



RESEARCH STUDIO FOR GEOREFERENCED
MEDIA AND TECHNOLOGY

RESEARCH STUDIOS AUSTRIA
Studio iSPACE



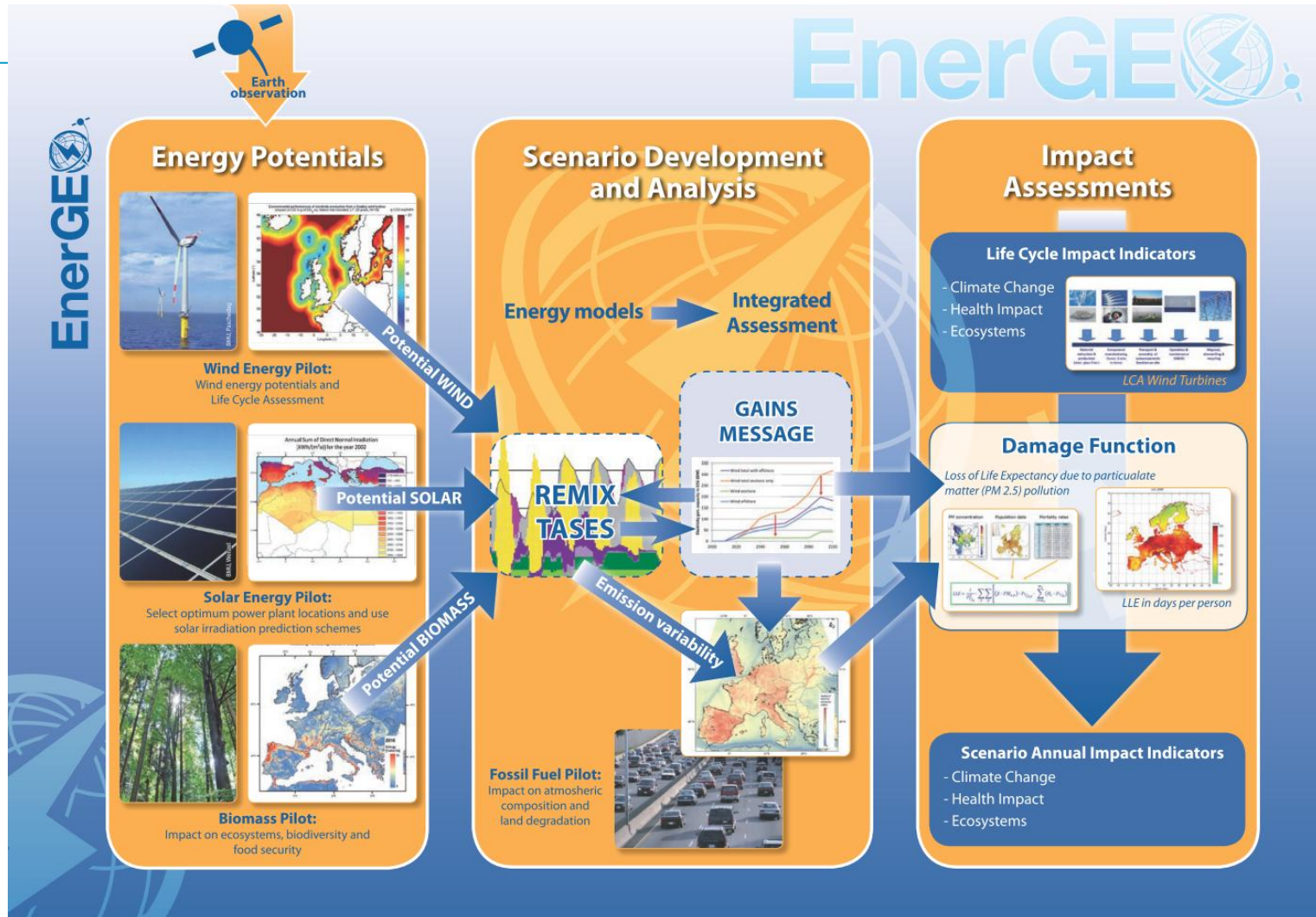
EnerGEO Geoportal

Bernhard Vockner, Manfred Mittlböck, Andreas Richter

Objectives of EU FP 7 EnerGEO

- EnerGEO develops products and methodologies that provide energy companies, consultants and policy makers (local, regional, global) with the tools to **evaluate the environmental impact of changes in energy use** in terms of the **complete life cycle** including exploration, development, exploitation, maintenance and decommissioning based on the use of the *Global Earth Observation System of Systems (GEOSS)* capacities. This strategy is demonstrated for a variety of energy resources worldwide (fossil fuels, biomass, solar and wind energy).
- **EnerGEO combines:**
 - 1. **Existing energy system models** and models capable of assessing and forecasting environmental impacts and costs of energy exploitation
 - 2. **Existing global earth observation datasets** from which environmental indicators are derived in order to quantify changes to freshwater systems, biosphere, ecosystems, atmosphere and oceans

