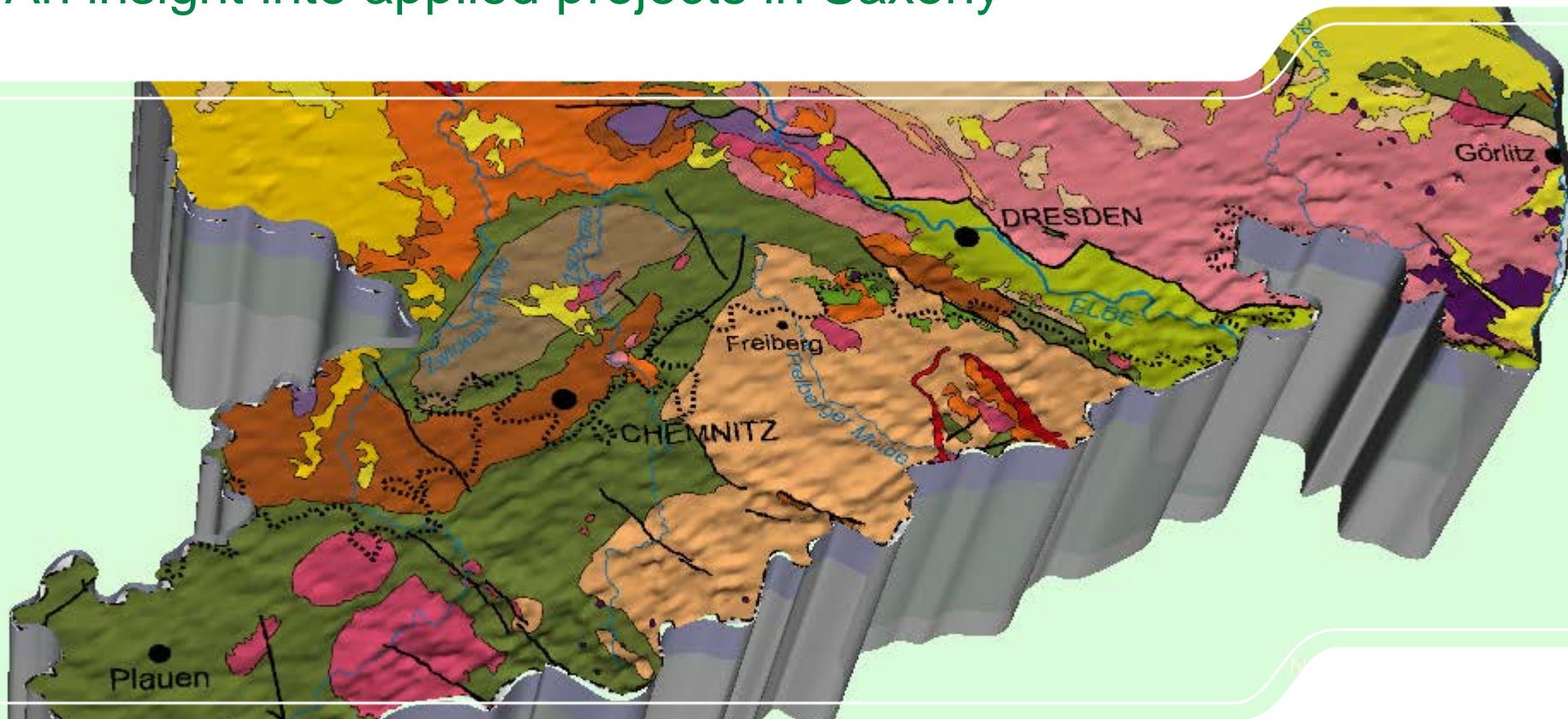


Transboundary Geological 3D-Modelling

An insight into applied projects in Saxony



Outline

■ Introduction

■ Projects

■ TransGeoTherm

■ Caldera of Altenberg-Teplice

■ Elbe Zone/GRACE

