



## SETatWork Newsletter 6 - July 2010

[SETatWork Newsletter 5](#) | [All News and Articles](#) | [Register to receive the Newsletter](#) | [Home](#)

### Contents

#### Editorial

**Roundtable Events** Brussels, Belgium

**26 March 2010** | **12 October 2010**

#### CDM Facilitation Workshops

**China Results** 19 & 21 April 2010

#### EU ETS Matchmaking Events

**Sweden** 25 May 2010 | **France** 3 May 2010 | **Germany** 25 February & 10 March 2010

#### Update on CDM

CDM Biogas Projects in Chile

#### Update on EU

EU SET Plan and SET IS

#### CCS and RES

#### Good Practices

#### Events Diary

Contact details: [info@setatwork.eu](mailto:info@setatwork.eu) | [www.setatwork.eu](http://www.setatwork.eu)

### Editorial

Here follows the sixth issue of the **SETatWork Newsletter**.

SETatWork is a project supported by EU's 7th Framework Programme (FP7). It assists European industries with meeting the challenge of climate change and bridging contacts to market actors and researchers outside Europe.

The technology focus is to promote energy efficiency and savings as well as polygeneration in the carbon markets.

This issue of the newsletter focuses on reporting from recent Facilitation Workshops within the SETatWork cooperation, as well as providing information on a forthcoming Roundtable event on 12 October in Brussels to discuss **Industry Supporting Schemes and Instruments for post-2012 Emission Trading Scheme** with the aim of developing recommendations to the European Commission on the **future strategy for the Emissions Trading Scheme in Europe**.

If you would like to take part in the Roundtable, please register by sending an email to [roundtable@setatwork.eu](mailto:roundtable@setatwork.eu) before **30 September 2010**

In addition, we include details of **fourteen Good Practice Case Studies** which have been published since the last newsletter.

Use of the [SETatWork Database](#) continues to grow steadily, with more than 50 project ideas and partner requests now available in the [Partner Search](#) section of the site. There have been more than 2,500 visitors to the website every week since March, viewing more than 11,000 pages. This means that the Database continues to grow as a useful resource where Sustainable Energy Technology and Service Providers to the Carbon Markets can promote their activities.

If you would like to add details of your company to the SETatWork Database, you can register online (*note: the database opens in a separate window*):

**Register in the SETatWork Database:** [www.setatwork.eu/database/register.htm](http://www.setatwork.eu/database/register.htm)

#### The SETatWork Management Team

For further information about SETatWork or any of the issue raised on this website please contact: [info@setatwork.eu](mailto:info@setatwork.eu)

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## SETatWork Roundtable Events

SETatWork is supported by the European Commission (EC) project under the Seventh Framework Programme (FP7). Its activities are targeted at members the EU Emission Trading Scheme (EU-ETS) throughout Europe during 2008-2010. The overall scope of the funded programme of activities is to provide support to **EU-ETS member industries** in addressing the needs for **improving performance on climate change** and to **facilitate access to carbon credits from CDM activities**.

An essential activity of the work programme agreed with the EC is the development of a set of recommendations on the **future EU strategy for development of the EU-ETS**.

To this end, SETatWork has scheduled two Roundtable Events aimed at collecting and discussing **recommendations to the EC on current and future needs in EU-ETS industries** in order to remain competitive on the global market while significantly improving performance of manufacturing with respect to carbon intensity.

The first meeting, **[Recommendations to European Commission on post-2012 Emission Trading Scheme](#)** took place in Brussels, Belgium on **26 March 2010**.

As a result of the first Roundtable, SETatWork has extended its activities to October 2010 when it will hold its second Roundtable Event, **[Industry Supporting Schemes and Instruments for post-2012 Emission Trading Scheme](#)** in Brussels on **12 October 2010**.