EU FP7 EnerGEO



GEO Context

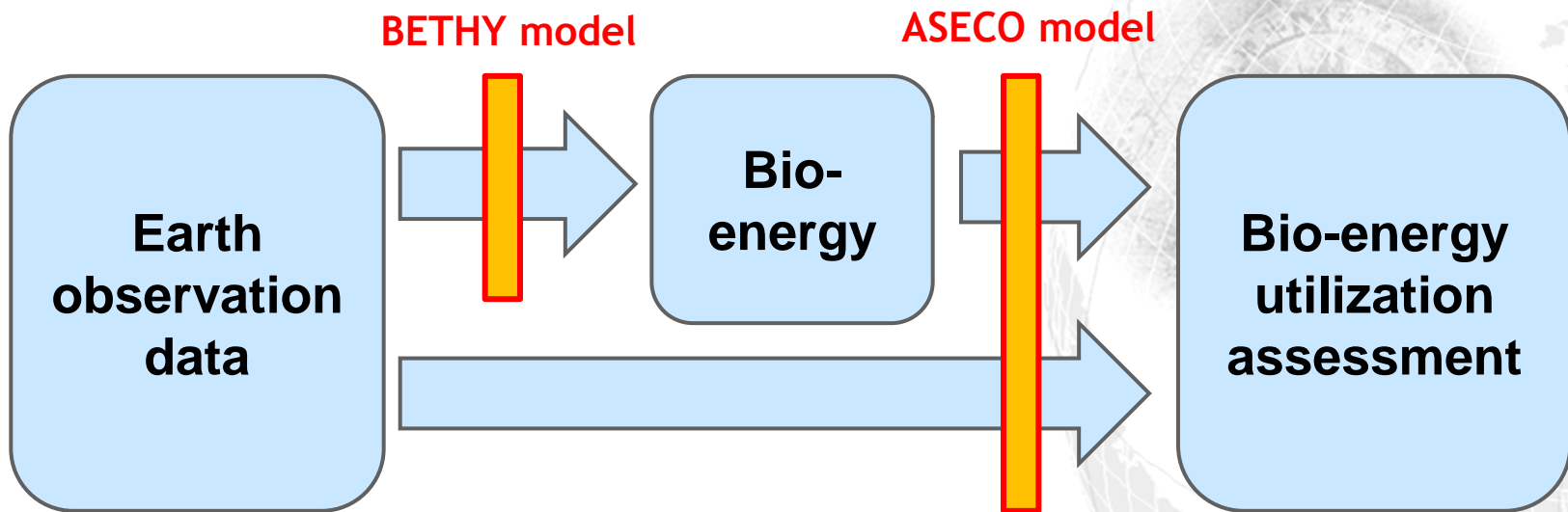
- EnerGEO represents a major contribution of the European Commission to GEOSS, in particular to the Societal Benefit Area (SBA) **Energy** and the **GEO-tasks**
 - EN-07-02 (Energy Environmental Impact Monitoring) and
 - EN-07-03 (Energy Policy Planning)
 - (or any GEO Workpackage derived from these).
- By developing a distributed system based on the recommendations of the **GEO-Architecture and Data Committee (ADC)**, global collection and dissemination of data relating to the impact of energy use on the environment will be supported.