■ From Dresden to Prag by train

■ Outlook



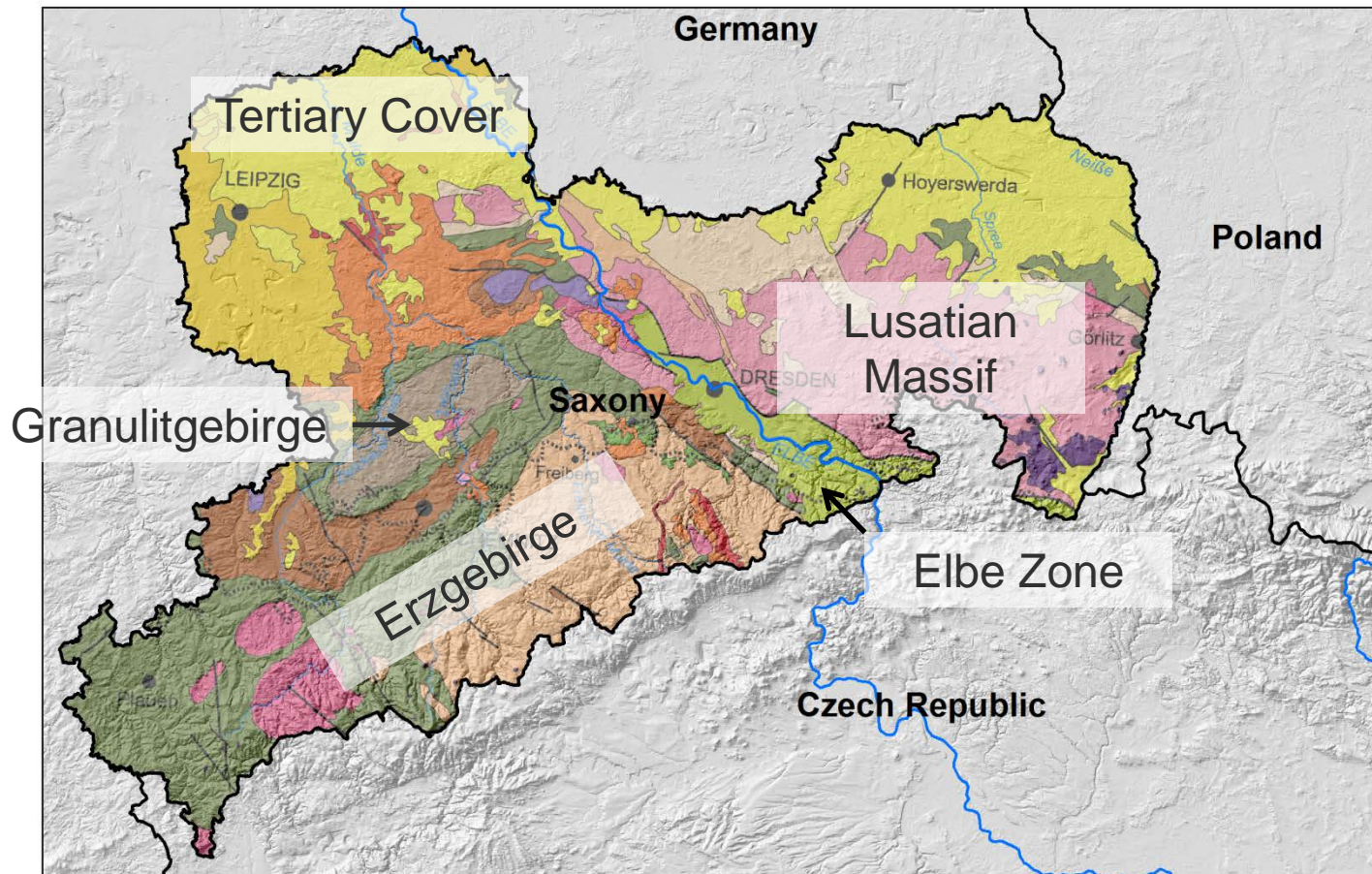
Introduction

Topographic Situation



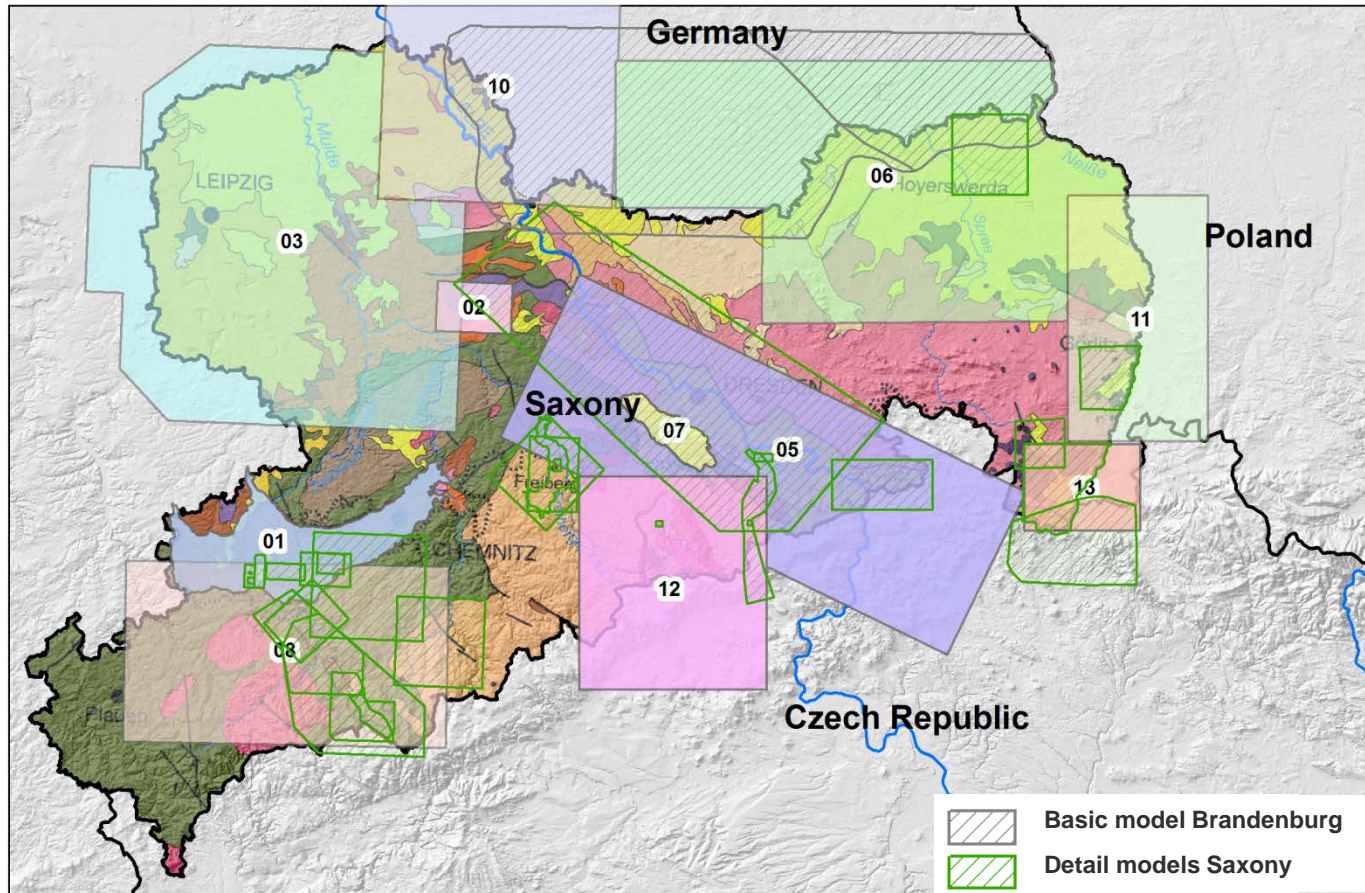
Introduction

Geological Overview



Introduction

Geological 3D-Modeling



Main object:

„Sachsen 3D“ -
Complete capture of
the geological
underground

Coverage about 78 %

Basic models
(colored)

Detail models
(hatched)

Projects

TransGeoTherm

	
Projekt	Model 3D
Aktuelles	Das präsentierte geologische 3D-Modell wurde mit der Software GOCAD (Paradigm®)* erstellt und danach mithilfe der Software GST Desktop (GiGainfosystemsGbr) auf der Internetseite vorgestellt. Das Modell stellt den vereinfachten geologischen Aufbau des Projektgebietes in Form von dreidimensionalen Objekten dar. Die Zahl der dargestellten Einheiten wurde auf Grund der technischen Möglichkeiten bei der Darstellung des Modells auf 30 begrenzt.
Agenda	
Projektpartner	
Ergebnisse	
Oberflächennahe Geothermie	
Geologie	
Geothermische Karten	
Model 3D	
Publikationen und Präsentationen	
Download	
Galerie	
Links	
Kontakt	
Danksagung	
<p>©2013 PIG-PIB & IfUG Impressum Letzte Aktualisierung: 30.12.2014</p>	
<p>* Das Staatliche Geologische Institut – Staatliches Forschungsinstitut bedankt sich in seiner Funktion als Lead-Partner des Projektes TransGeoTherm besonders bei der Firma Paradigm® für die kostenlose Bereitstellung der Lizenz für die Software GOCAD zum Zweck der Erstellung des 3D-Modells für das Projekt. * The Polish Geological Institute – National Research Institute, the Lead Partner of the</p>	

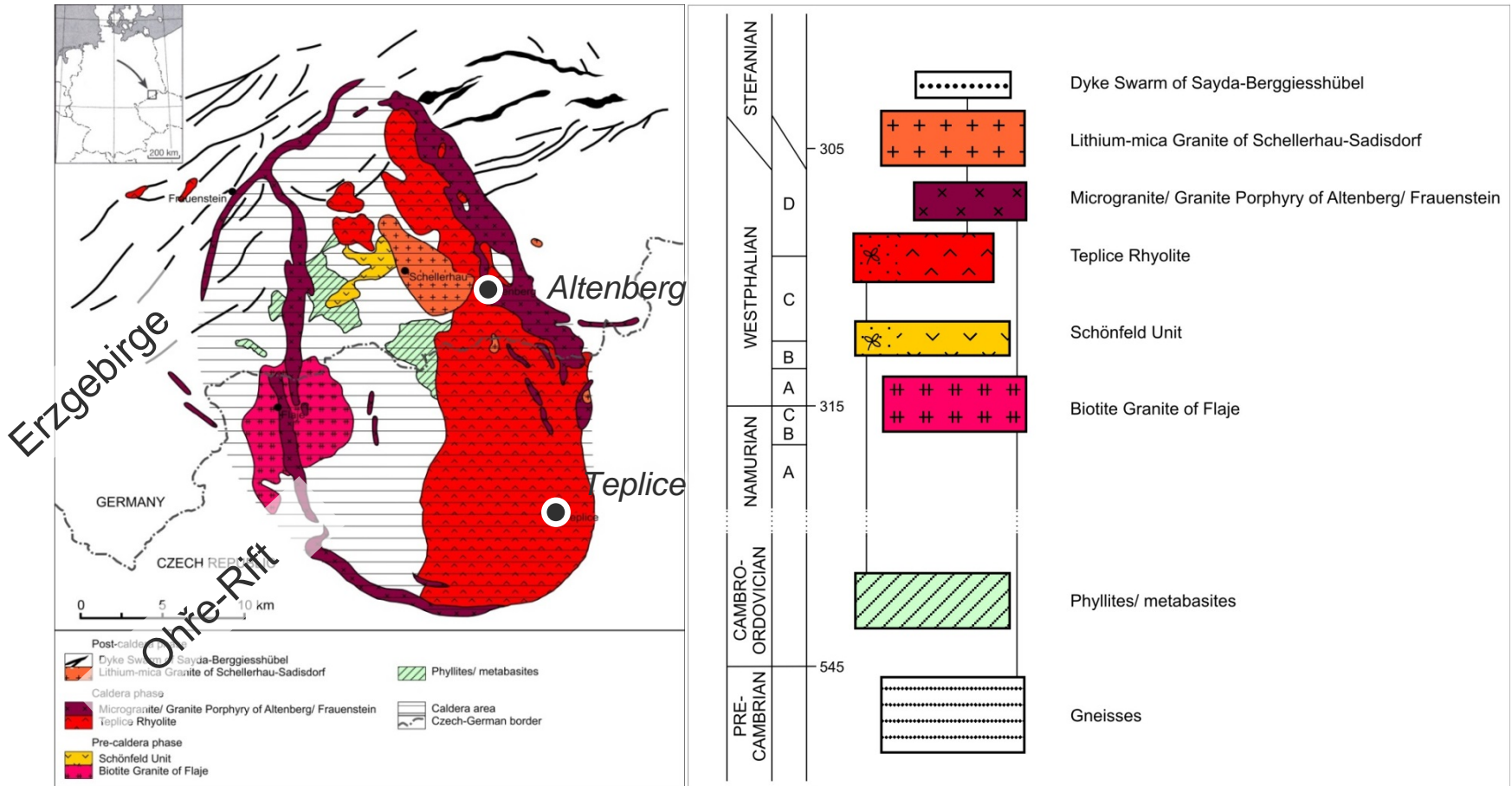
Results (Selection)

