EGEC NEWS

THE VOICE OF GEOTHERMAL ENERGY IN EUROPE

Issue n°11 September 2010

WELCOME… to the new EGEC Newsletter in 2010!

A word from the (re-elected) EGEC president:

SVG-president Kathy Riklin with SVG founding president Jules Wilhelm (2nd from right), framed by IGA-president Ladsi Rybach (right) and EGEC-president Burkhard Sanner (left) (Photo: SVG/Wellstein)

Dear members of EGEC, dear readers of this newsletter,

let me start with a piece of history, again. Following an initiative by Hans Rickenbacher, then member of the Bern parliament and subsequent long-term secretary of the association, the Swiss Geothermal Association SVG/SSG was founded in 1990. This event was commemorated with a ceremony in the famous "Dock C" building (a.k.a. Dock Midfield) of Zurich Airport at Kloten, on 25.8.2010. This building was also the first to receive the new Swiss Geothermal Award (Schweizer Geothermiepreis) for its outstanding heating and cooling system based on energy piles. SVG president Kathy Riklin and a representative from the airport unveiled the related plaque in the public observation area of Dock C. Being personally a member of SVG since 1990, I was happy to attend this unique event – and look forward to 25 years of SVG!

EGEC sends congratulations to its founding member SVG for 20 years of successful service to the geothermal community in Switzerland and Europe, and wishes all the best for the future work!

September 13, 2010 marked the end of the term of the 4th EGEC board (2007-2010). At the Annual General Meeting, held in the Renewable Energy House in Brussels in conjunction with a strategy workshop, EGEC members elected a new board for 2010-2013. The growing number of members (>110, all of them associations, institutions, companies or professionals) and the many volunteers for board duty resulted, for the first time, in electing all board members in a secret ballot. Also new coordinators for the various technical and non-technical duties have been appointed; please see full details on page 8 of this newsletter.

I wish, personally and on behalf of EGEC, to thank all board members and coordinators of the 4th term for their service and support, in particular those who are retiring from the board.
And I am happy to enter into the 5th term with a splendid team!

On the policy front, many things happened, so please find the info in this newsletter. The NREAPs received until now, for instance, show clearly that many decision makers do not yet know the geothermal potential. Our educational goal from the Ferrara Declaration 1999 still is not fulfilled!

Burkhard Sanner

This Issue

POLICY

National Renewable Energy Action Plans: Delivery starts !

The 30th of June 2010 was the date for each of the 27 EU Member States to hand in their National Renewable Energy Action Plans (NREAPs) to the European Commission under the Renewable Energy Directive.
Until now, 21 plans have been presented but we expect all Member States to submit their plans in the coming weeks. The NREAPs will give an overview of the development of the renewable energy sector until 2020 as well as detailed information on measures to reach the targets. One year after the entry into force of the Renewable Energy Directive, EU Member States have to outline how they intend to reach their national binding targets by 2020. The Renewable Energy industry anticipates ambitious and consistent action plans ensuring that the EU meets - and even exceeds - its 20% renewables target by 2020. Support measures should be sufficient to ensure the achievement of the binding targets. The plans will also present new measures to comply with the directive, especially to support renewable heat, the "sleeping giant". A large range of technologies should be supported to diversify the energy mix of the Member States and ensure increased security of supply.

Indeed, many NREAPs already published base their actions only on Wind, Solar and Biomass. The geothermal contribution is underestimated or forgotten:

- In some countries, where geothermal plants (direct uses, geothermal heat pumps) are already existing, they are not counted in the NREAPs.
- Although there are geothermal power plants under construction (ca. 200 MWe) in several Member States, no targets are fixed for 2020.
- The availability of geothermal plants is really underestimated, and in some Member States the scenario is less than business-as-usual.

The geothermal technology has many advantages:

- it produces electricity, heating and cooling. Cascade uses are also possible to improve the economic performance
- the geothermal resource is present in each EU Country - the Earth !
- the availability of the resource all day and night, throughout the year: a renewable base load to the grid, operating up to 100% of time, without storage.

But, what could seem an advantage, is in fact a major barrier: the lack of visibility.

The geothermal industry being confident to reach a minimum 4 GW electrical installed and a heating & cooling production of 10 Mtoe, is sure the 20% target will be over-reached by 2020 thanks to its geothermal contribution.
Early this year, the 27 EU Member States indicated already in their 27 forecast documents that the EU will exceed 20% renewable energy by 2020. In economically challenging times, Europe needs a strong future-oriented industry and creation of new jobs. Now Member States need to capture the economic, environmental and social benefits of developing renewable energy technologies nationally.

Towards the creation of a new European Financial Facility for RES

On December 09, 2009 the EC approved a series of offshore wind and carbon capture and storage (CCS) projects that will receive over € 1.5 billion from the EU's economic recovery fund. With the funding amount of € 2.3 billion to gas and electricity projects, the budget for energy projects (€ 3.98 billion) is 97% committed.
End of May 2010, the EC proposed a new regulation for the 3% unallocated, in order to create a financial facility for sustainable energy projects.
MEPs from the Industry, Research and Energy Committee (ITRE) approved the report for modifying the EC regulation on the European Economy Recovery Plan. The unspent money from euro 3.98 billion EEPR will be used to create a facility for financing RES. Municipal, local and regional authorities that fund public and private schemes will be eligible for the money.

EGEC proposed to have the risk mitigation added as eligible expenses. This amendment has been voted positively with a large majority in the ITRE committee.
The final EP vote in plenary session is expected in November 2010.

The recast EPBD is officially published!

Directive 2010/31/EU on the energy performance of buildings has officially been published on the 18th of June 2010

NER300: the 1st call expected soon

During the meeting of the geothermal panel (RHC-Platform), the EC presented in details the NER300. The European Commission also mentioned the date expected for the 1st call: before end 3 Quarter 2010. The second call will be in 2013.
Some Member states started activities: France launched a call for interests, Sweden and Czech Rep. will organise events on NER300, UK-Ireland and The Netherlands published guidelines. visit www.ner300.com for all details.
Moreover, the EC launched a call to have evaluators for project applications under the NER 300 initiative. Three will be selected for geothermal > EGS.

France established a new financing framework for geothermal

Firstly, with the beginning of the new year, France has announced a higher feed-in tariff for geothermal, biomass and building integrated solar photovoltaic. Finally a French decret has just presented the new french FiT for geothermal power.
The french arrêté detailing the Feed-in-tariff for geothermal electricity production has been published in the "Journal officiel" on 24th of July. The reference tariff in metropolitan France is 20 c€/kWh, and in french overseas departments it is 13 c€/kWh. A bonus for energy efficiency can be added: 8 c€/kWh in metropolitan France and 3 c€/kWh.

Secondly, France establishes a new € 1.35 Billion Renewable Energy Fund which will support the development of cutting-edge clean energy technologies.
The program, titled Renewable Energy and Green Chemistry Demonstration, will offer € 450 million in subsidies and € 900 million in low-interest loans over the next four years for new technology projects.
In particular the new government initiative will focus on financing emerging technologies which face high startup costs. Such technologies include advanced biofuels, and marine, geothermal, and solar energy. Until now, the government has focused on funding the more established nuclear and wind sectors.
The government is seeking an additional € 2 billion investment from the private sector for the Renewable Energy and Green Chemistry Demonstration program.
This may only be the beginning of a set of new renewable energy investment plans from the French government.

Thirdly, EGEC would like to draw your attention to a new funding scheme that has been set up in France for SMEs developing new services connected to sustainable buildings. This can be for example
- Improved integration of RES into buildings
- a new business / financing model for RES in buildings, such as lease or ESCO models
- anything related to operation and maintenance of RES in buildings by an external service provider
- advice to interested building owners on the RoI of RES in buildings, the CO_2 footprint of RES in buildings, or the projected energy yield
- etc.

