

Sustainability and climate change

Solar Power: Generation and Transmission

PwC Services and Citations

‘What if you could provide the world with an endless supply of virtually carbon-free electricity; ensure a constant source of drinkable water to the world’s most vulnerable areas; avert some of the world’s future humanitarian crises; and save billions of dollars in the process? Concentrating Solar Thermal Power (CSP) proponents say there is no “could” about it – it’s more a case of “can”.’

CNN, 12 November 2007

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Introduction

Studies over the past few years have shown that substantial climate change is now unavoidable and that it poses an immense risk both to mankind's everyday lives and the world around us. The way in which the world obtains its energy has a key role to play in how we address this challenge, and whilst there has been an urgent need to take action, progress to date has been slower than needed and limited in its impact.

The renewables sector is in the spotlight as companies, governments and consumers grapple with issues such as security of supply, environmental impact and affordability. The sector is on a journey of major change, anticipating a world with a much wider range of technologies than at present and where the shape of the industry will continue to change. Governments are under pressure to meet international and domestic commitments, and companies are seeking to extend their value chain both upward and downward to secure supply and end markets. The traditional boundaries that define the energy industry are becoming blurred as the interdependence of different energy sectors grows and the linkages between utility and technology companies becomes more critical.

PricewaterhouseCoopers (PwC) works with governments, companies and industry stakeholders in every region of the world and has been instrumental in many of the major developments that are shaping the renewables industry today.

PwC's view is that the world needs to quickly identify and promote those renewable energy solutions that can substantially cut global greenhouse gas emissions, and, where possible, begin to address other areas of risk such

as energy security and supply. Whilst a range of renewable energy options exist, one area that shows increasing potential as an alternative to existing fossil fuel sources is solar. The global uptake of photovoltaic (PV) and (CSP) have the potential, when combined with appropriate transmission networks, to make a significant difference.

This booklet sets out how PwC has played and continues to play a key role in helping governments, business and society make the transition to renewable solar energy options. Building on our experience of working with the global energy sector for over 100 years, it outlines the services that we can bring to bear to support programmes of work, provides examples of the work that we have completed in recent years, and sets out some of the thought leadership that we have published in the area of renewable energy to help shape and support the debate in the coming years.

Should you need support or be interested in learning more, please get in touch with us via the key contact names provided at the end of this booklet. We look forward to the opportunity to engage and support you with this important challenge.



How we can help – Introducing PwC

Audit and assurance

PwC audits major energy and utility companies in all key energy markets – gas, electricity, water, renewables and other services. Recognising that all companies want audit teams that know their issues and understand their business challenges, PwC's energy professionals bring a high level of knowledge to their work. Our industry dedicated professionals receive specialised training, including regular updates on renewable specific issues, and have the knowledge and experience necessary to help organisations with complex financial accounting issues related to matters such as; valuations, pensions and share plans, listings, International Financial Reporting Standards (IFRS) conversions, and corporate treasury and company secretarial functions.

PwC auditors around the world use a single, global audit methodology, fully compliant with International Auditing Standards and applicable national standards. Our globally consistent approach to audit means that, regardless of location, PwC people can understand and evaluate your business using a single language and common methods. In turn, that gives you a uniform level of quality in all our audits. This methodology also enables us to quickly organise and deploy the kinds of multinational audit teams often required by our larger clients.

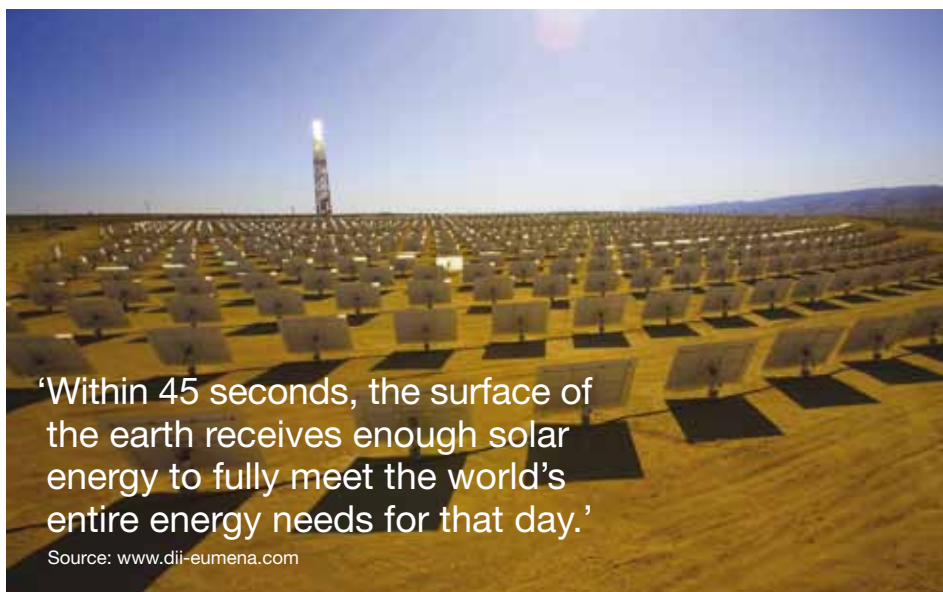
Advisory

Our advisory practice puts energy sector companies and other industry stakeholders at the leading edge. Whether you are pursuing new opportunities, responding to events or coping with the daily pressures of growth, competition and shareholder value, we are there to help. We are able to deploy trusted industry specialists with unparalleled knowledge of business processes and technology and customer relationship skills, as well as financial and accounting expertise. Further details of our advisory services are provided throughout the booklet.

Tax services

PwC has the largest network of tax specialists in the world, with over 30,000 dedicated professionals in 150 countries. This means we can support you both locally and globally, wherever you require tax advice.

Our tax professionals solve challenging issues, anticipate changes that can impact your tax situation and financial statements, and keep you apprised of local, state, foreign and international tax regulations as they pertain to your company's operations. Our network of international



‘Within 45 seconds, the surface of the earth receives enough solar energy to fully meet the world’s entire energy needs for that day.’

Source: www.dii-eumena.com

tax structuring professionals can also enable you to structure your international business in a tax efficient manner, both locally and globally. We can help you construct effective cross-border strategies and manage your global structural tax rate. We will also keep you abreast of new developments in the international arena that affect your business.

Early tax planning for mergers and acquisitions (M&A) is essential to reduce both the actual transaction tax costs and the long-term sustainable tax rate following the transaction. PwC can offer you expert deal structuring and financing advice at all points throughout the deal cycle. We deliver value through quantitative analysis, rigorous implementation and leading edge structuring techniques, carrying out pre acquisition due diligence, ensuring tax efficient deal structuring, and ensuring post deal integration.

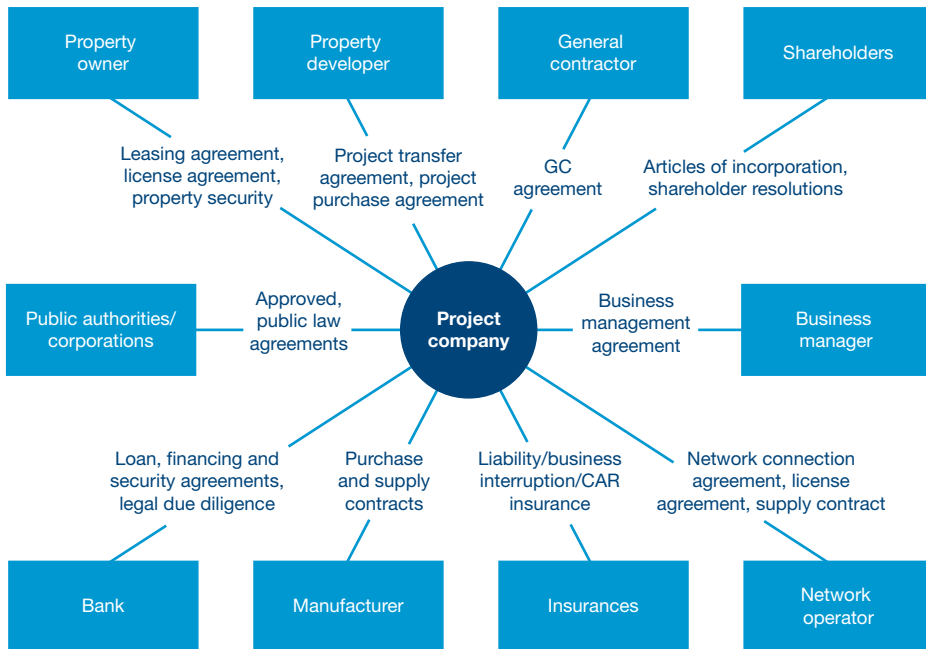
Inter-company transactions across borders are growing rapidly and are becoming much more complex. At PwC, we have a strong international network of dedicated transfer pricing specialists with advanced training in economics, accounting, law and project management, ready to work with you. Our industry and tax authority experience and unique capabilities enable us to develop innovative approaches for utility industry participants.

Legal Services

From a legal perspective, it is clear that the renewable energy sector continues to grow rapidly and as a result faces new and complex challenges. Projects involving established technologies such as wind energy, solar energy or biomass utilisation have now achieved the scale of conventional power station projects, with

correspondingly high project demands on all stakeholders. New technologies such as geothermal and wave power, and new applications of existing technologies such as offshore wind energy are now also making their way into the market. All of this is happening at a time when the sector is moving into an increasingly international and complex competitive and financial market environment.

Main legal relationships of parties involved in solar renewable projects



How we can help – Introducing PwC

Given this, it is clear that the technical, economical and tax based aspects of these projects are not the only factors that are decisive for the financial success of renewable energy projects. Also key is the correct handling of legal requirements and risks. The various legal relationships of the parties involved have to be structured professionally and the responsibilities spread in a legally airtight form among those involved in the project in order to guarantee achievement of the project without any conflict. Reliability and resilience are demanded not just with regard to the technology being used, but also on the part of the financier with regard to the structure of financial, tax and legal framework conditions. A particular challenge in this respect is to coordinate on a project the various experts employed in securing these framework conditions and put their recommendations into practice in an appropriate manner.

As an integrated legal advisor, PwC can assist project developers, investors, banks, plant constructors and service providers with the realisation of their projects with services tailored precisely to individual requirements.

For project developers

We can provide comprehensive support with the legal development and marketing of your project. In doing so, we place particular value on an early implementation of the specific legal financing and market standards of banks and investors. In this way, it is possible to make your project more attractive and increase its value.

