

KIA ORA

Born in Aotearoa built for the world

The Geothermal Institute at the University of Auckland advances the development of geothermal energy through world-leading education, research, and consulting.

Since 1978, we have trained over 2,000 energy professionals worldwide, equipping them with the skills required to support geothermal growth in the renewable energy sector. We deliver postgraduate study programmes and professional training to develop industry-ready expertise.

Our research drives innovation in geothermal science, engineering, and resource management to tackle global energy challenges.

Through consulting, we work with energy companies, Māori trusts, and government agencies to provide expert guidance to de-risk geothermal development and optimise operations.

With a strong international network, the Institute delivers commercial projects, research programmes, and training courses in over 40 countries.

45+

Years of Innovation

2,000

Trained Professionals

40

Countries Reached
Globally

Largest

Gigawatts of Geothermal
Generation Supported

geothermal.auckland.ac.nz

Contact Us

Dr John O'Sullivan

Co-Director

Phone: +64 21 821 566

Email: jp.osullivan@auckland.ac.nz

Associate Professor Sadiq J. Zarrouk

Co-Director

Phone: +64 21 045 0196

Email: s.zarrouk@auckland.ac.nz

Di Whiting

Research Operations Manager

Phone: +64 21 430 192

Email: d.whiting@auckland.ac.nz

Mike Roger

Strategic Growth Manager

Phone: +64 27 264 8081

Email: michael.roger@auckland.ac.nz



ENGINEERING



Powering Progress Together



OUR MAHI

The Geothermal Institute has a broad range of expertise and plays a key role in New Zealand's geothermal industry, supporting its growth through research, training, and consulting services.

Education

We offer specialised postgraduate study options designed to equip students with the knowledge and skills necessary for a successful career in the geothermal industry. Our programmes build capacity by providing applied knowledge and skills, ensuring that the global geothermal workforce is well-prepared to tackle the challenges of geothermal exploration, development, and utilisation. Other training includes options short courses, mentoring, master classes, seminars and technical workshops. Tailored short courses for international and domestic industry cohorts can be coupled with 'hands-on experience' and site visits to engage with the geothermal industry and stakeholders.

Research

Research at the Geothermal Institute is internationally renowned for its innovation and impact. We carry out collaborative and internationally connected research, unlocking our understanding of geothermal systems and developing new innovative tools to realise global geothermal potential. The Institute's research capabilities span fundamental science and practical applications, with particular strengths in geothermal engineering and modelling.

Consulting

The Geothermal Institute offers a wide range of consulting services to geothermal stakeholders, including energy companies, Māori trusts, and government agencies. The Institute's consulting expertise is grounded in its extensive research and teaching experience, enabling it to provide innovative solutions to complex geothermal challenges. Our consulting activities are driven by a commitment to best practices in geothermal technology and delivering high-quality outcomes for our clients while ensuring timely and effective delivery.

OUR EXPERTISE

Where expertise meets innovation

We bring deep knowledge and hands-on experience across all areas of geothermal science and engineering. These examples reflect a selection of our wider capabilities.



Reservoir Modelling / Digital Twins

Leverage our expert reservoir modelling for accurate forecasting and strategic decision-making, optimizing asset potential through geoscientific data integration.



Geothermal Resource Assessment

With our cutting-edge resource assessment and uncertainty quantification techniques, confidently evaluate and analyse your reservoirs' potential and economic feasibility, even with limited data.



Geothermal wellbores, well test analysis and drilling

From well-test design and supervision to geothermal reservoir engineering, we provide thorough and results-driven field operation monitoring programmes.



Above Ground Engineering

Addressing engineering demands through power plant engineering, geothermal energy implementation, and expert problem-solving across sectors.



Critical Mineral Extraction

Using reservoir modelling, we estimate rare mineral extraction from geothermal brines and develop optimised mineral extraction strategies. This approach has been applied to lithium extraction projects in the USA and Italy.



Independent Peer Review

Reviewing geothermal resources, developments, and modelling to provide critical evaluations of the methodologies, data, and findings to ensure accuracy, reliability, and best practice.



Supercritical Geothermal Technology

We are developing new techniques for supercritical geothermal resources to unlock energy from deep, high-temperature reservoirs.



CO2 Sequestration in Geothermal Systems

We investigate how geothermal systems can be used to store CO2 underground, supporting both clean energy and climate goals.



Mineral Scaling and Corrosion Control

Controlling and minimizing mineral scaling and corrosion in geothermal development is key to the optimum utilization of geothermal energy and the prevention of expensive repairs and loss of generation. We work with the industry to put in place control measure for prevention and mitigation of both.



Steamfield and Power Plant Design and Optimisation

We work with field developers on the design of the steam gathering system and power plant equipment to insure clean steam will reach the turbines, without having to do expensive retrofitting and repairs.

