Fracture Stimulation – legal risks and liabilities

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Abstract

Fracture stimulation (also known as hydraulic stimulation) involves pumping water at high pressure into a well, which causes fracturing of the rock. This additional fracturing enhances the permeability of the hot dry rock in order to create an efficient hydraulic loop for the purposes of harnessing geothermal energy.

The process of fracturing the rock can also give rise to seismicity events – that is, it can induce small earthquakes which have the potential to damage property and infrastructure not only within the exploration licence area but also on adjacent land and further afield.

The paper will examine the legal risks and potential consequences of fracture stimulation, including:

- damage caused by seismicity events could result in the commission of an offence under environment protection legislation (which prohibits the causing of harm to the environment, property and the health, safety and amenity of people) or under resources legislation (which for instance prohibits interference with mining operations);
- landowners or operators of infrastructure that suffer damage to their property may also seek compensation for losses caused by the seismicity events;
- if concerned about the potential impacts on the environment and property, regulators could issue orders preventing fracture stimulation, or allowing it only after precautionary measures are put in place.

The paper will discuss the legal risk management measures that geothermal operators should include in project planning to seek to mitigate their potential liabilities where fracture stimulation is proposed.