

# EUROPEAN GEOTHERMAL CONGRESS 2022



## Proceedings

The ISBN code is 978-2-9601946-2-3

**Organised by:**

**Main sponsor:**



Bundesverband  
**Geothermie**

**Baker Hughes** 

Published by EGEC

Place du champ de mars 2, 5th Floor,  
1050 Brussels

Tel : +32 2 318 40 63 | E: [com@egec.org](mailto:com@egec.org)  
| W: [www.egec.org](http://www.egec.org) | AISBL: 465303654

# Contents

<b>Country Updates</b>	<b>04</b>
<b>German Dach Event</b> German DACH event - National and regional projects German DACH event - National research projects German DACH event - National political and regulatory framework German DACH event - Others	<b>06</b>
<b>Geothermal Solutions</b> 1.1. Sector coupling: electricity, heat and transport 1.2. Transformation pathways for the energy transition 1.3. Success stories 1.4. Regional solutions 1.5. Hybrid systems 1.6. Other	<b>09</b>
<b>Policy Markets</b> 2.1. Heat market at city level and in rural areas 2.3. Policy -frame conditions and incentives 2.4. Legal aspects and regulations 2.5. Socio-economic aspects of geothermal energy 2.6. Financing, corporate structures, “bankability”, etc. 2.7. Public acceptance and engagement issues, public relations 2.8. Other	<b>12</b>
<b>Technology Innovation</b> 3.1. Geothermal power in Europe – projects, ideas, experiences 3.2. Geothermal heating and cooling uses for buildings, tertiary, agricultural, and industrial sectors 3.3. Geothermal heat pumps in Europe – small and large buildings, heating and cooling, and domestic hot water 3.4. Underground thermal energy storage – design, system integration and operation 3.5. Exploiting mineral production from geothermal sources 3.6. Exploration and planning 3.7. Environmental impacts and solutions 3.9. Other	<b>16</b>
<b>Research Development</b> 4.1. Risk Management (reservoir assessment, safe operations, environment protection, demand side) 4.2. Exploration and planning 4.3. Geothermal drilling and Constructing of geothermal wells 4.4. Reservoir engineering, development and operation of geothermal plants 4.5. Energy conversion systems and supply 4.6. Ground Source heat exchangers technologies 4.7. Operation of geothermal systems 4.8. Integration of geothermal into the circular economy 4.9. Other	<b>34</b>

# Country updates

COUNTRY UPDATES		
CU-0	Burkhard Sanner <sup>1</sup> , Miklos Antics <sup>2</sup> , Marco Baresi <sup>3</sup> , Javier F. Urchueguía <sup>4</sup> , Philippe Dumas <sup>5</sup>	<a href="#">European Country Update</a>
CU-1	Nevina Polo <sup>1</sup> , Nevton Kodhelaj <sup>1</sup> , Shkëlqim Bozgo <sup>1</sup> , Erison Karamani <sup>1</sup> , Abaz Aliko <sup>2</sup> , Entela Shehaj <sup>2</sup>	<a href="#">Albania Country Update</a>
CU-2	Johann E. Goldbrunner <sup>1</sup> , Gregor Goetzl <sup>2</sup> ,	<a href="#">Austria Country Update</a>
CU-3	Nicolas Dupont <sup>1</sup> , Estelle Petit-clerc <sup>2</sup> , Matsen Broothaers <sup>3</sup> , Olivier Kaufmann <sup>1</sup> .	<a href="#">Belgium Country Update</a>
CU-4	Natalija Samardžić <sup>1</sup> , Hazim Hrvatović <sup>2</sup> , Ferid Skopljak <sup>1</sup>	<a href="#">Bosnia-Herzegovina Country Update</a>
CU-5	Boryana Deneva <sup>1</sup> , Sava Kolev <sup>2</sup> , Simeon Valtchev <sup>2</sup> , Aglaida Toteva <sup>2</sup>	<a href="#">Bulgaria Country Update</a>
CU-6	Sanja Živković <sup>1</sup> , Slobodan Kolbah <sup>2</sup> , Dražen Tumara <sup>1</sup> , Mladen Škrlec <sup>2</sup> , Tena Bilić <sup>3</sup> , Matija Vajdić <sup>1</sup>	<a href="#">Croatia Country Update</a>
CU-7	Anders Mathiesen <sup>1</sup> , Lars Henrik Nielsen <sup>1</sup> , Henrik Vosgerau <sup>1</sup> , Søren Erbs Poulsen <sup>2</sup> , Theis Raaschou Andersen <sup>2</sup> , Karl Woldum Tordrup <sup>2</sup> , Birte Røgen <sup>3</sup> , Claus Ditlefsen <sup>4</sup> and Thomas Vangkilde-Pedersen <sup>4</sup>	<a href="#">Denmark Country Update</a>
CU-8	Alvar Soesoo <sup>1</sup> and Heikki Bauert <sup>2</sup>	<a href="#">Estonia Country Update</a>
CU-9	Teppo Arola and Meri Wiberg	<a href="#">Finland Country Update</a>
CU-10	Virginie Schmidlé-Bloch <sup>1</sup> , Armand Pomart <sup>1</sup> , Christian Boissavy <sup>1</sup> , Camille Maurel <sup>2</sup> , Mikaël Philippe <sup>2</sup> , Astrid Cardona-Maestro <sup>3</sup> , Albert Genter <sup>4</sup>	<a href="#">France Country Update</a>
CU-11	Josef Weber <sup>1</sup> , Holger Born <sup>2</sup> , Sandra Pester <sup>3</sup> , Christopher Schiffler <sup>4</sup> and Inga Moeck <sup>1</sup>	<a href="#">Germany Country Update</a>
CU-12	Dimitrios Mendrinou <sup>1</sup> , Constantine Karytsas <sup>1</sup> , Markos Kapiris <sup>1</sup> , Maria Papachristou <sup>2</sup> , Paschalis Dalampakis <sup>3</sup> , Apostolos Arvanitis <sup>4</sup> , and Nikos Andritsos <sup>5</sup>	<a href="#">Greece Country Update</a>
CU-13	Annamária Nádor <sup>1</sup> , Attila Kujbus <sup>2</sup> , Anikó Tóth <sup>3</sup>	<a href="#">Hungary Country Update</a>
CU-14	Árni Ragnarsson, Benedikt Steingrímsson, Sverrir Thorhallsson	<a href="#">Iceland Country Update</a>
CU-15	Riccardo Pasquali <sup>1</sup> , Sarah Blake <sup>2</sup> , Aoife K. Braiden <sup>2</sup> , Niall McCormack <sup>1</sup>	<a href="#">Ireland Country Update</a>

COUNTRY UPDATES		
CU-16	Bruno Della Vedova <sup>1</sup> , Ilaria Bottio <sup>2</sup> , Maurizio Cei <sup>3</sup> , Paolo Conti <sup>1,*</sup> , Geoffrey Giudetti <sup>3</sup> , Gianluca Gola <sup>1</sup> , Lorenzo Spadoni <sup>2</sup> , Maurizio Vaccaro <sup>1</sup> , Luca Xodo <sup>5</sup>	<a href="#">Italy Country Update</a>
CU-17	Feliksas Zinevicius	<a href="#">Lithuania Country Update</a>
CU-18	Melanie Provoost <sup>1</sup> and Frank Agterberg <sup>2</sup>	<a href="#">Netherlands Country Update</a>
CU-19	Sanja Popovska-Vasilevska <sup>1</sup> , Sevde Stavreva <sup>1</sup>	<a href="#">North Macedonia Country Update</a>
CU-20	Beata Kepinska <sup>1</sup> , Marek Hajto <sup>2</sup>	<a href="#">Poland Country Update</a>
CU-21	João Carlos Nunes <sup>1*</sup> , Luís Coelho <sup>2</sup> , José Martins Carvalho <sup>3</sup> and Maria do Rosário Carvalho <sup>4</sup>	<a href="#">Portugal Country Update</a>
CU-22	Robert Gavriiliuc <sup>1</sup> , Marcel Rosca <sup>2</sup> , Doinita Iuliana Cucueteanu <sup>1</sup>	<a href="#">Romania Country Update</a>
CU-23	Valentina Svalova	<a href="#">Russia Country Update</a>
CU-24	Sibela Oudech <sup>1</sup> , Ivan Djokic <sup>1</sup>	<a href="#">Serbia Country Update</a>
CU-25	Branislav Fričovský <sup>1</sup> , Daniel Marcin <sup>1</sup> , Katarína Benková <sup>1</sup> , Radovan Černák <sup>1</sup> , Klement Fordinál <sup>2</sup> , Ondrej Pelech <sup>3</sup>	<a href="#">Slovakia Country Update</a>
CU-26	Dušan Rajver <sup>1</sup> , Andrej Lapanje <sup>1</sup> , Nina Rman <sup>1</sup> , Joerg Prestor <sup>1</sup>	<a href="#">Slovenia Country Update</a>
CU-27	Iñigo Arrizabalaga <sup>1</sup> , Margarita de Gregorio <sup>2</sup> , Celestino García de la Noceda <sup>3</sup> , Paloma Pérez , Javier F.Urchueguía <sup>5</sup>	<a href="#">Spain Country Update</a>
CU-28	Signhild Gehlin <sup>1</sup> , Olof Andersson <sup>2</sup> , Jan-Erik Rosberg <sup>3</sup>	<a href="#">Sweden Country Update</a>
CU-29	Katharina Link <sup>1</sup> and Christian Minig <sup>2</sup>	<a href="#">Switzerland Country Update</a>
CU-30	Orhan Mertoglu <sup>1</sup> , Sakir Simsek <sup>1</sup> , Nilgun Basarir <sup>1</sup> , Halime Paksoy <sup>2</sup> , Aysegul Cetin <sup>3</sup>	<a href="#">Turkey Country Update</a>
CU-31	Corinna Abesser <sup>1</sup> , Robin Curtis <sup>2</sup> , Rob Raine <sup>3</sup> , Hester Claridge <sup>4</sup>	<a href="#">UK Country Update</a>
CU-32	Yurii Morozov, Anastasia Barylo and Oleh Lysak	<a href="#">Ukraine Country Update</a>

# German DACH event

German DACH event - National and regional projects		
<b>493</b>	Stober Ingrid; Schilling Frank; Müller Birgit; Kiefer Ernst	Frequently Asked Questions - FAQ, Fragen und Antworten zur Tiefen Geothermie
<b>35504</b>	Lackner, Daniel (1); Ledig, Toni (1); Betzl, Bernhard (1); Heitkämper, Dr. Wolfgang (2); Walter, Cord (2)	<a href="#">Urbanes Bohren - Entwicklung eines Lärmvermeidungskonzeptes zur erfolgreichen Realisierung von Bohrvorhaben im dicht bebauten Urbanen Umfeld</a>
<b>35505</b>	Drexl, Catharina; Mattheis, Justin; Potten, Martin; Stockinger, Georg; Thuro, Kuroschi	<a href="#">Hydraulisch-mechanische Charakterisierung von tiefen Geothermiereservoirien und deren Deckschichten im Nordalpinen Vorlandbecken, SO Deutschland</a>
<b>53506</b>	Zimmermann, Jens	<a href="#">Mitteltiefe Geothermie in Mitteldeutschland? - Eine Potenzialuntersuchung in Thüringen</a>
<b>63505</b>	Pache, Immanuel; Hernandez, Ayla Marie; Holzer, Rahel	<a href="#">Oberflächennahe Geothermie: Errichtung eines Horizontalfilterbrunnens für die Fernkälte- und Wärmeversorgung in München</a>
<b>63506</b>	Rettenmaier, Detlev (1); Millot, Romain (2); Gourcerol, Blandine (2); Sanjuan, Bernard (2); Jeandel, Elodie (1); Zorn, Roman (1); Genter, Albert (3); Baujard, Clément (3)	Geothermisches Lithium aus Europa und der DACH Region - ein Überblick über Potentiale, Parameter und Herkunft
<b>63508</b>	Böhm, Franz (1); Dorsch, Klaus (2); Pletl, Christian (1)	25 Jahre tiefe Geothermie im Großraum München
<b>63509</b>	Schölderle, Felix (1); Götzl, Gregor (2); Zosseder, Kai (1)	Temperaturprognosen im Bayerischen Molassebecken: eine neue risikobasierte Korrektur von Bottom Hole Temperaturen
<b>63510</b>	Venczel, Stefan (1); Stockinger, Volker (1,2)	<a href="#">Kombination einer geothermischen Großkollektoranlage mit einem Luftrückkühlwerk als Wärmequellen für ein Kaltes Nahwärmenetz</a>
<b>63512</b>	Bär, Kristian (1); Meike, Hintze (2); Jeroen, van der Vaart (2); Matthis, Frey (2); Judith, Bott (3); Ingo, Sass (2,3)	<a href="#">Green re-dawn of a former oil reservoir - geothermal resource assessment of the Pechelbronn Group in the northern Upper Rhine Graben</a>

German DACH event - National research projects

494	"Ulrich, Kai-Uwe (1); Poetke, Dieter (1); Hiester, Uwe (2); Jungk, Volker (3); Canzler, Wolfram (3)"	<a href="#">Environmentally Compatible Use of Geothermal Heat Storage</a>
35506	"Orlowsky, Dirk; Schott, Wolfgang; Witte, Christoph; Bißmann, Silke; Lehmann, Bodo"	<a href="#">Aufbereitung von seismischen „Alt-Daten“ der Steinkohle-Exploration zur geologischen Neuinterpretation mit Bezug Tiefe Geothermie</a>
39504	"Thiemann, Katja (1); Azzola, Jerome (2); Hansinger, Maximilian (1); Gaucher, Emmanuel (2); Meinecke, Michael (1)"	<a href="#">GFK - DAS Datenmanagement</a>
53504	"Randow, Jakob; Satke, Paul"	<a href="#">Entwicklung einer Softwareschnittstelle für gekoppelte Untergrund- und Gebäudetechniksimulationen zwischen OpenGeoSys und Modelica</a>
53509	"Nehler, Mathias (1); Hahn, Florian (1); Klein, Stefan (1); Heinze, Thomas (2); Licha, Tobias (2); Nettmann, Edith (2); Bracke, Rolf (1,2); Oppelt, Lukas (3); Grab, Thomas (3); Seidel, Torsten (4); König, Christoph M. (4)"	<a href="#">Projektvorstellung Wärmespeicherung in Zechen des Ruhrgebiets (Winzer)</a>
53510	"Richter, Simon; Lubashevsky, Katrin; Randow, Jakob"	<a href="#">Sensitivitäts- und Unsicherheitsanalysen für auslegungsrelevante Parameter oberflächennaher Erdwärmesonden</a>
56504	"Wenzel, Thomas (1); Heinrich, Patrick (1); Oppelt, Lukas (2); Wunderlich, Timm (2)"	<a href="#">Energieversorgung von Gebäuden mit Grubenwassergeothermie: Chancen für eine CO<sub>2</sub>-neutrale Wärmeversorgung</a>
63513	"Otten, Christoph (1); Teitz, Sebastian (2); Holtzegel, Alexander (1); Iannotta, Joy (3); Heine, Florian (3); Eichinger, Florian (3); Würdemann, Hilke (1)"	<a href="#">Testing and monitoring of a biodegradable scaling inhibitor in geothermal plants in the southern German Molasse Basin</a>
63514	"Wittig, Volker (1); Meier, Peter (2); Polat, Berker (1); Börner, Jascha (1); Geißler, Niklas (1)"	<a href="#">Innovative Technologien zur Verbesserung der Bohrlochanbindung in tiefen geothermischen Reservoirs</a>

## German DACH event - National research projects

63515	"Klitzsch, Norbert (1); Stoffel, Phillip (2); Knapp, Dominique (3); Wägerle, Daniel (3); Heim, Elisa (1); Kümpel, Alexander (2); Pechnig, Renate (3)"	<a href="#">Updates aus dem Projekt MPC-Geothermie: Einbindung von Erdwärmesonden in die Gebäudesteuerung mittels Model Predictive Control</a>
63516	"Kohl, Thomas (1); Schill, Eva (1); Bremer, Judith (1); Steiner, Ulrich (1); Nitschke, Fabian (1); Kölbel, Thomas (2); Blöcher, Guido (3); Hahn, Florian (4); Klein, Stefan (4); Jahrfeld, Thomas (5); Meier, PETER (6); El-Alfy, Andre (6); Atkinson, Trevor A (7); McLing, Travis (7); Dobson, Patrick (8); Zhang, Yingqi (8); Rutquist, Jonny (8)"	<a href="#">VESTA - Very-High Temperature Heat Aquifer Storage</a>
64512	"Kroll, Maike; Gurgel, Malte; Preuße, Axel"	<a href="#">Erarbeitung einer Aufarbeitungssystematik für Explorationsrisse und Bewertung der Relevanz von Rissinformationen zur Unterstützung der Planung von Geothermieprojekten</a>
64513	"Meier, Tobias (1); Bücken, Daniel (1,2)"	<a href="#">Spannungsfeldmodellierung anhand historischen Daten der Steinkohle-Exploration zur Festlegung von Bohrlochzielen für die Geothermie in NRW</a>
64514	"Kaiser, Leonard; Sebastian, Thronberens; Back, Stefan; Kukla, Peter"	<a href="#">Geologische Neuinterpretation re-prozessierter 3D-seismischer „Alt-Daten“ der Steinkohle-Exploration im Hinblick auf tiefengeothermische Exploration</a>

## German DACH event - National political and regulatory framework

53507	Gaßner, Hartmut; Buchholz, Georg	<a href="#">Stand der Beschleunigung der Geothermienutzung durch das Sommerpaket</a>
-------	-------------------------------------	--

## German DACH event - Others

53508	"Kuchling, Susanne; Netzeband, Gesa"	<a href="#">Subsurface unites forces</a>
63507	"Pfrang, Daniela (1); Schoelderle, Felix (1); Bohnsack, Daniel (2); Zosseder, Kai (1)"	<a href="#">Geophysikalische Reservoircharakterisierung des oberen Jura im Molassebecken - von der Detailstudie des Geothermie Projekts Schäftlarnstraße (München) zu beckenweiten Erkenntnissen</a>
64515	"Klute, Sven; Budt, Dr. Marcus; Doetsch, Prof. Christian"	<a href="#">Methodology for identification and evaluation of process routes for industrial process steam generation from deep geothermal energy</a>
65517	"Hu, Linwei; Rizvi, Zarghaam; Wuttke, Frank"	<a href="#">Optimization and long-term assessment of ground-air-solar source heat pump systems</a>

