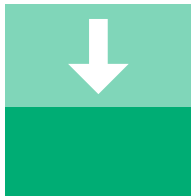


## OPPORTUNITY #2

WHAT IF WE REPURPOSED OIL RIGS?

# UNSTRANDED ASSETS

Abandoned oil and gas facilities, both offshore and onshore, can be repurposed for carbon sequestration to reduce both carbon dioxide and methane in the atmosphere



Limiting global warming to 1.5°C requires **reducing global carbon dioxide (CO<sub>2</sub>) emissions by 45% by 2030**

### WHY IT MATTERS TODAY

Limiting global warming to 1.5°C requires reducing global carbon dioxide (CO<sub>2</sub>) emissions by 45% by 2030 compared with levels in 2010 and to net zero around mid-century.<sup>10</sup> One route to aid these efforts is to capture and store CO<sub>2</sub> beneath the Earth's surface, where it has been estimated that there is room to sequester trillions of tonnes of carbon dioxide (CO<sub>2</sub>).<sup>11</sup>

An estimated 300 billion tonnes of that capacity<sup>12</sup> lies in depleted oil and gas fields, both onshore and offshore, from which the energy resources have been produced and consumed. However, currently only around 40 million tonnes of CO<sub>2</sub><sup>13</sup> are captured and stored each year, mainly from energy production facilities. The challenges lie in finding economical and practical ways of capturing CO<sub>2</sub> and transporting it to underground geological storage.

### SECTORS



## THE OPPORTUNITY TOMORROW

While the 20th century saw a boom in platforms and plants that extract oil and gas from the ground, the 21st century could see such structures being converted to store carbon dioxide underground. In some ways, it is the reverse of oil and gas extraction.

As the world transitions to clean energy, these rigs are set to become obsolete, stranded assets. Rather than removing these platforms, which may be more environmentally harmful than leaving them in place once decommissioned,<sup>14</sup> they could be converted to enable them to inject the CO<sub>2</sub> recovered from factory and power plant emissions (using carbon capture and storage (CCS) technologies) into the depleted reservoirs. New technological solutions – known as direct air capture with carbon storage (DACC) – can extract CO<sub>2</sub> already in the atmosphere. This can also be transported to and stored in depleted oil or gas fields.

## BENEFITS

By reducing atmospheric carbon levels, these solutions can help lessen the environmental, economic and social impacts of climate change.

## RISKS

Risks include carbon dioxide leaks, seismic activity as carbon dioxide is being injected, acidification from deep ocean storage and physical or cyber-attacks on critical systems and storage facilities.