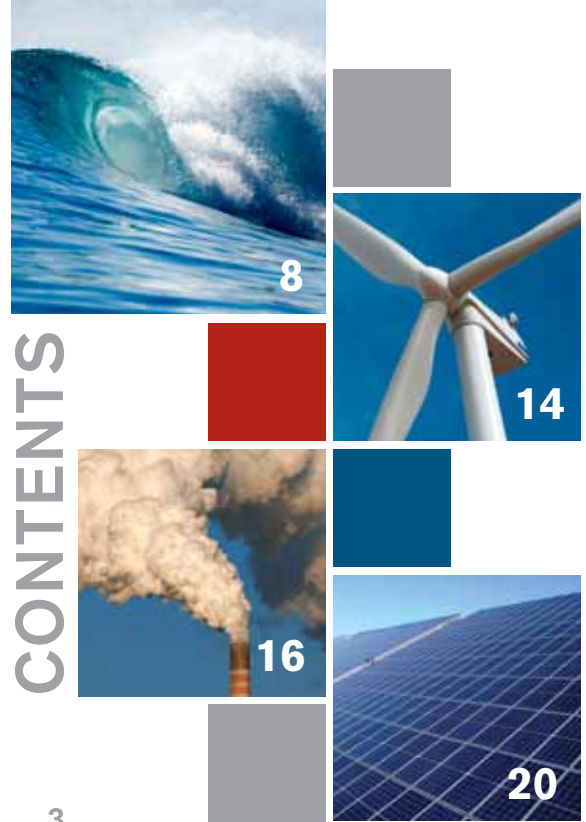
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# In This Issue

Welcome to the last issue of *International News* for 2009.

The focus for this issue is renewable energy. We start in Asia, where China is working hard to take the lead in the production of green energy vehicles. To help achieve this objective, the 2009 Auto Industry Adjustment and Revitalization Plan puts forward the development objectives, major tasks and relevant measures for China's auto industry from 2009 to 2011.

In the United States, a renewable energy revolution is underway in an entirely new area: wind and hydrokinetic (tidal) energy generation on the Outer Continental Shelf. It is still uncertain how new rules will apply to individual hydrokinetic projects, but we look at how developers can begin to pursue projects in premium lease areas that have significant energy potential.

One major reason why the United States has long rejected the international Kyoto Protocol for greenhouse gas reduction is concern over the economic stress that capping carbon emissions would cause. Now, new legislation is likely to spur market forces. We take a look at major government programmes already underway that have created substantial market momentum for renewable energy production.

It is becoming increasingly clear that the EU Emissions Trading Scheme system of carbon trading is flawed in contrast to the alternative models of renewable portfolio standards, feed-in tariffs and energy efficiency incentives. We review the alternatives and make the case for renewable mandates.

We then compare the U.S. and European wind markets and highlight some of the major differences that may affect European companies looking to expand into the U.S. market.

Next, we take a look at the Clean Development Mechanism, which, although it has had problems in practice and its future is under review, is undoubtedly remarkable in what it has achieved.

A report commissioned by the European Community for the upcoming Copenhagen summit has found that patents do not unduly impede innovation in the renewable energy field. We review the impact that this report will have on developed and developing markets.

Moving into the European Union, we look at the negotiations for a new agreement to tackle climate change for the period after the expiry date of the Kyoto Protocol, and the implications these have for the European Union's energy markets.

Staying in Europe, Italy is currently the most attractive market for investments in photovoltaic plants in Europe. The year 2010 will be another period of massive investment in the Italian photovoltaic market, but careful planning and efficient implementation is required as the feed-in tariffs will be significantly cut down in 2011.

Finally, as Germany has long assumed a pioneer role in the promotion of renewable energy, we review the Renewable Energy Sources Act 2009, which implements a revised feed-in tariff for electricity generated from renewable energy.

In our features section, we take a look at recent amendments to the European Capital Requirements Directive in the aftermath of the global financial crisis, and the effect these amendments have on EU credit institutions. In the United States, the regulation of over-the-counter derivatives is gathering pace. We review proposed U.S. legislation that mandates extensive clearing, trading and reporting rules that will need to be taken into account.

Finally, since the September 2009 elections of new German majorities, the future coalition parties have agreed on plans and timescales for their implementation. We review a number of substantial changes to the employment market and the social security system.

If you have any comments on this issue or would like to contribute to *International News*, please contact me at [dryder@mwe.com](mailto:dryder@mwe.com).

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# Recent Amendments to the European Capital Requirements Directive

By Kate Lamburn and Ben Watford

**In an attempt to align the interests of investors more closely with those of originators and sponsors of securitisation transactions, in May 2009 the European Parliament amended the Capital Requirements Directive (CRD), consisting of Directives 2006/48/EC and 2006/49/EC.**

The new requirements apply to securitisations issued on or after 1 January 2011 and to existing securitisations from 31 December 2014. The originator, sponsor or original lender must retain an exposure of 5 per cent and give continuing asset-level disclosure in order for EU credit institutions (EUCIs) to invest in its securitisation.

## Retention Requirements

Article 122a of the CRD sets out four options for retaining economic exposure:

- Retaining portions of each tranche of securities sold or transferred
- For revolving exposures, retaining a portion of the nominal amount of the securitised exposures
- Retaining randomly selected exposures of the nominal amount of the securitised exposures, provided that the minimum number of exposures is 100
- Retaining the first loss tranche of securities and any other tranches having the same (or more severe) risk profile maturing no earlier than those transferred or sold to investors

The interest is measured at origination and must be ongoing and not subject to any credit risk mitigation or hedging.

The retention requirements do not apply to the following:

- Positions guaranteed by EU governments,

central banks or other public sector entities where a 50 per cent risk weight or less is assigned, or multilateral banks

- Transactions where underlying reference entities are identical to those that make up an index of entities that is widely traded, or are other tradable securities other than securitisation positions
- Syndicated loans, purchased receivables or credit default swaps, when not used to package/hedge a securitisation covered by the retention requirements

## Due Diligence Requirement

EUCIs must demonstrate policies and procedures appropriate to their trading books and commensurate with the risk profile of their securitised positions. These must cover the following:

- Risk characteristics of individual securitisation positions
- Loss experience and reputation in previous securitisations
- Statements/disclosures relating to due diligence on securitised exposures
- All structural features of securitisations that can materially affect performance of an institution's securitisation position
- Where applicable, collateral valuation methodology and policies to ensure independent valuation

EUCIs must regularly perform stress tests on their securitisation positions. These may be based on financial models developed by credit rating agencies, but EUCIs must show an understanding of those models. They must also establish procedures to monitor ongoing performance information on exposures underlying their securitisation positions. Where the underlying exposures are securitisation positions, information

on the performance of pools underlying the securitisation tranches is required. In order to conduct stress tests, sponsor and originator EUCIs must ensure investors have access to all relevant data on the credit quality and performance of the individual underlying exposures, cash flows and collateral.

Penalties are to be imposed if the due diligence requirements are not met in any material respect. A minimum additional risk weight of 250 per cent will be imposed for the first infringement, increasing with subsequent infringements to a cap of 1,250 per cent.

## Credit Quality Requirement

The new requirements provide that EUCIs must apply the same criteria for granting credit to securitised exposure as to exposures held on their own book, and the same analysis to participations and underwritings in securitisation issues purchased from third parties. If an EUCI does not follow these guidelines, the originator EUCI may not exclude the securitised exposures from the calculation of its capital requirements.