The new funding is worth 15.000 EUR, easy and quick to access – really SME-friendly. Check out the call information (in English or French) for more details:
http://www.oseo.fr/a_la_une/agenda/appels_a_propositions/appel_a_projets_greenconserve
http://www.oseo.fr/a_la_une/agenda/appels_a_propositions/appel_a_projets_remake

Dates announced for the EUSEW 2011

The next EU Sustainable Energy Week (EUSEW 2011) will take place between 11 and 15 April 2011 in all Europe and Brussels, with a special focus on energy efficiency. You can participate to this European campaign by organizing events in your town, city or region.

NEWS

New FP7 call for proposals published !

The new FP7 calls for proposals have been published on 22/07/2010. One concerns directly geothermal energy > Supporting the coordination of national research activities of Member States and Associated States in the field of GEOTHERMAL energy (ERA-NET) Other calls can be interested for your geothermal project ideas. This call will be discussed during next meeting of TP geothermal on 14/09/2010 morning in Brussels.

EU and African leaders launched a new renewables cooperation programme

At a meeting of the Africa-EU Energy Partnership (AEEP) in Vienna on 14 sept., EU commissioners launched the Renewable Energy Cooperation Programme (RECP) with €5 million funding. This programme aims to bring relevant renewable energy technologies (among them geothermal) to Africa to contribute to the African renewable energy targets for 2020.
During the conference, Kenya has urged the European Union to set up an insurance fund to cushion the African governments against investments in energy production projects. Energy minister Kiraitu Murungi told the African-EU high level partnership meeting that lack of such an insurance, was holding back most developing countries from venturing into such projects.

Crédit Suisse says: Geothermal least expensive alternative energy technology

Geothermal power is supposed to be the least expensive alternative energy technology in cost per MWh according to a report by Crédit Suisse. Therefore, the cost per MWh is at $36 for geothermal power followed by wind with $43 per MWh and the most expensive being solar crystalline with $153 per MWh.

Al GORE loves geothermal !

In an article published by the European Energy Review, Karel Beckman writes "The greatest fan of geothermal energy is no one less than Al Gore, former Vice-President of the USA. 'Geothermal energy', he writes in his latest book "Our Choice", the successor to his world famous "An Inconvenient Truth", is potentially the largest – and presently the most misunderstood – source of energy in the … world today.'"

Japan could be a geothermal energy leader

A prominent US environmentalist said that Japan should focus on developing geothermal energy, saying the volcanic island-nation could become the global leader in the field. Japan is located at the crossroads of four tectonic plates and on what is known as the "Pacific Ring of Fire" and dotted with volcanoes, is one of the world's most quake-prone countries. "Japan could make geothermal energy the centre of its new energy economy just as the US or China will make wind the centre of theirs," Lester Brown, president of the US-based Earth Policy Institute. Japan makes use of hot springs as a resource for tourism, but geothermal energy only accounts for 0.3 percent of its energy mix, and the country relies heavily on imports of oil and other resources.

DECC launched a Deep Geothermal Fund in UK

The Deep Geothermal Energy Fund, administered by the Department of Energy and Climate Change, will be open to applications until 29 October. The fund will help companies carry out exploratory work needed to find viable sites for this technology.

Irish Rock band U2 supports geothermal plant

The Dora-1 geothermal power plant in the Aegean province of Aydın, Turkey will financially be supported by the famous Irish rock band U2. An environment-friendly project has been put in place, raising around $ 450,000 for 4 projects, among them the Turkish geothermal power plant. When traveling to concerts of the so-called "Live Nation U2 360 Tour", their fans will be able to balance their average carbon emissions by purchasing an offset certificate from one of the four projects for $1.89. A special website has been established, explaining each of the 4 projects and making the purchase of offsets from one the projects easily possible. Follow this link to get to the website http://offsetoptions.cloudapp.net/u2-360/Offsetting.aspx?lang=en&user=9417ecb7-0d97-4bb8-aeeb-747a5d56c327

Geothermal power projects in Turkey and India : search of partners

The subsidiary of a Swiss company having 3 geothermal exploration licenses in Turkey, is looking for partners in a JV. As for the funding needs, they are looking for a senior partner with a proven track record to act as project manager (expertise in raising capital for this type of projects). One of the large Indian groups is setting up a Geothermal Power Plant in India and they are looking for expertise from Europe. First information: 2 x 25MW geothermal power plants in Andhra Pradesh, all Govt. permissions already through. This Indian partner is looking for consulting, technology, investment, partnership.

News on deep geothermal projects in Netherlands and Denmark

Deep geothermal projects knows a new start in traditional regions like France (Paris Basin) and Hungary, and new countries are developing geothermal energy:
The Netherlands: During July, Huisman's LOC 400 drilling rig began a second geothermal project in the Netherlands, this time in the city of The Hague.
Denmark: Sonderborg Geothermal dig breaks ground! Sonderborg Fjernvarme and DONG Energy are drilling on this new geothermal site. It will host the geothermal well and facility that will supply a large portion of Sonderborg's heating in the future from a climate-friendly source. It will not be long now! Sonderborg will soon become the third place in Denmark where clean, CO2-neutral heat will be literally pumped right out of the ground. If all goes according to plan the facility will supply Sonderborg city with a third of its annual consumption of district heating by the year 2012. The Project is an important part of the Sonderborg-areas vision of ZEROcarbon.

Two million euros to be invested in new Romanian greenhouses heated by geothermal water

Two million euros have been invested by Transgex Co. to construct a bio-heated greenhouse range in Livada, Romania, for the production of tomatoes. The greenhouses, cover nearly 5 acres, are expected to produce a minimum of 800 tons of tomatoes. Transgex also plans to invest 50,000 euros to operate a refrigeration storage unit with a 30-ton capacity. The first 100 tons of this year crop are already sold to markets in the Romanian counties of Bihor, Cluj, Sibiu and in neighboring Hungary. Transgex expects to add additional greenhouse space to sell products in European Community markets.

Declaration for geothermal energy signed in Poland

A declaration on cooperation for geothermal energy in Poland was signed at the Ministry of the Environment in Warsaw on March 8 during Conference titled Development of Geothermal Energy Sector in Poland. It was stressed that geothermal energy contributes to sustainable development based upon economic and social development in harmony with environmental requirements while increasing energy safety and reducing Poland's dependence upon foreign energy sources. The national commodity balance and the external account also improve. The energy industries develop, too, thus contributing to creation of additional jobs, and export of the state-of-the-art technology increases, it was noted in the declaration. "Although we have no geysers in Poland, such as Island has, Poland's geological structure provides the opportunities to using geothermal waters for economic purposes. The changes introduced recently in the Polish Geological and Mining Law are in favour of both the geothermal sector and the possibility to use the resources provided by the National Fund for Environmental Protection and Water Management, and those make up an essential component of these opportunities" chief geologist Henryk Jezierski explained.(MoE/RK)

Geothermal heat directly available in East Macedonia

Whilst in countries such as the Netherlands millions have to be invested and time consuming procedures have to be followed to bring the geothermal heat to the surface, growers in Macedonia may use the existing pipes running through the "Green Park Kocani" area. The pumping station already feeds 2 greenhouses via 3 main pipes (type venlo 3.20 year of construction 1975-1982) on a total of 18 hectares all together with the Locani district municipal heating. The (old) greenhouses use about 300,000 m3 each winter season for every 6 hectare of tomatoes and cucumber cultivation. The length of the properly insulated transport pipe is 5 kilometres and runs across an area, in which early (covered) open ground cultivation was possible. The temperature of the water is a minimum of +70C°/m3. Geothermal water has a heat value of 64kWh/m3 or 55,000 kcal/m3 when using a heat exchanger (source: KJP Vodavod). The

remaining heat of the water +20C°, can directly or through various technical provisions, e.g. solar energy, be used again, also by using a filter installation for irrigation or even for the production of purified spring water for consumption.

