

## ANNEX I - Europe-China Projects in energy related fields

This annex provides a more detailed overview of the government-led, joint research and business-to-business projects. It includes (1) a description of each of the projects led under each of these areas as well as (2) a table of recent energy-related projects conducted between the EU and China with detailed information about each of the activities.

### 1. Government led projects

#### a. China-European Union

The EU-China energy cooperation is enriched with several cooperation platforms. In an action-oriented partnership, these platforms are responsible for carrying out practical day-to-day collaboration and touch upon the entire range of areas involved in achieving a low-carbon economy transition. At present, projects between China and the EU mainly focus on policy advice, capacity building, technical collaboration, financial investment, and other fields. . For a detailed list of projects conducted under EU platforms, see table below.

The **Europe-China Clean Energy Centre (EC2)** was launched in 2010 and it is in charge of assisting China in its low-carbon transition by building a sustainable, environmentally friendly and efficient energy system. The five-year cooperation project is funded by the European Commission, the NEA and the Ministry of Commerce with the support of the Italian Ministry of Environment, Territory and Sea and is located in Beijing. The project is managed by a consortium of European and Chinese partners led by Politecnico di Torino with the Energy Research Institute of National Development and Reform Commission as one of the main executive units of the project. EC2 provides Chinese and European stakeholders with policy advice, capacity building and awareness-raising on the benefits of clean energy, and facilitates EU-China technological cooperation. EC2 is focusing on sustainable urbanisation with a “Demo Zone” approach in the context of New Energy Cities and Low Carbon Model Towns, promoting matching between European and Chinese cities both at policy and technology-business level.

In October 2012, the **China-EU Institute for Clean and Renewable Energy (ICARE)** was formally established between Huazhong University of Science and Technology and the Institute des Sciences et Technologies de Paris (ParisTech) with the cooperation of more than 10 European and Chinese universities and research institutions.

ICARE aims at providing top quality energy efficiency and renewable energy education at university level with the goal of fuelling the energy transition process with highly skilled professionals. ICARE is not only key to energy cooperation but as a higher education cooperation platform it also contributes to the EU-China high-level cultural exchange dialogue. It follows in the footsteps of other successful education cooperation projects with the China Europe International Business School based at Shanghai Jiao Tong University and the China-EU School of Law hosted by the China University of Political Science and Law. European and Chinese students graduate with double majors in the fields of solar energy, wind energy, biomass energy, geothermal energy, and energy efficiency. Over 100 students have graduated from the Institute to date. The Institute’s offer further extends into high-level professional trainings, a research platform and a doctoral programme.

The **EU-China Policy Dialogues Support Facility (PDSF)** is a project co-funded by the European Union and China to facilitate and support current and future implementation of policy dialogues. Policy dialogues constitute the backbone of the cooperation and next to energy, the dialogues cover a wide spectrum of fields and sectors, like education and culture, environment, employment and social affairs, information society, public health, agriculture, regional policy, food safety.

The first phase of the PDSF (PDSF I) implemented 26 projects with 62 separate events, involving 19 Chinese ministries and state agencies as well as 12 DGs with a total budget of almost € 6.6 million. More than 200 senior policy-makers and experts participated in these activities. The second phase of the

PDSF (PDSF II) started in March 2012 and lasts for 4 years. Currently, energy-related projects supported by PDSF II mainly include policy work under the EU-China Transport dialogue on presenting comprehensive measures to alleviate urban traffic congestion, improve the effectiveness and efficiency of urban traffic and increase the proportion of green travel. Other projects connected to energy include the Urbanization Leadership project under the EU-China Sustainable Urbanization Partnership and the EU-China Mayors Forum. Under the Smart Cities dialogue, the EUPDSF organised an inception seminar to start up the Smart Cities Technical Expert Group bringing together both members of the relevant Chinese ministries and European DGs as well as, the EU Chamber of Commerce (EUCCC), private sector operators active in the ICT sector, plus officials from the pilot Chinese and European cities as speakers. This was followed by a comparative study on best practices and lessons learned in the development of smart cities in China and Europe, an expert meeting which reviewed the results of the study, a study tour to Europe visiting a selection of pilot cities and a high-level dissemination event.

The **EU-China Trade Project (EUCTP)** - currently in its second phase from 2010 to 2015 has the purpose to support the Chinese government in promoting trade and investment reforms within China's larger sustainable development and low carbon economy transition process together with supporting the various sectoral policy dialogues and working groups. As part of the project's five major fields of action - trade in services, quality infrastructure and technical barriers to trade, agriculture and agro-food/sanitary and phytosanitary measures, customs, and horizontal crosscutting trade issues – the EUCTP actively supports energy activities under the horizontal crosscutting focus-area.

The EUCTP's technical assistance activities reflect the dynamic nature of the partnership associated with low carbon development and on energy specifically. Energy efficiency and demand-side management, to technical grid integration standards and green smart city and the internet of things are some of the themes the EUCTP is active in. In practical terms, the EUCTP assists the central government on policy-making, legislation and regulations by means of academic visits, training, seminars and meetings. In addition, it also actively cooperates with local governments, administrative organs and institutions to improve their ability of policy implementation and execution. Some of the recent projects include the organisation of the March 2014 EU-China Conference on strategies for the development of energy-efficient buildings or a workshop on future flexible power systems<sup>1</sup>.

The **Europe-China Eco-Cities Link (EC-Link)** provides technical support to the strategic cooperation on urbanisation launched in 2012. EC-Link is conducted in cooperation between the EU and the Chinese MOHURD. It Started in July 2013 EC-Link and lasting for a period of 48 months, it aims at assisting sustainable and low carbon urbanization in China with a specific focus on Chinese cities. With the combined support of € 9 million from European Commission and € 2 million from MOHURD, it further fosters the robust common low carbon and environmental sustainable activities and deepens cooperation in fields of environment, energy and climate change.

EC-Link assists Chinese cities in adopting energy and resource-efficient solutions by sharing experiences on sustainable urbanisation and other relevant policies. EC-Link provides a networking platform for European and Chinese cities and advises on low-carbon urban solutions. It also delivers a "Europe-China pilot low-carbon eco-city" and demonstrates the best approaches to low carbon eco-planning.

The EU-China '**Supporting the Design and Implementation of Emissions trading Systems in China**' (ETS) is to assist China over a three years period in its efforts to meet its emissions targets and sustainable development. The project specifically supports China in the design and implementation of a successful emissions trading pilot that would eventually be applied nationwide. The EU ETS offers technical assistance through training workshops and information materials at regional and central level as well as for practitioners and industry representatives and through study assignments and experts' exchanges.

On the more business oriented cooperation, since 2010 the **EU SME Centre** assists European SMEs – including clean technology and low-carbon companies – to develop, establish and maintain activities in the Chinese market through assistance activities ranging from information sharing, training, matchmaking and networking events. Since its inception, the Centre successfully conducted a very large amount of enquires and consultations for SMEs from every EU member state, widely disseminated

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<sup>1</sup>Source - EUCTP.

an impressive body of reports and publication raising awareness on the opportunities in the Chinese market.

The '**Intellectual Property: A Key to Sustainable Competitiveness**' (IP Key) project co-financed by the EU and the Office for Harmonization in the Internal Market (OHIM) is supporting the interest of European innovators and right holders trading or investing in China including the interest of the highly innovative energy sector. It is to contribute to greater transparency and fair implementation of the Chinese IPR protection and enforcement system as well as to further improve the IPR environment in China. IP Key contributed to improved representation of European interests in the EU-China dialogue and offers European businesses in China a structured platform and highly specialized expertise.

**Switch-Asia** is one of the European Commission's main tools for the promotion of sustainable consumption and production in Asia. The programme is instrumental in promoting the greening of the entire value chain from consumers to industry with a view to achieving a more sustainable growth pattern as well as emissions reduction. China is one of the principal beneficiaries of the past cooperation with more than 15 projects. The originality of the projects is its partnership approach with small and medium-sized enterprises and/or consumers, ensuring a high level of ownership at local level. Energy-related projects led in China include a ground-sourced heat pump project, high-efficiency electric motor project, high-efficiency electric substation project, industrial symbiosis and environmental governance project, and low energy consumption for building standards.

The goals of Switch Asia projects are therefore comprehensive and touch upon many angles of sustainable energy from energy efficiency and energy conservation and the management of sustainable supply chain and environmental management system, to the promotion of sustainable products, clean production and the stimulation of the demand for sustainable products.

#### **Green Star Private Equity - Global Energy Efficiency and Renewable Energy Fund**

The Global Energy Efficiency and Renewable Energy Fund (GEEREF) with the EU as the main investor has agreed to invest 10 million Euros to Green Star Resource Utilization Investment Fund. Green Star is the first energy efficiency focused private equity in China targeting energy efficiency and emissions reduction. It mainly invests in small and medium-sized projects of waste heat recycling and generation to save power consumption in energy-intensive companies with high energy consumption, such as cement, steel and coke production. It also invests in renewable energy and clean energy industry. The fund's main contribution is thus to provide a finance mechanism for energy efficiency projects which as opposed to China's large renewable energy investments are still at an early stage<sup>2</sup>.

#### **b. China-Belgium**

In the framework of the promotion of sustainable development and clean energy cooperation, Belgium and China joined forces and cooperated on a **Clean Development Mechanisms (CDM) project in Hunan**. The Belgian Federal Ministry of Environment and the Hunan CDM Centre worked in particular on capacity-building activities. The project culminated in 2012 with a two-day conference on CDM and sustainable development.

#### **c. China-Denmark**

China and Denmark have developed a series of sustainable energy-specific projects under the **Wind Energy Development Project (WED)** initiated in 2005 and running until 2010. Taking the North-Eastern China as research subject, this project conducted wind resource assessment wind power project planning and it connected wind power to the power grid. The project also contributed to training the technical personnel and carried out other various capability-building activities.