# Geothermal Solutions

1.1. Sector coupling: electricity, heat and transport		
151	Moltinger, Michael	<a href="#">Performance of geothermal systems in combination with thermo active building systems (TABS) on residential buildings - a simulation Study</a>
1.2. Transformation pathways for the energy transition		
131	"Goetzl, Gregor (1); Milenic, Dejan (2); Mandrone, Giuseppe (3); Chicco, Jessica Maria (3); Gemeni, Vasiliki (4); Haslinger, Edith (5); Rman, Nina (6); Singh, Rao Martand (7); Vranjes, Ana (2); Zosseder, Kai (8)"	<a href="#">COST Action Geothermal-DHC - Roadmaps for integrating geothermal energy in its full technological spectrum into heating and cooling networks across Europe</a>
268	"Nibbs, William; Westaway, Rob; Falcone, Gioia"	<a href="#">Repurposing Hydrocarbon Wells for Geothermally-heated Horticulture in the UK.</a>
275	"Zwickel, Philipp (1); Bauer, Florian (2); Schätzler, Katharina (2); Steiner, Ulrich (2); Waczowicz, Simon (1); Hagenmeyer, Veit (1); Schill, Eva (2)"	<a href="#">Integrated concept of local heat transition using geothermal heat production, aquifer storage and optimization of distribution network</a>
328	"Dumas, Philippe; Kumar, Sanjeev; Garabetian, Thomas"	<a href="#">Business models for geothermal in a smart sector integration</a>
445	"Dalla Longa, Francesco (1); Nogueira, Larissa (1); Limberger, Jon (1); van Wees, Jan-Diederik (1,2); van der Zwaan, Bob (1,2,3,4)"	<a href="#">Scenarios for Geothermal Energy Deployment in Europe</a>
453	"Maione, Alessandro; Massarotti, Nicola; Santagata, Remo; Vanoli, Laura"	The GEOGRID system: design and environmental assessment of a geothermal district heating/cooling and electricity system for the Campi Flegrei area in Italy.
459	"Szekszárdi, Adrienn; Tóth, Krisztina; Sulyok, István; Gati, Matyas"	<a href="#">WeHEAT SYSTEMS: a sustainable closed loop heating technology in the field of geothermal energy</a>
466	"Szekszárdi, Adrienn; Tóth, Krisztina; Békési, Eszter"	<a href="#">Proven method to select idle wells for geothermal use</a>



1.3. Success stories		
187	"Charman, Jane; Law, Ryan; Farndale, Hazel"	<a href="#">Effective Community Engagement in Cornwall, UK</a>
206	"Richter, Benjamin; Schmidt, Franziska; Thom, Manuel; Batschkus, Daniel"	<a href="#">The advantage of cooperations in municipal projects</a>
1.4. Regional solutions		
139	"Mongelli, Domenico Carmelo (1); De Carli, Michele (1); Di Sipio, Eloisa (2); Dalla Santa, Giorgia (2); Galgaro, Antonio (2); Zarella, Angelo (1)"	<a href="#">COMPARISON BETWEEN CLOSED LOOP AND OPEN LOOP GSHP SOLUTIONS FOR HEATING AND COOLING A RESIDENTIAL BUILDING IN A WARM CLIMATE. A CASE STUDY</a>
144	"Mouchot, Justine (1); Graff, Jean-Jacques (2)"	Technical & economic scenario for geothermal energy direct uses application: a regional analysis in France
241	"van der Vaart, Jeroen (1); Frey, Matthis (1); Bär, Kristian (1); Reinecker, John (2); Sass, Ingo (1,3,4)"	<a href="#">Deep Geothermal Potential Assessment of the Cenozoic Northern Upper Rhine Graben using Stochastic Uncertainty Modeling</a>
265	"Hamm, Virginie; Maragna, Charles; Maurel, Camille"	<a href="#">Deployment of 5th generation heating and cooling grids (5GDHC) in France: two case studies in Orleans and Strasbourg metropolises</a>
329	"Haslinger, Edith (1); Hoyer, Stefan (2); Philipp, Robert (3); Lauer mann, Michael (1); Rupprecht, Doris (2); Lager, Daniel (1); Friedrich, Robin (1); Pantelic, Dragisa (1)"	<a href="#">Heat Harvest - Harvesting excess heat from buildings and urban surfaces with geothermal seasonal storage to alleviate the Urban Heat Island effect in cities</a>
461	"Haslinger, Edith (1); Turewicz, Veronia (2); Huber, David (3); Illyes, Viktoria (3); Hammer, Andreas (4); Biermayr, Peter (5); Ponweiser, Karl (3); Stuckey, David (6); Stern, Philipp (6); Koch, Gerfried (7); Vogl, Franz (8); Götzl, Gregor (2); Bartak, Gerhard (9); Niederbrucker, Richard (10); Friedrich, Robin (1); Pantelic, Dragisa (1); Kienberger, Thomas (4)"	<a href="#">Development of a low-temperature heating and cooling grid with industrial waste heat and geothermal storage for an abandoned military camp with buildings protected by cultural heritage</a>
480	"Aristia, Gabriela; Bäbler, Ralph"	<a href="#">A Coating System for Corrosion Protection of Carbon Steel as an Alternative for High Alloyed Materials</a>

1.5. Hybrid systems		
184	"Janssen, Martijn T.G.; Barnhoorn, Auke; Draganov, Deyan; Wolf, Karl-Heinz A.A."	<a href="#">CO2 Storage in Geothermal Reservoir Rocks: A Seismic Velocity Characterization Study</a>
296	Saltuk, Fatih	<a href="#">A New Algorithm for Renewable Hybrid Energy Selection in Turkey</a>
299	"Genet, Romain (1); Fréchin, Nicolas (2)"	Benefits of hybrid geothermal heat pump systems in the French context
435	"Danesi, David; Bonafin, Joseph; Pingaro, Emanuele; Zanzucchi, Paolo Maria"	<a href="#">Production of green Hydrogen integrated with geothermal plants</a>
1.6. Other		
133	"Witte, Henk J.L. (1); Lauermann, M. (2); Haslinger, E (2); Reichl, C. (2); Martinez, M (3); Doerr, C (2); Fernandez, S (3); Kling, S (2); Martinez, K (3); Meeng, C (1); Steurer, A (2)"	<a href="#">Development and validation of analytical solutions for earth basket (spiral) heat exchangers</a>
219	"Ayzit, Tolga; Chandrasekharam, Dor- nadula; Baba, Alper"	<a href="#">Hamit granitoid: A sustainable clean energy source for mitigating CO2 emissions</a>
239	Witte, Henk J.L.	<a href="#">ITGBES-PRO, a new method for the integrated design of clustered individual borehole heat exchanger systems.</a>
279	"Seidel, Torsten (1); König, Christoph M. (1); Jagert, Felix (2); Nardini, Isabella (2)"	<a href="#">Modelling the injection of CO2 enriched groundwater into a low-temperature fractured rock siliciclastic reservoir at the German GECO demo site in Bochum</a>
407	"Gonzalez Garcia, Hector; Francke, Henning; Huenges, Ernst; Flores Armienta, Magaly; Sass, Ingo"	Evaluation of the sustainability of a geothermal power plant: Los Humeros, Mexico as study case.
409	"Gola, Gianluca (1); Di Sipio, Eloisa (2); Manzella, Adele (1); Galgaro, Antonio (2)"	Thermal performance and longevity of Geothermal Deep closed-loop heat exchangers: a numerical analysis
427	"Kling, Stephan (1); Haslinger, Edith (1); Lauermann, Michael (1); Witte, Henk (2); Reichl, Christoph (1); Steurer, Alexander (1); Dörr, Constantin (1); Pantelic, Dragisa (1); Friedrich, Robin (1)"	<a href="#">GeoFit: Experimental investigations and numerical validation of shallow spiral collectors as a basis for development of a design tool for geothermal retrofitting of existing buildings</a>

481	"Jahrfeld, Thomas (1); Guglielmetti, Luca (2)"	European Network for Geothermal Heat & Cooling
484	"Cröniger, Christine; Tretter, Richard"	<a href="#">Approach to Climate Neutral Heat Supply in Munich 2035</a>
488	"Freire, Lorena; Sánchez, Julio; Castro, Rubén; Ezpeleta, Ignacio"	<a href="#">Advanced EIS-based sensor for corrosion monitoring in geothermal power plants</a>
228	Behzadi, Amirmohammad* Nourozi, Behrouz Gram, Annika Harsem, Trond Thorgeir Jonströmer, Cynthia Sadrizadeh, Sasan	<a href="#">Proposal and analysis of a geothermal-assisted low-temperature heating and high-temperature cooling system</a>
246	Ezekiel, Justin* Ebigbo, Anozie Arifianto, Indra Daniilidis, Alexandros Finkbeiner, Thomas Mai, P. Martin	<a href="#">Techno-economic performance evaluation of geothermal energy extraction from hydrothermal systems in Western Saudi Arabia</a>
375	Nederstigt, Tijn A'Campo, Yvonne Slager, Reinder van der Voet, Eva*	<a href="#">Facilitating geothermal energy in local heat transition planning</a>
379	Hau, Kevin Peter* Games, Federico Lathion, Rodolphe Brehme, Maren Saar, Martin O.	<a href="#">On the feasibility of producing geothermal energy at an intended CO2 sequestration field site in Switzerland</a>
467	Thiem, Stefan* Wunsch, Marco Buse, Christian Mathes, Rafael Budach, Ingmar Franz, Matthias Kielgas, Benjamin Tilsen, Rene	<a href="#">Hydrothermal district heating in Schwerin – reviving the geothermal potential of the North German Basin</a>
472	Rudolph, Bastian* Bremer, Judith Stricker, Kai Schill, Eva Koenen, Marielle Dinkelman, Dorien van Wees, Jan Diederik Kohl, Thomas	<a href="#">Large-scale storage capacities as the backbone of a renewable energy system</a>

## Policy Markets

2.1. Heat market at city level and in rural areas		
147	"Pratiwi, Astu Sam; Trutnevyte, Evelina"	<a href="#">Competitiveness evaluation of geothermal district heating systems using decision tree analysis</a>
321	"Kumar, Sanjeev; Dumas, Philippe; Garabetian, Thomas"	<a href="#">Geothermal district heating &amp; cooling for sustainable and smart cities</a>
347	Sangin, Sepehr* Franz, Matthias Hashemi-Farzad, Ali	<a href="#">Aquifer thermal energy storage for balancing renewable excess electricity: a technical feasibility study from North Germany</a>
434	Barbon, Andrea Bonafin, Joseph Pingaro, Emanuele Zanzucchi, Paolo Maria Duvia, Andrea*	<a href="#">LARGE HEAT PUMP INTEGRATION IN GEOTHERMAL HEATING NETWORKS</a>
2.3. Policy -frame conditions and incentives		
116	Nádor, Annamaria	<a href="#">De-risking geothermal exploration by public data portals and financial incentives – good examples from Hungary and the Danube Region</a>
207	"Richter, Benjamin; Schmidt, Franziska; Thom, Manuel; Batschkus, Daniel"	<a href="#">Opportunities for deep geothermal energy due to changed legal framework conditions in Germany</a>
303	"Kumar, Sanjeev; Dumas, Philippe; Garabetian, Thomas"	<a href="#">Geothermal energy's role in meeting the EU's climate and energy targets in 2030 and 2050</a>

304	"Kumar, Sanjeev; Dumas, Philippe; Garabetian, Thomas; Constance, Madeleine"	<a href="#">Geothermal lithium: Unlocking the door to climate-proofed industrial and energy strategies</a>
437	"Stokłosa, Alicja Wikto- ria (1); Breembroek, Gerdi (2); Braiden, Aoife (3); Schreiber, Stephan K. (4); Pétursdottir, Harpa Þórunn (5); Ingólfsson, Hjalti Páll (1); Björnsson, Sigurður (6); Ramsak, Paul (2)"	<a href="#">GEOHERMICA accelerating the deployment of geothermal energy in Europe</a>
1207	"Richter, Benjamin; Schmidt, Franziska; Thom, Manuel; Batschkus, Daniel"	<a href="#">Opportunities for deep geothermal energy due to changed legal framework conditions in Germany</a>

#### 2.4. Legal aspects and regulations

125	"Goetzl, Gregor (1); Steiner, Cornelia (1); Boon, David (2); Herms i Canellas, Ignasi (3); Borović, Staša (4); Holecek, Jan (5); Williams, Harri (6); Hunter Williams, Nata- lya (7); Petitclerc, Estelle (8); Janža, Mitja (9); García-Gil, Alejandro (10); Erlström, Mikael (11); Vandeweyer, Vincent (12); Kłonowski, Maciej (13); Černák, Radovan (14); Ditlefsen, Claus (15); Malyuk, Boris (16); Bishop, Harrison (7)"	<a href="#">The importance of managing shallow geothermal energy in urban areas - results from the GeoERA project MUSE</a>
-----	---	--

#### 2.5. Socio-economic aspects of geothermal energy

124	Kurek, Katarzyna A.	Geothermal resources and local development in Poland
145	"Ioannou, Anastasia (1); Falcone, Gioia (1); Fernandez, Isabel (2)"	<a href="#">A decision support tool for promoters of geothermal energy projects</a>

#### 2.6. Financing, corporate structures, "bankability", etc.

113	"SCHMIDLE BLOCH, Virginie (1); BOMMENSATT, Norbert (2); BOISSAVY, Christian (3)"	<a href="#">Historical and new geological guarantee schemes : Essentials tools to support ambitious heat production targets by deep geothermal energy in France</a>
-----	---	---

114	"Huck, Pierre; Gottwald, Alexander; Nikiforova, Nevena"	<a href="#">Technical due diligence and lenders' advisory for the geothermal power plant in Garching an der Alz, Germany</a>
307	"Garabetian, Thomas (1); Bonciani, Dario (2); Torsello, Loredana (2); Allen, Jessica (3); Kiraly, Odon (4); Fedor, Ferenc (4); Schmidlé, Virginie (5); Noevig, Thor (6); De Gregorio, Margarita (7); Perez, Paloma (7); Senturk, Ufuk (8); Robins, Emmanuelle (9); Constance, Madeleine (1); Dumas, Philippe (1)"	<a href="#">The global geothermal market: a stronger focus on heating and cooling, towards greater interconnections of national and regional markets?</a>
308	"Garabetian, Thomas; Dumas, Philippe; Kumar, Sanjeev; Martini, Emil"	<a href="#">SUSTAINABLE FINANCE IS GEOTHERMAL FINANCE? UNDERSTANDING THE MEANING OF THE TAXONOMY AND OPPORTUNITIES FOR THE GEOTHERMAL SECTOR</a>
419	"Karytsas, Spyridon; Mendrinis, Dimitrios; Choropanitis, Ioannis; Oikonomou, Theoni; Karytsas, Constantine"	<a href="#">The GEORISK European project: Working towards the establishment of a risk mitigation scheme for geothermal projects in Greece</a>
1114	"Huck, Pierre; Gottwald, Alexander; Nikiforova, Nevena"	<a href="#">Technical due diligence and lenders' advisory for the geothermal power plant in Garching an der Alz, Germany</a>
<b>2.7. Public acceptance and engagement issues, public relations</b>		
102	"Mendrinis, Dimitrios (1); Polyzou, Olympia (1); Karytsas, Spyros (1); Nordø, Åsta Dyrnes (2); Midttømme, Kirsti (2); Sprenkeling, Marit (3); Peuchen, Ruben (3); Geerdink, Tara (3); Puts, Hanneke (3); Otto, Danny (4)"	<a href="#">Understanding societal requirements of subsurface resources exploitation projects: Societal Embeddedness Level assessment methodology, its application in 4 CCS National case studies and implications for the geothermal industry</a>
122	"Kępińska, Beata (1); Kasztelewicz, Aleksandra (1); Miecznik, Maciej (1); Petursson, Baldur (2); Gunnarsson, Jon (2)"	<a href="#">Building the awareness and public acceptance of geothermal uses among key stakeholders in Poland (the EEA FM Project, 2020–2024)</a>

236	"Barich, Amel (1); Stok osa, Alicja (1); Hildebrand, Jan (2); Casillas, Ana (3); Elíasson, Ótto (4); Medgyes, Tamas (5); Quinonez, Gauthier (6); Fernandez, Isabel (7)"	<a href="#">Social License to Operate in Geothermal Energy</a>
262	"Bonciani, Dario (1); Guðjónsdóttir, Sylvía Rakeł (2); Douziech, Mélanie (3); Pérez-López, Paula (3); Torsello, Loredana (1)"	<a href="#">Strategies and outcomes of the engagement with market actors to generate and adopt life-cycle based environmental assessment tools of deep geothermal projects.</a>
334	"Dumas, Philippe; Kumar, Sanjeev; Garabetian, Thomas"	<a href="#">The use of sustainable LCA approach to develop geothermal</a>
420	"Duijn, Michael (1); Puts, Hanneke (2); Sambell, Karlien (2); Van Popering-Verkerk, Jitske (1); Winters, Eva (2)"	<a href="#">Exploring a Value-based Participatory Monitoring approach for improving the societal embeddedness of geothermal initiatives</a>
457	"Chavot, Philippe; Masseran, Anne; Seranno, Yeny; Zoungrana, Jean"	<a href="#">How to govern deep geothermal projects? Political, environmental and scientific issues involved in the debates related to the Strasbourg earthquakes (2019-2021).</a>
1102	"Mendrinós, Dimitrios (1); Polyzou, Olympia (1); Karytsas, Spyros (1); Nordø, Åsta Dyrnes (2); Midttømme, Kirsti (2); Sprenkeling, Marit (3); Peuchen, Ruben (3); Geerdink, Tara (3); Puts, Hanneke (3); Otto, Danny (4)"	<a href="#">Understanding societal requirements of subsurface resources exploitation projects: Societal Embeddedness Level assessment methodology, its application in 4 CCS National case studies and implications for the geothermal industry</a>
1262	"Bonciani, Dario (1); Guðjónsdóttir, Sylvía Rakeł (2); Douziech, Mélanie (3); Pérez-López, Paula (3); Torsello, Loredana (1)"	<a href="#">Strategies and outcomes of the engagement with market actors to generate and adopt life-cycle based environmental assessment tools of deep geothermal projects.</a>
<b>2.8. Other</b>		
266	"Dumas, Philippe (1); Urchueguia, Javier (2); Batini, Fausto (3)"	<a href="#">The state of research, innovation, and competitiveness of the European geothermal energy sector</a>
458	"Krieger, Margaret (1); Kurek, Dr. Kasia (2)"	A systematic analysis of geothermal data collection in Europe