Galena explores geothermal potential in Chaves (Portugal)

Galena is the holder of a geothermal exploration concession at and surrounding the town of Chaves, Portugal, where historic hot springs indicate the presence of geothermal resource that potentially may be exploited to generate electricity. The concession covers an approximate 200km2 area, which includes a protected zone at the historic hot springs and a few adjacent shallow wells. The area is easily accessed by major and minor roads, population density is moderate, and water is abundant and should be available for the Company's future drilling programs. The Chaves geothermal region was extensively studied by academic/scientific interests in the early 1990's, with funding from the EU, directed towards exploration of the geothermal resource. Only a few shallow wells are present in the area and no deep drilling was done, but the studies indicate that further exploration is warranted. The Company has a proposed exploration work program, which includes more comprehensive collection and evaluation of existing data, geophysical studies, and drilling to shallow and intermediate depths to define the subsurface temperature distribution. If warranted, further drilling of deep production diameter wells will be needed to confirm the resource. GeothermEx prepared for Galena International Resources Ltd. the independent technical report, resource evaluation of the Chaves Geothermal prospect.

First Geothermal projects in Serbia

Reservoir Capital Corp. reported that its wholly-owned subsidiary, Southern European Exploration D.o.o. has signed a Business and Technical Cooperation Agreement with Jumko A.D., to evaluate the existing geothermal wells operated by Jumko, within the Company's Vranjska Banja exploration permit located in Southern Serbia. Jumko holds a two hectare exploitation permit with two geothermal wells (VG-2 and VG-3) that were drilled for district heating of an industrial complex. The VG-2 well intercepted several hot water aquifers, the best of which measured 126 degrees centigrade between 864-890 metres depth. The VG-3 well intercepted a zone containing three intervals with measured temperatures of 124 degrees centigrade, between 1,500 and 1,575 metres depth. Under the terms of the Agreement, the Company has an exclusive one-year period to complete detailed technical and feasibility studies. The Company's Vranjska Banja exploration permit covers 1,750 hectares in area and completely surrounds the Jumko permit. Since receiving the exploration permit in November 2009, the Company has used existing geophysical data (magnetics and gravity) to define target areas and this March began detailed magnetic surveys, mapping and water geochemistry studies. Reservoir Capital Corp. is a Canadian public company whose operations are focused in Serbia with a mandate to acquire and develop natural resource opportunities in Serbia and Southeast Europe. It is a Southeast Europe focused project generator, investing primarily in renewable energy. The Company holds two hydroelectric projects, Brodarevo 1 and 2, with 55MW of potential capacity undergoing pre-feasibility studies and an application in process for a third at Vrutci with 32MW potential capacity, all in southwest Serbia. Reservoir currently holds four geothermal licenses and a portfolio of precious and base metal exploration projects. Reservoir's common shares trade on the TSX Venture Exchange under the symbol "REO" and on the Frankfurt and Berlin exchanges under the symbol "ROC".

Moreover the European Commission has launched an invitation to tender in June 2010 to finance a technical assistance for the Serbian Ministry of Energy ; It aims at analysing the legal framework, seeing the possibility to establish a feed-in tariff, evaluating the geothermal potential and making pre-feasibility studies on CHP geothermal power plants.

A first geothermal power plant is Slovakia to be built

Slovakia sees development of its first geothermal power plant by Geoterm, a JV of local players and the Ministry of the Economy. The project expects a plant of 8-9MW for a cost of EUR30 million. The first geothermal power plant in Slovakia is currently being planned in the eastern part of the country, the Košice basin.

First geothermal power plant project in Croatia

The first geothermal power plant in Croatia is going to be constructed in Velika Ciglena, Bjelovar. The construction licence for the plant should be obtained by the end of 2010 and it has been assessed that the construction of Marija 1 geothermal power plant will be completed in two years with an installed power generation capacity of 4.7MW and 10MW heat production. A new project is being prepared with a second geothermal power plant to be constructed in south Slavonia.

Biggest German geothermal power station to be built in the next 2 years

Over the next two years, geothermal firms Hörmann Energie und Umwelt and Geysir Europe will be investing more than € 70 Million in a geothermal project in Germany near the city of Geretsried. Drilling tests are about to start in Summer and should be finished in 2011 in order to start the power plant in 2012.

Geothermal Power Plant in Bruchsal in operation

The geothermal installation in Bruchsal, Germany, a pilot project of EnBW Energie Baden-Württemberg AG and Energie- und Wasserversorgung Bruchsal GmbH (ewb) is in operation since end of 2009, having a capacity of 550 KW and supplying around 1200 households with green electricity. During the drilling operation, a temperature of 120°C was found at about 1,900 m / 2,500 m depth. The total amount of investments in this project is about EUR 17 million. Geothermal electricity is providing our future renewable base load !

A new Geothermal Community: GEOCOM

The project Geothermal Communities will demonstrate best available technologies in the use of geothermal energy combined with innovative energy-efficiency measures and integration of other renewable energy sources in three different pilot sites (Hungary, Slovakia and Italy). In addition to the demonstration component through the parallel implementation of three ambitious development works there is also a strong complementary component of research focusing on making geothermal projects more cost efficient and technologically sound. Furthermore the project will integrate a large number of cities as project partners (from Serbia, Romania, Poland and FYROM) that either already have ongoing geothermal systems that needs the adoption of new technologies or they would like to implement new systems from scratch with the help of the project. GEOCOM is a project of the CONCERTO initiative co-funded by the EC within the FP7.
www.geothermalcommunities.eu

Planck Foundation suggests a plan for Iceland to pay debt in geothermal energy

The Amsterdam-based Planck Foundation made a proposal to the Icelandic authorities that Iceland Iceland could pay the £3.48bn it owes the UK and Holland (from the collapse of Icesave) by providing the two countries with a steady stream of green electricity instead of cash = Geothermal Energy.

GDF Suez to create "UK's largest district energy company"

The energy services division of energy provider GDF SUEZ has announced the acquisition of the Utilicom Group, which comprises companies such as a geothermal heating provider and heat and power firm. The announcement has come following a purchase agreement with the IDEX Group for energy management company IDEX Energy UK Ltd and its subsidiaries. The investment will create COFELY District Energy Ltd, which is expected to be the UK's largest district energy company. The company is set to manage a wide range of projects in the UK, including: Southampton district energy scheme, Birmingham district energy scheme, London Olympic Park and Stratford City, The Whitehall CHP scheme.