The 2009 **Renewable Energy Development Project (RED)** supported China for a five-year period in the establishment of the **China National Renewable Energy Centre (CNREC)** whose purpose is to formulate the development strategies for the wind, biomass and solar energy fields. The project also helped towards creating the Renewable Energy Information Centre, which is to promote technology innovation and R&D cooperation on renewable energy between Chinese and Danish companies and institutions.

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<sup>2</sup> EU Delegation to China web - [http://newsletter.eu-in-china.com/newsletters/201007/012\\_en.html](http://newsletter.eu-in-china.com/newsletters/201007/012_en.html) accessed 09.10.14

Twelve joint project proposals have been recently submitted and preliminarily selected and stepped into the implementation stage.

In 2012 the NEA and the Danish Energy and Construction Department signed a **Memorandum of Building Partnership on Renewable Energy** (*title to be confirmed*), which suggested cooperation in six fields including strategic planning and policy research on renewable energy, capacity building, new technology demonstration, mechanism innovation on grid connection and power mechanism, industrial exchanges.

In the field of wind energy, biomass energy and solar energy important achievements of the cooperation include a series of research projects conducted with experts in China and abroad, the 2050 Wind Power Development Roadmap and Biomass Biogas Development Roadmap. Currently research is being conducted for a solar energy roadmap, the comprehensive utilization of biomass, and a liquid fuel roadmap.

The 2007-2009 Sino-Danish **Provincial Capability Building Project for Biomass Energy and Clean Development Mechanism (CDM)** selected Xinjiang, Guizhou and Hunan to conduct a study on biomass resources. The project also offered training on the development and management of CDM projects.

Led by the Danish government and jointly initiated by South Korea and Mexico, the Global Green Growth Forum (3GF) was first held in October 2011 with China together with Denmark becoming core partners amongst others countries. In 2013 the Third Global Green Growth Forum was held in Copenhagen, with the theme "Enhance Resource Utilization Efficiency of The Value Chain," involving energy efficiency, water resource, reduction of food waste, sustainable development of agriculture/land, chain of green value and financial innovation and other areas.

#### d. China-Finland

As part of the two countries' active cooperation in the field of clean technology, Finland and China are working together at improving Beijing's air quality thanks to the **Beautiful Beijing** project. The project offers its clean tech expertise in a holistic approach with initiatives in the fields of energy production and distribution technologies, buildings and construction, traffic and transportation, air quality monitoring and analysis.

#### e. China-France

Nuclear energy cooperation between France and China is a major focus of the bilateral energy relations. The cooperation in the nuclear power field includes the construction of nuclear power plants, the development of third-country markets and joint research and development. Both countries have signed an **Implementation Agreement on the Development of Peaceful Uses of Nuclear Energy Cooperation Agreement**, which sets up a joint working group. Under this framework both parties exchange views on technical aspects and issues of nuclear safeguard in the construction of commercial nuclear energy post-processing plant in China as well as the introduction of French technology and equipment.

Cooperation in the field has been very active with a series of agreements reached throughout the year starting with the decision of the Chinese government to construct in 2007 two French EPR units in Taishan, Guangdong. China Guangdong Nuclear Power Group signed together with the Areva Group and EDF (Electricité de France) a series of agreements on the cooperative construction and joint venture in the Taishan nuclear power plant, making it the biggest energy cooperation project between China and France. This agreement promotes in particular the cooperation in the field of upstream and downstream nuclear fuel cycle. This was followed in 2010 by the signature of a **Memorandum of Understanding on Large-scale Commercial Post-processing and Recycling Plant** in China between China National Nuclear Corporation (CNNC) and Areva as well as a joint venture contract with the same parties on zirconium cladding and guiding tubes. Most recently, CNNC and Areva signed a Letter of Intent for cooperation in large-scale commercial reprocessing plants. Since then, CNNC and Areva have held two rounds of negotiations and a high-level coordination meeting.

Nuclear cooperation was further enhanced in 2011 with the establishment of a new **reactor research and development-working group** between the China Guangdong Nuclear Power Group, EDF and Areva. The working group worked at defining market positioning, technical standards and drafting a work plan for the new reactor (*tbc*). In 2012 the three parties signed a **Memorandum of Understanding on Cooperation in France**. China Guangdong Nuclear Power Group and CNNC are to work together in the

EDF UK Hinkley Point C nuclear power project with prospects to co-operate with the French side on specific technology aspects relating to third generation million-kilowatt-class nuclear power units (*tbc*). This cooperation was boosted in 2013 with the signature of a tripartite declaration reaffirming the cooperative ties.

#### f. China-Germany

The cooperation between Chinese and German governments in the field of energy can be dated back to the end of last century, covering areas of energy planning, energy policy, new energy and energy-efficient technologies and capability building, etc.

China's energy cooperation with Germany is articulated around two main cooperation channels. Since 2007 both countries are working together in an **Energy Working Group** meeting under the Chinese-German Forum for Economic and Technological Cooperation involving the NDRC and the Federal Ministry of Economics and Technology of Germany. In 2009 topics addressed in the first meeting of the working group included energy saving and efficiency, the improvement of the electric power industry and wind power integration. The focus of the second conference expanded to address among others energy efficiency and renewable energy resources. Opening up a second channel of energy cooperation, the NEA and the German Federal Ministry of Environment, Nature Conservation and Nuclear Safety signed in 2013 the **Memorandum of Understanding on Cooperation in the Field of Renewable Energy**. It is expected to build a long-term coordination mechanism, strengthen bilateral cooperation in the field of renewable energy and promote renewable energy application.

At present exchanges and cooperation between China and Germany in the field of wind power, photovoltaic and other renewable sources of energy are growing closer. The "China-Germany Joint Development of Wind Power Talent" project, which has been implemented for 10 years, has trained a large number of wind power technologies. In the area of solar energy, Germany is one of China's largest export countries for photovoltaic cell and conversely China is one of the biggest importers of German photovoltaic and raw materials. Since 1999, a series of cooperation projects have been launched with the German Development Agency GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) with good results. The projects - led by the NDRC - include "Suzhou, Beijing, Hohhot Urban Energy Planning", "Western Provinces Yunnan, Xinjiang, Qinghai and Gansu No Power Village Solar Photovoltaic Demonstration Project", "Xinjiang Coalfield Fire Fighting Technical Cooperation Project", "Bundling Of Environmental Protection Projects in the Area of Coal and Power Plant", "Bundling Project on China's Energy Policy and Energy Efficiency" and "Wind Power Research and Training Project in China".

#### g. China-Italy

As part of the **Sino- Italian Cooperation Program for Environmental Protection** launched in the year 2000 by the Italian Ministry for the Environment, Land and Sea (IMELS) together with the State Environmental Protection Administration of China (SEPA), Italy is promoting sustainable development, environmental protection and business to business activities with China. The main tools employed were pilot projects, cooperative research and environmental protection capacity building. The focus of projects covered by the vast program of more than 200 projects was energy efficiency, clean energy and renewable energy, assistance for implementation of international environmental conventions, air monitoring, urban sustainable development and eco-building, waste recycling, sustainable transportation, integrated management on water resources, eco conservation and sand control, sustainable agriculture, capacity building for environmental protection.

Italian Government has an important role in supporting the above mentioned Europe-China Clean Energy Centre (EC2).

#### h. China-UK

Energy cooperation between China and UK mainly focuses on the fields of nuclear and wind power. The nuclear cooperation is historically underpinned by the **Intergovernmental Cooperation Agreement on the Peaceful Uses of Nuclear Energy** jointly signed by the two countries in 1985. In October 2010, the British government issued a new nuclear power development plan and decided to build new nuclear power stations on 8 sites by 2025. This was reaffirmed in 2011 after the Fukushima nuclear crisis. At present, three major nuclear power companies in China are actively working at promoting the participation of Chinese companies in investment and construction of British new nuclear power

projects. Since 2013 both governments signed the **Memorandum of Understanding on Nuclear Energy Cooperation** to promote cooperation in the field of nuclear energy for civilian use. The main purpose of this mechanism is to strengthen bilateral civilian nuclear energy cooperation and to encourage investment and trade exchanges, including nuclear power project construction, operation and maintenance, safety, equipment supply, decommissioning and radioactive waste management. A joint Working Group on nuclear energy cooperation has also been established to coordinate the implementation of the cooperation.

In the field of wind power the NEA and the UK Department of Energy and Climate Change have been active working on the London-held 2011 **China-UK Offshore Wind Power Seminar**. The seminar brought together a variety of stakeholders - Chinese and British government departments, major wind power development companies, offshore wind power equipment manufacturers, related technical services enterprises and research institutions – to discuss issues such as wind power policy, technology, offshore wind power projects development, construction and operational experience. This event was followed in 2012 by a **seminar on China and UK offshore wind power policy** in Beijing.

At present, the two sides are working on an offshore wind power project together to contribute accelerating the scaling up of offshore wind power development in China. The project currently in its preparatory phase will offer UK best practices in offshore wind power strategic planning, key technologies and industry management in order to contribute solving the current issues holding back wind power development in China. Since September 2013 wind power cooperation is also supported by a **Memorandum of Understanding on China-UK Wind Power Cooperation in Offshore** signed between the NEA and the UK Trade and Investment. Both sides agreed to share offshore wind power experience, strategies and planning experience, promote bilateral cooperation in the field of offshore wind power, including sharing technology, engineering, business, financial development and other industrial information and resources; and industry cooperation on the development of offshore wind power market of China-UK and third-countries; improve the economical efficiency of offshore wind power, and overcome the technology and market barriers to the development of offshore wind power.

Since 2013 the Foreign & Commonwealth Office (FCO) has introduced **the China Prosperity SPF programme**. The Programme supports projects, which create the conditions for sustainable global growth and development in line with the low-carbon solution/climate change as well as the energy security strands of the programme. Energy-related projects are to notably contribute to increased diversity and supply of energy resources and to bring China closer to the two degrees global warming limit of pre-industrial levels.



## 2. Joint research projects

### a. China-European Union

Under the previous Framework Programme, FP7 China has become one of the EU's key international partners in research and innovation. China was third, after the US and Russia in terms of global participation in FP7, which included an energy thematic.