Participation in these events is free of charge. Further information is included in this newsletter below. To find out more or to register, please:

- send an e-mail to [roundtable@setatwork.eu](mailto:roundtable@setatwork.eu) before **30 September 2010**
- or contact **Nils Daugaard** by phone +45 2826 5655

### **Roundtable Meeting Recommendations to European Commission on post-2012 Emission Trading Scheme 26 March 2010, Brussels, Belgium**

This **SETatWork Roundtable Meeting** on 26 March 2010 provided an excellent opportunity for organisations representing key industries to share their ETS experience and requirements. By joining us they could help shape the scope and direction of the scheme, and enable industries across Europe to engage more productively in carbon trading while remaining competitive in global markets.

The outcome of the roundtable discussions will be included in SETatWork's recommendation to the EU Commission on the following topics:

1. **Identified needs in industry** for EU to develop schemes which facilitate a smooth penetration of energy saving technologies in the manufacturing industry and poly-generation in order to meet EU emission reduction targets.
2. **Requirements necessary for transparent and simplified access to the global market for carbon credits** by strengthening the use of carbon credits within the EU-ETS and propose how the markets for CDM link and appliance result.
3. **Input required** to strengthen the **transfer of technology and know-how** from the EU into the **CDM markets in Asia, Latin America and Africa**.

**Minutes & SETatWork Presentation:** [www.setatwork.eu/events/100325\\_SETatWork\\_Roundtable.htm](http://www.setatwork.eu/events/100325_SETatWork_Roundtable.htm)

### **FREE Roundtable Event Industry Supporting Schemes and Instruments for post-2012 Emission Trading Scheme Tuesday 12 October 2010, Brussels, Belgium**

This **Free Roundtable Event of high level EU Emission Trading Scheme (EU-ETS) stakeholders** takes place in Brussels on **12 October 2010** to help develop recommendations to the European Commission on the **future strategy for the Emissions Trading Scheme in Europe**.

The Roundtable consists of two sessions; the first, in the morning will discuss **Industry support**, while the second, in the afternoon, will discuss **Access to project based carbon credits**.

The objective of this event is to address two core activities identified in the dialogue with SETatWork stakeholder groups:

- **Support schemes** for EU ETS industry members, national / sectorial or common for EU
- **Facilitation service** between buyers of project based carbon credits and project owners

The target audience of this event is:

- EU ETS member organisations
- Industry associations representing EU-ETS industries and
- Equipment suppliers to industry

The outcome of the roundtable discussions will form part of SETatWork's recommendations to the EU Commission on the following topics:

1. **Propose technical and financial schemes and tools** targeting EU ETS members in order to **facilitate a smooth penetration of energy saving technologies in the manufacturing industry**.
2. **Define scope and core services** for a transparent and simplified **access to the global market for project based carbon credits** for all members of the EU ETS.

**Further information, registration, programme, venue, etc:**  
[www.setatwork.eu/events/101012\\_SETatWork\\_Roundtable.htm](http://www.setatwork.eu/events/101012_SETatWork_Roundtable.htm)

## SETatWork CDM Facilitation Workshops

SETatWork offers an opportunity for joining market actors in the carbon market sector. As part of this, a number of facilitation workshops have taken place during 2010 in Asia where European stakeholders have been invited to meet local stakeholders.

The key objective has been to foster cooperation in the field of CDM projects by creating contact between local CDM project developers & related business and EU stakeholders, such as buyers of CO<sub>2</sub> credits and technology suppliers. This has been supplemented with other commercial and RTD activities.

The reports from the first two Facilitation Workshops, which took place in **Bangkok, Thailand** in February and **New Delhi, India** in March 2010, were included in the previous newsletter. If you have an interest in these areas, please click on the links for each event (below) as additional information and presentations have been added to these event pages since the last newsletter.

**Presentations from the event in India:** [www.setatwork.eu/events/1003india.htm](http://www.setatwork.eu/events/1003india.htm)

**Presentations from the event in Thailand:** [www.setatwork.eu/events/1002thailand.htm](http://www.setatwork.eu/events/1002thailand.htm)

Reports from recent workshops in [China](#) in April 2010 and [Sweden](#) and [France](#) in May 2010 are included in this newsletter (below).