# Technology Innovation

3.1. Geothermal power in Europe – projects, ideas, experiences		
111	"JEANNOU, Antoine (1); TREMEAC, Brice (2); DIABY, Ahmadou-Tidi-ane (2)"	<a href="#">The Geothermal Energy Buffer (GEB) a promising energy storage solution - a study of GEB's operation</a>
134	"Jupe, Andrew (1); Law, Ryan (2); Farndale, Hazel (2)"	<a href="#">Implementation of an Induced Seismicity Protocol for the United Downs Deep Geothermal Power Project, United Kingdom</a>
135	"Law, Ryan; Farndale, Hazel"	<a href="#">An Update on the United Downs Geothermal Power Project, Cornwall, UK</a>
136	"Ravier, Guillaume (1); Seibel, Olivier (2); Ingi Ólafsson, Dagur (3); Davíðsdóttir, Svava (3); FRIES, David (1)"	<a href="#">Investigations on brine transport pipes for upscaling geothermal plants in the Upper Rhine Graben</a>
148	"Tonkul, Serhat (1); Baba, Alper (1); Demir, Mustafa Muammer (1); Regenspurg, Simona (2); Kieling, Katrin (2)"	<a href="#">3D Modelling and Characterization of Stibnite Scale Formation in Germencik Geothermal Site, Büyük Menderes Graben, Western Turkey</a>
149	"Tonkul, Serhat (1); Baba, Alper (1); Demir, Mustafa Muammer (1); Regenspurg, Simona (2); Kieling, Katrin (2)"	<a href="#">3D Modelling and Characterization of Scale Types in Hyper Saline Geothermal System in Tuzla Geothermal Power Plant, NW Turkey</a>
153	"Zimmermann, Günter; Hofmann, Hannes; Zang, Arno; Huenges, Ernst"	<a href="#">Recent developments and future of Enhanced Geothermal Systems (EGS)</a>
176	"Helali, Chahinez; Betelu, Stephanie; Ignatiadis, Ioannis"	<a href="#">MECHANISMS AND KINETICS OF CARBON STEEL CORROSION/ SCALING AND INHIBITION IN ACTUAL OR RECONSTITUTED AND TREATED GEOTHERMAL WATERS</a>
178	"Esmailpour, Morteza; Gholami Korzani, Maziar; Kohl, Thomas"	<a href="#">Increasing the contribution of closed geothermal systems to green energy generation through designing a novel deep multi-lateral framework</a>
180	"Zeh, Robin (1); Stockinger, Volker (1,2)"	<a href="#">Monitoring of a large-scale geothermal collector system and a 5GDHC in Bad Nauheim</a>
183	"Geißler, Niklas (2); Garsche, Florian (1); Samus, Vitalii (1); Bracke, Rolf (1)"	<a href="#">Micro Turbine Drilling - MTD</a>
193	"Schmid, Matthias; Stockinger, Volker"	<a href="#">Monitoring and optimisation of a large-scale geothermal collector system under a residential and commercial building with integration of waste heat from a supermarket</a>



204	"Ravier, Guillaume (1); Rodriguez, Alvaro (2); Bougon, Pierre-Etienne (2); David, Fries (1)"	<a href="#">Casing solution to increase lifetime of geothermal wells in the Upper Rhine Graben and to optimize Total Cost of Ownership</a>
208	"aydin, hakki (1); Temizel, Cenk (2)"	<a href="#">Application of Machine Learning Techniques in Geothermal Industry: A Case Study of Power Generation from a Combined Geothermal Power Plant</a>
209	"Taddei Pardelli, Paolo (1); Tempesti, Claretta (1); Mannelli, Andrea (1); Sabard, Alex (2); Fanicchia, Francesco (2); Paul, Shiladitya (2); Holmes, Briony (2); Lee, Chi (2); Jopen, Antony (2); Şengun, Raziye (3); Sahiller, Hakan Alp (3); Halaçoğlu, Ural (3); Pekdüz, Ismail (3); Stefansson, Andri (4); Galeczka, Iwona (4); Ediger, Volkan (5); Kirkil, Gokhan (5); Přikryl, Jan (6); Kjellgren, Per (7)"	Design, construction and test of a retention tank for a scaling reduction system to increase geothermal plant efficiency
211	"Hallundbæk, Søren; Rosas Gutierrez, Fabio"	<a href="#">Improving geothermal well designs for optimal performance</a>
233	"Glauche, Anton; Seyidov, Ferid"	<a href="#">The GRE GEO Project – Development of corrosion-resistant casing systems</a>
238	"Passamonti, Arianna (1); Hahn, Florian (1); Strozyk, Frank (1); Bombarda, Paola (2); Bracke, Rolf (1)"	<a href="#">Development of a pilot site for high temperature heat pumps, with high temperature mine thermal energy storage as heat source</a>
251	"Mazzoni, Tiziana; Basile, Paolo; Favaro, Lorenzo; Giannecchini, Luca; Orlando, Stefano; Xodo, Luca"	<a href="#">A Methodology for the evaluation of geothermal resources and power production cost: case history Italy</a>
256	"Baujard, Clement; Maurer, Vincent; Dalmais, Eleonore; Ravier, Guillaume; Glaas, Carole; Genter, Albert"	<a href="#">Low induced seismicity in fractured geothermal reservoirs: experience and lessons learned from Rittershoffen and Soultz-sous-Forêts plants operation and Illkirch reservoir development</a>

259	"Dino, Giuseppe Edoardo (1); Palomba, Valeria (1); Frazzica, Andrea (1); Brebels, Adriaan (2); Blanes Restoy, Luis Miguel (3)"	<a href="#">Retrofitting through a dual source heat pump, a techno-economic analysis</a>
264	"Hamm, Virginie (1); Maurel, Camille (1); Bugarel, Frederik (1); Hervé, Jean-Yves (2)"	<a href="#">Good practice guidelines on deep geothermal drilling and exploitation from experience in the Paris Basin (Dogger and Albian aquifers)</a>
277	"Baur, Sabine (1); Seibt, Andrea (2); Kuhn, Dietmar (1)"	<a href="#">Laboratory flow-through experiments to determine the effect of inhibitors in the injection of fluids supersaturated with barium sulfate</a>
312	Ruff, Markus	<a href="#">Deep Geothermal Energy, Eco-Friendly with Zero Emissions – Operational Experiences from CO2 and Methane Injection and its Significance for CCS and the World</a>
324	"Puech, Jean-Claude (1); Strobbia, Claudio (1); Boelle, Jean-Luc (1); Cheou, Elie-Pascal (1); Chapart, Alexandre (1); Bos, Stijn (2); Gallego, Pierre (3)"	<a href="#">Frugal seismic for Geothermal Industry</a>
343	"Mroz, Heather; Vidal, Edgar; Shufran, Matt"	The Use of Explosion Clad Metals for Geothermal Applications
374	"Storkaas, Christoffer (1); Zvrskovec, Frantisek Alexander (3); Bernhoff, Hans (2)"	<a href="#">DEEP - Geothermal systems in a petrothermal environment</a>
376	"Blöcher, Guido (1); Heumann, Arnd (1); Virchow, Lioba (1); Regenspurg, Simona (1); Wiersberg, Thomas (1); Zimmer, Martin (1); Kallmeyer, Jens (1); Alibrandi, Armando (1); Staisch, Holger (2); Thielke, Christoph (3)"	<a href="#">Green-Campus Spandau - Developing a regenerative energy supply for residential areas using the former gas storage facility in Berlin</a>
388	"Broothaers, Matsen; Cox, Kevin; Harcouët-Menou, Virginie; Laenen, Ben; Lagrou, David; Pogacnik, Justin; Van Meensel, Steven"	<a href="#">Deep geothermal energy in the Lower Carboniferous carbonates in the Belgian Campine Basin: status and insights from second start-up phase of the Balmatt project in Mol</a>
401	"Homuth, Sebastian (1); Meirich, Marco (2); Andersen, Øystein (3)"	<a href="#">Upscaling and professionalizing geothermal developments via standardizing and value engineering</a>

450	"Saar, Martin O.; Breme, Maren"	<a href="#">Geothermal energy research in the GEG group at ETH Zurich</a>
471	"Nardini, Isabella (1); Bracke, Rolf Bracke (1); Sigfússon, Bergur (2); Ingólfsson, Hjalti Páll (3); Batini, Fausto (4); Berndsen, Maximilian (1); Cremer, Tilman (1); Halaçoğlu, Ural (5); Jagert, Felix (1); Nehler, Mathias (1); Freire Piñeiro, Lorena (6); Siedel, Torsten (7); Snæbjörnsdóttir, San- dra (2)"	GECO Project – Geothermal Emission Control
475	"Lönroth, Johnny; Hämäläinen, Matias; Herranen, Jan; Juurikka, Satu; Lindholm, Roope; Oksanen, Jere; Mäkiahö, Tomi; Manner, Kaijaleena; Ojanne, Mikko; Pihlanen, Niko; Puolitaival, Hannu; Simpkala, Matti"	<a href="#">Commercialising a concept for deep geothermal boreholes for Fennoscandia and beyond</a>
477	"Longfield, Stephen; Stuebing, Todd; Schwarz, Bailey; Hodder, Mark; Mölk, Daniel; Holmes, Michael"	<a href="#">Favor Loop™ Commercial Project at Geretsried, Molasse Basin, Germany</a>
490	"Hartmann, Werner; Timo, Hein"	<a href="#">New Technical Developments in Wellhead Design – Best Practices and Projects</a>
1111	"JEANNOU, Antoine (1); TREMÉAC, Brice (2); DIABY, Ahmadou-Tidi- ane (2)"	<a href="#">The Geothermal Energy Buffer (GEB) a promising energy storage solution - a study of GEB's operation</a>
1136	"Ravier, Guillaume (1); Seibel, Olivier (2); Ingi Ólafsson, Dagur (3); Davíðsdóttir, Svava (3); FRIES, David (1)"	<a href="#">Investigations on brine transport pipes for upscaling geothermal plants in the Upper Rhine Graben</a>
1148	"Tonkul, Serhat (1); Baba, Alper (1); Demir, Mustafa Mu- ammer (1); Regenspurg, Simona (2); Kieling, Katrin (2)"	<a href="#">3D Modelling and Characterization of Stibnite Scale Formation in Germencik Geothermal Site, Büyük Menderes Graben, Western Turkey</a>

1149	"Tonkul, Serhat (1); Baba, Alper (1); Demir, Mustafa Muammer (1); Regenspurg, Simona (2); Kieling, Katrin (2)"	<a href="#">3D Modelling and Characterization of Scale Types in Hyper Saline Geothermal System in Tuzla Geothermal Power Plant, NW Turkey</a>
1153	"Zimmermann, Günter; Hofmann, Hannes; Zang, Arno; Huenges, Ernst"	<a href="#">Recent developments and future of Enhanced Geothermal Systems (EGS)</a>
1178	"Esmailpour, Morteza; Gholami Korzani, Maziar; Kohl, Thomas"	<a href="#">Increasing the contribution of closed geothermal systems to green energy generation through designing a novel deep multi-lateral framework</a>
1209	"Taddei Pardelli, Paolo (1); Tempesti, Claretta (1); Mannelli, Andrea (1); Sabard, Alex (2); Fanicchia, Francesco (2); Paul, Shiladitya (2); Holmes, Briony (2); Lee, Chi (2); Jopen, Antony (2); Şengun, Raziye (3); Sahiller, Hakan Alp (3); Halaçoğlu, Ural (3); Pekdüz, Ismail (3); Stefansson, Andri (4); Galeczka, Iwona (4); Ediger, Volkan (5); Kirkil, Gokhan (5); Přikryl, Jan (6); Kjellgren, Per (7)"	Design, construction and test of a retention tank for a scaling reduction system to increase geothermal plant efficiency
1251	"Mazzoni, Tiziana; Basile, Paolo; Favaro, Lorenzo; Giannecchini, Luca; Orlando, Stefano; Xodo, Luca"	<a href="#">A Methodology for the evaluation of geothermal resources and power production cost: case history Italy</a>
1343	"Mroz, Heather; Vidal, Edgar; Shufran, Matt"	The Use of Explosion Clad Metals for Geothermal Applications
1374	"Storkaas, Christoffer (1); Zvrskovec, Frantisek Alexander (3); Bernhoff, Hans (2)"	<a href="#">DEEP - Geothermal systems in a petrothermal environment</a>

1401	"Homuth, Sebastian (1); Meirich, Marco (2); Andersen, Øystein (3)"	<a href="#">Upscaling and professionalizing geothermal developments via standardizing and value engineering</a>
1475	"Lönroth, Johnny; Hämäläinen, Matias; Herranen, Jan; Juurikka, Satu; Lindholm, Roope; Oksanen, Jere; Mäkiaho, Tomi; Manner, Kajaleena; Ojanne, Mikko; Pihlanen, Niko; Puolitaival, Hannu; Simpkala, Matti"	<a href="#">Commercialising a concept for deep geothermal boreholes for Fennoscandia and beyond</a>
1490	"Hartmann, Werner; Timo, Hein"	<a href="#">New Technical Developments in Wellhead Design – Best Practices and Projects</a>
<b>3.2. Geothermal heating and cooling uses for buildings, tertiary, agricultural, and industrial sectors</b>		
107	"Goldbrunner, Johann (1); Eckschlager, Anton (2)"	<a href="#">The Geothermal Project Ried – Mehrnbach (Upper Austrian Molasse Basin)</a>
108	"Bloemendal, Martin (1,2); van Esch, Thijs (1); Vardon, Phil (1); Hartog, Niels (2)"	Making aquifer thermal energy storage (ATES) system more sustainable using ATES triplet systems for space heating and cooling
174	"Kolo, Isa; Brown, Christopher; Falcone, Gioia; Banks, David"	<a href="#">Closed-loop deep borehole heat exchanger: Newcastle Helix case study</a>
201	"Ohlsen, Björn; Stockinger, Volker"	<a href="#">Possible applications of a frozen soil storage and linking with other heat sources</a>
212	"Bockelmann, Franziska; Peter, Markus; Roggenkamp, Henning"	<a href="#">Real-life comparison of different heat exchangers with low temperature heat sources used in heat pump applications</a>
221	"Lentsch, David; Schweingruber, Mischa"	<a href="#">First Multilateral Well in the South German Molasse Basin - Case Study</a>
258	"Calvo, Raffaele (1); Alimonti, Claudio (1); Scrocca, Davide (2)"	<a href="#">A Green solution for depleted oil wells integrating it in the territory</a>

292	"Tomaszewska, Barbara (1); Mukti, Mentari (2); Tyszer, Magdalena (1); Czubernat, Maciej (1); Kępińska, Beata (1); Bujakowski, Wiesław (1); Kasztelewicz, Aleksandra (1); Kabay, Nalan (3); Baba, Alper (4); Bryjak, Marek (5); Akkurt, Gülden Gokcen (4); Eser Ökten, Hatice (4); Meriç, M. Kamil (3)"	<a href="#">Geothermal Resources For Agriculture: Growing Tomato, Eggplant, and Zucchini in Geothermal Greenhouse Using Treated Geothermal Water For Irrigation</a>
320	"Chen, Qing; Nicholson, Duncan"	<a href="#">Thermal piles Constructions – Responsibilities, Risks and Good Practice</a>
340	"García-Céspedes, Jordi (1); Herms, Ignasi (2); Arnó, Georgina (2); de Felipe, José Juan (1)"	<a href="#">Geo-SIV: a new free tool MATLAB-based for the preliminary technical, economic and environmental evaluation of small to medium shallow geothermal energy projects in Catalonia based on GIS datasets</a>
346	"Tomaszewska, Barbara (1,2); Mukti, Mentari (2); Czubernat, Maciej (1); Tyszer, Magdalena (1); Kępińska, Beata (1); Bujakowski, Wiesław (1); Kasztelewicz, Aleksandra (1); Kabay, Nalan (3); Baba, Alper (4); Bryjak, Marek (5); Akkurt, Gulden Gokcen (4); Ökten, Hatice Eser (4); Meriç, M. Kamil (3)"	<a href="#">Geothermal Resources For Agriculture: Hydroponic and in soil lettuce cultivation using geothermal water and energy</a>
398	"Kühl, Lars (1); Sanner, Burkhard (2); Stoffel, Phillip (3); Maatmann, Ronja (1); Mands, Erich (2)"	<a href="#">Examples of integration and optimisation of operation of shallow geothermal energy systems in commercial and non-residential buildings within project geo:base</a>
1108	"Bloemendal, Martin (1,2); van Esch, Thijs (1); Vardon, Phil (1); Hartog, Niels (2)"	Making aquifer thermal energy storage (ATES) system more sustainable using ATES triplet systems for space heating and cooling

1292	"Tomaszewska, Barbara (1); Mukti, Mentari (2); Tyszer, Magdalena (1); Czubernat, Maciej (1); Kępińska, Beata (1); Bujakowski, Wiesław (1); Kasztelewicz, Aleksandra (1); Kabay, Nalan (3); Baba, Alper (4); Bryjak, Marek (5); Akkurt, Gülden Gokcen (4); Eser Ökten, Hatice (4); Meriç, M. Kamil (3)"	<a href="#">Geothermal Resources For Agriculture: Growing Tomato, Eggplant, and Zucchini in Geothermal Greenhouse Using Treated Geothermal Water For Irrigation</a>
1340	"García-Céspedes, Jordi (1); Herms, Ignasi (2); Arnó, Georgina (2); de Felipe, José Juan (1)"	<a href="#">Geo-SIV: a new free tool MATLAB-based for the preliminary technical, economic and environmental evaluation of small to medium shallow geothermal energy projects in Catalonia based on GIS datasets</a>
<b>3.3. Geothermal heat pumps in Europe – small and large buildings, heating and cooling, and domestic hot water</b>		
112	"Hirsch, Hauke; Nicolai, Andreas; Grunewald, John"	<a href="#">Dimensioning of low-temperature district heating grids with geothermal heat sources using detailed simulation software SIM-VICUS</a>
137	"Abugabbara, Marwan (1); Alberdi-Pagola, Maria (2); Javed, Saqib (1); Erbs Poulsen, Søren (3)"	<a href="#">Integration of ground-source heat pumps in combined district heating and cooling networks: A holistic modeling framework</a>
285	"Ramachandran, Sunder; Schorling, Peter; Chapman, Paul; Sarimento-Klapper, Helmuth; Lauese, Bjoern; Dickinson, John"	<a href="#">Use of Environmentally Friendly Production Chemicals such as Corrosion Inhibitors in Geothermal Applications</a>

