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POWERED BY PLASTIC

Keith Allaun, CEO of PowerHouse Energy Group, speaks to **Jo Gallacher** about the company's pioneering EfW system

Call it serendipity or good judgement, Keith Allaun has always seemed to be in the right place at the right time. After graduating from Stanford University, California just two years before the launch of the Macintosh computer, he witnessed the dawn of the personal technology age at Silicon Valley origins. Allaun spent the next 25 years working for Apple, Amazon and various energy companies, which worked to reaffirm the potential of technology that could be harnessed as a force for good. This has inspired his latest venture – PowerHouse Energy Group.

The UK-based energy company says it has pioneered the industry's most 'efficient, economical and environmentally friendly' Energy from Waste (EfW) system on the market. Its process uses thermal conversion of waste and biomass to produce a syngas, EcoSynthesis, which can be used to produce liquid chemical precursors, generate heat and electricity and extract hydrogen.

By using just half an acre of land to build a site, Allaun says the process can generate enough electricity to power 1,500-2,000 homes per year. If used to extract hydrogen, this could fuel 200 consumer vehicles or 50 HGVs for 300 miles each per day. The benefits to the environment are obvious: cutting emissions and diverting waste away from landfill.

Allaun says: "It's been a five-year rollercoaster of technology, exploration, alleys and dead ends and eventual advances in technology which has allowed us to finally catch up with the vision for technology to convert waste into energy efficiently. It wasn't about burning it and turning it into more CO₂, but effectively extracting the energy and maximising it. We used hydrogen to completely offset the carbon being generated through this intense gasification process."

Allaun is under no illusions of the monolithic challenge plastic pollution poses to the Earth and its complex ecosystems. He adds: "You have to participate in your own rescue. It's absolute naivety to believe that we're going to get there without taking a series of steps. We're not the silver bullet and we don't claim to be."

He can be excused for becoming seemingly impatient with the level of progress of the UK energy market. PowerHouse Energy's technology has been five years in the making, and despite lots of promising innovations currently being developed, the difference is this technology is ready and roaring to go. All it needs now is the backing of an investor to showcase its potential.

Allaun says: "The reality is that we're going to start seeing cost go down as we build more of these things, eventually we will be able to create one of these that is standalone, and you can drop it off in the back of a trailer."

Plastics to energy

All waste plastic can be used within the process, from headache-inducing black plastics to everyday beverage containers. Inevitably, the process creates a by-product, but wherever possible, metals are

extracted and recycled. Many anti-EfW critics argue plastics should always be recycled rather than being broken down. Yet Allaun says he is more than happy to wait for the materials to reach their recyclable limit before being used in the process.

A hydrogen future?

The challenge for Allaun and his team now is to push the case for hydrogen as the energy technology of the future. For the past 20 years, electric cars powered by lithium batteries have been on the rise, demonstrated by Kia's electronic e-nero, voted *What Car?*'s Car of the Year 2019. With lots more charging points planned to be installed up and down the country, the weight of UK policy seems currently to be swaying in the direction of lithium.

Allaun says: "The idea that we're going to 'de-dieselise' this country in the next five years is absurd. The only thing that motivates a country to move that

quickly is its threat of survival, and we've not recognised that yet."

Allaun will not be short of competitors either, given government, consumers and businesses have already backed a number of other renewable energy technologies such as solar and wind. As more alternatives come onto the market, is our push towards divestment being compromised due simply to too many options?


"I don't care how much wind or tidal energy we create, it's never going to be enough," he says. "There are countries in this world where 70% of the population still doesn't have electricity. The amount of waste per capita continues to grow throughout the world and we're

Keith Allaun CV

Keith Allaun grew up in Panama in Central America before travelling to California to study biology at Stanford University. After his hopes of becoming a professional surfer were diminished, Allaun began working for a computer consulting firm, which led him to work at Apple Computer in 1986 – shortly after the launch of the Macintosh.

Allaun worked with Apple in Silicon Valley where he met with entrepreneurs who went off to start companies including Netscape, Yahoo and Tandem. He then went on to work for HP and PwC and a handful of start-ups.

He became involved in venture capital at the University of Florida before moving to Australia to launch an energy company in Queensland. It was this experience which set him up to take over PowerHouse Energy Group five years ago, where he cleaned up the balance sheet, turned it over to management and helped progress the technology.



“The only thing that motivates a country to move quickly is its threat of survival, and we’ve not recognised that yet”

going to have to find more effective ways of doing it, and burying it in holes is not an efficient mechanism.”

PowerHouse Energy Group is currently in talks with six prospective clients looking to implement the technology, including motor giant Toyota. All customers are situated near people managing waste issues, interested in having a regular flow of hydrogen and have regular access to plastic waste.

Despite his plans for a global roll-out,

Allaun considers the EU as the strongest market for the technology to grow due to already high recycling rates and more environmental political will. He says: “Where the levels of recycling are the highest are where our greatest opportunities exist. Even if they’re recycling 90% of plastic, the 10% left is just sitting there. Let’s take advantage and extract everything we can. We take the waste, turn it into energy and add value to people’s lives.”

Allaun is ebullient and bubbling with excitement about his company and the role it could play in preventing the plague of plastic pollution. Though PowerHouse Energy Group is currently small and relatively unknown, a mixture of good judgement and serendipity may be all it needs to change that. **RWW**