The SETatWork website also acts as a platform where companies can **register their details** for free, to promote their organization and projects or find partners for future collaboration within key industries. These details will be entered into the **database** maintained by the consortium, which contains a range of companies including technology providers, project developers, industry contacts, etc (*note: the database opens in a separate window*).

**Register in the SETatWork Database:** [www.setatwork.eu/database/register.htm](http://www.setatwork.eu/database/register.htm)

During the workshops, the questionnaire on matchmaking was completed by distributing matchmaking forms to the attendants. According to feedback, participants showed their cooperative intents on following technologies:

- Grid connection of PV system, such as smart control and dispatch, reliable operation and fault positioning, conversion etc.,
- Solar thermal power system
- Integration of solar thermal use with heat pump
- Energy storage materials and products,
- Innovative high efficiency heat pump
- Building energy management system
- Low temperature waste heat recovery for power generation
- Energy policy study
- others

Details of these and other non-confidential partner-matching requests can be found by **searching the SETatWork Database** (*note: the database opens in a separate window*).

**SETatWork Partner Search:** [www.setatwork.eu/database/submenu/Sps.htm](http://www.setatwork.eu/database/submenu/Sps.htm)

## Sino-EU Workshops on Sustainable Energy Technology - China, 19 & 21 April 2010

Two SETatWork Facilitation Workshops were held in China in April 2010, in Guangzhou on 19 April 2010 and in Hangzhou on 21 April 2010. The events were timed to follow the **Carbon Trade China 2010: Emitting China's CDM Potential and Enhancing East-West Carbon Trade** that was held in Beijing, 15-16 April 2010 ([www.chinacarbontrade.com.cn](http://www.chinacarbontrade.com.cn)) allowing delegates to link their participation in these events.



Sino-EU Workshop on Sustainable Energy Technology - 21 April 2010, Hangzhou, China

In April 21 of 2010, "Sino-EU workshop on sustainable energy technology" was held in Hangzhou of China, organized by [Zhejiang Energy Research Institute](#), as one of matchmaking events in China within activities of EU funded project "SET@Work", with the view of promoting sustainable energy technology outside Europe and bringing European suppliers in a favorable position for this development with focus on rapidly developing CDM markets in China.

Taking into consideration the **China 2020 CO<sub>2</sub> emission reduction target** declared in November of 2009, this workshop discussed topics of **low carbon development strategy**, **innovative energy saving technologies** and **technology matchmaking and carbon trade**, etc., and consisted of two technical sessions on **Low Carbon Economy Development** and **Energy Efficiency Technology and Carbon Trade**. Twelve speakers gave outstanding presentations and more than 50 attendants were present at this workshop; they mainly came from research institution, universities and consulting agencies, as well as industrial association, etc.

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Minutes from this event are available at: [www.setatwork.eu/events/1004china.htm](http://www.setatwork.eu/events/1004china.htm)

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For further information about the event in Hangzhou, please contact:  
Ms. Huang Dongfeng, Zhejiang Energy Research Institute (ZERI)  
218 Wen'er Road, Hangzhou 310012, China  
Tel: +86-571-88840792; email: [huangdf@zeri.org.cn](mailto:huangdf@zeri.org.cn)

For further information about the event in Guangzhou, please contact:  
Mr. Luo Zhigang, Guangzhou Institute of Energy Conservation (GIEC),  
No 2, Nengyuan Road, Wushan Tianhe District, Guangzhou, China  
Tel: +86 20 87057771; email: [Luo zg@ms.giec.ac.cn](mailto:Luo zg@ms.giec.ac.cn)

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#### SETatWork EU ETS Matchmaking and Training Events

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##### **Possibilities for Bioenergy Companies to Access New Markets** **Financial and supporting opportunities to export bioenergy** 25 May 2010 - Jönköping, Sweden

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This event was planned in collaboration with the organized matchmaking that took place during World Bioenergy 2010. The side event to World Bioenergy 2010 was organized between EEN, Bioenergy Promotion and SETatWork.