381	"Bernardi, Adriana (1); de Carli, Michele (2); Galgaro, Antonio (2); di Sipio, Eloisa (2); Dalla Santa, Giorgia (2); Vercruysse, Jaques (3); Sanner, Burkhard (4); at later stage, More authors (5)"	<a href="#">Shallow Geothermal Energy for existing buildings – overview and status of project GEO4CIVHIC</a>
393	"Mathes, Rafael; Kabus, Frank; Junker, Hannes; Popov, Michael"	<a href="#">Geothermal heating plant Schwerin: Realization of a cascaded large-scale heat pump system in combination with a medium-depth geothermal system</a>
440	"Parry, Andrew; Simon, Matthieu; Varadarajan, Prasanna Amur; Sosio, Giovanni"	<a href="#">Modelling and benchmarking the behavior of closed-loop borehole heat exchangers with inclined wells: the Celsius Energy system</a>
1285	"Ramachandran, Sunder; Schorling, Peter; Chapman, Paul; Sarimento-Klapper, Helmuth; Lauese, Bjoern; Dickinson, John"	<a href="#">Use of Environmentally Friendly Production Chemicals such as Corrosion Inhibitors in Geothermal Applications</a>
<b>3.4. Underground thermal energy storage – design, system integration and operation</b>		
104	"Lemoine, Gerard (1); Kępińska, Beata (1,2)"	Assessment of the shallow groundwater potential of the " Kościerzyna Morainic Island" for cold and heat seasonal energy storage
199	"Godschalk, Bas; Oerlemans, Peter; Drijver, Benno"	<a href="#">First results of one year full scale HT-ATES in operation in the Netherlands</a>
213	"Samy, Ayman; Izadi, Ghazal; Barton, Colleen; Wallis, Frank; Kaus, Andreas"	<a href="#">Reservoir deliverability assessment and uncertainty analysis for new geothermal prospects</a>
229	"Bossennec, Claire (1); Seib, Lukas (1); Frey, Matthis (1); Bär, Kristian (1); Welsch, Bastian (1,2); Sass, Ingo (1,2)"	<a href="#">Multi-scale characterisation of the structure and hydraulic behaviour of a medium-deep heat storage test-site in a granodioritic reservoir</a>
244	"Seib, Lukas (1); Bossennec, Claire (1); Welsch, Bastian (1,2); van der Vaart, Jeroen (1); Formhals, Julian (1,2); Sass, Ingo (1,2); Frey, Matthis (1); Kretzschmar, Richard (1)"	<a href="#">Thermohydraulic Modeling and Co-Simulation of a Pilot System for Medium Deep Borehole Thermal Energy Storage in a Crystalline Reservoir</a>



250	"Dinkelman, Dorien; Koenen, Marielle; Carpentier, Stefan"	<a href="#">High temperature aquifer thermal energy storage performance in Middenmeer, the Netherlands: monitoring and model validation</a>
348	"Hahn, Florian (1); Klein, Stefan (1); Bussmann, Gregor (1); Seidel, Torsten (2)"	<a href="#">The mine thermal energy storage project in Bochum - lessons learned from the HEATSTORE project</a>
349	"Dinkelman, Dorien; van Bergen, Frank"	<a href="#">Evaluation of the country-wide potential for High-Temperature Aquifer Thermal Energy Storage (HT-ATES) in the Netherlands</a>
355	"West, Timothy; Spitler, Jeffrey D."	<a href="#">Approximate g-functions for selection of borehole field configurations used with ground-source heat pump systems</a>
366	"Gehlin, Signhild E A (1); Spitler, Jeffrey D (2)"	<a href="#">FINAL RESULTS FROM IEA HPT ANNEX 52 - LONG-TERM PERFORMANCE OF LARGE GSHP SYSTEMS</a>
378	"Henniges, Jan; Blöcher, Guido; Lipus, Martin"	Monitoring of high-temperature aquifer storage well performance and integrity
380	"Vallin, Sami; Leppäharju, Nina"	<a href="#">Utilizing DTS data to optimize large borehole thermal energy storage</a>
411	"Zwamborn, Murette (1); Beernink, Stijn (1,5); Kleinlugtenbelt, Rob (2); Oerlemans, Peter (2); Pothof, Ivo (3,5); Dinkelman, Dorien (4); van Bergen, Frank (4); Bloemendal, Martin (1,5)"	<a href="#">HT-ATES systems in district heating networks, a Dutch benchmark study</a>
442	"Beernink, Stijn (1,2); Barnhoorn, Auke (1); Vardon, Philip J. (1); Bloemendal, Martin (1,2); Hartog, Niels (2,3)"	<a href="#">Impact of vertical layering and the uncertainty and anisotropy of hydraulic conductivity on HT-ATES performance</a>
443	"Kranz, Stefan; Saadat, Ali; Bloecher, Guido; Francke, Henning"	<a href="#">ATES design aspects and optimised system integration</a>
1104	"Lemoine, Gerard (1); Kępińska, Beata (1,2)"	Assessment of the shallow groundwater potential of the " Kościerzyna Morainic Island" for cold and heat seasonal energy storage
1213	"Samy, Ayman; Izadi, Ghazal; Barton, Colleen; Walles, Frank; Kaus, Andreas."	<a href="#">Reservoir deliverability assessment and uncertainty analysis for new geothermal prospects</a>

1244	"Seib, Lukas (1); Bossennec, Claire (1); Welsch, Bastian (1,2); van der Vaart, Jeroen (1); Formhals, Julian (1,2); Sass, Ingo (1,2); Frey, Matthis (1); Kretzschmar, Richard (1)"	<a href="#">Thermohydraulic Modeling and Co-Simulation of a Pilot System for Medium Deep Borehole Thermal Energy Storage in a Crystalline Reservoir</a>
1348	"Hahn, Florian (1); Klein, Stefan (1); Bussmann, Gregor (1); Seidel, Torsten (2)"	<a href="#">The mine thermal energy storage project in Bochum - lessons learned from the HEATSTORE project</a>
1349	"Dinkelman, Dorien; van Bergen, Frank"	<a href="#">Evaluation of the country-wide potential for High-Temperature Aquifer Thermal Energy Storage (HT-ATES) in the Netherlands</a>
1355	"West, Timothy; Spitler, Jeffrey D."	<a href="#">Approximate g-functions for selection of borehole field configurations used with ground-source heat pump systems</a>
1378	"Henniges, Jan; Blöcher, Guido; Lipus, Martin"	Monitoring of high-temperature aquifer storage well performance and integrity

### 3.5. Exploiting mineral production from geothermal sources

138	Chen, Yuedu	Shear reactivation and permeability enhancement induced by cold fluid injection into fractured geothermal reservoirs: Insights from a coupled THM simulation
278	"Fries, David (1); Lebouil, Sophie (2); Maurer, Vincent (1); Martin, Carine (2); Baujard, Clément (1); Ravier, Guillaume (1); Boguais, Romain (2); Amari, Smail (2)"	<a href="#">Lithium extraction through pilot scale tests under real geothermal conditions of the Upper Rhine Graben</a>
350	"Ameur, Meriem (1); Stéphane, Sylvain (2); André, Laurent (2); Mabire, Dominique (3); Genter, Albert (4); Azaroual, Mohamed (1,2)"	<a href="#">Geochemical evolution and scaling risks induced by the geothermal brine from Upper Rhine Graben cooled for lithium extraction</a>
365	"Bosia, Clio; Aldoori, Hussam"	The valorization of lithium resources from geothermal fluids: from a worldwide overview to a focus on the Upper Rhine Graben

### 3.6. Exploration and planning

115	"Bloemendal, Martin (1,2); Beernink, Stijn (1,2); Kleinlugtenbelt, Rob (3); Hartog, Niels (2)"	<a href="#">Impact on individual primary energy consumption due to sub-surface interactions between ATES systems</a>
127	"Reinecker, John (1); Hochschild, Tobias (1); Frey, Matthis (2); van der Vaart, Jeroen (2); Bär, Kristian (2)"	<a href="#">Enhanced Exploration Strategy and Workflow for Deep Geothermal Projects in the Upper Rhine Graben</a>

146	"Dezayes, Chrystel; Lacquement, Frédéric; Capar, Laure; Stopin, Alexandre; Toussaint, Elisa"	<a href="#">From geological structure to geothermal potentiel assessment of the Dinantian limestones in northern France.</a>
172	"Bredesen, Kenneth (1); Chopra, Satinder (2); Feng, Runhai (3)"	<a href="#">Quantitative seismic interpretation studies of a Triassic-Jurassic geothermal sandstone reservoir in the Copenhagen area</a>
173	"Stove, Gordon; Limmer, David; Delgado, Octavio; Lawrence, Lewis"	<a href="#">Electromagnetic technology to help calculate subsurface geothermal zones and temperatures before drilling</a>
179	"Savitri, Kartika P. (1,2); Hecker, Christoph (1); Deon, Fiorenza (1); van der Meer, Freek D. (1); Sihotang, Mauliate A.H. (3); Azis, Herwin (3)"	<a href="#">The link between clay composition and the location of a geothermal system reservoir</a>
225	"Baxter, Clare (1); O'Sullivan, John (1); Cypaite, Vaiva (2)"	<a href="#">Workflow Using Numerical Modelling at the Exploration Stage: A Case Study of Pico Alto Geothermal Field.</a>
240	"GERBAUD, Laurent (1); PUBILL, Aleix (1); ALDANNAWY, Houssam (1); LAMAZOUADE, Marion (2); SOUCHAL, Raphaël (2); CUILLIER, Bruno (3)"	<a href="#">Mud Hammer in Deep Hard Geothermal formation, from the single impact to the directional and vibration characterisation: A solution to reduce the drilling cost</a>
267	"Rizzello, Daniele (1); Armadillo, Egidio (2)"	<a href="#">AN INVERSE APPROACH FOR SMOOTH MAGNETOTELLURIC TRANSFER FUNCTION ESTIMATION</a>
283	"Geel, C.R.; de Haan, H. B.; ten Veen, J. H.; Houben, A. J. P.; Kruisselbrink, A. F.; Foeken, J. P. T.; Veldkamp, J. G.; Peters, E.; Jan Diederik, van Wees"	<a href="#">Characterisation of a shallow geothermal resource in The Netherlands: the Brussels Sand Mb.</a>
286	"HERMANT, Bastien (1); KAZANTSEV, Alexandre (2); BELLANGER, Mathieu (1)"	<a href="#">New approach to design a seismic monitoring network using geology, physics and combinatorics: application to a geothermal prospect in the French Massif Central</a>

287	"Cypaite, Vaiva (1); Arnó, Georgina (1); Herms, Ignasi (1); Camps, Víctor (1); Conesa, Ariadna (1); Colomer, Montse (1); Boon, David (2); Steiner, Cornelia (3); Götzl, Gregor (3)"	<a href="#">Results from the GeoERA MUSE shallow geothermal project – The urban area of Girona city (NE Catalonia, Spain)</a>
290	"Boon, David Philip (1); Farr, Gareth (1); Patton, Ashley (1); Abesser, Corinna (1); Scheidegger, Johanna (1); Barnett, Megan (1); Gregory, Simon (1); Coppell, Lynn (1); Williams, Laura (1); Busby, Jon (1); Thorpe, Steve (1); Holden, Alan (1); James, David (2); Harcombe, Gareth (2); Knowles, Steve (2); Hermes, Ignasi (3); Steiner, Cornelia (4); Goetzl, Gregor (4)"	<a href="#">Results from the GeoERA MUSE shallow geothermal project – UK Cardiff pilot area</a>
313	"HERMANT, Bastien (1); BELLANGER, Mathieu (1); GALIBERT, Stéphane (2)"	<a href="#">3D stress modelling on structural network: pre-drilling modelling for the GEOPULSE geothermal power project in the French Massif Central</a>
322	"Steininger, Stefan (1); Holzer, Daniel (2); Forstner, Ingo (3)"	<a href="#">Structured generic project plan for guidance on steps along geothermal project phases for potential geothermal operators and other stakeholders</a>
336	"Ritzmann, Oliver (1); Lippert, Kevin (1,2); Michal, Kruszewski (1,2); Gregor, Bussmann (1)"	<a href="#">Geothermal exploration in a greenfield environment - Seismic interpretation, structural geology, and geomechanical modelling for well planning in Hagen (southern Ruhr District, Germany)</a>
341	"Puech, Jean-Claude; Boelle, Jean-Luc; Cheou, Elie-Pascal"	<a href="#">Seismic acquisition spacing parameters : How can I reduce the risk to be wrong ?</a>
342	"van Heiningen, Pieter {MSc.} (1); van Hoegaerden, Vincent {MSc.} (1); Kaymakci, Nuretdin {Prof.dr.} (2); Moser, Tijmen Jan {Dr.} (3)"	A unique integrated exploration approach for geothermal reservoirs, a case study from Metropole Region Amsterdam

406	"Koroncz, Péter János (1,2); Fedor, Ferenc (2); Vizhányó, Zsanett (2); Kuncz, Máté (2); Ács, Péter (2); Fedor-Szász, Anita (2); Farkas, Márton Pál (3,8); Sendula, Eszter (3); Pernyeszi, Tímea (4); Magyar, Gábor (5,6); Szanyi, János (7); Kovács, László (9); Csicsák, József (5); Hofmann, Hannes (8); Kovács, János (3)"	<a href="#">Laboratory R&amp;D related to the development of technology for water re-injection in poorly consolidated Upper Pannonian rocks</a>
474	"Strack, Kurt Martin (1); Hinojosa, Hector (2); Lüschen, Ewald (1); Marinez, Yardenia (1)"	<a href="#">Using Electromagnetics for Geothermal and Carbon Capture, Utilization and Storage (CCUS) applications</a>
487	"Jolie, Egbert; Jentsch, Anna; Duesing, Walter"	<a href="#">Smart gas analytics for geothermal exploration and monitoring</a>
1115	"Bloemendal, Martin (1,2); Beernink, Stijn (1,2); Kleinlugtenbelt, Rob (3); Hartog, Niels (2)"	<a href="#">Impact on individual primary energy consumption due to sub-surface interactions between ATES systems</a>
1127	"Reinecker, John (1); Hochschild, Tobias (1); Frey, Matthis (2); van der Vaart, Jeroen (2); Bär, Kristian (1)"	<a href="#">Enhanced Exploration Strategy and Workflow for Deep Geothermal Projects in the Upper Rhine Graben</a>
1172	"Bredesen, Kenneth (1); Chopra, Satinder (2); Feng, Runhai (3)"	<a href="#">Quantitative seismic interpretation studies of a Triassic-Jurassic geothermal sandstone reservoir in the Copenhagen area</a>
1173	"Stove, Gordon; Limmer, David; Delgado, Octavio; Lawrence, Lewis"	<a href="#">Electromagnetic technology to help calculate subsurface geothermal zones and temperatures before drilling</a>
1286	"HERMANT, Bastien (1); KAZANTSEV, Alexandre (2); BELLANGER, Mathieu (1)"	<a href="#">New approach to design a seismic monitoring network using geology, physics and combinatorics: application to a geothermal prospect in the French Massif Central</a>

1287	"Cypaite, Vaiva (1); Arnó, Georgina (1); Herms, Ignasi (1); Camps, Víctor (1); Conesa, Ariadna (1); Colomer, Montse (1); Boon, David (2); Steiner, Cornelia (3); Götzl, Gregor (3)"	<a href="#">Results from the GeoERA MUSE shallow geothermal project – The urban area of Girona city (NE Catalonia, Spain)</a>
1313	"HERMANT, Bastien (1); BELLANGER, Mathieu (1); GALIBERT, Stéphane (2)"	<a href="#">3D stress modelling on structural network: pre-drilling modelling for the GEOPULSE geothermal power project in the French Massif Central</a>
1322	"Steininger, Stefan (1); Holzer, Daniel (2); Forstner, Ingo (3)"	<a href="#">Structured generic project plan for guidance on steps along geothermal project phases for potential geothermal operators and other stakeholders</a>
1341	"Puech, Jean-Claude; Boelle, Jean-Luc; Cheou, Elie-Pascal"	<a href="#">Seismic acquisition spacing parameters : How can I reduce the risk to be wrong ?</a>
1406	"Koronczi, Péter János (1,2); Fedor, Ferenc (2); Vizhányó, Zsanett (2); Kuncz, Máté (2); Ács, Péter (2); Fedor-Szász, Anita (2); Farkas, Márton Pál (3,8); Sendula, Eszter (3); Pernyeszi, Tímea (4); Magyar, Gábor (5,6); Szanyi, János (7); Kovács, László (9); Csicsák, József (5); Hofmann, Hannes (8); Kovács, János (3)"	<a href="#">Laboratory R&amp;D related to the development of technology for water re-injection in poorly consolidated Upper Pannonian rocks</a>
1474	"Strack, Kurt Martin (1); Hinojosa, Hector (2); Lüschen, Ewald (1); Marinez, Yardenia (1)"	<a href="#">Using Electromagnetics for Geothermal and Carbon Capture, Utilization and Storage (CCUS) applications</a>
1487	"Jolie, Egbert; Jentsch, Anna; Duesing, Walter"	<a href="#">Smart gas analytics for geothermal exploration and monitoring</a>
<b>3.7. Environmental impacts and solutions</b>		
117	"Bloemendal, Martin (1,2); Beernink, Stijn (1,2); Hartog, Niels (1)"	<a href="#">Transition of ATES to HT-ATES: field monitoring results of thermal impact, groundwater quality and performance</a>
152	"Uhrmann, Hannah; Heberle, Florian; Brüggemann, Dieter"	<a href="#">Life Cycle Assessment of an operating geothermal heat project in the Southern German Molasse Basin (Germany)</a>

