

Rare earths and our insatiable appetite for digital memory

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Rare earths are used for devices such as mobile phones and laptops Credit: Flickr/Yutaka Tsutano

This week a dozen protesters travelled from Malaysia to Australia to protest outside the Annual General Meeting (AGM) of Lynas Corporation, an Australian rare earth mining company, for the third year running.

Most Australians probably don't realise that Australia has a rare earth mine or that this is one of a very small handful of rare earth mines in the world. Lynas Corporation ship the [rare earths](#) they extract in Australia to a town called Kuantan on the east coast of Malaysia to be processed.

Rare earths are essential to the production of modern media because they are critical to our iPods, [smart phones](#), digital cameras, laptops, PCs and to the illusive "cloud" where we store our captured moments, ideas and memories.

Rare earths are in fact in plentiful supply in Australia. According to CSIRO, Australia has approximately 6% of the world's rare earths.

One of the problems with rare earth mining is that while the 17 minerals known as rare earths are generally considered harmless by themselves, they are frequently found mixed with potentially dangerous radioactive ores such as thorium. Separating and refining the rare earths can be complex and messy and requires a great deal of water use. This process results in toxic waste.

Once rare earth minerals have been extracted from the earth, separated and processed, they are used individually for a range of different purposes. Most of us come into contact with rare earth products every day through our use of communication technologies.

They are used to make fibre optic cables, digital cameras, computer hard disc drives, digital screens, microphones and handheld wireless devices. In particular, rare earths have helped make our media become more mobile by being key to the development of smaller size communication technologies like laptops and mobile phones.

When Lynas got their rare earth mine up and running in Western Australia, they needed a place to process the rare earths. It seems they

never considered Australia as an option because it would be too expensive, costing four times as much to build and run. Eventually they struck a deal with the Malaysian government who offered them a deal that included no tax payments for 14-years.

Ever since locals heard about this deal – protesters say it was half built by the time they found out about it – they have been trying to stop it. The protesters here in Australia this week say they are here with the support of more than a million Malaysians who have signed their petition to have Lynas kicked out of their home town.

The question we need to ask ourselves in Australia is: are we willing to allow rare earths to be processed here and if not, should we be mining them? If we are willing to have a rare earth processing plant here, what conditions would we want to impose? It's an important question because at the time of writing 11 more rare earth mining projects are at the scoping study, proposal or early development stage in Australia.

Connecting rare earth mining to the digital media devices we so easily embrace can be seen as a small, but growing trend in media studies.

We all pay so little attention to the resources used by "the cloud". The cloud metaphor filters our perceptions of storage and memory because it is cleverly designed to be "natural" and elevated far away from the hardware that it really constitutes. These kinds of conceptual tricks artfully obscure and make invisible the environmental damage caused by our media production, consumption and waste.

We may need rare earths to satisfy our persistent desire for the latest communication technologies and to digitally capture and save everything we do, see and think. However, there are things we can do to minimise and more equitably distribute the damage and risk.

This includes regulating mining and manufacturing companies to adhere to stricter environmental laws and making them treat their workers better. It is vital we fight against the planned obsolescence and disposable mentality we have all come to expect from our communication technologies. We need to be consuming less technology and throwing less away, or in the case of data storage, perhaps throwing away more.

Our back-ups and storage of data we really don't want have implications for the use of energy and resources. This includes the massive amount of data we are storing on social network sites such as Facebook and via our webmail accounts. As server farms grow every year around the world we are told we are told by companies like Google that we should feel happy to have our data travelling though and living in these "high-tech data centers". Rather, we should start asking questions about what we save, where and why.

At the very least, we might start by listening to the Malaysian protesters, hearing their concerns and complaints and asking ourselves if we'd be responding in the same way if we lived in Kuantan.

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