Particular service areas include:

- **Contract law:** Legally airtight structuring and negotiation of all necessary project agreements, for example with landowners, existing plant operators, plant manufacturers, sub-contractors, network operators and project buyers
- **Public law, environment and anti-pollution law:** Support with official planning and approval processes; identification of alternatives to uneconomical official requirements or planning
- **Public procurement law:** Advice for contracting authorities and private bidders on tenders for renewable energy projects by public authorities
- **Legal organisation consulting:** Optimisation of legal project development processes in order to accelerate projects and lower costs

For investors

We can secure the success of your transaction by providing comprehensive advice throughout the complete M&A process including:

- **Legal due diligence and contract structuring:** Preparation of investment or transaction decisions by legal analysis and evaluation of the project or target company; negotiation of project purchase and project conveyance contracts and insurance and business management agreements
- **Banking & finance, capital market legislation:** Negotiation of loan agreements; support in drawing up documentation for the disbursement process; advice on project or company related recourse to regulated capital markets; support with Initial Public Offerings (IPOs) and delistings
- **Company law:** Corporate structuring of projects and company groups; foundation of the necessary shelf companies and structuring of articles of association

For banks

We can assist you in minimising project-related legal risks of your loan exposures and achieving competitive structures in project-related demands by banks. We offer support with:

- **Collateral planning:** Sector related structuring and appraisal of your collateral concepts for financing projects within the sector of renewable energy
- **Risk screening and 'risk healing':** Legal analysis of your renewable energy loan portfolio or individual delinquent loan exposures with regard to individual and multiple legal risks; project related "healing" of identified security risks together with the borrower
- **Legal project support and appraisal from a financing point of view:** Assessment of new projects as part of a legal due diligence on the basis of the disbursement conditions; assistance for borrowers with legal aspects of project development at the request of the financing bank

For plant manufacturers and service providers

We can advise you on all legal aspects of your business and operative processes. We offer support with:

- **Contract and commercial law:** Structuring of supply, purchase and service agreements as well as general business terms and conditions; advice on questions of antitrust, competition and copyright law; handling guarantee claims; establishing shared service centres
- **Company law:** Assistance with restructuring, shareholder and annual general meetings; structuring of joint-venture agreements
- **Labour law:** Preparation and review of appointment agreements, remuneration systems and works agreements; legal arrangements for delegation of employees
- **Procedural law:** Representation in and out of court to secure your interests

We serve 64%
of the world's
largest energy
companies listed
in FT Global 500

How we can help – Example PwC services

We have outlined below some of the services and support that we provide to clients in the solar renewables sector.

	1. Feasibility Study & Business Case Planning	2. Financing	3. Tender & Procurement
Financial institutions, banks and investors	<ul style="list-style-type: none"> • Feasibility analysis • Cost-benefit analysis • Valuation of externalities • Due diligence • Market review • Deal strategy validation • Project development • Carbon finance and transactions • Funding options appraisal • Creation of joint ventures 	<ul style="list-style-type: none"> • Structuring • Financial modelling • Tax modelling • Debt and equity raising • Hedging strategies • Structure of clean tech funds and grants • Tax-efficient structuring of investments • Tax incentive analysis 	<ul style="list-style-type: none"> • Bid preparation • Negotiation advice • Deal execution • Capital project advice
Technology companies, component manufacturers	<ul style="list-style-type: none"> • Strategic planning and identification of growth opportunities • Assessment of market exposure risks • Market entry strategy and studies • Commercial and regulatory strategy • Investment banking advice • Synergy assessment • Contact initiation 	<ul style="list-style-type: none"> • Cross-border tax planning • Transfer pricing • Optimising research and development concessions • Advice on import taxes • IFRS advice • Transaction finance • Debt advisory 	<ul style="list-style-type: none"> • Market and product analysis • Competitor analysis • Supply chain modelling and security reviews • Sustainable supply chain assessment • Sourcing strategy • Logistics planning • Cost analysis and reduction • Custom duty advice
Governments	<ul style="list-style-type: none"> • Market governance • Regulation and policy • Change strategy • Stakeholder management 	<ul style="list-style-type: none"> • Financial incentive structures e.g. FITs • Tax advisory • Grants and funding availability • Public Private Partnerships (PPPs) • Total tax contribution (TTC) 	<ul style="list-style-type: none"> • Stakeholder management and engagement • Design of procurement process • Management and evaluation of tenders • Negotiation support • Management of financial close

We understand that these services are rarely required in isolation and we are experienced in delivering large, integrated projects that address a number of related issues. We often do so as part of a larger consortium or partnership and are adept at taking a holistic approach to our services across all or part of the project lifecycle.

Examples and further details of these services are provided in the subsequent section.

4. Construction	5. Operation & Maintenance	6. Disposal & Acquisition
<ul style="list-style-type: none"> • Programme management • Independent progress review 	<ul style="list-style-type: none"> • Tax efficient project extraction • Refinancing 	<ul style="list-style-type: none"> • Corporate finance advisory • Valuations • Business evaluation for investments/ divestments by shareholders • Buy and sell-side deal due diligence, including: <ul style="list-style-type: none"> – Strategy and commercial issues – Financial review – Operations analysis – Commercial contracts – Regulation and tariffs – Tax and legal review – Social and pension review – Information systems review – Analysis of potential risks and upsides – Market review
<ul style="list-style-type: none"> • Supply chain improvement • Sustainable supply chain • Stakeholder management and communication 	<ul style="list-style-type: none"> • Assurance and audit • Tax compliance • Tax efficiency and implementation review • Tax incentive advisory • Income tax and tax return advice 	<ul style="list-style-type: none"> • Corporate finance advisory • Transaction services • Post merger integration including: <ul style="list-style-type: none"> – Synergy reviews – Operational improvements – Performance management and measurement – Restructuring and harmonising legal structures – Portfolio review – 100 day planning
<ul style="list-style-type: none"> • Programme management 	<ul style="list-style-type: none"> • Stakeholder management and communication • Policy impact assessment • Non-financial reporting (sustainability reporting) 	<ul style="list-style-type: none"> • Privatisation assistance • Workforce issues • Stakeholder management and communication

How we can help – Example PwC services

We have outlined below some of the services and support that we provide to clients in the solar renewables sector.

	1. Feasibility Study & Business Case Planning	2. Financing	3. Tender & Procurement
Developers	<ul style="list-style-type: none"> • Cost-benefit analysis • Valuation of externalities • Feasibility analysis • Market review • Due diligence • Carbon market feasibility study • Carbon finance and transactions • Business case development • Competitor analysis • Anticompetition issues • Political risk assessment • Fuel mix optimisation • Advice on certificate trading • Commercial international and regulatory strategy • Analysis of the different national economic and regulatory frameworks, and push/pull schemes (including grid regulation, financing instruments such as feed-in tariffs and emissions trading) • Legal rights of access to easements and connection agreements 	<ul style="list-style-type: none"> • Financial modelling • Finance and capital raising • Finance structure: <ul style="list-style-type: none"> – PPPs – BOO/BOT/BTO – Opex/Capex • Tax structuring and M&A advice • Risk management • Project development • Develop/Review operator/consortium model • Renewable energy grant application assessment and advice • Economic regulation, energy and infrastructure reform • Competition policy • Financial economics • Natural and renewable resource economics 	<ul style="list-style-type: none"> • Tender and procurement advisory, including pricing, capital vendor management and contract/tender management • Negotiation support • Supply chain modelling • Sustainable supply chain • Risk management, including: <ul style="list-style-type: none"> – Financial risk management – Internal controls – Risk valuation and measurement methodologies – Operational and risk management processes and controls – Tools for price forecasting and asset modelling – Enterprise wide risk management – Project delivery and operational risk management processes, controls and reporting • Sourcing strategy • Tax efficient supply chain • Training and development • Structuring and legal assistance
Operators	<ul style="list-style-type: none"> • Organisation design • Governance • Risk and compliance • IFRS advice • Carbon finance and transactions 	<ul style="list-style-type: none"> • Offtake Agreement/PPA advice • Renewable energy policy • Developing appropriate tax structures to optimise tax efficiencies of investment transactions • Cross-border taxation, including transfer pricing 	<ul style="list-style-type: none"> • Risk management • Supply chain modelling • Sustainable supply chain • Negotiation assistance
NGOs/ environmental groups	<ul style="list-style-type: none"> • Life-cycle assessment • Carbon footprinting • Training and development • Environmental due diligence 	<ul style="list-style-type: none"> • Stakeholder management and communication 	<ul style="list-style-type: none"> • Stakeholder management and communication • Political risk assessment

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Examples and further details of these services are provided in the subsequent section.

4. Construction	5. Operation & Maintenance	6. Disposal & Acquisition
<ul style="list-style-type: none"> • Operator/consortium models • Stakeholder management and communication • Supply chain improvement • Programme management • Corporate and non-financial reporting and measurement • Tax depreciation • Carbon market project design • Project assurance • Environmental and social impact assessment • Process design • Health and safety audits • Human resource tax and work permit compliance • Operational and IT effectiveness • Political risk assessment • Project risk assessment • Project cost and delay analysis • Contract reviews • Dispute resolution 	<ul style="list-style-type: none"> • Carbon markets and carbon management • Carbon sequestration advice • Assurance and audit • Earnings and balance sheet optimisation, determining optimal accounting treatments including renewable energy certificates, off take agreements, asset capitalisation, valuations, derivatives, debt vs. equity • Accounting structuring, including avoidance of dividend traps • Accounts preparation/bookkeeping • External audit, enhancing investor confidence • Tax compliance • Competitor analysis • Organisation design • Performance management • Corporate performance management • Talent acquisition • Supply chain improvement • Cost analysis and reduction • TTC analysis • Tax function effectiveness • Corporate reporting and investor reporting advice 	<ul style="list-style-type: none"> • Disposal strategy • Valuation • Deal structure • Buy-side due diligence • Sell-side due diligence • Programme management • Stakeholder management and communication • Tax advice • Post merger integration support • Asset management • Restructuring and regulatory advice • Workforce issues
	<ul style="list-style-type: none"> • Life-cycle assessment • Regulatory requirements • Assistance with trading strategy 	
<ul style="list-style-type: none"> • Stakeholder management and communication • Programme management • Environmental and social impact assessment 	<ul style="list-style-type: none"> • Lifecycle assessment • Carbon footprinting • Stakeholder management and communication • Reporting • Non-financial reporting (sustainability reporting) 	<ul style="list-style-type: none"> • Environmental due diligence

Box indicates services which apply to both developers and operators.

Who we've assisted and how

1. Feasibility Studies and Business Case Planning

Feasibility Studies

Solar PV and solar thermal feasibility studies, including electricity market and economic analysis. Examples include:

Australia

- Development of an expression of interest document, project plan and evaluation methodology for a solar power plant in Australia Capital Territory:
 - Advice on new renewable generation projects in New South Wales
 - Advice on the commercial viability and grid connection issues of renewable energy options for large users of electricity

Client: Corporate

- Partnering with a renewable energy company on its journey to become a leading retailer of grid-connected solar systems, PwC initially worked with the company on early stage business planning and strategy discussions. As the company expanded, PwC provided coaching on business practices and processes, helped to build and model financial forecasts, and advised on access to government grants. PwC also acted as lead advisor to a successful equity raising and continues to support this company through the delivery of the annual external audit process, review of critical accounting issues as well as the provision of ongoing tax advice.

Client: Corporate

Austria

- Analysis of the strategic implementation of the EU Renewables Directive across six countries. Assessed the success of mandatory and voluntary programmes in order to inform the implementation of the Directive in Austria.

Client: Austrian government

France

- Evaluation of the photovoltaic potential of the real estate park of a large French corporate (5-10m sqm) and development through two strategic approaches (value maximisation vs. surface coverage maximisation). Screening and selection of best potential partners for project development.