The SBAs of GEOSS

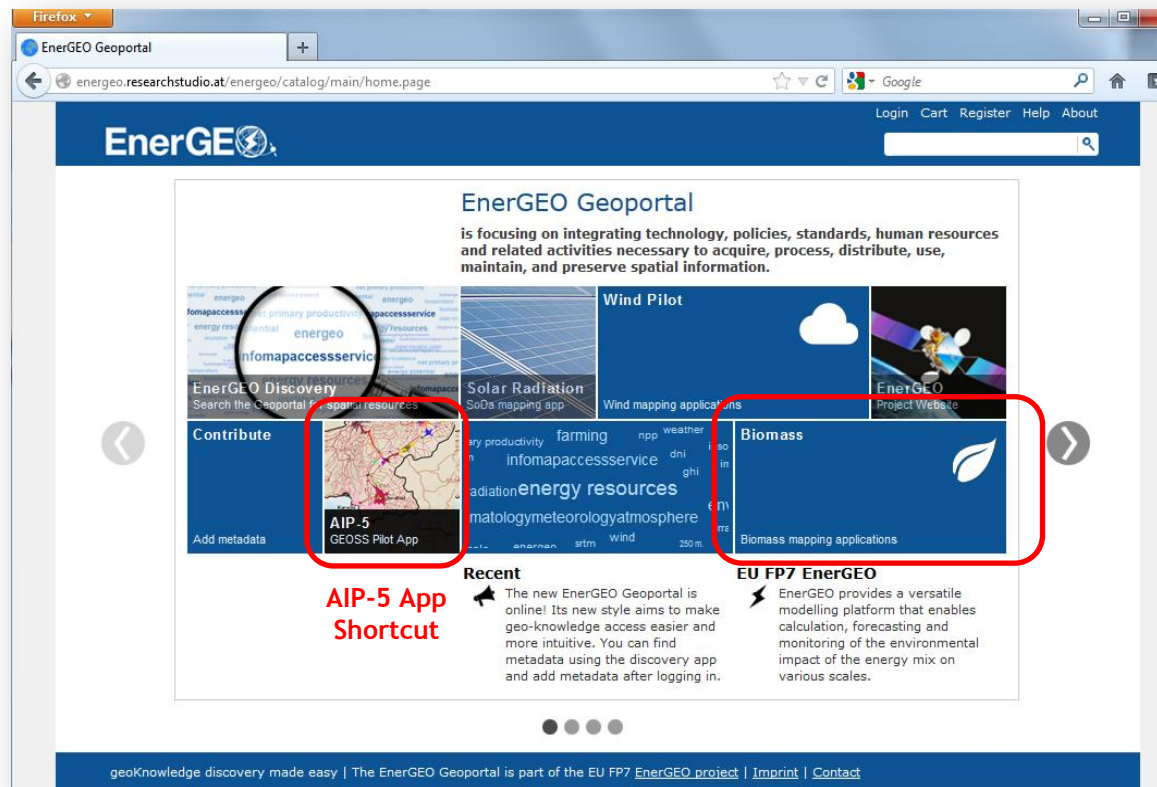
AIP-5 Bio-energy assessment for Pakistan

- The AIP-5 Bio-energy case-study for Pakistan is dedicated to **bio-energy assessment** based on earth observation data
- Focus lies on spatial and temporal discrete biomass growth.
- The models **BETHY** by DLR and **ASECO** by RSA show how spatial discrete energy demand could be covered by biomass and already existing transport, plant and grid infrastructure (2001-2010)



