



ALCUE NET

Latin America, Caribbean and European Union Network on Research and Innovation

Geothermal Energy in Austria

**Geothermal Energy Workshop
Salta – December 2014**



Global electricity production 2012 (Mtoe)

1'167 Mtoe Natural gas
2'399 Mtoe coal
145 Mtoe Bio/waste 44 Mtoe oil

Fossil fuels
3'755 Mtoe $\equiv$ 4'987 GW

6'855 Mtoe input for electricity
(36,8%)

67 Mtoe Geothermal (0,36%)

8 Mtoe Geothermal heat

75 Mtoe solar,tide,wind

316 Mtoe Hydro power

2'642 Mtoe nuclear power

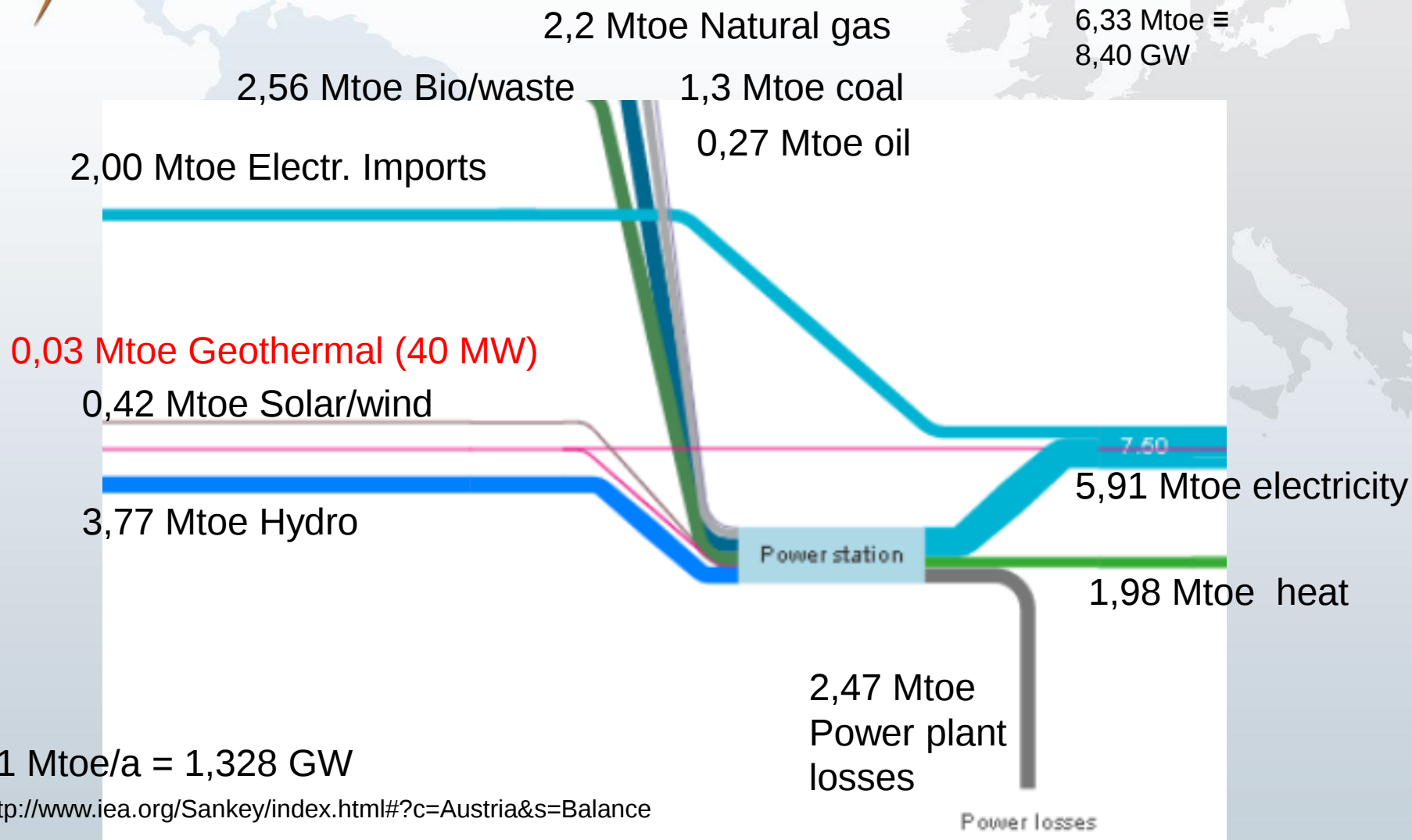
Renewable 3,2 % of total
energy production