In the matchmaking part of the event, 160 companies from 35 countries met during one and a half days. The side event that was organised in direct contact with the conference, exhibition and matchmaking. 24 delegates from Sweden, India, Iran, Brazil, Egypt, Singapore and Finland came to listen to our invited speakers. The companies and delegates were interested in having contact with European organisations and companies for further business and learning about financing contacts.



The event resulted in several contacts of direct interest to SETatWork activities, in particular from delegates from Egypt. Another company was interested in business in Botswana, Africa, while the Iran delegate wanted further cooperation with Europe in Energy efficiency projects. India had several projects to add to the SETatWork database.

It seems that African countries want to have contact with European companies to be able to start working with their climate goals. For this CDM as mechanism is a very interesting financing model for them to be able to afford investing in clean technologies.

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**View the presentations:** [www.setatwork.eu/events/100525\\_SE\\_Bioenergy.htm](http://www.setatwork.eu/events/100525_SE_Bioenergy.htm)

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For further information about SETatWork matchmaking events in Sweden, contact:  
**Pernilla Holgersson**, [KanEnergi](#) - [pernilla.holgersson@kanenergi.se](mailto:pernilla.holgersson@kanenergi.se)

**SETatWork Networking Workshop during 18th European Biomass Conference & Exhibition - Monday, 3 May 2010 - Lyon Convention Centre - Cité Internationale - France**

The global society is faced with a huge challenge in order to meet the threat given by global warming.

The project **SETatWork - Sustainable Energy Technologies at Work** aims to meet this challenge through the collaboration and partnerships between organisations in EU, Asia and South America, supported by the EU's Seventh Framework Programme (FP7).

In this context, an **EU ETS match-making event** was organized as a side event during the [18th European Biomass Conference](#) with the following objectives:

- to promote the implementation of innovative and sustainable technologies in companies that participate in EU Emissions Trading System
- to match stakeholders involved in energy efficiency and savings in European industry sectors for realization of energy efficiency and saving projects

In the final part of the workshop, a "networking cocktail" was organized where participants had the opportunity to share experiences and discuss "face-to-face" regarding new business opportunities.



**View the Report of this Event** (4337 Kb PDF):

[www.setatwork.eu/events/100503\\_Report\\_Networking\\_Workshop\\_Lyon.pdf](http://www.setatwork.eu/events/100503_Report_Networking_Workshop_Lyon.pdf)

For further information about SETatWork match-making events in Italy, contact:

**Filippo Vivarelli** - [filippo.vivarelli@etaflorence.it](mailto:filippo.vivarelli@etaflorence.it), [ETA Florence - Renewable Energies](#)

**Reports from Matchmaking and Training events in Germany**

For further information about SETatWork matchmaking and training events in Germany, contact:

**Josef Konradl**, [KEWOG Städtebau GmbH, Unit ZREU](#) - [j.konradl@kewog.de](mailto:j.konradl@kewog.de)

**Energy efficiency measures for German ETS industries**

KfW, Frankfurt, Germany - 25 February 2010

At the end of February 2010, a SETatWork training workshop, organised by **KEWOG Städtebau GmbH** in cooperation with KfW Bankengruppe, took place in Frankfurt. The workshop aimed at informing ETS companies about EU energy policies and latest developments in the carbon market on the one hand and at showing best practice of energy saving energy management systems and technologies on the other hand.

In the morning session, the Copenhagen Accord as well as the amended EU Emissions Trading Directive were analysed and discussed. In the afternoon session experts gave insights into innovative energy processes and technologies like heat recovery, combined heat and power, energy management systems and reduction potential of compressed air leakages.

The workshop was well attended by around 50 participants and provided the ETS industry a platform to learn and discuss about carbon markets as well as about innovative energy efficient technologies in industrial processes.