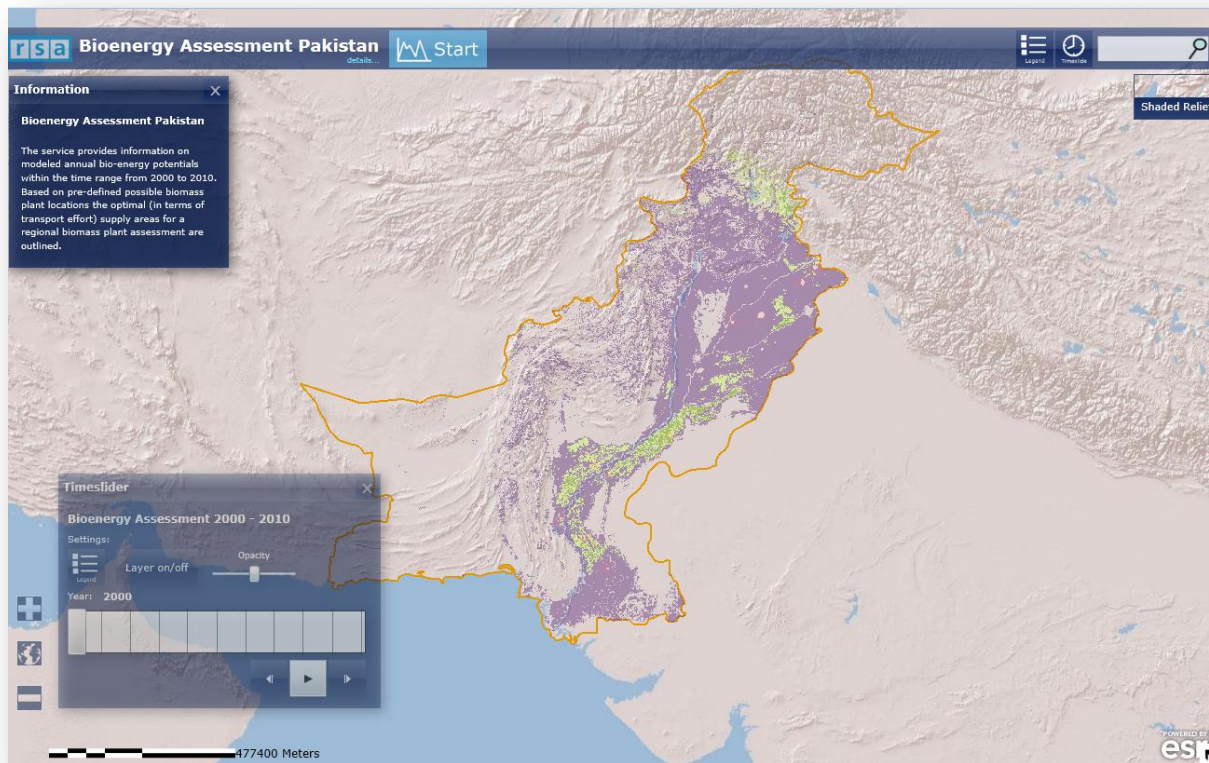
AIP-5 Bio-energy assessment for Pakistan

- Introductory Information is available in the Energeo Community Portal <http://geoportal.energeo-project.eu>



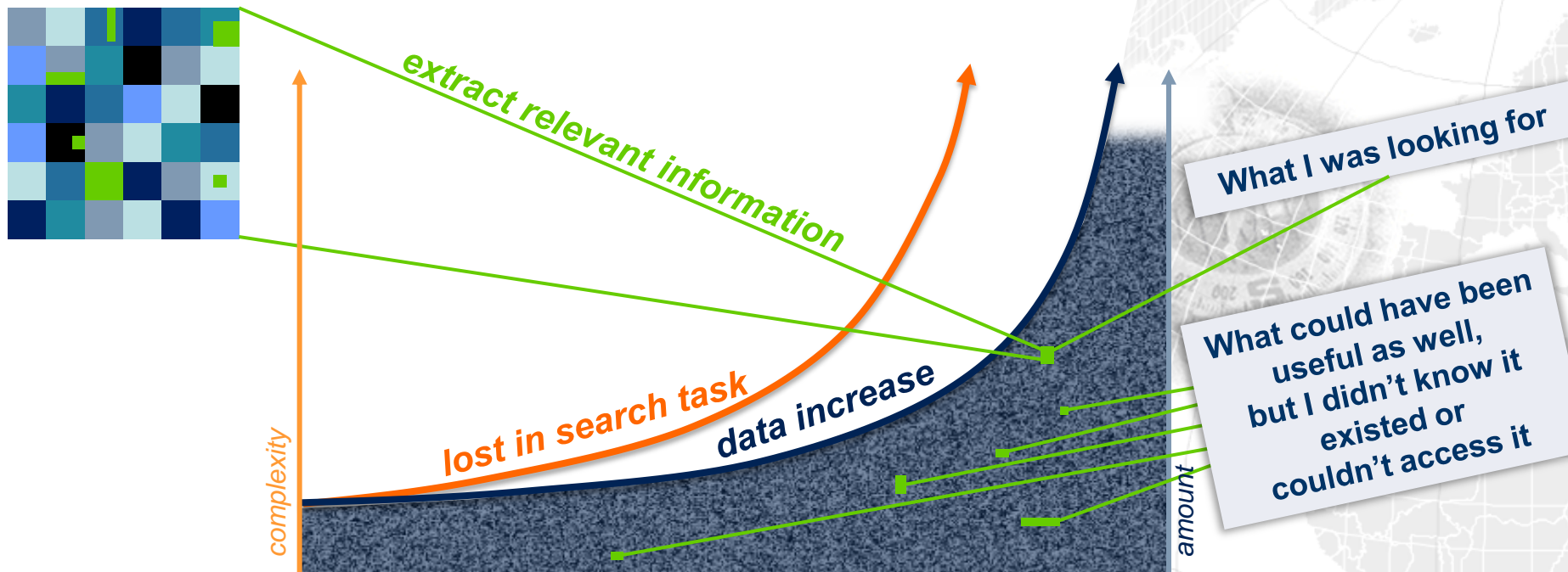
AIP-5 Bio-energy assessment for Pakistan

