

# EUROPEAN GEOTHERMAL CONGRESS 2019

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## PROCEEDINGS

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## Contents

<b>Organised by</b> .....	1
<b>Main Sponsor</b> .....	1
<b>Sponsors</b> .....	1
<b>1. Country Updates (CU)</b> .....	<b>3</b>
<b>2. Policy</b> .....	<b>5</b>
2.A. Policy – Public perception and social aspects (P-PP).....	5
2.B. Policy– Financing (P-FI).....	5
<b>3. Technology</b> .....	<b>6</b>
3.A. Technology – Exploration&Planning (T-EP).....	6
3.B. Technology - Operation (T-OP).....	7
3.C. Technology – Corrosion & Scaling (T-CS).....	7
3.D. Technology - Power (T-EL).....	8
3.E. Technology – Heating & Cooling technologies (T-HC).....	9
3.F. Technology – Technologies & Innovation (T-TI).....	9
3.G. Technology – UTES (T-UT).....	10
3.H. Technology – Geothermal HP (T-HP).....	11
3.I. Technology - Envi. Impacts & Solutions (T-EI).....	12
<b>4. Science</b> .....	<b>12</b>
4.A. Science – Resources Classification (S-RC).....	12
4.B. Science – Exploration (regional assessment) (S-ER).....	12
4.C. Science – Exploration (Upper Rhine Grabben) (S-EG).....	13
4.D. Science – Exploration (carboniferous) (S-EC).....	13
4.E. Science – Exploration (clastic) (S-EB).....	14
4.F. Science – Exploration (magmatic) (S-EM).....	14
4.G. Science – Exploration (play types) (S-EP).....	14
4.H. Science – Exploration (S-EX).....	15
4.I. Science – Geothermal Wells (S-GW).....	17
4.L. Science – Reservoir engineering (S-RE).....	18
4.M. Science – Stimulation (S-ST).....	19
4.N. Science – Induced seismicity (S-IS).....	20
4.O. Science – Power & Heat conversion (S-PO).....	20
4.P. Science – European R&D (S-EU).....	21

## 1. Country Updates (CU)

<b>CU-0</b>	Burkhard Sanner	<a href="#">Europe Country Update</a>
<b>CU-1</b>	Goldbrunner, Goetzl	<a href="#">Austria Country Update</a>
<b>CU-2</b>	Dubanevich, Zui	<a href="#">Belarus Country Update</a>
<b>CU-3</b>	Lagrou, Petitclerc, Hoes, Dupont, Laenen	<a href="#">Belgium Country Update</a>
<b>CU-4</b>	Samardžić, Hrvatović, Skopljak	<a href="#">Bosnia-Herzegovina Country Update</a>
<b>CU-5</b>	Hristov, Deneva, Valchev, Benderev	<a href="#">Bulgaria Country Update</a>
<b>CU-6</b>	SanjaŽivković, Kolbah, Škrlec, Tumara	<a href="#">Croatia Country Update</a>
<b>CU-7</b>	Michopoulos	<a href="#">Cyprus Country Update</a>
<b>CU-8</b>	Dědeček, Šafand, Tým	<a href="#">Czech Republic Country Update</a>
<b>CU-9</b>	Poulsen, Bjørn, Mathiesen, Nielsen, Vosgerau, Vangkilde-Pedersen, Ditlefsen, Røgen	<a href="#">Denmark Country Update</a>
<b>CU-10</b>	Kallio	<a href="#">Finland Country Update</a>
<b>CU-11</b>	Boissavy, Henry, Genter, Pomart, Rocher, Schmidlé-Bloch	<a href="#">France Country Update</a>
<b>CU-12</b>	Weber, Born, Moeck	<a href="#">Germany Country Update</a>
<b>CU-13</b>	Papachristou, Arvanitis, Mendrinos, Dalabakis, Karytsas, Andritsos	<a href="#">Greece Country Update</a>
<b>CU-14</b>	Nádor, Kujbus, Tóth	<a href="#">Hungary Country Update</a>
<b>CU-15</b>	Pasquali, Williams, Blake, McAteer	<a href="#">Ireland Country Update</a>
<b>CU-16</b>	Manzella, Serra, Cesari, Bargiacchi, Cei, Cerutti, Conti, Giudetti, Lupi, Vaccaro	<a href="#">Italy Country Update</a>
<b>CU-17</b>	Šliaupa, Zinevičius, Mazintas, Petrauskas, Dagilis	<a href="#">Lithuania Country Update</a>
<b>CU-18</b>	Popovska-Vasilevska, Armenski	<a href="#">Macedonia Country Update</a>
<b>CU-19</b>	Provoost, Albeda, Godschalk, van der Werff, Schoof	<a href="#">Netherlands Country Update</a>
<b>CU-20</b>	Kvalsvik, Midttømme, Ramstad	<a href="#">Norway Country Update</a>
<b>CU-21</b>	Kępińska	<a href="#">Poland Country Update</a>

<b>CU-22</b>	Nunes, Coelho, Carvalho, do Rosário Carvalho, Garcia	<a href="#">Portugal Country Update</a>
<b>CU-23</b>	Gavriliuc, Rosca, Cucueteanu	<a href="#">Romania Country Update</a>
<b>CU-24</b>	Oudech, Djokic	<a href="#">Serbia Country Update</a>
<b>CU-25</b>	Fričovský, Černák, Marcin, Blanárová, Benková, Pelech, Fendek	<a href="#">Slovakia Country Update</a>
<b>CU-26</b>	Rajver, Lapanje, Rman, Prestor	<a href="#">Slovenia Country Update</a>
<b>CU-27</b>	Arrizabalaga, De Gregorio, De Santiago, García de la Noceda, Pérez P, Urchueguía	<a href="#">Spain Country Update</a>
<b>CU-28</b>	Gehlin, Andersson	<a href="#">Sweden Country Update</a>
<b>CU-29</b>	Link, Siddiqi, Lupi	<a href="#">Switzerland Country Update</a>
<b>CU-30</b>	Mertoglu, Simsek, Basarir, Paksoy	<a href="#">Turkey Country Update</a>
<b>CU-31</b>	Curtis, Busby, Law, Adams	<a href="#">UK Country Update</a>
<b>CU-32</b>	Morozov, Barylo	<a href="#">Ukraine Country Update</a>