**Further information and presentations:** [www.setatwork.eu/events/100225ewee.htm](http://www.setatwork.eu/events/100225ewee.htm)

**B2B matchmaking event for more innovation and less CO<sub>2</sub>**

IHK München - 10 March 2010

Heating and cooling are both major factors influencing energy consumption in companies. In order to prove the energy saving potential of innovative heating, ventilation and air-conditioning systems and to offer a marketing platform for technology providers, **KEWOG Städtebau GmbH** and Chamber of Commerce, Munich, joined forces to organise a matchmaking event with focus on HVAC technologies.

The SETatWork matchmaking event was attended by around 90 participants that could benefit from presentations that portrayed the energy saving potential of intelligent technology like solar cooling, fuel switch or re-cooling of chillers. Seventeen innovative technology providers presented their products and services and were available for personal talks with the companies interested in energy saving heating, ventilation and air-conditioning processes.

**Carbon Market Development and SETatWork Intervention**

**CDM projects in CHILE:**

**Investigation of potential of biogas production from waste as a CDM project**

Prepared by: [Asesorías Profesionales P. Lehuedé Ltda \(APLE\), Chile](#)

Prepared: June 2010 Published: July 2009

The Clean Development Mechanism is the flexible mechanism of the Kyoto protocol that enables offsetting of emissions through climate friendly projects in developing countries. A number of implemented CDM project activities include biogas production. Chilean consulting firm APLE (Asesorías Profesionales P. Lehuedé Ltda) is today in the process of developing two CDM projects related to biogas production from waste.

Using the two APLE projects as examples, the thesis investigates if biogas production from waste as a CDM project is an interesting business idea, what environmental problems in Chile the biogas projects can solve, if the studied projects contribute to technology transfer and if the studied projects can be characterized as additional. The first part of the work was a field study in Chile where information of the APLE projects was

collected. Calculations of emission reductions were then made with the help of UNFCCC approved methodologies. The field study was complemented with literature studies.

Biogas projects can come with large emission reductions if the organic waste without the project would have been left to decay anaerobically emitting methane to the atmosphere. Using the biogas for production of heat and/or electricity will further increase the emission reductions. In the first studied project organic waste from a factory producing broiler meat will be digested for biogas production. The biogas will be used for production of electricity and heat which is consumed in the factory. The emission reductions are relatively small in this project since only part of the waste decomposes anaerobically in the baseline scenario. In the second project organic compounds in industrial wastewater is digested for biogas production. The wastewater originates inter alia from salmon farming. The biogas is used for electricity production. This project comes with large emission reductions since all wastewater is treated in anaerobic lagoons emitting methane in the baseline scenario.

Both projects are profitable. In the second project, but not in the first, carbon finance is essential for the profitability of the project. However, due to technical barriers both projects can be seen as additional. The projects have several positive environmental impacts such as reduced eutrophication, increased land-use efficiency and reduced risk of groundwater contamination from landfill leachate. The second project will also significantly improve the sanitary conditions in the salmon farming industry. Controlled anaerobic digestion is a new technology in Chile and both projects will contribute to technology transfer.



**View the full report** (943 Kb PDF): [www.setatwork.eu/downloads/SCS\\_Chile.pdf](http://www.setatwork.eu/downloads/SCS_Chile.pdf)

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## Update on European Union

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### European Strategic Energy Technology Plan (SET-Plan) - Towards a low carbon future

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Four European Industrial Initiatives of the Strategic Energy Technology Plan were launched on **3 June 2010** in Madrid (see: [ec.europa.eu/energy/technology/initiatives/initiatives\\_en.htm](http://ec.europa.eu/energy/technology/initiatives/initiatives_en.htm))

- Wind
- Solar (Photovoltaics & Concentrated Solar Power)
- Electricity Grids
- Carbon Capture & Storage

During the event, both the public and private sector engaged in the adventure of accelerating the development of low carbon technologies.

