

THE NEED FOR UNCONVENTIONAL OIL.

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The need to transition to New Energy is well accepted, albeit the speed and the actual path taken remains less certain. That said, the transition is not a flick of a switch, where traditional energy sources are turned off and New Energy takes over. New Energy technologies need time and continuous development to ensure grid stability and for energy supply to be able to meet energy demand when it is actually required.

As this process plays out, there is an acknowledgement that traditional oil and gas resources need to continue to be developed, albeit with a sharp focus on minimising and mitigating excess emissions from extraction to use. In this note, we review the role of the US shale industry in the energy transition, and identify one Australian company playing a crucial economic and environmental role in the US shale industry.

The Need for Fossil Fuels?

We have previously written that to limit global warming to 1.50c, it is apparent that all Paris-aligned scenarios call for the reduction of hydrocarbon demand. However, Tyndall's analysis shows that this doesn't mean an end to new oil and gas projects. Scenarios modelled by the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) forecast a total decline in oil consumption of between c17-89% by 2050 (from 2019 levels). Notably, natural field decline (8%pa as estimated by the IEA assuming no new capital is invested) would result in a reduction in supply from existing oil fields of 92% by 2050 – a larger decline than even the most aggressive forecasts of decline in consumption.

The most obvious conclusion from the studies is that there is an ongoing need for further investment in new oil projects to meet expected demand. More nuanced however, is that the studies suggest this new oil supply should be "short cycle" or via projects that are smaller and more flexible. This is because short cycle projects can manage the different demand scenario outcomes, and minimise the risk of an earlier-than-expected adoption of alternative sources of energy. Furthermore, the need for short cycle supply reduces the risk of becoming a stranded asset under the most onerous carbon price outlooks.

This need for more short cycle fossil fuels bodes well for the US shale industry, where the development of infrastructure for extraction is extremely short cycle compared to more conventional means.

The key issue with unconventional oil such as shale is that, excluding the initial capital expenditure, it is more resource-intensive to extract – both in terms of energy and cost – compared to conventional methods. In addition, the environmental impact is also greater, as techniques such as fracking have raised concerns about water usage, chemical contamination, and induced seismic

activity. The reason it is more resource intensive to extract is because, unlike the porous and permeable reservoirs that house conventional oil, unconventional oil is trapped in formations with low permeability, such as shale, tight sands, or tar sands. This means the land needs to be “fractured” or cracked, and then water, chemicals and sand needs to be blasted into the cracks to pressure the oil to the surface. This process raises obvious environmental concerns given the footprint it leaves behind.

So, while unconventional oil like shale can play a key role in the energy transition given the short cycle nature, the negative environmental footprint may negate the advantages this method brings.

Enter SciDev

SciDev is a small listed Australian chemicals and water technology company with IP that helps heavy industries reduce their environmental footprint. In late September 2025, I was fortunate enough to spend the day in the Eagle Ford Shale oil fields with Chris Dartez, SciDev's VP of North America. We visited a number of SciDev's customer well sites, getting first-hand experience of the SciDev products in action. The insights gained from my trip were invaluable, and more than made up for the two flights, three-hour drive, and 24 hours total travel it took to get there from Sydney!



While SciDev has a range of proprietary chemistries and technologies (e.g. [PFAS treatment plants](#)), it is SciDev's CatCheck product line that is playing a crucial role in the US shale industry. CatCheck is an enhanced oil recovery surfactants designed to optimise production in unconventional oil and gas reservoirs. In addition to increasing oil recovery, the product also controls clay swelling and fines migration during operations, delivering increased production rates and improved efficiency throughout the life of the well. CatCheck also retains cations within the formation, reducing interfacial tension, and minimising fines migration. These properties drive oil flow through the proppant pack, while simultaneously reducing unwanted water production.

Put more simply, CatCheck reduces the friction and efficiency in the fracking extraction process that involves pumping water, sand and chemicals into a deep drilled well. The reduced friction and efficiency means: (1) more oil can be extracted – studies have shown 42% more barrels of oil equivalent in the first 12 months of usage; (2) the life of the oil well lasts longer; and (3) lower water usage which

reduces the well's environmental impact by allowing the well to produce more oil with less water.

The clear benefits of CatCheck saw this product deliver 46% revenue growth (y/y) for SciDev in FY25. This growth is even more impressive in the context of a flat US shale market given weaker oil prices. This strong growth has seen SciDev win c8% market share within the Eagle Ford Shale area. Equally exciting, SciDev has recently won a master services agreement in the Permian Basin. The Permian Basin is the highest producing oil field in the US, four-times the size of Eagle Ford, and where SciDev currently has less than 1% market share. With its established operational platform, SciDev appears well-positioned for potential growth.

While the majority of the world wants to reduce the reliance on fossil fuels, even the most stringent demand forecasts for oil will require exploration and development to meet 2050 demand targets. Our view is that the required development projects should focus on shorter cycle projects, which bodes well for the US shale industry.

We acknowledge that a key concern for shale is the environmental footprint shale fracking can leave. In portfolio holding SciDev, we believe we have uncovered a great investment opportunity where its core product helps to minimise the environmental footprint of the industry. The strong adoption rate in the Eagle Ford Shale region and the initial uptake in the Permian Basin provides us with confidence that SciDev is a company that can play a crucial role in the energy transition for many years to come.



Contact us

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The transition to New Energy is not via a flick of a switch.

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