The EU's new Framework Programme for Research and Innovation "Horizon 2020" offers China an opportunity to continue cooperating in the field of energy research based on mutual interest and common benefits. Horizon 2020 clearly supports international cooperation and with its large financial resources - Horizon 2020 is the largest multinational programme of its kind – it offers plenty of opportunities to foster further energy research exchanges.

Research is also playing an important role in the urbanisation cooperation. Research and innovation topics were selected in May 2013 in a joint effort to support innovation. 250 European and Chinese experts from industry, academia and government including discussed on framework conditions, such as common standards, and intellectual property protection. City planning, green urban mobility and transport as well as sustainable energy solution for cities were selected as areas for common actions. Energy-related priority-fields included integrated urban energy planning, energy efficiency, and integrating renewable energy into the electricity grid.

Renewable energy, energy efficiency and green technology are also considered a key focus-area by the **Strategic Forum International Cooperation (SFIC)** which is an advisory body to the Council and the European Commission working at integrating national and European approaches to science and technology.

### b. China-Austria

Institutionally, the NDRC and the Federal Ministry of Economy, Family and Youth (BMWFJ) have put in place a Memorandum of Understanding on cooperation in the field of energy efficiency and environmental protection (6 June 2006), which extended indefinitely on 31 October 2011.

Austria's research-related priorities with China encompass a large scope of issues touching onto the field of energy such as urban planning - low carbon city development and smart cities - green urban mobility and transport - infrastructure technology, smart mobility, railway technology - and sustainable energy itself. Sustainable energy cooperation ranges from green technology and buildings to low carbon technology, energy efficiency and renewable energies.

In the framework of multilateral initiatives within the EU, the Austrian Institute of Technology (AIT) is a partner of the European Research Area Net (ERA.Net) and focuses on projects of energy efficiency, low carbon and sustainability.

### c. China-Belgium

Energy cooperation between China and Belgium takes place through the field of education. Energy, environment, ICT and several other topics have been identified by the Cooperation with the Chinese Scholarship Council (CSC) and higher education institutions. This initiative gives an opportunity to build lasting links between education institutions but perhaps more importantly it also fosters contacts and exchanges between young Chinese and Belgians who are interested in working in the field of energy. The Flemish region, the French-speaking Community of Belgium (WBI) and the FNRS are all part of this programme.

All areas of cooperation - including energy - more than 50 agreements, conventions or joined collaborations have been made or reiterated between the 5 most important Walloon and Brussels's Universities and more than 40 Universities around the People's Republic of China in 2011.

### d. China-Cyprus

Energy as well as science technology and innovation is high on Cyprus' agenda with China. The cooperation is underpinned by the 2006 **Agreement on Economic Cooperation between the Parties**. An agreement between both governments for Science, Technology and Innovation Cooperation is

under study. More generally, cooperation is supported amongst others through cooperation arrangements between several Cypriot universities and research centres with counterparts in China.

#### **e. China-Denmark**

Clean and renewable energy cooperation is being promoted under the Sino-Danish University Centre. Established in 2010 the Centre is a focal point for Sino-Danish collaboration on research, PhD education and research-based Master's programmes.

In 2009 the Danish Council for Strategic Research - in association with MOST - launched and implemented a joint research programme within sustainable and renewable energy. The initiative is directly in line with the Danish strategy for knowledge-based collaboration with China and was set up in order to increase Sino-Danish research collaboration and bring mutual benefit to the parties.

Since 2009 the Danish Council for Strategic Research's Programme Commission for Sustainable Energy and Environment has allocated between 10 and 19 million DKK every year to the initiative matched by MOST.

In the framework of the collaboration between the Danish Energy Technology Development Programme (EUDP) and MOST, a call was launched resulting in a joint development and demonstration programme within wind energy and smart grid.

Since 2009, the Danish supported Renewable Energy Development (RED) programme has been under implementation. The programme has 2 components. The first was focusing on establishing CNREC and support for its operation until end 2014. The second component with a total budget of DKK 30 million supports a total of 12 joint Danish-Chinese projects within renewable energy. The Danish Energy Agency is providing extensive support to CNREC, which is placed under NEA's responsibility.'

Since 2010 China and Denmark have created two Danish-Chinese centres in renewable energy. These originate from a joint call for research projects and took place under the MoU between the Danish National Research Foundation (DNRF) and the National Natural Science Foundation of China (NSFC) on scientific cooperation within the fields of life sciences, natural sciences and engineering.

#### **f. China-Finland**

The energy cooperation between the two countries is particularly rich in the fields around sustainable energy and includes among others global climate and environmental issues and related fields such as cleantech and clean energy. Currently this takes place by means of bilateral consultations. Whilst this approach results from the priorities set by the main Finnish agencies in charge of research and technology cooperation - Tekes and the Academy of Finland – Finland is currently working at a national strategy. Finland's RTD and energy cooperation is part of a larger goal of improving the level of mutual understanding, awareness and competencies between Finland and China.

#### **g. China-France**

Energy-related issues are a prolific area of cooperation between both countries. At their last joint committee meeting in 2011 in Paris cooperation in energy was reinforced along with sustainable development, biodiversity and water management as well as green chemistry, green technologies, ICT and smart cities. Underpinning this, France and China have established joint institutes and run networks dealing with environment and energy such as the Beijing-based monsoon, ocean and climate laboratory (LIA MONOCL) and the Sino-French program for environment and sustainable development (SEED) but also the Sino-French Laboratory for sustainable energy (LIA LSE) and the New approaches for water control and sustainable energy by electrochemical biosensors and biofuel cells (GDRI CEERBIO) in Changchun.

#### **h. China-Germany**

Germany's cooperation with China is very comprehensive when it comes to energy as it encompasses environmental technologies and ecology, electro-mobility and sustainable urbanisation. Together Germany and China have institutionalised a "Research for Sustainable Development" (FONA) framework under which Germany represented by the Federal Ministry for Education and Research (BMBF) is funding research and development projects as part of its "International Partnerships for Sustainable Technologies and Services for Climate Protection and the Environment" (CLIENT). The goal



of this initiative is market-development driven through enhanced research cooperation on applied environmental and climate protection technologies and services.

Electro-mobility cooperation is active both institutionally at government level and at project level. It is framed by a MoU for scientific cooperation in the field of e-mobility between the BMBF and MOST and is furthermore supplemented by a MoU between the association of German Technical Universities and a group of Chinese Universities led by Tongji University on e-mobility research. On a more practical note, both the BMBF and MOST are funding research for the development of electro-mobility.

Three specific projects stand out in the field of sustainable urbanisation cooperation –the “Sustainable Development of the Megacities of Tomorrow”, the “RECAST Urumqi -Meeting the Resource Efficiency Challenge in a ClimateSensitive Dryland Megacity Environment” and the Hefei-based “Metrasys - Mega Region Transport Systems for China” initiatives. Whilst the first project aims at creating best practices for sustainable urban development for megacities in general, the Urumqi project specifically focuses on instituting dedicated strategies and tools for tackling the sustainability prospects of a specific city with difficult climate conditions and expanding population. Metrasys in turn specialises in providing and implementing an up-to-date traffic management systems.

The BMBF has also established a funding mechanisms under its "Research for Sustainable Development" (FONA) framework programme aimed at introducing model projects to help establish and expand international partnerships in research, development and application of environmental and climate protection technologies and services and to trigger the development of lead markets in this area.

#### **i. China-Greece**

Renewable energy as well as energy savings has been identified by Greece as a priority field in its S&T cooperation with China together with environment and transport, and communication. The cooperation is framed by the 1979 Agreement on S&T Cooperation signed between the General Secretariat for Research and Technology under the Ministry of Education, Lifelong Learning and Religious Affairs and MOST. In 2012 both countries launched together a science and technology cooperation project. It aimed at financing high-level joint science industrialization research projects with a view to promote the sustainable development of both countries of which the renewable energy and energy savings focus point benefited. The cooperation stimulated exchanges between organizations with previous cooperation history<sup>3</sup>.

#### **j. China-Hungary**

China-Hungary S&T relations were formalised in 2002 with the inter-governmental Agreement on Scientific and Technological Cooperation supplemented. It features a joint Committee, which meets every 2 years. Energy utilization, including new and renewable energies, as well as the development of green technologies is a core area in this field together with environmental protection, as well as waste and water management. Both countries have also have a Sino-Hungarian Joint Laboratory of Environmental Science between the Wuhan China University of Geosciences and Eotvos Lorand University Budapest.

#### **k. China-Italy**

Energy and environment is currently included within the Executive Program on Scientific and Technological Cooperation running from 2013-2015 and is generally one of Italy's priority fields. Italy's S&T relations with China are also supported by an agreement between the CNR (Consiglio Nazionale delle Ricerche) and the Chinese Academy of Sciences (CAS) as well as an agreement on nuclear energy between the China Institute of Atomic Energy (CIAE) and the National Institute for Nuclear Physics (INFN) (December 2009).

#### **l. China-Poland**

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<sup>3</sup>Source - ChinaAccess4EU monthly alert 22, February 2012.

Clean energy is one of Poland's most promoted topics with China. Since 1995 the agreement on S&T Cooperation between the Polish Ministry of Science and MOST structures scientific relations. It is supported by a technological cooperation committee that convenes every two years.

#### **m. China-Portugal**

Energy and especially renewables and electricity are a key area for Portugal-China S&T relations. A series of agreements provide institutional support to the cooperation: the 2012-signed MoU on Scientific, Technological and Innovational Cooperation between Minister Nuno Crato and Minister Wan Gang and the 2006 Joint Statement on Scientific and Technological Cooperation. Older agreements include the 1993 Agreement on Scientific and Technical Cooperation and the historical 1982 Agreement on Cultural, Scientific and Technical Cooperation.