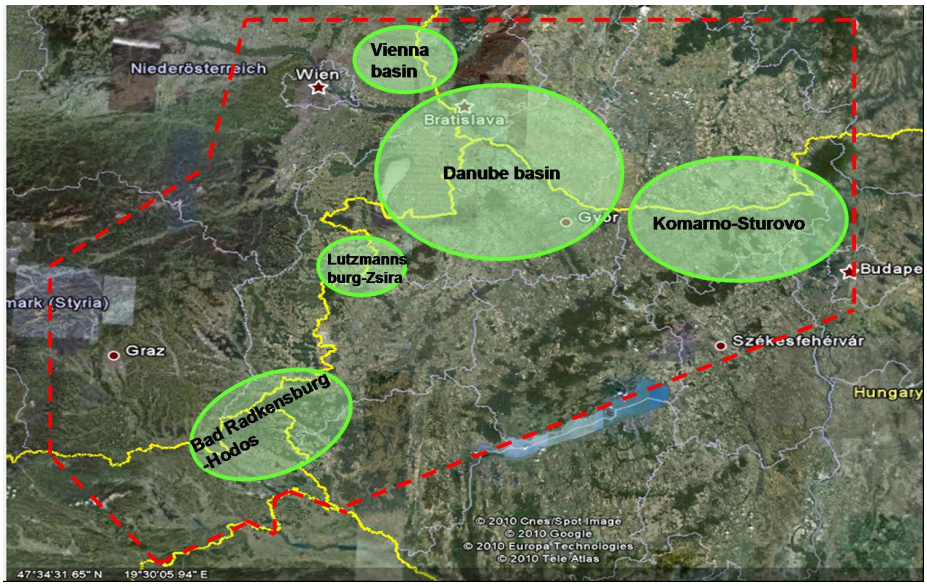
Release of the CGC Complaints Mechanism

The Canadian GeoExchange Coalition (CGC) announced the publication of the CGC Complaints Mechanism. This formal process will be used to handle complaints filed by customers, qualified companies and other industry stakeholders. Self-regulation adds to and complements existing municipal, provincial and federal regulations. While the industry's newly formalized complaint process does not substitute for existing regulatory, enforcement or legal mechanisms in Canada's various jurisdictions, it

will help CGC staff analyse and manage complaints of all sorts. CGC intends that costly legal procedures may be avoided through mediation and other informal approaches.

TRANSENERGY: Transboundary Geothermal Energy Resources of Slovenia, Austria, Hungary and Slovakia

The project „TRANENERGY" aims is to provide implementation tools based on a firm geoscientific basis for enhanced and sustainable use of geothermal resources in the western part of the Pannonian basin:



The project addresses the key problem of using natural resources that are shared by different countries in a sustainable way. Natural resources, such as geothermal energy whose main carrying medium are deep groundwaters along regional flow paths are strongly linked to geological structures that do not stop at state borders, i.e. integral parts of the entire flow system encompass vast areas (recharge areas lie in mountain regions while waters discharges from the deeply buried basement structures of intramountain basins).

The project website (www.transenergy-eu.geologie.ac.at) will be the central information medium, which will inform stakeholders and the public about the progress of the work and results.

The project aims to transfer expert know-how about geothermal resources and sustainable reservoir management to quite heterogeneous target groups (governmental authorities, experts, private investors).

NEWS from EGEC

New EGEC Board elected

During the EGEC AGM 2010, EGEC members elected a new Board for 2010-2013: B Sanner has been re-elected President ; 2 new vice-Presidents: R Bertani (ENEL) & P Ungemach (GPC IP) ; secretary and Treasurer remain M Antics & C Boissavy ; and 2 new ordinary members of the board have been elected: C Mahieux (Alstom) and T-E Musaeus (Rock Energy).

Moreover, new EGEC coordinators have been nominated: for electricity T Kaya (Turkish Petroleum) & JP Gibaud (Schlumberger) ; for heating & cooling S Basta (Geotermia) & G Szita (Porcio); for policy E Demollin (Heerlen) & R Goodman (SLR) ; for R&D J Urchueguia (Energesis) & A Manzella (CNR-IGG).

Event announcement for GeoPower Europe taking place 8-9 December 2010 in Paris, France:

The Official Conference of the European Geothermal Energy Council

Turning up the heat on geothermal energy in Europe

2nd annual European event

Paris, France: 8-9 December 2010

Jointly Produced By

GreenPower conferences and EGEC

The French Government has recently announced a **1.35bn euros program**, which aims to provide financial support to renewable projects **including geothermal**. With a 70% increase in its feed-in tariff and ground breaking research continuing into Enhanced Geothermal Systems at Soultz-san-Forets, France is the ideal location for the 2nd annual **GeoPower Europe Conference and Exhibition**.
Green Power and EGEC have once again come together to create ***the*** European industry event with an unrivalled speaker faculty and unparalleled agenda covering investment, regulation, regional experiences and plans for the future.

Don't miss the opportunity to be part of the flourishing geothermal market in Europe. Book now and save 10% .

New for 2010:
Post-Conference District Heating Site Visit. Make the most of the GeoPower Europe networking opportunities and gain first-hand practical insight of operating systems by visiting one of Paris' long-standing geothermal district heating plants. This half-day excursion to Epinay-sous-Sénart, just one hour from central Paris, has a limited number of first-come first-served complimentary passes for registered delegates. Email rebecca.jackson@greenpowerconferences.com for more details.
Plus
If you are new to the industry, or feel in need of a refresher, attend the **Geothermal Power Economics 101** training course on 7 December 2010. Available to book as a standalone course, or as a primer before the main conference, **Geothermal Power Economics 101** is designed to introduce the basics of geothermal power – the resource and the methods of harnessing it – along with its competitive positioning within the power and energy markets. Brought to you by the **Green Power Academy**, this beginners-level course will provide quality, impartial and informative information to increase your knowledge of the geothermal industry.

For more information:
http://www2.greenpowerconferences.co.uk/EF/?sSubSystem=Prospectus&sEventCode=GE1012FR&sSessionID=8ae2803966ed82ae2265bfed68f83b92-1060598

Re-thinking 2050: 100 % RES

EREC's new report on "RE-thinking 2050 – A 100 % Renewable Energy Vision for the European Union" has been published. You can download the full version of RE-thinking 2050 from www.rethinking2050.eu . In this scenario 2050, geothermal energy will be an important player (ca 20%) ! Furthermore, We cordially invite you join the list of supporters and to declare your support for 100 % renewables in 2050 on the website via designing your own free electronic postcard.
The European Climate Foundation also presented several scenarii for future energy in Europe in 2050 with 40% - 60 % - 80 % RES. To reach the objective of having 100% RES by 2050, it has been underlined that EGS will play the key role. more information on www.roadmap2050.eu

Next meetings of TP geothermal in Brussels on 14 september 2010

The European technology platform on geothermal h&c and electricity will meet on 14/09/2010 in Brussels. The shallow group will finalise the strategic research agenda of the sector and discuss training and certification issues. The deep geothermal group will meet in the morning to discuss the resource assessment and the new FP7 call, and in the afternoon a workshop on the NER 300 will be organised.

TP GEOELEC adopts a definition about EGS:

On Wednesday March 24th EGEC organized the 2nd meeting after the foundation of the Technology platform on geothermal electricity (Geoelec) at beginning of December 2009 in Munich. About 80 participants were discussing current topics amongst others the vision in geothermal development for 2050 and the definition on EGS. The vision 2050 is open to discussion and the first draft can be find on the TP geoelec section. For the further development of the vision document any geothermal player is invited to contribute to the document by end of May 2010. On the meeting in Brussels also the definition of EGS was discussed. The objective is to present to European and National Authorities a definition that could be used for R&D but also for financial incentive schemes of any nature (direct support, feed-in-tariff, etc.). After an interesting discussion finally the participants of the meeting agreed in the definition that "*An Enhanced Geothermal System is an underground reservoir that has been created or improved artificially*."

EGEC organises a workshop on the NER 300 for EGS project developers

EGEC organises on 14/09/2010 in Brussels a workshop on the NER300. It will be an opportunity for EGS project developers to listen to EC officials detailing the call and to ask questions. The call is expected for 3Q2010: September-October 2010.
Location: Regione Toscana - Ufficio di Bxl, Rond Point Schuman - 14, 1040 Bruxelles
Moreover, EGEC has prepared a guide providing geothermal project developers with all the important information on NER300, the new EC Fund. This new financing tool will notably finance four EGS project in the EU. You can find this paper on our website www.egec.org in the Member's Corner.