## 2. Policy

### 2.A. Policy – Public perception and social aspects (P-PP)

<b>14</b>	P-PP	Pellizzone, Manzella, Allansdottir	<a href="#">Geothermal societies: a comparative analysis</a>
<b>30</b>	P-PP	Hajto	<a href="#">Identification of conflicts and environmental constrains related to the use of shallow geothermal heat in urban areas on the example of the city of Krakow, Poland</a>
<b>138</b>	P-PP	Hahn	<a href="#">Extended Horizontal Jet Drilling for EGS applications in Petrothermal Environments</a>
<b>150</b>	P-PP	Raos, Ilak, Rajšl, Bilić, Trullenque	<a href="#">Assessment of enhanced geothermal projects and their optimal long-term usage plans by using the dms-touge decision-making support tool</a>
<b>246</b>	P-PP	Peterschmitt, Dumas, Garabetian	<a href="#">Geoenvi: tackling the environmental concerns for deploying geothermal energy in Europe</a>
<b>256</b>	P-PP	Schmidle-Bloch, Heintz, Moullet	<a href="#">How to win social acceptability the French geothermal industry approach</a>
<b>267</b>	P-PP	Serrano, Bodin, Zoungrana, Heimlich, Chavot, Masseran	<a href="#">French press coverage of geothermal energy, 2002 - 2018</a>
<b>284</b>	P-PP	Chavot, Serrano, Bodin, Zoungrana, Heimlich, Masseran	<a href="#">Public perception of geothermal projects in Alsace: between energy transition and territorial preservation</a>

### 2.B. Policy– Financing (P-FI)

<b>105</b>	P-FI	Dumas, Garabetian	<a href="#">Financing geothermal: innovative schemes for new business models</a>
<b>107</b>	P-FI	Ádám, Lapanje, Markovic, Milenic, Nádor, Rotár-Szalkai, Fărnoaga, Samardžic, Jolovic	<a href="#">Application of a novel geological risk mitigation scheme in the Danube Region</a>
<b>241</b>	P-FI	Garabetian	<a href="#">Policy and regulation: impact of the new european framework on the geothermal sector</a>
<b>242</b>	P-FI	Garabetian	<a href="#">Innovation and competitiveness of the geothermal heating and cooling sector</a>
<b>243</b>	P-FI	Hartog	<a href="#">Eutectic Freeze Crystallization (EFC): A cool solution for processing geothermal waste brines?</a>
<b>245</b>	P-FI	Pinzuti, Dumas, Garabetian, Manzella, Trumpy, Laenen, Lagrou	<a href="#">European technology and innovation platform on deep geothermal, a presentation</a>
<b>264</b>	P-FI	Toth, Fenerty, Nyikos	<a href="#">Prospects for geothermal power projects in Hungary</a>

353	P-FI	Zwamborn, de Groof	<a href="#">Assessment guidelines and certification scheme for geothermal systems in the Netherlands</a>
358	P-FI	Adams, Fleming, Bielicki, Hansper, Glos, Langer, Wechsung, Saar	<a href="#">Grid Scale Energy Storage using CO2 in Sedimentary Basins: the Cost of Power Flexibility</a>
387	P-FI	Wieser, Engel, Goldbrunner, Kriegl	<a href="#">Risk control as a key to keep geothermal developments fundable</a>

### 3. Technology

#### 3.A. Technology – Exploration&Planning (T-EP)

35	T-EP	Lackner, Lentsch, Dorsch	<a href="#">Germany`s Deepest Hydro-Geothermal Doublet, Drilling Challenges and Conclusions for the Design of Future Wells</a>
41	T-EP	Herms, Goetzl, Borovic, García-Gil, Ditlefsen, Boon, Veloso, Petitclerc, Janza, Erlström, Åonowski, Holecek, Hunter Williams, Vandemeijer, Cernak, Malyuk	<a href="#">MUSE-managing urban shallow geothermal energy. A GeoERA geo-energy project</a>
72	T-EP	Drouiller	<a href="#">3d seismic, a key tool for design &amp; derisking of dual geothermal boreholes in stratified aquifers and fractured aquifers along regional faults</a>
74	T-EP	Agemar, Suchi	<a href="#">Development of 3d structural models of geothermal usable horizons in the area of north western Germany</a>
149	T-EP	Savvatis, Steiner, Krzikalla	<a href="#">4D geomechanical Simulations (VISAGETM) to Evaluate Potential Stress Relocation in a Geothermal Targeted Fault System in Munich (South Germany)</a>
182	T-EP	Gillot	<a href="#">Game changing technology in seismic imaging applied to geothermal industry</a>
187	T-EP	Alten, Wolf, Gramenz, Agemar, Tribensee	<a href="#">Free Access to Maps and 3D-Models for Geothermal Planning in Germany</a>
307	T-EP	Reinecker, Hochschild, Kraml, Löschan, Kreuter	<a href="#">Experiences and challenges in geothermal exploration in the Upper Rhine Graben</a>
346	T-EP	J.Peijster	<a href="#">Lean: low cost exploration and derisking of geothermal plays in white spot areas: the rotliegend demonstrator</a>
368	T-EP	Dirix, Harcouët-Menou, Van Bael, Laenen	<a href="#">Technical assessment of large scale groundwater-cooling systems for low temperature geothermal power plants</a>
373	T-EP	Buday, Buday-Bódi, Csákberényi-Nagy, Kovács	<a href="#">Subsurface Urban Heat Island Investigation in Debrecen, Hungary Based on Archive and Recently Measured Data</a>

<b>375</b>	T-EP	Buday-Bódi, Buday, Mcintosh	<a href="#">Geology, Potential and Utilization of Porous Thermal Water Reservoirs, NE-Hungary</a>
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### 3.B. Technology - Operation (T-OP)

<b>37</b>	T-OP	Skúlason Kaldal, Thorbjornsson, Guðmundsson, Reinsch, Lipus, Wollenweber, Orlic, Gíslason, Stefánsson, Pálsson, Sverrisson	<a href="#">Full-scale Surface Experiment of Cemented-in Casing Connections Designed for Stress Mitigation</a>
<b>38</b>	T-OP	Lingen	<a href="#">Testing of Deep Hot-Water Wells - Best Practice</a>
<b>39</b>	T-OP	Mouchot	<a href="#">Deep geothermal plants operation in upper rhine graben: lessons learned</a>
<b>52</b>	T-OP	Faluomi, Bonizzi, Andreussi	<a href="#">Mast: a fine mesh transient multiphase code for geothermal fluid networks simulation</a>
<b>53</b>	T-OP	Faluomi, Borsi, Orlando	<a href="#">Progeo: an advanced tool for geothermal energy exploitation</a>
<b>152</b>	T-OP	Soldo, Conti, Alimonti	<a href="#">Exergy performance of a wellbore heat exchanger coupled with a orc plant: comparison of two different case studies</a>
<b>183</b>	T-OP	Jamali, Wittig, Bracke	<a href="#">Thermal rock weakening and drilling based laser technologies for hard rock and geothermal applications</a>
<b>249</b>	T-OP	Rangel, Pereira, Ponte, Thorhallsson	<a href="#">Reaming calcite deposits of well pv8 while discharging: a successful operation at Ribeira Grande geothermal field, São Miguel island, Azores</a>
<b>290</b>	T-OP	Bonafin, Pietra, Zanzucchi, Manzolini	<a href="#">Optimization of pipelines for transportation of geothermal two-phase fluid from well-head to power block.</a>
<b>333</b>	T-OP	Kahrobaei, Willems. van Wees, Wilschut, Fonseca	<a href="#">Regional scale geothermal field development optimization under geological uncertainties</a>
<b>386</b>	T-OP	Kirknel, Nylandsted, Werge-Gross, Juul, Kann, Thomsen, Fosbøl	<a href="#">Thermodynamic modelling of water chemistry in geothermal systems</a>