#### **n. China-Romania**

S&T cooperation between both countries is historical with a 1953-established Joint Committee for Scientific and Technological Cooperation, which has been meeting regularly every 2 years since its inception. Although there are no specifically determined priority fields, energy and environment is one of the areas where most projects are being developed. Since 2008, both governments signed and agreement implemented by the Romanian Ministry of National Education and MOST.

#### **o. China-Slovenia**

Slovenian and Chinese researchers are jointly collaborating on 13 projects as part of the EU's 7th Framework programme for RTD, including on energy and environment projects. The S&T collaboration is governed by the 1993 Agreement on Scientific and Technological Cooperation between the Government of the Republic of Slovenia and the Government of the People's Republic of China.

#### **p. China-Spain**

Energy cooperation between Spain and China is governed by a MoU involving the Spanish Centre for Energy, Environment and Technology Research (CIEMAT) as well by MoUs between several Universities and Technology Centres. It is supported by a governmental agreement on renewable energies signed by the Spanish Ministry of Industry, Energy and Tourism (MINETUR). More recently, the second Chinese-Spanish High-Level Commission (MOST – MINECO) for the follow up of the MoU signed in 2011 held in Madrid in 2013 defined energy and environment - including water-related issues - as priority issues.

Renewable energy is a dynamic area of cooperation as exemplified by the Sino- Spanish Cooperation Working Plan on Renewable Energies between the Institute for the Diversification and Energy Saving and the Chinese ERI. In 2011 the Sino-Spanish Forum on Renewable Energy was organised as a joint activity of the Centre for Energy Research (CIEMAT) and MOST.

Cooperation on solar energy facilities is also carried out between CIEMAT and the Institute for Electrical Engineering of the Chinese Academy of Sciences in Dahan and the Sino-Spanish Centre for the Promotion of Renewable Energies.

At multilateral level, the Spanish Centre for Renewable Energies CENER (Centro Nacional de Energías Renovables) was involved in the feasibility study on the creation of the Danish-supported national Centre for Renewable Energy of China (CNREC). CENER is a member of the International Advisory Committee, together with Denmark and USA.

#### **q. China-Sweden**

In 2012, Sweden and China reinforced their scientific cooperation related to sustainable development thanks to the signature of two new agreements between the Swedish Ministry for Education and Research MOST. This initiative was complemented in 2013 with the launch of a call for international cooperation between Swedish and Chinese universities, research institutions and companies to promote networking and R&D collaboration in the area of eco-innovations.

#### **r. China-UK**

Energy cooperation between the UK and China beneficiaries from its own dedicated channel with the annual UK-China Energy Dialogue. Cooperation fields agreed upon are wide-ranging and include energy security policy, oil and gas, nuclear power, renewable energy and in particular offshore wind power and clean coal (efficient generation and carbon dioxide capture, utilisation and storage). Co-operation includes but is not limited to government, business, academic institutions and NGOs.

The UK-China research and innovation partnership has identified energy and environmental technologies as one of the priority areas for the cooperation. The UK has run a series of tech-partnering matchmaking workshops since 2011, in partnership with MOST, and local S&T Commissions, bringing together businesses and academics from the UK and China, to encourage collaboration in sustainable manufacturing, water technologies, low carbon buildings and the internet of things.

Joint research calls agreed between UK Research Councils and the Natural Science Foundation of China, the Chinese Academy of Sciences and MOST have addressed fuel cells, smart grids and electric vehicles, solar fuels, carbon capture and storage, cleaner fossil fuels. At multilateral level, RCUK are currently working on a programme entitled “Green Economy and Changing Populations” with the NSFC, alongside partners from Germany, France and the Netherlands (“the Bonn Group”).

### 3. Business to business projects

#### a. China-Denmark

The Danish wind turbine company Vestas has been very present in China. **Vestas** provided together with CGNPC (China General Nuclear Power Corporation) an industrial training for delivering successful wind power projects in China, it jointly conducted a research project on coordinated development of wind power and power grid with State Grid Energy Research Institute and delivered the Standardization of Wind Power Modeling And Model Validation with the New Energy Department of China Electric Power Research Institute. Vestas also published the China Wind Power Evaluation System together with the China Wind Energy Association. The company is now actively promoting China's first green power purchasing based offshore wind power demonstration project (*to be clarified*).

Other than conducting joint research on wind power grid-connection with Vestas, State Grid also promotes joint research work under the Renewable Energy Project together with Danish EA energy consultancy. State Grid members went to Denmark and conducted a training(*to be clarified*) on Balmorel model for research of wind power digestion in the early 2011. To further strengthen the cooperation between the ERI and EA, in 2012 the two sides jointly applied for the Renewable Energy Development Project with the "Integration Systems Of Wind Power, District Heating And Cogeneration in Northeast China" project.

#### b. China-France

Since 2006 **CNPC and Total** are cooperating on developing the South Sulige natural gas field. This project began to conduct trial production in August 2012, with a gas output of 173 million cubic meters per year. Together with the Malaysian Petronas the two companies also jointly participate in the Halfaya oilfield project in Iraq, which in 2013 had a production capacity of 200.000 barrels per day.

Also in the oil sector, **GDF Suez and CNOOC** are working together in Qatar. In June 2011 CNPC obtained 40% of the development equity of the No.4 block owned by GDF Suez. GDF Suez and CNOOC are also working in the gas sector together. In July 2013 both companies agreed that from 2017 on CNOOC will purchase 1 million tons of LNG from GDF Suez every year, with a contract duration of 20 years.

**CNOOC and Total** have pursued several cooperation projects together in the oil and gas sector. In April 2006, CNOOC acquired 45% of equity of the OML130 deep-water block in Nigeria with Total as the main operator (24%). With 4 oilfields discovered, the explored and controlled reserve is about 1.5 billion barrels. The two companies also joined forces on an oil and gas projects in Uganda. Together they own a third of the equity of 1, 2 and 3A blocks. The workable reserve is about 104 million tons and it will formally be put into production in 2017. In 2021, the production peak will reach 8.3 million barrels per year, and the equity production of CNOOC will be 2.76 million barrels per year. CNOOC and Total's cooperation also extends to LNG. In June 2008 CNOOC and Total signed a long-term LNG purchase and sale agreement whereby Total provides 1 million ton of LNG supply per year to CNOOC, with a supply duration of 15 years. In 2009 CNOOC jointly purchased with SINOPEC assets in Trinidad and Tobago where Total is also involved. In 2012, the production by sharing equity of joint venture of SINOPEC and CNOOC was 140.000 tons.

**Total** is working with both **SINOPEC and SINOCHEN** in Yemen. In 2008, SINOCHEN purchased 16.785% of the non-operator equity of No.10 Block in Yemen from SOCO Company, which is listed in London. Total has 28.57% of the equity and serves as operator. Total works with SINOPEC on the exploration project of blocks 69/71 in Yemen located in the middle of the oil and gas rich Mareb-Shabwa Basin. SINOPEC owns 50% of the equity of the block and serves as operator, while Total owns 40% of the equity. Together both companies also work on offshore exploration project in Angola sharing equity of 17.53 million barrels. SINOPEC owns 15.125% of the equity of the block, while Total owns 30% of the equity and serves as operator. In Canada SINOPEC and Total cooperate on the Northern Lights oil sand project producing 1 billion barrels of asphalt oil resource. Both companies each hold 50% of the equity, and the project is expected to be put into production in 2020.

### c. China-Germany

The German company **Siemens** has a considerable participation in energy projects in China. Among others Siemens has been involved in the Three Gorges hydropower station project, the Shanghai Waigaoqiao Power Plant project and the Shanghai Shidongkou project. In the field of wind power Siemens has also won the bid for the second phase of Donghai Bridge in Shanghai 100,000-kilowatt offshore wind power project (*to be clarified*). In the solar PV field, the Linuo Group and Siemens are cooperating on a photovoltaic inverter project. Siemens has strong technical advantages in the area of digital control system and assumed the supply of the whole set of digital control system equipment for Tianwan nuclear power plant. In addition to that Siemens has also offered a large number of power transmission and transformation equipment for China's power transmission and transformation engineering, especially the provision of equipment in extra-high voltage and ultra-high voltage.

In 2011 the **Nari group** under State Grid exported photovoltaic products to Germany for the first time. This consisted of the 10-17kw series photovoltaic grid-connected inverter with independent intellectual property rights.

In the field of nuclear energy, CNNC plant No.821 introduced a high-level radioactive liquid waste vitrification production line from Germany. During the 1990s Germany transferred to Tsinghua University the high temperature gas-cooled reactor and low temperature heating reactor technology and equipment free of charge.

### d. China-Italy

**Ansaldo** - Italy's largest supplier, installer and service provider for power generation plants and components – has had long-term cooperation with China, with joint collaboration on high-power generators. In an example of a mutually beneficial cooperation, this technology was jointly developed with China retaining the company shares for the Chinese market and Italy for the rest of the world.

Strong fields to be developed in the future will focus on Italy's assets in biomass and geothermal energy as well on smart grids and energy distribution.

Although Italy does not cooperate with China on nuclear at a governmental level due to its own phase out of nuclear power, several Italian companies produce parts for the Chinese market.

### e. China-UK

In the field of nuclear energy, **CNNC and Invensys** cooperate on the digital control system and simulator supply for the Fuqing, Fangjiashan and Changjiang nuclear power plants. Invensys is providing the engineering design, system integration and product supply of the digital control system.

**The British General Electric Company** provided a full set of conventional power generation equipment and most of the conventional island in-plant system for the Daya Bay Nuclear Power Station. It also provided technical advisory services for conventional island installation work. The company furthermore supplies for conventional island (*to be clarified*) of Ling' Ao power station, and conducts technical transfer of conventional island under the contract.

At present, **State Nuclear Power Technology Corp and China Guangdong Nuclear Power Group** will carry out the construction and operation of the new UK nuclear power projects by means of small proportion of co-ownership coupled with foreign investment. In accordance with NEA's nuclear power "going out" coordination mechanism, China Guangdong Nuclear Power Group will set up a joint team with CNNC and participate in EDF's UK Hinkley Point C nuclear power project. Meanwhile, cooperation between State Nuclear Power Technology Corp and the New Era Group is under review.

