Capitalising on under-the-radar investment opportunities

Words: Nick Dimmock, Founder of 350PPM

As the global energy landscape continues to transition from fossil fuels towards cleaner and more sustainable energy sources, the growth and innovation in the renewable energy sector are set to open a myriad of new and promising avenues for investments. And there are many long-term opportunities to take advantage of if you know where to look.

For businesses, opportunity may come in the form of increased margins because of financial incentives or infrastructural support from the government. For investors, this could mean more under-the-radar investment options; something to help diversify their portfolios into the much-talked-about environmental, social and governance (ESG) space, and emerging technologies such as low-energy nuclear reactions (LENR).

Breakthrough technologies like this often represent significant advancements, with the potential to really revolutionise industries, and indeed the whole global energy marketplace, by vastly improving efficiency, and enhancing our quality of life through the sharp acceleration of the transition to net zero. Investing in these technologies drives innovation and progress, leading to new products, services, and solutions that can address the pressing challenges ahead.

Breakthrough technologies have the potential to drive economic growth by stimulating investment, creating jobs, and fostering entrepreneurship. They often spawn entire ecosystems of related industries and services, generating wealth and prosperity for individuals and entire communities.

So, investment here not only helps us future-proof our global energy system. It has wider-reaching benefits that will help companies, including existing renewable energy developers, gain a competitive advantage by adopting cutting-edge tools, techniques, and advancements to complement current infrastructure and resources.

Last year's COP28 highlighted that the climate change targets set in the Paris Agreement in 2015 have not been met, largely because countries have not delivered emissions reduction by phasing out fossil fuels. It also included the first-ever agreement to transition 'away from fossil fuels in energy systems in a just, orderly and equitable manner, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science.'

However, the UN's climate change conference fell disastrously short of enforcing a fossil fuel phase-out or indeed providing sufficient climate finance, known as Loss and Damage, to support affected communities in dealing with the impact of climate change.

It is now abundantly clear that the COP framework will not help us meet greenhouse gas (GHG) targets, and it's time for businesses, and investors, to step up. We are heading for a climate catastrophe, and we must reduce GHG emissions as quickly as possible.

To limit global temperatures to 1.5°C, we need to reduce emissions by 43% by 2030. An initial assessment of pledges undertaken by the Energy Transition Commission suggests that even if COP28 pledges were supported by all countries and implemented in full, with strong policies behind them, we would not keep temperatures well below 2°C.

The COP28 declaration features very few commitments and no accountability so it is up to businesses to shift their focus from short-term economic gains to long-term sustainability action.

That said, the development of technology and artificial intelligence to address emission reductions has been accelerating rapidly. So, as an industry, we need to continue this trajectory of innovation for the rapid production of clean energy. This requires investment in breakthrough and emerging technologies, which while carrying risk, has a strong potential for significant rewards.

As we know, the renewable energy sector provides significant opportunities for job creation and economic growth. Investments in renewable energy projects stimulate local economies by creating jobs in manufacturing,

construction, installation, maintenance, and research and development. The opportunities are wide-reaching, and the continued research and development into new areas will lead to breakthroughs in efficiency, storage, and grid integration, making all renewable energy sources more competitive and accessible.

Diversifying the energy portfolio with new renewable sources reduces reliance on a limited offering of energy sources, increasing resilience against supply disruptions and price volatility. This drive towards diversity in the energy mix will also enhance reliability and stability which can only be positive for the here and now, as well as future generations.

One such technology that we have been deeply involved in is low-energy nuclear reaction (LENR), also known as cold fusion, because despite the controversy and sceptical views, it is now developing quickly and has real potential to revolutionise the energy mix. Let's take a closer look at the advantages.

Potential for disruptive innovation

If LENR technology can be reliably developed and commercialised, it could disrupt existing energy industries, potentially leading to more competition, innovation, and diversification in the sector.

Abundant fuel

LENR typically involves isotopes of hydrogen, such as deuterium or tritium, and nickel or palladium, and even water. These elements are relatively abundant in nature, making the fuel source potentially more accessible and less expensive compared to traditional nuclear fuels like uranium.

Low radioactivity

Unlike conventional nuclear reactions, LENR reactions produce minimal or no harmful radiation so they are safe to operate and manage in terms of waste disposal.

High energy density

LENR reactions have the potential to release significant amounts of energy from relatively small amounts of fuel. If successfully harnessed, LENR could provide a dense and compact source of energy, potentially transforming power generation and transportation.

