ENVIRONMENT

Blasted Sea – Cybernetic capitalism expanding the frontier of fossil fuel extraction

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On 1 August in north-east Scotland, midway through the hottest summer yet, two sets of microphones were recording. One was trained on UK Prime Minister Rishi Sunak as he stood outside a Shell-owned gas processing terminal at Scotland's easternmost tip, unveiling a plan to authorise 100 new licences to drill for fossil fuel in the North Sea. Some distance off the coast – and far from any media attention – a second set of microphones was being dragged through the water. Under the command of Texas-based geophysics company SAExploration, they were being used to survey the seafloor, searching for the fossil fuels that might lie beneath.

Such surveys are part of a booming industry. The latest IPCC report made it clear that no new fossil fuel projects can be initiated if we are to avoid catastrophic global heating. Yet according to *Offshore Magazine*, a trade publication for offshore fossil fuel exploration, 'the future is looking bright'. The sector is expected to expand by 14% this year alone. Major offshore explorations are underway in the waters of Argentina, Brazil, Côte d'Ivoire, Colombia, Greece, Malaysia, Mexico, Namibia, Norway, Russia, South Korea, Turkey, the UK and the United States. This expansion is driven in part by disruptions from the war in Ukraine, new technological developments and an industry buoyed by inflated profits and keen to defend and extend its position. The quest for offshore fuel is also propelled by growing scarcity. Much of the 'conventional' supply of oil and gas is already over-exploited, forcing mining companies to go to greater lengths.

Tapping 'unconventional' deposits requires advanced technology. Before an offshore oil or gas well can be sunk, the area needs to be mapped, and the most accurate way to do that is via a process called 'seismic exploration'. This involves a ship slowly traversing the 'acquisition area' – industry jargon for the place being mapped – trailing pneumatic guns and microphones behind it, sometimes on 10km-long lines. The air-guns fire regular sound blasts into the water; the microphones record the echo bouncing back from the seafloor. To penetrate the sub-seafloor, where oil and gas may be found, the blasts have to be extremely loud. At an unimaginable 240 decibels, they are among the loudest sounds humans can produce. For comparison: these are louder than the sound produced by the explosion of an atomic bomb. To map the acquisition area, hundreds of thousands of such blasts are required. The guns fire every ten seconds, 24 hours a day, for months on end. At this rate the number of blasts adds up quickly. By the time of Sunak's announcement, SAExploration's vessel in the North Sea would have fired off almost one million blasts over the first 108 days of its mission.

One marine biologist-turned-whistleblower, disturbed by the possible ecological impacts of this practice, recently described her time aboard a seismic exploration ship that was working off the coast of Australia [1]. She was given a pair of binoculars and tasked with keeping an eye out for whales; if the crew had visual confirmation of specific types of whales, they would temporarily pause the blasting. But this safeguard was limited, not only because the pneumatic guns were being dragged 10km behind the ship – near or beyond the horizon – but also because the blasts continue

through the night when no observer is on duty.

The blasts are no doubt keenly heard by cetaceans – dolphins and whales – who experience sound in distinctive and complex ways (they are able to 'see' and feel with sound). Humans can hear frequencies between 20 and 20,000 hertz (Hz); Bottlenose dolphins can hear up to 160,000 Hz. They use their ultra-precise hearing to locate food, to navigate and to communicate. Hundreds of thousands of nuclear bomb-volume blasts ripping through their habitat is likely to affect their senses in ways we cannot understand. It is an act of phenomenal violence. What of the other inhabitants of the overfished, acidifying ocean? What happens when microorganisms are hit with a 240-decibel sound wave? The short answer is nobody knows; it hasn't been adequately studied.

This lack of ecological research contrasts sharply with the level of technoscientific knowledge needed to transform the audio recording of the blasts echoing back from the seafloor into maps for fossil fuel companies. Processing these recordings is highly complicated, often requiring super-computers to crunch the geophysical data. The US-based multinational oil company ConocoPhillips, for example, has one of the world's top supercomputers, a purpose-built 1000m2 machine that sits in a data facility in Houston. Much of its processing power is given over to turning seismic exploration data into maps. Such processes are central to the extraction industry – a fact that complicates the call to 'follow the science' with respect to climate change. Oil and gas companies are following the science – indeed, they are using the most advanced science available, and they are using it to extract even more fossil fuel.

Marine seismic surveys, according to Australia's regulatory agency, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) (which 'recognises climate change'), are undertaken not only to identify 'potential oil and gas reservoirs below the seafloor' but also 'reservoirs suitable for storing waste carbon dioxide to prevent it from entering the atmosphere and contributing to climate change'. A discerning reader will note that these two purposes exist in different universes. The first is real and dangerous, a practice that needs to be halted immediately if the planet is to remain liveable. The second is, at best, a science fiction concocted by the fossil industry.

Seismic exploration is a telling manifestation of the technoscientific reorganisation of global capital. It embodies the central contradiction that has been with us since the first nuclear explosions which opened a new epoch of cybernetic capitalism [2]. At the cutting-edge of science and using some of the world's most powerful calculation engines, the technique is as rationalised as it gets. Yet the blasting of an atomic bomb of sound every ten seconds is belligerent in the extreme toward the oceanic ecosystems, while the aim of expanding the frontier of fossil fuel extraction at a time of increasingly acute climate crisis is nothing short of demented.

Herein lies a deeper problem: a society dedicated to endless growth is necessarily pushed towards meeting expanding energy requirements. Governments of all stripes, from greenwashing 'pragmatists', like Labor in Australia, to anti-greens like Sunak's Tories – also claiming to be 'pragmatic' – are forced to intensify the quest for more energy and thus the drive towards technoscientific instrumentalisation. Cybernetic capitalism, compelled to seek new 'smart' ways to achieve endless expansion, leaves behind a blasted sea and a boiling sky.

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P.S.

•“Blasted Sea”. Sidecar. New Left Review. 22 SEPTEMBER 2023: https://newleftreview.org/sidecar/posts/blasted-sea?pc=1539

Footnotes

[1] https://www.thesaturdaypaper.com.au/news/environment/2023/06/10/seismic-blasting-whistleblower-speaks#hrd

[2] https://newleftreview.org/issues/ii135/articles/timothy-erik-strom-capital-and-cybernetics