In the field of oil and gas, **Petro China and Shell** have conducted multiple cooperation projects in Australia, Syria and Canada. They jointly developed natural gas projects at the Ordos Changbei gas fields (Sichuan) including the Shell Gas Field in the Daning block, the gas fields in the Jinqu Block and Zitong block and the shale gas field in the Fushun-Yongchuan block. China National Offshore Oil and BP cooperate in the South China Sea, in the Yinggehai oil and gas field and in the Guangdong Dapeng LNG project. Petro China purchased part stakes of the INEOS Group in two oil refineries. In addition, Petro China invested \$1.015 billion for the acquisition of part stakes of oil refineries of the INEOS group located in the Grangemouth Refinery in Scotland and in the Lavera Refinery in France.

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<b>I. ENERGY SUPPLY</b>				
<b>A. Fossil fuels</b>				
<i>Clean coal</i>	2006-2020	<b>China-EU Near Zero Emission Coal (NZE) project</b>	European Commission and MOST	<p>The project aims at developing and demonstrating CCS technology in the framework of the EU-China Partnership on Climate Change.</p> <p>In the framework of the EU-China Partnership on Climate Change, the EC has cooperated with China's Ministry of Science and Technology (MOST) on concrete actions to develop and deploy clean energy technologies, while reducing their overall costs. The partners developed the China-EU Near Zero Emission Coal (NZE) project (2006-2020), which aims to develop and demonstrate CCS technology. The project is divided into three phases, the first of which ran from 2006–2009 and included two coordinated feasibility studies. Phase two (on-going) comprises a site-specific design and feasibility study for a demonstration project. Phase three (to be completed by 2020) will be the construction and operation of a commercial scale demonstration plant fired by near zero emissions coal with CCS technology.</p>
	2008	<b>First workshop on Clean Coal ("Energy Efficiency over the Coal Value Chain")</b>	Clean coal working group under the energy dialogue	<p>The workshop brought together over 30 participants, including 16 representatives of EU industry and organisations and 11 representatives of Chinese ministries, industry and other organisations. The workshop was chaired by the European Commission. Discussions at the workshop touched on subjects such as incentivising change through regulation, emission monitoring and control, coal gasification (IGCC), coal to liquids (CTL), CDM and JI projects, coal bed methane/coal mine methane (CBM/CMM), and CO<sub>2</sub> capture readiness. The workshop also addressed collaborative projects for Phase 1 of the EU-China NZE project. To follow up on discussions at the workshop, participants agreed to hold specialist workshops to better identify concrete projects.</p> <p>(Source – Commission Concrete Cooperation projects brochure)</p>



Cooperation field	Year	Project	Institution	Contents description
	2010	Second EU-China clean coal workshop		The expected number of 50 participants had to be increased up to 80 persons, due to the high level of interest from experts of both EU and Chinese industry and research institutions. Together with EU industry representatives in China, around 15 European experts travelled to Beijing to attend the workshop.  (Source – European Commission Concrete Cooperation projects brochure)
	2012	Second China-EU Clean coal workshop	EC2 for the energy dialogue	The workshop brought together policy makers, industry and academia to share good practices, policies and technologies.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
<i>Natural Gas</i>	2014	Study assignment on energy market reform focusing on natural gas	EUCTP II and NEA	At the request of NEA, EUCTP II organised a study assignment for six senior NEA officials from the Gas Market Reform Team to learn about the EU's experiences in setting up a gas market among its member states. They went to Europe to meet with DG Energy and the Belgian Energy Regulating Office in Brussels, as well as regulatory agencies and industry representatives in Poland and the UK. During the meetings the following issues were discussed: - current policies and implementation experiences, especially with regard to reforming the gas market in transitional economies and, - pricing mechanisms for both domestically produced and imported gas.  (Source - EUCTP II)
<b>B. Renewables</b>				
<i>Policy</i>	2011	Three-day e-learning training course on clean energy policies and international best practices	EC2 for NDRC	The course reached eight provincial government institutions in Heilongjiang, Hainan, Inner Mongolia, Qinghai, Tibet, Urumqi, and Shanxi. High-level lectures on clean energy policies, international regulatory frameworks and the latest technologies were presented by recognised experts in the energy sector and reached a target audience of more than 220 Chinese government officers. NDRC recognised this training as one of the most effective and wide reaching tools under

Cooperation field	Year	Project	Institution	Contents description
				its training program relating to the theme of Urban Sustainability & Green Economy in 2012 and 2013.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
		Five small-scale workshops and seminars on the areas of renewable energy and EE, related financing structures and the effects of incentives, and biomass-to-energy technologies	EC2	The workshops contributed to a better understanding of how policies can support the sustainability and innovation of renewable energy projects (e.g. regarding subsidised prices on wind energy). In addition, new barriers, challenges and opportunities for renewable energy industries and policy-making were discussed.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2011	Conference on low carbon technologies and best practices on clean energy under the framework of the EU Sustainable Energy Week (EUSEW)	EC2	The conference was held at the European Parliament in Brussels. It fostered cooperation between European and Chinese institutions and facilitated the exchange of best practices on energy intensity for green investments, smart grid and DSM among Chinese policy makers, business communities and research institutions. In particular, the conference focused on the joint identification of the measures to be adopted to launch new energy models – in line with the policy objectives of China and the EU – and the drivers and challenges for DSM.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
<i>Smart grids</i>	2010	Expert meeting "GRIDS 2010 China – EU Smart Grids Industry Roundtable"	Supported by EUCTP II	This meeting focused on renewable energy integration to the grids and smart grids; bringing together experts from industry in the EU and China who are exploring channels of future collaboration. The SGCC delegation had a strong interest in discussing wind forecasting; incentives to replace ageing windmills, smart grids control system, grid codes and standards. This was held in the context of the European Wind Energy Association's "GRIDS 2010" conference held in Berlin in November 2010 under the EU-China dialogue on Energy.  (Source - EUCTP II)

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	2010	<b>EU-China Smart Grids Study Tour Study visit to Brussels</b>	EUCTP II for NEA and technical experts from State Grid Corporation of China (SGCC) and ERI	On 16 December 2010 in Brussels a follow up seminar, chaired by Director - General Phillip Lowe of DG ENER was held to maintain the momentum built at a seminar held in Beijing in April 2010 and the EU-China Smart Grids industry meeting held at the GRIDS 2010 conference in Berlin on 24 November 2010. On 15 & 17 December 2010, delegates met with representatives of European industry, policy makers and other stakeholders who were unable to attend the event in Beijing. Three delegates from SGCC travelled to this event to deliver key presentations and meet with their counterparts in Directorates General for Energy (DG ENER), Research (DG RTD), and Information Society (DG INFSO).  (Source – EUCTP II)
	2011	<b>Conference on Standardization: An Architecture for the Smart Grid</b>	DG Energy, NEA and SGCC	To reinforce the bilateral exchanges between the EU and China, NEA and SGCC representatives were invited by DG ENER to participate in the “Conference on Standardization: An Architecture for the Smart Grid” hosted by the European Telecommunications Standards Institute in Sophia Antipolice (France) in early April 2011, and to give a speech to introduce China’s Construction and Practices of Strong & Smart Grid. During the EU-China High Level Energy Meeting in May 2012 between NEA and DG ENER, it was agreed to strengthen EU-China strategic cooperation on smart grids.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
		<b>Guidelines for driving the development of smart grid design, selection of technologies, construction and operation based on a Chinese-European comparative analysis</b>	EC2	The EC2 project delivered guidelines based on a Chinese-European comparative analysis for driving the development of smart grid design, selection of technologies, construction and operation.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
<b>Grid integration</b>	2012	<b>Workshop on grid integration</b>	EUCTP II	Wind power policy, regulatory rules, certification and affirmative assessment were addressed in this workshop.

Cooperation field	Year	Project	Institution	Contents description
				(Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2012	<b>EU-China kick-off meeting on regulations and technical standards of renewable energy grid integration</b>	EUCTP II for SERC	<p>In the joint statement signed under the EU-China High Level Energy Dialogue in May 2012, one of the five main priorities identified between DG Energy and SERC was technical standards and regulations of renewable energy grid integration in the power sector. In particular, SERC expressed interest in finding technical solutions to the challenges in this field such as regulatory rules, standards and grid certification, and conformity assessment procedures.</p> <p>To support this priority, a kick-off meeting was held for Chinese regulators and technical experts to hold in-depth discussions with European industry in this area. The meeting allowed the participants to narrow down a list of questions identified by SERC prior to the meeting into a level of detail necessary to facilitate European support of SERC's needs.</p> <p>(Source - EUCTP II)</p>
	2013	<b>EU-China follow-up workshop on grid integration</b>	EUCTP II for NEA	<p>During the cooperation kick-off meeting, a group of regulators, researchers and industry representatives were selected to work together to conduct an in-depth analysis on renewable energy grid integration by referencing relevant examples of good European practices and policies. Specifically, the analysis focused on responding to a list of questions on regulatory rules, standards, certifications and conformity assessment procedures relating to RE.</p> <p>The EU-China Follow-up Workshop on Renewable Energy Grid Integration offered an ideal platform for presenting the findings of this analysis. Over 30 participants attended, representing all engaged experts involved in the production of the analysis, high-level officials from NEA, Chinese power regulators, and relevant EU counterparts (including representatives of leading European companies in the power sector). Reports and recommendations for following a roadmap under the topics of promoting RE integration and balancing the distribution of thermal and renewable power were shared and discussed with Chinese beneficiaries.</p> <p>(Source - EUCTPII)</p>

