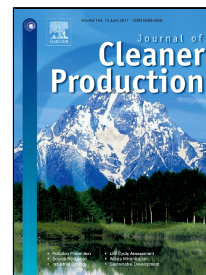


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Framing the future of fracking: discursive lock-in or energy degrowth in the Netherlands?

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## **Framing the future of fracking: discursive lock-in or energy degrowth in the Netherlands?**

### **Abstract**

Hydraulic fracturing is a technology developed to improve and increase the production of natural gas. In many countries, including the Netherlands, it has caused environmental controversies. In these controversies, 'futurity framing' may open up debates for alternative paradigms such as 'degrowth,' which is the pursuing of collective and deliberative, downscaled production of (natural) resources and less consumption for convivial living. Based on a frame analysis, it is demonstrated that opponents and proponents of fracking have envisaged pessimistic energy futures either to promote or devalue fracking technology. In addition, the results show that dominant technological enthusiasm has enabled the introduction of 'degrowth technology,' which are downscaled, decentralized and renewable energy technologies. Degrowth-technology framing may provide a means of access for more radical degrowth thinking in the energy debates. This empirical finding also indicates that the degrowth paradigm could include controversies as entry points for creating support for degrowth thinking.

*Key words: degrowth, technology, hydraulic fracturing, shale gas, framing, socio-technological futures*

### **1. Introduction**

The development of new energy technologies often takes place in order to fulfil growing energy demands, to make a transition to more sustainable energy, as well as for geopolitical, economic and environmental reasons. Hydraulic fracturing is one such energy technology. It was developed to improve the extraction of natural gas. Previously vertical fracturing techniques were solely applied to extract more natural gas from sandy soil, currently its horizontal version is used in the production of shale gas, as well as for enhanced geothermal energy systems (deep earth warmth). This development enables the

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