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# Regulation of Over-The-Counter Derivatives in the United States

By Pierre Brochet

**In the United States, the regulation of over-the-counter (OTC) derivatives is gathering pace. In September 2009, the G20 agreed in Pittsburgh that by the end of 2010, OTC derivatives should be traded on exchanges or electronic trading platforms, cleared through central counterparties (CCPs) and reported to trade repositories, and that non-centrally cleared OTC derivatives should be subject to higher capital requirements. In October 2009, the U.S. House Financial Services Committee approved draft legislation, the Over-the-Counter Derivatives Markets Act of 2009, for the regulation of the OTC derivatives market. If passed by Congress, the act would be signed into law in the coming months.**

The industry itself has already taken steps to improve the functioning of the OTC derivatives market. The principal swap dealers have reduced the backlog of undocumented trades and the delay between trade and documentation. They have also reduced outstanding transactions by cancelling offsetting positions. The Depository Trust & Clearing Corporation and exchange operators such as CME Group and IntercontinentalExchange, Inc., have begun clearing billions of U.S. dollars in notional value of certain types of swaps. The International Swaps and Derivatives Association launched the “Big Bang Protocol” to incorporate auction settlement and credit event determination by a committee of industry participants into standard credit default swap (CDS) contracts. The proposed U.S. legislation goes further by mandating extensive clearing, trading and reporting rules under the joint authority of the U.S. Commodity Futures Trading Commission

(CFTC) for swaps and the U.S. Securities and Exchange Commission (SEC) for security-based swaps, subject to the arbitrage of the U.S. Treasury.

Standardised swaps between dealers and “major swap participants” (anyone with a substantial net position in swaps, exclusive of hedging for commercial risk, or with positions that create significant exposure to others) must be cleared and traded on an exchange or “swap execution facility”. Standardised swaps that involve end users need not be cleared but must be reported to a trade repository.

“Reporting and record keeping is required for all OTC derivative transactions.”

Reporting and record keeping is required for all OTC derivative transactions. Cleared transactions must be reported by the clearing houses to the relevant Commission and a trade repository. Non-cleared transactions must be reported directly to the relevant Commission. Large positions in swaps must also be reported directly to the Commissions. The legislation also mandates public disclosure of aggregate data on swap trading volumes and positions.

Capital requirements for cleared transactions by swap dealers and major swap participants must be more than zero, and capital requirements for non-cleared transactions must be higher than for cleared transactions. The regulators must set margin levels for non-cleared transactions where one counterparty is a dealer or major swap participant. Finally, swap dealers and major swap participants must register with,

and clearing houses and swap execution facilities must in most cases be approved by, the relevant Commission.

The changes that the legislation would introduce are significant, but questions remain: does it strike the right balance between policy needs and end users’ access to efficient risk management tools? Will non-standardised derivatives become too expensive to survive? Will CCPs absorb the shocks of large-scale defaults? Will the Commissions be able to make effective use of the data collected to avert a systemic collapse?

The legislation exempts from registration foreign swap markets participants subject to comparable foreign regulation, and promises to coordinate with foreign regulators to establish consistent international standards. But with the European Commission set on having its own regulations and regulators for the European OTC derivatives market, and the U.S. regulators’ powers to exclude from the U.S. OTC derivatives market participants regulated in a manner that undermines the stability of a financial market, it remains to be seen whether the OTC derivatives market will be subjected to a regulatory turf war.



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# Significant Changes in German Employment Law and Social Security System

By Paul Melot de Beauregard

**Since the September 2009 elections of new German majorities, the future coalition parties have agreed on plans and timescales for the implementation of new legislation. The employment market and the social security system form a significant part of these plans.**

One important—although not surprising—change is that the new conservative/liberal government does not want to establish a general minimum wage, or even proceed with the establishment of minimum wages in certain industries as promoted by the old conservative/social-democratic majority. In contrast, existing minimum wage thresholds for certain industries will be reviewed. However, these plans are accompanied by a requirement for a new law that will for the first time define immoral wages: anything that falls below two-thirds of the average wage according to the relevant collective bargaining agreement.

Existing minimum wage thresholds for certain industries will be reviewed.

Another important objective for the new government is a change to the existing law on fixed-term employment contracts that will allow employers to re-employ an employee on a fixed-term basis, even if there has been an unlimited employment relationship between the parties in the past. Up until now, this was not allowed.

To avoid a misuse of this new option, there will be a minimum brake period of one year where no employment relationship between the parties is allowed.

For more than a decade, the Older Employees Part Time Work Act has successfully allowed older employees to bridge the last years of their employment until retirement by the use of part-time occupation, and has helped many companies to save money through such programmes. It also has provided for government aid for employees who use these programmes. The new coalition agreed that this law will not be extended beyond the end of 2009 when it is due to run out. The ending of this rather successful law must be viewed against the strongly envisaged integration of older people into the labor market.

Another crucial change is the strengthening of financial employee participation programmes, *e.g.*, stock option programmes, in particular in connection with the waiver of wage parts by the employees. This change aims to create a win-win situation that increases employee remuneration and fosters an entrepreneurial attitude on one hand, and creates financial funds for the company on the other. This legislation will also influence the income tax legislation, as such programmes will be significantly privileged. Because German law has been comparably reluctant in the past to combine the employment and shareholder relationships, such plans will help to guide the national employment market towards the international level.

Last but not least, the new government intends to pay particular attention to the governance of boards and management as well as employee representation bodies. Given the misbehaviour and misuse of position by individual employee representatives in some public companies during recent years, a code of conduct will be established. This attempt must be viewed in connection with the increased level of protection of employee data that has been undertaken as one of the last legislative acts of the old government.

These and other targets—such as an increase of the minimum benefits for unemployed and poorer people, as well as an increase in employee contributions to the statutory health insurance—have been laid down in the coalition agreement, and the new government will now have four years to implement these projects and plans. However, experience shows that such plans, particularly those targets that go together with disadvantageous implications on existing employee rights, will be established as fast as possible to avoid any political influence on the next elections.



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# China's Green Vehicle Strategy

By David Dai and Alex An

In recent years, the Chinese Government has been working on two campaigns, one related to energy saving and emissions reduction, and the other to consumption stimulation, both of which are of strategic importance to China's economic growth. The notion of "green vehicles", a combination of green energy vehicle consumption and production, reflects the essence of the two campaigns. As such, early in 2004, the Chinese Government put forward the promotion and development of green vehicles when mapping out its Auto Industry Development Policy. The development of green vehicles is also incorporated into the auto stimulus package, the 2009 Auto Industry Adjustment and Revitalization Plan.

## China's Green Vehicle Development Plan

The Plan puts forward the development objectives, major tasks and relevant measures for China's auto industry from 2009 to 2011. The Chinese Government pledges to implement renewable energy strategies in the auto industry and promote the industrialisation of pure electric vehicles, hybrid vehicles, and their related key components and parts. The government also aims to increase the production capacity of electric and hybrid vehicles to 500,000 and improve sales of new-energy vehicles (green vehicles) over the next three years, which is expected to account for 5 per cent of the total sales of passenger vehicles at that time.

In order to achieve these objectives, the Plan lists a series of measures, which include the following:

- Appropriating the central government's investment of RMB 10 billion to assist vehicle production enterprises to upgrade their products, improve key technologies, and develop new-energy vehicles and relevant components and parts
- Supporting large or medium-sized cities in promoting and subsidising energy-saving and green vehicles to be first used in the transport, taxi, environmental protection, postal service, airport and public sectors

## Access to New Energy Vehicles Industry

In July 2009, China's Ministry of Science and Technology published the Administrative Provisions for the Access of New-Energy Automobile Manufacturers and Products. The Provisions divide the development of green vehicles based on the technological maturity of the vehicle, system and key assembly, and the level of optimisation of national and industrial standards into three different technological phases—preliminary, developing and mature—in which different administrative measures are to be implemented accordingly.

With respect to the establishment of a green vehicle enterprise, the Provisions set forth a series of requirements on its production, design and development ability; production consistency; marketing and after sale service; and components and parts procurement management. The Provisions further require that a green vehicle enterprise must have (or have the right to modify or use) at least one of the three key technologies of new-energy vehicles: the on-board energy system, the driving system and the control system.