168	"Parascanu, Maria (1); Pieskä, Henrikki (2); Espí Gallart, Jose Jorge (1); Clarens Blanco, Frederic (1); Wang, Qian (2,3); Zukowska, Ewa Alicja (1); Calderoni, Marco (4)"	<a href="#">Environmental approach of an enhanced geothermal system for energy efficient building retrofitting in a decentralized context</a>
175	"Helali, Chahinez (2); Valentin, Romain (2); Betelu, Stephanie (1); THIEBAUD-ROUX, Sophie (2); Ignatiadis, Ioannis (1)"	<a href="#">COMPARATIVE STUDY OF THE EFFECTIVENESS OF ORGANIC PETRO- OR BIOSOURCED SURFACTANTS IN INHIBITING CARBON STEEL CORROSION IN A STANDARDIZED RECONSTITUTED GEOTHERMAL WATER</a>
291	"Papakostas, Vasileios (1); Kontoulis, Nikoletta (1); Paravantis, John (1); Gerbaud, Laurent (2); Velmurugan, Naveen (2); Cazenave, Florian (3)"	<a href="#">Environmental Impacts of Water-Based Fluids in Geothermal Drilling</a>
298	"Attard, Guillaume (1); Bayer, Peter (2); Blum, Philipp (3); Eisenlohr, Laurent (1)"	<a href="#">On the concept of geothermal protection zones for integrated urban groundwater management</a>
337	"Berndsen, Maximilian (1,2); Nehler, Mathias (1); Nardini, Isabella (1); Erstling, Stefanie (1); Saenger, Erik H. (1,2); Delerce, Sylvain (3); Akin, Taylan (4); Galeczka, Iwona M. (5); Erol, Selçuk (6)"	<a href="#">Experimental study on rock-CO<sub>2</sub> interaction processes at HP/HT conditions</a>
372	"Schröder, Simon; König, Christoph"	<a href="#">Overview of Relevant Process Parameters in Numerical Heat Transfer Simulations of High Voltage and Extra-high Voltage Cables</a>
452	"Leontidis, Vlasios (1); Gainville, Martin (1); Jeannin, Laurent (2); Perreaux, Marc (2)"	<a href="#">Maximizing the reinjection of non-condensable gases in high temperature geothermal sites</a>
469	"Gomez, Esteban (1,2); Scott, Samuel (2,3); Newson, Juliet (2); Ratouis, Thomas (4)"	<a href="#">Numerical Modelling for the Prediction of the Heat and Fluid Flow in Nesjavellir Geothermal Field</a>
479	"SCHOTT, Tiphaine; LIAUTAUD, Françoise"	<a href="#">Unexpected deposits, steel corrosion inhibitors, anti-scales and their compatibility in geothermal brine</a>

1117	"Bloemendal, Martin (1,2); Beernink, Stijn (1,2); Hartog, Niels (1)"	<a href="#">Transition of ATEs to HT-ATES: field monitoring results of thermal impact, groundwater quality and performance</a>
<b>3.8. Other</b>		
129	"Ramon, Juan (1); Velásquez, Sergio (2)"	<a href="#">GEOFIT Project creating the opportunity of Geographical – BIM (GEOBIM) platform to manage geothermal systems</a>
143	"Petteruti, Ernesto; Ciardi, Umberto; Bruno, Massimo; Volponi, Andrea; Cavaioni, Paolo"	<a href="#">Scale risk assessment and laboratory selection of an inhibitor in a geothermal plant exploiting high salinity brine</a>
191	"Fokker, Peter A. (1,2,3); Viberti, Dario (2); Salina Borello, Eloisa (2); Verga, Francesca (2); van Wees, Jan-Diederik (1,3); de Wijkerslooth, Charlotte (4); Bekius, Hedwich (4); Konijn, Arjan (5); Bos, Wim (5); Koenen, Mariëlle (1); van Pul-Verboom, Viola (1)"	<a href="#">Pulse testing in Geothermal Energy: Demonstration of a new monitoring tool</a>
194	"Beaudry, Gabrielle; Pasquier, Philippe; Marcotte, Denis"	Experimental validation of non stationary convolutions for the simulation of dynamic flow rates in standing column wells operations.
195	"Dion, Gabriel; Pasquier, Philippe; Marcotte, Denis"	<a href="#">Recovery of ground thermal conductivity from the time derivative of short-term transfer function</a>
196	"Kvalsvik, Karoline Husevåg (1,2); Ramstad, Randi Kalskin (1,3); Midtømme, Kirsti (2); Holmberg, Henrik (3)"	Distributed Temperature Sensing measurements for exploring Borehole Thermal Energy Storages in Norway
215	"Boersma, Kornelius; Og. van, Geertjan; Ruiten. de, Volkert"	<a href="#">Case study of drilling a big diameter, large outstep and high-angle well</a>
230	"Pasquali, Riccardo (1); Muller, Mark (2)"	<a href="#">Mapping Thermal Properties using Resistivity, Lithology and Thermal Conductivity Measurements</a>
248	"Arvanitis, Apostolos; Xenakis, Markos; Amvrazis, Marios-Dimitrios; Trimi, Polyanthi-Maria; Karvouni, Konstantina"	<a href="#">A 3D geological model of the Neo Erasmio-Magana low enthalpy geothermal field (Thrace, Greece)</a>
270	Friberg, Christofer (1,2,3,4)	xGeo - Next generation smart non-intrusive mobile geological investigation system.



316	"Erge, Oner; Sakaoglu, Kudret; Sonmez, Ahmet; Dogan, Huseyin Ali"	<a href="#">Investigation of HT Drilling Fluids Performance - A Review of Over 90 Field Cases in 3000m+ Deep Geothermal Wells in Turkey</a>
391	"Spaggiari, Chiara (1); Lanconelli, Matteo (3); Tinti, Francesco (1); Voza, Antonio (3); Boldini, Daniela (1,2)"	<a href="#">Key features of the novel geothermal heat exchanger prototype installed at the Brenner Base Tunnel</a>
433	"Bonafin, Joseph (1); Besoiu, Christian (2); Pingaro, Emanuele (1); Zanzucchi, Paolo (1); Pietra, Claudio (1); Bonzanini, Arianna (1)"	<a href="#">Joint Development between Turboden and Favor</a>
451	"Moeck, Inga (1); Backers, Tobias (2); Kemenyfy, Julio (3); Tegeler, Rinke (1); Gahr, Andreas (4); Seibt, Peter (5); Kahnt, René (6); Thiem, Stefan (5); Tönies, Andreas (7); Fritschen, Ralf (8)"	<a href="#">Multistage multizone gel-proppant reservoir treatment in the geothermal research well GEN-1ST-A1 in Geretsried (Bavarian Molasse Basin, Germany)</a>
1143	"Petteruti, Ernesto; Ciardi, Umberto; Bruno, Massimo; Volponi, Andrea; Cavaioni, Paolo"	<a href="#">Scale risk assessment and laboratory selection of an inhibitor in a geothermal plant exploiting high salinity brine</a>
1230	"Pasquali, Riccardo (1); Muller, Mark (2)"	<a href="#">Mapping Thermal Properties using Resistivity, Lithology and Thermal Conductivity Measurements</a>
1248	"Arvanitis, Apostolos; Xenakis, Markos; Amvrazis, Marios-Dimitrios; Trimi, Polyanthi-Maria; Karvouni, Konstantina"	<a href="#">A 3D geological model of the Neo Erasmio-Magana low enthalpy geothermal field (Thrace, Greece)</a>
1391	"Spaggiari, Chiara (1); Lanconelli, Matteo (3); Tinti, Francesco (1); Voza, Antonio (3); Boldini, Daniela (1,2)"	<a href="#">Key features of the novel geothermal heat exchanger prototype installed at the Brenner Base Tunnel</a>
64516	"Goldberg, Valentin Magnus; Kluge, Tobias; Nitschke, Fabian"	Challenges and opportunities for lithium extraction from geothermal systems in Germany

# Research Development

4.1. Risk Management (reservoir assessment, safe operations, environment protection, demand side)		
164	"ter Heege, Jan (1); Wassing, Brecht (1); Buijze, Loes (1); Jaarsma, Bastiaan (2)"	<a href="#">Geological controls on induced seismicity potential for geothermal projects targeting Dinantian carbonates in the Netherlands</a>
188	"Ziegler, Moritz (1); Heidbach, Oliver (1,2)"	<a href="#">Geomechanical models and their uncertainties - A concept and a case study</a>
220	"Olivarius, Mette (1); Mathiesen, Anders (1); Vosgerau, Henrik (1); Nielsen, Lars H. (1); Weibel, Rikke (1); Bonnell, Linda M. (2); Lander, Robert H. (2)"	<a href="#">Diagenesis modelling as a tool to prevent drilling tight geothermal sandstone reservoirs</a>
281	"Fiori, Rémi; Vergne, Jérôme; Schmittbuhl, Jean; Zigone, Dimitri; Lambotte, Sophie"	<a href="#">Induced micro-seismicity monitoring in urban context using seismic arrays</a>
289	"Mukti, Mentari (1); Tomaszewska, Barbara (1); Ningrum, Eva Oktavia (2); Bundschuh, Jochen (3)"	<a href="#">Assessing The Removal of Arsenic and Boron From Geothermal Wastewaters With The Use Of An Adsorbent Hydrogel</a>
330	"Lu, Haiping; Shen, Dong; Nelson, Curtis; Penkala, Joseph; Bestgen, Daniel; Margan, Swamy; Ramachandran, Sunder"	<a href="#">Silica/silicate Scale Control and Treatment in a Geothermal Plant</a>
333	"Stephant, Sylvain; Joulian, Catherine; Hamm, Virginie"	<a href="#">Effect of an inter-seasonal heat storage on the biogeochemistry of the Albian aquifer at Paris-Saclay site</a>
335	"Gaucher, Emmanuel (1); Hansinger, Maximilian (2); Goblirsch, Peter (3); Azzola, Jérôme (1); Thiemann, Katja (2)"	<a href="#">Towards a geothermal reservoir management system</a>
354	"Marelis, Arjan (1,2); Buijze, Loes (2); Wassing, Brecht (2); van Wees, Jan Diederik van Wees (1,2)"	<a href="#">A sensitivity analysis of stress changes related to geothermal direct heat production in clastic reservoirs and potential for fault reactivation and seismicity.</a>

431	"Stricker, Kai; Egert, Robert; Grimmer, Jens; Gholami Korzani, Ma- ziar; Schill, Eva; Kohl, Thomas"	<a href="#">Thermal-hydraulic-mechanical (THM) modeling of high-temperature heat storage using DeepStor as a case study</a>
432	"Naranjo, David; Draganov, Deyan; Weemstra, Cornelis"	<a href="#">Microseismic monitoring of Nature's Heat Geothermal Project in Kwintsheul (Netherlands)</a>
441	"Drif, Kamel (1,2); Lengliné, Olivier (2); Kinscher, Jannes (1); Schmittbuhl, Jean (2)"	<a href="#">Faulting and hydraulic energy balance during fluid injection in the Soultz-sous-Forêts geothermal reservoir</a>
444	"Petitclerc, Estelle (1); Gerard, Pierre (2); VanCamp, Marc (3); Walraevens, Kristine (3); Van Noten, Koen (4); Van der Veken, Jeroen (5); Baudinet, Camille (1); Zeckra, Martin (4); Van Lysebetten, Gust (5)"	<a href="#">Multidisciplinary approach to assess the Cambrian geothermal potential in Brussels region with a focus on public buildings (GeoCamb project)</a>
1220	"Olivarius, Mette (1); Mathiesen, Anders (1); Vosgerau, Henrik (1); Nielsen, Lars H. (1); Weibel, Rikke (1); Bonnell, Linda M. (2); Lander, Robert H. (2)"	<a href="#">Diagenesis modelling as a tool to prevent drilling tight geothermal sandstone reservoirs</a>
1289	"Mukti, Mentari (1); Tomaszewska, Barbara (1); Ningrum, Eva Oktavia (2); Bundschuh, Jochen (3)"	<a href="#">Assessing The Removal of Arsenic and Boron From Geothermal Wastewaters With The Use Of An Adsorbent Hydrogel</a>
1335	"Gaucher, Emmanuel (1); Hansinger, Maximilian (2); Goblirsch, Peter (3); Azzola, Jérôme (1); Thiemann, Katja (2)"	<a href="#">Towards a geothermal reservoir management system</a>
1354	"Marelis, Arjan (1,2); Buijze, Loes (2); Wassing, Brecht (2); van Wees, Jan Diederik van Wees (1,2)"	<a href="#">A sensitivity analysis of stress changes related to geothermal direct heat production in clastic reservoirs and potential for fault reactivation and seismicity.</a>
1432	"Naranjo, David; Draganov, Deyan; Weemstra, Cornelis"	<a href="#">Microseismic monitoring of Nature's Heat Geothermal Project in Kwintsheul (Netherlands)</a>

1441	"Drif, Kamel (1,2); Lengliné, Olivier (2); Kinscher, Jannes (1); Schmittbuhl, Jean (2)"	<a href="#">Faulting and hydraulic energy balance during fluid injection in the Soultz-sous-Forêts geothermal reservoir</a>
<b>4.2. Exploration and planning</b>		
105	"Vosgerau, Henrik (1); Balling, Niels (2); Oliveira, Allan (3); Mathiesen, Anders (1); Mathiesen, Troels (4); Nielsen, Lars Henrik (1); Weibel, Rikke (1)"	<a href="#">Overcoming obstacles for large scale utilization of geothermal energy for district heating</a>
141	"Arifianto, Indra; Mai, Paul Martin"	<a href="#">Using Satellite Gravity Data for Low Enthalpy Geothermal Exploration: Case Study Midyan Area, Saudi Arabia</a>
142	"Frey, Matthis (1); van der Vaart, Jeroen (1); Bär, Kristian (1); Bossennec, Claire (1); Seib, Lukas (1); Dezayes, Chrystel (3); Calcagno, Philippe (3); Sass, Ingo (1,2)"	<a href="#">Towards a Techno-Economic Geothermal Resource Assessment of the Northern Upper Rhine Graben Crystalline Basement</a>
177	"Anees, Muhammad (1); Kley, Jonas (1); Leiss, Bernd (1); Wagner, Bianca (1); M. Shah, Mumtaz (2)"	<a href="#">Heat-producing granitoids of North Pakistan as potential geothermal prospects</a>
198	"Yström, Lars Helge; Nitschke, Fabian; Vollmer, Mark; Kohl, Thomas"	<a href="#">Deep learning and geochemical modelling as tools for solute geothermometry</a>
205	"Chmielowska, Anna; Sowiżdżał, Anna"	<a href="#">Geothermal Energy in Petroleum Province – a case study from Southern Poland (Carpathian Foredeep)</a>
214	"Esteban Lopez, Sarah; Nokar, Kim Roya; Shipilin, Vladimir; Sattelberger, Martin; Tasdemir, Burcu; Weber, Immanuel; Fritschle, Tobias; Schäfer, Ingo; Linder, Bernd; Salamon, Martin"	<a href="#">Unravelling the geothermal potential of North Rhine-Westphalia: a geothermal characterisation of the intermediate to deep subsurface</a>
218	"Ringel, Lisa Maria (1); Jalali, Mohammadreza (2); Bayer, Peter (1)"	<a href="#">Estimation of hydraulic and geometrical characteristics of fractured geothermal reservoirs using in-situ tomographic methods</a>

224	"Iorio, Marina (1); Cavuoto, Giuseppe (1); Corniello, Alfonso (2); Di Fiore, Vincenzo (1); Fedi, Maurizio (2); Milano, Maurizio (1); Pelosi, Nicola (1); Punzo, Michele (1); Tarallo, Daniela (1); Massarotti, Nicola (3)"	<a href="#">Exploration of the geothermal field in the eastern Phlegrean Fields caldera for sustainability analysis of low-middle temperatures exploitation</a>
237	"Smit, Florian Walther Harald (1); Vosgerau, Henrik (1); Gregersen, Ulrik (1); Bredesen, Kenneth (1); Chopra, Satinder (2); Frykman, Peter (1)"	<a href="#">Improved reservoir characterization of the Gassum Formation (Stenlille, Denmark) - a promising geothermal reservoir</a>
252	"Alimonti, Claudio (1); Scrocca, Davide (2)"	<a href="#">Geothermal potential assessment for oil&amp;gas fields in Italy</a>
253	"Scrocca, Davide (1); Alimonti, Claudio (2)"	<a href="#">Hydrocarbon wells potentially suitable for geothermal repurposing in Italy: a first assessment</a>
274	"Wheeler, Walter (1); Morency, Christina (2); Bellanger, Mathieu (3); Auxietre, Matieu (3); Barucq, Helene (4); Bordes, Clarisse (5); Brito, Daniel (5); Diaz, Julien (4); Fageraas, Bjarte (7); Grobbe, Niels (6); Hermant, Bastian (3); Matzel, Eric M (2); Midttømme, Kirsti (1)"	<a href="#">Seismoelectric effects for Geothermal resource assessment and monitoring - the SEE4GEO project</a>
282	"Dalampakis, Paschalis (1); Tziritis, Evangelos (1); Koufogiannis, Ilias A.K. (2); Papachristou, Maria (3); Andritsos, Nikos (4); Arvanitis, Apostolos (2)"	<a href="#">An assessment of low enthalpy geothermal waters in the Akrotamos area (Northern Greece)</a>
302	"Finger, Claudia (1); Roth, Marco (2); Gotowik, Aileen (1,2); Dietl, Marco (1,2); Engels, Nina (3); Harrington, Rebecca (2); Knapmeyer-Endrun, Brigitte (4); Reicherter, Klaus (3); Oswald, Thomas (5); Reinsch, Thomas (1); Saenger, Erik H. (6,1,2)"	<a href="#">Seismological study of the geothermal field laboratory in the Lower Rhine Embayment, Germany</a>