GEOTRAINET: Training Courses for GSHP systems

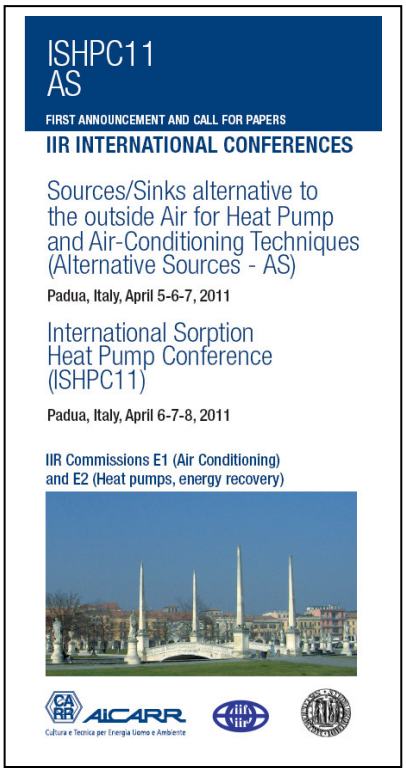
The Geotrainet project has been set up to establish a European training framework for GSHP designers and drillers. Certification of GSHP installers will be obligatory (by 2012) after implementation into National law of the RES Directive. Please find more information on the website www.geotrainet.eu

QUALICERT

QualiCert stands for "Common quality certification and accreditation for installers of small scale renewable energy systems". In anticipation of an obligation for all Member States, arising from article 4 of the RES Directive (Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC) to develop certification schemes for installers of small-scale renewable energy installations, QualiCert proposes a concerted action among different Member States on certification and accreditation of installers of small-scale building-integrated renewable energy systems. The proposal precisely addresses the RES Directive's requirement of certification schemes in each Member State that obey to a set of similar criteria and recognise each other's certification.
To guarantee broadest possible support to the future accreditation and certification scheme, QualiCert is relying on an interdisciplinary multi-stakeholder approach involving builders and installers through their EU associations, existing training providers and accrediting bodies with grassroots experience, the RE

industry through its European associations, and a number of national energy agencies. This EU-wide concerted approach will allow going beyond national discussion, which are sometimes highly politically-tainted and blocked, to have a more pragmatic, result-oriented outcome based on the best identified methodology valid for EU-27. QualiCert is also addressing the genuine market need for a comprehensive system to certify installers in order to guarantee quality installations and satisfied customers, which in turn will spur further market deployment.

ISHPC11 AS: IIR nternational Conferences - First Announcement and call for papers
Sources/Sinks alternative to the outside Air for Heat Pump and Air-Conditioning Techniques (Alternative Sources - AS): Padua, Italy, April 5-6-7, 2011
International Sorption Heat Pump Conference (ISHPC11): Padua, Italy, April 6-7-8, 2011
Call for papers: deadline is September 30, 2010.
Abstract (maximum 500 words) with the indication of corresponding author must be e-mailed as an attached doc file to the Scientific Conference Secretariat:
padova2011@gest.unipd.it.
The abstract should clearly state the objectives, methods, results and conclusions.



Objectives of the conferences and topics
Sources/Sinks alternative to the outside Air for Heat Pumps and Air-Conditioning Techniques
(Alternative Sources - AS)
Heat sources and heat sinks of heat pumps and refrigeration systems, respectively, have an immense impact on performance. The conference is aiming at joining heat sink and heat source research, development, and experience of all kind of heat pumping and refrigerating technologies, promoting the exchange of ideas among the researchers, scientists and engineers working from all over the world.
Topics: Exhaust (ventilation) air, Ground water, Ground-source systems horizontal, Ground-source systems vertical, River and lake water, Sea water, Free cooling, Simultaneous heating and cooling, Closed water loop, Waste water and effluent, Solar, Dual source
International Sorption Heat Pump Conference ISHPC11
This triennial conference is dedicated to heat pumping devices which make use of ab- or adsorption effects. Researchers, scientists and engineers find here a forum to exchange ideas and experiences on basic findings, applied topics and pilot plants regarding Sorption Heat Pumps Technology.
Topics: Absorption, Adsorption, Cogeneration, Desiccant, Enhancement Techniques, Heat & Mass Transfer, Heat Pumps, Hybrid cycles, Improved Components and Cycles, Open cycles, Solar Cooling, Surfactants, Thermodynamic Modelling, Thermodynamics and Second Law Analysis.
For additional and updated information please visit the official Conferences website:
http://www.aicarr.org/Pages/PadovaIIR2011/home.aspx

The European Geothermal Energy Council (EGEC) now benefits from an official BUILD UP Partnership

In March 2010, EGEC www.egec.org joined the BUILD UP initiative as a Partner, following an invitation from the European Commission. Replacing the former EPBD Buildings Platform since 16 June 2009, www.buildup.eu "*is a new environment for building professionals, local authorities and building occupants willing to share their experience on how to cut energy consumption in buildings*", said Andris Piebalgs, European Energy Commissioner.

The key aim of this European initiative is to reduce the energy consumption of buildings across Europe by transferring best practices to the market and fostering their uptake. BUILD UP will also keep EGEC updated about EU energy policy for buildings.

On www.buildup.eu, EGEC is enabled to interact with others and to access:

- The latest news and events in the field;
- A database of resources, guidelines and tools;
- A database of case histories.

The BUILD UP interactive web portal will catalyse and release Europe's collective intelligence for an effective implementation of energy-saving measures in buildings.

BUILD UP will increase EGEC's visibility as it allows us to:

- Announce news;
- Share library resources – such as guidelines and best practices;
- Propose events;
- Submit successful cases.

Moreover, BUILD UP enables us to launch a thematic virtual community. The members of this open forum will then be able to view the most relevant cases, news, documents or events that EGEC will have selected for them.

No money is involved in the BUILD UP Partnership, but it requires effort, especially to actively submit proposals of good practice examples and resources on the BUILD UP web portal. The BUILD UP Partners – also EGEC's members in the countries – are expected to bring a substantial contribution to the promotion and dissemination of BUILD UP. In this way, it fits perfectly into the communications needs that were expressed so far.

As a BUILD UP Partner, EGEC shares its existing knowledge, guidelines, tools and best practices for energy-saving measures in buildings across Europe.

Find resources, post your materials, and share knowledge on www.buildup.eu *the European portal for energy efficiency in buildings*.

NEWS EGEC members

Creation of the Bulgarian Geothermal Association

It is a great pleasure for us to announce the creation of the Bulgarian Geothermal Association /BGA/ and starting of its new website on www.geothermalbg.org . The mission is creating of liaison with organizations interested in alternative or renewable energy sources, with companies and institutions involved in the geothermal sector in Bulgaria and abroad. If you have any questions, please do not hesitate to contact: geothermalbg@gmail.com

Geothermal Energy from Swedish Geotermica AB

Swedish Geotermica AB has issued new shares to finance the take over of a majority stake in Italian geothermal exploration company DER srl. The company holds the only geothermal exploration permit on mainland Italy besides Enel. From the start in 2009, the company has focused on Italy with the highest heat flow in Europe and with high power prices. After assessing a number of leads in the country, the firm opted for taking over DER and Rome West, with quick lead times and limited risks of exploration. Geotermica AB will finance the exploration and field development by raising capital on the Swedish stock markets and by farming out stakes in the project. Following the current minorsmall fund raising, of €1,4 million, to finance the take over and this summer geophysical and geochemical surveys, the company will do a larger public offer of new shares this coming autumn, followed by a listing on one of the Stockholm trading places.