## Taking Steps to Go Green

Through the Plan and Provisions, the Chinese Government has put great emphasis on key technologies in the development of green vehicles. In contrast to the traditional vehicle sector, in the field of green vehicle technologies China is not lagging that far behind the leading vehicle-producing countries. The government is taking significant steps to go green in this industry.

The government welcomes foreign investment in the green vehicle sector. However, investors should note that the government may require them to provide more advanced technologies. If a business wants to take a share of the sizable profits arising from the flourishing vehicle consumption market in China, the expectations and policies of the Chinese Government should always be carefully observed.



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# The Green Energy Tide Hits the Continental Shelf

By Gregory Lawrence and Jonathan Flynn

**Green energy is red hot in the United States. The American Clean Energy and Security Act (ACES), which was passed by the U.S. House of Representatives earlier this year, puts the Obama administration's goals for expanded renewable energy output into tangible form. It sets a Renewable Electricity Standard (RES) that requires retail electricity suppliers to meet an increasingly higher percentage of their load with electricity from renewable energy sources, rising from 6 per cent in 2012 to 20 per cent by 2020. A separate renewable energy bill with similar provisions has been introduced and debated in the U.S. Senate.**

In addition, 30 states and the District of Columbia, which collectively account for well over half of the electricity sales in the United States, have developed their own RES or Renewable Portfolio Standard (RPS) programmes. Moreover, both ACES and a similar bill now before the U.S. Senate propose a cap-and-trade regime for greenhouse gas (GHG) emissions,

which could assign a price to GHGs from fossil plants, potentially rendering renewable power more competitive.

“The total average wave energy on the OCS alone is estimated to equal more than half of the entire electricity consumption of the United States in 2007.”

## Green Energy and the Outer Continental Shelf

A renewable energy revolution is underway in an entirely new direction: wind and hydrokinetic (tidal) energy generation on the Outer Continental Shelf (OCS). On 23 June 2009, the federal government issued five exploratory leases for renewable wind energy production in OCS areas off New Jersey and Delaware. The leases, the first of their kind, authorise preparations for the construction of meteorological towers from six to 18 miles offshore to collect site-specific data on wind speed, intensity and

direction for the eventual creation of wind energy installations. For more information, visit <http://www.mms.gov/ooc/press/2009/press0623.htm>. The leases reflect a new federal program, administered by the Minerals Management Service (MMS), to develop OCS renewable power projects. It is still uncertain how the new MMS rules will apply to individual projects, but developers now can begin to pursue projects in premium lease areas that have significant energy potential and that are near electricity demand centres.

The OCS generally refers to the offshore Atlantic Ocean, Pacific Ocean and Gulf of Mexico territory under the administration of the federal government, extending anywhere from 60 to 350 nautical miles from the coastline. In addition to wind resources, the OCS provides excellent potential to produce power from ocean current and tidal forces. The total average wave energy on the OCS alone is estimated to equal more than half of the entire electricity consumption of the United States in 2007. Despite this potential, jurisdictional uncertainty and



other regulatory factors have stood as major obstacles to the development of such resources.

### New OCS Lease Policy

Congress included in the Energy Policy Act of 2005 a provision placing jurisdiction over offshore renewables in the hands of the MMS. The agency responded by undertaking an extensive rulemaking proceeding that culminated on 22 April 2009 (Earth Day) in the introduction of regulations to develop renewable energy generation on the OCS. The agency also recently inked a Memorandum of Understanding (MOU) with the Federal Energy Regulatory Commission (FERC) to resolve a jurisdictional tussle over the actual sale of power and the licensing of tidal energy projects (as opposed to wind and solar). Under the MOU, an applicant must first obtain a lease from the MMS to conduct renewable energy activities on the desired tract of the OCS and subsequently acquire an exemption or license from the FERC to undertake the construction and operation of the tidal energy project.

In contrast with this shared responsibility, the new MMS lease policies for offshore wind and solar projects are comprehensive for that agency, covering conception to decommissioning. The issues involved are complex, beginning with the bidding and award process for leases and continuing through assignment, facility approval, financing and environmental compliance. Under the policies the MMS will issue two types of leases:

- Commercial leases will give developers access, transmission/distribution and operational rights to produce, sell and deliver power on a commercial scale for a period of up to 30 years, with the opportunity for renewal.
- Limited leases will be issued for shorter periods (for example, five years) and convey the right to conduct activities such as site assessment and technology research and testing without producing and selling power commercially. Limited leaseholders may, however, be given additional consideration by the MMS in a subsequent competitive process for a commercial lease, depending on the terms of their lease.

Even applicants unsure if a particular renewable energy technology is commercially feasible should seek a commercial lease, because it reserves the full right to commercially develop the OCS site. The technology testing can be conducted during the site-assessment phase of the lease. The lessee is not obligated to fulfil the full lease term if the technology proves to be unsuitable for commercial production. Alternatively, smaller entities unable to undertake expensive long-term commercial leases can still pursue renewable energy activities on the OCS under a limited lease.

### OCS Leasing Process

All leases will be awarded through a competitive process modelled after the one already used for offshore oil and gas leases. The duration of the process will depend on the nature of the lease. According to the MMS estimates, project developers should plan on taking one to two years to secure a commercial lease, while limited lease applications may take up to six months. The commercial lease is time consuming as well as more costly, in part because it requires an environmental analysis under both the National Environmental Policy Act (NEPA) and the Coastal Zone Management Act (CZMA). Despite these estimates, developers should allow for additional time in the early stages of this new program.

The biggest reason for expecting a lengthy process is the multiple milestones that applicants must reach to secure a competitive lease. These include the following:

- *Call for information and nominations.* Once the MMS decides to initiate a competitive sale process, the agency will provide notice to the public about the area under consideration. Prospective bidders have 45 days to indicate areas and levels of interest.
- *Area identification.* Using information obtained from the call for information, the MMS will determine the geographic area for the proposed lease, any alternatives to the proposed action and any necessary mitigation measures.
- *Environmental analysis.* Once a lease area is identified, the MMS will begin preparing the documents necessary to comply with both NEPA and CZMA environmental requirements.
- *Proposed sale notice.* After completion of the environmental documentation,

MMS will issue, up to six months in advance of a proposed sale date, a public notice announcing the terms and conditions of a proposed competitive lease. Concurrently, all tribal, state and local authorities affected by the proposed lease will have 60 days to comment.

- *Final sale notice.* If no roadblocks arise to this point, MMS will issue, at least 30 days before the sale date, a Final Sale Notice indicating the date, time and place of the sale; the blocks available for lease; bidding rules and lease terms; and other pertinent information.
- *Bid evaluation.* MMS will evaluate each bid for technical and legal adequacy, as well as the lessee's financial capability.
- *Lease issuance.* From a variety of bidding formats, MMS will evaluate the bids and make a choice. The winning bidder immediately receives the lease forms and has 10 days to file the required financial assurance and pay the remaining bonus bid. The first six months of rent are due to the MMS within 45 days after an executed lease is received.

Many issues must still be resolved before commercial scale projects begin operating on the OCS. Examples include the cost, time and multiple regulatory approvals needed to connect offshore energy generation to the existing electricity grid, and vocal objections from local groups that oppose OCS development. Nonetheless, by providing a roadmap for the issuance of renewable energy leases on the OCS, the MMS action moves the United States significantly closer to harnessing its renewable resources on the OCS.



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# The Market Engines of U.S. Renewable Energy Development

By John Hammond and Gregory Lawrence

**The United States has long rejected the international Kyoto Protocol for greenhouse gas (GHG) reduction because of the economic stress that capping carbon emissions would cause, given that the U.S. economy depends on burning coal for much of its energy needs. Because coal is abundant, there also has been little incentive regionally for the United States to pursue large-scale development of renewable energy sources, which involve little or no GHG emissions.**

New legislation is poised to spur market forces remaking this economic paradigm. Pending bills in Congress will put a price on GHGs by creating new commodity markets for trading GHG allowances and offsets. These markets are poised to be significant, global and perhaps larger than existing commodity markets. Fundamentally, a GHG emissions price would increase the cost of fossil generation, making renewable power generation more competitive.