Cooperation field	Year	Project	Institution	Contents description
<b>Biomass</b>	2011	<b>Two policy advisory report on opportunities and constraints in the biomass sector in China and recommendations on measures to be taken in China for effective energy policies</b>	EC2 for NDRC the Ministry of Agriculture (MOA), NEA and other relevant government bodies	The reports offered recommendations on measures to be taken in China for effective energy policies, were published by EC2 in 2011 and 2012. These reports were circulated among NDRC, the Ministry of Agriculture (MOA), NEA and other relevant government bodies.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2012			
<b>Heat</b>	2012	<b>China heat pump water heater (HPWH) challenge programme</b>	Switch Asia	The project promotes residential HPWH in China to reduce greenhouse gas (GHG) emissions. It plans to increase the market share of household heat pump water heaters to 6.5% in Southern China.  (Source – Switch Asia)
<b>Other</b>	2007	<b>Climate change framework loan</b>	European Investment Bank (EIB)	The EU-China Partnership on Climate Change includes activities to reduce the cost of energy technologies and promote their deployment and dissemination. In November 2007, the European Investment Bank signed a Climate Change Framework Loan of €500m to fund projects in China that contribute to combating climate change.  (Source – UK Parliament report Stars and Dragons: The EU and China - European Union Committee)
	2007-2010	<b>EU-China Clean Development Mechanism facilitation project</b>	European Commission	The EU-China Clean Development Mechanism (CDM) Facilitation Project, which ended in January 2010, provided assistance to China in strengthening its policy and regulatory regime for CDM development. This has facilitated China's participation in the carbon market and its transition to a low carbon economy. However, project-based offsetting mechanisms are limited in terms of their scale. DECC wrote: "Advanced developing countries such as China need to build on their success in attracting CDM investment by moving towards sectoral crediting and trading mechanisms that will make a net contribution to emission reductions and achieve financial flows and emission reductions ..." The Government supported the Council of Ministers Conclusions of 2 March 2009, which included a proposal to "build, as soon as practicable and by no later than 2015, a robust OECD-wide

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				carbon market through the linking of cap-and-trade systems, to be extended to economically more advanced developing countries by 2020" (DECC pp 253-4).' (Source – UK Parliament report Stars and Dragons: The EU and China - European Union Committee)
	2011 and 2012	<b>Support for the participation in the annual European Union Sustainable Energy Week (EUSEW) held in Europe</b>	EC2 for NEA, MOFCOM, MIIT, and key stakeholders from industry and research institutions	The aim of this event is to enhance institutional networking and exchanges between the EU and China. Conferences and workshops during the programme provided participants with a comprehensive overview on European EE and clean energy regulations, policies, technologies and practices, which contributed to capacity building in China.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
<b>C. Nuclear</b>				
	2000	<b>Generation IV International Forum (GIF) on fission-related research</b>	Argentina, Brazil, Canada, France, Japan, the Republic of Korea, the Republic of South Africa, the United Kingdom, the United States, Switzerland China, Russia.	The Generation IV International Forum (GIF) is a co-operative international endeavour organised to carry out the research and development (R&D) needed to establish the feasibility and performance capabilities of the next generation nuclear energy systems.  (Source – Generation IV)
	2006	<b>International Thermonuclear Experimental Reactor (ITER) cooperation</b>	EU, US, China, Japan, India Russia, South Korea	ITER is an international collaborative project (EU, US, China, Japan, India Russia, South Korea) to demonstrate the potential of nuclear fusion as an energy source. It is one of the world's most ambitious research endeavours. Its results could dramatically change the world's energy landscape opening the way to a safe, affordable, inexhaustible and CO2-free source of energy.  (Source – European Union press release)
<b>II. ENERGY DEMAND</b>				
<b>A. Demand-Side Management</b>				



Cooperation field	Year	Project	Institution	Contents description
	2011	<b>Modelling tools and scenarios for decision support in energy policies and measures</b>	EC2	European and Chinese experts discussed international energy modelling trends, presenting detailed comparative studies and scenario analysis of China's clean energy development outlook and CO2 emission strategies, both for China's 12th Five-Year Plan and EU 2020 strategy. The outcomes of the EC2 report "Quantitative tools for the Energy Policy Process" were also presented and discussed.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2011	<b>Joint seminar on demand-side management</b>	EUCTP II, European Delegation in Beijing and the China Carbon Forum	Chinese regulations requiring for the first time utilities to spend a portion of their revenues on developing large-scale energy-saving programs in factories, businesses and homes across China.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2011	<b>Medium and long-term energy demand projection model for the NEA</b>	EC2 for NEA	The model provides the capacity to analyse the effects of social, economic and technological factors on mid/long-term energy demand under different scenarios. The model is an important tool for evidence-based energy policy-making. In the coming year, this model will be based on the new targets proposed during the Communist Party of China's 18th National Congress as well as the experience of the PRIMES energy system model used for the EU Energy Roadmap 2050 and other models such as TIMES and POLES.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2013	<b>Follow-up workshop on energy efficiency and demand-side management</b>	EUCTP II for SERC, NEA, NDRC, and national grid companies, as well as relevant EU counterparts and Member States' regulatory authorities	The workshop was held to discuss Chinese regulations, which require for the first time utilities to spend a portion of their revenues on developing large-scale energy-saving programs in factories, businesses and homes across China. A panel of European and Chinese experts discussed the regulation and debated different pricing and incentive structures.

Cooperation field	Year	Project	Institution	Contents description
				(Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2014	<b>EU-China workshop on energy efficiency and Demand Side Management (DSM) model development for Guangdong and Jiangsu province</b>	EUCTP II and SERC	Furthering its work in energy efficiency, China has identified Guangdong and Jiangsu as DSM pilot provinces, with DSM pilot projects soon to follow in both locations. To inform the design of these projects, EUCTP II supported SERC in engaging the Directorate-General for Energy of the EC (DG ENER) and the EU Chamber of Commerce in China (EUCCC) in identifying leading European industry representatives who could offer targeted, relevant insight for Guangdong and Jiangsu on designing and implementing Demand Side Management (DSM) and energy efficiency projects. Three industry leaders – ABB, Air Liquid and Schneider Electric – were identified as having the capacity to respond to SERC's needs and were engaged to take part in the activity. (Source - EUCTP II)
<b>B. Energy Conservation</b>				
<b>Buildings</b>	2008	<b>Train the Trainers: train Chinese construction sector SMEs in energy saving techniques and technologies</b>	Switch Asia	<p>The objective of the SWITCH-Asia "Train the trainers in Construction" project is the incorporation of energy efficiency measures in the design and construction of buildings, through a practical training program for Chinese construction sector SMEs and representatives of key related government agencies. The activities include:</p> <ul style="list-style-type: none"> <li>- Providing training courses to Chinese construction SMEs</li> <li>- Promoting European building standards and best practices</li> <li>- Contributing to the development of an enabling policy environment (i.e. to create a setting that reinforces and/or stimulates enterprises to change their behaviour).</li> </ul> <p>(Source – Switch Asia)</p>
	2009	<b>Sustainable building and interior decoration initiative</b>	Switch Asia	The project works towards improving the living quality for building inhabitants and workplace safety for decoration workers. Project partners aim to increase the sustainability of interior decoration and renovation practices. This includes

Cooperation field	Year	Project	Institution	Contents description
				consumers choosing safe, healthy and environmentally friendly decoration products and appliances. (Source – Switch Asia)
	2011	<b>Energy efficiency in buildings conference</b>	DG Energy and MOHURD	Since 2011, DG ENER and MOHURD jointly held three conferences on energy-efficiency in buildings under the umbrella of the International Green Building Expo. This conference has been the flagship event under the cooperation, mobilising resources from policy and technical perspectives, increasing public awareness, and providing capacity building for policy makers, engineers and private/public stakeholders. In 2012, EUCTP II supported a study assignment for MOHURD officials and technical experts (see below).  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2012	<b>Improving energy-efficiency &amp; environmental performance of SMEs &amp; large companies by voluntary public-private partnerships (PPPs)</b>	Switch Asia	The overall objective of the project is the scaling up of SCP practices facilitated by voluntary PPPs throughout China and thereby contributing significantly to the mitigation of climate change.  The specific objective is to improve energy and resource efficiency in the SME sectors of laundry & dyeing and textile as well as large companies in Nanjing, Jingzhou and five other Chinese mega cities through creation of organisational, financial and policy support at local and national levels by scaling up successful SCP practices by means of voluntary PPPs from large companies to SMEs aimed at reduction of emissions and energy consumption beyond 12th Five-Year-Plan (FYP) targets. In 2015 an annual energy saving of 100.  The project's target area: Beijing, Nanjing, Jingzhou and other interested mega-cities like Jinan, Hangzhou, Xian, Baoding and Tianjin (Source – Switch Asia)
	2012	<b>Low energy housing in Sichuan and Shenzhen, China - Enable</b>	Switch Asia	The overall objectives of the action are to increase the sustainable use of resources in the building sector, esp. energy efficiency and recycling of building material, while improving the quality of life in the target area and contributing to the mitigation of climate change. The project also aims at up-scaling pilot studies using

Cooperation field	Year	Project	Institution	Contents description
		and enforce energy efficient building construction		<p>innovative mechanism of public-private partnership between construction bureaus and developers through MoUs as well as incentives by financial institutes offering credits for sustainable building projects.</p> <p>The specific objective of the action is to foster construction of energy efficient residential buildings in Shenzhen and Sichuan Province. This includes the energetic performance of the building envelope, the chosen technologies and the integration of renewable energies, especially solar energy.</p> <p>(Source – Switch Asia)</p>
	2012	Study assignment for MOHURD officials and technical experts from the Building Research Institute to participate in concerted action of building directives meetings	EUCTPII and MOHURD	<p>???????? A group of 4 senior officials and experts from MOHURD and CABR were invited by DG Energy (DG ENER) to attend the Concerted Action (CA) Meetings for the Energy Performance of Buildings Directive (EPBD) in Athens, Greece from 28 May – 2 June, 2012. This was the first time that China has had representatives participate in these meetings; the representatives exchanged views with European members and delivered presentations on building conservation and certification in China.</p> <p>Technical themes discussed included: a) Architectural Identity; b) Cost optimisation; c) Economic incentive; d) Architectural classification; e) Near-zero energy buildings; and f) Air conditioner system testing, quality testing and monitoring from both technical and relevant legislative and regulatory perspectives.</p> <p>(Source - EUCTP II)</p>
	2012	EU-China seminar on integration of best available technologies for near zero energy buildings	EUCTP II and MOHURD	<p>Seven speakers from Europe represented the EU, including DG Energy, the Executive Agency for Innovation and Competitiveness (EACI) and the EU Member States at national, regional and local levels.</p> <p>Seven high-level speakers presented the domestic context, representing government, academia and the private sectors at both central and provincial levels. The event was closed by Mr Han Aixing, Deputy Director General, Department of Building Energy and Science &amp; Technology of MoHURD. In order to maximise the opportunity presented by having high-level European experts in Beijing, an informal Q&amp;A session was organised for the day preceding the seminar.</p>