Schlumberger Acquires GeothermEx: Strengthens Position to Support Geothermal Customers Worldwide

Schlumberger announced the acquisition of GeothermEx Inc., a California-based global provider of expert geothermal consulting services. The acquired team now operates as an integrated part of Schlumberger Geothermal Services, covering the full spectrum of resource exploration, development and production services. “Schlumberger has been providing technologies and services to the geothermal industry for many years,” said Sanjaya Sood, vice president, Schlumberger Geothermal Services. “With the addition of GeothermEx our team is better-equipped to offer innovative techniques to efficiently develop geothermal projects worldwide.” Established in 1973, GeothermEx has developed numerous pioneering techniques for optimizing geothermal resources. Serving hundreds of geothermal power projects in more than 50 countries, GeothermEx specializes in geosciences, drilling, engineering, project development, reservoir management, and economic analysis.

GT Energy to make geothermal energy available in South Dublin

Within two years, a pilot geothermal project in Newcastle, Co Dublin, could provide up to 25 per cent of the south Dublin local authority area’s energy needs. A hole of up to 4 km depth will be drilled within the next six months by GT Energy (in assistance with Sustainable Energy Ireland) which will then allow to have the first costumers connected within the next two years.

GT Energy has secured a grant of €162,000 from Sustainable Energy Authority Ireland (SEAI). The funding will be used to determine the viability of geothermal energy sources in locations in south County Dublin (by drilling a further test well to a depth of about 3,500 metres). GT Energy had already drilled two test wells in south County Dublin in 2007 and 2008. Through previous studies, GT Energy have estimated that geothermal energy could have the potential to provide up to 20MWelectrical capacity and 100MWth of base load thermal energy , which would be equivalent of providing heat to 100,000 homes. In addition to Dublin, the company has identified a number of other potential sites for deep geothermal energy in Ireland and Britain.

Moreover, GT Energy and ESBI signed a partnership to build Ireland's first geothermal energy plant
GT Energy has entered into a Technology Partnership Agreement (TPA) with ESB International (ESBI). Under the agreement, GT Energy will generate up to 50 megawatts (MW) of electricity using geothermal energy by 2020, and ESBI will assist the company with the design of the generating equipment and grid connection design work. The two companies will work together to share information, expertise and resources to support GT Energy's plans to develop a number of deep geothermal electricity projects across the Island of Ireland.

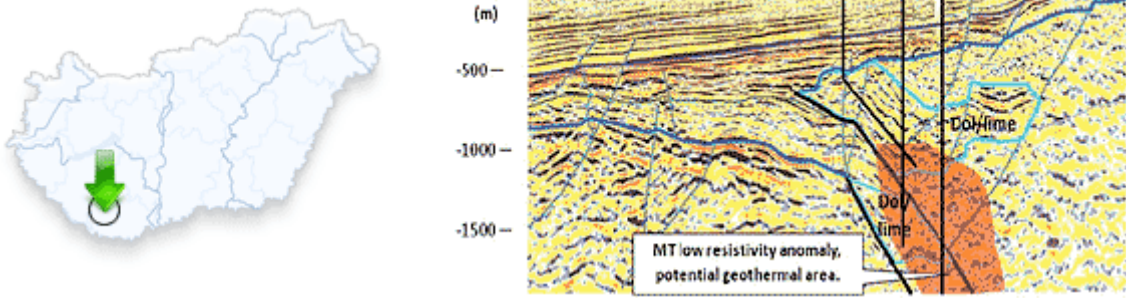
Geothermal District Heating Projects Advance in Hungary

Mannvit Engineering recently announced important development milestones for geothermal district heating projects in Hungary. The first phase of a geothermal district heating development project of up to 40 MWth began this month with drilling of the first well in the town of Miskolc in eastern Hungary. Work on the first district heating project in Hungary, in the town Szentlörinc, continues with a planned reinjection well to be drilled at the end of May, 2010. The first well in this town was successfully drilled last fall. Both of the projects will be supervised by Mannvit.

MANNVIT
ENGINEERING

Pannergy lays the foundation stone of the Szentlõrinc geothermal district heating plant

On 8th of July 2010, Pannergy BoD organised an opening event to present the geothermal plant. It is scheduled to be providing district heating for public institutions as well as 1,000 homes in the town from November this year. The project realized in Hungarian-Icelandic cooperation has been Hungary's hitherto largest district heating system based on renewable energy sources.



PannErgy Plc informed that on 23 August 2010 the geothermal drilling at Miskolc-Mályi reached the targeted bottom depth at 2310 meters. After further deepening, the geophysical measurements and primary tests have confirmed that in the vertical range of 2270-2310 meters there is a geothermal reservoir with hot water of 110-120 degrees Celsius temperature, and its yield reaches 4200-5400 liters/minute (cc. 70-90 l/s). The result of the drilling significantly exceeds PannErgy's former conservative expectations, being approximately three times larger than that.

Petratherm España signs geothermal deal

petratherm

A Memorandum of Understanding (MoU) has been signed between the Spanish branch of Australian company Petratherm, Petratherm España and Italian company Enel Green Power. The MoU includes the development of geothermal projects on the Iberian Peninsula and the Canary Islands, with direct and external costs to be shared equally between the two companies. It will also include the formation of a technical committee, comprising representatives of both parties to oversee the exploration and development program. In relation to Petratherm's advanced Tenerife geothermal project located in the Canary Islands, Enel Power will contribute 50 per cent of all exploration costs and fund the first deep production well, in return for a majority equity stake in the project. Enel Green Power holds 800 MW of geothermal capacity, and a development portfolio of more than 300 MW.
The Australian geothermal company Petratherm has also signed an agreement with the Madrid Regional and Spanish governments to progress an 8 MW Madrid Geothermal District Heating (GDH) project. The project is one of several being moved forward by Petratherm, following formation of a partnership with Enel Green Power, to develop new and existing electricity producing projects across Spain and Portugal. Madrid's GDH project was highlighted as one of six renewable energy projects of interest within the

Madrid Regional Government's Renewable Energy Cluster, which is seeking to advance renewable energy projects in the region. Italy-based Enel Green Power is a world leader in geothermal power generation with more than 800 MW of capacity operating and a further 300 MW in development. Petratherm also has four geothermal investigation permits covering areas within the Valles and Abro Basins near the city of Barcelona.

GtV position paper on Induced Seismicity in Geothermal projects

GtV, the german geothermal association, publishes a paper concluding: Geothermal installations have until now never caused hazardous earthquakes causing structural damage or putting human life at risk. Particularly in Germany, only minor damages have been reported and have until now not even been proven in court. Geothermal projects are performed under the Mining Act. This states that care must be taken that no personal harm occurs and that traffic or general infrastructure is not damaged and no damage to public goods is done. Smaller damages on buildings have to be compensated if they occur. Nevertheless induced seismicity that has been experienced in a few isolated cases is a serious acceptance problem. The natural fear of 'earthquakes' is deeply rooted; they are regarded as (and are) unpredictable and not manageable. In contrast, geothermal installations can be produced and run in a way that makes even small noticeable seismic events unlikely. The entire process (installation and production) can be controlled. The controlled operational approach (step-by-step) is recommended, including seismological monitoring. Experts may find that at some locations the seismic risk is unacceptable because of very special geological conditions. No geothermal project should be established in those (rare) areas. Those special areas could be areas of superficial and uncompacted alluvial deposits or areas with an extensive natural historical seismicity with catastrophic results

GtV Bundesverband Geothermie

GtV announces 51 deep geothermal projects in Germany

The German Geothermal Association (GtV) has published an inventory of the deep geothermal projects already operating and under construction in Germany. 51 projects have been recorded representing an installed capacity of more than 100 MWe and more than 100 MWth. Please find the complete list of projects in the news section of the EGEC website www.egec.org

GtV Bundesverband Geothermie

UK: Cornwall grants planning permission for a first EGS project

GEOTHERMAL ENGINEERING LTD
Heat and power from the Earth

Plans to build the UK's first geothermal energy plant have been given the go-ahead. Members of the council's strategic planning committee unanimously voted in favour of Geothermal Engineering Ltd's plan. Work is now expected to begin on the United Downs Industrial Park near Redruth, West Cornwall.