- Hydrogeological/geothermal and geological 3D-Model
- Map of groundwater table depth
- Geothermal maps:
 - Heat extraction performance
 - Thermal conductivity
- Internet presentation

<http://www.transgeotherm.eu/index.de.html>

Projects

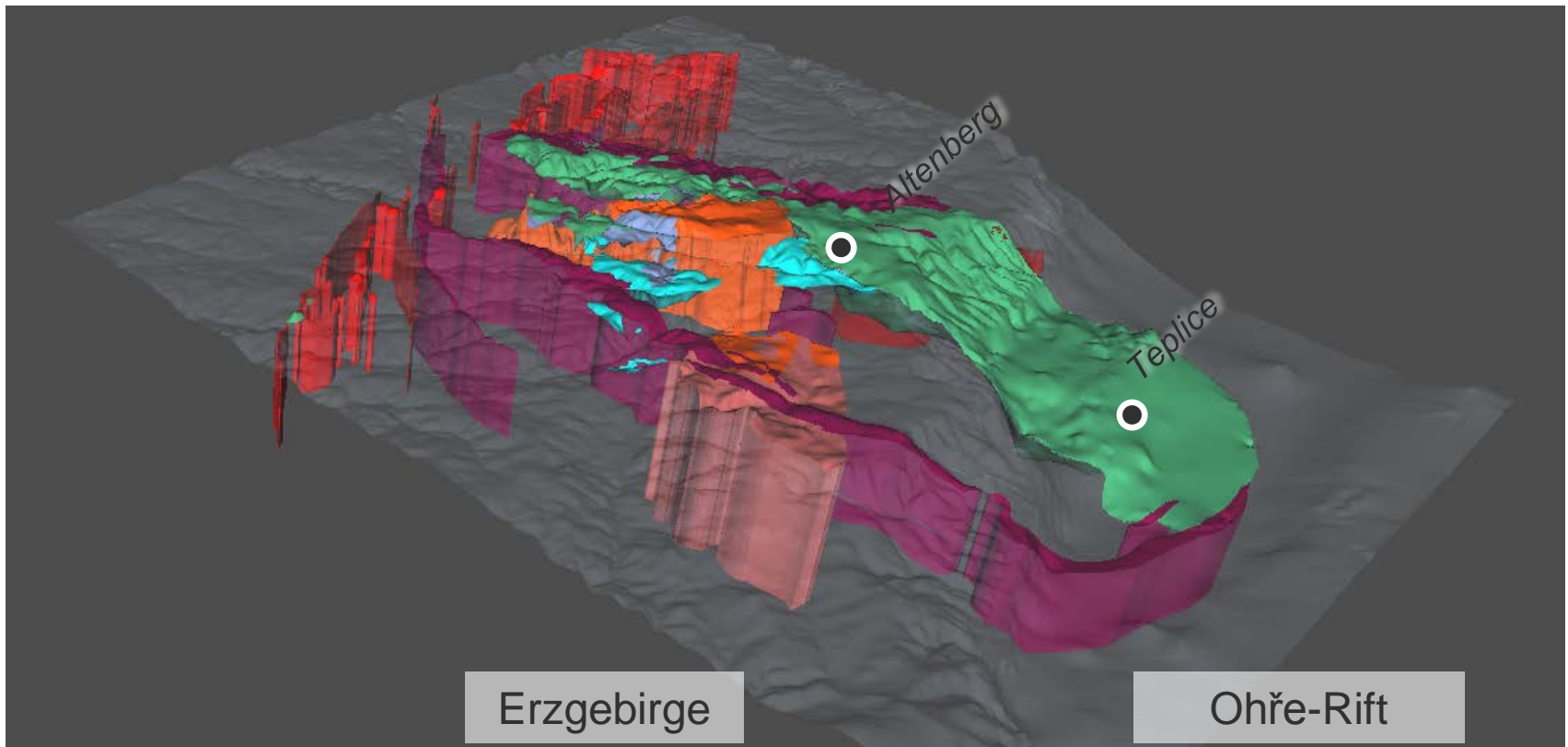
Caldera of Altenberg-Teplice





Projects

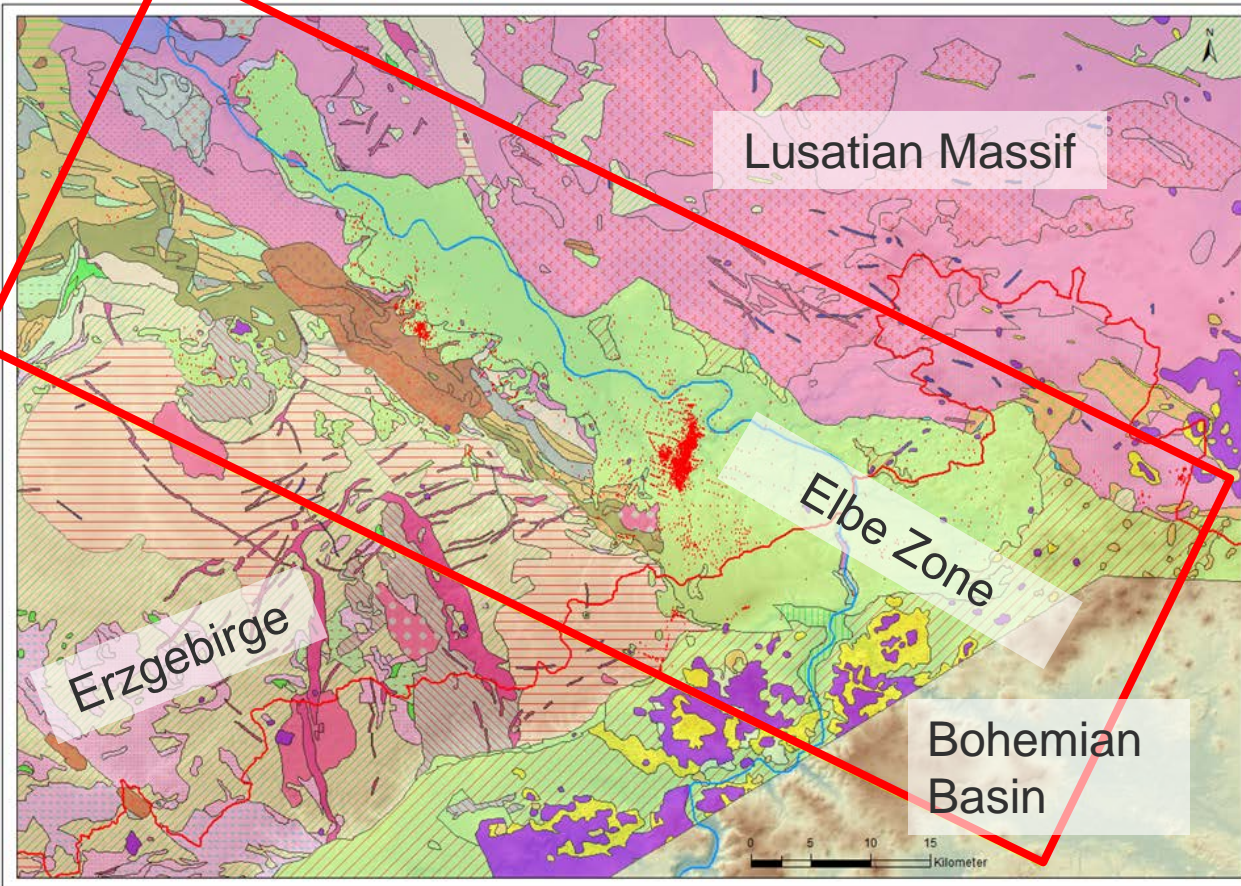
Caldera of Altenberg-Teplice



Geological 3D-Model of the Altenberg-Teplice Caldera, SKUA-GOCAD™, 3x exaggerated (V. GEISLER, 2013)

Projects

Elbe Zone



**Aquifers in
Cretaceous
Sediments**

Duration:
2013

Model area:
100 km x 37 km

Source: Figure by A. GAUER (2013)



Evropská unie. Evropský Fond pro regionální rozvoj: Investice do vaší budoucnosti / Europäische Union. Europäischer Fonds für regionale Entwicklung: Investition in Ihre Zukunft / Evropská unie. Evropský fond pro regionální rozvoj: Investice do vaší budoucnosti

Ziel 3 | Cíl 3
Ahoj sousede. Hallo Nachbar.
2007-2013. www.ziel3-cil3.eu

VÝZKUMNÝ ÚSTAV
VODOHOSPODÁŘSKÝ
T.G. MASARYKA
veřejná výzkumná instituce

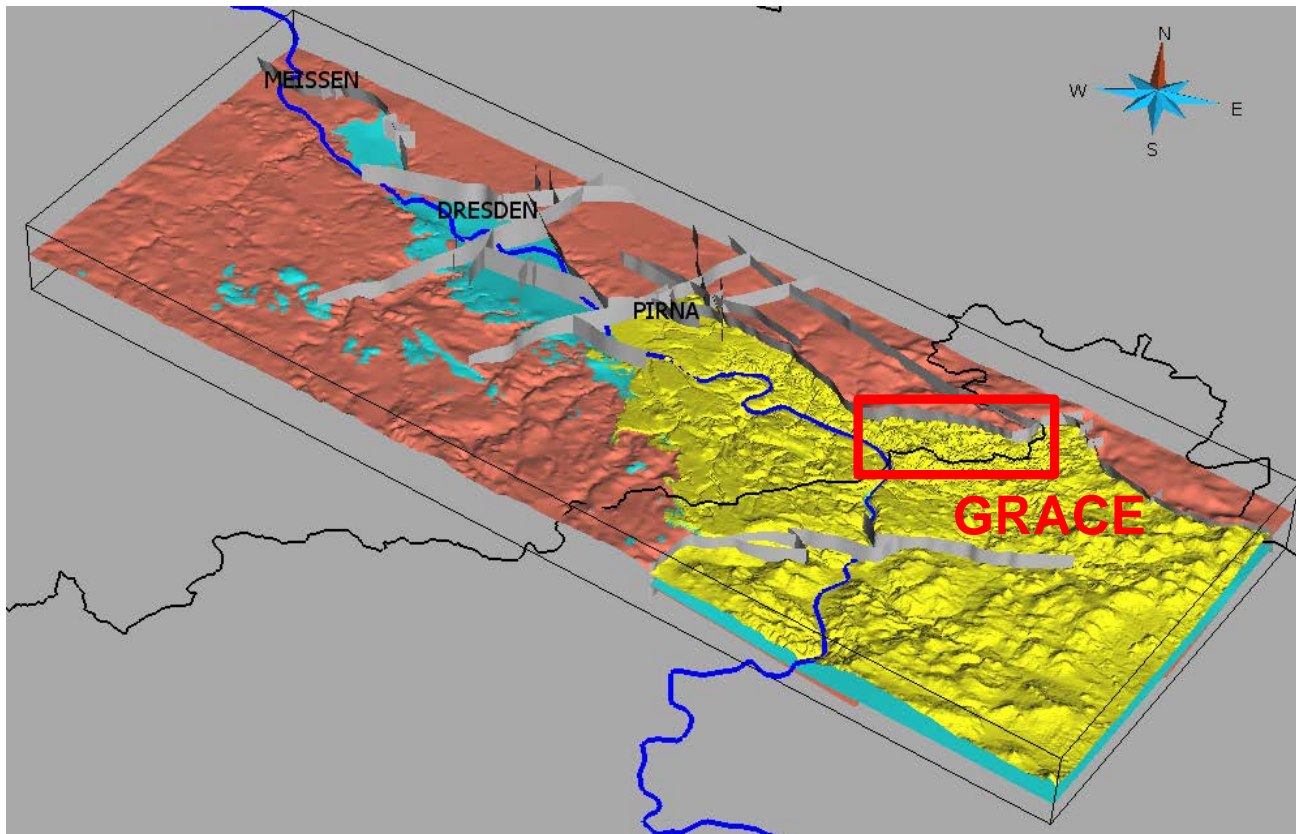
LANDESAMT FÜR UMWELT,
LANDWIRTSCHAFT
UND GEOLOGIE