- Presentation of the Biomass- assessment pilot for Pakistan in a spatio-temporal enabled web-service



Information Discovery

- New IT trends open up increasing amounts of data every day
- Discovering & extracting the right information is a major challenge

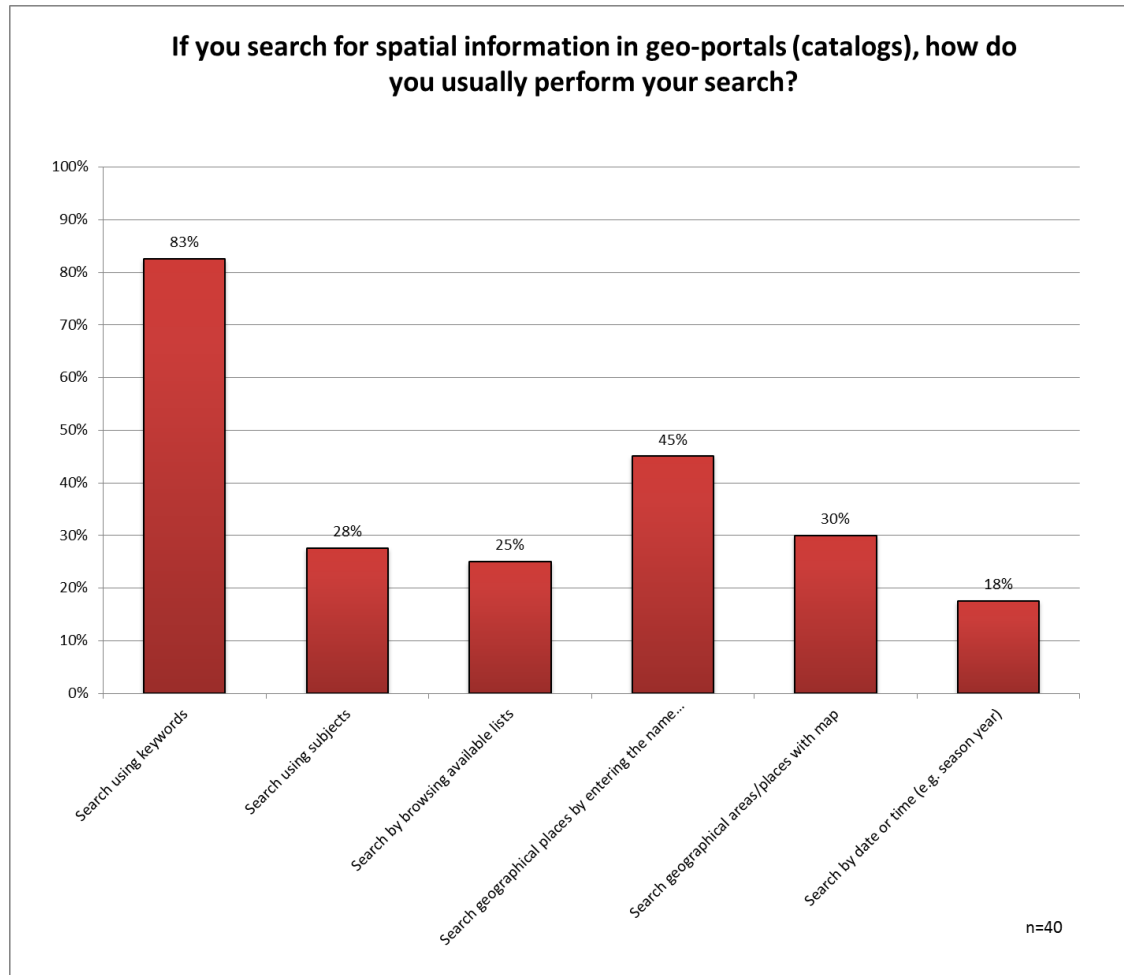


Structured metadata as basis for Discovery

- Based on standards and frameworks (e.g. ISO 19115, 19119, 19139, 19110, INSPIRE, GEOSS)
- Survey: 42 persons of the GEO Community responded

