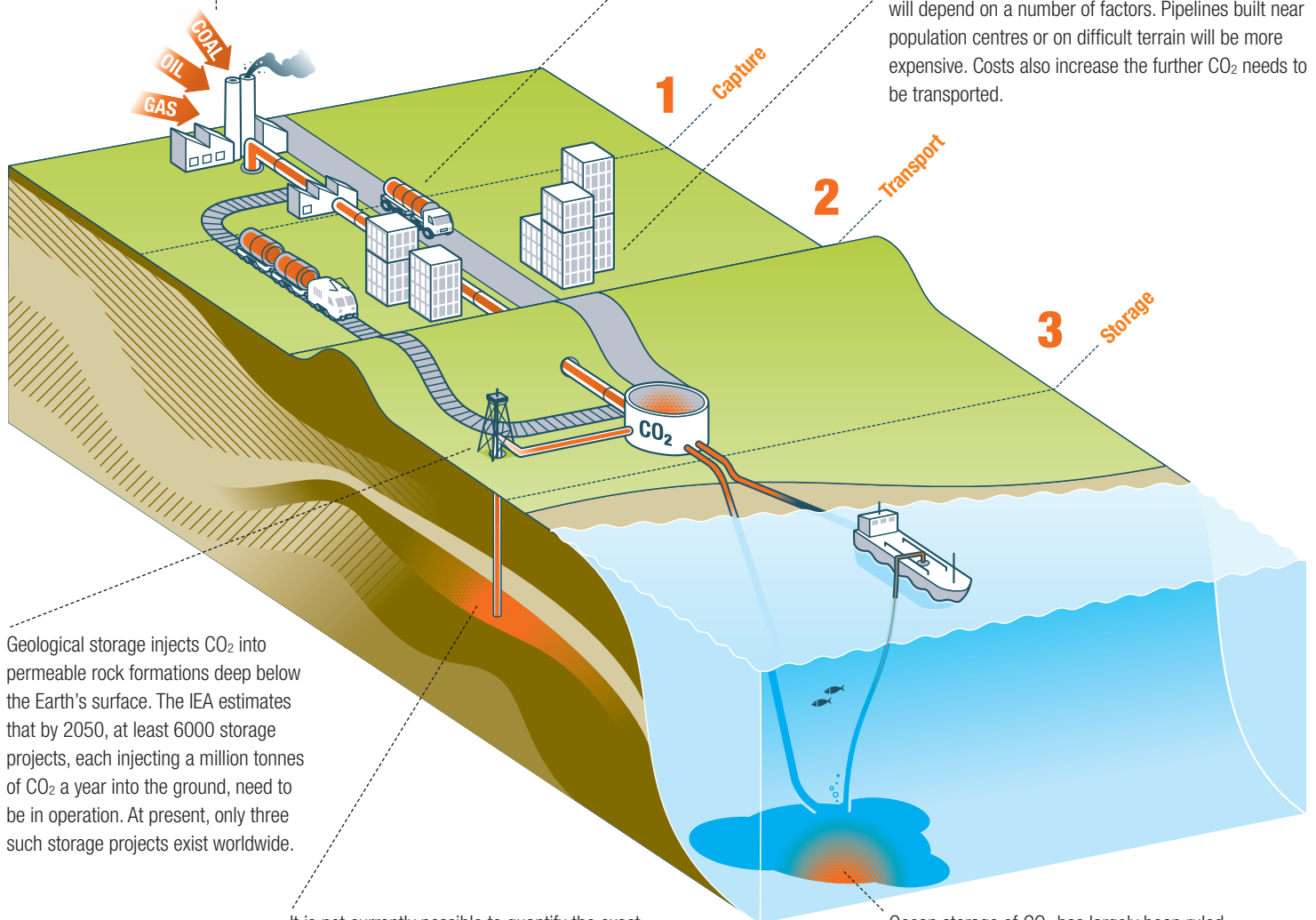


Carbon capture and storage at a glance

Carbon capture is the most energy-intensive part of the process. Carbon capture systems have yet to be applied to a single utility scale coal-fired power station anywhere in the world. Costs for installation are estimated to result in a near doubling of plant costs. Retrofits could be even more costly.

CO₂ can be transported to a storage location via pipelines, ships, rail or road transport. Cost considerations and proximity to water bodies leaves pipelines as the likely choice for most CCS operations.

The construction of a network of pipelines for CCS is likely to require a considerable outlay of capital. Costs will depend on a number of factors. Pipelines built near population centres or on difficult terrain will be more expensive. Costs also increase the further CO₂ needs to be transported.



Geological storage injects CO₂ into permeable rock formations deep below the Earth's surface. The IEA estimates that by 2050, at least 6000 storage projects, each injecting a million tonnes of CO₂ a year into the ground, need to be in operation. At present, only three such storage projects exist worldwide.

It is not currently possible to quantify the exact risk of leakage, however any CO₂ release has the potential to impact the surrounding environment; air, groundwater or soil. A leakage rate as low as 1% could undermine any climate benefit of CCS.

Ocean storage of CO₂ has largely been ruled out due to unavoidable negative impacts on the ocean environment from acidification and other changes in ocean chemistry.