### 3.C. Technology – Corrosion & Scaling (T-CS)

<b>19</b>	T-CS	Recalde Lummer, Willert, Gerdes	<a href="#">Innovative fluid system for dissolving lead scales - fluid development and field trial in a geothermal well</a>
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<b>22</b>	T-CS	Florenco, Scheiber, Mouchot, Seibt, Jähnichen	<a href="#">Scale and Corrosion Control Program, Example of two geothermal plants in operation in the Upper Thine Valley Graben</a>
<b>23</b>	T-CS	van der Velde, van de Watering	<a href="#">(Environmental) impact of inhibitors applied in the geothermal sector in the Netherlands</a>
<b>27</b>	T-CS	Scheiber	<a href="#">Combined application of inhibitors for scale and corrosion mitigation: lessons learned</a>
<b>263</b>	T-CS	Faes, Lecompte, De Paepe, Verbeken, Van Bael, Salenbien	<a href="#">Corrosion in heat exchangers in geothermal power plants</a>
<b>388</b>	T-CS	Matheis	<a href="#">The inhibition of lead sulfide scale in geothermal plants</a>

### 3.D. Technology - Power (T-EL)

<b>18</b>	T-EL	Recalde Lummer, Rauf, Gerdes	<a href="#">Premium treatment system for granite and sandstone formations - fluid development and field trial in a geothermal well</a>
<b>51</b>	T-EL	Ómar Friðleifsson, Albertsson, Stefánsson, Þórólfsson, Mesfin, Sigurðsson, Sigurðsson, Gíslason	<a href="#">The Reykjanes DEEPEGS demonstration well - IDDP-2</a>
<b>110</b>	T-EL	Vranješ, Milenić, Jolović, Toholj, Samardžić, Skopljak	<a href="#">Concept of cascade use of geothermal energy in open indirect district heating system on the territory of bogatic - darlinge project pilot area</a>
<b>117</b>	T-EL	Franco, Vieira, Ponte, Rangel,	<a href="#">A decade of commercial geothermal production from the Pico Vermelho power plant, São Miguel Island, Azores</a>
<b>194</b>	T-EL	Van Bael, De Servi, Dirix Al Koussa, Laenen, Harcouët-Menou, Rajabloo, Spiessens	<a href="#">Hybrid cooling of geothermal plants based on groundwater cooling: first simulation results and technical feasibility</a>
<b>254</b>	T-EL	Pogacnik	<a href="#">A Lookback on 20 Years of Production at the Rotokawa Geothermal Field, New Zealand</a>
<b>291</b>	T-EL	Pietra, Gaia, Bonzanini, Bombarda	<a href="#">Co2 emissions from geothermal power plants: evaluation of technical solutions for co2 reinjection.</a>
<b>293</b>	T-EL	Bonafin,Duvia	<a href="#">Operations update of European geothermal binary units delivered by Turboden.</a>
<b>324</b>	T-EL	Iro, Kraus, Bihlmayr, Huck	<a href="#">Compliance and operational safety of geothermal power plants</a>



### 3.E. Technology – Heating & Cooling technologies (T-HC)

29	T-HC	Golchin, Vardon, Hicks, Pantev, Musivand, Arzanfudi	<a href="#">Energy piles in the Netherlands: Geotechnical behaviour</a>
31	T-HC	Rman, Bălan, Bobovečki, Gál, Jolović, Lapanje, Marković, Milenić, Skopljak, Rotár-Szalkai, Samardžić, Szócs, Šolaja, Toholj, Vijdea, Vranjes	<a href="#">Assessment of thermal water utilization in the southern part of the pannonian basin</a>
36	T-HC	Homuth, Loos, van Ee	<a href="#">Individualized Solutions for Turn Key Geothermal Projects - Case Study Geothermal Doublet Lansingerland, NL</a>
42	T-HC	Vitriu, Arnó, Herms, De Felipe	<a href="#">3d modeling to evaluate the thermal interferences between borehole heat exchangers in a mediterranean area</a>
71	T-HC	Bussmann	<a href="#">Reutilization of Mine Water for Heating and cooling in the Abandoned Colliery Dannenbaum in Bochum</a>
115	T-HC	Tinti, Azzolin, Bonduà, Zanetti, Bortolin, Busato, Bortolotti	<a href="#">Sequential coupled simulation of a dual source heat pump and shallow geothermal reservoir</a>
158	T-HC	Watson, Westaway, Falcone	<a href="#">A Review of Deep Geothermal Energy and Future Opportunities in the UK</a>
294	T-HC	Haslinger, Götzl, Ponweiser, Biermayr, Stuckey, Hammer, Bartak, Vogl, Niederbrucker, Illyés, Turewicz, Holzer, Kienberger, Koch, Bauernfeind, Kinner	<a href="#">Low-temperature heating and cooling grids based on shallow geothermal methods for urban areas</a>
309	T-HC	Harcouët-Menou, De Ridder, Patteeuw, Verhoeven, Allaets	<a href="#">Efficient modelling of flow and heat in abandoned flooded mines coupled to parameters estimation: case study Heerlen, the Netherlands</a>
316	T-HC	Pernter	<a href="#">JANSEN hipress: New technology for deep geothermal probes</a>

### 3.F. Technology – Technologies & Innovation (T-TI)

198	T-TI	Ravier, Seibel, Pratiwi, Mouchot, Genter, Ragnarsdóttir, Sengelen	<a href="#">Towards an optimized operation of the EGS Soultz-sous-Forets power plant (Upper Rhine Graben, France)</a>
244	T-TI	Dumas, Garabetian	<a href="#">Risk mitigation and insurance schemes adapted to market maturity: the right scheme for my market</a>
305	T-TI	Glos	<a href="#">Assessment of performance and costs of co2 plume geothermal (cpg) systems</a>

<b>311</b>	T-TI	Oueslati, Passuello, Lehr, Nurzad, Mattie, Vaccaro, Alfani	<a href="#">Learning from the oil &amp; gas industry: leveraging innovation and integration to reduce the risk and cost of geothermal projects</a>
<b>312</b>	T-TI	Hoencamp, Last	<a href="#">Impacts of the Dutch geothermal innovation roadmap</a>
<b>370</b>	T-TI	Sowizdzal, Górecki, Chmielowska	<a href="#">Geothermal energy as an opportunity to improve the security and defense of the country</a>