Total energy production 2012: 18'609 Mtoe

Power station

<http://www.iea.org>

Electricity production – Austria 2012



Geothermal energy of Austria

Geothermal systems

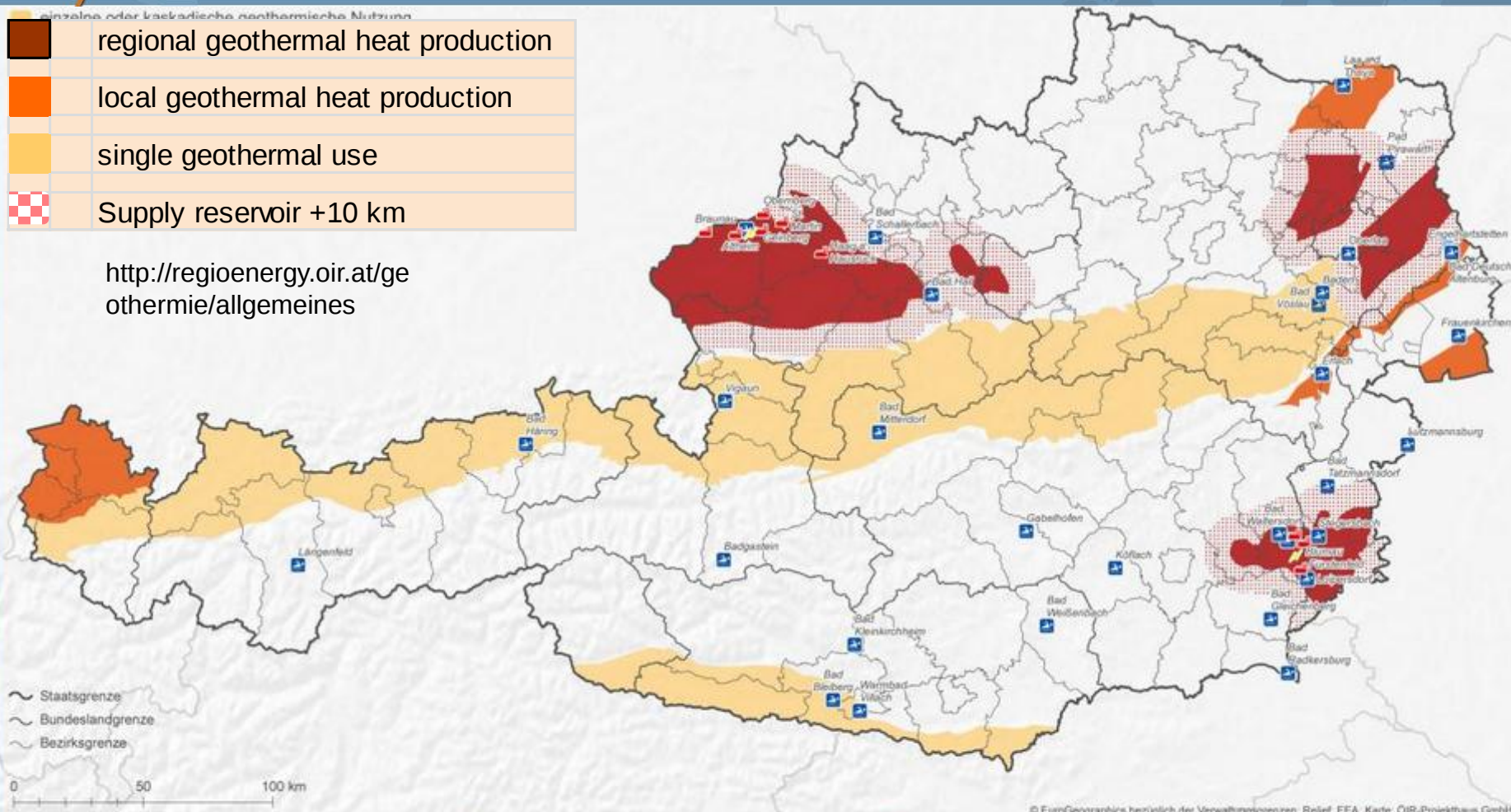
Type of use

Petrothermale Systeme rocks, magma	Hot Dry Rock Techniques
Hydrogeothermale systems (>150°C) steam systems hot water systems	Electricity Production
Hydrothermale systeme (<150 °C) aquifere thermal water	electricity generation (>100 °C) direct use
shallow systems < 25 °C, down to 400 m	heat pumps

Hydro-geothermal plants; status and potential (REGIO Energy)

	regional geothermal heat production
	local geothermal heat production
	single geothermal use
	Supply reservoir +10 km

<http://regioenergy.oir.at/geothermie/allgemeines>



Quelle: GBA, Gregor Götzl, Godfrid Wessely, Eva Wegerer,
eigene Bearbeitung.
Stand: Oktober 2008



Dieses Projekt wird aus Mitteln des
Klima- und Energiefonds gefördert
und im Rahmen des Programms
„ENERGIE DER ZUKUNFT“ durchgeführt.