By doing so, the European Commission, the Presidency of the European Union (Spain), the co-Chairs and Members of the SET-Plan Steering Group, and high-level representatives of the 4 industries have agreed to support:

- Technology Roadmaps (2010-2020) including concrete action plans to develop the technologies and improve their competitiveness,
- Implementation Plans which focus on the priority actions for 2010-2012 and
- light and non-bureaucratic governance structure that involves all of us while preserving full sovereignty over the use of our own resources.

The next step will be to put into operation the actions envisaged by the four sectors. Effective European projects which will make better use of public and private resources and get the most out of them will be developed. These projects will bring the technological competitiveness to the European industries and will pave the way towards a European low carbon economy.

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**Find out more at:** [ec.europa.eu/energy/technology/set\\_plan/set\\_plan\\_en.htm](http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm)

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## SETIS - the Information System of the European Strategic Energy Technology Plan (SET-Plan)

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SETIS's purpose is to efficiently collect, harmonise, validate, analyse and disseminate information on the priority energy technologies identified by the SET Plan, across the EU. The goal is to provide undisputed and transparent data and methodologies to support the strategic planning, monitoring and evaluation of the European Energy Technology policy.

The SETIS website contains data and methodologies supporting decision-making on the SET Plan. They relate to energy technologies identified as key to moving towards a low-carbon future in Europe.

SETIS is managed by the European Commission, with its Joint Research Centre (JRC) at the heart, assuring the neutrality and objectivity of the data.

JRC works in close collaboration with other Commission services and EU Member States as well as with European stakeholders such as the European Technology platforms, industrial stakeholders, trade associations, the European Research Alliance, European Industrial initiatives and international organisations.

For supporting the strategic planning, monitoring and review of the SET-Plan, SETIS continuously develops two core activities, whose results are based on its own research:

- **Technology mapping:** key information on the status and prospects of low-carbon technology with respect to EU policy goals;
- **Capacities mapping:** an estimation of the current public and private research and development (R&D) expenditures across the EU-27 on the priority energy technologies.

In addition, SETIS has developed an Energy Cost Calculator based on an extensive and transparent cost analysis. It compares cost prospects for different technologies and shows the main elements that contribute

to the cost of production. This information can be used to analyse where the critical efforts should be targeted.

**Find out more at:** [setis.ec.europa.eu](http://setis.ec.europa.eu)

Two presentations by Peter Luby, ECB Bratislava, SETatWork contact for Slovak Republic

During March and April 2010, Peter Luby from ECB Bratislava, SETatWork contact for Slovak Republic, prepared two presentations on the impact of EU Directives on Sustainable Technologies in Europe. Further information and the presentations can be found in the SETatWork Database:

**Carbon Capture and Storage in View of EU Climate Policy and Directive 2009/31/EC**

See: [www.setatwork.eu/database/products/R168.htm](http://www.setatwork.eu/database/products/R168.htm)

**Renewable Energy Sources in Europe in View of the EU 20-20-20 Target and Directive 2009/28/EC** - See: [www.setatwork.eu/database/products/R169.htm](http://www.setatwork.eu/database/products/R169.htm)

14 more Good Practice Case Studies Published by SETatWork

Since the last newsletter, a third set of Good Practice Case Studies (GPs) produced by SETatWork project partners have been published on the website. These cover a range of technologies and industries including:

- Biomass co-firing, fuel switch and CHP plants in Poland
- Energy efficient and biomass District Heating and CHP plants in Bulgaria
- National Action Plan for Energy Efficiency and large scale solar thermal installation in buildings, Portugal
- Use of waste heat in the chemical industry and fuel switch and increased energy efficiency in natural gas heating in industry, Germany
- Implementation of Combined Cycle Power Plant, Czech Republic

SETatWork Good Practices are currently in the process of being incorporated into the **Case Studies search** section of the SETatWork database.