Cooperation field	Year	Project	Institution	Contents description
				This session was organised in cooperation with the SWITCH ASIA project, which hosted the session at their booth at the International Green Building Exhibition. (Source - EUCTP II)
	2013	<b>MOHURD study visit to Greece - Concerted action</b>	EUCTP II and MOHURD	Study assignment to Europe for MOHURD officials and Chinese experts to learn and exchange relevant policies and techniques with EU Member States to promote near-zero emission buildings with specific climate zones in Europe. (Source – EUCTP II)
	2014	<b>EU-China conference on strategies for the development of energy-efficient buildings</b>	EUCTP and MOHURD	The conference attracted more than 130 participants from research institutions, standard setting bodies, as well as European and Chinese property agencies and urban planning and design companies. The themes covered included the following: <ul style="list-style-type: none"> <li>- The EU's overall strategy and progress in policy making on energy-efficient buildings</li> <li>- Compliance and quality in construction, and examples of how the EU monitors and enforces respective regulations</li> <li>- The EU's building stock</li> <li>- Progress towards the 2nd generation CEN standards</li> </ul> (Source – EUCTP II)
	2014	<b>MOHURD study assignment to attend the Concerted Action meeting on energy efficiency in buildings</b>	EUCTP II and MOHURD	EUCTP II organised a study assignment for a delegation of six high-level officials from MOHURD, the China Green Building Council and the China Academy of Building Research to participate in the CA Meeting on NZEB in Dubrovnik, Croatia. After the CA meeting, the delegation attended further site visits with the Danish Energy Agency in Copenhagen, the Green Light House, the Osram Centre, and Rockwool in addition to further demonstration sites in Denmark. The following topics were discussed: enforcement of requirements in new buildings; coordinated approaches to training and accreditation of experts; turning existing

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				buildings into NZEBs; and CEN standards for inspection of heating and air-conditioning systems. (Source - EUCTP II)
<b>Industry</b>	2008	<b>Improving environmental and safety performance in the electrical and electronics industry in China (ESEEC)</b>	Switch Asia	The project aims to improve sustainable production patterns. It wants to switch behaviour to sustainability by mobilising the private sector, along with relevant public sector authorities. The project targets the performance of over 500 Chinese SMEs in the electrical and electronics sector in the area of eco-efficiency, occupational health & safety and corporate social responsibility. (Source – Switch Asia)
	2008	<b>Electric motor systems energy-saving challenge – improving the operating efficiency of Chinese electric motor systems</b>	Switch Asia	The project assists hundreds of industrial users of electric motor systems in upgrading to high-efficiency motor systems. With upgrading electric motors systems the project aims to reduce energy consumption and cut CO2 emissions.  It promotes the market transformation to high-efficiency electric motors, and motor system components. Within 3 years the project plans to reach out to over 400 major industrial users of electric motor systems. By improving the operating efficiency of their systems, the users of electric motors can save about 1 million tons of CO2 emissions per year. (Source – Switch Asia)
	2009	<b>China higher efficiency power and distribution transformers promotion Project</b>	Switch Asia	The objective was to increase the market penetration of higher efficiency transformers in the Chinese electricity grid. With more than 30% of transmission and distribution losses resulting from out-dated transformers, investment into more efficient electricity transformers helped to reduce fossil fuel use and GHG emissions.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)



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	2012	<b>Policy seminar on low-carbon development: solar water heating policies</b>	EC2 for Chinese policy makers and industry representatives.	<p>The seminar focused on the policies and implementation of industrial energy efficiency and standards relating to solar water heating across multiple sectors. Companies involved in the solar water heater industry exchanged their experience in research, industry practices of solar industry heating and financial mechanisms. International and national experts introduced the achievements of solar industry heating applications.</p> <p>(Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)</p>
	2012	<b>Remanufacturing &amp; eco-design seminar</b>	EC2	<p>The seminar took place under the DG ENTR-MIIT “Industrial Energy-Efficiency &amp; Greenhouse Gases Emissions Reduction” Working Group.</p> <p>(Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)</p>
	2012	<b>Energy-efficiency and Emission Reduction Potential Scan (ERPS)</b>	EC2	<p>The EU funded SWITCH-Asia VA3 project in China trained 262 SMEs by the end of 2012 and has made available their Energy-efficiency and Emission Reduction Potential Scan (ERPS) reports. Based on these audits, energy reduction targets have been set and PPPs have been signed. Each EE &amp; Enterprise Resource Planning Systems report received approval from management. A further 700 SMEs and 100 large energy-intensive companies are planned to join the scheme during the period 2012-2015 in the form of governmental incentives and established action teams in SME pilot companies. So far, a total of 20.4 PJ energy savings has been achieved in the target cities of Nanjing and Jingzhou.</p> <p>(Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)</p>
	2013	<b>Capacity-building workshop on industrial energy efficiency</b>	DG Enterprise and MIIT	<p>The workshop took place under the DG ENTR-MIIT 4<sup>th</sup> Meeting of the ‘Industrial Energy Efficiency and Greenhouse Gases Emissions Reduction’ Working Group.</p> <p>(Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)</p>

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<b>Transport</b>	2012	<b>Workshop on electric buses and taxis</b>	EC2 under the EU-China Dialogue on Transport	<p>The workshop aimed to share experiences, progress and lessons from Chinese EV Urban demonstration projects (“Ten Cities, thousands of energy-saving and new energy vehicles demonstration project”), and offered lessons from EU experiences and policies. The workshop welcomed stakeholders of the electric vehicle markets in China and Europe, including Chinese and European officials, company representatives and experts.</p> <p>(Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)</p>
<b>Other</b>	2014	<b>EU-China workshop on energy efficiency and energy saving technology</b>	EUCTP II, MOFCOM and CCCME	<p>Experts from governments and industry exchanged expertise on the latest developments in energy efficiency, particularly the impact of the new EU and United States regulations and how to promote the kinds of energy efficiency changes to enable compliance.</p> <p>The programme also addressed how Chinese SMEs seeking to export products to the EU can upgrade processes to comply and, at the same time, promote the energy saving and efficiency aspects of their brand, both domestically and internationally.</p> <p>(Source EUCTP II)</p>
<b>III. CROSS-CUTTING</b>				
<b>A. Energy Regulation</b>				
<b>Energy Law</b>	2009	<b>Two-days workshop on the energy law</b>	European Commission and the State Council Legislative Affairs Office (SCLAO)	<p>The workshop focused on the following specific topics: the relationship between general laws and specific laws on energy; energy planning; role of the market mechanism; energy prices and pricing; energy market access; universal energy services; fossil energy; new and renewable energy; environmental protection; strategic energy reserves; energy emergency; and energy technology. The Energy Law Workshop was a very successful event, gathering every line Chinese ministries involved in the drafting process and generating fruitful discussions. By introducing EU experiences and legislations and also giving related policy recommendations, the European Commission assisted in the drafting of China’s new Energy Law.</p>

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				Following the workshop SLCAO acknowledged that the EC support was extremely efficient and well targeted. Participants agreed that more cooperation on the framework Energy Law should follow.  (Source – European Commission Concrete projects brochure)
<i>Policies</i>		Policy advisory report on quantitative tools for the energy policy process – A comparison between European and Chinese experiences”	EC2	The report explored energy modelling in the EU and China and key aspects of the current leading models. Drawing on more than 10 years of EU experience with energy modelling, the report provided recommendations for policy on: pricing; taxations; standards on technologies; electricity market liberalisation; and EE on the demand-side.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
		Training seminar on supporting the implementation of China’s 12th 5-Year Energy Plan	EC2	The training seminar presented China’s future energy path in line with China’s 12th FYP, referencing both policy and technological approaches to power generation, efficiency in energy utilisation, energy usage in buildings and EE in the transportation sector.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
		Technology and policy database	EC2	This knowledge-sharing tool is to provide advisory support to Chinese and European players in the energy sector, foster international technology cooperation and inform policy-making. It is based on five focus areas including: bio fuels; renewable resources; energy-efficiency; and sustainable distribution systems. EC2 is using the database in the planning and implementation stages of its Demo Zone and Policy Zone activities. It will also be offered as a tool to the EC2 Clean Energy Alliance Members and EC2 project stakeholders.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2012	High-level conference on cooperation on energy	EC2	The conference explored further possible cooperation between the EU and China in areas of common interest including clean coal, renewable energy, oil and gas,

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		security: China-EU government and business perspectives		and nuclear safety issues. Chinese stakeholders that participated included the National Energy Administration (NEA), the Ministry of Commerce (MOFCOM), the Ministry of Environmental Protection (MEP), the National Development and Reform Commission (NDRC), provincial-level officials and market players in the energy sector.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2013	Technical cooperation project on capacity building for ETS at national and local levels in China	EU and China	This project is the result of a particularly successful on-going collaboration with the NDRC allows relevant Chinese experts to benefit from the EU experience in running an ETS system that works across a large region with very diverse levels of economic development and industrial and power generation structures.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
<b>Electricity Market reform</b>	2012	SERC study visit to the EU on electricity market reform	EUCTP II for SERC	This activity was designed as a study visit to Europe for SERC officials and professionals to meet with DG ENER and EU Member States' regulators in order to better understand the implementation of the Third Energy Package, including items such as regulatory rules and procedures in the electricity market in the area of grid power systems, power market regimes and power regulatory regimes, etc.  A group of 6 delegates, led by Director General Wang Qiang, took part in the study visit, which was carefully designed and facilitated by the local authorities and DG ENER. The schedule provided the study group with opportunities to meet with relevant officials and experts, while carrying out exchanges and discussions not only on the process of electricity market reform, but also on the background, implementation, effects and challenges of these approaches. (Source - EUCTPII)
	2012	SERC internship in the Netherlands and Denmark on electricity market and price regulation	EUCTP II for SERC	Four officials from SERC and its subdivisions were selected as interns for the training programme through a series of internal and external interviews co-organised by EUCTP II, the Sino-Danish Renewable Energy Project, and MS experts from the Netherlands Embassy in China.