### 3.G. Technology – UTES (T-UT)

<b>24</b>	T-UT	Koumrouyan, Sohrabi, Valley	<a href="#">Geomechanical characterisation of geothermal exploration borehole for Aquifer Thermal Energy Storage (ATES) development in Geneva, Switzerland</a>
<b>17</b>	T-UT	Picone, Bloemendal, Pellegrini, Hoekstra	<a href="#">Novel combinations of aquifer thermal energy storage with solar collectors, soil remediation and other types of geothermal energy systems</a>
<b>64</b>	T-UT	Hahn	<a href="#">The utilization of the former markgraf ii colliery as a mine thermal energy storage</a>
<b>78</b>	T-UT	Koornneef	<a href="#">Heatstore: high temperature underground thermal energy storage</a>
<b>167</b>	T-UT	Stefan, Gavriluc, Cucueteanu, Polizu	<a href="#">Eli-Np Magurele Romania - the largest shallow geothermal system in Europe</a>
<b>197</b>	T-UT	Godschalk, Fleuchaus, Schüppler, Velvis, Blum	<a href="#">Aquifer thermal energy storage for universities</a>
<b>220</b>	T-UT	Bloemendal, Keviczky, Jaxa-Rozen, Rostampour, Herrera	<a href="#">Ates smart grids: optimal use of subsurface space in high density ates areas</a>
<b>222</b>	T-UT	Jasper, Wittig, Lindken	<a href="#">Laser optical investigation of high-pressure water jets in submerged reservoir type conditions used for high-pressure jetting</a>
<b>224</b>	T-UT	Schulte, Welsch, Formhals, Sass	<a href="#">Potentials and Challenges of Borehole Thermal Energy Storage in Solar District Heating Grids</a>
<b>230</b>	T-UT	Kühl, Renn, Schneider, Sanner, Mands	<a href="#">Project Geo:base – Energetical and ecological optimization of strategies for operation and control of complex energy supply systems based on shallow geothermal energy in commercial and non-residential buildings</a>
<b>248</b>	T-UT	Bloemendal, Hartog, van Meurs	<a href="#">Transforming ates to ht-ates, insights from Dutch pilot project</a>
<b>262</b>	T-UT	Beernink, Hartog, Bloemendal, van der Meer	<a href="#">ATES systems performance in practice</a>

289	T-UT	Drijver, Bakema	<a href="#">State of the art of HT-ATES in The Netherlands</a>
328	T-UT	Welsch, Göllner-Völker, Schulte, Bär, Sass, Schebek	<a href="#">Medium Deep Borehole Thermal Energy Storage Systems - Economic and Environmental Impact</a>

### 3.H. Technology – Geothermal HP (T-HP)

44	T-HP	García-Céspedes, Arnó, Herms, De Felipe	<a href="#">Characterization of shallow geothermal energy installations through remote minute-resolved monitoring. A case study</a>
55	T-HP	Bockelmann, Peter, Schlosser	<a href="#">Wpsource - comparison of heat sources for heat pumps</a>
139	T-HP	Fascì, Lazzarotto	<a href="#">A novel model for the estimation of thermal influence of neighbouring borehole heat exchangers</a>
148	T-HP	Alimonti Soldo, Di Leginio	<a href="#">Improvement of the energy system efficiency by a ground source heat pumps system in a sport center</a>
161	T-HP	Puttige, Andersson, Östin, Olofsson	<a href="#">Method to estimate the ground loads for missing periods in a monitored GSHP</a>
162	T-HP	Maragna, Compere, Barriere, Maurel, Monnot	<a href="#">Estimation of shallow geothermal energy potential at urban scale</a>
228	T-HP	Urchueguía, Sanner	<a href="#">Project GEOCOND: Advanced materials and processes to improve performance and cost-efficiency of Shallow Geothermal systems and Underground Thermal Storage</a>
233	T-HP	Bernardi, Pockelé, Sanner, Galgaro, De Carli, Urchueguía, Pasquali, Poletto, Castelruiz, Hose, Poletto, Bertermann, Gavriiliuc, Mendrinós, Righini, Vercruyse	<a href="#">A new effort to address shallow geothermal energy supply in the built environment: H2020-project GEO4CIVHIC</a>
278	T-HP	Seward	<a href="#">Determination of Thermal Properties of New Zealand's soils and investigations of external factors influencing the near surface low-temperature geothermal resources</a>
295	T-HP	Lazzarotto, Mazzotti, Pallard	<a href="#">Thermal response test performance evaluation with non ideal or noisy input signals</a>
313	T-HP	Gehlin, Spitler	<a href="#">lea hpt annex 52 - gshp long-term performance</a>
380	T-HP	De Carli, Castelruiz Aguirre, Zarella, Cardoso, Noyé, Gast, Graci, Emmi, Bertermann, Müller, Galgaro, Dalla Santa, Fabio Poletto, Mezzasalma, Contini,	<a href="#">A Decision Support System (DSS) and a design tool for helping stakeholders and designers in the choice of gshps</a>

		Urchueguía, Belliardi, Pasquali, Bernardi	
385	T-HP	Perego, Pera, Galgaro, Dalla Santa, Cultrera, De Carli, Emmi, Bertermann, Mueller, Mendrinos, Vercruyse, Pasquali, Bernardi	<a href="#">Economic, geological and technical potential mapping test in Europe for gshp systems</a>

### 3.1. Technology - Envi. Impacts & Solutions (T-EI)

112	T-EI	Dalmais	<a href="#">Meet project: toward the spreading of egs across Europe</a>
142	T-EI	Gaultier, Boisson	<a href="#">Development of urban geothermal systems: how to promote a sustainable approach?</a>
217	T-EI	Lattanzi, Beutel, Costagliola, Rimondi	<a href="#">Tracing the impact of geothermal plants in the Monte Amiata area, Tuscany, Italy: evidence from Hg contents in stream sediments and tree barks</a>

## 4. Science

### 4.A. Science – Resources Classification (S-RC)

118	S-RC	Falcone, Conti	<a href="#">Regional and country-level assessments of geothermal energy potential based on UNFC principles</a>
119	S-RC	Schifflechner, Eyerer, Alonso Álvarez, Wieland, Spliethoff	<a href="#">Evaluating the south German molasse basin's geothermal potential by means of the unfc 2009 classification</a>
177	S-RC	Hermant, Colas, Patriarche, Auxietre, Bellanger	<a href="#">New classification of high temperature geothermal systems based on 110 geothermal systems</a>
342	S-RC	Davaux, Ungemach, Antics, Naville	<a href="#">Geothermal derisking. How to learn and succeed from failure stories</a>