**Search the Database for Case Studies:** [www.setatwork.eu/database/submenu/Scs.htm](http://www.setatwork.eu/database/submenu/Scs.htm)

**View all the SETatWork Good Practice case studies:** [www.setatwork.eu/gp.htm#gps](http://www.setatwork.eu/gp.htm#gps)

**Add your own case study to the Database:** [www.setatwork.eu/gp.htm#howto](http://www.setatwork.eu/gp.htm#howto)

Click on the links below to view the fourteen new Good Practice case studies:

SGP35: PGE Turów Power Plant, Poland



[Download SGP35](#) (166 Kb PDF) - 2009

The objective of this project was the reduction of emissions to the atmosphere.

The new installation for biomass co-firing has been put into operation in June 2009. It is integrated with two lignite fired fluidized bed boilers. This investment is PGE's another project resulting in reduction of emissions to atmosphere.

SGP34: PGE Lublin CHP, Poland



[Download SGP34](#) (156 Kb PDF) - 2002

The investment was voluntary action of the company but influenced by EU/national regulations.

The project resulted in significant environmental (e.g. lower CO<sub>2</sub> emissions), economic (e.g. power savings) and social (e.g. image improvement) benefits. Calculation of CO<sub>2</sub> emissions reduction is based on chemical energy consumption during heat generation process. Average annual chemical energy (for 8 years of CCU exploitation) is on the level of 10.042.614 GJ.

SGP33: PGE Kielce CHP, Poland - New renewable energy generating capacity installed – biomass displacing higher emitting sources



[Download SGP33](#) (170 Kb PDF) - 2008

The new heat and power cogeneration unit in Kielce CHP has been put into operation in December 2008. The unit consist of separated coal and biomass boilers and following devices: steam boiler OR 50, fuel: coal, steam production: 50 t/h; steam boiler OR 50, fuel: biomass, steam production 20 t/h; back-pressure turbine set, installed capacity: 10,5 MWe, additionally heat station: 30 MWt.

Two separated steam boilers are working on one turbine. Applied technology is using BFU (BI-FUEL UNIT) technology. The new unit in Kielce CHP is very unique and the first one in Poland that enables to burn coal and biomass (energetic willow, wood chips) separately.

SGP32: PGE Gorzów CHP, Poland - Turbine switch between coal fired boilers and Combined Cycle unit during summer season



[Download SGP32](#) (164 Kb PDF) - 2008

The objective of this project was to switch off two back-pressure turbine sets (T4, T5) integrated with combined cycle unit and to replace them by more efficient pass-out and condensing turbine (T6). Furthermore it is noteworthy that T6 turbine was primary integrated with high emissive coal fired boiler that has been shut down.

#### SGP31: RES-biomass utilisation in District Heating, Bansko, Blagoevgrad Region, Bulgaria

 [Download SGP31](#) (161 Kb PDF) - 2005-07

The objective of this project was the construction of a heating station together with heat transmission network, biomass (wood waste) fueled for production of hot water (115/70°C) for space heating and domestic hot water preparation for industrial sites, administrative and dwelling buildings, hotels.

#### SGP30: Energy Efficiency in District Heating, Vratsa, Bulgaria

 [Download SGP30](#) (274 Kb PDF) - 2004-05

The objective of the project was to carry out a renovation of district heating station implementing a CHP unit based on internal combustion engine fuelled by natural gas.

The project was executed in DHC Vratsa, Bulgaria. It included instillation of a CHP unit based on reciprocating gas engine Wartsila 16V25SG plus generator. There are two gas engines + generators + boiler-utilisators installed with the overall capacity of 12,1 MW of which 6 MW electrical capacity.

#### SGP29: Energy Efficiency in District Heating, Burgas, Bulgaria

 [Download SGP29](#) (221 Kb PDF) - 2005-06

The objective of the project was to carry out a renovation of district heating station implementing a CHP unit based on internal combustion engine fuelled by natural gas.

The project was executed in DHC Burgas, Bulgaria. It included instillation of a CHP unit based on reciprocating gas engine Wartsila 16V25SG plus generator. There are six gas engines + generators + boiler-utilisators installed with the overall capacity of 37 MW of which 18 MW electrical capacity.