310	"Dashti, Ali (1); Gholami Korzani, Maziar (1); Geuzaine, Christophe (2); Egert, Robert (1); Kohl, Thomas (1)"	<a href="#">Quantification of the exiting geological uncertainty in flow characteristics of a geothermal reservoir</a>
311	"Muhl, Lena (1,2); Bloecher, Guido (1); Sass, Ingo (1); Kluge, Christian (1); Ballerstedt, Tanja (1)"	<a href="#">Hydro-mechanical parameters of Cornubian and Odenwald reservoir granitoids with focus on fracture stiffness testing</a>
326	"Kukkonen, Ilmo T. (1); Heikkinen, Pekka J. (1); Pentti, Matti (2); Sinisaari, Matti (2); Malin, Peter E. (3); Giese, Ruediger (4); Kueck, Jochem (4)"	<a href="#">St1 Deep Heat Project: Geothermal energy from 5-6 km in the continental crust</a>
332	"Budach, Ingmar (1); Franz, Matthias (2)"	<a href="#">Combining subsurface reservoir mapping, Multiple-Point Statistics and Monte Carlo simulation for probability of success studies in geothermal reservoirs of the Rhaetian Deltaic System (North German Basin)</a>
344	"Balling, Niels (1); Fuchs, Sven (2); Mathiesen, Anders (3)"	<a href="#">A 3D geothermal model for Denmark: temperature and resource assessment</a>
352	"Rangel Jurado, Nicolas (1); Küçük, Serhat (1); Brehme, Maren (1); Lathion, Rodolphe (2); Games, Federico (2); Saar, Martin O. (1,3)"	<a href="#">Comparative Analysis on the Techno-Economic Performance of Different Types of Deep Geothermal Systems for Heat Generation</a>
353	"Alms, Katharina (1); Agemar, Thorsten (2); Moeck, Inga (2)"	Heat refraction in the North German Basin: The role of salt
361	"Drews, Michael; Shatyrbayeva, Indira; Bohnsack, Daniel; Duschl, Florian; Obermeier, Peter"	<a href="#">Evaluation of pore pressure in the North Alpine Foreland Basin (Bavarian Molasse Basin) and its impact on deep geothermal exploration drilling</a>
383	"Arndt, Martin; Fritschle, Tobias; Thiel, Anna; Salamon, Martin"	<a href="#">The Lower Carboniferous (Dinantian) in the deep subsurface of North Rhine-Westphalia (Germany): results of a 3D mapping campaign</a>
384	"Markó, Ábel (1); Tóth, Marianna (2); Brehme, Maren (3); Mádl-Szőnyi, Judit (1)"	<a href="#">Assessing reinjection potential of abandoned hydrocarbon wells in Zala region (SW Hungary)</a>

386	"Bohnsack, Daniel (1); Drews, Michael (1); Duschl, Florian (1); Shatyrbayeva, Indira (1); Heidbach, Oliver (2); Müller, Birgit (3)"	<a href="#">A subsurface pore pressure map of Bavaria from quality-ranked borehole data – a template for Europe and beyond</a>
387	Agemar, Thorsten	<a href="#">GeotIS Update 2022</a>
390	"Pradipta, Devito (1); Ramdan, Divy Muhammad (2); Permana, Lano Adhitya (3)"	NEW APPLICATION OF SURFACE NATURAL FRACTURES CHARACTERIZATION AND IMPLICATIONS TO THE GEOTHERMAL SYSTEM IN SOUTHERN BAJAWA FIELD, INDONESIA: A NOVEL APPROACH FOR PRELIMINARY EXPLORATION AND MODELLING
405	"Muhl, Lena (1,2); Avakian, Benjamin (2,3); Trullenque, Ghislain (2); Ledésert, Béatrice (3); Sass, Ingo (1)"	<a href="#">Influences of pre-structuration of a reservoir on permeability evolution in fracture zones. Insights from mechanical testing on an alteration profile</a>
413	"Gola, Gianluca; Donato, Assunta; Santilano, Alessandro; Trumpy, Eugenio; Manzella, Adele"	Deep Geothermal Resource assessment: application and comparison of different approaches in the Latium volcanic areas (Central Italy)
417	"Shail, Robin (1); Cotton, Lucy (2); Dalby, Chris (2); Constance, Madelaine (2); Gutmanis, Jon (2); Henes, Philip (1); Adams, Ben (1); Bennett, Tony (3)"	<a href="#">Geological Overview of the Eden Geothermal Project</a>
438	"Zabihian, Farid; Sohrabi, Reza; Williams, Molly; Valley, Benoît"	<a href="#">Preliminary results from the analysis of stress profiles in deep geothermal reservoirs</a>
447	"Balza Morales, Andrea (2); Gomez Diaz, Esteban (1); Brehme, Maren (3,4); Kukla, Peter A. (1,5); Wagner, Florian M. (2)"	<a href="#">Geothermal potential in the Rhine-Ruhr region - Integration of structural analysis and a preliminary magnetotelluric feasibility study</a>
448	"Thiel, Anna (1); Fritschle, Tobias (1); Arndt, Martin (1); Petitclerc, Estelle (2); van Melle, Timme (3); Broothaers, Matsen (4); Passamonti, Arianna (5); Tasdemir, Burcu (1); Salamon, Martin (1)"	<a href="#">DGE-ROLLOUT: Deep Geothermal Energy Potential of Lower Carboniferous Carbonate Rocks in North-West Europe</a>

468	"Bott, Judith (1); Cacace, Mauro (1); Anikiev, Denis (1); Scheck-Wenderoth, Magdalena (1,2)"	<a href="#">Cross-scale geothermal exploration of Germany's subsurface by means of data-integrative 3D geological models and coupled THM simulations</a>
470	"Franz, Matthias (1); Budach, Ingmar (2); Wunsch, Marco (2)"	<a href="#">Exploration strategy, development examples and remaining opportunities in Mesozoic hydrothermal reservoirs of the North German Basin</a>
476	"Antics, Miklos (1); Ungemach, Pierre (1,3); Souque, Christine (2); Essou, Codjo Thomas Florent (3); Gasser-Dorado, Julien (3); Fremont, François (3)"	<a href="#">Novell Well Architectures and Completions Improve Well Injctive Performance in Poorly Consolidated Sediments. Application to Paris Basin Upper Cretaceous Clastics</a>
1141	"Arifianto, Indra; Mai, Paul Martin"	<a href="#">Using Satellite Gravity Data for Low Enthalpy Geothermal Exploration: Case Study Midyan Area, Saudi Arabia</a>
1177	"Anees, Muhammad (1); Kley, Jonas (1); Leiss, Bernd (1); Wagner, Bianca (1); M. Shah, Mumtaz (2)"	<a href="#">Heat-producing granitoids of North Pakistan as potential geothermal prospects</a>
1198	"Yström, Lars Helge; Nitschke, Fabian; Vollmer, Mark; Kohl, Thomas"	<a href="#">Deep learning and geochemical modelling as tools for solute geothermometry</a>
1205	"Chmielowska, Anna; Sowizdzal, Anna"	<a href="#">Geothermal Energy in Petroleum Province – a case study from Southern Poland (Carpathian Foredeep)</a>
1218	"Ringel, Lisa Maria (1); Jalali, Mohammadreza (2); Bayer, Peter (1)"	<a href="#">Estimation of hydraulic and geometrical characteristics of fractured geothermal reservoirs using in-situ tomographic methods</a>
1224	"Iorio, Marina (1); Cavuoto, Giuseppe (1); Corniello, Alfonso (2); Di Fiore, Vincenzo (1); Fedi, Maurizio (2); Milano, Maurizio (1); Pelosi, Nicola (1); Punzo, Michele (1); Tarallo, Daniela (1); Massarotti, Nicola (3)"	<a href="#">Exploration of the geothermal filed in the eastern Phlegrean Fields caldera for sustainability analysis of low-middle temperatures exploitation</a>
1252	"Alimonti, Claudio (1); Scrocca, Davide (2)"	<a href="#">Geothermal potential assessment for oil&amp;gas fields in Italy</a>



1274	"Wheeler, Walter (1); Morency, Christina (2); Bellanger, Mathieu (3); Auxietre, Matieu (3); Barucq, Helene (4); Bordes, Clarisse (5); Brito, Daniel (5); Diaz, Julien (4); Fageraas, Bjarte (7); Grobbe, Niels (6); Hermant, Bastian (3); Matzel, Eric M (2); Midttømme, Kirsti (1)"	<a href="#">Seismoelectric effects for Geothermal resource assessment and monitoring – the SEE4GEO project</a>
1282	"Dalampakis, Paschalis (1); Tziritis, Evangelos (1); Koufogiannis, Ilias A.K. (2); Papachristou, Maria (3); Andritsos, Nikos (4); Arvanitis, Apostolos (2)"	<a href="#">An assessment of low enthalpy geothermal waters in the Akropotamos area (Northern Greece)</a>
1311	"Muhl, Lena (1,2); Bloecher, Guido (1); Sass, Ingo (1); Kluge, Christian (1); Ballerstedt, Tanja (1)"	<a href="#">Hydro-mechanical parameters of Cornubian and Odenwald reservoir granitoids with focus on fracture stiffness testing</a>
1344	"Balling, Niels (1); Fuchs, Sven (2); Mathiesen, Anders (3)"	<a href="#">A 3D geothermal model for Denmark: temperature and resource assessment</a>
1353	"Alms, Katharina (1); Agemar, Thorsten (2); Moeck, Inga (2)"	Heat refraction in the North German Basin: The role of salt
1387	Agemar, Thorsten	<a href="#">GeotIS Update 2022</a>
1390	"Pradipta, Devito (1); Ramdan, Divy Muhammad (2); Permana, Lano Adhitya (3)"	NEW APPLICATION OF SURFACE NATURAL FRACTURES CHARACTERIZATION AND IMPLICATIONS TO THE GEOTHERMAL SYSTEM IN SOUTHERN BAJAWA FIELD, INDONESIA: A NOVEL APPROACH FOR PRELIMINARY EXPLORATION AND MODELLING
1413	"Gola, Gianluca; Donato, Assunta; Santilano, Alessandro; Trumpy, Eugenio; Manzella, Adele"	Deep Geothermal Resource assessment: application and comparison of different approaches in the Latium volcanic areas (Central Italy)
1447	"Balza Morales, Andrea (2); Gomez Diaz, Esteban (1); Brehme, Maren (3,4); Kukla, Peter A. (1,5); Wagner, Florian M. (2)"	<a href="#">Geothermal potential in the Rhine-Ruhr region - Integration of structural analysis and a preliminary magnetotelluric feasibility study</a>

### 4.3. Geothermal drilling and Constructing of geothermal wells

103	Van den Bos, Guido	Automated Geothermal Drilling with NOVOS
223	"Gucuyener, Ismail Hakki; Gurcay, Kazim Onur; Yanik, Abdussamed; Ay, Ahmet"	<a href="#">Evaluation of Rheological Models for High Temperature Water-Based Drilling Fluids Using Geothermal Field Data</a>
234	"Sellami, Hedi (1); Cazenave, Florian (2); Gerbaud, Laurent (1); Jahangir, Emad (1); Souchal, Raphaël (2); Velmurugan, Naveen (1)"	<a href="#">Improvement of drilling performances in deep geothermal drilling in hard rocks, by using a novel Hydro-Mechanical Drilling Technology</a>
255	"Baria, Roy (1); Day, Richard (2); Grand, Gus (3); Baumgaertner, Joerg (4); Glass, Hylke (5); Jupe, Andrew (6); Cotton, Lucy (7)"	DEEP GEOTHERMAL DEVELOPMENT AT THE EDEN PROJECT IN CORNWALL, UK
272	"Wessling, Albin (1); Kajberg, Jörgen (1); Larsson, Simon (1); Jonsén, Pär (1); Ramírez, Giselle (2); Vilaseca, Montserrat (2)"	<a href="#">Discrete Element Modelling of Rock Drilling</a>
273	"Blangé, Jan Jette (1); Zikovic, Vedran (2); Van Bergen, Frank (2); Wawoe, Diederik (1); Heerens, Gert-Jan (2)"	<a href="#">Novel Directional Steel Shot Drilling Technology for short radius, long reach multilaterals</a>
295	"Zikovic, Vedran (1); Blangé, Jan Jette (2); Bergen, Frank van (1); Heerens, Gert-Jan (1)"	<a href="#">Experimental investigation of hole cleaning and other operational parameters of a novel directional drilling technology for long reach laterals</a>
309	"Knauer, Henning; Jamali, Shahin; Wittig, Volker; Bracke, Rolf"	<a href="#">Deep Geothermal Drilling Real-Time Performance Prediction and Optimization Using Artificial Intelligence Methods</a>
358	"Liao, Hualin (1); Wang, Huajian (1); LATHAM, John-Paul (2); Xiang, Jiansheng (2); Gerbaud, Laurent (3); Sellami, Hedi (3)"	<a href="#">Study on output pressure prediction and jetting features of ultra-high pressure water jet for the downhole intensifier</a>

368	"Lipus, Martin Peter (1); Skúlason Kaldal, Gunnar (2); Helgi Eggertsson, Guðjón (3); Reinsch, Thomas (4,1); Wildenborg, Ton (5); Wollenweber, Jens (5); Demusson, Vignir (6); Pálsson, Bjarni (7); Sverrisson, Ólafur (7)"	<a href="#">Full-scale thermal cycle testing of innovative high-temperature casing connections ("flexible couplings")</a>
400	"Kjellgren, Per (1); Hahn, Simon (2); Schroer, Philipp (2); Peng, Tao (1); Jenssen, Carl Birger (1); Yu, Hanrui (1); Wittig, Volker (2); Přikryl, Jan (3); Alexandersson, Kristján F. (3); Mallin, Kevin (4); Zhang, Feifei (5)"	<a href="#">Investigation of a Fluidic Oscillator DTH Hammer Drill</a>
402	"Hahn, Simon; Schroer, Philipp; Bunk, Marian; Wittig, Volker; Bracke, Rolf"	<a href="#">Development of a Novel Percussion Mechanism for Downhole Hammer Drilling</a>
418	"Latham, John-Paul (1); Xiang, Jiansheng (1); Sellami, Hedi (2); Gerbaud, Laurent (2); Velmurugan, Naveen (2); Kane, Alexandre (3); Yang, Juan (3); Coudert, Terence (3); Liao, Hualin (4); Wang, Huajian (4); Naderi, Sadjad (1)"	<a href="#">Experimental and numerical investigation of high-pressure jetting fluids impinging on submerged hard rock under deep geothermal downhole drilling conditions</a>
456	"Kandala, Shanti Swaroop (1); Mai, An (1); Vetsak, Alex (2); Shor, Roman (1)"	<a href="#">An integrated model for deep drilling through hard rock</a>
460	"Sambrook, James Victor (1); Manolakos, Athena E. (1); Mai, An (1); Kantza, Apostolos (1); Shor, Roman J. (1); Torre, Ariel Torre (2); Vetsak, Alex (2)"	<a href="#">Geothermal Drilling in Deep and Hot Conditions with Conventional Technologies: Rig Design</a>

1223	"Gucuyener, Ismail Hakki; Gurcay, Kazim Onur; Yanik, Abdussamed; Ay, Ahmet"	<a href="#">Evaluation of Rheological Models for High Temperature Water-Based Drilling Fluids Using Geothermal Field Data</a>
1309	"Knauer, Henning; Jamali, Shahin; Wittig, Volker; Bracke, Rolf"	<a href="#">Deep Geothermal Drilling Real-Time Performance Prediction and Optimization Using Artificial Intelligence Methods</a>
1400	"Kjellgren, Per (1); Hahn, Simon (2); Schroer, Philipp (2); Peng, Tao (1); Jenssen, Carl Birger (1); Yu, Hanrui (1); Wittig, Volker (2); Přikryl, Jan (3); Alexandersson, Kristján F. (3); Mallin, Kevin (4); Zhang, Feifei (5)"	<a href="#">Investigation of a Fluidic Oscillator DTH Hammer Drill</a>
1402	"Hahn, Simon; Schroer, Philipp; Bunk, Marian; Wittig, Volker; Bracke, Rolf"	<a href="#">Development of a Novel Percussion Mechanism for Downhole Hammer Drilling</a>
1418	"Latham, John-Paul (1); Xiang, Jiansheng (1); Sellami, Hedi (2); Gerbaud, Laurent (2); Velmurugan, Naveen (2); Kane, Alexandre (3); Yang, Juan (3); Coudert, Terence (3); Liao, Hualin (4); Wang, Huajian (4); Naderi, Sadjad (1)"	<a href="#">Experimental and numerical investigation of high-pressure jetting fluids impinging on submerged hard rock under deep geothermal downhole drilling conditions</a>
1456	"Kandala, Shanti Swaroop (1); Mai, An (1); Vetsak, Alex (2); Shor, Roman (1)"	<a href="#">An integrated model for deep drilling through hard rock</a>
1460	"Sambrook, James Victor (1); Manolakos, Athena E. (1); Mai, An (1); Kantza, Apostolos (1); Shor, Roman J. (1); Torre, Ariel Torre (2); Vetsak, Alex (2)"	<a href="#">Geothermal Drilling in Deep and Hot Conditions with Conventional Technologies: Rig Design</a>