Client: Corporate

Germany

- Analysis of the current global market status and market prospects of thin-film solar PV modules. Informed an investment decision.

Client: Confidential

- Market analysis and investment advice to build renewable energy portfolio (investment volume by 2020: €1bn).

Client: Municipal utility consortium

- Market study for thin-film solar PV modules.

Client: EWE

- Model review for a 53 MW PV plant.

Client: Confidential

- Market survey on the world market for thin-film PV modules.

Client: Confidential

- Market survey and transaction advice for an international investor for takeover of a German PV manufacturing company (modules and cells).

Client: Corporate

India

- Market analysis of Indian solar market, including a review of the legislative and regulatory framework, the solar PV and solar thermal value chains and the identification of key financiers of Indian solar developments.

Client: Confidential, US-based multinational

1. Feasibility Studies and Business Case Planning



- Study of current manufacturing cost per kW h of three domestic and two international vendors of various solar PV technologies.
Client: Confidential
 - Feasibility report regarding the technology, level of investments and infrastructure requirements of installing both crystalline PV and thin-film PV in the Indian market.
Client: Indian power developer
 - Review of global and Indian market for solar PV.
Client: Corporate
- Italy
- Pre-feasibility studies for API Nova Energia, providing financial modelling services related to many projects in the photovoltaic sector.
Client: API Nova Energia
 - Pre-feasibility studies for Sumitomo Mitsui Bank Corporation, providing financial modelling services related to many projects in the photovoltaic sector.
Client: Mitsui Bank Corporation
 - Pre-feasibility studies for AES Solar, providing financial modelling services and performing the financial model related to the financing of many photovoltaic plants.
Client: AES Solar
- Netherlands
- Coordinated European setting up of solar energy companies in Italy, Spain, etc, together with optimal tax structuring.
Client: Solar Totsl
- Norway
- Market analysis of future investments in HVAC transmission grids.
Client: Statnett SF, Nordic TSO

UK

- Feasibility study investigating the option of developing a large-scale solar thermal plant in India.
Client: Indian solar thermal power developer
- Economic analysis of different solar capture applications and valuation of different technology. Provision of a marketing and market-penetration strategy.
Client: Solar capture technology developer
- Market entry review for solar thermal micro-generation.
Client: EDF
- Renewable market research on the barriers to growth for stakeholders in the UK renewable energy market.
Client: UK government, Department for Business, Enterprise and Regulatory Reform
- Review of the global thin-film production machinery market.
Client: Financial stakeholders
- Analysis of electricity markets and regulation in the European Union and Latin America.
Client: Confidential
- Market analysis of the European electricity sector, including analysis of generation and retail markets, ownership and operation of network grids, tariff structures relating to network access, composition of the regulator, and future market developments.
Client: BP

Who we've assisted and how

1. Feasibility Studies and Business Case Planning



- Advice on the creation of a regional electricity market in south east Europe (countries include Serbia, Albania, Croatia, UNMIK, FYR Macedonia, Bosnia & Herzegovina and Montenegro).
Client: European Commission
 - Market analysis of future investments in HVAC transmission grids.
Client: Statnett SF, Nordic TSO
 - Advised a manufacturer of photovoltaic solar cells on their global PV market development and business growth models and plans. The analysis focused on a SWOT analysis of the major payers in the PV, renewable and energy markets. Of particular interest was the potential for strategic alliances through the PV and energy industry value chain.
Client: Corporate
-
- Regional
- Market review of clean tech in the heating sector at a European and eastern Europe level and target screening of potential acquisitions, with a particular focus on geothermal heat pumps, solar thermal and photovoltaic segments.
Client: Confidential

Business Case Planning

Preparation of a number of **business plans** and **company strategies** for solar power plants and transmission companies, including:

- France
- Business plan development for a large French corporate wishing to develop photovoltaic projects in large roof-mounted and ground-based installations.
Client: Confidential
 - Review of the business plan of a photovoltaic venture in a view to raise capital from investors, the venture being focused on the installation and exploitation of large roof-mounted photovoltaic segment (car parks, warehouses).
Client: Confidential
 - Business review for two ground-based photovoltaic projects and development of a business plan to ensure financial IRR and fiscal optimisation.
Client: Photowatt Technologies
 - Development of business plans for two types of photovoltaic installations: roof-integrated and ground-mounted systems, with two roof patterns (flat/low charge and inclined). Commercial strategy development based on scenario sensitivity analysis.
Client: Photowatt Technologies
-
- India
- Solar PV manufacturing facility: business plan and filing. Support for a large power developer in south India: 400 MW based on crystalline PV technology and 40 MW thin-film technology.
Client: Corporate
 - **Client: Confidential, Indian power developer**

1. Feasibility Studies and Business Case Planning

Norway

- Strategy development for electricity transmission.
Client: Statnett, Nordic TSO

Spain

- Business plans to support the development of PV plants, including the phasing of investments, cash flow projections and computation of financial performance indicators such as NPV, financial return on investments and financial return on capital. Examples include:
 - **Client: Sumitomo**
 - **Client: Voltwerk**
 - **Client: Prestige Hotels**

Regulatory Advice

Strategic advice on and market analysis of the **regulation** of the electricity industry. Example projects include:

Germany

- Legal advice on corporate law and capital market regulation for a leading German group of companies acting in the field of developing, financing and operating renewable energy projects, regarding IPO activities and the entry of a strategic investor.
Client: Confidential
- Provided legal advice to a German project developer in connection with the planning of a rooftop solar project.
Client: Confidential

India

- Regulatory and policy review and viable business models for SPV power generation business for a US major.
Client: Corporate

- Market study and regulatory review for US based multinational.
Client: Corporate

Netherlands

- International analysis of regulatory structures for TSOs.
Client: TenneT, Dutch HVDC TSO
- Analysis of the regulatory and market design of electricity markets.
Client: Delft University of Technology
- Advice and support in the implementation of the operational processes needed to ensure regulatory compliance. Identification of opportunities to improve compliance success.
Client: Dutch utilities company

UK

- Analysis of possible regulatory structures in the UK electricity transmission sector.
Client: National Grid

Carbon Markets

We assist clients with the preparation of Clean Development Mechanism (CDM) projects either on a full transaction mandate or with the supporting feasibility studies, PDD preparation and project approval process. We regularly structure, market and sell carbon credits generated from CDM projects. Examples include:

Brazil

- Feasibility studies and assessment of the qualification of projects for CDM status.
Client: Various heavy industries

India

- Advice on a full transaction mandate for the sale of carbon credits.
Client: Various heavy industries

Who we've assisted and how

1. Feasibility Studies and Business Case Planning

-
- UK
- Building financial models based around the sale of carbon credits.
Client: Confidential
 - Structuring the sale of carbon credits on the mandatory and voluntary carbon markets generated from afforestation projects.
Client: Forestry company
-

Renewables Subsidy Innovation and Policy

We create optimal financial leverage by securing maximal utilisation of **government grants and incentives**. Examples include the management of renewables subsidies for a number of renewable energy generators, including:

- Netherlands
- **Client: Eneco**
 - **Client: Dutch Biodiesel**
 - **Client: C.GEN**
-
- India
- **Client: Confidential, US-based solar developer**
-



Advisory Support: Smart solutions for smart grids

Behind the hype, there is the reality. Smart grids are set to deliver real improvements and enable the roll out of a range of renewable energy technologies. A range of technological innovations are, together, expected to make possible a step change in grid efficiency, facilitate automation to reduce cost and improve quality, enable the integrated and optimal use of distributed and renewable generation, and promote interaction between supply and demand technologies and between the consumer and the utility that will provide benefits for both.

But this future comes at a cost and with immense challenges along the way. It requires substantial capital investment. It means transforming the grid from an electromechanical system to a fully digital system. Its full potential requires much to happen on many different fronts. Companies face tough dilemmas on the timing of investment, choice of technology partners, how to maximise the cost benefit to their company as well as the wider grid and society, and, last but not least, the key challenge of delivering the necessary upgrades efficiently and on time.

2. Financing

Financial Advice

Financial advice in the development of a number of PV plants and PV component production facilities. Includes financial structuring, scenario analysis, funding option evaluation, risk management and negotiation support. Examples include:

- Austria**
 - A PV component production facility.
Client: Confidential
- Germany**
 - Financial advice for a 400 MW solar module factory.
Client: European investor
 - Financial advice on different financing options for a 4 MW PV project in Greece.
Client: United Green
 - Financial advice for a solar start-up company.
Client: International financial investor
- India**
 - Financial viability of rooftop PV systems.
Client: Confidential, US-based PV developer
- Spain**
 - A 18 MW PV plant.
Client: Sedwick Corporate
 - 2 PV plants in Sol de Alconchel and Ar-gasol.
Client: NMAS1 EOLIA
 - A 20 MW solar PV plant.
Client: Luzentia
 - A 20 MW solar PV plant.
Client: Voltwerk

Investment Services

Investment assessment including due diligence, tax structuring and business plan assessment to inform investment decision making. Examples include:

- Netherlands**
 - Financial Investment Guide to Renewable Energy: The financial investment guide is a (software) tool to calculate the feasibility of renewable energy projects.
Client: Dutch Ministry of Economic Affairs
- Spain**
 - Assessment of a €600m joint venture investment opportunity comprising two 50 MW solar thermal plants.
Client: Inveravante (partnered with Iberoólica Solar)

Tax Advice

Tax advice, regarding both corporate tax structure and specific issues relating to the renewable energy industry. Examples include:

- Netherlands**
 - Participation in a joint venture and partnership with solar developers.
Client: Dutch utilities company
 - Structuring the tax and trading strategy for renewable and solar investment funds.
Client: Dutch utilities company
 - Advised several Dutch utilities companies with respect to participation in joint ventures and partnerships as well as on the structuring of funds on (international) renewable energy projects, such as solar, wind, bio fuel and bio energy projects.
Client: Corporate

Who we've assisted and how

2. Financing

Financial Modelling

Financial model development for a number of PV plants and grid infrastructure, including the establishment of the tax, accounting and regulatory hypotheses of the models. Examples include:

Germany

- Assisted Deutsche Bank and the Mandated Lead Arranger (MLA), Société Générale, with the review of the financial model related to the financing of a photovoltaic plant of 8 MW in the south of Italy.

Client: Deutsche Bank/MLA/SG

Italy

- Assisted Fortis Bank with the developing of the financial model related to the financing of a photovoltaic power plant of 3.3 MW.
Client: Fortis Bank
- Assisted AES Sole Italia, providing financial modelling services up to financial close for the 42 MW Cellino San Marco photovoltaic project.
Client AES Sole Italia
- PricewaterhouseCoopers has assisted AES Sole Italia in with financial models related to the financing of many photovoltaic plants.
Client: AES Sole Italia
- Assisted Sorgenia Solar with the review of the financial model related to the financing of a photovoltaic plants portfolio.
Client: Sorgenia Solar
- Assisted Santander with financial models related to the financing of many photovoltaic plants.
Client: Santander

- Assisted Fortis Bank with the financial model related to the financing of a photovoltaic plant in Lazio.

Client: Fortis Bank

- Assisted Sumitomo Bank with the financial model related to the pre-feasibility studies for the construction of photovoltaic plants.

