An information source for European resources

Stephan Gruijters, the coordinator of EuroGeoSource, gives an overview of the project and his thoughts on how best to ensure a sustainable energy and minerals supply throughout Europe

Firstly, could you provide an overview of the EuroGeoSource project, and the issues that you are seeking to address?

The main objective of EuroGeoSource is to develop an information and policy support system for the sustainable supply of energy and mineral resources in Europe. EuroGeoSource will allow users to identify, access, use and re-use aggregated geographical information on energy and mineral resources from at least 10 European countries.

What are the main threats to the long-term security of energetic and non-energetic minerals and how can EuroGeoSource help to negate these threats and improve exploitation of minerals?

The European Union currently imports more than 50 per cent of its hydrocarbons and minerals and this is growing each year. In view of the reduction in the world's hydrocarbon and mineral reserves, and the possible disruption of importation by uncontrollable political events, the rational use of these resources is becoming a central issue in EU economic policy.

This makes access to reliable and uniform spatial data on energy and mineral resources vital. EuroGeoSource is going to provide exactly that.

Who have been the main partners in the EuroGeoSource project, and what have they contributed to your work?

The EuroGeoSource consortium consists of 11 geological surveys, two commercial companies and one university. The geological surveys are the institutes which manage the information on energy and mineral resources, so they deliver the content. The other partners are responsible for building the EuroGeoSource system.

EuroGeoSource made an inventory of the existing national political and organisational aspects of geo-energy and mineral resources data management in the participating countries. It became obvious that the content and structure of the data differ substantially in each country, meaning that users have to identify and contact different institutions and have to deal with the assorted types and formats of the retrieved data. This stresses the added value of a harmonised, pan-European information portal like EuroGeoSource.

Furthermore, how important is the collaborative nature of EuroGeoSource? Have the public workshops played a fundamental role in establishing international cooperation?

In 2010 the One Geology Europe portal was launched, making a 1:1 million pan-European geological map freely available for anyone to view and download. EuroGeoSource views One Geology Europe as a successful example of international collaboration.

Although we have 11 geological surveys already present already in the consortium, we do not cover Europe entirely; instead EuroGeoSource strives to incorporate data from as many European countries as possible to make the initiative a thematic extension of One Geology Europe.

The EuroGeoSource portal will be a success if we provide the information and functionality desired by the end-users. That is why EuroGeoSource encourages them to give us their feedback at our public workshops and any other relevant public event. EuroGeoSource will create an Information portal that is reliable, fast, and that fits the needs of the stakeholders in the energy and minerals resources sector in the EU community. To do this, collaboration between the geological surveys is vital, but also an active dialogue with the user community.

How do you see EuroGeoSource evolving in the future? Are you looking to expand the project if it proves to be successful?

The first year of EuroGeoSource has not only produced very promising results, it has also created an enthusiastic team of experts which is very dedicated to the project. It is a pleasure to work with this team, and that makes me very confident that we will succeed in producing our deliverables.

We are actively reaching out to other relevant institutions to join EuroGeoSource as data providers, enlarging the projects coverage of Europe, and learning how to map their data to INSPIRE (Infrastructure for Spatial Information in Europe) in return. An integrated solution for European and national issues on energy and mineral resources, as a showcase for the geological surveys and the added value of INSPIRE, that's what drives me!

Can you give us your thoughts on what you think is the best way forward in managing energy and mineral resources in the future?

I believe that as long as we are dependent on these commodities we must rationalise their use and incorporate the production in a long-term land use philosophy. There are great examples of nature redevelopment at former quarries in Europe already. I believe that organising access to harmonised reliable data across Europe will help policy makers to come to a sustainable use of Europe's energy and mineral resources. This will have a stimulating effect on national policy also.

Access to energy and minerals

EuroGeoSource is a European initiative that will provide harmonised information regarding the exploitation of energy and mineral resources in a web portal to support policy making, commerce and research

IN THE TECHNOLOGICALLY advanced era in which we live, demands from industry and wider society are driving energy and mineral exploitation to levels that are affecting our environment on unprecedented scales. Individual efforts have had little effect on the tide of environmental degradation but collaboration among nations, companies, etc. is made difficult by competing political and economic interests.

Against this background, nations and larger bodies such as the European Union are now looking at different ways of sustaining the current supply of energy and minerals without creating further environmental damage.

Economics and politics will still, however, drive energy and mineral supply and demand. The financial downturn in 2008 has affected global markets and, as a consequence, energy and mineral prices, in some cases leading to deprivation and social unrest. To enable sound economic and political decisions, as much information on energy and mineral supplies as possible is needed.

At present this information is hard to find and, in some cases, unreliable or not even available. Three main factors are responsible for this: differences in information format, lack of information harmonisation between countries and organisations, and large discrepancies in how often information is updated.

EUROGEOSOURCE

In response to the need for quality information, the European Union, through the Information and Communication Technologies Policy Support Programme (ICT PSP), has funded a three year 2.5 million euro project to design and develop an information and policy support system for sustainable supply of energy and mineral resources in Europe – EuroGeoSource. The system will contain information from at least 10 European countries on geo-energy (oil, gas, coal, etc) and mineral resources (metal ore and non-metallic minerals, industrial minerals and construction materials such as gravel, sand, ornamental stone, etc.).