Building on successful mandatory renewable portfolio standards in 30 states, certain congressional bills also set a mandatory, national Renewable Electricity Standard (RES) that requires utilities and other retail electricity suppliers to meet increasingly higher percentages of their load with renewable energy and, in part, energy efficiency measures. This will drive renewable and efficiency asset development even faster and to more regions of the country.

## Legislative Initiatives

The pending legislative initiatives are largely complementary. Each intends to use economic forces from a GHG cap-and-trade market to shape the U.S. energy market for years to come. Most comprehensive is the American Clean Energy and Security Act (ACES). Passed by the House of Representatives in July 2009 and under consideration by the Senate, ACES would create a comprehensive, economy-wide cap-and-trade programme to reduce GHG emissions by covering approximately 85 per cent of all U.S. GHG emissions.

As drafted, it establishes an overall cap on GHG emissions compared to 2005 levels, starting at 97 per cent for 2012 reducing incrementally to 17 per cent for 2050. Covered entities must obtain in a new market, by purchase at auction or by allocation, an allowance or offset for each metric ton of covered emissions.

“These markets are poised to be significant, global and perhaps larger than existing commodity markets.”

The Clean Energy, Jobs and American Power Act, introduced by Senators Kerry and Boxer in September 2009, mirrors many provisions of ACES. One important issue not detailed in the Kerry/Boxer bill is regulatory oversight of GHG markets. Meanwhile, Senate Bill 1399, introduced in July 2009 by Senators Feinstein and Snowe, would require most GHG trading to take place on

regulated exchanges or through clearing organisations to be regulated by the U.S. Commodity Futures Trading Commission (CFTC). ACES divides oversight authority between the CFTC and the Federal Energy Regulatory Commission (FERC).

### Incentive Developments

The extent of federal agencies' regulatory powers over the new GHG markets remains uncertain. Uncertainty means that market participants should move forward with GHG strategies, but be cautious and aware of federal and state developments. Nevertheless, major government programmes already underway have created irresistible momentum for renewable energy production. The following highlights key renewable market drivers: direct incentives and the groundwork for GHG emission pricing.

*American Recovery and Reinvestment Act of 2009 (ARRA).* The February 2009 ARRA economic stimulus package provides for U.S. \$20 billion of investment in renewable energy, including a three-year extension of the production tax credit (PTC); the option to take the PTC as an investment tax credit (ITC); and the option to receive a cash grant equal to 30 per cent of total facility costs placed in service (and a bonus depreciation deduction) now rather than use the applicable ITC over time. Under ARRA, ITC grants are available for wind facilities placed in service on or before 31 December 2012 and for other qualifying facilities in service before 31 December 2013, where construction commences before 2010. Investors and developers with U.S. taxpayer status can avail themselves of the tax credits, although some foreign entities may need to establish U.S. blocker companies.

*Advanced Energy Project Tax Credits.* ARRA created a new U.S. \$2.3 billion ITC encouraging investment in manufacturing facilities that produce certain renewable and advanced energy property, but not actual energy generation. In August 2009, the U.S. Treasury Department announced an initial allocation round of the credit, which applies to "qualifying advanced energy projects" located in the United

States, and equals 30 per cent of the taxpayer's qualified investment. A "qualifying advanced energy project" re-equips, expands or establishes a manufacturing facility for the production of equipment to produce energy from renewable resources, for example.

*Loan Guarantees for Conventional Renewable Energy Generation Projects.* The U.S. Department of Energy (DOE) announced in October 2009 the first solicitation under its much anticipated new Financial Institution Partnership Program (FIPP) with private sector lender participants, to expedite diligence and funding of renewable energy projects. Up to U.S. \$750 million in funding would cover credit subsidy costs of the loan guarantees, which the DOE anticipates could support U.S. \$4 to 8 billion in lending to eligible conventional renewable generation projects. The FIPP follows existing and expanded solicitations for renewable energy projects employing innovative technologies. To be eligible, projects must commence construction by 30 September 2011. International project sponsors may apply for loan guarantees as long as the project is located in the United States.

*Mandatory Reporting of Greenhouse Gases, Proposed GHG Permits.* While the U.S. Congress continues to do its work, the U.S. Environmental Protection Agency (EPA) has been busy too, keeping pressure on lawmakers. In September 2009, the EPA issued a final rule requiring that certain facilities and industries report their annual emissions of carbon dioxide and other GHGs. The new reporting system covers approximately 85 per cent of total U.S. emissions and will allow the EPA to gain a comprehensive understanding of emission sources to help guide the development of emissions reduction policies. Suppliers of fossil fuels, direct GHG emitters, vehicle and engine manufacturers outside of the light duty sector (which includes passenger cars and trucks), and certain large downstream facilities that emit more than 25,000 metric tons of CO<sub>2</sub> and other GHGs annually will be subject to the reporting requirements. The EPA also has proposed

new thresholds for GHGs from large industrial facilities to determine when Clean Air Act operating permits would be required, including use of best available control technologies. The emissions threshold for such permits would be 25,000 tons of GHG emissions per year, mirroring the reporting rule.

“This will drive renewable and efficiency asset development even faster and to more regions of the country.”

The renewable energy engine is gathering speed and converts. The requirements embodied in government legislation and incentives—renewable energy standards, cash grants and loan guarantees, and a competitive boost from potential GHG pricing—mean a green energy transformation. Indeed, such initiatives also could give an advantage to traditional “fossil” power companies and utilities that develop, acquire or enter joint ventures with renewable energy installations. Government is, in part, picking near-term winners and losers. Investigating how these potent incentives are shaping transactions now is the best way to take full advantage of the coming green transformation.



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# Renewable Mandates Should Trump Cap-and-Trade

By Doron F. Ezickson

**Three policy models for carbon emissions reductions and renewable energy resource diversity have been developed in the European Union and the United States over the last decade. The Kyoto treaty triggered the development of the EU Emissions Trading Scheme (ETS), a cap-and-trade system intended to enable market-driven solutions to global over-production of carbon dioxide. European renewable energy policy goals have been enacted in two forms: renewable resource mandates, such as the UK Renewables Obligation Certificate programme, and price supports for renewable resources, primarily in the form of a feed-in tariff mechanism, in several European countries. In the United States, by contrast, only a voluntary emissions scheme has developed.**

Some states are moving towards regional cap-and-trade markets, and Congress has been seriously considering a mandatory cap-and-trade system since early 2009.

U.S. states have also developed a growing patchwork of renewable mandates, with attendant trading provisions for renewable energy certificates (RECs), while Congress is considering a federal renewable portfolio standard (RPS). Finally, enhanced energy efficiency goals have begun to be facilitated through a more programmatic approach to monetising the benefits of reduced energy usage through real time metering and other avenues.

**“A number of cracks in the foundation of the EU ETS have begun to form.”**

## Problems Faced

A number of commentators believe that the EU ETS system of carbon trading is flawed in contrast to the alternative models of renewable portfolio standards, feed-in tariffs and energy efficiency incentives. Problems with UN validation of Clean Development Mechanism (CDM) projects, EU court challenges to credit allocations

and uncertainty under Kyoto about enforcement of the mandatory country caps lend increasing support to a sceptical view of cap-and-trade by market participants. The inevitable lack of regulatory certainty inherent in a commodity itself created by regulation provides important insight into the danger of over-reliance on an EU ETS-like system, both for governments and for the private sector that provides the capital to support the system. Governments must give a more intensive focus to improving liquidity and scale of renewable mandates and a more systematic approach to energy efficiency. Only initiatives such as these will encourage the necessary capital investment from the private sector to achieve the important policy objectives of emissions reductions and energy resource diversity.