Client: Sumitomo Bank

- Assisted Mitsubishi with the financial model related to the pre-feasibility studies for the construction of photovoltaic plants.

Client: Mitsubishi

Netherlands

- A Dutch utilities company is considering the options to provide its private clients with operational leases on renewable energy products (such as solar panels, high efficiency boilers, solar boilers). PwC assisted Nuon on the modelling of this 'operational lease product' with respect to the corporate tax issues.

Client: Nuon

Spain

- A 7 MW PV plant in Albacete.
Client: Itochu Corporation
- Developed the financial model of a PV plant in the Canary Islands. The objective of our work has consisted of the establishment of the tax, accounting and regulatory hypotheses of the model, as well as the finance raising for this 9 MW PV project.
Client: Sumitomo Corporation

2. Financing



- Developed the financial model of a PV plant in La Rioja. The objective of our work has consisted of the establishment of the tax, accounting and regulatory hypotheses of the model, as well as the finance raising for this 1 MW PV project.

Client: Mitsubishi Corporation

- Developed the financial model of four PV plants in Castilla la Mancha and Murcia. The objective of our work has consisted of the establishment of the tax, accounting and regulatory hypotheses of the model, as well as the finance raising for these 2.8 MW PV projects.

Client: Solarstorm

UK

- Financial model development for an HVDC interconnector.
- Financial model re-design for electricity distribution. Included the addition of extended functionality and incorporation of new regulatory issues.

Client: Major UK utilities company

Advisory Support: Pacific Gas and Electric – smart metering implementation programme

PwC is involved in North America's largest smart metering roll-out. Pacific Gas and Electric (PG&E) has already deployed 3.5 million gas and electric smart meters throughout northern California and is tasked with delivering 10.2 million smart meters in a \$2.2bn, five-year programme to 2012. PwC holds a major consulting role on the project, including participation in all executive steering committee discussions and contribution to eight distinct work streams, including key areas such as programme management office (PMO) process and controls design, business process design, and deployment of real time cost and customer impact metrics. The smart metering project required integrating multiple work streams and stakeholders through a strong, centralised project management body to manage programme scope, schedule and budget.

PwC provided an integrated quality assurance and process design team, which reviewed PMO processes and procedures across nine functions (organisational design, financial management, communications and reporting, supply chain, schedule management, issue and risk management, procurement and contract management, scope management and systems and technology). The PwC team leveraged its understanding of the utility and smart meter project culture to design and implement PMO processes and control improvements that fitted with the needs of the project and the project team. The project demonstrated strong PMO capability to the utility regulator, and has been able to operate and manage scope, schedule and budget to meet project goals. The PwC team has operated with a collaborative focus and is able to make real time process change, necessary for the project considering the customer, utility and state implications of project issues.

Who we've assisted and how

2. Financing

Financial Model Review

Financial modelling review and validation of the tax, accounting and regulatory hypotheses of a number of financial models for solar plants. Examples include:

Germany

- A 50 MW solar PV project.
Client: KfW IPEX and juwi solar

Spain

- A solar thermal plant in Lebrija.
Client: Sacyr Vallehermoso
- A 50 MW energy solar plant.
Client: Grupo Cobra
- Three PV power plants.
Client: Naturener S.A.
- A PV plant.
Client: Joint venture between ACS Dragados and Solar Millennium

Finance Raising

Raising finance for a number of solar plants through equity and debt instruments. Examples include raising finance for:

Spain

- A 9 MW PV plant in the Canary Islands.
Client: Sumitomo Corporation
- A 1 MW PV plant in La Rioja.
Client: Mitsubishi Corporation

UK

- Four 2.8 MW PV plants in Castilla la Mancha and Murcia.
Client: Solarstrom
- Fund raising advice and development of financial models for clients in the development of a number of solar (PV) farms.
Client: Corporate
- Re-financing of a global leader in thin-film production equipment. Evaluated the business and its markets in depth to come to a view on the outlook for micromorph thin-film technologies, its competitive positioning and future demand for production equipment. Using these insights, we critically reviewed and came to our own view on the achievability of management's revenue projections.
Client: Confidential

Advisory Support: Reacting to sustainability and climate change

Sustainability and climate change have moved to the top of the corporate and governmental agenda, gaining traction among employees, shareholders, regulators and consumers alike. Most organisations know it's an area that can no longer be ignored, but many are at different stages of understanding. Whether driven by corporate conscience, stakeholder pressure or regulation and taxation, all recognise that action has to be taken now.

Finding the right balance among competing economic, social and environmental goals is the essence of a sustainable strategy. Sustainability considerations have moved way beyond philanthropy and ethics. They go to the heart of corporate strategy and competitive advantage, whether it's through understanding changing regulation, changing consumer preferences, security of supply chain, access to scarce resources or cost optimisation, to name but a few. Any miscalculation or misjudgement in these areas can have serious repercussions on the long term viability of an organisation and how it is judged and valued by its multiple stakeholders.

Sustainability and climate change are also critical for the public sector, with the government, other public bodies and international development stakeholders all facing increasing pressure to respond with an appropriate, cost-effective and integrated approach.

PwC's Sustainability & Climate Change group helps both public and private sector clients address the specific and immediate issues relating to sustainability, as well as helping with longer term strategic thinking. We have a unique blend of skills, experience and tools, as well as scale and reach in all service areas. Our global team comprises some 700 sustainability and climate change professionals, with over 100 based in the UK. Visit www.pwc.co.uk/sustainability to learn more.



Who we've assisted and how

3. Tender and Procurement

Competitive Tender Process

Advice on the **design of the competitive tendering process** and the analysis of corporate and contractual structures in the procurement of large HVDC and energy infrastructure projects. Includes advising on the establishment or procuring of joint venture agreements. Examples include the design of the tender process for:

- Spain • The construction of a 10 MW solar thermal plant by joint venture.
Client: Boeing
- UK • The construction of a 500 MW HVDC interconnector link between Ireland and Great Britain.
Client: EirGrid
- The procurement of the UK's first commercial-scale carbon capture and storage on a power plant.
Client: UK government, Department of Energy and Climate Change

Contracting Strategy

Advice or review of **contracting strategy** for power plant development.

- Netherlands • Review and analysis of the contracting strategy used by a number of European power plants. Drew recommendations for optimal strategies and informed decision making regarding the management of a new asset development initiative.
Client: European power generation company

UK

- Allocation of EU support for carbon capture and storage and innovative renewable energy projects.
Client: European Commission

Supplier Review

The review or commercial **due diligence of suppliers** to the solar energy and electricity transmission industries. Examples include the review of:

UK

- A supplier of high-quality aluminium sheet to the solar thermal industry.
Client: Confidential

Power Purchase Agreements

Assistance in the **valuation and purchase price allocation** activities for **Power Purchase Agreements** (PPA) for solar electricity. Services also include market-testing exercises to negotiate PPA contracts, and assistance with the impairment test of the goodwill. Examples include:

Germany

- Legal advice to a Danish investor regarding the acquisition of MW-class freeland solar projects in Germany.
- Provided legal advice to a Danish investor in connection with:
 - the acquisition of MW-class rooftop and freeland solar projects in Germany and Spain from German project developers,
 - the acquisition of a 24+2 MW wind solar park project in Greece from a German project developer.

Italy

- Client: Enertad/ERG
- Client: CAMGAS



4. Construction



Health & Safety

Health & Safety (H&S) audit of a construction company's internal H&S governance and systems.

UK

- Client: British Land

Supply Chain

Supply chain analysis, including the mapping of the supply chain required to construct a solar plant, and the subsequent management and improvement of the supply chain. Often includes specific supplier reviews or contract and procurement advice. Examples include:

India

- Mapping the supply chain of a solar PV plant and undertaking a review of key suppliers and their drivers.
Client: Confidential

Who we've assisted and how

Advisory Support: Effective governance of project delivery

Effective project governance and control can be a significant challenge for solar as well as other power projects. Getting governance wrong impacts successful project delivery, whether due to delays or cost overruns which could have been avoided, or due to misaligned stakeholder interests. Project owners and investors need to address a number of fundamental questions:

- Do you know where and how value is lost and what drives risk?
- How can you intervene in a managed way if your project is going wrong?
- Do you know who is managing your key risks and if mitigation is effective?
- How could you get a better view on project performance and outcomes?
- How should governance of your capital projects and programmes connect with your corporate governance?

Poor project governance can often affect the timeline for delivery of large capital projects generally, leading to increased costs and ultimately failure to deliver the project's business case. But what is governance? Project governance has developed from the broader concepts of corporate governance, which is concerned with a set of relationships between an organisation's management, its board, its owners and other stakeholders. It provides the structure through which the objectives of the company are set, the means by which achievement of those objectives is agreed and how company performance against those objectives is monitored. Success in projects with complex procurement structures has been shown to rest more on effective governance, strategic alignment and stakeholder management than on the ability to plan and deliver the project plan.

Project governance extends the principles of corporate governance into the management of individual capital projects through governance structures and the management of projects at a business level. In a portfolio environment, effective project governance is concerned both with doing the

right projects and getting them right first time, every time. Doing the right projects requires the project goals to be aligned with the strategic objectives of the business by means of an effective benefits-management system). Doing the projects right ensures that project control processes are managed effectively to deliver the expected benefits to the business and its stakeholders.

The tension between the risk transfer evident in some contracting strategies and the willingness of the supplier to be transparent about its performance when it has significant amount of risk to manage increases the importance of project assurance to the owner. In these cases, comfort is needed that the information management and reporting systems used by the contractor and reported to the owner are robust and supported by appropriate technology. This importance escalates in larger projects and programmes where supply chains are often multi-layered and geographically diverse.

PwC's view is that when risk allocation is negotiated in complex contracts for the delivery of capital projects such as renewable Independent Power Producers, consideration should be given to the operation of an effective governance regime and the requirements of project management processes for disclosure, information management and reporting across the breadth of the supply chain. The benefits of using PwC to help you with this are that we:

- Have in-depth experience and expertise in construction disputes, international arbitration and litigation
- Can supply resources drawn from global specialist teams and local offices
- Have an array of tried-and-tested tools and techniques that can be used to assist in investigating unique problems on capital projects
- Are business focused to achieve dispute resolution
- Can supply a range of industry specialists (insurance, telecoms, energy) and economics, valuation and finance specialists.

