

British technology ready to solve UK/Malaysia plastic waste crisis

A newly commercial British technology which converts waste plastic into clean energy is ready to solve the problem of waste plastic from the UK ending up in vast mounds in Malaysia, graphically exposed in the first part of BBC1's shocking documentary 'War on Plastic with Hugh and Anita' aired last night.

This technology, which has been ten years in development by British company PowerHouse Energy, is known as DMG® (Distributed Modular Generation). It takes non-recyclable mixed waste plastic and through a chemically engineered process operated at very high temperatures it vaporises the plastic in the absence of oxygen to produce gas which comprises hydrogen, methane and carbon monoxide. The hydrogen can be used to power vehicles, typically using hydrogen fuel cells, and the other gases in the mix can be used to generate electricity.

Research and Development has been undertaken in conjunction with University of Chester with a demonstrator unit being located on the University's Energy Park in Thornton. The technology received independent validation that it works in November 2018 from DNV-GL, one of the largest companies in the world which independently certifies new technologies.

A key attribute of this technology is its relatively small size and modular construction meaning it can be located where the waste is situated and it needs only half an acre of land to operate on and can be up and running in just 10 months. And the beauty of the system is the proportion of gases produced can be adjusted to meet the specific needs of the community in which it is located.

A typical DMG® powered plant will convert 1 truck full (25 tonnes) of plastic waste a day into enough energy to power 4,000 homes for 24 hours and 60,000 miles of hydrogen powered car motoring or for 20 HGVs each to travel 300 miles.

And this process has the benefit of producing clean energy at a commercially attractive price, in particular with regards hydrogen, the cleanest fuel on the planet, which is produced at a cost that competes with that of diesel and petrol.

This technology which recovers energy from plastic waste is also highly complementary to the numerous other technologies and approaches which are being used to reduce, reuse and recycle plastic waste, all of which are required if the war on plastic is to be won.

A compelling example of how this technology will use plastic that may otherwise end up in Malaysia, or indeed that which is shipped back to the UK, would be to locate a DMG plant on a UK waste management sites and on the same site locate a hydrogen fuelling station to power super-green hydrogen powered local buses to servicing the local community. In particular, this would provide an immediate solution for those councils which have found, to their embarrassment, their recyclable plastics being destined to end up on a rubbish tip in Malaysia or elsewhere.

Furthermore, DMG® technology can be utilised to directly benefit Malaysian communities where the plastic waste could be used to generate electricity for areas which currently have no or very limited access to the electricity grid. A local plant using just 25 tonnes of plastic waste would create circa 58 MWh of electrical power per day, enough to provide for communities of several thousand people in the developing areas of Malaysia.

“We can do this and relish the opportunity to show just what can be achieved with our energy recovery process, which alongside other commendable initiatives being deployed is the responsible thing to do”, commented PowerHouse Energy’s Chief Executive, David Ryan, the man behind the company that created this exciting technology.

He adds: “Our process regenerates the energy contained within the plastic, producing a clean gas for electricity and hydrogen for road transport, the cleanest fuel on the planet, at a cost which makes it a realistic contender to replace petrol and diesel, and that has to be a benefit to all of us everywhere.

“The scope of application for this technology is truly global and with the support we are seeking from governments and commercial partners across the world it is ideally placed to make a significant impact in helping win the war on plastic.”

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Notes for editors:

About PowerHouse Energy and DMG technology

PowerHouse Energy has developed a proprietary process technology - DMG® - which can utilise waste plastic, end-of-life-tyres, and other waste streams to efficiently and economically convert them into syngas from which valuable products such as hydrogen, electricity and other industrial products may be derived. The PowerHouse technology is one of the world’s first proven, modular, hydrogen from waste (HfW) process.

To provide an idea of the impact the DMG® process could have consider that If just 10% of the plastic waste produced annually in the UK was to be utilised using the DMG® process it would power 90,000 homes, supply hundreds of industrial estates with heat and fuel the equivalent of 122 million clean HGV miles (and in the process displace 10 million gallons of diesel fuel); and all of this every year.

For more information see www.powerhouseenergy.net