The plant is being developed by London-based Geothermal Engineering and is intended to generate 55MW of renewable heat energy and 10MW of electricity when it becomes fully operational in 2013. Approval of the planning application last week (August 13) means the company can drill three wells 4.5km in depth at the United Downs industrial estate, which is an existing brown field site. Work is set to start in early 2011.

Ryan Law, managing director of Geothermal Engineering Ltd, said: "With the development of our plant we want to make deep geothermal energy a significant contributor to the UK's energy portfolio. "Not only can we contribute renewable, continuous power to the grid, we also want to change the way the UK meets its heat demands by offering energy-efficient, decentralised heat. The Department of Energy and Climate Change has already estimated that deep geothermal technology could supply between one and five GW of baseload, renewable electricity by 2030."

Geothermal Engineering Ltd received GBP 1.475 million for its EGS project in Cornwall from the UK government's Deep Geothermal Challenge Fund.

GBP 2,011,000 grant to EGS Energy Ltd.

egs|ENERGY
ENGINEERED GEOTHERMAL SYSTEMS

As already released in the last EGEC newsletter, the UK Department of Energy and Climate Change will provide funding of up to GBP 6 million for geothermal exploration in the UK. EGS Energy Ltd. has been awarded GBP 2,011,000 to

develop the first commercial engineered deep geothermal power plant in the UK, at The Eden Project in Cornwall. The Eden Power Plant will consist of a two borehole system – one injection well and one production well, both around 3-4km deep. For more information, please get in touch with EGS Energy Ltd.

Turboden to Supply 5MW Geothermal ORC plant in Bavaria, Germany

Turboden, EGEC member with 30 years of expertise and experience in the design and manufacture of Organic Rankine Cycle (ORC) power generation systems, will supply a 5MWe geothermal ORC turbogenerator unit to the German utility SWM – Stadtwerke München. The geothermal plant is a 5MWe ORC turbogenerator based on a two pressure level cycle, fed with geothermal fluid at 140°C (284°F) and cooled by air condensers. The plant will provide the existing district heating network, which is already fed by a 600kWe Turboden biomass unit - with additional 4MW thermal power (4000 MWhth/yr). The startup is planned for the last quarter of 2011. more on www.turboden.eu

Newcastle University pumps first hot water in landmark twin borehole "geothermal prototype".

A team of scientists and engineers pumped out on 23 June 2010 the first hot water from the depths of Weardale as part of a landmark project to investigate the potential of geothermal energy as a source of renewable heat. The twin borehole system is the first of its kind in the UK and will allow warm groundwater – heated by the hot granite rocks hundreds of metres below ground – to be continually cycled through a 1,000m underground heating system. Led by Newcastle University, the geothermal borehole is one of five forms of land-based renewable energy sources being considered for the proposed Eastgate eco-village in Weardale.

The University team believe it could not only provide renewable, clean energy for homes and businesses, but also some of the natural hot water could be used in a spa - the first such development in the UK since the Romans tapped the hot springs at Bath.

Project lead Professor Paul Younger, of Newcastle University, says that using a twin set of boreholes solves problems which have hindered other attempts to use deep-seated hot water. "Once you find hot groundwater then pumping it to the surface through a single borehole isn't the problem – it's what you do with the water afterwards that has held back geothermal energy," he explains. "Water from such depths is twice as salty as seawater, so unless you happen to be on the coast, you can't let the spent water simply flow away at surface but cleaning the water is both energy intensive and costly. "In this system we are re-injecting the water using a second borehole. This means we are able to maintain the natural water pressures in the rocks and allow pumping to continue for many decades to come. "So, by recycling the hot water through what is essentially a huge central heating system deep underground, we can produce an almost carbon-neutral source of energy."

Following a grant from the Department of Energy and Climate Change earlier this year, the team has drilled a second - or 'reinjection' - borehole to complement the 995m deep exploration borehole which was originally drilled three years ago. Water at a temperature of around 30-40ºC is brought up to the surface where it passes through a heat exchanger before being sent back underground to be re-heated. Used water is reintroduced to the granite at about 420m deep, and heated up again as it flows through a complicated maze of fractures on its way back to the pumping borehole. Newcastle University's Professor David Manning said the Eastgate borehole was a 'geothermal prototype' that could be used at other 'hotspots' across the UK.

He explained: "Water deep underground gets heated by the naturally-occurring low-level radiation that is found in all rocks. "Some rocks are far better at producing heat than others – especially granite of the kind we have drilled into at Eastgate. This makes it one of the country's 'hotspots' – where water starts warming up quite close to the surface."

A spokesman for Durham County Council said the findings by Newcastle University were of real interest and the use of geothermal as a potential energy resource for Eastgate would be considered in due course. Lloyd McInally, Lafarge Cement UK's rating and regeneration manager, said the borehole was an exciting first step for the former cement works site. "The plans for the former Lafarge cement works at Eastgate have been developed to provide future generations with real opportunities at the same time as

creating a genuine sustainable 'green' legacy for the Dale," he explained. "The twin borehole system is an important and exciting first step."
Professor Younger said the next step was to go even deeper. "There is every reason to suppose that if we drill even deeper here in future we will find water at boiling point, which is hot enough to generate electricity."

Geothermal Anywhere and partners receive US$ 3,700,000 from EU money

The Slovak company Geothermal Anywhere is developing a new innovative drilling platform, based on a non-contact method that would enable to drill ultra deep, to depths of 6-10 kilometers cost effectively. Besides starting the phase of research itself, Geothermal Anywhere now searches other partners. In line with all three projects' targets, the administrator is looking for financial or strategic partners. All of the eligible costs of three projects would be reimbursed by the Ministry once the R&D outcomes would exist.

RENEXPO®: Platform No. 1 for Renewable Energy
Annual German trade fair on energy supply of the future goes into 11th round

The RENEXPO®, International Trade Fair for Renewable Energy and Energy Efficient Building & Renovation, takes place for the eleventh consecutive year from October 7 - 10, 2010 in the Trade Fair Centre in Augsburg, Germany. The RENEXPO® is one of the major trade fairs for renewable energy and energy efficiency in Europe. Due to its unique variety of topics, it has become the trade platform number one. Last year, the RENEXPO® attracted visitors and exhibitors from more than forty countries. This illustrates its international appeal and the strong interest in the trade fair beyond Germany. This year's RENEXPO® will again be supported by strong national and international network partners. The event traditionally features a guest country, which this year will be Austria. As a result, a range of decision makers, exhibitors and business professionals from Austria are expected to attend. Further, the RENEXPO® is a member of the EU campaign "Sustainable Energy Europe". Another international highlight is the IBEF® International Business Exchange Forum where companies present themselves at a common international booth.
This year's RENEXPO® focus will be again on bioenergy. The IHE® WoodEnergy is Germany's most important trade fair on heat and power generation from wood, covering the entire value chain of wood energy. The IHE® has established itself as the European forum of the wood energy sector.
A field that has been further developed is cogeneration. Featuring under the trade mark "InterCogen®", manufacturers and suppliers will present the technology's latest products and developments. In cooperation with the German national association for cogeneration (Bundesverband Kraft-Wärme-Kopplung B.KWK), a common booth will offer the possibility for exchanging knowledge and creating contacts.
Accompanying the trade fair exhibition, several conferences will take place. One of the most anticipated events is the 10th International Conference on Wood Energy which is presented by the German national association for bioenergy (Bundesverband BioEnergie e.V. BBE). For the tenth year, the conference will provide a comprehensive overview of policies, profitability and best practice involving wood energy. Another event will be the 4th Conference on Small and Micro Cogeneration.
The RENEXPO® is recognised as one of the few „International Energy Trade Fairs" by UFI. It brings together companies and business professionals from around the world and offers an excellent forum for developing new concepts, exchanging knowledge and creating new business relationships. The range of topics at the RENEXPO® is unmatched, covering everything from photovoltaics and solarthermal energy to geothermal energy, heat pumps, cogeneration, biomass, wood energy, Stirling engines, and energy efficient building and renovation.
Additional information on the trade fair, conferences and supporting programme is available at www.renexpo.com.