5. Operation and Maintenance



Audit

Our industry specialists provide cost-effective and risk-considered **audit** and **assurance services** to both the solar and electricity transmission industries. Select examples include:

Europe – Solar energy companies

- Abengoa
- Bosch Solar Energy (fka ErSol Energy)
- CENTROTEC Sustainable
- Colexon Energy
- Compagnie de Saint-Gobain
- Fersa Energias Renovables
- First Solar
- Goldbeck Solar
- HUBER + SUHNER
- Kostal Solar Electric
- Novera Energy
- Npower
- Robert Bosch
- Rothe Erde
- RWE Innogy (fka Innogy)
- S.A.G. Solarstrom (tax client only)
- Shell Gas & Power International
- Solaria Energía y Medio Ambiente
- Sol Puerto Rico

Europe – Electricity transmission companies

- A2A
- British Energy Generation
- Business Group Benelux (fka Nuon)
- Edison
- E.ON
- National Grid
- RWE
- TenneT TSO



Who we've assisted and how

5. Operation and Maintenance



Audit continued

North America – Solar energy companies

- AGY Holding
- Bonneville Power Administration
- Chevron
- Consolidated Edison
- Day4 Energy
- Dow Corning
- Edison International
- Energy Northwest
- Evergreen Solar
- First Solar
- GrafTech International
- FirstEnergy (fka Jersey Central Power & Light Company)
- NSTAR
- Quanta Services
- STR Holdings
- SunPower
- Tampa Electric Company
- UniSource Energy

North America – Electricity transmission companies

- ATCO
- Canadian Utilities
- Allegheny Energy
- Ameren
- Atlantic City Electric Company
- Baltimore Gas and Electric Company
- Bonneville Power Administration
- Brazos Electric Power Cooperative
- California ISO
- Central Illinois Light Company
- Central Illinois Public Service Company
- Cleco
- Commonwealth Edison Company
- Consolidated Edison Company of New York
- Consolidated Edison
- Constellation Energy Group
- Delmarva Power & Light Company
- E.ON US
- Edison International
- ERCOT (Texas ISO)
- Exelon
- FirstEnergy
- Illinois Power Company
- Kentucky Utilities Company
- Metropolitan Edison Company
- MGE Energy
- Monongahela Power Company
- Municipal Electric Authority of Georgia
- National Grid USA
- Nebraska Public Power District
- New England Power Company
- Niagara Mohawk Power
- NSTAR
- Oglethorpe Power
- Ohio Edison Company
- Orange and Rockland Utilities
- PECO Energy Company
- PJM Interconnection
- Pennsylvania Electric Company
- Pennsylvania Power Company
- Pepco Holdings
- Public Utility District No. 1 of Chelan County, Washington
- Public Utility District No. 2 of Grant County, Washington
- Puget Energy
- Salt River Project
- Seminole Electric Cooperative
- Southern California Edison Company
- Southwest Power Pool
- Tampa Electric Company
- TECO Energy
- The Cleveland Electric Illuminating Company
- The Empire District Electric Company
- The Toledo Edison Company
- Tucson Electric Power Company
- Turlock Irrigation District
- UIL Holdings
- Union Electric Company
- UniSource Energy

5. Operation and Maintenance

Audit continued

Asia – Solar energy companies

- Ablerex Electronics
- Delta Electronics
- Kyocera
- Shell Eastern Trading
- Viridis Clean Energy Group

Asia – Electricity transmission companies

- CLP Holdings
- CLP Power Hong Kong
- Tanjong
- Tenaga Nasional Berhad

Advisory Support: Developing & Delivering Solar Projects

Players in the sector of renewable energy are faced with a wide variety of challenges during the planning and realization of their projects. These range from how to finance project development and realization, handling transactions for the purchase or sale of individual projects, completing project pipelines to strategic issues such as the entry into new markets or countries. PwC can provide comprehensive help across a range of service areas.

Advice for project developers and operators

- Advice and support with the financing of projects by arranging own and borrowed funds:
 - Advice on project, contract and security structuring
 - Draft of bankable risk allocation, and support in coordinating this with banks (including due diligence support)
 - Finance structuring and preparation of term sheets
 - Contacting possible lenders and negotiation of financing terms and conditions up to financial close
- National and international search for lenders and support with transactions (“sell-side”)

- Project processing according to international project financing standards, e.g. through advice and support with the preparation of the information memorandum/ financial model
- Support and back-up in strategic questions such as company and project alignment through advice and market surveys in the sector of renewable energy

Advice for investors

- Search for national and international investment opportunities in the form of projects or strategic partnerships (“buy-side”)
- Support with the development of acquisition strategies and processes for market address
- Advice and support with the organization of the due diligence process as part of transactions
- Performance of commercial, financial and legal due diligence by PwC industrial experts from one source
- Analysis and economic evaluation of projects
- Support as financial adviser for investment in companies or taking over projects or project companies in the sector of renewable energy

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Who we've assisted and how

5. Operation and Maintenance

Tax

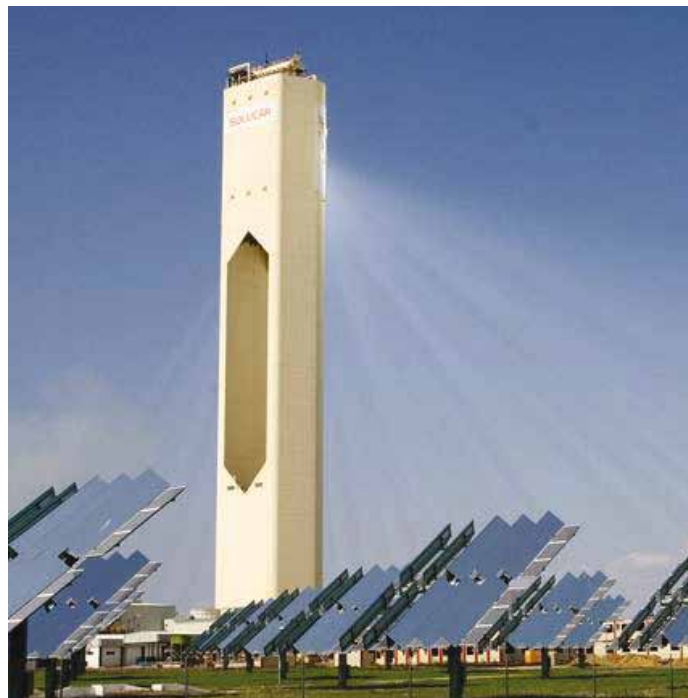
In addition to a wide range of **tax services** including compliance, planning and tax strategy, our Renewable Energy Tax team helps clients in the solar sector to capture fully the tax benefits of renewable energy. By providing insights into the availability of **tax incentives**, the relative value of various tax incentive options, and the ongoing nature of legislative extensions and modifications of energy tax, PwC helps renewables companies to manage their **energy investment decisions** and **reduce costs**. Recent projects include:

Canada

- Tax structuring in significant investments in solar, wind and hydro.
Client: Investment company
- Advising on tax incentives of investing in existing and planned solar and wind developments.
Client: Confidential
- Reviewing contracts and advising on the impact of the carbon tax.
Client: Energy generation company

UK

- Advised on the VAT, transfer pricing and accounting treatment of a contract to provide tolling services that would transfer risk around carbon emissions.
Client: European power company
- Advised on the VAT implications of a number of carbon deals including a cross-border EUA/CER arbitrage deal.
Client: Investment banks (various)



- Provided tax structuring advice in relation to the business mode and financing for a clean energy project.
Client: Confidential
- Undertook a multi-jurisdictional review of the direct tax treatment of emissions trading and provided tax structuring advice in relation to EUA sale and repurchase transactions in several European jurisdictions.
Client: UK financial institution

5. Operation and Maintenance



Tax

We also provide ongoing **tax services** to a number of companies in the solar and electricity transmission industries. Select examples include:

Europe – Solar energy companies

- Abengoa
- ALSTOM
- AMG Advanced Metallurgical Group
- BP
- Eneco Holding
- Eternit
- IBERDROLA RENOVABLES
- OC Oerlikon Corporation
- Robert Bosch
- Sacyr Vallehermoso
- Schneider Electric
- Siemens
- SolarWorld
- Von Roll Holding

Europe – Electricity transmission companies

- EDP - Energias de Portugal
- Eneco Holding
- Enel
- Energie Baden-Württemberg
- E.ON
- GDF SUEZ
- IBERDROLA
- National Grid
- RWE
- SUEZ-TRACTEBEL
- TenneT TSO

Continued from page 23

Advice for banks and financial modeling

- Preparation of financial models and performance of model audits
- Training for preparation and use of financial models
- Acceptance of due diligence tasks for project financing and audits as well as validation of business plans
- Project evaluation and advice in the sector of risk evaluation

Advice for public institutions

- Preparation of surveys, analyses and expert appraisals
- Institutional capacity building
- Development and set up of large programmes of work
- Evaluation and conceptual design of aid programs

Who we've assisted and how

5. Operation and Maintenance



Tax continued

North America – Solar energy companies

- AGY Holding
- Arizona Public Service Company
- Black & Veatch Holding Company
- CH2M HILL Companies
- Clayton Homes
- Dow Corning
- Edison International
- El Paso Electric Company
- First Solar
- Florida Power & Light Company
- FPL Group
- GE Energy (Hong Kong)
- GrafTech International
- ITOCHU International
- First Energy (fka Jersey Central Power & Light Company)
- National Semiconductor
- Newport
- Pinnacle West Capital
- Public Service Enterprise Group
- RF Micro Devices
- STR Holdings
- UniSource Energy

North America – Electricity transmission companies

- California ISO
- ERCOT (Texas ISO)

Asia – Solar energy companies

- AU Optronics
- Chevron
- Delta Electronics Taiwan
- Ebara
- Honda
- Kyocera
- Mitsubishi
- Mitsui
- Nippon Sheet Glass Company
- NSK Ltd.
- SANYO
- Solar Energy System
- Suntech Power Holdings
- TDK

Asia – Electricity transmission companies

- Korea Electric Power Corporation
- Reliance Infrastructure Ltd
- Tanjong
- Tokyo Electric Power Company

5. Operation and Maintenance

Performance Management and Improvement

Our **Performance Improvement** specialists have a wide range of capabilities across the value chain of renewable electricity generation and distribution, including **managing costs, managing technology, growing revenue, managing people and improving performance**. We have vast experience working with utilities companies on a range of operational issues. These are typically specific to the individual needs of the business and examples include:

Australia

- The design of a cultural change programme for an energy company following poor employee engagement results. Data analysis and workshops informed the creation of a three year roadmap to implement behavioural change.
Client: Global resources company

Netherlands

- Advised on the residual value of assets of special purpose companies, exploiting wind parks, (biomass) cogeneration, solar electricity and heat/cold storage.
Client: Corporate

UK

- Development of IT strategy. Included a review of the current service delivery model, identification of IT drivers, benchmarking, KPI comparison and customer satisfaction assessment.
Client: UK regional electricity distribution company

USA

- Accounting systems advice following the launch of a new highly complex accounting standard. Included industry tailored training sessions, insight into industry practices and development of a best practice roadmap.
Client: Large US north eastern utility company
- Process improvements for increased efficiency and reliability of financial close and reporting procedures.
Client: US medium-sized public utility
- Performance improvement consulting to solve the increasing complexity of the client's "Purchase to Pay" cycle and SAP environment.
Client: Global power generation company



Who we've assisted and how

Advisory Support: Sustainability Considerations

Climate and carbon

Climate change has emerged as one of the most important political and business issues of our time. At PwC, we've responded by working with companies and policy makers since the mid eighties, helping shape the agenda, analyse the issues and develop practical solutions. Whether it's defining policy, understanding the opportunities, helping to develop projects, preparing and protecting a business, setting a good example or empowering others, we help our clients understand the issues that will have the greatest impact on their organisation, form a strategy to address them, and then support them through the complex organisational changes needed to put their strategy in place.