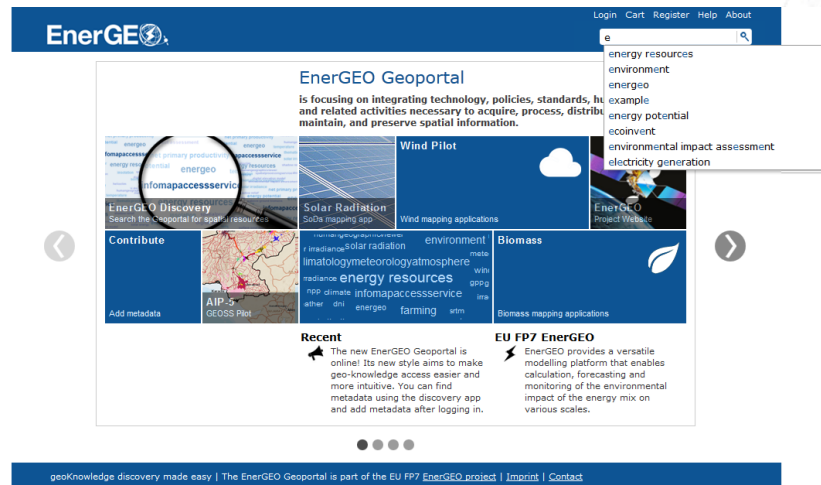


Structured metadata as basis for Discovery



Discovery in the EnerGEO Geoportal

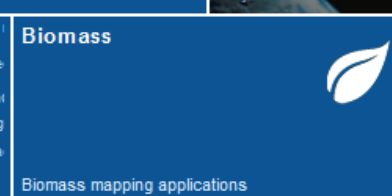
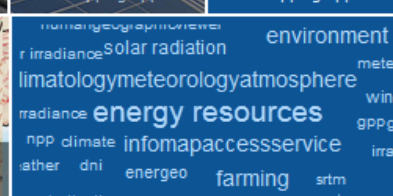
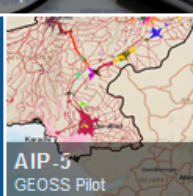
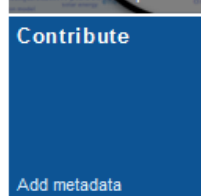
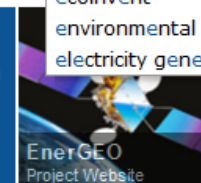
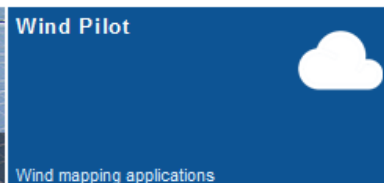
- Discovery improvement in current Geoportal solutions by applying methods such as
 - Autosuggestion lists
 - Tag clouds
 - Recommender Systems
 - Contextual similarity of texts



energy resources
environment
energeo
example
energy potential
ecoinvent
environmental impact assessment
electricity generation

EnerGEO Geoportal

is focusing on integrating technology, policies, standards, hu and related activities necessary to acquire, process, distribu maintain, and preserve spatial information.



Recent

⚡ The new EnerGEO Geoportal is online! Its new style aims to make geo-knowledge access easier and more intuitive. You can find metadata using the discovery app and add metadata after logging in.

EU FP7 EnerGEO

⚡ EnerGEO provides a versatile modelling platform that enables calculation, forecasting and monitoring of the environmental impact of the energy mix on various scales.

Search

 ☐ Records shown from: Webservice-Energy.org

Click here to select different site or configure search.

[This Site](#)

18 Results

[Webservice-Energy.org](#)

140 Results

Select sites where the search will be distributed

You may select up to 5 sites.

- ☒ This Site
- ☒ Webservice-Energy.org

Additional Options

[Clear](#)**WHERE**

- ☒ Anywhere ☐ Intersecting ☐ Fully within

Results 1-10 of 140 record(s) [1](#) [2](#) [3](#) [4](#) [5](#) [>](#) [Last](#)☐ Expand results [Zoom To Results](#) [Zoom To Searched Area](#)[ATLAS_PACA_WINDSPEED_10M_CLASSES_EPSG_4326_8b](#)[ATLAS_PACA_MEAN_TEMPERATURE_MSG](#)[ATLAS_PACA_SOURCE_POINTS_DISTKM](#)[Helioclim-3 Map](#)[Daily irradiation \(daily sum solar exposure\), global, horizontal at Husbands Barbados](#)[EnerGEO Composite Environmental Indicator](#)[Environmental Life Cycle Impact Assessment Web Processing Service](#)[Relief shadow effect on Solar Resource](#)