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				<p>The programme was specifically designed to respond to an identified list of questions proposed by SERC on power market and price regulation and addressed by the host agencies in both countries, involving expertise and resources from the University of Amsterdam, the Danish Energy Agency, Energinet.dk and Nordpool power exchange, to gain insight and practical experiences from both policy and technical perspectives referencing good European practices.</p> <p>(Source - EUCTP II)</p>
	2013	<b>Workshop on the future flexible power systems</b>	EUCTP II for NEA	<p>Over 50 participants including regulators, grid companies and energy research institutions from both sides participated in the workshop. The two officials from SERC who had attended internships in Denmark and the Netherlands, as well as the experts from the previous internship's host agencies, presented their experiences and findings from the internship and explored areas for future cooperation.</p> <p>Topics also included good practices and case studies on flexible thermal power plants and dispatching of power systems with a high share of renewable and distributed energy.</p> <p>(Source EUCTP II)</p>
<i>Other</i>	2009	<b>Europe-China standards information platform (electrical appliances, machinery, medical devices and environmental protection)</b>	Sustainable Development Association (SDA) with the support of the European Commission and the European Free Trade Association (EFTA)	<p>The Europe-China Standardization Information Platform (CESIP) is a practical information tool that aims at strengthening mutual trade and investment flows between Europe and China by making standards and related technical regulations more accessible.</p> <p>(Source - European Committee for Electrotechnical Standardization CENELEC)</p>
	2011	<b>EU-China Low-carbon economy platform</b>	EUCTP II for the group of interested bodies at the EU and member states level, including government, executive agencies, and projects	<p>On the 18th of October 2011, the EUCTP announced the launch of the EU China Low Carbon Economy Platform. The platform comprises a group of interested bodies at the EU and MS level, including government, executive agencies, and projects. Representatives of international organisations will also attend.</p> <p>The group will meet quarterly to discuss the development of a low carbon economy in China, and to co-ordinate and increase the impact of their individual activities. Each regular meeting of the group will discuss one of the platform's key</p>

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				<p>topics, looking at co-ordination of policy and co-operation activities, to better support Chinese partners.</p> <p>This website aims to provide information to interested parties in China and abroad on group members' work in each of the seven key topics - Renewable Energy, Clean Coal, Smart Grids, Energy Efficiency, Green Buildings, E-Mobility and Carbon Markets. To learn more about each of these areas, as well as upcoming activities, the group's discussions in these areas, policy and news, browse the website using the navigation bar above.</p> <p>(Source – Low-Economy Platform)</p>
<b>B. Energy and Environment</b>				
<i>China-EU Partnership on Climate Change Rolling Work Plan</i>	2005	China-EU seminar “Towards a global carbon market: using market-based mechanisms to combat climate change”	For European and Chinese policy-makers and businesses	<p>The seminar brought together policy makers and the private sector from both sides, strengthening the cooperation on these issues.</p> <p>(Source Chinese Ministry of Foreign Affairs)</p>
	2006	International workshop on Near-Zero Emissions Coal – Power Generation with Carbon Capture and Storage in China”		<p>The workshop was held in Beijing on 4-5 July 2006.</p> <p>(Source Chinese Ministry of Foreign Affairs)</p>
	2006	First joint China-EU workshop on vulnerability and adaptation to climate change		<p>First workshop of this kind, which took place in Beijing on 21-22 September 2006.</p> <p>(Source Chinese Ministry of Foreign Affairs)</p>
<i>Environment</i>	2006-2012	EU-China River Basin Management Programme (RBMP)	European Commission DG Environment, Ministry of Water Resources Ministry of Environmental Protection	<p>The purpose is to support MWR, MEP and related partners enhancing integrated river basin management practices at central/decentralised levels with specific attention to the Yellow and Yangtze River basins through sharing of EU experience.</p> <p>(Source – EEAS)</p>



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	2012	<b>EU-China Environmental Sustainability Programme (ESP)</b>	European Commission DG Environment	The project aims to support China's efforts to meet the environmental and climate change targets defined in the 12th Five Year Development Plan. The specific objectives focus on the achievement of environmental sustainability through improved water quality and the prevention and control of heavy metal pollution and implementation of sustainable solid waste management.  (Source – DG Environment)
	2012	<b>China-Europe Water Platform (CEWP)</b>	European Commission DG Environment	The platform aims to achieve an integrated approach to water management in China. The CEWP is a political initiative and a partnership for promoting policy dialogue on water sector reforms, encouraging capacity-building, technical and business cooperation.  (Source – DG Environment)
<b>Emissions Trading</b>	2014	<b>Three-year cooperation on carbon emissions trading scheme</b>	European Commission and NDRC	The scheme is about supporting the design and implementation of emissions trading systems in China.
<b>C. Energy and Cities</b>				
<b>Cities</b>	2013	<b>Pairing of 12 European and Chinese cities</b>	Under the Urbanisation Forum	The cities include - Shenyang-Le Havre (France), Xi'an-Chartres (France), Guangzhou-Bristol (UK), Chengdu-Bonn (Germany), Changsha-Swedish Embassy in China, Tianjin-Climate KIC, Changzhou-Essen (Germany), Weifang-Freising (Germany), Weihei-Ghent (Belgium), Luoyang-Turin (Italy), Haiyan-Sonderborg City (Denmark).
		<b>Low carbon model town</b>	EC2 and NEA	EC2 is managing the initiative Low-carbon Model Town, led by the National Energy Administration (NEA) and related to Chinese participation in Asia Pacific Economic Cooperation (APEC). In APEC Chinese Year 2014, relevant Chinese Low-Carbon Model Towns (LCMT) in the process of being planned and developed will be showcased in front of APEC partners. EC2 provides: methodological support based on European experience on two Low Carbon model districts among 26 Chinese

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				cities that are part of the APEC LCMT scheme (namely Shenzhen International Low-Carbon City and Xuwei New Area in LianYungang).  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
<b>Smart cities</b>	2011	<b>Green smart city cooperation</b>	Ministry of Industry & Information Technology (MIIT) and DG Information Society & Media Directorate-General (now DG CONNECT)	Agreed at the end of 2011, in the context of the 3rd ICT Dialogue Meeting between the Ministry of Industry & Information Technology (MIIT) and the EC's Information Society & Media Directorate-General (now DG CONNECT) in Chengdu.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2011	<b>EU-China workshop on green smart cities and Internet of Things (IoT) application</b>	EUCTP II and Ministry of Industry and Information technology (MIIT)	The e-workshop attracted over 40 participants from both regions including government officials from DG INFSO, MIIT at the central and local levels, industrial representatives such as China Mobile, Digital China, which plays a significant role in IT development and the telecommunications market in China, telecommunication research institutions, and representatives from the EUCCC and European industry.  The activity included exchanges on the strategic planning of smart city development and how Information and Communication Technology (ICT) contributes to this development. In addition, detailed analyses of Ningbo and Guangzhou's strategic and implementation plans were highlighted, with experts from both regions sharing in- depth discussions of the challenges they have encountered. Both sides expressed keen interest in real cooperation for solutions in the future at both the political and technical levels. (Source EUCTP II)  (Source – EUCTP II)
<b>New Energy cities</b>		<b>New energy cities</b>	EC2 and NEA, ERI/NDRC	NEA promotes 100 “New Energy Cities”, 1000 “New Energy Regions” for scaling up the use of renewable energies to achieve sustainable development (target of 6% RE in energy balance). EC2 supports NEA in building-up the procedure for managing and monitoring New Energy Cities project cycle, by sharing the experience of EU Cities and experts. The twinning with European cities are envisaged. (Experts’ Digest brochure 2014)

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				EC2's "New Energy Cities" is a planning project cycle on the New Energy Demo Cities construction plan and action scheme (NEC)  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2010	<b>Two-day conference "Building bridges and fostering sustainable growth"</b>	EC2 under the EU-China Smart City Forum organised on the occasion of the Shanghai Expo in 2010	The conference brought together high-ranking Chinese and EU officials. Participants discussed strategies and policies on renewable energy, smart grids and clean vehicles.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2012-2013	<b>EURUMQI Demo Zone</b>	EC2, local government of Urumqi, Xingjian Province,	In 2012-2013, EC2 provided support to the local government of Urumqi, Xingjian Province, for the preparation of the Energy Conservation and Emission Reduction Plan and the Circular Economy Plan, based on relevant European experience.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
		<b>Second bridge initiative</b>	EC2	The initiative was organised by EC2 via its "China-EU bridge on low-carbon model town" and aimed at supporting China's NEA under the APEC Low-Carbon Model Town (LCMT) Project, which impacts on financial and technical levels regarding investments in local cities in China.  (Source – EU-China Strategic Partnership on Energy Security and Urbanisation 2010-2020: Towards a low-carbon economy)
	2012-2013	<b>Two e-learning training courses on clean energy policies and international best practices</b>	NDRC	Two e-learning training courses were held on clean energy policies and international best practices in 2012 and in 2013 on Urban Sustainability & Green Economy. These took place in 47 Chinese cities with over 4,000 participants from NDRC at both central and local level, including SOEs as well as research and educational institutions. Given its success, this training has been designed and integrated as a regular training course on sustainable development by the NDRC Training Centre.