### 4.B. Science – Exploration (regional assessment) (S-ER)

130	S-ER	Arola	<a href="#">Creating shallow geothermal potential maps for Finland</a>
179	S-ER	Nador, Kumelj, Hribernik, Sörös, Rotár-Szalkai, Lapanje, Rman, Vijdea, Markovic, Jolovic, Samardzic, Milenic, Krunic, Balan, Asimopolos	<a href="#">Danube region geothermal strategy and information system to support the decarbonisation of the heating sector</a>
226	S-ER	Vrijlandt	<a href="#">Thermogis update: A renewed view on geothermal potential in the Netherlands</a>

<b>247</b>	S-ER	Mijnlieffvan, Kempen, Tolsma, de Vries, Esteves, Martins, Veldkamp, Struijk, Vrijlandt, van Wees	<a href="#">Dutch geothermal resource reporting. A first attempt of Dutch nationwide geothermal resource using the unfc resource classification system. Status date January 2019.</a>
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#### 4.C. Science – Exploration (Upper Rhine Grabben) (S-EG)

<b>109</b>	S-EG	Glaas, Vidal, Patrier, Beaufort, Genter	<a href="#">Contribution of SWIR to the Clay Signature of Permeable Fracture Zones in the Granitic Basement. Overview of Soultz and Rittershoffen wells.</a>
<b>169</b>	S-EG	Lerouge, Dezayas, Kushnir, Duee, Wille	<a href="#">Saint pierre bois and ringelbach, analog sites of the permo-triassic cover / hercynian basement transition in the upper rhine graben</a>
<b>205</b>	S-EG	Köpke	<a href="#">Long term seismicity monitoring of the rittershoffen deep geothermal reservoir</a>
<b>216</b>	S-EG	Vallier, Magnenet, Schmittbuhl, Fond	<a href="#">Contribution of large-scale faults on hydrothermal circulation in deep geothermal reservoir in the Upper Rhine Graben</a>
<b>352</b>	S-EG	Abdelfettah, Sailhac, Girard, Dalmais, Maurer, Genter	<a href="#">Resistivity image under grt1-2 geothermal doublet of the rittershoffen egs project as revealed by magnetotelluric</a>

#### 4.D. Science – Exploration (carboniferous) (S-EC)

<b>129</b>	S-EC	Kunkel, Agemar	<a href="#">Hydraulic Characterization of Potential Geothermal Reservoirs in the North German Basin</a>
<b>191</b>	S-EC	Guglielmetti, Moscariello	<a href="#">Application of the gravity method to constrain geological structures of geothermal interest in the Geneva Basin</a>
<b>221</b>	S-EC	Zimmermann, Budach, Metz, Barth, Franz, Seibt, Wolfgramm	<a href="#">Reservoir prediction and risk assessment of hydrothermal reservoirs in the North German Basin - combining deep subsurface reservoir mapping with Monte-Carlo Simulation</a>
<b>276</b>	S-EC	Halldórsdóttir, Axelsson, Berre, Keilegavlen	<a href="#">Enhanced fluid convection and heat transfer near the bottom of the IDDP-1 well in Krafla</a>
<b>298</b>	S-EC	Henninges, Martuganova, Stiller, Norden, Bauer, Krawczyk, Huenges	<a href="#">Exploration and monitoring with distributed acoustic sensing at the EGS site Groß Schönebeck</a>

#### 4.E. Science – Exploration (clastic) (S-EB)

134	S-EB	van der Voet, Laenen, Lagrou, Muchez, Swennen	<a href="#">Fracturation of Lower Carboniferous carbonates in the Campine-Brabant Basin (N Belgium, S Netherlands, W Germany): borehole analyses</a>
145	S-EB	Broothaers, Bos, Lagrou, Harcouët-Menou, Laenen	<a href="#">Lower carboniferous limestone reservoir in northern Belgium: structural insights from the Balmatt project in mol</a>
303	S-EB	Dussel, Moeck, Mraz, Budach, Wolfgramm, Stockinger	<a href="#">Characterisation of fault zones as geothermal targets in the deep north alpine foreland basin (southern Bavarian molasse basin)</a>
382	S-EB	Heijnen, Jaarsma, Veldkamp, Schavemaker	<a href="#">Ultra-deep geothermal program in the Netherlands</a>

#### 4.F. Science – Exploration (magmatic) (S-EM)

56	S-EM	Darnet, Coppo, Wawrzyniak, Nielsson, Friðleifsson, Schill	<a href="#">Imaging and monitoring the Reykjanes supercritical geothermal reservoir in Iceland with time-lapse CSEM and MT measurements</a>
87	S-EM	Wasch, Creusen, Eichinger, Goldberg, Kjoller, Kristensen, Mathiesen, Regenspurg van, Pul-Verboom	<a href="#">Improving geothermal system performance through collective knowledge building and technology development</a>
240	S-EM	Deb	<a href="#">Modeling natural steady- state of super-hot geothermal reservoir at los humeros, mexico</a>
260	S-EM	Ceci	<a href="#">Integrated multi-physics workflow for geothermal exploration in Turkey</a>
301	S-EM	Sutrisno, Bonte, Daud, Smit, Beekman, van Wees, Purwanto	<a href="#">Assessing the role of pull-apart basins for high-temperature geothermal resources in transcurrent tectonic setting: Sumatra and California compared</a>

#### 4.G. Science – Exploration (play types) (S-EP)

60	S-EP	Schintgen, Wuttke, Agemar, Moeck	<a href="#">Refinement of the geothermal play type concept by comparison of two foreland basins</a>
77	S-EP	Daniilidis, Nick, Bruhn	<a href="#">Parameter interdependency in energy and economic output of a geothermal development strategy</a>
113	S-EP	Rotár-Szalkai, Zilahy-Sebess, Gulyás, Kun, Maros, Kerékgyártó, Szócs, Nádor, Ádám, Rajver, Lapanje, Markovic, Vranješ, Baltres, Färnoaga, Olah	<a href="#">New harmonized method for outlining transboundary geothermal reservoirs and resource assessment</a>

<b>338</b>	S-EP	Veldkamp, Brunner, de Jong, Heijnen, van Langen, van Wees	<a href="#">Play-based portfolio approach for geothermal development</a>
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#### 4.H. Science – Exploration (S-EX)