Recommendations enhancing (Geo-) Web Discovery



view



rate

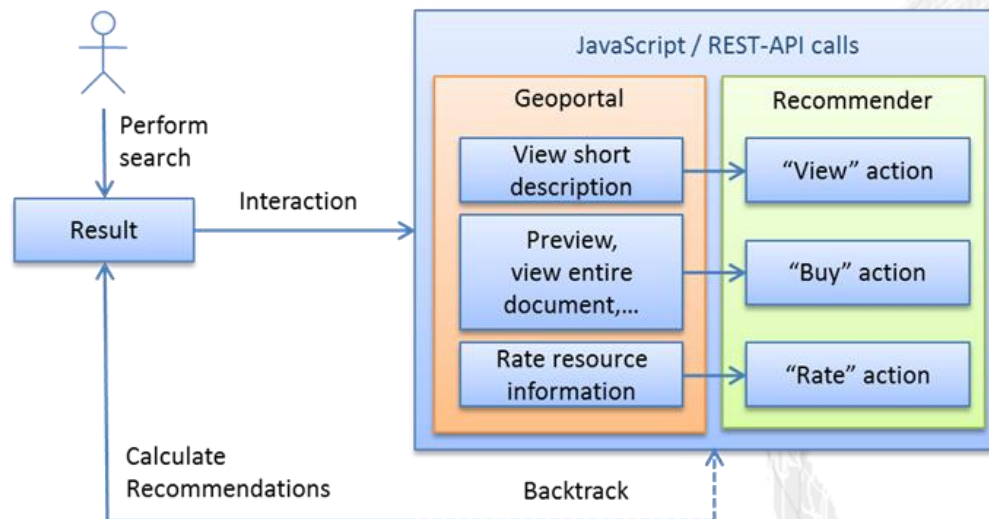


buy



Recommendation strategies for Geo-resources

- Integration of recommendations based on user interactions
 - Improvement of discovery in Geoportals by “tracking” user’s interactions with the search results & resources
 - Analogy between Geoportal interactions and recommenders:



- Integration of contextual similarity of texts










- Easyrec (OpenSource)

