

## Interview with Chris Williams, PREL



In March 2011, Chris Williams, Managing Director of PREL, spoke with Tetronics' Marketing Department to discuss why PREL had chosen plasma processing and Tetronics to underpin their EnergyPark in Peterborough and beyond.

### ABOUT PREL

Peterborough Renewable Energy Limited was established in 2002 by a group of local business men to realise their passion for managing material in an environmentally friendly manner and to eliminate the need for landfill sites. The development of the EnergyPark provides the platform to turn this vision into a reality. The park comprises of zero landfill technology creating value from all materials generated. The EnergyPark increases the proportion of waste materials that can be recycled and provide renewable resources.

The company aims to provide solutions to specific waste and energy issues faced by private and public bodies through the selection of best available technologies.

### ABOUT TETRONICS LTD

Tetronics Ltd is a global leader in the supply of Direct Current Plasma Arc systems for a wide range of applications including Waste Recovery, Hazardous Waste Treatment, Metal Recovery and Production Processes. Tetronics' capabilities encompass everything from initial testing of the process material, through design, supply and onsite installation and on-going support of full commercial plants.



## TETRONICS: CHRIS, WHAT WAS THE BACKGROUND TO THE PETERBOROUGH ENERGY PARK?

**CW:** Our primary goal with EnergyPark Peterborough is to eliminate waste and generate energy without being reliant on landfill, or secondary power generation. As well as ensuring the park was sustainable, we also wanted to realise value from the waste it generated – we knew that plasma technology could help us remove the need for landfill and essentially started from there.

With my background and experience, I knew that plasma was a good option to help us achieve these goals – particularly around extracting value from the energy process. It would also allow us to scale up to accommodate the running costs of the park, and would mean that our waste contractors would see no difference in terms of how they dropped off waste. In a broader sense, it would help us service the wider needs of the community; the public would see us as a power station, the waste management companies as a processing plant and the environment agency as a production facility, albeit Waste Incineration Directive (WID) compliant.

## T: WHY DID YOU SELECT TETRONICS AS THE PLASMA OPTION FOR THE PARK?

**CW:** We had originally selected an American supplier. However, it soon became clear that while the secondary product produced by their processes was good, the volume throughput was significantly lower than we needed and there were a number of commercial difficulties. Ultimately the cost to benefit ratio didn't stack up.

We had been tracking Tetronics since 2001. We watched their progress and their technology met our needs. We decided to make the switch from an American supplier to a UK one - a switch we are very proud of.

When we were going through our second round of planning applications we talked to Tetronics about submitting Fly Ash management proposals. It became clear to us that this represented exactly the right technology at the right scale. They matched our requirements in terms of tonnage, and the fact that they were a British company made them an ideal fit. Wherever we can we try to support British manufacturing and welcome the carbon benefits of machinery being UK sourced.

“ Plasma is the most viable and flexible recycling system for APC residues. ”

## T: WHAT IS THE SCHEDULE FOR THE ENERGY PARK, AND WHAT ELSE DO YOU HAVE PLANNED?

**CW:** The construction will start in the summer of 2011, and it is expected to last for 3 or 4 years. The plasma unit is scheduled to be commissioned 24 months into the build period. This will be the first of the UK Green EnergyParks, as well as the first commercial UK APC residue plasma treatment facility.

## T: HOW CRITICAL IS THE PLASMA PART OF THE FACILITY?

**CW:** We simply couldn't do this without the plasma element – the plasma part contributes to helping us maintain zero landfill status and this was the core driver for the project. We wanted to recover value from the process and eliminate as much waste residue as possible so plasma was the obvious choice. It's the most viable and flexible recycling system for APC residues.

## T: DO YOU HAVE OTHER SIMILAR CONCEPT PLANTS IN THE PIPELINE?

**CW:** Yes, we're in Pre-Application Consultation in Scotland for an EnergyPark incorporating two plasma units, at an outline stage for an EnergyPark in Calgary, Canada, with a further two projects at early stage in the UK. For future projects, plasma is absolutely critical, allowing us to effectively eliminate waste at each of our EnergyParks, whilst ensuring a low or negative carbon footprint. What is key to the success of our plants is that we create energy from the biomass fraction in waste in a responsible manner.

## T: HAVE THERE BEEN CHALLENGES AROUND UNDERSTANDING HOW PLASMA CAN HELP ACHIEVE THESE OBJECTIVES?

**CW:** In the early days no-one knew what plasma was - or what advantages it could provide for waste management, and we spent most of 2000 to 2004 working on educating the various stakeholders as to the advantages of using the technology. Given that my personal history contains a background in working with plasma, I inherently knew this would be a good solution.

Due to the clear environmental benefits of using plasma, once people understood it, it was also the first part of the project that was readily acceptable to and supported by the public. The technology has been around for a long time, although there is still a need for education, particularly in the UK. Japan and France have been using the technology since 1989/90, and a plant in Sheffield, UK, has been operating for 15 years, using steel dust instead of waste ash, but actually using the same plasma technology we'll be using. This proves that the technology is stable, and we've been able to see for ourselves how well it works.

## T: WAS THERE ANY CONCERN ABOUT THE POWER CONSUMPTION NEEDED FOR PLASMA?

**CW:** In short, no. This issue is always overstated. Power would be needed for any solution, and due to our

EnergyPark model we actually create energy excess, and even with plasma recycling of the minerals that are captured in the process, we still have plenty of power to export and sell. Whilst plasma does of course use power, here it's not an issue because of the design of the system.

It's also worth considering that even if we didn't use the plasma in this process we would have to then truck fly ash and debris residues around, which would in turn use more total energy than plasma to dispose of.

The important thing is to look at the whole process and not a single element of it. We know plasma can be commercially beneficial, which is one of the reasons the Tetronics solution was so good.

“ We know plasma can be commercially beneficial. ”

## T: HOW HAS IT BEEN WORKING WITH TETRONICS?

**CW:** We are delighted with the performance and service of the team – they are extremely dedicated and are incredibly knowledgeable about not only their industry, but ours too. In my experience this is unusual in this sector. We are continuing to work closely with Tetronics as a strategic partner in this process.