#### 4.4. Reservoir engineering, development and operation of geothermal plants

106	"Keim, Maximilian; Loewer, Markus; Molar-Cruz, Anahi; Schifflechner, Christo- pher"	<a href="#">The value of heat interconnection pipelines in the use of deep geothermal energy</a>
154	"İlgin, Buğrahan; Erol, Selçuk; Akin, Serhat"	<a href="#">Assessment of Amorphous Silica Scaling during CO2 Sequestration in Geothermal Reservoirs</a>
155	"Nitschke, Fabian; Buness, Carola M.; Egert, Robert; Ystroem, Lars H.; Kohl, Thomas"	<a href="#">The F4aT-Laboratory - Forced Fracture Fluid Flow and Transport</a>
158	"Luo, Wen (1); Vardon, Philip (1); Dieudonné, Anne-Cath- erine (1); Cox, Barbara (2)"	<a href="#">Numerical study of fluid loss into a thief zone overlying a geothermal reservoir</a>
161	"Salinas, Pablo; Regnier, Geraldine; Jaquemyn, Carl; Pain, Christopher C; Jackson, Matthew D"	<a href="#">Geothermal reservoir modelling using Dynamic Mesh Optimisation</a>
162	"Firth, Hayley; Regnier, Geraldine; Salinas, Pablo; Jacquemyn, Carl; Jackson, Matthew D"	<a href="#">Well-Doublet Location Optimisation for Aquifer Thermal Energy Storage using Dynamic Mesh Optimisation and Surface Based Modelling</a>
165	"Hofmann, Hannes; Blöcher, Guido; Zimmermann, Günter; Regensburg, Simona; Huenges, Ernst"	<a href="#">Development opportunities for deep geothermal energy in the North German Basin using the example of the Enhanced Geothermal System (EGS) research site Groß Schönebeck</a>
181	"Pogacnik, Justin (1); Harcouet-Menou, Vir- ginie (1); Zarrouk, Sadiq (2); McLean, Katie (3); Snyder, Diana (1)"	<a href="#">Pressure Response in Geothermal Injection Well MOL-GT-02; Balmatt, Belgium</a>
186	"Milsch, Harald; Cheng, Chaojie"	<a href="#">Fluid flow through rock fractures undergoing chemical interactions: experimental investigations with implications for EGS sustainability</a>
190	"Boeije, Chris; Verweij, Cas; Zitha, Pacelli; Barnhoorn, Auke; Pluymakers, Anne"	<a href="#">CO2 degassing of fluid in coreflood experiments</a>

216	"Major, Marton (1); Daniilidis, Alexandros (2); Mejer Hansen, Thomas (1); Khait, Mark (2); Voskov, Denis (2)"	<a href="#">Thermal response of a fluvial geothermal system with different methods for representing heterogeneity – An example from the Gassum Formation</a>
261	"Kottsova, Anna (1,2); Bruhn, David (2); Saar, Martin (1); Veeger, Floris (3); Brehme, Maren (1,2)"	<a href="#">Clogging mechanisms in geothermal operations: theoretical examples and an applied study</a>
271	"Santoso, Ryan Kurniawan (1); Degen, Denise (1); Cacace, Mauro (2); Wellmann, Florian (1)"	<a href="#">State-of-the-art physics-based machine learning for hydro-mechanical simulation in geothermal applications</a>
276	"TÜRKDOĞAN, Selvican (1,2); ACHTZIGER, Peter (1); AMANN, Florian (1); JALALI, Reza (1); KHALEDI, Kavan (1)"	A Workflow for Data Integration and Uncertainty Characterization of H M Coupled Models in Enhanced Geothermal Systems
280	"Ouf, Josselin (1,2); Khaledi, Kavan (1); Jalali, Mohammadreza (1); Amann, Florian (1); Vardon, Phil (2)"	Numerical Modeling of HM processes during Hydraulic Stimulation at the Grimsel Test Site
301	"Finger, Claudia (1); Nakata, Nori (2,3); Tuinstra, Katinka (4); Lanza, Federica (4); Saenger, Erik H. (5,1,6)"	<a href="#">Review of time-reverse applications to locate and characterise seismicity in geothermal reservoirs</a>
305	"Pervin, Mollika; Haque, Ashadul; Uz Zaman, Asad; Arman, Miah Raihan Mahmud; Chowdhury, Fahim; Rahman, Mohammad Azizur"	<a href="#">Development of geofluid knowledgebase system (KBS) to optimize geothermal energy production</a>
306	"Kruszewski, Michal (1,2); Montegrossi, Giordano (3); Backers, Tobias (2); Saenger, Erik H. (4,1,2)"	<a href="#">In-Situ Stress State of the Ruhr Region (Germany) and Its Implications for Geothermal Energy Utilization</a>

314	"Brehme, Maren (1,2); Markó, Ábel (3); Zimmermann, Günter (2); Weinzierl, Wolfgang (2); Aldaz, Santiago (2); Thiem, Stefan (4); Huenges, Ernst (2)"	<a href="#">The success of soft stimulation: thermal, hydraulic and chemical parameters before and after stimulation at the Mezöbereny site</a>
315	"Catinat, Maxime (1); Brigaud, Benjamin (1); Fleury, Marc (3); Antics, Miklos (2); Ungemach, Pierre (2); Davaux, Mélanie (2); Gasser Dorado, Julien (2); Thomas, Hadrien (1); Thomas Florent Essou, Codjo (2); Andrieu, Simon (4); Mouche, Emmanuel (5)"	<a href="#">NMR contribution for porosity-permeability heterogeneity characterization in limestones: implications for 3D reservoir prediction and flow simulation in a world class geothermal aquifer</a>
323	"Birke, Lena Sofie (1,3); Rivera Villarreyes, Carlos Andres (1); Meneses Rioseco, Ernesto (2)"	<a href="#">Uncertainty quantification and further development of the 3D thermal-hydraulic numerical model of the Upper Jurassic reservoir (Greater Munich area) for deep geothermal district heating</a>
331	"Meneses Rioseco, Ernesto (1); Moeck, Inga S. (1); Dussel, Michael (2)"	<a href="#">Understanding the thermo-hydro-mechanical behavior of an EGS in deep Upper Jurassic carbonates of the Bavarian Molasse Basin: Case study Geretsried</a>
360	"Hefny, Mahmoud (1,2); Setiawan, Muhammad Bhakti (3); Hammed, Mohamed (4); Qin, Chao-Zhong (5); Ebigbo, Anozie (6); Saar, Martin O. (1,7)"	<a href="#">Optimizing fluid(s) circulation in a CO2-based geothermal system for cost-effective electricity generation</a>
369	"Popineau, Joris; Renaud, Theo; O'Sullivan, John"	<a href="#">History Matching of the geothermal Dogger aquifer in the south Paris sedimentary basin</a>
385	"Merbecks, Tristan (1); Bombarda, Paola (2); Saar, Martin (3); Silva, Paolo (2); Alfani, Dario (2)"	<a href="#">Investigating the design of ORC heat introduction for single and two phase geofluids such as brines with or without non-condensable gases.</a>
397	"Egert, Robert (1); Gaucher, Emmanuel (1); Savvatis, Alexandros (2); Goblirsch, Peter (3); Kohl, Thomas (1)"	<a href="#">Numerical determination of long-term alterations of THM characteristics of a Malm geothermal reservoir during continuous exploitation</a>

403	"CHABAB, Salaheddine; POULAIN, Marie; DUCOUSSO, Marion; CEZAC, Pierre"	<a href="#">Thermodynamic modelling to predict the bubble point pressure from available information (T. GLR) from geothermal processes to prevent degassing</a>
421	"Raies, Ines (1,2); Kohler, Eric (1); Fleury, Marc (1); Ledésert, Béatrice (2)"	<a href="#">Identification and understanding of colloidal destabilization mechanisms in geothermal processes</a>
424	"Fleury, Marc (1); Catinat, Maxime (2,3); Brigaud, Benjamin (2); Antics, Miklos (3); Ungemach, Pierre (3)"	<a href="#">Permeability estimation from NMR logs in a limestone geothermal aquifer</a>
436	"Kohl, Thomas (1); Bremer, Judith (1); Schill, Eva (1,2); Kolditz, Olaf (3); Shao, Haibing (3); Sass, Ingo (4); Zimmermann, Günther (4)"	<a href="#">GeoLaB - Geothermal Laboratory in the Crystalline Basement</a>
462	"Halldorsdottir, Sæunn (1); Berre, Inga (1); Keilegavlen, Eirik (1); Axelsson, Gudni (2,3)"	<a href="#">Thermal fracturing and heat transfer below the superhot IDDP1 well in Krafla, NE Iceland</a>
485	"Broda, Benedikt (1); Köhl, Bernhard (1); Schlegel, Philipp (1); Eichinger, Florian (3); Iannotta, Joy (3); Kuhn, Dietmar (2); Seibt, Andrea (5); Teitz, Sebastian (6); Würdemann, Hilke (4)"	<a href="#">Site-specific solutions to reduce calcium carbonate precipitations in production wells in the South German Molasse Basin – Results from EvA-M 2.0 project</a>
1158	"Luo, Wen (1); Vardon, Philip (1); Dieudonné, Anne-Catherine (1); Cox, Barbara (2)"	<a href="#">Numerical study of fluid loss into a thief zone overlying a geothermal reservoir</a>
1161	"Salinas, Pablo; Regnier, Geraldine; Jaquemyn, Carl; Pain, Christopher C; Jackson, Matthew D"	<a href="#">Geothermal reservoir modelling using Dynamic Mesh Optimisation</a>
1162	"Firth, Hayley; Regnier, Geraldine; Salinas, Pablo; Jaquemyn, Carl; Jackson, Matthew D"	<a href="#">Well-Doublet Location Optimisation for Aquifer Thermal Energy Storage using Dynamic Mesh Optimisation and Surface Based Modelling</a>



1181	"Pogacnik, Justin (1); Harcouet-Menou, Virginie (1); Zarrouk, Sadiq (2); McLean, Katie (3); Snyder, Diana (1)"	<a href="#">Pressure Response in Geothermal Injecton Well MOL-GT-02; Balmatt, Belgium</a>
1216	"Major, Marton (1); Daniilidis, Alexandros (2); Mejer Hansen, Thomas (1); Khait, Mark (2); Voskov, Denis (2)"	<a href="#">Thermal response of a fluvial geothermal system with different methods for representing heterogeneity – An example from the Gassum Formation</a>
1261	"Kottsova, Anna (1,2); Bruhn, David (2); Saar, Martin (1); Veeger, Floris (3); Brehme, Maren (1,2)"	<a href="#">Clogging mechanisms in geothermal operations: theoretical examples and an applied study</a>
1305	"Pervin, Mollika; Haque, Ashadul; Uz Zaman, Asad; Arman, Miah Raihan Mahmud; Chowdhury, Fahim; Rahman, Mohammad Azizur"	<a href="#">Development of geofluid knowledgebase system (KBS) to optimize geothermal energy production</a>
1306	"Kruszewski, Michal (1,2); Montegrossi, Giordano (3); Backers, Tobias (2); Saenger, Erik H. (4,1,2)"	<a href="#">In-Situ Stress State of the Ruhr Region (Germany) and Its Implications for Geothermal Energy Utilization</a>
1360	"Hefny, Mahmoud (1,2); Setiawan, Muhammad Bhakti (3); Hammed, Mohamed (4); Qin, Chao-Zhong (5); Ebigbo, Anozie (6); Saar, Martin O. (1,7)"	<a href="#">Optimizing fluid(s) circulation in a CO2-based geothermal system for cost-effective electricity generation</a>
1403	"CHABAB, Salaheddine; POULAIN, Marie; DUCOUSSO, Marion; CEZAC, Pierre"	<a href="#">Thermodynamic modelling to predict the bubble point pressure from available information (T, GLR) from geothermal processes to prevent degassing.</a>
1421	"Raies, Ines (1,2); Kohler, Eric (1); Fleury, Marc (1); Ledésert, Béatrice (2)"	<a href="#">Identification and understanding of colloidal destabilization mechanisms in geothermal processes</a>
1424	"Fleury, Marc (1); Catinat, Maxime (2,3); Brigaud, Benjamin (2); Antics, Miklos (3); Ungemach, Pierre (3)"	<a href="#">Permeability estimation from NMR logs in a limestone geothermal aquifer.</a>

1436	"Kohl, Thomas (1); Bremer, Judith (1); Schill, Eva (1,2); Kolditz, Olaf (3); Shao, Haibing (3); Sass, Ingo (4); Zimmermann, Günther (4)"	<a href="#">GeoLaB - Geothermal Laboratory in the Crystalline Basement</a>
<b>4.5. Energy conversion systems and supply</b>		
203	"Sowizdział, Anna (1); Andresen, Trond (2); Miecznik, Maciej (3); Frengstad, Bjørn S. (4); Liszka, Marcin (5); Gładysz, Paweł (1); Pająk, Leszek (1); Chmielowska, Anna (1); Tomaszewska, Barbara (1); Løvseth, Sigurd W. (2); Stenvik, Lars A. (4); Gawron, Marcel (5)"	<a href="#">EnerGizerS - Enhanced Geothermal Systems (EGS) using supercritical carbon dioxide as a working medium in Polish and Norwegian conditions</a>
425	"Schifflechner, Christopher; Wieland, Christoph; Spliethoff, Hartmut"	<a href="#">Efficient and flexible plant configurations for geothermal tri-generation systems with an Organic Rankine Cycle</a>
1203	"Sowizdział, Anna (1); Andresen, Trond (2); Miecznik, Maciej (3); Frengstad, Bjørn S. (4); Liszka, Marcin (5); Gładysz, Paweł (1); Pająk, Leszek (1); Chmielowska, Anna (1); Tomaszewska, Barbara (1); Løvseth, Sigurd W. (2); Stenvik, Lars A. (4); Gawron, Marcel (5)"	<a href="#">EnerGizerS - Enhanced Geothermal Systems (EGS) using supercritical carbon dioxide as a working medium in Polish and Norwegian conditions</a>
1425	"Schifflechner, Christopher; Wieland, Christoph; Spliethoff, Hartmut"	<a href="#">Efficient and flexible plant configurations for geothermal tri-generation systems with an Organic Rankine Cycle</a>
123	"Shafagh, Ida; Rees, Simon; Loveridge, Fleur"	<a href="#">The Effect of Boundary Conditions on Heat Transfer through Energy Walls</a>
140	"Gupta, Aakash; Loveridge, Fleur; Shafagh, Ida; Rees, Simon"	<a href="#">An analytical approach to evaluate the heat transfer through embedded retaining walls</a>
156	"VOIRAND, Antoine (1); MARAGNA, Charles (1); VEYRON, Mathilde (2); CLAUSSE, Marc (2)"	<a href="#">A New Borefield Dymola Model Accounting for Groundwater Flow and Complex Borefield Geometries</a>

167	"Suft, Oliver; Bertermann, Dr. David"	<a href="#">Long-term Monitoring Concept Of A Very Shallow Horizontal Collector System</a>
189	"Meibodi, Saleh; Loveridge, Fleur"	<a href="#">Modelling and Simulation of Energy Walls Coupled with a Ground Source Heat Pump using TRNSYS</a>
202	"Kordas, Olga (1); Nikiforovich, Eugene (2)"	<a href="#">Steady – state quantitative and qualitative characteristics of geothermal energy extracted by Heat Pumps: Geothermal Energy Limit</a>
377	"Cadelano, Gianluca (1); Galgaro, Antonio (2); Dalla Santa, Giorgia (2); Di Sipio, Eloisa (2); Bortolin, Alessandro (1); Bernardi, Adriana (1)"	<a href="#">Evaluation of different metal anti-corrosion countermeasures on coaxial ground loop heat exchangers for shallow geothermal applications</a>
404	"Staudacher, Lars; Peter, Osgyan"	<a href="#">Geothermal deicing using a two-phase borehole heat exchanger</a>
408	"Urchueguía, Javier (1); Sanner, Burkhard (2); Gonzalez, Rosa (3); Zirgulis, Giedrius (4); Caputcu, Ayten (5); Saner Okan, Burcu (6); Bayonas, Antonio (7); Bartoli, Flavia (8); Shuster, Michael (9)"	<a href="#">Advanced materials and improvements for borehole heat exchangers - final results from project GEOCOND</a>
428	"Van de Ven, Adinda (1); Koenigsdorff, Roland (1); Neth, Fabian (1); Zorn, Roman (2); Schüppler, Simon (2); Huttenloch, Petra (2); Steger, Hagen (3); Albers, Anna (3); Karrer, Hanne (4); Fuchs, Martin (4); Kainzlsperger, Michael (4)"	<a href="#">Advanced thermal and geophysical test methods of shallow geothermal systems</a>
1123	"Shafagh, Ida; Rees, Simon; Loveridge, Fleur"	<a href="#">The Effect of Boundary Conditions on Heat Transfer through Energy Walls</a>
1140	"Gupta, Aakash; Loveridge, Fleur; Shafagh, Ida; Rees, Simon"	<a href="#">An analytical approach to evaluate the heat transfer through embedded retaining walls</a>

1163	"Bhamji, Imran (1); Mittal, Garima (2); Taddei Pardelli, Paolo (3); Ingvi Snorrason, Davíð (4); Csaki, Ioana (12); Ingi Ólafsson, Dagur (5); Anxionnaz-Minvielle, Zoe (6); Pálsson, Halldór (7); Ragna Ragnarsdóttir, Kolbrún (8); Kjellgren, Per (9); Chowdhury, Fahim (10); Defensor, John (11); Paul, Shiladitya (2); Ósk Haraldsdóttir, Helen (8); Martelo, David (1); Khan, Raja (1); Kale, Namrata (1); Cormorant, Guillaume (13); Karlisdóttir, Sigrún Nanna (7); Pálsson, Halldór (7)"	Anti-corrosion and anti-scaling of geothermal heat exchangers
1167	"Suft, Oliver; Bertermann, Dr. David"	<a href="#">Long-term Monitoring Concept Of A Very Shallow Horizontal Collector System</a>
<b>4.6. Energy conversion systems and supply</b>		
123	"Shafagh, Ida; Rees, Simon; Loveridge, Fleur"	<a href="#">The Effect of Boundary Conditions on Heat Transfer through Energy Walls</a>
156	"VOIRAND, Antoine (1); MARAGNA, Charles (1); VEYRON, Mathilde (2); CLAUSSE, Marc (2)"	<a href="#">A New Borefield Dymola Model Accounting for Groundwater Flow and Complex Borefield Geometries</a>
167	"Suft, Oliver; Bertermann, Dr. David"	<a href="#">Long-term Monitoring Concept Of A Very Shallow Horizontal Collector System</a>
189	"Meibodi, Saleh; Loveridge, Fleur"	<a href="#">Modelling and Simulation of Energy Walls Coupled with a Ground Source Heat Pump using TRNSYS</a>
202	"Kordas, Olga (1); Nikiforovich, Eugene (2)"	<a href="#">Steady – state quantitative and qualitative characteristics of geothermal energy extracted by Heat Pumps: Geothermal Energy Limit</a>
377	"Cadelano, Gianluca (1); Galgaro, Antonio (2); Dalla Santa, Giorgia (2); Di Sipio, Eloisa (2); Bortolin, Alessandro (1); Bernardi, Adriana (1)"	<a href="#">Evaluation of different metal anti-corrosion countermeasures on coaxial ground loop heat exchangers for shallow geothermal applications</a>
404	"Staudacher, Lars; Peter, Osgyan"	<a href="#">Geothermal deicing using a two-phase borehole heat exchanger</a>