A number of cracks in the foundation of the EU ETS have begun to form. On 23 September 2009, the EU Court of First Instance ruled that the European Commission had exceeded its powers by imposing a ceiling on carbon allowances



for Member States. After an over-allocation of allowances to Member States in the first trading period from 2005 to 2007, and a resultant collapse in market prices in 2006, the Commission tightened the limits for Member States. Recognising the damage this decision does to the carbon market, a Commission spokesman stated that “the Commission will take all possible action in order to protect the integrity of the European-wide market of allowances and minimise the legal uncertainty created by these rulings”.

In another setback in autumn 2009, the United Nations suspended the world’s largest auditor of CDM projects for irregularities in its review of projects and employment of qualified personnel. Given that approximately 20 per cent of the credits traded come from certified CDM projects, the inability to rely on the legitimacy of these projects introduces a degree of risk that many market players may not be willing to assume in the future.

Another issue is that Kyoto has no effective means to enforce country commitments to reduce carbon emissions. A commonly cited example is that of Canada, a signatory to Kyoto that is now 29 per cent over its target. However, there is little expectation that Canada will suffer any adverse repercussions as a result of this. Without enforcement of these caps, the price of carbon will be subject to extreme volatility and may ultimately collapse.

Another area of developing regulatory risk related to the carbon markets is the potential for overlapping and draconian regulation of the nascent carbon trading business. A variety of tax and other fraud schemes have been identified by the United Kingdom’s Financial Services Authority as illustrating the need for more focussed regulatory oversight and enforcement activity in the carbon markets. In the United States, a number of agencies, including the Federal Energy Regulatory Commission (FERC) and more recently the U.S. Commodities Futures Trading Commission (CFTC), have asserted or sought jurisdiction over a potential carbon market.

CFTC Chairman Gary Gensler testified on 9 September 2009 that the CFTC is

better equipped to oversee carbon trading than other agencies, such as the Environmental Protection Agency or FERC, because it has “a great deal of experience regulating the trade part of cap and trade”. Chairman Gensler also advocated for regulatory components to be part of any cap-and-trade legislation: standards setting in allocation; record keeping; overseeing trade execution systems; overseeing clearing of trades; and protecting against fraud, manipulation and other abuses. The need for intensive regulation will, at a minimum, substantially slow the development and flow of capital into a U.S. carbon trading market. It is therefore sensible to ask whether the effort is worth the result.

### Potential Solutions

Renewable mandates and supports suffer from fewer obstacles to success. The arguments in favour of renewable energy mandates are considered by some observers to be superior to those supporting feed-in tariffs because, while government officials set the percentage goal for new renewable resources, it is left to the market to set the price for such resources. By contrast, feed-in tariffs involve governments in price setting and can therefore lead to unexpected changes as well as distortions in market values. While there is ongoing debate as to whether renewable mandates create efficient or adequate incentives for innovation, reputable commentators have observed that innovation can be strong under either programme if properly structured.

“Renewable mandates and supports suffer from fewer obstacles to success.”

If a renewable mandate is part of a well-designed, medium- to long-term, and sufficiently scaled programme, the RECs market will have superior transparency, price discovery and liquidity owing in no small part to the regulatory certainty of the programme. As of autumn 2009, 28 U.S. states had renewable energy mandates, with an additional five in the process of being developed. While some of the state programmes share characteristics, most are not sufficiently similar to enable the development of regional or national markets, and therefore lack optimal

efficiency and liquidity. The opportunity to develop such scale and consistency is presented clearly by proposed legislation to create a federal RPS.

The key features of a federal RPS should include adoption of a minimum common standard for length of programme, allocation of costs across all customers, a consistent and integrated tracking system to prevent double counting of credits, and clear requirements for operation dates and the shelf life of credits. A number of additional features that are not consistently included in state programmes would enable more accurate pricing and efficient allocation of capital. These include a more refined approach to the benefits of optimal location of new facilities, in coordination with regional ISOs and RTOs; the need for facilities to also serve capacity markets; and REC pricing that reflects both the time and season of availability, *i.e.*, periods of peak daily demand and peak seasonal demand. Finally, the environmental attributes required of new renewable resources must be more consistently delineated.

Renewable mandates must be accompanied by more aggressive and systematic goal setting and incentives for energy efficiency. Many technological innovations are ready to be deployed. A number of new energy efficiency proposals are pending in Congress and are under review by the European Union and a number of Member States. Immediate action on these proposals will enable private capital to trigger far broader deployment of these technologies, which are a necessary contributor to meeting the important energy policy challenges we face.



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# Notes for Europeans Entering the U.S. Wind Energy Market

By Stefan Schmitz

**In the last 20 years, European renewable energy firms have been extremely successful in their own territories. Denmark, Germany and Spain have been leading the way in renewable energy projects and have developed cutting-edge technology with respect to wind turbines. Since these countries have established their sites, market growth rates have dropped markedly. Yet the appetite for growth remains, and companies are looking for new markets. The United States fulfils their criteria, but the U.S. renewable energy market differs in many respects from the European market.**

## **Land Agreements**

Generally speaking, land agreements in the United States do not differ greatly from those to which European companies are accustomed. Some last longer than the average European agreement—sometimes up to 100 years—but the average is around 30 years.

One of the major differences in the United States is that official land records are less reliable. While there are land registries in the United States, lenders are not content to rely solely upon an examination of those records and require borrowers to purchase title insurance naming the lender as insured. If any third party asserts a right against the mortgaged property that predates the

recording of the lender's mortgage in the land registry, the title company will indemnify the lender and defend the title against the claim. In order to be able to issue insurance, the title insurer will carry out its own due diligence, thereby seeking to limit its own risk. The price of the policy is calculated based upon the amount of coverage being purchased, with rates currently running between U.S.\$2 and U.S.\$3 per U.S.\$1,000 of coverage. Lenders will insist on insurance being in place before they lend to a project.

## **Off-Take**

Most European companies have grown used to feed-in tariffs that make their lives extremely easy because they do not have



to spend much time and money on the negotiation of a complicated power purchase agreement (PPA). In Europe, more countries are adopting feed-in tariffs as opposed to certificate systems. In the United States, there is (with a few exceptions) no feed-in tariff and therefore no guaranteed off-take. As a result, project developers must look carefully at the likelihood of getting a PPA before they start their project.

“Grid connection is one of the most important aspects of a wind project in the United States.”

About half of the states have a renewable portfolio standard (RPS) that is similar to the certificate system in some EU countries, notably the ROC system in the United Kingdom. Just like the certificate system in Europe, an RPS requires the utilities in a state to have a certain percentage of their electricity come from renewable energy sources. This does not give an individual project a right to have its electricity bought by a utility, it only increases its chances by creating an artificial demand. Whether the utility will buy the electricity, how much of it and at what price is subject to negotiations between the project and the utility.

Some utilities meet their obligations under an RPS by putting PPAs up for auction. They will calculate, for example, that they need to have 300 MW of wind power installed to meet any remaining obligation under the state's RPS, and they will offer a power purchase agreement for 20 years to the lowest bidder, *i.e.*, the project that offers them the lowest price per kWh for the PPA. Needless to say, the profit margins under these PPAs are extremely low.

Many PPAs in the United States also grant different prices for different times of day, in contrast to the uniform price to which European companies are accustomed. Power purchase agreements tend to be long, and their negotiation requires significant understanding and lawyer hours.

### Grid Connection

European companies are used to a rather easy grid connection regime, probably because European countries tend to be smaller and the grid appears to be in much better shape than it is in the United States, where substantive investment is necessary to accommodate future needs, especially for renewable energy.

As in Europe, the U.S. grid has been separated from generation for some time. However (again similar to Europe) the grid is still owned by the utilities, but access to it is administered by independent system operators (ISOs), and it is to them that a renewable energy company must apply for grid access. In the past there have been many instances of abuse: companies with projects that are nowhere near completion or even realistic have applied for grid positions and received them, at the expense of much more realistic and mature projects. This abuse has largely been brought to an end, and the ISOs are now much more careful with admission. The procedure is very open and in theory not very complicated. It requires, however, substantial cooperation and work by the developer and, depending on the ISO, significant payments to deter bogus applications. The grid connection is one of the most important aspects of a wind project in the United States at the moment. Many investors and banks will ask whether or not a project has received grid connection before they ask what the wind speeds are.