Cluster Manager • Type Manager

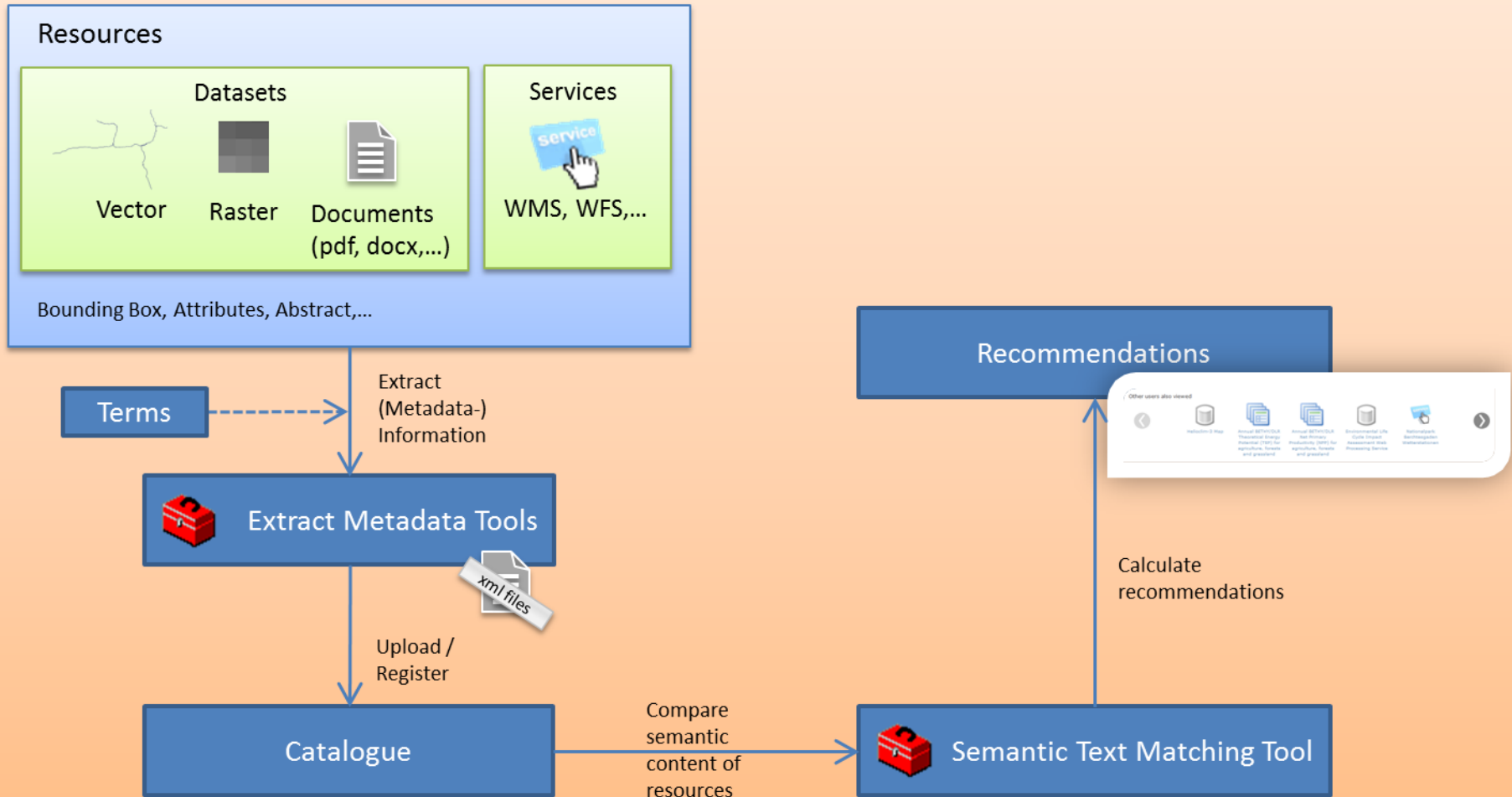
website. You can view item details by

Advanced Search

Search

	Type	
ationen	ITEM	   ON <input type="checkbox"/>
ssment	ITEM	   ON <input type="checkbox"/>
uctivity island	ITEM	   ON <input type="checkbox"/>

(Semi-)automatic Metadata Extraction and Semantic Text Matching to improve Discovery



Implementation

EnerGEO / Geoportal

Home Search Browse

Login Cart Register Help About

Map Viewer

Search

Records shown from: This Site
Click here to select different site or configure search.

Additional Options
Clear

WHERE

☒ Anywhere
 ☐ Intersecting
 ☐ Fully within

Diese Seite übersetzen Deutsch

Microsoft® Translator

Results 1-7 of 7 record(s)

☐ Expand results
 ☐ Zoom To Results
 ☐ Zoom To Searched Area

- Helioclim-1 Surface Solar Radiation
- Helioclim 3 WPS
- Helioclim 3 WMS
 The HC3Map Web Service provides maps of 5-years average of the monthly irradiation, i.e., the mean energy received during a whole month per square meter. Irradiation is expressed in kWh/m2. Period is 2004-2008. Two maps are provided: one for the global ir...
[Preview](#) [Add To Map](#) [Details](#) [Metadata](#) [Link](#) [Zoom To](#)
- Helioclim-3 Free Access
- PACA Region (FRANCE) 250 m. resolution Irradiation Map (WMS)
- Helioclim-3 Map
- Environmental Life Cycle Impact Assessment Web Processing Service

See results through REST
API: GEORSS ATOM HTML FRAGMENT KML JSON CSV

2) Other users also viewed

Helioclim-3 Map
 Helioclim 3 WPS
 PACA Region (FRANCE) 250 m. resolution Irradiation Map (WMS)
 Helioclim-3 Free Access
 Annual BETHY/DLR Above Ground Biomass increase (AGBI) for forests (Brandenburg)

geoKnowledge discovery made easy | The EnerGEO Geoportal is part of the EU FP7 EnerGEO project | [Imprint](#) | [Contact](#)



Discussion

- Recommender systems improve the quality of search results
- Additional “links” between resources based on experiences of other users are established and presented
- Incorporation of additional material (pdfs, doc) together with contextual similarity enhances the concept of recommendations (especially when having few users)





RESEARCH STUDIO FOR GEOREFERENCED
MEDIA AND TECHNOLOGY

RESEARCH STUDIOS AUSTRIA
Studio iSPACE



EnerGEO Geoportal

Bernhard Vockner, Manfred Mittlböck, Andreas Richter

Fragen?



Research Studios Austria
Forschungsgesellschaft mbH