

Pollution-free hydrogen: New green energy breakthrough?

PARIS: Scientists said yesterday they have developed a way of extracting hydrogen from oil without releasing greenhouse gases — a breakthrough they hailed as a “silver bullet” for cleaner energy and the climate. Unlike petrol and diesel, hydrogen produces no pollution when burned. It is already used by some car manufacturers to power vehicles and may also be burned to generate electricity.

But until now the wide-scale roll-out of hydrogen technology has been prohibited by the high cost of separating it from hydrocarbons. Currently the vast majority of hydrogen used for vehicles is derived from natural gas, the extraction process of which produces planet-warming methane. Now a group of Canadian engineers say they have come up with a method of getting hydrogen directly from oil sands and oil fields, while leaving carbon dioxide and methane in the ground.

The team behind the research, which was unveiled at the Goldschmidt Geochemistry Conference in Barcelona, said the technology had the potential to supply Canada’s entire electricity requirement for the next 330 years — all without releasing any greenhouse gases. “Low-cost hydrogen from oil fields with

no emissions can power the whole world using mostly existing infrastructure,” Grant Strem, CEO of Proton Technologies, which is commercializing the extraction method said.

“This is the silver bullet for clean energy and clean climate.”



This is the silver bullet for clean energy

With global energy demand rising in lockstep with emissions, the United Nations Intergovernmental Panel on Climate change says the world needs to work rapidly to curb greenhouse gases or risk dangerous temperature increases. Strem said the method could produce hydrogen at between \$0.10-0.50 per kilo, compared with the current production cost of around \$2 per kilo.

Even abandoned oil fields still contain

significant amounts of oil. Strem and the team found injecting oxygen into the fields raised their underlying temperature, freeing hydrogen that can be filtered from other gases. “The only product in this process is hydrogen, meaning that the technology is effectively pollution- and emission-free,” said Strem. Experts greeted the possible breakthrough with guarded optimism.

“Making hydrogen from hydrocarbons using oxygen is nothing new — the trick is not releasing the CO2 to the atmosphere,” said Jeremy Tomkinson, Company Director and CEO at NNFC The Bioeconomy Consultants. “It would be really exciting if they had found a way of... ensuring the carbonaceous gases remain locked underground — letting them go to atmosphere would result in no difference to burning the oil above ground at far less energy burden.” Professor Brian Horsfield, from the GFZ German Research Centre for Geosciences, Potsdam, said that extensive field testing would be needed to see how the system works on an industrial scale. He nevertheless called the project “highly innovative and exciting.” Declining oilfield infrastructures now stand to get a new lease of life. — AFP

Singapore to trial driverless buses booked with app

SINGAPORE: Singapore will next week begin a public trial of driverless buses that can be booked with an app, part of ambitions to roll out autonomous vehicles across the city-state. Well-organized and high-tech, Singapore has become a testbed for self-driving vehicles, developing home-grown technology and inviting foreign companies to trial their own.

Four driverless mini-buses will follow a 5.7 kilometer route on the resort island of Sentosa from August 26 to November 15 for the public trial, said ST Engineering, the Singaporean company behind it. Visitors can use an app on their phones to book the shuttles, which will pick them up and take them to selected destinations such as a golf club, the beach and an historic fort. Those without mobile phones can book the shuttles from kiosks along the route, with the free service operating on weekdays for four hours. The buses will have

a driver to take control if necessary. At a demonstration yesterday, two of the vehicles negotiated a roundabout with little difficulty and stopped at intersections on a main road to allow cars to pass. They can operate in moderate rain — but have to stop during heavy downpours, which are common in the tropical, Southeast Asian city. Vincent Chong, president and chief executive of ST Engineering, said the buses were equipped with “advanced, multi-sensor technology” and “built to operate in complex urban environments”.

The company aims to roll out the shuttles in a few years time to other parts of Singapore to transport people from home to subway stations and back, and hopes they can help tackle a shortage of drivers in the city-state. In 2016, US software firm nuTonomy became the world’s first company to launch driverless taxi trials in public in Singapore, beating rival Uber by weeks. — AFP

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