### Turbine Supply

As a rule, turbine manufacturers do not provide turn-key services in the United States. Generally the turbine manufacturers deliver the parts of the turbine to certain delivery points from which they must be collected by the project company. Sometimes the turbine manufacturers deliver the parts to the site but will not assemble them; this must be done by other companies and under different agreements. The warranty begins to run as soon as the turbine has been erected and has been accepted by the turbine company itself.

### Finance

Prices under PPAs in the United States tend to be much lower than in Europe, usually at a level at which no project in Europe would be profitable. U.S. projects have in the past relied, and will continue to rely for the foreseeable future, on other incentives, notably the production tax credit (PTC). The PTC gives an additional two (U.S.) cents per kWh of wind generated electricity. Considering that under the PPA the compensation could be as low as five or six (U.S.) cents, an additional two (U.S.) cents is a considerable uplift.

Under the stimulus package which the Obama administration introduced earlier in 2009, project owners can also replace the PTC with a government cash grant of 30 per cent of capital expenditure. In addition, U.S. projects benefit hugely from the accelerated depreciation of the project equipment. Hardly any U.S. wind project could survive without the accelerated depreciation. One drawback of this is that the accelerated depreciation, as well as the PTC, does require the U.S. tax capacity, which is not the case for the cash grant.

Debt financing by U.S. banks is also significantly different. As a rule, U.S. banks tend not to lend for more than seven years, a period not sufficient for repayment by a wind project. Not surprisingly, European banks, which are able to lend for longer periods and already have significant experience, have a huge market share in the United States, ranging from 75 to 85 per cent. This provides an additional bonus for European companies, as they are used to dealing with these banks and have long-term relationships with many of them.



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# The Clean Development Mechanism

By Adam Topping

**The Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) sets binding targets for industrialised countries to reduce their greenhouse gas (GHG) emissions. Since the Kyoto Protocol came into force on 16 February 2005, it has been ratified by all major Western nations with developed markets, with the notable exception of the United States.**

Whilst the GHG reduction targets under the Kyoto Protocol are aimed at individual countries, the onus is then shifted by governments onto companies active in pollution-heavy sectors, such as fossil fuel power generation or iron production. These companies are issued a fixed number of GHG allowances per year, each of which permits the pollution of one tonne of CO<sub>2</sub> equivalent. The companies are required to either restrict their total GHG output to within the prescribed cap, or, if the cap is

exceeded, go to the market to purchase additional GHG allowances or pay a penalty. The Kyoto Protocol also offers these countries additional means of meeting their targets by way of three market-based mechanisms, of which the two most successful are emissions trading through established schemes, such as the European Union Emissions Trading Scheme (EU ETS) and the Clean Development Mechanism (CDM).

## How the CDM Works

For developing countries, the main purpose of the CDM is to assist them in achieving sustainable development while also giving them access to clean technologies. For developed countries, the purpose is to help them achieve compliance with their GHG reduction targets.

The Kyoto Protocol distinguishes between “Annex 1” countries, the developed countries and transition economies listed in Annex 1 to the Kyoto Protocol, which are subject to

binding GHG reduction commitments, and “Non-Annex 1” countries, the developing countries that are not subject to binding targets. Under the CDM, investors from Annex 1 countries are encouraged to invest in and/or otherwise assist in the implementation of projects that reduce GHGs in developing (or host) countries. Investors can be public or private bodies. In return for making these investments, the investors receive carbon credits in the form of certified emission reductions (CERs). CERs can then be offset against an investor’s GHG reduction targets (if applicable) or traded on one of the post-Kyoto emissions trading schemes.

The advantage to investors is that the cost of achieving GHG reductions is expected to be lower than if they invested in projects in their own countries or in other developed countries. The benefits to the host countries are that they receive substantial foreign investment and gain access to clean technology, enabling them



to develop industry know-how. Moreover, local investors in the project could receive CERs to be sold on the open market.

### Satisfying the Criteria of a CDM Project

In order for a CDM project to be able to generate CERs, the following criteria must be satisfied:

- Participation in the project, by both the investors and the host country, must be on a voluntary basis.
- The project must bring about “real, measurable, and long-term benefits related to the mitigation of climate change”.
- Any reductions in GHGs must be “additional to any that would occur in the absence of the certified project activity”. In order to establish this, the parties must show what the GHG output would have been without the project—the baseline—and that a clear reduction of this baseline will occur as a direct result of the project.

“The project must bring about ‘real, measurable, and long-term benefits related to the mitigation of climate change’.”

### Size and Types of CDM Projects

CDM projects can be classified as either large- or small-scale projects. To qualify as small scale, a project must be one of the following:

- A renewable energy project with a maximum output capacity of 15 MW (or an appropriate equivalent)
- An activity that reduces energy consumption on the supply and/or demand side, with a maximum output of 60 GWh per year (or an appropriate equivalent)
- Any other project activity that results in GHG reductions of less than or equal to 60 kt CO<sub>2</sub> equivalent annually

Any CDM project falling outside the scope of this definition is large scale.

To date, there are more than 4,200 CDM projects in the pipeline, of which 1,835 have been approved formally and registered. Seventy have been submitted to the CDM

Executive Board for registration, split almost equally between large and small scale. By the end of 2012, CDM projects are expected to have generated 1,900 million CERs. The main sectors that have so far been utilised in the implementation of CDM projects are energy industries, with 1,352 registered projects, waste handling and disposal (395), and fugitive emissions from fuels (130).

### Financing Issues

If the CDM element of the project delivers as planned, this will offer significant additional income, above and beyond that being delivered by the project in a “standard” situation. However, most investors and financiers will want a guaranteed internal rate of return, regardless of whether there are any problems or delays with the CDM element of the project. Whilst the CDM will not save projects that otherwise make no financial sense, it is possible that a borderline project may become appealing to investors (and banks) when the additional carbon revenue created by CERs is added to the predicted returns. Furthermore, in order to increase the appeal of a project with potential CDM application, any investor or financier may wish to ensure that a long-term CER offtake agreement is in place prior to committing funds.

### CDM Successes and Failures

The CDM has certainly been successful as a mechanism that enables investors to comply with their GHG reduction targets. However, analysis of the CDM must also look at the extent to which it has achieved its other goal of promoting sustainable development.

As the CDM has evolved, some say its primary function has been to allow investors to obtain the maximum volume of CERs for the minimum price. This is unsurprising and is what one would expect from a market-based mechanism. However, as money has poured into CDM projects that capture or otherwise reduce emissions, there has been a lack of investment in sustainable development.

Concerns have also arisen with respect to the lack of infrastructure to deal with the ever-increasing number of CDM projects. This has resulted in a lengthy process for investors seeking to register a new CDM project. It is nearly impossible currently to register a project within nine months of

its inception and rare for any CERs to be issued in less than two years.

Another perceived failing of the CDM is that it hasn’t penetrated Africa, especially Sub-Saharan Africa, to any discernible degree. In fact, in October 2009, registered projects in Africa accounted for less than 2 per cent of the total number of CDM projects.

Aside from sustainability, the CDM has proven successful with regard to its other goals, particularly in the promotion of new technologies, as well as in providing investors from developed countries with alternate means of complying with their GHG reduction targets and giving an opportunity for investors to create additional cash flow through receipt and sale of CERs.

### The Future

The CDM, along with the Kyoto Protocol, is set to expire in 2012. The future of the CDM, particularly the form it will take beyond 2012, is currently under review. Perhaps the forthcoming United Nations Climate Change Conference in Copenhagen (in December 2009), under which a successor to the Kyoto Protocol will hopefully be agreed, will provide clarity on these issues.

