

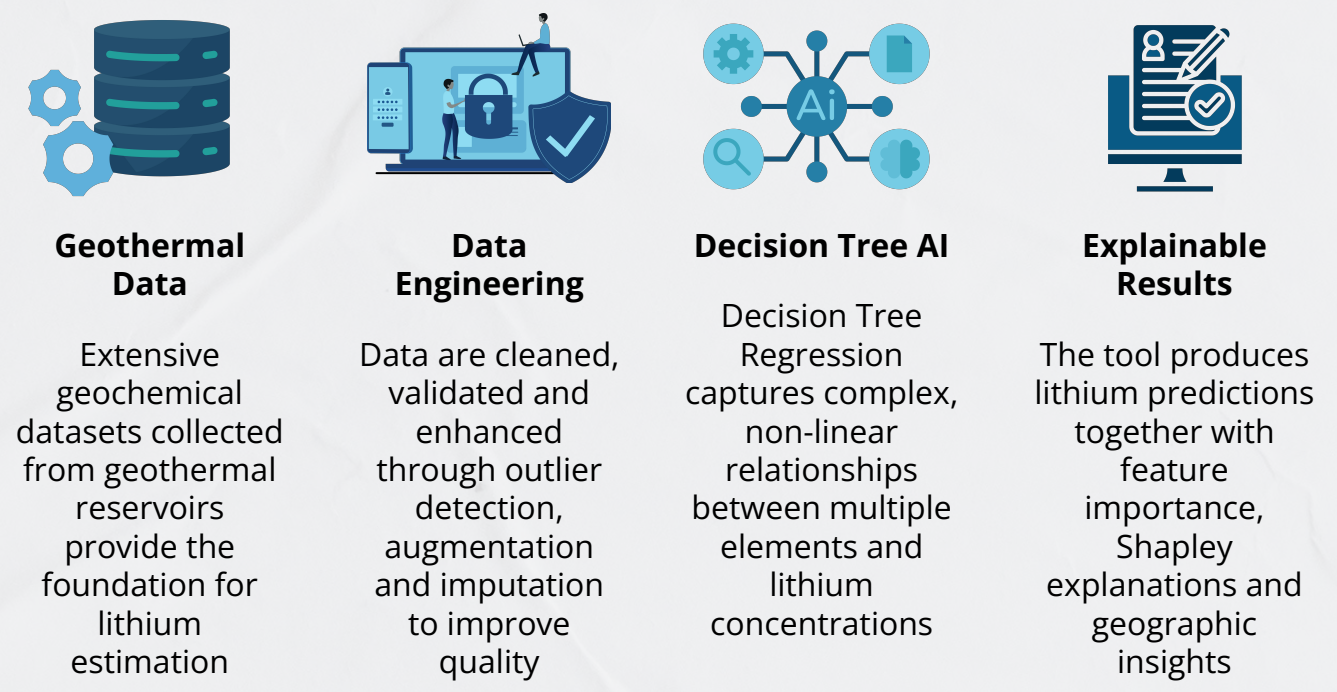
AI-POWERED LITHIUM EXPLORATION IN GEOTHERMAL RESOURCES

From geothermal data to actionable lithium intelligence



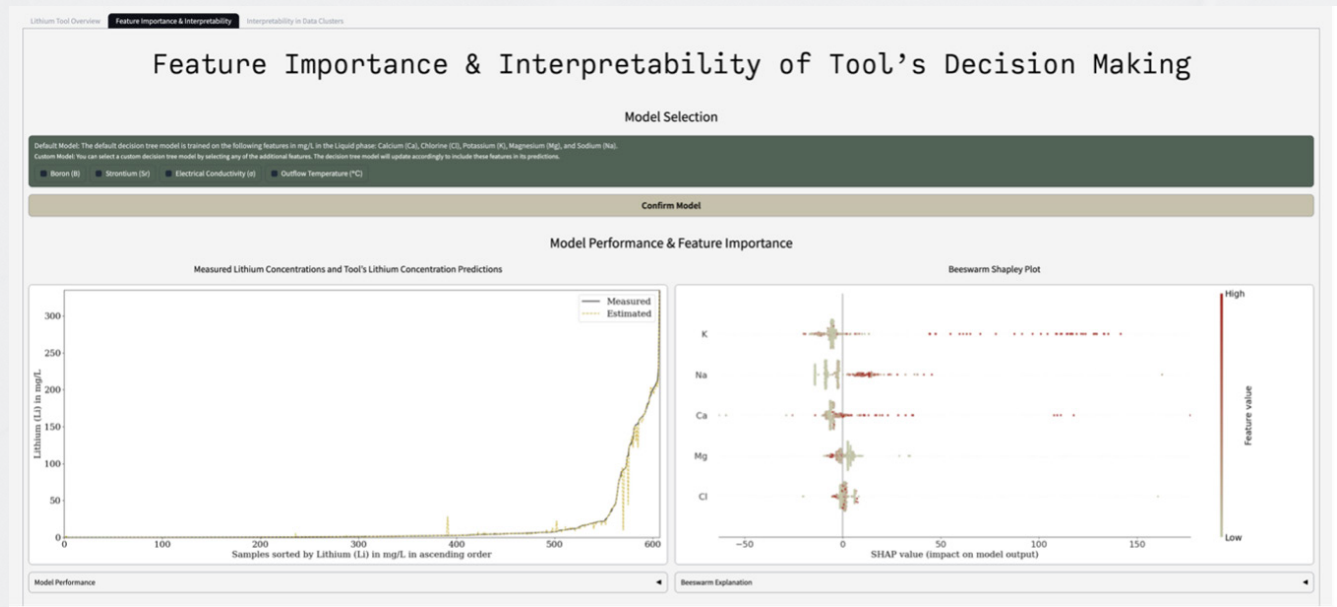
The Lithium Estimation AI Tool, developed by INLECOM within the Horizon Europe CRM-geothermal project, uses Artificial Intelligence to estimate lithium concentrations in geothermal resources. By combining geochemical data with explainable AI, it helps accelerate sustainable lithium exploration and supports Europe's critical raw material supply.