<b>7</b>	S-EX	Veenhof	<a href="#">Shallow and Deep rocks as potential sources of geothermal energy in Denmark</a>
<b>10</b>	S-EX	Lara Cruz, Contamine, Cezac	<a href="#">Experimental study of CO2 solubility on nacl and cacl2 solutions at 333 K and pressures up to 400 bar</a>
<b>11</b>	S-EX	Tang, Nowamooz	<a href="#">The performance of Borehole Heat Exchanger installed in unsaturated soils</a>
<b>20</b>	S-EX	Manzella, Botteghi, Olafur, Gianluca, Hersir, Limberger, Liotta, Santilano, Trumpy, van Wees	<a href="#">Mapping supercritical geothermal resources in Europe</a>
<b>21</b>	S-EX	Law, Ledingham, Cotton	<a href="#">United downs deep geothermal power project, UK</a>
<b>25</b>	S-EX	Dezayes, Sp3 Team	<a href="#">A new geothermal exploration workflow for deep sedimentary basins and basement</a>
<b>26</b>	S-EX	Dufour, Heederik	<a href="#">Early Geothermal Exploration in The Netherlands, 1980 - 2000</a>
<b>45</b>	S-EX	Kuder	<a href="#">Assessment of the geothermal potential of fault zones in Germany by numerical modelling</a>
<b>47</b>	S-EX	Peters, Geel, Nair, Bloecher	<a href="#">Potential of well stimulation using small-diameter laterals in geothermal reservoirs</a>
<b>50</b>	S-EX	Arnò, Veciana, Casasso, Herms, Almaro, Prohom	<a href="#">Assessment of closed-loop shallow geothermal potential in catalonia using gis tools</a>
<b>62</b>	S-EX	Shipilin, von Hartmann, Tanner, Moeck	<a href="#">Facies Distribution and Temporal Evolution of Faults in the Southern German Molasse Basin: A Case Study of Geretsried, Germany</a>
<b>69</b>	S-EX	Bellanger, Hermant, Galibert, AuxiÀtre	<a href="#">Fault-controlled hydrothermal system associated with major Crustal Fault Zone: future drilling target to assess the deep geothermal potential of “ The Sioule license project</a>
<b>73</b>	S-EX	von Hartmann, Shipilin, Meneses, Rioseco, Buness	<a href="#">Facies analysis of an upper jurassic carbonate geothermal reservoir</a>
<b>89</b>	S-EX	Verdel, Martins, Obermann, Toledo, Jousset	<a href="#">Ambient noise seismic reflection interferometry at the los humeros geothermal field, Mexico</a>
<b>94</b>	S-EX	Santilano, Trumpy, Gola, Donato, Scrocca, Ferrarini, Brozzetti, De Nardis, Lavecchia, Manzella	<a href="#">The geothermal favourability of geopressured-geothermal systems: a case study in Italy</a>
<b>108</b>	S-EX	Schaming Cauchie, Frémand, Lengliné, Cuenot, Grellier, Grunberg, Schmittbuhl	<a href="#">Recent valorisation of data distributed by cdgp : new analysis of persistent multiplets at Soultz-sous-Forets</a>
<b>114</b>	S-EX	de Franco, Petracchini, Scrocca, Caielli, Montegrossi, Santilano, Manzella	<a href="#">Synthetic seismic reflection modelling in the supercritical geothermal system of the Larderello field (Italy)</a>

116	S-EX	Agemar	<a href="#">Statistical Analyses of Subsurface Temperature Data and Correction Methods</a>
120	S-EX	Nielsen, Olivarius, Weibel, Mathiesen, Tremosa, Bonnell, Nielsen	<a href="#">Geothermal reservoir quality from diagenesis modelling</a>
126	S-EX	Dixit, Bernard, Mischer-Zita	<a href="#">Silica precipitation from geothermal fluid and synthetic solutions: salts effects on kinetics and mechanisms</a>
132	S-EX	Conti, Pellegrini, Falcone	<a href="#">Application of the unfc classification to open-loop ground source heat pump systems: a case study</a>
140	S-EX	Buness, Von Hartmann, Ziesch, Wawerzinek, Meneses, Rioseco, Thomas	<a href="#">Interdisciplinary research for a geothermal carbonate reservoir</a>
153	S-EX	Tumara, Živković, Maljković, Kolbah, Škrlec, Vrbanac	<a href="#">Assessment of geothermal potential in the area of city of Karlovac, Croatia</a>
156	S-EX	Renaud, Verdin, Falcone	<a href="#">A Numerical Study of Deep Borehole Heat Exchangers Efficiency in Unconventional Geothermal Settings</a>
157	S-EX	Brehme, Giese, Suherlina, Kamah	<a href="#">Bathymetry and geochemical profiles as new mapping tools for fault permeability</a>
159	S-EX	Gaucher, Toledo, Metz, Figueroa-Soto, Calò	<a href="#">One year of passive seismic monitoring of the Los Humeros (Mexico) geothermal field</a>
160	S-EX	Mouchot	<a href="#">Geothermal energy development in serbia: a french-serbian collaborative project</a>
164	S-EX	Harlin	<a href="#">The Measureable Effect of Pyrite Concentration in the Lucan Formation on Bedrock Thermal Conductivity and Geothermal Collector Design</a>
166	S-EX	Darnet , Dezayes, Girard, Baltassat, Lerouge, Reuschle, Coppo, Bretaudeau, Porte, Lucas	<a href="#">Geophysical signature of the transition zone between the sedimentary cover and the basement: an analogue approach to help de-risking geothermal prospects</a>
170	S-EX	Gerard Kukral, Francois, Huysmans, Agniel, Van Lysebetten, Petitclerc	<a href="#">Assessment of thermal conductivity scanner for the determination of soils thermal conductivities for geothermal applications</a>
193	S-EX	Carpentier, Boullenger, Meekes, Steeghs	<a href="#">Identifying risked potential of seals and flow in ultradeep and shallow geothermal reservoirs</a>
202	S-EX	Prol-Ledesma, Carrillo-De La Cruz	<a href="#">Regional exploration of geothermal resources using silica geothermometer/heat flow</a>
203	S-EX	Carrillo-De La Cruz, Flores-Soto, Prol-Ledesma	<a href="#">Relationship Between Heat Flow and Deep of the Bottom of Magnetic Source in Mexico</a>
210	S-EX	Richard, Gillot, Maurer, Cuenot, Klee	<a href="#">Northern Alsace (France): the largest geothermal exploration by 3D seismic reflection</a>
214	S-EX	Reith, Godderij, Jaarsma, Bertotti, Heijnen	<a href="#">Dynamic simulation of a geothermal reservoir: A case study of the Dinantian carbonates encountered in the californiã« geothermal wells</a>
219	S-EX	Purwandono, Bontè, Utami, Pramumijoyo, Harijoko, Beekman, Van Wees	<a href="#">Tectonic and compositional variation in Flores Island, Indonesia: implication for volcanic structure and geothermal occurrences</a>
225	S-EX	Pedamallu, Rodrigues, Hiriart, Cruz	<a href="#">Economics of offshore geothermal energy and mineral extraction</a>
231	S-EX	Wang, Boersma, Pizzocolo, Vercauteren, Fischer	<a href="#">Development of a flow loop system for scale management study in geothermal systems: From a static to a dynamic study</a>