Whilst there have been problems with how the CDM has operated in practice, what has been achieved is undoubtedly remarkable and must be considered a success. Moreover, it will have provided a solid foundation upon which to build whatever the UNFCCC decides will replace the CDM post-2012.

*Stefan Schmitz also contributed to this article.*



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# The Convergence of Intellectual Property and Renewable Energy

By David Larson and Dov Greenbaum

**A report commissioned by the European Community for the upcoming Copenhagen summit has found that patents do not impede unduly innovation in the renewable energy field.**

The report and commentators contrast renewable energy technology, where much of the innovation consists of incremental improvements on public domain technologies, with biopharmaceutical intellectual property (IP) rights, which, broadly, protect drugs that have few if any substitutes. The many competing paradigms for renewable energy (including wind, solar, hydro and biofuels) tend to weaken the IP holder's position in the marketplace, limiting its ability to extract monopoly-like rents for such technologies.

The report notes that some commentators argue that all but the poorest nations may actually increase their adoption of renewable energy technologies by strengthening their IP regimes. The report concludes that economic and non-IP related factors—such as small market size and limited purchasing capabilities—are the true inhibitors to the development and transfer of renewable energy IP.

The Nobel Prize winning Intergovernmental Panel on Climate Change (IPCC) also declined to recommend relaxing IP protection of renewable energy technologies, even though it acknowledged the important and essential role that technological innovation plays in reducing greenhouse gasses. The IPCC found that in most cases current technologies, often in the public domain, are adequate to reduce greenhouse gas emissions.

Notwithstanding the conclusions of these groups, some constituents within the renewable energy community urge that IP rights be softened. For example, at the Bangkok climate change talks in 2008, China and India (among others) proposed treating renewable energy innovations like those for pharmaceuticals in The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). Proponents of this approach argue that climate-related innovations are a public good akin to pharmaceuticals.

The debate regarding IP rights on renewable energy innovations is not new. In 1992, The United Nations Conference on Environment and Development (Rio de Janeiro) called for relaxing IP protection of “environmentally sound technology”. In 2007, at the Bali UN Framework Convention on Climate Change (UNFCCC) Conference, countries with developing markets refused to commit to specific emission reduction standards, partly because of the alleged failure of developed nations to abide by Article 4 of UNFCCC. Similar concerns were raised again at the Bonn Climate Change Talks, where some nations reiterated their assertion that IP rights act as a barrier to entry for innovating in the renewable energy space.

The governments of nations with developed markets, in particular the United States, are reluctant to support any dilution of patent protection. In June 2009, the U.S. House of Representatives sought to head off any effort to weaken patent protection worldwide, adopting an amendment to the Foreign Relations Act stating that it will be the policy of the United States to prevent

“any weakening of and ensure robust compliance with and enforcement of existing international legal requirements . . . for the protection of intellectual property rights related to energy or environmental technology.” In October 2009, 34 members of Congress wrote to Secretary of State Hillary Clinton reiterating concerns over IP rights in ongoing treaty negotiations and urging her not to capitulate to efforts aimed at weakening global patent protection.

For the foreseeable future, government action that might soften IP protection for the benefit of clean energy innovation is highly unlikely, and nations with developing markets must look to private initiatives for relief from the perceived barriers to adopting the latest renewable energy technologies .



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# Copenhagen Climate Change Negotiations and Replacing the Kyoto Protocol

By Frank Schoneveld

**In the lead-up to the Copenhagen summit in December 2009, negotiations are accelerating for a new agreement to tackle climate change for the period after 2012, the expiry date of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC).**

The biggest challenge is to find a way of sharing global greenhouse gas emissions reductions between developed markets and rapidly developing markets, such as China, Brazil and India. Currently, only countries with developed markets have commitments under the Kyoto Protocol to reduce by 2012 their overall emissions of greenhouse gases by at least 5 per cent below 1990 levels. But in a post-2012 agreement, the European Union wants countries with developing markets to also assume binding emission reductions. These countries have so far refused to undertake these commitments and are generally demanding more emission cuts from other countries.

According to the executive secretary of the UNFCCC, a post-2012 climate change agreement must address the following items:

- Mitigation (reduction of emissions), including by sectoral approaches and by limiting deforestation
- Adaptation to deal with effects of climate change
- Technology for mitigation and adaptation
- Financing for developing countries

The UN climate change panel says that countries with developed markets must cut emissions to between 25 and 40 per cent

(developing countries as a group to 15 to 30 per cent) of 1990 levels by 2020. Current targets pledged by developed countries are regarded generally as insufficient to meet that goal. Unilaterally, the European Union undertakes to reduce emissions to 20 per cent below 1990 levels by 2020, and offers a reduction of 30 per cent if other developed countries agree to make comparable reductions and more advanced developing countries “contribute adequately”. Of course, action taken by the United States and the European Union is likely to be crucial in convincing other countries to announce more ambitious proposals for emissions reductions.

Sectoral carbon market instruments that complement existing Kyoto Protocol market-based mechanisms are likely to be an element in post-2012 mitigation efforts. The European Union is proposing that international air and maritime transport have specific emission reduction targets. Other sectors mentioned are agriculture and energy. The European Union stresses the need for an international agreement to tackle the risk of carbon leakage in these sectors, with such an agreement potentially involving tariffs on energy-intensive goods and services. The European Union also suggests that current carbon trading systems be extended to an Organisation for Economic Co-operation and Development-wide carbon market through the linking of cap-and-trade systems.

The European Union accepts that schemes to prevent deforestation and to increase forest stocks, including wood and wood products produced sustainably, in developing countries can be included in carbon markets, with strict controls.

To reduce climate change impacts, the European Union is proposing that adaptation measures be integrated into all national and sectoral planning, both for developed and developing markets. The European Union also recognises that a significant increase in both public and private financial flows to countries with developing markets is needed for adaptation, mitigation, deforestation reduction, technology transfer and capacity-building activities. The European Union’s finance ministers on 20 October 2009 failed to reach agreement on climate change financial aid for developing countries. However, significant aid (in the billions of euros) is likely. Other proposals for increasing finance to developing countries include an extension to other Kyoto Protocol mechanisms of the current 2 per cent levy on credits issued for some climate change projects and an international air travel adaptation levy.

Now that the European Union’s position on many issues is clearer, negotiations in Copenhagen in December 2009 are likely to revolve around many of the European Union’s proposals.

*Asta Aleskute also contributed to this article.*



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# 2010-11 Photovoltaic Forecast for Italy

By Carsten Steinhauer

**Italy is currently the most attractive market for investments in photovoltaic (PV) plants in Europe. Not only does it benefit from particularly favourable solar exposure, (allowing the southern regions to exceed 1500 kW/h per kWp a year), it also offers generous incentives and high electricity prices. As a consequence, Italy is expected to be among the first countries in the world to reach grid parity in 2012 or 2013.**

The year 2010 will be another period of massive investment in the Italian PV market, but careful planning and efficient implementation are required, as the feed-in tariffs will be cut down significantly in 2011. Companies that want to connect to the grid before 2011 should start early, because the “fast track” authorisation procedures offered in the past by southern Italian regions will no longer be available.

## Return of PV Plants in Italy

The return generated by a PV plant in Italy is composed of the sum of the price obtained for the sale of the generated electricity and the feed-in tariff granted by the government for each kWh injected in the grid.

“The year 2010 will be another period of massive investment in the Italian PV market, but careful planning and efficient implementation are required.”