PUBLICATIONS

A new book published on Geothermal Energy Systems. Edited by Ernst Huenges

The book presents basic knowledge about geothermal technology for the utilization of geothermal resources. It helps to understand the basic geology needed for the utilization of geothermal energy and describes the methods to create access to geothermal reservoirs by drilling and the engineering of the reservoir. The book describes the technology available to make use of the earth's heat for direct use, power, and/or chilling, and gives the economic and environmental conditions limiting its utilization.

Special emphasis is given to enhanced or engineered geothermal systems (EGS), which are based on concepts that bring a priori less productive reservoirs to an economic use. These concepts require the geothermal technology described here. The idea of EGS is not yet very old. Therefore, this book aims to provide a baseline of the technologies, taking into account the fact that due to a growing interest in EGS, a dynamic development may increase the specific knowledge to a large extent in the near future.

The book begins with a large-scale picture of geothermal resources, addressing expressions of the earth's heat sources and measured heat flow at different places world wide. This leads to conceptual models with a geological point of view influencing geothermal reservoir definitions based on physical parameters like porosity, permeability, and stress distribution in the underground, indicating that geothermal applications can be deployed anywhere, but some locations are more favorable than others.

The second chapter addresses the characterization of geothermal reservoirs and the implications of their exploration. A best practice for the exploration of EGS reservoirs is still to be determined and the different methods in geology, geophysics, and geochemistry have a strong local character. Some methods are successful in exploring conventional geothermal reservoirs like the magnetotellurics, whereas for EGS, seismic methods become more and more important.

An overall conceptual exploration approach integrating the geophysical measurements into a geological model taking into account the earth's stress conditions is addressed in this chapter, but it has to be further developed in future contributions.

The baseline know-how of EGS drilling given in the third chapter, is based on a few case studies and therefore, somewhat different from hydrocarbon drilling with reference to issues like large diameter holes, deviated wells, and mitigation of formation damage. The latter is also important for drilling conventional geothermal reservoirs, which to a great extent follow standards in operation and completion.

The knowledge of underground physical conditions, especially the magnitude and direction of the local stress, is important for reliable drilling into EGS reservoirs. Awareness of the stress conditions is also a prerequisite for starting hydraulic fracturing treatment which is addressed in a following chapter.

In the fourth chapter, techniques and experiences from several EGS sites are described providing a set of methods available for addressing the goal of increasing well productivity. The case studies cover several geological environments such as deep sediments and granites. Significant progress was made in the last few years in recovering enhancing factors in the order of magnitudes. Chances and risks of companion effects of the treatments, such as induced seismicity, are addressed and will be a subject of forthcoming research.

In the fifth chapter, the state-of-the-art numerical instruments used to simulate geothermal reservoirs during exploitation are given in different case studies. Different coupled processes such as thermal–hydraulic or hydraulic–mechanical, including coupled chemical processes, are discussed. The development of the coupling of thermal, hydraulic, mechanical, and chemical processes is ongoing, hence the chapter provides the basics.

The benefits of using geothermal energy technologies for the direct use and conversion of the earth's heat into chilling or heating power (as required), are described in the sixth chapter. Technical solutions for all tasks within the goal of energy provision exist, and approaches for improving the performance of system components are given. Special emphasis is given to techniques that can assure reliable and efficient operation at the interface of underground fluids with technical components. Processes like corrosion and scaling have to be addressed and they are still a subject of future research.

The economic learning curve is shown in the seventh chapter that provides some methods to analyze the risks of a project. A decision-making methodology is given for several stages of the project. Environmental aspects are discussed, and results of life cycle assessment with illustrations of greenhouse gas emissions are reported in the chapter.

The final chapter discusses the possibility of geothermal deployment as a part of future energy provision and an important contribution to the mitigation of CO2 emissions. The technological, economic, and

political factors controlling such deployment are discussed and should provide some assistance for decision makers.
Ernst Huenges, Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences Telegrafenberg, 14473 Potsdam, Germany

U.S. Geothermal Power Production and Development Update

Start 2010, the US Geothermal Energy Association published an industry update. In addition to providing information on current geothermal projects in development, this special edition identifies recent U.S. Department of Energy funding allocated to geothermal research, development, and demonstration projects on a state by state basis. The funding identified in this report comes not only from DOE annual appropriations but also from stimulus money provided by the American Recovery and Reinvestment Act of 2009. You can find the entire update report here:
http://www.geo-energy.org/GEA_January_Update_Special_Edition_Final.pdf

Frost & Sullivan Study on the European Geothermal Energy Market

Consultancy Frost&Sullivan published a study on the European Geothermal Energy Market which is divided into four parts: market forces, market forecasts, geographical analysis and competitive analysis, followed by the conclusions. In the study, they say that they expect the installed capacity to increase from 1.6GW in 2009 to almost 4GW in 2016.The whole document can be ordered via Frost&Sullivan.

Global Geothermal Markets and Strategies, 2009-2020

Emerging Energy Research published a market study on geothermal energy to guide through the global geothermal market landscape, answering questions like which are the leading utilities and ahich are looking to enter or where are the best opportunities, etc. The study can be downloaded for € 2.650 for a single copy pdf. You can find the study's table of contents and order information by following this link:
http://www.emerging-energy.com/user/GlobalGeothermalMarketsandStrategies200920301315192820_pub/EERGeothermalPromo.pdf

EVENTS

EGEC EVENTS :

GEOPOWER EUROPE 2010

8-9 December 2010

Paris, France

A Geothermal week from 6 to 10 December 2010 in Paris(France)
Geopower Europe 2010, organised jointly by EGEC and GPC, will be on 08 and 09 december. A site visit is planned on Friday the 10th of December. Moreover, ADEME is organising a presentation of the 'Fonds Chaleur – biomass, solar thermal, geothermal' on 06/12/ and with BRGM a geothermal event on h&c on - 07/12/2010. We will have a full geothermal week in Paris !

OTHER EVENTS :

RENEXPO® 2010

7-10 October 2010

Messe Augsburg, Germany

GRC's 34th Annual Meeting

24-27 October 2010

Sacramento, USA

RENEXPO® Eastern Europe / Alternative Energy 2010

27-29 October 2010

Kiev, Ukraine

Australian Geothermal Energy Conference

16-19 November 2010

Adelaide, Australia

RENEXPO® South-East Europe 2010

24-26 November 2010

Bucharest, Romania

RENEXPO® Austria 2010

25-27 November 2010

Salzburg, Austria

1er salon national des équipements, des technologies et des services en géothermie

20-21 January 2011

Parc Floral de Paris - Bois de Vincennes - Paris, France

4th CEP® CLEAN ENERGY & PASSIVEHOUSE, International Trade Fair for Renewable Energy and Passive House

10-12 February 2011

Trade Fair Centre Stuttgart, Germany

Geopower Asia

9-10 March 2011

Manilla, The Philippines

IIR INTERNATIONAL CONFERENCES
Sources/Sinks alternative to the outside Air for Heat Pump and Air-Conditioning Techniques (Alternative Sources - AS)
International Sorption Heat Pump Conference

5-8 April 2011

Padova, italy

7th International Congress & Exhibition for EE & RES for South East Europe

13-15 April 2011

Sofia, Bulgaria

Renewable Energy World Conference & Expo: Europe

7-9 June 2011

Milan, Italy