239	S-EX	Lepillier, Bruhn	<a href="#">Predictive Mechanical model for fracture stimulation in the context of Enhanced Geothermal System</a>
255	S-EX	Pedchenko, Loveridge, Woodman, Powrie	<a href="#">Quantifying the effect of single fractures on the thermal performance of borehole heat exchangers</a>
275	S-EX	Struijk	<a href="#">Thermal structure of the subsurface of the Netherlands - a review and outlook on temperature data and predictive model</a>
283	S-EX	Duwiguet	<a href="#">Geothermal potential of crustal fault zones: case of the Pontgibaud fault (French Massif Central)</a>
285	S-EX	Bekesi, Fokker, Martins, Van Wees	<a href="#">Inversion of coseismic deformation due to the 8th February 2016, Mw 4.2 earthquake at Los Humeros (Mexico) inferred from dinsar</a>
287	S-EX	Ramos, Escudero	<a href="#">Gis-supported evaluation and mapping of climatic and geological characteristics for shallow geothermal systems at a european continental scale</a>
296	S-EX	Poletto, Farina, Carcione, Pinna	<a href="#">Analysis of seismic wave propagation in geothermal reservoirs</a>
318	S-EX	Sengelen, Robion, Ledésert, Hébert, Regnet, Bourquin, Gasparrini, Margueret, Barnes	<a href="#">Petrophysical characterization of Triassic and basement formations for geothermal purposes in the Paris basin: from sub-surface data to reservoir outcrop analogue</a>
343	S-EX	Mateo Pla, Badenes, Urchueguía, Lemus	<a href="#">Assessing the Shallow Geothermal Laboratory at Universitat politecnica de Valencia</a>
345	S-EX	Limberger, Gernaat, De Boer, Van Vuuren, Van Wees	<a href="#">The global geothermal resource base: a European perspective</a>
349	S-EX	Sowizdział, Pająk, Gładysz	<a href="#">Conceptual model for geothermal reservoir suitable for enhanced geothermal systems using co2 as a medium in central part of Poland</a>
355	S-EX	Abdelfettah, Hinderer, Calvo, Dalmais, Maurer, Genter	<a href="#">Gravity versus thermal gradient: can we use gravity to discriminate potential hydrogeothermal area ?</a>
372	S-EX	Sowizdział, Stefaniuk, Kotyza	<a href="#">Geothermal education at the agh university of science and technology in Krakow, Poland</a>
379	S-EX	Redouane	<a href="#">Recent volcanism activity and geothermal potential of the eastern rif (Morocco)</a>
384	S-EX	Halaj	<a href="#">Use of geothermal water from Mesozoic formations in the Mogilno-Lodz trough, Poland</a>

#### 4.1. Science – Geothermal Wells (S-GW)

15	S-GW	Monneyron	<a href="#">Engie geothermal well monitoring</a>
28	S-GW	Rman	<a href="#">Efficient monitoring of wells used for direct use</a>
40	S-GW	Wasch	<a href="#">Integrated scale management</a>
48	S-GW	Troost, Peters, Leeuwenburgh	<a href="#">Optimization of jetted multi-lateral well design</a>
58	S-GW	Tinti, Focaccia, Barbaresi	<a href="#">Performance comparison between a typical very shallow and an innovative configuration of ground heat exchangers</a>

68	S-GW	ter Heege, Vercauteren, Pipilikaki, Wollenweber	<a href="#">Properties of well cements for high temperature geothermal wells</a>
70	S-GW	Kruszewski, Montegrossi, Ramirez, Wittig, Sanchez, Bracke	<a href="#">Crustal stress determination and wellbore stability analysis: los humeros geothermal field case study</a>
103	S-GW	Lohne, Aasen, Randeberg, Skadsem	<a href="#">Reliability-Based Casing Design for Geothermal Wells</a>
327	S-GW	Lipus, Reinsch, Henniges, Schmidt, Hattenberger	<a href="#">Integrity monitoring of geothermal wells using fiber optic distributed strain sensing techniques</a>
362	S-GW	Antics, Ungemach, Davaux	<a href="#">Anti-corrosion well concept. The bonneuil-sur-marne (paris basin) case study</a>

#### 4.L. Science – Reservoir engineering (S-RE)

46	S-RE	Bakker, Bruhn, Barnhoorn	<a href="#">A New Laboratory Method to Measure Heat Exchange in Tensile Fractures</a>
98	S-RE	Saeid, Al-Khoury	<a href="#">A predictive model for low-enthalpy geothermal systems</a>
100	S-RE	kiliç	<a href="#">Estimation of geothermal well discharges with artificial neural networks</a>
104	S-RE	Le Lous, Pryet, Larroque, Damy, Dupuy	<a href="#">Pre-operational risk study in deep geothermal modeling: insights from a dual medium synthetic model</a>
111	S-RE	Ahkami, Parmigiani, Di Palma, Saar, Kong	<a href="#">Study on mineral precipitation in fractured porous media using Lattice-Boltzmann methods</a>
128	S-RE	Pham, Sullera, Williams, Henneberger	<a href="#">ECLIPSE Geothermal - A Next Generation of Geothermal Reservoir Simulator</a>
141	S-RE	Croese, Doddema, Veeger	<a href="#">Microbiology in geothermal operations</a>
155	S-RE	Brehme, Marko, Nowak, Istvan, Blöcher, Huenges	<a href="#">Injection-triggered occlusion of flow pathways and its remediation in Mezöbereny - Hungary</a>
174	S-RE	Grimm Lima, Schädle, Vogler, O. Saar, Kong	<a href="#">Impact of effective normal stress on capillary pressure in a single natural fracture</a>
180	S-RE	Koenen, Neele, van der Valk, Kervevan	<a href="#">Techno-economic impact of CO<sub>2</sub> co-injection into geothermal doublets for the Netherlands</a>
181	S-RE	Willems, Westaway, Burnside	<a href="#">Hydraulic connectivity in Pannonian Sandstones of the Mezöberény geothermal doublet</a>
208	S-RE	Kondrat, Burachok	<a href="#">Evaluation of Geothermal Potential and Geothermal Energy Production Sustainability from Oil and Gas Fields in Western Ukraine</a>

<b>212</b>	S-RE	Peter-Borie, Armandine, les Landes, Blaisonneau, Durst, Guillon, Loschetter, Gaucher, Nielsson, Saether, Damy, Fridleifsson	<a href="#">Assessment of the stimulation scenarios by numerical modelling</a>
<b>265</b>	S-RE	Hefny, Qin, Gostick, Ebigbo, Saar, Hammed	<a href="#">CO2-Brine multiphase flow in Nubian Sandstone (Egypt): A Pore-Network Modeling using Computerized Tomography Imaging</a>
<b>277</b>	S-RE	Georgsson, Haraldsson, Ómarsdóttir	<a href="#">Capacity building in geothermal: Update and summary of UNU-GTP's recent activities with emphasis on Europe</a>
<b>286</b>	S-RE	Murray, Clement, Fritz, Schmittbuhl, Bordmann, Fleury	<a href="#">Modeling abiotic h2 generation from the granite basement in the Soultz-sous-Forêts geothermal system, Rhine Graben, France</a>
<b>314</b>	S-RE	Holmslykke	<a href="#">Seasonal heat storage in geothermal reservoirs</a>
<b>378</b>	S-RE	Meneses, Rioseco, Ziesch, Von Hartmann, Bunes	<a href="#">Geothermal reservoir modelling and simulation of the upper Jurassic aquifer for district heating in the city of Munich (Germany)</a>