Climate change strategy and investment

We help clients plan for an uncertain future, anticipating changes in markets and policy, as well as preparing for the physical impacts of climate change. The climate team works with our strategy consultants and industry specialists, helping businesses manage risks and respond to opportunities as climate change affects their operations, their markets, their supply chains and their investment decisions. We use scenarios and real options techniques to support planning and decision making, underpinned by a deep understanding of markets, policy and climate impacts.

Carbon markets

PwC provides a full range of carbon market services to carbon buyers and investors, whether they're looking to take positions in carbon assets, acquire pure-play carbon businesses or simply address compliance needs. We advise on strategy and transactions, conduct carbon due diligence and valuations, and advise on risk and compliance. We work with developers of carbon assets in the Clean Development Mechanism and Joint Implementation markets and in the Voluntary Carbon market. We advise on strategy and financing, prepare project design documents and manage sale processes, helping manage risks and maximise value, as well as building credibility and profile for sellers in the carbon markets.

Climate policy, economics and green growth

Climate change is at the heart of public policy. It is central to energy and industrial policy, to housing and infrastructure plans, to transport policy and to climate resilience and contingency planning. It drives economic policy, regulation and standards, tax and incentives, as well as carbon management and adaptation planning in the public sector. We help public sector clients develop and implement policies, strategies and programmes across central and local government. We support their engagement with the private sector,

as well as sharing best practice across the public sector. Our work is informed by deep knowledge of international policy developments and by experience in countries across Europe and further afield. It is underpinned by robust methodologies, economic analysis and evidence based decisions.

Climate risk management

PwC helps clients to understand and manage risks from climate change, building climate change resilience by providing comprehensive strategy evaluation, market analysis, risk assessments at a local level and options analysis across the value chain and investment portfolio. We also advise clients on government policy, emerging regulations and reporting requirements, and how these might impact their operations and projects.

Carbon reporting

There is overwhelming demand from a multiplicity of stakeholders for information about carbon and climate change risks and opportunities, and the associated strategies that might impact the financial wellbeing of a business. Carbon measurement and reporting creates a strategic picture of a business that is both informative and convincing. It gives enhanced market insight and reveals how emerging risks can be opportunities rather than threats if they are managed for competitive advantage – all critical in a carbon-constrained world. Forward-

looking analysis and statements of the risks and opportunities affecting a business will soon become an established part of the reporting cycle. PwC can perform an in-depth review of an organisation's current carbon position – from measuring the carbon footprint to assessing the effectiveness of reporting and how it measures up to leading practice. The output from the review will detail the actions, costs and time required to close the gap from the current position to the identified desired state.

CSR/Sustainability and non-financial reporting

In the future, reporting performance will be less dependent on financial numbers and more about delivering the strategy of the business. Companies will choose to adopt a multiple time horizon approach to reporting, explained with a data-set of non-financial indicators and metrics. These will create a blueprint of the long term position of the business and the drivers of business success, and short term context against which current performance can be assessed. As companies become more aware of the implications on the future success of their business of issues such as climate change, population growth, finite resource usage, the employee agenda and the ability to establish and maintain critical relationships, the challenge will be to report on the material issues in an integrated way. This does not mean bolting-on additional reporting to

existing reporting requirements, but showing how sustainability and other non-financial issues pervade a company and its reporting, and add value to business performance.

Management information systems and processes

Putting management information in the spotlight raises issues about how decision making within business is currently undertaken. The bar continues to be raised when it comes to increasing the relevance and timeliness of the management information that is now put before boards and senior executives, but at the same time much needs to be done to improve the insightfulness and accuracy of the data that are being collected, especially in the case of sustainability related data, such as carbon and water. PwC can help businesses understand the data they need to collect and the management information systems they need in place to be able to do this effectively. This also ensures that the data they collect are sufficiently clear and forward-looking to identify opportunities. PwC can also assist with data integrity and consistency by looking at the controls in place over the processes that are operating.

Governance, risk and compliance

As the recent recession has demonstrated, risk can no longer be confined to one company, country or continent. It pervades every decision a business takes and, left unmanaged,

can result in fines, business failure and even prison. Risks related to sustainable development interconnect with many other risk areas – from climate change to water scarcity, demographic shifts to resource availability, land use to labour rights. Similarly, regulation around sustainability issues continues to expand and Company Law reform has sought to make more explicit the responsibilities of the board towards social, ethical and environmental impacts.

Understanding the complexity and defining the risk appetite of the business is now a strategic imperative. Coupled with this is the need to identify the risks, decide how they will be measured and agree who will be accountable. CEOs widely recognise this, but very few have a clear plan to respond and creating a sustainable, risk resilient culture remains a challenge.

PwC is the UK's leading provider of integrated governance, risk and regulatory compliance services. Drawing from a global network of specialists in risk, regulation, people, operations and technology we help companies deliver lasting change through understanding how sustainability risks might impact their short and long term commercial success. The management of these risks can then be integrated into the overall corporate risk strategy. The services we offer also help clients manage these risks at the business unit and functional level.

Who we've assisted and how

6. Disposal and Acquisition

Transaction Services: Buy Side

Buy-side transaction services, including **financial, commercial and tax due diligence**, data room assistance, Sale and Purchase Agreement advice, and legal services in the acquisition of solar plants. Examples include the acquisition of:

- Spain
- Three PV plants with a combined capacity of 13 MW and a value of €90m. PwC was also the legal advisor in the transaction.
Client: Gilatz
 - Two PV plants with a combined capacity of 8 MW.
Client: Confidential
 - A PV plant with a capacity of 9 MW by EPC contract.
Client: Foresight
 - Solar assets with a capacity of 15 MW installed and 50 MW in planning.
Client: General Electric
 - A 7 MW PV plant in Ciudad Real.
Client: AES Solar
 - A manufacturer of photovoltaic cells/modules.
Client: Prestige Hotels
 - A manufacturer of thermal power systems and photovoltaic cells/modules. Annual manufacturing capacity of 90 MW.
Client: Private equity

UK

- A solar energy company with two PV plants in operation (30 MW), two PV projects under construction (20 MW) and 10 PV development projects (180 MW).
Client: General Electric

- A 50% stake in one of the largest renewable companies with assets amounting to more than 1,000 MW between solar, hydroelectric, wind and biomass.
Client: Private equity

Transaction Services: Sell Side

Sell-side transaction services, including **financial advice, financial, commercial and tax due diligence**, and legal services in the disposal of solar plants. Examples include assistance in the disposal of:

- Spain
- A 2 MW PV plant located in Extremadura, with a deal value of €20m.
Client: Prestige Energias Renovables
 - A two-axis PV plant of 2 MW in Badajoz, by EPC contract.
Client: Prestige Innovación

6. Disposal and Acquisition

Valuation

The **valuation of businesses or assets** for both buy and sell-side clients to support decision making. Examples include:

- Australia**
- Vendor advisor on the sale of SolarSystems to Silex Systems.
Client: Silex Systems
- France**
- Market due diligence for the acquisition of a French player in the photovoltaic industry with extensive research in terms of photovoltaic market value chain, end segments dynamics, and screening of build-up opportunities.
Client: Platina Partners
 - Market due diligence and strategic analysis for the Association Famille Mulliez for the acquisition of a share of Voltalia, a player active in photovoltaic, wind power, biomass and small hydroelectricity industries.
Client: Voltalia
 - Strategic, operational, financial and tax and legal due diligence of a potential investment in the French photovoltaic industry (review of projects portfolio, analysis of current margins and forecasts, operational capacity to install the projects pipeline, net working capital and net debt analysis, etc).
Client: Eurazeo
- Germany**
- Legal advice to a Danish investor regarding the acquisition of MW-class freeland solar projects in Germany and in connection with the acquisition of a wind park in the Land of Lower Saxony with a total capacity of 9.2 MW.
Client: Corporate

- Italy**
- Commercial due diligence of a 1 MW PV project.
Client: Solar Power Invest ApS
- Netherlands**
- The listed business of an HV and EHV transmission service operator.
Client: GRTN
 - Assets of special purpose companies in the area of solar electricity and heat/cold storage.
Client: International bank
 - Advisor to the consortium in the £1.6bn public to private acquisition.
Client: Biffa
 - Advisor to Montagu in the disposal of Cory to a consortium led by ABN Amro.
Client: Cory
 - Advisor to Verbund on the acquisition of a photovoltaic park in Spain.
Client: Verbund
 - Lead financial advisor on Impax's acquisition of 100% of the shares of the two-axis 2MW solar farm property from Prestige Group.
Client: Impax
- Spain**
- Investment and operational projects in solar power plants for the purpose of an IPO.
Client: T-Solar (Isolux)
 - Financial investor interested in a Spanish company with a photovoltaic capacity of 143 MWP and a pipeline of 312 MW in Spain and 106 MW abroad.
Client: Corpfin Capital Asesores

Who we've assisted and how

6. Disposal and Acquisition



- Financial investor interested in a company with a photovoltaic capacity of 58 MWP, wind power of 234 MW, 2 MW of mini-hydraulic, and a pipeline of 103 MW of wind power, 87 MW of sun power and 401 MW of thermal energy.
Client: Corpfin Capital Asesores
 - Acquisition by AES Solar of a 7 MW photovoltaic power plant owned by Jiménez Belinchón.
Client: AES Solar
 - Due diligence: TAU Ingeniería Solar acquired 100% of the shares of GIF Ingenieros Asociados, which held the rights for building and operating a photovoltaic power plant of 0.6 MW in Murcia.
Client: TAU Ingeniería Solar
 - TAU Ingeniería Solar acquired 100% of the shares of Fotonos de Castuera, S.L. which holds the rights for building and operating a photovoltaic power plant of 20 MW in Badajoz.
Client: TAU Ingeniería Solar, S.L.
 - Asset acquisition of operating solar plants with a total installed capacity amounting to 15MW and 50MW under promotion.
Client: General Electric
 - Full due diligence and advisory on the sale and purchase agreement to a private equity fund of an important solar energy company.
Client: General Electric
- A Spanish-based financial investor showed interest in the acquisition of a majority stakeholder in a Spanish group with photovoltaic operating projects (30MW) and a large pipeline of both PV (80MW) and CSP projects (1,200MW). PwC's Transaction Services (TS) team and Landwell Tax were in charge of the first stage of the project (financial and tax due diligence) with the Valuations and Strategy (V&S) team responsible in the second stage for reviewing the business plan to achieve external financing and the completion of a group valuation.
Client: Confidential
 - An investment group was interested in the acquisition of photovoltaic installations in Spain. PwC's Corporate Finance team was in charge of the first stage of the project (acquisition of the installations), after which the TS (Financial and Strategy groups) team was responsible for reviewing the business plan in order to achieve external financing. In total 13 MW were successfully acquired.
Client: Confidential
 - One of the key players in the solar market in Spain, was trying to expand its national and international business. It asked PwC for financial and tax buy-side due diligence services (to support several acquisitions), financial and tax sell-side due diligence (to support raising funding from financial investors) and IPO services.
Client: T-Solar

6. Disposal and Acquisition



- One of the key players in the PV solar market in Spain, asked PwC for financial and tax buy-side due diligence for Grupo Solarfin, an Spanish based company that owned licenses for the construction of PV projects amounting to 5 MW. The client needed an urgent analysis of three companies that were included in the transaction perimeter, in order to expand its business operations. PwC prepared timely reports for the buyer to make the offer, and also provided additional financial and tax analysis to support the discussions.