Reduced environmental impact

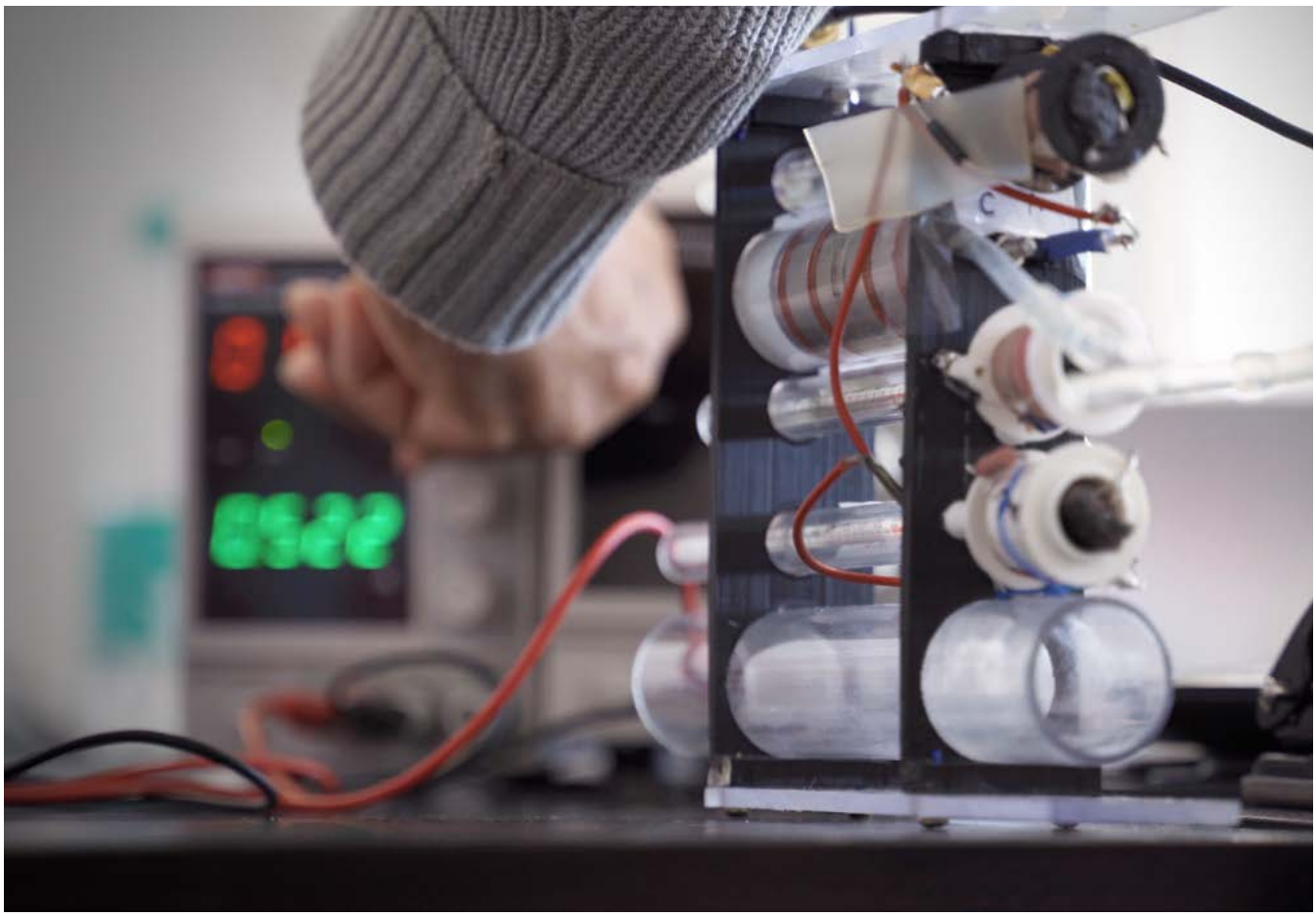
Since LENR reactions do not produce greenhouse gases or other pollutants associated with fossil fuel combustion, widespread adoption of LENR technology could help mitigate climate change and reduce environmental damage.