#### 4.M. Science – Stimulation (S-ST)

<b>34</b>	S-ST	Kaldal, Thorbjornsson, Reinsch, Peters	<a href="#">Radial Jet Drilling Stimulation in Geothermal Wells</a>
<b>49</b>	S-ST	Egberts, Peters	<a href="#">Well testing of multi-lateral wells using a semi-analytical model</a>
<b>65</b>	S-ST	Blöcher, Kluge, Goense, Pei, Bakker, Bruhn	<a href="#">Hydraulic-mechanical characterisation of geothermal reservoir rocks</a>
<b>75</b>	S-ST	Barnhoorn, Bakker, Douma, Janmahomed, Pluymakers	<a href="#">Experimental load cycling in the brittle field produces a more distributed fracture network</a>
<b>85</b>	S-ST	Baccarin, Büsing, Buske, Dini, Manzella, Rabbel, DESCRAMBLE, Science and Technology Team	<a href="#">Understanding supercritical resources in continental crust</a>
<b>99</b>	S-ST	Fokker, Wassing	<a href="#">A fast model for THM processes in geothermal applications</a>
<b>136</b>	S-ST	Karytsas, Polyzou, Mendrinos, Karytsasv	<a href="#">Towards social acceptance of geothermal energy power plants</a>
<b>336</b>	S-ST	Deb, Salimzadeh, Düber, Clauser	<a href="#">Laboratory experiments and numerical simulations of hydraulic fracturing for enhanced geothermal systems</a>
<b>339</b>	S-ST	Ungemach, Antics, Davaux	<a href="#">Subhorizontal well architecture enhances heat production. The cachan milestone</a>

#### 4.N. Science – Induced seismicity (S-IS)

101	S-IS	Toselli, Heberle, Brüggemann	<a href="#">Techno-economic analysis of a solid biomass retrofit of an air-cooled ORC geothermal power plant</a>
121	S-IS	Eller, Heberle, Brüggemann	<a href="#">Evaluation of different power plant concepts for geothermal heat and power production</a>
123	S-IS	Fiaschi, Manfrida, Talluri, Colucci	<a href="#">Geothermal power plant case study for a new ORC plant including CO2 reinjection</a>
165	S-IS	Duboeuf, Oye, Berre, Keilegavlen	<a href="#">Induced seismicity in the Reykjanes geothermal reservoir, Iceland - seismic event monitoring, characterization and clustering</a>
184	S-IS	Buijze, van Bijsterveldt, Cremer, Jaarsma, Paap, Veldkamp, Wassing, van Wees, van Yperen, ter Heege	<a href="#">Induced seismicity in geothermal systems: Occurrences worldwide and implications for the Netherlands</a>
206	S-IS	Wassing	<a href="#">Modelling the effect of hydraulic stimulation strategies on fault reactivation and induced seismicity</a>
282	S-IS	Candela, Ampuero, Peters, Van Wees, Fokker, Wassing	<a href="#">Semi-analytical fault injection model: effect of fault roughness and injection scheme on induced seismicity</a>
304	S-IS	Trung, Dang, Berre, Keilegavlen	<a href="#">Numerical investigation of wing crack initiation and propagation due to shear slip</a>
306	S-IS	Osvald, Kilpatrick, Rochelle, Szanyi, Medgyes, Kóbor	<a href="#">Batch and flow-through leaching of different metallic rocks under geothermal reservoir circumstances</a>
374	S-IS	Burnside	<a href="#">Geothermally Sourced Combined Power and Freshwater Generation for Eastern Africa (Combi-Gen)</a>

#### 4.O. Science – Power & Heat conversion (S-PO)

175	S-PO	Olivarius, Laier, Knudsen, Clausen, Malkki, Thomsen, Serre, Kristensen, Willumsen, Nielsen, Roos	<a href="#">Occurrence and source of radioactive lead in geothermal formation water, Denmark</a>
192	S-PO	Portier, Hinderer, Drouin, Sigmundsson, Schäfer, Jousset, Erbas, Magnússon, Páll Hersir, Ágústsson, De Zeeuw van Dalfsen, Guðmundsson, Bernard	<a href="#">Hybrid gravimetry monitoring of the Theistareykir and Krafla geothermal reservoirs (Iceland)</a>

<b>196</b>	S-PO	Portier, Sailhac, Warden, Erbas, Árnason, Páll Hersir, Guðmundsson	<a href="#">Time-lapse magnetotelluric monitoring of the Theistareykir geothermal reservoir (Iceland)</a>
<b>258</b>	S-PO	Jaehnichen, Degering, Seibt, Scheiber, Mouchot, Buse, Heberling	<a href="#">Inhibition of scales in geothermal plants in upper rhine graben: monitoring of fluids and scales</a>
<b>292</b>	S-PO	Ezekiel	<a href="#">On the use of supercritical carbon dioxide to exploit the geothermal potential of deep natural gas reservoirs for power generation</a>
<b>381</b>	S-PO	Shafagh, Rees	<a href="#">Analytical Investigations into Thermal Resistance of Diaphragm Wall Heat Exchangers</a>

#### 4.P. Science – European R&D (S-EU)

<b>81</b>	S-EU	Trumpy, Gola, Botteghi, Pellizzone, Pavel, Dumas, Pinzuti, Laenen, Manzella	<a href="#">The rd&amp;i document search engine of etip-dg</a>
<b>84</b>	S-EU	Reinsch, Blöcher, Bruhn, Wittig, Þorbjörnsson, Hoogland, Peters, Latham, Petrauskas, Nick, Šliaupa, SURE consortium	<a href="#">Novel Productivity Enhancement Concept for a Sustainable Utilization of a Geothermal Resource - The SURE Project</a>
<b>154</b>	S-EU	Pallotta, Serniotti	<a href="#">Descramble - drilling</a>
<b>195</b>	S-EU	Bogason, Friðleifsson, Ingólfsson	<a href="#">Deepegs project management - lessons learned</a>
<b>329</b>	S-EU	Madarász, Hartai project team	<a href="#">CHPM2030 - Novel concept of combined heat, power and metal extraction from geothermal brines</a>
<b>350</b>	S-EU	Bruhn	<a href="#">Gemex: Cooperation in Geothermal energy research Europe-Mexico for development of Enhanced Geothermal Systems and Superhot Geothermal Systems</a>