Freistaat
SACHSEN

Projects

Elbe Zone – Project Grace



Geological 3D-Model of the Elbe Zone, SKUA-GOCAD™, 3x exaggerated (A. GAUER, 2013)

**Shared utilisation
of groundwater
resources at the
Czech – Saxonian
border**

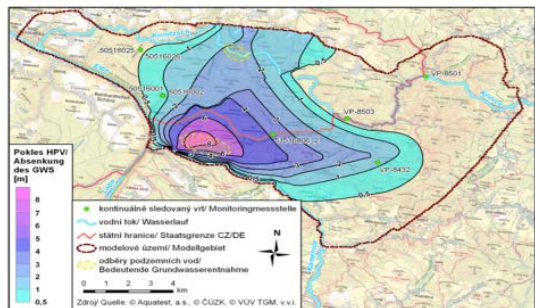
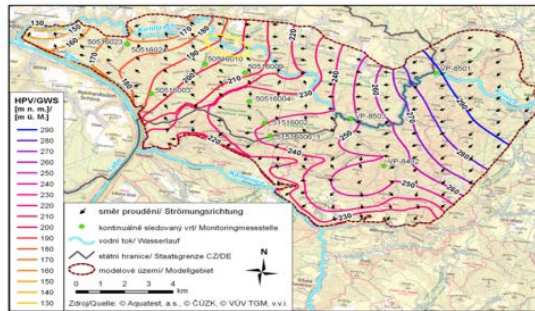
Duration:
2011 – 2015

Content:
GW-Monitoring,
Geological-
Hydrogeological-
Correlation,
Isotopes, Flow
simulation (Visual
MODFLOW®)



Projects

Elbe Zone - Project GRACE



Results (Selection)

- █ Significant influence of former anthropogenic water withdrawal
- █ Flow simulations:
 - █ Level of current GW-withdrawals leave stable GW-resources
 - █ Strong influence of GW-withdrawals across the border

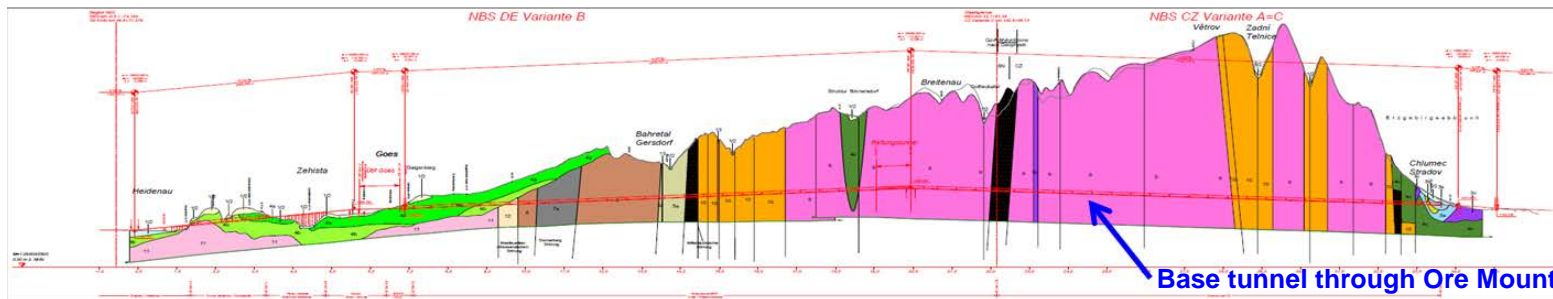
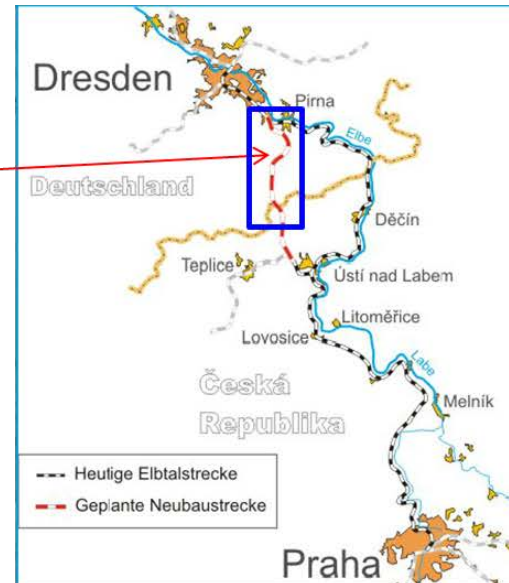
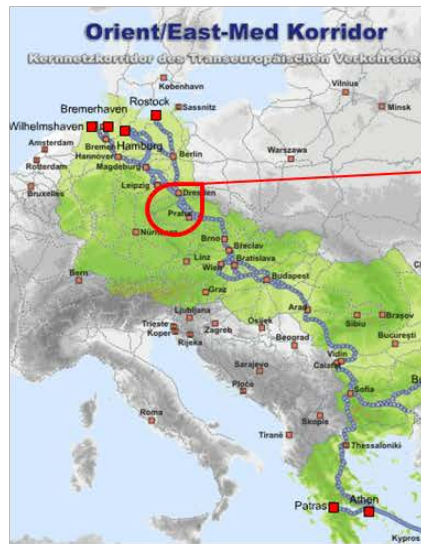
Source:
Figures by A. K. BÖHM et al. (2014), modified