#### SGP28: Energy Efficiency in District Heating Pleven

 [Download SGP28](#) (174 Kb PDF) - 2007-08

The objective of this project to carry out a renovation of district heating station implementing a CHP unit based on a gas turbine.

The project was executed in DHC Pleven, Bulgaria. It included instillation of a gas turbine and boiler-utilisator, after which the produced steam is fed to the existing main steam collector and feeds the respective steam turbine. A heat exchanger is installed at the outlet of the boiler-utilisator to utilize the heat of exhaust gases using water as a heat carrier. The overall capacity of the unit is 108 MW of which 32 MW electrical capacity.

#### SGP27: PNAEE - Portuguese National Action Plan for Energy Efficiency

 [Download SGP27](#) (213 Kb PDF) - 2008-15

The implementation of this plan will allow an energy saving of approximately 1,792 thousand tonnes of oil equivalent (toe) in 2015, which corresponds to savings of 9.8% in comparison with the reference period defined in the European Directive.

#### SGP26: ClimaEspaço – Tri-generation system

 [Download SGP26](#) (458 Kb PDF) - 1995-98

Tri-generation system that uses natural gas to produce electricity, heat and cool, in order to cover all the thermal necessities of several buildings suited in "Parque das Nações", namely buildings cooling and heating and water heating.

#### SGP23: Caixa Geral de Depósitos Solar thermal central

 [Download SGP23](#) (551 Kb PDF) - 2008

Installation of solar thermal panels in the roof of the Head Office of Caixa Geral de Depósitos (Public Bank) in Lisbon, in order to cover the thermal energy needs of the building.

This is the biggest solar thermal centre of Portugal, and one of the biggest installed in a roof in Europe.

#### SGP22: Lanxess AG: Redundant thermal decomposition of residual nitrous oxide (N<sub>2</sub>O)

 [Download SGP22](#) (238 Kb PDF) - 2009-2012

LANXESS operates an adipic acid production plant at the industrial park in Krefeld-Uerdingen, Germany. Adipic acid production exists in Uerdingen since 1953 and the current installation is running since 1987. Adipic acid is used primarily as the main constituent for nylon production and is also used as carrier for fragrances, for the treatment of leather, in coatings, synthetic lubricants and fibres, photo chemicals, plastics and more.

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#### SGP14: Bayerngas eco-bonus: fuel switch and increase of energy efficiency

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 [Download SGP14](#) (160 Kb PDF) - 2008-2012

By paying an eco bonus, the program of activities (PoA) encourages commercial and industrial customers to convert the existing heating systems running with fuel oil, coal or liquid gas to natural gas-fuelled heating systems.

The aim of the project is to reduce the GHG emissions by conversion to natural gas-fuelled boilers and direct heating systems as well as by the subsequent increase in efficiency. This leads to replacement of older, more emission intensive heating systems in favour of more environmentally friendly heating systems with natural gas-fuelled boilers and direct heating systems.

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#### SGP5: Implementation of Combined Cycle Plant 841MW in Power Plant Počerady – CEZ, Czech Republic

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Power Plant Počerady 1200 MW is located in North-West of Czech Republic, close to border with Germany. It is one of the biggest coal-fired power plants in the Czech Republic. Its owner is ČEZ a.s., one of the biggest private utilities in Europe. PP Pocerady has six blocks, capacity 200 MW each. All of them are fired with domestic brown coal causing high level of emissions GHG, mainly CO<sub>2</sub>.

In June, 2009 ČEZ concluded a contract with ŠKODA PRAHA Invest. for the design, supply, procurement, erection and commissioning of a Gas Turbine Combined Cycle (GTCC) powerplant capacity 841 MW. to be built in Pocerady. Its construction will start early 2010. Development of this GTCC plant will be in progress in the period from October 2010 to April 2013. Project costs are of the investment amounts approx 800 Mill. EUR.

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