How does the AI tool work?



Selected model: Decision Tree Regression | Performance (RMSE): 9.74 mg/L

Two core functionalities



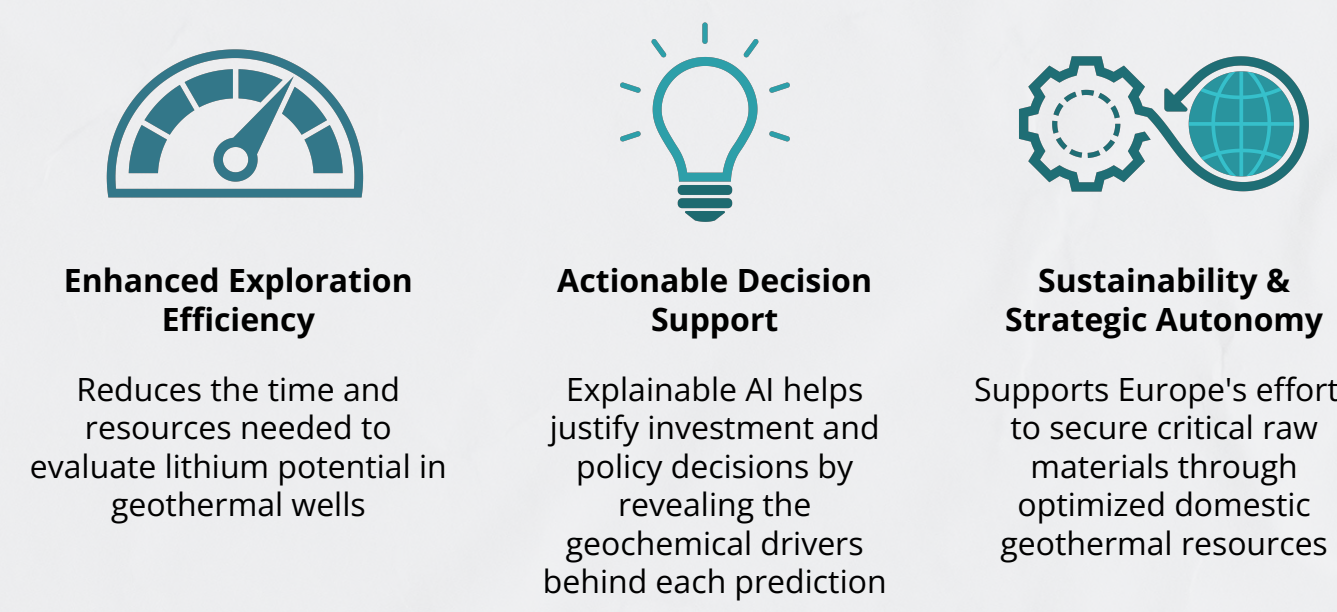
Understand an Individual Prediction

- Enter custom sample data or select an existing record to estimate lithium concentration.
- Estimate lithium concentration for a specific sample.
- See which elements increase or decrease the prediction.
- Follow the decision-tree pathway.
- Explore scatterplots showing relationships between lithium and individual elements.
- View the sample within its geographic context and identify potential outliers.

Discover Patterns & Geographic Trends

- Explore trends across the full dataset or filtered reservoir subsets.
- Filter the dataset by value ranges and reservoir type.
- Instantly retrain the decision tree.
- Compare feature importance with Beeswarm Shapley plots.
- Evaluate model performance for different contexts.
- Identify regional lithium hotspots and geological trends.

Why AI adds value



Explore the AI Tool <https://crm.inlecom.eu>