Co-financed by the European Union
Trans-European Transport Network (TEN-T)

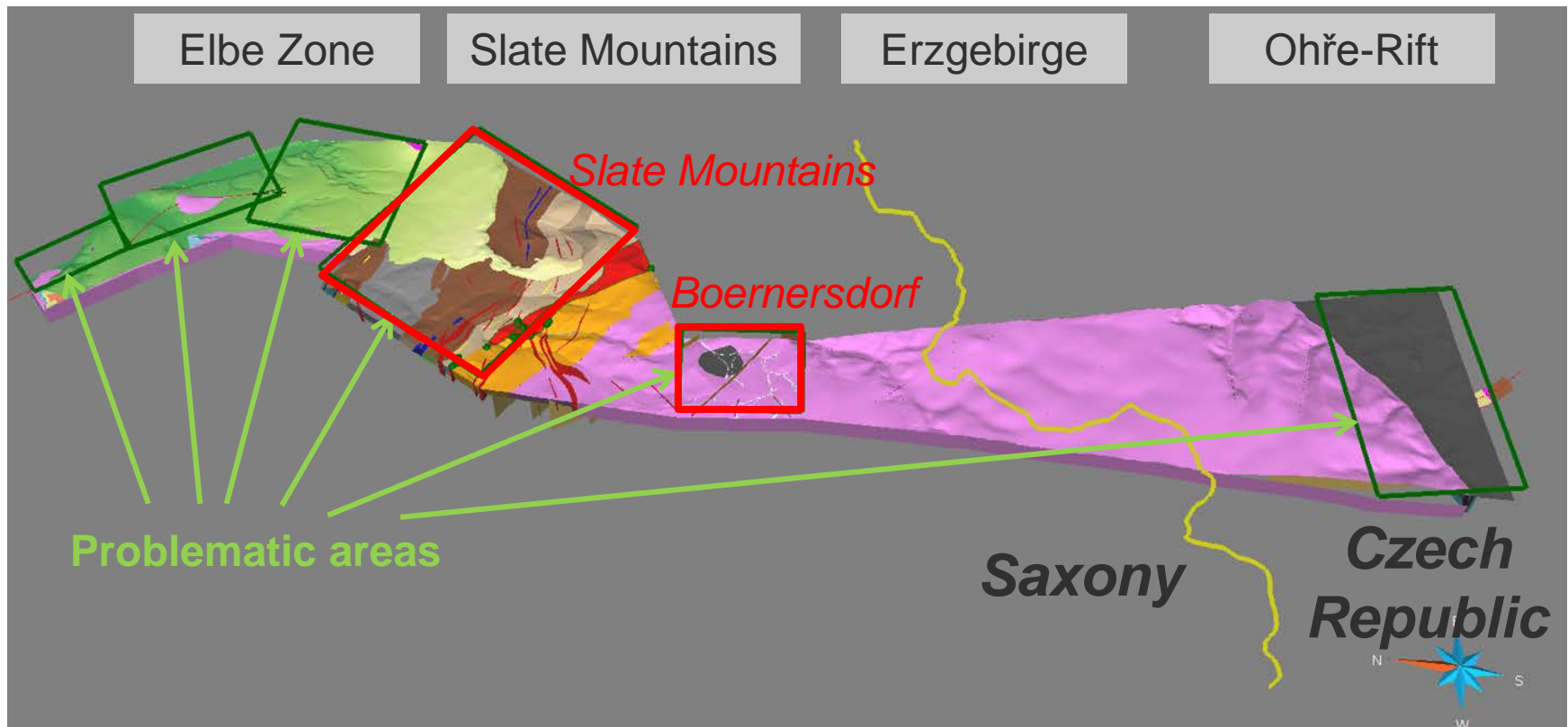
Projects

From Dresden to Prague by Train (NBS Dresden – Prag)