408	"Urchueguía, Javier (1); Sanner, Burkhard (2); Gonzalez, Rosa (3); Zirgulis, Giedrius (4); Caputcu, Ayten (5); Saner Okan, Burcu (6); Bayonas, Antonio (7); Bartoli, Flavia (8); Shuster, Michael (9)"	<a href="#">Advanced materials and improvements for borehole heat exchangers - final results from project GEOCOND</a>
428	"Van de Ven, Adinda (1); Koenigsdorff, Roland (1); Neth, Fabian (1); Zorn, Roman (2); Schüppler, Simon (2); Huttenloch, Petra (2); Steger, Hagen (3); Albers, Anna (3); Karrer, Hanne (4); Fuchs, Martin (4); Kainzlsperger, Michael (4)"	<a href="#">Advanced thermal and geophysical test methods of shallow geothermal systems</a>
1123	"Shafagh, Ida; Rees, Simon; Loveridge, Fleur"	<a href="#">The Effect of Boundary Conditions on Heat Transfer through Energy Walls</a>
1140	"Gupta, Aakash; Loveridge, Fleur; Shafagh, Ida; Rees, Simon"	<a href="#">An analytical approach to evaluate the heat transfer through embedded retaining walls</a>
1167	"Suft, Oliver; Bertermann, Dr. David"	<a href="#">Long-term Monitoring Concept Of A Very Shallow Horizontal Collector System</a>
1202	"Kordas, Olga (1); Nikiforovich, Eugene (2)"	<a href="#">Steady - state quantitative and qualitative characteristics of geothermal energy extracted by Heat Pumps: Geothermal Energy Limit</a>
<b>4.7. Operation of geothermal systems</b>		
110	"Oppelt, Lukas; Grab, Thomas; Pose, Sebastian; Storch, Thomas; Fieback, Tobias"	<a href="#">Innovative heat exchanger design to avoid fouling</a>
150	"Dietmaier, Annette; Baumann, Thomas"	Multiple sensor data fusion applied to geothermal reservoir management
159	"Zacherl, Lilly; Omid, Mohamad; Baumann, Thomas"	Scalings in Geothermal Systems: Quantifying and Modeling the Role of Degassing
182	"Banshoya, Shin Irgens; Berre, Inga; Keilegavlen, Eirik"	<a href="#">Simulation of reactive transport in fractured geothermal reservoirs</a>
200	"Cercllet, Léo; Pasquier, Philippe; Courcelles, Benoît"	<a href="#">Quantify the Impact of Groundwater Treatment on Carbonate Scaling in Standing Column Well</a>

227	"RAMIREZ, REINALDO (1); Giardinella, Sebastiano (2); Diaz, Rosario (1)"	<a href="#">Conversion of Oil Brownfield in a Geothermal Sustainable and Renewable Energy Field</a>
249	"Jeßberger, Jaromir; Heberle, Florian; Brüggemann, Dieter"	<a href="#">Integration of a high temperature heat pump into geothermal systems</a>
254	"Zotzmann, Jörg (1); Feldbusch, Elvira (1); Richter, Mirko (2); Aibibu, Dilbar (2); Regenspurg, Simona (1)"	Adsorptive removal of lead from geothermal fluid under high temperature/high pressure conditions to prevent Pb induced scaling
257	"Schmittbuhl, Jean (1); Lambotte, Sophie (1); Lengliné, Olivier (1); Grunberg, Marc (2); Jund, Hélène (2); Doubre, Cécile (1); Vergne, Jérôme (1); Cornet, François (1); Masson, Frédéric (1)"	<a href="#">Analysis of the recent induced seismicity below the city of Strasbourg, France</a>
263	"Schäfer, Dennis; Böhmer, Felix; Wechsung, Michael; Hansper, Jil"	<a href="#">Next-Gen Geothermal Power – Putting CO2 to Work</a>
288	"Fechner, Dorothee (1,2); Kondek, Milena (1); Kölbel, Thomas (1); Kolb, Jochen (2)"	<a href="#">CO2 handling in binary geothermal systems – a modelling approach for different CO2 contents, amount total dissolved solids and pressure-temperature conditions</a>
317	"Ji, Yinlin; Hofmann, Hannes"	<a href="#">Influence of thermal stress on injection-induced fault slip: An integrated laboratory and numerical study</a>
356	"Shoeibi Omrani, Pejman; Poort, Jonah; Wasch, Laura; Twerda, Aris"	<a href="#">Impact of geochemical uncertainties on geothermal fluid production and scaling precipitation in geothermal plants and facilities</a>
373	"Rhodes, Andrew (1); van Unen, Marianne (2); Liu, Wen (1)"	<a href="#">Techno-economic Analysis of a Low Temperature Geothermal District Heat Pump Network in The Netherlands</a>
392	"Jähnichen, Sabine (1); Degering, Detlev (1); Heberling, Frank (2); Hoffmann, Richard (3); Kuhn, Dietmar (4); Langenmaier, Michael (2); Otto, Tobias (1); Seibt, Andrea (5); Uhde, Jörg (3)"	<a href="#">Characterization of scales from a geothermal plant in the Upper Rhine Graben after long-term application of an inhibitor combination</a>

399	"Kummerow, Juliane; Goldberg, Tanya; Giese, Ronny"	<a href="#">Kinetics of scale formation of calcite and amorphous silica from hot brines monitored by impedance spectroscopy: An experimental study</a>
449	"Ruliandi, Dimas; Cahyadi, Dede; Budiyanto, Eko Nugroho; Lathieful Haq, Muhammad"	<a href="#">Analysis of Load Limit and Governor Free Selection Mode in Geothermal Power Plant Operation And Its Impact on The Steam Gathering System</a>
489	"Schneider von Deimling, Thomas (1,2); Bertermann, David (3); Assmann, Lisa Marie (1); Langer, Moritz (1,2)"	Modelling the potential of very shallow geothermal installations under consideration of climate change
1200	"Cerclet, Léo; Pasquier, Philippe; Courcelles, Benoît"	<a href="#">Quantify the Impact of Groundwater Treatment on Carbonate Scaling in Standing Column Well</a>
1227	"RAMIREZ, REINALDO (1); Giardinella, Sebastiano (2); Diaz, Rosario (1)"	<a href="#">Conversion of Oil Brownfield in a Geothermal Sustainable and Renewable Energy Field</a>
1249	"Jeßberger, Jaromir; Heberle, Florian; Brüggemann, Dieter"	<a href="#">Integration of a high temperature heat pump into geothermal systems</a>
1263	"Schäfer, Dennis; Böhmer, Felix; Wechsung, Michael; Hansper, Jil"	<a href="#">Next-Gen Geothermal Power – Putting CO2 to Work</a>
1288	"Fechner, Dorothee (1,2); Kondek, Milena (1); Kölbel, Thomas (1); Kolb, Jochen (2)"	<a href="#">CO2 handling in binary geothermal systems – a modelling approach for different CO2 contents, amount total dissolved solids and pressure-temperature conditions</a>
1373	"Rhodes, Andrew (1); van Unen, Marianne (2); Liu, Wen (1)"	<a href="#">Techno-economic Analysis of a Low Temperature Geothermal District Heat Pump Network in The Netherlands</a>
1392	"Jähnichen, Sabine (1); Degering, Detlev (1); Heberling, Frank (2); Hoffmann, Richard (3); Kuhn, Dietmar (4); Langenmaier, Michael (2); Otto, Tobias (1); Seibt, Andrea (5); Uhde, Jörg (3)"	<a href="#">Characterization of scales from a geothermal plant in the Upper Rhine Graben after long-term application of an inhibitor combination</a>
1449	"Ruliandi, Dimas; Cahyadi, Dede; Budiyanto, Eko Nugroho; Lathieful Haq, Muhammad"	<a href="#">Analysis of Load Limit and Governor Free Selection Mode in Geothermal Power Plant Operation And Its Impact on The Steam Gathering System</a>

4.8. Integration of geothermal into the circular economy		
345	"Jagert, Felix; Alms, Katharina"	<a href="#">Modeling of brine-rock interactions in German geothermal systems for future lithium recovery</a>
351	"Alms, Katharina (1); Jagert, Felix (1); Gehrke, Ilka (2)"	<a href="#">Co-production of geothermal energy and lithium from geothermal waters in Germany</a>
395	"Jagert, Felix; Güldenhaupt, Jonas; Nardini, Isabella"	Hydrogeochemical exploration of deep groundwater in fractured sandstone aquifers for CO <sub>2</sub> -Mineral-Carbonation: A case study in Bochum, Germany
4.9. Other		
101	"Toth, Aniko Nora (1); Lund, John W. (2); Huttrer, Gerry (3); Fenerty, David K. (4)"	<a href="#">Current world situation for geothermal energy production, based on WGC2020+1 reports from 88 countries</a>
109	"Yurteri, Cansu; Kurttaş, Türker"	<a href="#">Hydrogeochemical and Isotopic Investigations of Kiran (Mucur-Kırşehir) Hot and Mineralized Waters, Central Anatolia, Turkey</a>
160	"Regnier, Geraldine; Salinas, Pablo; Jackson, Matthew D."	<a href="#">A novel simulation methodology to quantify the risk of saltwater contamination of freshwater aquifers during Aquifer Thermal Energy Storage</a>
197	"Blake, Sarah (1); Mather, Ben (2); Dunphy, Rory (3); Companyà, Joan (4)"	<a href="#">New all-island deep temperature maps for Ireland</a>
210	"Schulze, Maximilian (1); Jahn, Sandro (1); Stefánsson, Andri (2); Driesner, Thomas (3)"	<a href="#">Understanding properties of superhot fluids for exploration and development of supercritical resources</a>
217	"Lager, Daniel (1); Haslinger, Edith (1); Friedrich, Robin (1); Dragisa, Pantelic (1); Hoyer, Stefan (2); Rupprecht, Doris (2)"	<a href="#">Thermophysical properties of a subsoil drill core for geothermal energy applications</a>
226	"Schaming, Marc (1); Schmittbuhl, Jean (1); Fremand, Alice (2,3); Turlure, Mathieu (2); Grunberg, Marc (2)"	<a href="#">CDGP - the data center for deep geothermal data in Alsace</a>
242	"Fasci, Maria Letizia; Lazarotto, Alberto; Acuña, José; Claesson, Joachim"	<a href="#">GSHPsDesigner: an open access tool for ground-source heat pumps designers and decision makers</a>



245	"Monaghan, Alison; Kuras, Oliver; Boon, David; Wilkinson, Paul; Meldrum, Phil; Harrison, Harry; Inauen, Cornelia; Swift, Russell; Chambers, Jonathan; Abesser, Corinna; Starcher, Vanessa; Shorter, Kirsty; MacAllister, Donald John; Spence, Michael"	<a href="#">Time-series geophysical and hydrogeological characterisation for mine water geothermal research at the UK Geoenergy Observatory in Glasgow, UK.</a>
293	"Harpers, Nick (1); Forbes Inskip, Nathaniel (1); Allen, Michael John (2); Faulkner, Daniel (2); Buckman, Jim (1); den Hartog, Sabine (1)"	<a href="#">Effects of chemical alteration on frictional properties in a deep, granitic, geothermal system in Cornwall: Direct shear experiments on granite gouges at near in-situ conditions</a>
297	"Starczewska, Magdalena; Sowiżdżał, Anna; Kaczmarczyk, Michał"	<a href="#">LIFE CYCLE ASSESSMENT OF ENHANCED GEOTHERMAL SYSTEM</a>
325	"Lassin, Arnault (1); Felipe dos Santos, Pedro (2); Ducouso, Marion (2); Cézac, Pierre (2); André, Laurent (1,3)"	<a href="#">Experimental measurements and modelling of thermodynamic properties of NaCl-CaCl<sub>2</sub> aqueous solutions up to high temperatures and CO<sub>2</sub> pressures</a>
327	"PAVULURI, Saideep (1); CLARET, Francis (2); TOURNASSAT, Christophe (1,3); ANDRE, Laurent (1,2); SOULAIN, Cyprien (1)"	<a href="#">porousMedia4Foam – a generic open-source reactive transport toolbox based on OpenFOAM</a>
359	"Suherlina, Lily (1); David, Bruhn (1); Brehme, Maren (2)"	<a href="#">Updated Conceptual Models of the Lahendong High-Enthalpy Geothermal Field</a>
367	"Kinscher, Jannes (1); Broothaers, Matsen (2); Francesca, De Santis (1); Ben, Laenen (2); Jean, Schmittbuhl (3); Emmanuelle, Klein (1)"	<a href="#">Origin and hazard of induced seismicity at the Balmatt geothermal doublet (Belgium)</a>
370	"De Santis, Francesca; Klein, Emmanuelle; Thoraval, Alain; Contrucci, Isabelle; Kinscher, Jannes"	<a href="#">Case analysis of seismicity related to the exploitation of deep geothermal energy</a>

371	"Doran, Hannah R. (1,3); Renaud, Theo (2); Brown, Christopher (1); Kolo, Isa (1); Falcone, Gioia (1); Sanderson, David (3)"	<a href="#">Radioactive waste as anthropogenic heat source: shallow geothermal applications</a>
382	"Saadat, Ali; Kranz, Stefan; Norden, Ben; Blöcher, Guido; Virchow, Lioba; Piekarski, Jan-Kristian; Regenspurg, Simona"	<a href="#">Geothermal district heating in Berlin: An ATEs field study in Berlin-Adlershof</a>
410	"Hemmerle, Hannes (1); Ferguson, Grant (2); Blum, Philipp (3); Bayer, Peter (1)"	<a href="#">Development of the geothermal potential of an urban aquifer over half a century</a>
412	"Regenspurg, Simona; Kieling, Katrin; Acksel, Daniel"	<a href="#">Geothermal potential and activities in the Berlin - Brandenburg region</a>
416	"Frick, Maximilian (1); Kranz, Stefan (1); Norden, Ben (1); Bruhn, David (2,3); Fuchs, Sven (1)"	<a href="#">Identifying the geothermal and heat storage potential of the shallow to deep subsurface of the North German Basin</a>
423	"Schifflechner, Christopher; Irl, Matthäus; Molar-Cruz, Anahi; Keim, Maximilian; Loewer, Markus; Ferrand, Thomas; Wieland, Christoph; Spliethoff, Hartmut"	<a href="#">Optimized pipe diameter and insulation thickness of long-distance heat interconnection pipelines</a>
426	"Nazari Moghaddam, Rasoul; van Doorn, Marcel; Dos Santos, Auribel; Sanders, Jan; Oskarsson, Hans; Hellberg, Per-Erik"	<a href="#">Development of a thermally stable scale Inhibitor-dissolver with a multi-scale inhibition approach</a>
429	"Stemmler, Ruben; Hammer, Vanessa; Blum, Philipp; Menberg, Kathrin"	<a href="#">Potential of Shallow Aquifer Thermal Energy Storage in Germany</a>
430	"Ramirez-Guzman, Angel Andres (1); Hung, Pham (1); Bär, Kristian (1); Sass, Ingo (2)"	Matrix acidification experiments for Remlinger sandstone samples in reservoir conditions.

478	"Borović, Staša (1); Pola, Marco (1); Pavić, Mirja (1); Briški, Maja (1); Kosović, Ivan (1); Frangen, Tihomir (1); Urumović, Kosta (1); Matoš, Bojan (2); Pavičić, Ivica (2); Terzić, Josip (1)"	<a href="#">Multidisciplinary Approach to Conceptual Modelling of Hydro-thermal Systems in Croatia - HyTheC</a>
492	"Kirsch, Reinhard (2); Rüter, Horst (1)"	<a href="#">Molten salt latent heat storage for demand-based electricity supply from renewable energies</a>
1130	"Chowdhury, M A H; Asaduzzaman, A K M; Ahmed, T; Ahmad, T I; Ahmed, M"	<a href="#">Environmental impacts of GeoHex and standard materials adopted for monophasic heat exchangers in geothermal power plants</a>
1160	"Regnier, Geraldine; Salinas, Pablo; Jackson, Matthew D."	<a href="#">A novel simulation methodology to quantify the risk of saltwater contamination of freshwater aquifers during Aquifer Thermal Energy Storage</a>
1197	"Blake, Sarah (1); Mather, Ben (2); Dunphy, Rory (3); Companyà, Joan (4)"	<a href="#">New all-island deep temperature maps for Ireland</a>
1217	"Lager, Daniel (1); Haslinger, Edith (1); Friedrich, Robin (1); Dragisa, Pantelic (1); Hoyer, Stefan (2); Rupprecht, Doris (2)"	<a href="#">Thermophysical properties of a subsoil drill core for geothermal energy applications</a>
1293	"Harpers, Nick (1); Forbes Inskip, Nathaniel (1); Allen, Michael John (2); Faulkner, Daniel (2); Buckman, Jim (1); den Hartog, Sabine (1)"	<a href="#">Effects of chemical alteration on frictional properties in a deep, granitic, geothermal system in Cornwall: Direct shear experiments on granite gouges at near in-situ conditions</a>
1297	"Starczewska, Magdalena; Sowiżdżał, Anna; Kaczmarczyk, Michał"	<a href="#">LIFE CYCLE ASSESSMENT OF ENHANCED GEOTHERMAL SYSTEM</a>
1327	"PAVULURI, Saideep (1); CLARET, Francis (2); TOURNASSAT, Christophe (1,3); ANDRE, Laurent (1,2); SOULAIN, Cyprien (1)"	<a href="#">porousMedia4Foam – a generic open-source reactive transport toolbox based on OpenFOAM</a>

1423	"Schifflechner, Christopher; Irl, Matthäus; Molar-Cruz, Anahi; Keim, Maximilian; Loewer, Markus; Ferrand, Thomas; Wieland, Christoph; Spliethoff, Hartmut"	<a href="#">Optimized pipe diameter and insulation thickness of long-distance heat interconnection pipelines</a>
1492	"Kirsch, Reinhard (2); Rüter, Horst (1)"	<a href="#">Molten salt latent heat storage for demand-based electricity supply from renewable energies</a>