Client: Fotowatio

UK

- Operational and pipeline renewable power generation assets. Also included the valuation of intangible assets such as the development team, know-how and brand.

Client: UK venture capital company

- Lead financial advisor on Foresight Group's acquisition of an 8.8 MWP solar PV project located in Madrideojos (Spain), owned by Santander. The project was developed by BP Solar.

Client: Foresight Group

USA

- Financial due diligence for the acquisition by Areva of the US CSP company Ausra, based in Mountain View, California.

Client: Areva

Advisory Support: Ireland – EirGrid Plc

Over a period of six months, PwC worked with EirGrid plc, the Irish electricity Transmission System Operator, as financial advisors on designing and executing the competition for the procurement and financing of a sub-sea HVDC electricity interconnector. This 500 MW interconnector will cost approximately €300-400 million and will link the Republic of Ireland and Great Britain, providing an important strategic link between the two electricity markets.

Over the six month period, PwC provided project finance support that included:

- Financial modelling
- Market sounding and pre-selection of banks
- Development of an information memorandum
- Selection of banks
- Preparation of all documentation and completion of due diligence
- Financial close for the project.

Who we've assisted and how

Advisory Support: Deals

The PwC Power and Utilities deal team comprises industry focused transactions specialists and market experts that draw on multidisciplinary expertise from across our firm. We assist our solar clients in addressing the value and assurance issues that lie at the heart of their deals. Our advice covers the commercial and regulatory, operational and strategic, and financial and structuring issues and covers the entire deal continuum, from inception through to completion and beyond. Our solar clients tell us that they value our commercial approach, our knowledge of their business and of the wider industry, and our responsiveness.

We can help you to find solutions to your deal issues including:

Strategic and commercial issues:

- Why are we doing this deal?
- What are our other options?
- Do we understand the market/regulatory drivers of value and sources of risk?
- Do we understand the current and expected carbon risks and opportunities?
- How can we capture more of the value and mitigate the risks?
- Do we understand the target's business?
- What is fair value?

Financial issues

- What are normalised earnings?
- What is the deal balance sheet?
- What are the GAAP implications? (IFRS/US GAAP?)
- What historic tax issues do we inherit?
- What are the available tax reliefs and how can we use them?
- Can we improve the tax efficiency?
- What are the pension and other long-term employment liabilities?
- Can we manage risks and still structure the deal?
- What are the financial implications of the Share Purchase Agreement?
- Is the projections model robustly built?



Operational issues

- How do we maximise cost synergies?
- What risks exist in the day one and hundred day plan?
- How will the IT services link up?
- What immediate process improvements can I gain?
- What working capital efficiencies can I achieve?
- How do we deliver revenue synergy?
- How do we engage our leaders and workforce to deliver?
- How do we identify and address an organisation's cultural issues?

Compliance and governance issues

- How do we ensure we are compliant with the tax and regulatory requirements?
- What are the environmental risks and liabilities associated with the deal?
- What investment is required to ensure (EHS) compliance and improve EHS performance?
- How does the governance structure need to change to accommodate the reshaped business?
- Can the existing systems and processes produce the required MI and KPIs on a timely basis?
- How do we ensure compliance with legal and contractual employment requirements?

Thought leadership



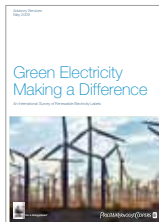
100% renewable electricity: A road map to 2050 for Europe and North Africa

This study, conducted by energy and climate experts from PwC in collaboration with researchers from the Potsdam Institute for Climate Impact Research, the International Institute for Applied Systems Analysis and the European Climate Forum, explores the potential to transform the power sector in Europe and North Africa and provides a possible road map to support a goal of achieving a 100% renewable power sector in the region by 2050.



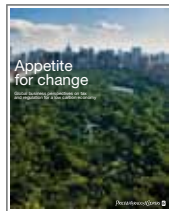
The state of the photovoltaic industry in France

An overview of the current status of the photovoltaic industry in France, including an analysis of the market, technology and regulation. The report details projections for the industry and identifies the key strategic issues it will face in the future.



Green electricity: Making a Difference

This study creates a basis for decision makers who wish to purchase electricity from renewable sources and who demand quality and reliability. The result provides a comparative analysis of different labels in relevant national and international markets as well as an overview of the country specific situation regarding renewable electricity.



Appetite for change

The PricewaterhouseCoopers report 'Appetite for change: Global business perspectives on tax and regulation for a low carbon economy' takes a close look at attitudes in the international business community towards environmental regulation, legislation and taxes. In almost 700 interviews in 15 countries, executives share their perspectives on issues such as the impact of climate change, the role of government, preferred environmental policy tools, and the essential ingredients for an effective global climate change deal.

For further information see: www.pwc.com/sustainability



Crisis or not: renewable energy is hot

PwC recently examined Europe's future renewable energy marketplace through the lens of progress towards the 2020 goals. This PwC study considers the market's potential, compares approaches in various countries, and puts forth some high level recommendations for how governments and companies can reap the rewards.



Review of carbon markets: Breaking the climate deadlock

Our review of the state of the carbon markets recommends what it will take to create a successful international framework. Part of an ongoing programme of collaboration with opinion leaders to inform climate change policy, it argues that the sum of the parts of the carbon markets will not deliver the real cuts in emissions that are required.



A world beyond recession: Utilities global survey 2009

The report compiles the results of interviews with about 70 executives from leading power utility companies around the world to gain their perspective on the implications for the utilities industry post recession. We saw that shortage of capital is having a significant impact on the industry, investment barriers are increasing and economic incentives are needed to boost renewables in the mix.

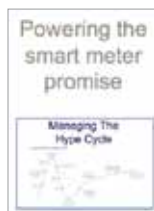


Smart solutions for smart grids – capability document

Behind the hype, there is the reality. The era of smart grids is set to deliver real improvements. A range of technological innovations are, together, expected to make possible a step-change in grid efficiency, facilitate automation to reduce cost and improve quality, enable the integrated and optimal use of distributed and renewable generation, and promote interaction between supply and demand technologies and between the consumer and the utility that will provide benefits for both. This capability statement offers out response to your smart grid challenges.

For further information see: www.pwc.com/sustainability

Thought leadership



Power the smart meter promise

In many markets, the introduction of smart meter technology has left the public feeling less than energised. Utilities around the globe have rolled out smart meter programs to great fanfare, only to experience eerily similar responses – enthusiasm followed by disappointment followed by concerns, complaints and, in some cases, even lawsuits. But with proper planning, utilities can ensure that customers experience the full value that smart meters deliver.



Delivering on earth's solar potential

This paper outlines how the development of a Smart Transmission Grid across Europe and the development of CSP plants across North Africa could address immediate energy security concerns and enable economic development across the region.



The World in 2050: Can rapid global growth be reconciled with moving to a low carbon economy?

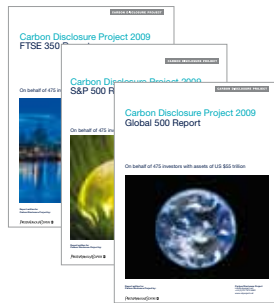
In this report, PwC calls on the governments of the major economies to demonstrate their joint political will to combat global warming. And we conclude that the adoption of a “greener growth + carbon capture and storage (CCS)” strategy would be technologically feasible without excessive economic costs – provided action is taken early enough across a broad range of fronts.

For further information see: www.pwc.com/sustainability



Typico plc: Greenhouse Gas Emissions Report

'Typico' is a ground-breaking carbon emissions reporting model that provides an illustrative example for business climate change and greenhouse gas emissions reporting. It has been developed by PwC to help companies interpret reporting guidelines being launched this year by Defra, the Climate Disclosure Standards Board and the CBI.



Carbon Disclosure Project

The Carbon Disclosure Project (CDP), to which PwC has been appointed global advisor and report writer, aims to provide investors with a unique analysis of how the world's largest companies are responding to climate change.

In 2009, the CDP received the highest response rate to date, the highest level of disclosed emissions and greater detail than ever before on the activities being undertaken by the largest corporations around climate change mitigation and adaptation.



Vision 2050

PricewaterhouseCoopers has been one of the key corporate sponsors of the 'Vision 2050' project of the World Business Council for Sustainable Development. This short illustrative analysis prepared by PwC aims to put an order of magnitude on the additional business opportunities that might arise in key sectors if the vision of a more sustainable future in 2050 is realised.

For further information see: www.pwc.com/sustainability

Thought leadership

Other selected
thought leadership:



For further information see: www.pwc.com/sustainability

Websites

The screenshot shows the PricewaterhouseCoopers website with the following content:

- Header:** PricewaterhouseCoopers logo, navigation links (Home | About | PwC Legal | Media Centre | PwC Plus | Publications | Who we are), and a search bar.
- Navigation:** Home | Industries | Issues | Services.
- Industry focus:** Energy, utilities and infrastructure industry focus.
- Text:** "Environmental pressures, volatile commodity prices and the demand for efficiency due to the economic cycle all contribute to the challenges facing companies in the oil, gas, power, infrastructure, water and mining sectors today. The changeable market makes it critical for management to take the right strategic decisions in order to create value for their shareholders." "Our team of sector specialists provide a range of services, including:"
- Services:**
 - **Strategy:** advice on trading strategy, regulatory strategy, corporate strategy, business planning and market entry/exit.
 - **Transactions:** lead financial advisory services or acquisitions and divestitures, advice on electric utilities restructurings, fair value calculations, impairment assessment, mergers to market calculations, fair value analysis, digital divestiture and strategic value assessment.
 - **Restructuring:** advice on changes to markets and to companies.
 - **Restructuring:** advice on better control, reduction, realisation.
- Recent Papers:** A list of recent publications.
- Contact:** "Contact Us" button, "What do you want to do?" dropdown, "Email us" button, "Phone us" button, "Fax us" button, "Head Office" phone number.
- Footer:** "Renewables: Clean 2009 Annual Report" link.

http://www.pwc.co.uk/eng/issues/valuation_strategy_energy_utilities_infrastructure.html

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- Navigation:** Home | Industries | Issues | Services.
- Industry focus:** Renewable energy.
- Text:** "Predicted population growth and economic development will increase future demand for electricity to a level that cannot be met by the existing generation and transmission infrastructure in many parts of the world, including Europe." "Coupled with the drive to reduce CO2 emissions and concerns about security of fossil fuel supply mean that Governments will need to consider radical changes to their energy policy to ensure future energy security. In addition, emerging wind, solar or nuclear targets will also require the new build and ongoing use of fossil fuel power stations." "Alternative energy sources therefore represent the only way of satisfying energy demand and still meeting these targets. Clean technology and renewables (such as bioenergy, solar, wind, geothermal and hydro) are becoming increasingly important and will need to form a large part of a sustainable global energy generation and transmission infrastructure." "The issues: Governments and organisations seeking to minimise their energy risks must consider:"
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- Footer:** "Renewables: Clean 2009 Annual Report" link.