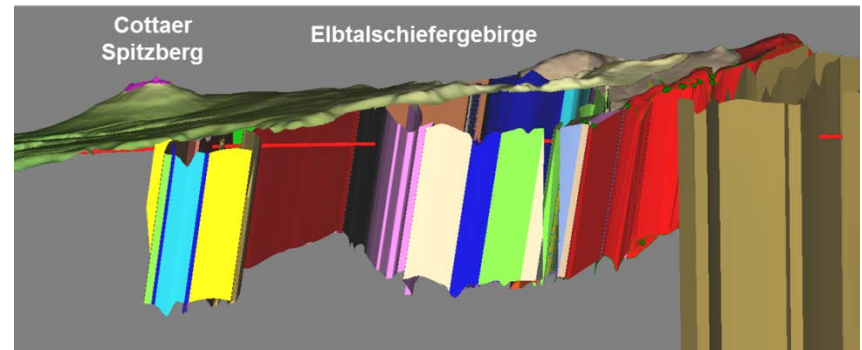
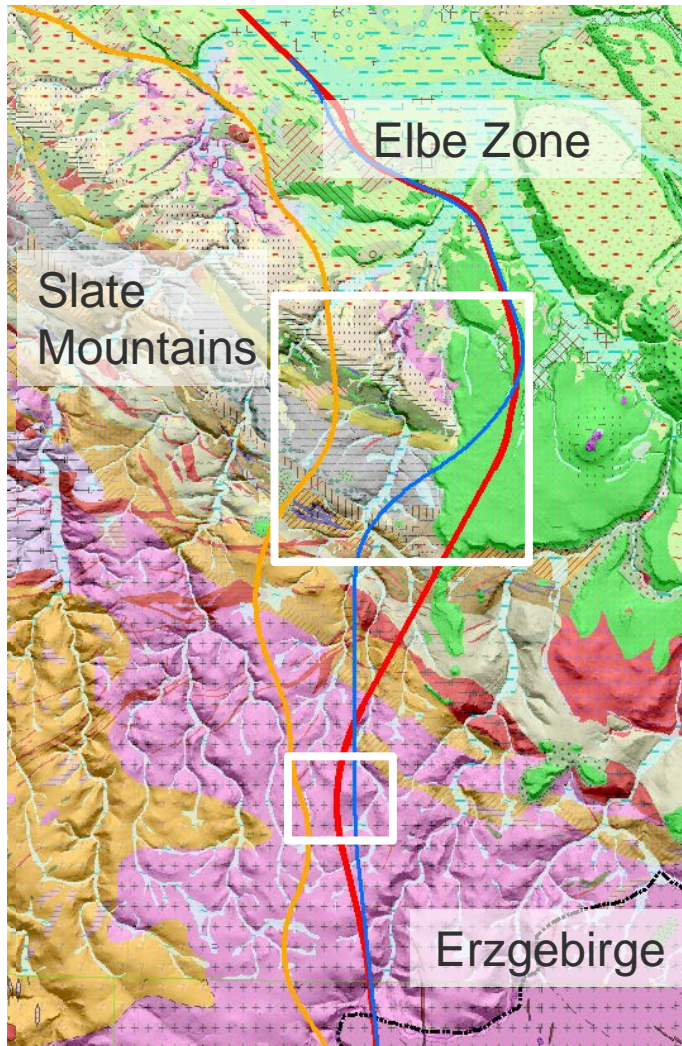


Projects

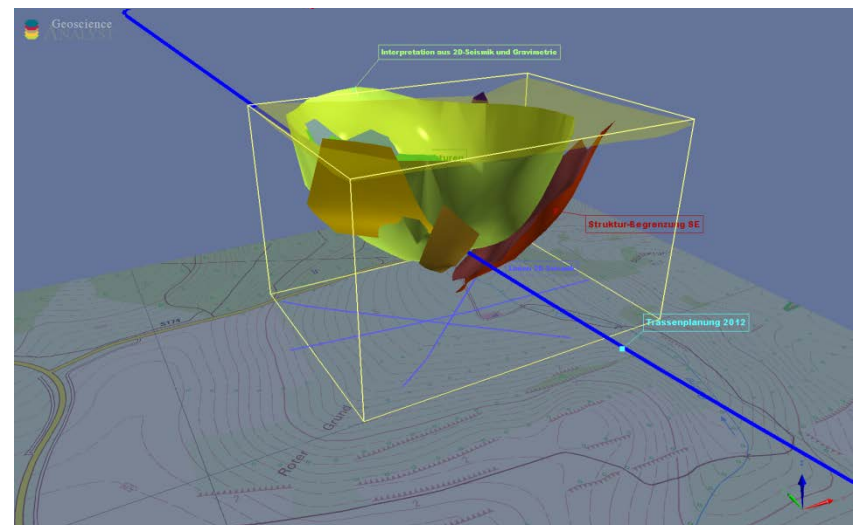
From Dresden to Prague by Train (NBS Dresden – Prag)



Geological 3D-Model of the NBS Dresden-Prag, SKUA-GOCAD™ (Source: Figure by S. KULIKOV et al. (2016), modified)



Adaptation of the planned train path



Source: Figures by S. KULIKOV et al. (2016), modified

Outlook



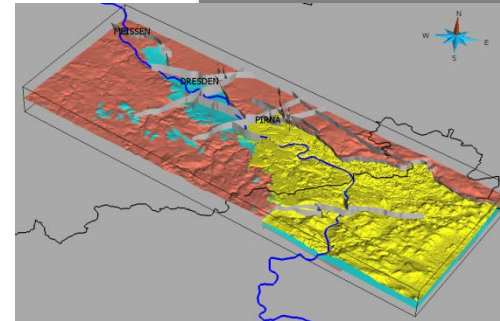
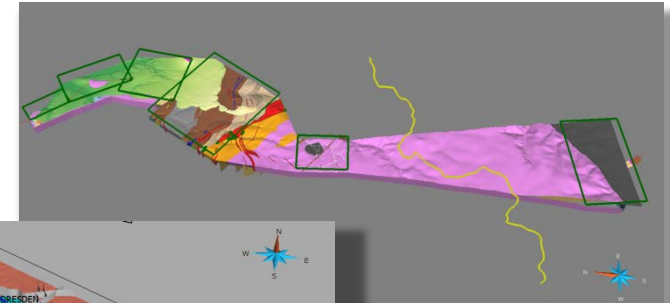
Kooperationsprogramm
SN – CZ 2014 - 2020



Europäische Union. Europäischer Fonds für
regionale Entwicklung: Investition in Ihre
Zukunft / Evropská unie. Evropský fond pro
regionální rozvoj: Investice do vaší budoucnosti

■ **NBS Dresden – Prag**
2017-2019

■ **GRACE → ResiBil**
2016-2019



Thank you for your attention!