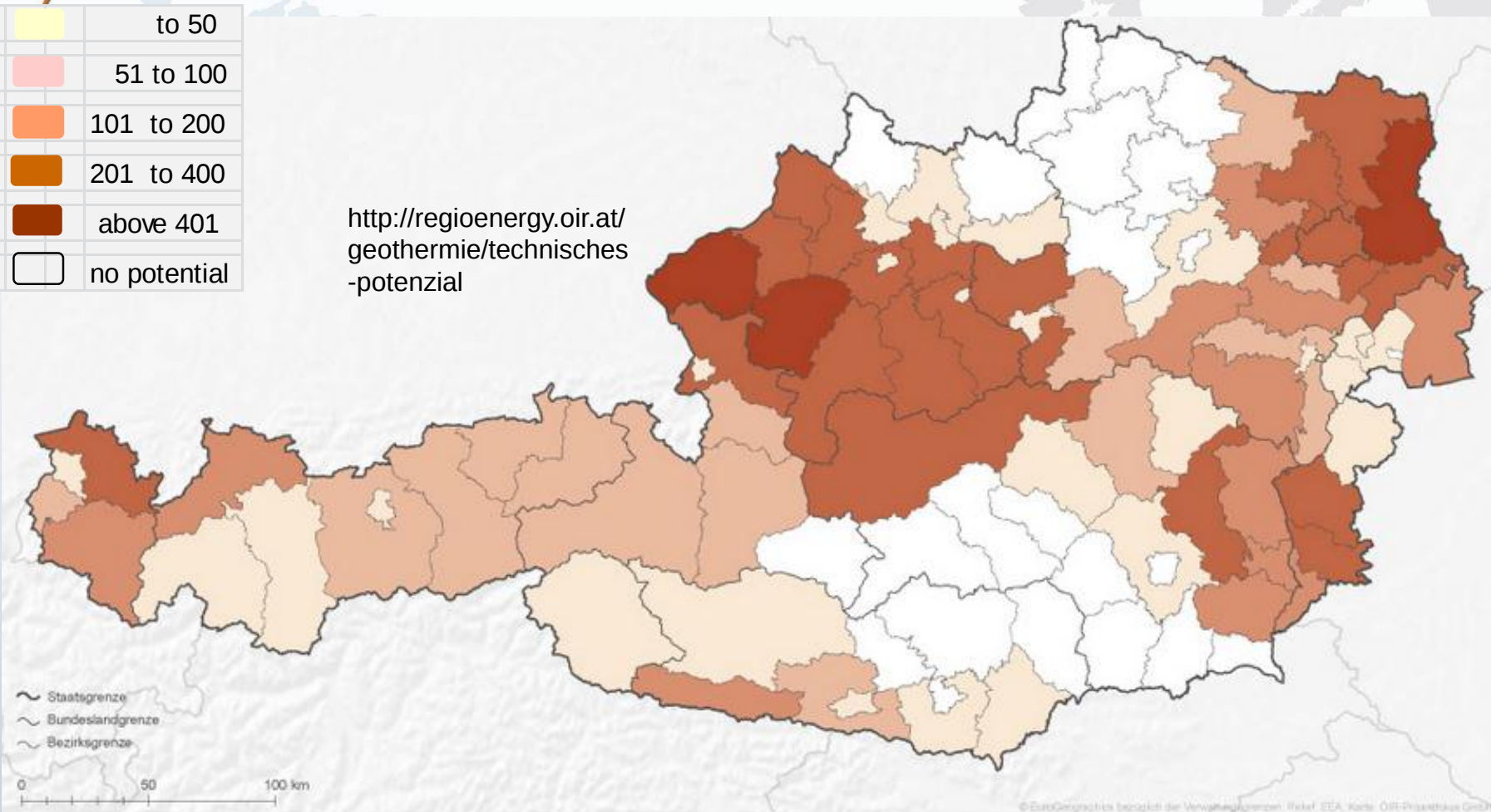
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Hydro-geothermal energy potential of Austria (REGIO Energy)

	to 50
	51 to 100
	101 to 200
	201 to 400
	above 401
	no potential

<http://regioenergy.oir.at/geothermie/technisches-potenzial>



Quelle: eigene Berechnung
Stand: Dezember 2008



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Geothermal Plants in Upper-Austria

Plant	Altheim	Haag	Geinberg	Obernberg	St. Martin	Simbach/ Braunau Thermal 1+2	Ried
application	E, DH	DH	DH, B&T and G	DH	DH	DH	DH
installed power [MW]	18,8	2,2	7,8	1,7	3,3	14	24
volume flow [L/s]	80	20	25	20	20	74	100
temperature [°C]	105	86	105	80	90	80	95
Start-up	1990 dublette 1999	1995	1981 dublette 1998	1996/97	2000	2001	2014
size of district heating [km]	15	12	6	17	25	40	35

E...electricity production DH... district heating B&T...balneology and therapeutic G...glas- or greenhouse

Mid-therm geothermal potential in Austria

- Southeast Styria $80 \text{ MW}_{\text{th}}$ and $1,3 \text{ MW}_{\text{el}}$
- Vienna basin with $200 \text{ MW}_{\text{th}}$
- Upper Austria Molasses $150 \text{ MW}_{\text{th}}$ and $10 \text{ MW}_{\text{el}}$

Source: J. Goldbrunner (<https://www.gaswaerme.at/de/pdf/10-1/goldbrunner.pdf>)

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Thank you