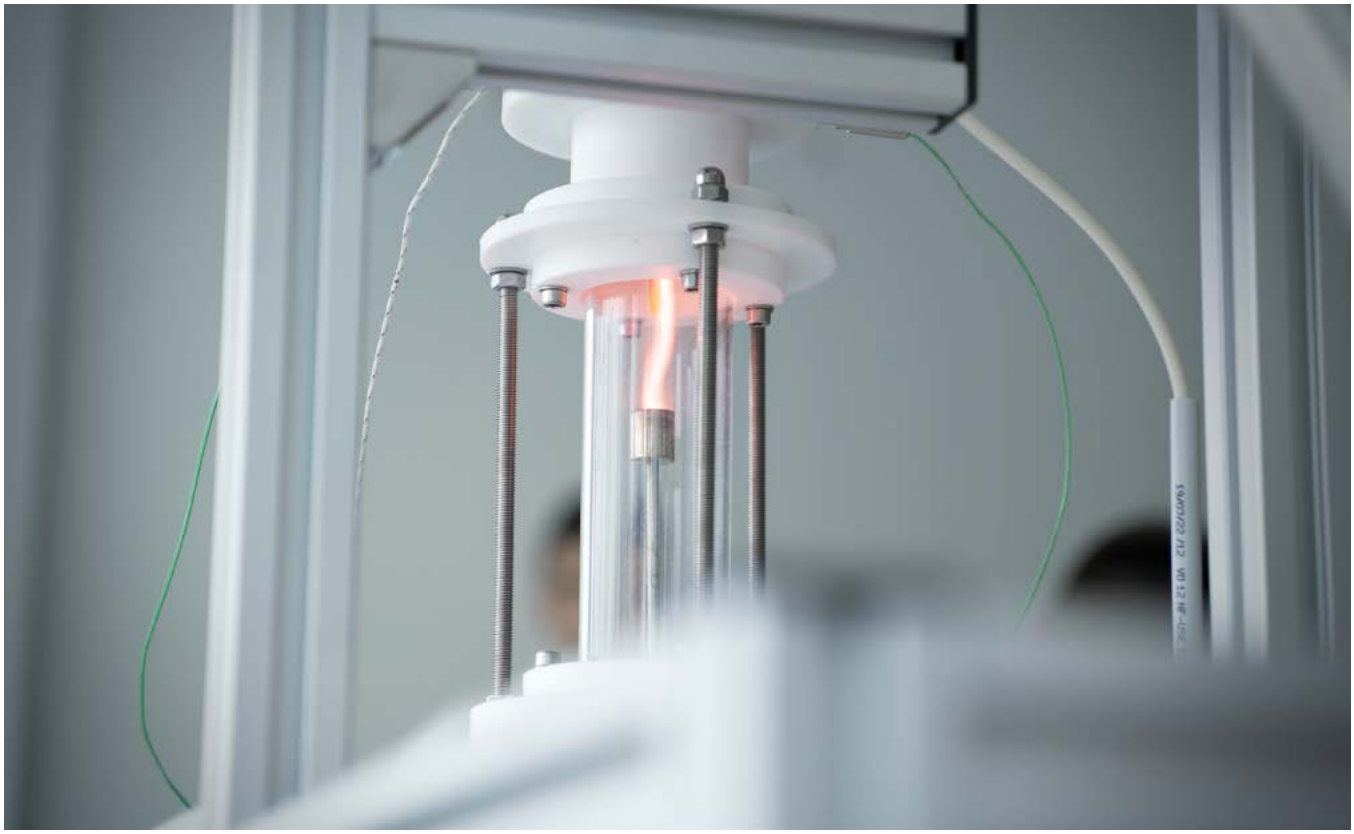
Nick Dimmock

Potential for distributed energy generation

LENR reactors could potentially be scaled down to smaller sizes, enabling distributed energy generation. This could empower communities and regions to generate their own energy locally, reducing reliance on centralised power grids.

While this technology has been in development for a long time and is still met with scepticism, I have very recently seen





scientists produce LENR in 'EnergiCells' capable of outputting up to five times more energy than went in at both the UK Atomic Energy Authority (AEA) at Culham Science Park in Oxfordshire and the IEP Instituto Electrotecnico Portugues in Portugal.

Many scientists remain cynical due to the absence of a widely accepted theoretical framework explaining the observed phenomena, but there are other natural phenomena that warrant exploration including, for example, the use of water as fuel.

Water doesn't follow the usual rules of chemistry which would indicate that on Earth, as water should technically, be a gas! Why does hot water freeze faster than cold water? And why does ice float? Water has many remarkable features that not even the world's top scientists can understand or explain. Could the use of water as a fuel source for LENR be the answer to all our problems?

What we do know is that collectively 30 private fusion companies have raised more than £5bn in the last two years with the aim of developing fusion reactors within the next decade or so.

In 2024, we absolutely must focus on leveraging tech solutions for climate change, now.

Furthermore, artificial intelligence and the Internet of Things (IoT) are integral to tackling some of the challenges associated with carbon and energy management. It is imperative to make the management and monitoring of emission reductions more efficient, transparent, and effective. For example, the use of technology for transparent measurement and reporting, and the use of intelligent automation for the purposes of abatement management.

To conclude, clean energy and environmental industries must continue to innovate better and create more effective solutions if we are to accelerate progress on reducing GHG emissions to a level where we can make an impact. Inevitably this will require investment to ensure new technology is effectively developed at pace, commercialised, and deployed.

We need to create investment funds that are specifically designed to support portfolios to tackle the most urgent needs and help avert the irreversible effects of climate change.

Overall, investing in new renewable energy technology is essential for addressing climate change, promoting sustainable development, enhancing energy security, and fostering economic prosperity.

Institutional and private investments are crucial to building a sustainable future. While well-established renewable energy sources such as wind, solar and hydro offer long-term and sustainable solutions to the world's growing energy needs, and unlike finite fossil fuels, offer an inexhaustible, stable source of energy, we must prioritise these renewable technologies. And we must look further ahead to future fuels and innovation that supports what we are already working with.

While investing in breakthrough technology involves risks, it also offers the potential for significant returns. Early adopters of transformative technologies can capture substantial market share and reap rewards as the technology matures and becomes more mainstream.

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About 350 PPM

350PPM is on a mission to reduce the amount of CO_2 in the atmosphere to 350 parts per million and reduce CO_2e, equivalent greenhouse gases, to similar levels.

It operates as a central legal entity whose purpose is funding and assisting breakthrough environmental businesses. As a result, the companies selected for its portfolio are those that can make the biggest impact on reducing the level of CO_2 per USD invested.

It serves as an incubator and accelerator, participating directly in the development of client companies to support success, and its portfolio currently includes Eng8, Megawatt Mosaic and GreenMine.