Electricity generated by PV plants can be sold either to the state-owned electricity services company GSE (Gestore dei Servizi Elettrici) or to the market. The GSE is obliged to purchase the electricity generated by a PV plant at

prices defined by the Electricity and Gas Authority (AEEG). PV plants with a nominal peak power below 1 MW benefit from guaranteed minimum prices, which vary between the first 500,000 kWh, the second 500,000 kWh and the second million of kWh. In 2009, guaranteed minimum electricity prices would range between 7.45 (euro) cents and 10.11 (euro) cents/kWh. The production exceeding the 2 million kWh, as well as that generated by PV plants with a nominal peak power above 1 MW, is sold at average market prices, which vary according to the region where the plant is located and to the hour of the day and day of the week on which the electricity is generated. In 2009, average market prices between 5.53 (euro) cents and 15.9 (euro) cents were registered on weekdays between 8 am and 6 pm, whereas on weekends the average prices ranged between 3.37 (euro) cents and 7.62 (euro) cents. As an alternative to selling to the GSE, operators



of PV plants can choose to sell the electricity privately to the market, either through the Italian power exchange (IPEX) or through bi-lateral agreements.

Regardless of whether the electricity is sold to the GSE or to the market, the GSE pays to the operator of a PV plant a feed-in tariff for each kWh of electricity injected in the grid. The feed-in tariff is by far the larger component of the return on a PV plant and is the reason for the massive foreign investments that can currently be registered in the Italian PV market. Pursuant to the so-called Conto Energia, PV plants that start operations between 1 January and 31 December 2010 are entitled to a feed-in tariff of between 34.6 (euro) cents and 47 (euro) cents per kW, depending on the nominal peak power of the plant and the degree of its architectural integration (see box). PV plants made of modules that themselves represent elements of urban and street fixtures or the external surfaces of buildings or building structures (integrated plants) benefit from a higher tariff than those made of modules installed on top of such structures (partially integrated plants) and than those simply installed on the ground (non-integrated plants).

### Uncertain Future for the Feed-In Tariff

The feed-in tariff under the current Conto Energia is guaranteed until 1200 MW have been connected to the grid across Italy, which will probably be mid-2010, given that by the end of October 2009 about 500 kW had been connected. Once the 1200 MW target has been reached, plants that start operations within the following 14 months (or 24 months in the case of public entities) will still benefit from the feed-in tariff.

While the grace period gives sufficient comfort to those plants that connect before 31 December 2010 and therefore benefit from the 2010 feed-in tariff, at the moment

it is uncertain what the feed-in tariff will be for 2011. It is clear that the Italian Government will increase the 1200 MW threshold in order to subsidise further the building of photovoltaic plants in Italy. But given the significant reduction of prices for crystalline silicon modules in 2008 and 2009, it is likely that the government will reduce the feed-in tariffs by at least 25 per cent. Given this scenario, it is easy to imagine the rush to grid connection by the end of 2010 and the difficulties encountered by the local grid operators as they attempt to deal simultaneously with all connection requests. Already now, the negative effects of the uncertainty on the 2011 feed-in tariff can be perceived in project finance transactions, as neither the EPC contractor nor the financing bank are prepared to bear the 2011 tariff risk.

“Already now, the negative effects of the uncertainty on the 2011 feed-in tariff can be perceived.”

### Authorisation Procedure

Companies planning to obtain the 2010 feed-in tariff should be aware that authorisation procedures may take longer than in 2009. In fact, pursuant to federal legislation, the construction of PV plants with a peak power above 20kW is subject to a “single authorisation procedure” (Autorizzazione Unica) that may last up to six months and may be delayed additionally by a preliminary screening procedure that assesses the need for an environmental impact study. In order to attract investments, some regions (such as Apulia, Basilicata and Calabria) have autonomously increased the threshold to 1 MW, allowing authorisation of smaller PV plants through

a simple “start of activity declaration” (*denuncia di inizio attività*, or DIA). Under this procedure, the plant is deemed authorised tacitly if the public administration has not objected within 30 days of receipt of the declaration.

While these regional laws allowed a wave of 1 MW projects in the southern regions in 2009, the federal government has challenged these laws before the Constitutional Court for incompatibility with federal legislation. The first hearing (for Apulia) will take place on 26 January 2010, with those for the other regions following shortly afterward. It is reasonable to expect that the Constitutional Court will repeal the regional laws quite soon after the hearings. Moreover, a draft of new guidelines on the authorisation process has been proposed by the Ministry of Economic Development in cooperation with the regions, which clearly restates that all PV plants exceeding the 20 kWp threshold require the Autorizzazione Unica. It is therefore no longer recommended to invest in 1 MW-DIA projects, but it is certainly more prudent to go through the Autorizzazione Unica process.

*Andrea Rodo also contributed to this article.*



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#### FEED-IN TARIFFS FOR PV PLANTS THAT START OPERATIONS BETWEEN 1 JANUARY AND 31 DECEMBER 2010

PEAK POWER/TYPE	FIELD PLANT	PARTIALLY INTEGRATED	FULLY INTEGRATED
1 to 3 kW	38.4 euro cent	42.2 euro cent	47.0 euro cent
From 3 kW to 20 kW	36.4 euro cent	40.4 euro cent	44.2 euro cent
Above 20 kW	34.6 euro cent	38.4 euro cent	42.2 euro cent

# New German Renewables Act Boosts Offshore Energy

By Robert Manger and Thomas Ammermann

Germany has long assumed a pioneer role in the promotion of renewable energy. Carrying forward the key principles and guidelines of preceding acts, the Renewable Energy Sources Act 2009 implements a revised feed-in tariff for electricity generated from renewable energies. Significant precedents maintained in the Act include the entitlement of operators of renewable energy plants to the connection of their plants to the grid system, and the obligation of grid system operators to purchase and transmit electricity primarily from renewable energy sources and to remunerate fixed tariffs to the plant operators.

Under the Act, the tariffs are determined by the specific technology for renewable energy and individual plant size, and are generally paid for 20 years upon commissioning of the plant. For plants established in the future, the tariff for the whole remuneration period declines gradually (degression) at the beginning of each year, depending on the specific technology. Because of the reliable and constant cash return ensured by the Act, the risks for investors are reduced significantly.

## Offshore Wind Energy

To give investors in offshore wind energy an incentive, the Act significantly increases the initial tariff to 13 (euro) cents/kWh. For offshore wind energy plants commissioned to the grid before 2016, the initial tariff increases to 15 (euro) cents/kWh. A degression amounting to 5 per cent will not become effective before 2015. Finally, offshore plants installed more than 12 nautical miles off the shoreline

and at a water depth of more than 20 metres are rewarded with an extension of the initial tariff payment period. The period of 12 years for the payment of the initial tariff is extended by 0.5 months for each full additional nautical mile, and by 1.7 months for each full additional metre of water depth.

## Other Renewables

The tariffs remunerated by grid system operators to renewable energy plant operators for electricity from other renewable energy sources are modified as well:

- The initial remuneration tariff for onshore wind energy plants was increased from 7.87 (euro) cents/kWh to 9.2 (euro) cents/kWh. This initial remuneration tariff is paid for a period of time determined by the location of the plant (*Referenzstandortmethode*) and followed by remuneration pursuant to a basic remuneration tariff of 5.02 (euro) cents/kWh.
- The substitution of existing onshore wind plants older than 10 years by more efficient modern wind energy plants (repowering) is promoted through an initial tariff payment increase of 0.5 (euro) cents/kWh.
- Onshore wind energy plants may also benefit from the introduction of a system services bonus (*Systemdienstleistungsbonus*) granted for compliance with specific technology requirements to ensure grid stability. Existing plants may be retrofitted.
- The remuneration tariff for electricity generated by hydropower plants with a maximum capacity of 5 MW increases by 1 to 3 (euro) cents/kWh, depending on the output amount.

The duration of tariff payment for these plants is reduced from 30 to 20 years. For hydropower plants with a capacity of more than 5 MW, the duration of tariff payment remains 15 years.

- Though the remuneration tariffs for electricity generated from biomass remain mostly unchanged, numerous modifications of the Annexes to the Act increase possible remunerations for such electricity generated.
- The fixed remuneration tariff for electricity generated by solar power plants is slightly decreased from 33.18 (euro) cents/kWh to 31.94 (euro) cents/kWh.

These measures will ensure Germany meets its ambitious goal to supply 30 per cent of its energy needs by 2020 with renewable energy.



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