<http://www.pwc.co.uk/eng/services/renewables.html>

Key Contacts

Our people

With a network of over 4,500 dedicated energy specialists, we are, literally, wherever you are. Supported by 10 centres of excellence covering major regions worldwide, we are able to provide you with fresh perspectives and solutions to your business challenges.



PwC Network Coordinator

Gus Schellekens

+44 20 7804 1770

gus.schellekens@uk.pwc.com

About PwC

PricewaterhouseCoopers provides industry-focused assurance, tax and advisory services to build public trust and enhance value for its clients and their stakeholders. More than 155,000 people in 153 countries across our network share their thinking, experience and solutions to develop fresh perspectives and practical advice.

PwC is the professional services leader in the international energy, utilities and mining community, advising clients on both conventional and renewable energy through a global network of fully dedicated specialists. Please visit us at: www.pwc.com/energy.

North America			
Canada	Penny Rae	+1 403 509 6371	penny.rae@ca.pwc.com
	Brian Pawluck	+1 604 806 7581	brian.k.pawluck@ca.pwc.com
	Janet Rieksts-Alderman	+1 506 653 9459	janet.a.rieksts-alderman@ca.pwc.com
	Leanne Sereda	+1 403 509 7586	leanne.a.sereda@ca.pwc.com
USA	Tim Carey	+1 408 817 5000	d.timothy.carey@us.pwc.com
	Wayne Hedden	+1 408 817 7897	wayne.hedden@us.pwc.com
	Stephen Lechner	+1 415 498 6596	stephen.p.lechner@us.pwc.com
	Daryl Walcroft	+1 415 498 6512	daryl.walcroft@us.pwc.com
	Matthew Labovich	+1 703 918 3649	matthew.labovich@us.pwc.com
South America			
Argentina	Jorge Bacher	+54 11 5811 6952	jorge.c.bacher@ar.pwc.com
	Marcelo Iezzi	+54 11 4850 6816	marcelo.liezzi@ar.pwc.com
	Ezequiel Luis Mirazon	+54 11 4317 1829	l.mirazon@ar.pwc.com
Brazil	Mauricio Girardello	+55 11 3674 2469	mauricio.girardello@br.pwc.com
	Rogério Gollo	+55 11 3674 3851	rogerio.gollo@br.pwc.com
Chile	Rafael Ruano	+56 2 940 0181	rafael.ruano@cl.pwc.com
Middle East and North Africa			
Abu Dhabi	Don Painter	+973 3838 2872	don.painter@ae.pwc.com
	Alistair Kett	+971 2694 6831	a.kett@ae.pwc.com
	Linda Costello	+971 2694 6800	linda.costello@ae.pwc.com
Algeria	Yacin Mahieddine	+331 5657 5859	yacin.mahieddine@fr.pwc.com
	Samir Hamouda	+331 5657 5859	samir.hamouda@fr.landwellglobal.com
	Said Benikene	+331 5657 5859	said.benikene@fr.pwc.com
Dubai	Neil Broadhead	+971 4304 3199	n.broadhead@ae.pwc.com
Egypt	Tarek Mansour	+202 2516 8027	tarek.mansour@eg.pwc.com
	Alaa El Soueni	+202 2516 8027	alaa.k.elsoueni@eg.pwc.com
	Rehab Abdelhafez	+202 2759 7700	rehab.abdelhafez@eg.pwc.com
Jordan	Ismail Maraqa	+962 6 585217	ismail.maraqa@jo.pwc.com
Morocco	Fouad Arfaoui	+212 22 99 98 00	fouad.arfaoui@ma.pwc.com
	Leila Sijelmassi	+212 22 99 98 00	leila.sijelmassi@ma.pwc.com
	Mouncef Ighiouer	+212 22 99 98 00	mouncef.ighiouer@ma.pwc.com
Oman	Abdulelah Salih	+968 2455 9111	abdulelah.salih@om.pwc.com
	Mohammed T. Salem	+968 2455 9164	mohammed.t.salem@om.pwc.com
Qatar	James Hewitt	+974 4675581	james.hewitt@qa.pwc.com
	Steve Anderson	+974 467 5581	stephen.x.anderson@qa.pwc.com
Saudi Arabia	Hani Al Tamimi	+966 1211 0400	hani.a.tamimi@sa.pwc.com
Tunisia	Abderrahmen Fendri	+216 7186 2156	abderrahmen.fendri@tn.pwc.com
	Abir Matmti	+216 7186 2156 ext 107	abir.matmti@tn.pwc.com

Europe

Austria	Gerhard Prachner	+43 1 501 88 1800	gerhard.prachner@at.pwc.com
	Erwin Smole	+43 1 501 88 2928	erwin.smole@at.pwc.com
	Bernhard Haider	+43 1 501 88 2900	bernhard.haider@at.pwc.com
Belgium	Bernard Gabriels	+32 3 259 3304	bernard.gabriels@be.pwc.com
	Filip Drieghe	+32 9 268 8252	filip.drieghe@be.pwc.com
France	Philippe Girault	+33 1 5657 8897	philippe.girault@fr.pwc.com
	Thierry Raes	+33 1 56 57 82 37	thierry.raes@fr.pwc.com
	Benjamin Cros	+33 1 56 57 87 16	benjamin.cros@fr.pwc.com
Germany	Nicolas Granier	+33 1 56 57 86 69	nicolas.granier@fr.landwellglobal.com
	Manfred Wiegand	+49 20 1438 1509	manfred.wiegand@de.pwc.com
Greece	Henning Hönsch	+49 69 9585 1269	henning.hoensch@de.pwc.com
	Socrates Leptos-Bourgi	+30 210 687 4693	socrates.leptos.-bourgi@gr.pwc.com
Italy	Evangelos Markopoulos	+30 210 687 4035	vangellis.markopoulos@gr.pwc.com
	Riccardo Maria Togni	+39 06 5708 33409	riccardo.maria.togni@it.pwc.com
	Valentino Guarini	+39 02 9160 5807	valentino.guarini@it.pwc.com
Netherlands	John McQuiston	+39 06 57025 2439	john.mcquiston@it.pwc.com
	Pim Roest	+31 20 568 4273	pim.roest@nl.pwc.com
Portugal	Paul Nillesen	+31 20 568 6993	paul.nillesen@nl.pwc.com
	António Brochado Correia	+351 225 433 000	antonio.correia@pt.pwc.com
Spain	Luis Ferreira	+351 213 599 296	luis.s.ferreira@pt.pwc.com
	Carlos Fernández Landa	+34 91 568 4839	carlos.fernandez.landa@es.pwc.com
	Julian Brown	+34 915 684 723	julian.brown@es.pwc.com
Switzerland	Gonzalo Sanchez Martinez	+34 946 022 534	gonzalo.sanchez@es.pwc.com
	Ralf Schlaepfer	+41 58 792 1620	ralf.schlaepfer@ch.pwc.com
Turkey	Faruk Sabuncu	+90 212 326 6406	faruk.sabuncu@tr.pwc.com
UK	Gus Schellekens	+4420 7804 1770	gus.schellekens@uk.pwc.com
	Daniel Guttman	+4420 7804 9714	daniel.guttman@uk.pwc.com
	Ronan O'Regan	+4420 7804 4259	ronan.oregan@uk.pwc.com
	Ross Hunter	+4420 7804 4326	ross.hunter@uk.pwc.com
	Steve Randle	+4420 7213 3652	steve.randle@uk.pwc.com
	Vimal Vallabh	+4420 7583 5000	vimal.n.vallabh@uk.pwc.com
Stephen Knight	+4420 7212 3427	stephen.p.knight@uk.pwc.com	

Africa

South Africa	Mark Ally	+27 11 797 5049	mark.ally@za.pwc.com
	Jan Gey van Pittius	+27 11 797 5331	jan.hey.van.pittius@za.pwc.com
	Stanley Subramoney	+27 51 503 4100	stanley.subramoney@za.pwc.com
	Simon Venables	+27 11 797 5660	simon.venables@za.pwc.com

Russia & Central and Eastern Europe

Russia	Dave Gray	+7 495 967 6311	dave.gray@ru.pwc.com
	John Wilkinson	+7 495 967 6187	john.wilkinson@ru.pwc.com
Bulgaria	Albena Markova	+35 9 293 55294	albena.markova@bg.pwc.com
Hungary	Tibor Almássy	+36 1461 9644	tibor.almassy@hu.pwc.com

Far East

China	Ruth Dobson	+86 10 6533 2011	ruth.dobson@cn.pwc.com
	Tao Xie	+86 10 6533 2002	tao.xie@cn.pwc.com
	Gavin Chui	+86 10 6533 2188	gavin.chui@cn.pwc.com
India	Hongbin Cong	+86 10 6533 2667	hongbin.cong@cn.pwc.com
	Kameswara Rao	+91 40 2330 0750	kameswara.rao@in.pwc.com
	Amit Kumar	+91 124 330 6256	amit2.kumar@in.pwc.com
Japan	Shubhranshu Patnaik	+91 124 330 6008	shubhranshu.patnaik@in.pwc.com
	Chandrasekhar Iyer	+91 755 241 0006	chandrasekhar.iyer@in.pwc.com
	Scott Williams	+81 80 3158 6815	scott.s.williams@jp.pwc.com
Singapore	Kazuhiko Abe	+81 90 6486 0786	kazuhiko.k.abe@jp.pwc.com
	Paul Cornelius	+65 6236 3718	paul.cornelius@sg.pwc.com

Australasia

Australia	Michael Shewan	+61 3 8603 6446	michael.shewan@au.pwc.com
	Michael Happell	+61 3 8603 6016	michael.happell@au.pwc.com
	Justin Portelli	+61 3 8603 3275	justin.portelli@au.pwc.com
	Brian Gillespie	+61 7 3257 5656	brian.gillespie@au.pwc.com
	Darren Smith	+61 8 9238 3240	darren.a.smith@au.pwc.com
	Harry Koller	+61 2 8266 8761	harry.koller@au.pwc.com
New Zealand	Craig Rice	+64 9 355 8641	craig.rice@nz.pwc.com

The challenge

We now know that substantial climate change is unavoidable and that it poses an immense risk both to mankind's everyday lives and the world around us. There is an urgent need to take action, but progress to date has been slow and limited in its impact.

The opportunity

With the impact of climate change and energy shortages on our doorstep, the world now needs to promote those solutions that can immediately cut global greenhouse gas emissions and address other areas of risk.

The solution

As part of a multi-faceted approach to increasing the role of renewable technologies, solar energy – in particular photovoltaic and concentrating solar thermal power – can play a key role. Enough solar energy reaches our planet every day to meet all of our energy needs. Research has concluded that it is possible to capture this energy at its most intense points of impact, convert it into a storable and transmittable form, and transmit it efficiently to where it is needed.

This booklet sets out how PwC has played and continues to play a key role in helping governments, business and society to make the transition to renewable solar energy options. Building on our experience of working with the global energy sector for over 100 years, it outlines the services that we can bring to bear to support programmes of work, provides examples of the work that we have completed in previous years, and sets out some of the thought leadership that we have published in the area of renewable energy to help shape and support the debate going forward.

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