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Stephan Gruijters is the coordinator of EuroGeoSource. He summarises the benefits of this new system: "The big advantage of EuroGeoSource is that it provides users with actual, reliable and harmonised information on the European scale. Furthermore, it brings together economical, administrative and geological information related to energy and mineral resources". The system, which takes the form of a web portal, will also provide users with functionality to search, locate, view and analyse pertinent geographical information.

STATE OF PLAY

EuroGeoSource is currently in its second year. The first year saw the team make contact with a wide group of potential end-users to ask them what they would expect from an information portal like EuroGeoSource. An inventory of the current situation in the participating countries regarding availability, accessibility and management of energy and mineral resources data was made. All this information was used to build a first draft version of the portal, which was met with enthusiastic reactions when demonstrated at the first EuroGeoSource public workshop in Budapest in March 2011.

Currently, the project is gaining more publicity by numerous presentations at (inter-)national conferences and events. All of this progress suggests that the team are likely to meet their ambitious aim of having the full services made publicly available in February 2013, as Gruijters enthuses: "We are on track, alive and kicking".

ENABLING POLICY MAKING

At present, any organisation that is interested in energy and mineral information has to find out where to get the information, check if the different data providers supply the same type of data and then harmonise the received information to make a comprehensive and usable dataset. But, explains Gruijters, EuroGeoSource will perform these tasks for them and provide users with a complete overview of existing locations where energy and mineral resources are being exploited: "It will provide users with metadata on the location, but also more detailed information on what type of commodity is being extracted, production data, geological relevant information of the site and, for oil and gas sites for instance, the number of extraction and infiltration wells".

The EuroGeoSource web portal will also enable users to combine information from the site with

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EUROGEOSOURCE

EU INFORMATION AND POLICY SUPPORT SYSTEM FOR SUSTAINABLE SUPPLY OF EUROPE WITH ENERGY AND MINERAL RESOURCES

OBJECTIVES

The system will allow users to identify, access, use and reuse aggregated geographical information on geo-energy and mineral resources, covering at least 10 European countries.

PARTNERS

Geological Survey of Slovenia, Slovenia
Ministry of Economy, Energy and Tourism, Bulgaria
Geological Institute of Romania, Romania
Polish Geological Institute, Poland
Geological Survey of Estonia, Estonia
Geological Institute of Hungary, Hungary
Royal Belgian Institute of Natural Sciences, Belgium
Laboratorio Nacional de Energia e Geologia, Portugal
Geological Seismic and soil survey of Emilia-Romagna Region, Italy
University of Zaragoza, Spain
Geodan software development and technology, The Netherlands
Geospatiumlab, Spain
Geolgical Survey of Denmark and Greenland, Denmark

FUNDING

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STEPHAN GRUIJTERS trained as an engineer and has almost 20 years experience working with subsurface information. In the last 10 years he has been involved in mapping the subsurface of The Netherlands on a national scale and disseminating these models, its applied derivatives and its underlying data through web portals.

information that is available via web services such as One Geology Europe or Natura 2000.

Key stakeholder users will benefit from the system, says Gruijters: "The system is aimed at users from the EC (including the EC Directorate-General for Energy and Transport, EuroStat and the Joint Research Centre's Institute for Energy), commercial parties (oil, gas and mining companies, investment companies, etc), geological surveys, research institutes and universities, and (inter-)national geo-energy and mining authorities".

USER-FRIENDLINESS

Whilst it is essential that the system provides accurate and plentiful information on energy and mineral supplies, it also has to allow access so that the required information is found quickly and easily. To address this need, searches can be made by keywords or location, and a graphical summary of the search results are linked to the geographical map where the results are shown.

Users can toggle between maps, change the order, change the opacity and add their own data, so that they can create their own maps and share them with others by sending them a personalised link. Gruijters notes a clear similarity between EuroGeoSource and a better known search facility: "Of course panning and zooming through the maps gives you the same user experience as GoogleMaps!"

This likeness is by design. Successful search engines like Google provide relevant weblinks to any keyword within seconds; they even report the exact number of seconds it takes to find the information. Just one click more pinpoints this data on a map, and a suggestion for the quickest route to it takes less than two seconds.

This user-friendly interface has had a strong influence on the EuroGeoSource project, explains Gruijters: "For any information portal to be successful, it needs to have the same look and feel as Google".

In addition, people are accustomed to the speed of Google. To add this speed functionality to the EuroGeoSource web portal, Gruijters and colleagues have taken advantage of cloud computing, a relatively new technology: "We collect the basis information via web services, index it and use cloud computing to speed up the performance of the portal".


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INVOLVING USERS

The EuroGeoSource web portal has been designed with diverse users in mind. 10 European countries are involved and the consortium and users range from commercial companies to universities. As a result, not only are different languages spoken but different terminology is used.

Gruijters explains the inventive method to deal with such variety: "We help the user by letting experts not only translate the content of the information, but also map it to the common terminology within each country". In this way users are directly involved in the development of the resource.

But this is not where user participation ends. Gruijters and EuroGeoSource colleagues designed an Internet questionnaire that was sent out to 1,024 potential users: "We asked them what kind of information they would like to be present in the portal, why they are interested in this information, how they currently collect this information, what kind of other geographical information they want to combine it with, and what kind of functionality they want to have present in the portal".

The answers received were then fed into the design process, helping the design of the portal's webpage and functionality. The team will continue to involve users, says Gruijters: "We will keep on asking our potential users for their feedback in the coming two years, for instance through our two public workshops scheduled for January 2012 and 2013".


CLAY AND GRAVEL QUARIE, BRUNSUM, THE NETHERLANDS