



Is ADNOC Turning to Hydrogen?

The Abu Dhabi National Oil Company (ADNOC) has announced partnerships with two of the country's sovereign wealth funds, as it bids to diversify its energy portfolio by moving into hydrogen. The UAE economy has historically been built upon the extraction and exportation of oil and gas, but a changing of the times has instigated a robust response from the Emirati government.

By signing deals with Mubala Investment Company and ADQ, the state-owned oil company has increased its ability to explore hydrogen as a major export commodity for the country. The agreement will focus primarily on the production of green hydrogen, while ADNOC will continue to pursue blue hydrogen independently.

Diversify to stabilise

With rising global awareness of the negative environmental credentials of fossil fuels, the appetite for those commodities has been waning for some time. This phenomenon, accompanied by a significant drop-off in demand brought about the coronavirus pandemic, saw [oil prices reach negative values](#) last year.

That has prompted countries which have predominantly relied on fossil fuels for their economic stability to seek alternative methods of generating income. In particular, the UAE has targeted hydrogen as an advantageous means of maintaining its position as one of the leading exporters of fuels all over the world. The recent deals are only the latest piece of that puzzle.

Blue vs green

The UAE has already been investigating the possibilities of generating and exporting blue hydrogen, which uses steam methane reforming (SMR) to turn natural gas into hydrogen. However, this process does entail the emissions of some harmful greenhouse gases, which must be captured at source using carbon capture and storage (CCS) technology.

Unlike blue hydrogen, green hydrogen uses renewable energy to generate hydrogen, meaning there are no undesirable emissions associated with the practice at all. However, green hydrogen is, at present, two to three times more expensive than blue hydrogen, while neither method is cost-competitive with traditional fossil fuels.



Well-placed to prosper

Although more research will be required in order to refine the technology involved in both blue and green hydrogen generation, industry experts are confident that the overheads can be reduced significantly over the coming decade. The two deals signed with Mubala and ADQ – as well as a similar agreement with German company Siemens Energy – mean that the UAE will have both the financial backing and the technological expertise to deliver results.

The fact that ADNOC already produces around 300,000 tonnes of hydrogen per annum for use in its downstream operations means that the company already has a head start on its competitors in this field. This, coupled with the significant amounts of natural gas that ADNOC already produces and the ample sunshine that the UAE enjoys (essential for generating solar power), means that it is well-placed to become a market leader in both blue and green hydrogen in the foreseeable future.