Interview: Paula O’Neill – Managing Director, Premium Power, Ireland



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Paula O’Neill, co-founder and MD of Premium Power, an Irish electrical consultancy, highlights the importance of having safe, resilient and efficient electrical systems, particularly in high-tech industries like pharmaceutical manufacturing, and her growth strategy for Premium Power in the next few years.

Can you give our international audience an introduction to Premium Power?

Premium Power is a specialist consultancy that aims to address the key and related issues of resilience and safety in electrical systems.

Our founders saw that many large companies in high-tech sectors like life sciences manufacturing, pharmaceutical, semi-conductor manufacturing and data centers were seeing disastrous consequences from intermittent disruption to their electrical power supply.

What was the gap you identified within the market?

Our initial focus was on power quality. Poor power quality in electrical systems can have a very negative effect on equipment in the sensitive manufacturing environment. There is a double whammy where equipment in these advanced processes distorts the power on the network while being itself very sensitive to electrical disruptions.

Our role is to come in, identify the problem, fix it and put measures in place to ensure the processes could run efficiently and without downtime.

The concept of energy management has become very important in the past five years, particularly with the advent of ISO:55000, which is seen as the gold standard for energy management. Pharma companies in particular want to demonstrate that they are running energy programs and systems for the future by measuring what is being used and trying to minimize usage as much as possible.

Surprisingly, many energy efficiency projects have reduced the reliability of industrial power systems. A major reason for this is the introduction of a type of motor controller called VSDs (Variable Speed Drives). VSDs are used to control motor speed, facilitating the reduction of energy consumption to match demand. The problem is that these drives themselves can have a very negative effect on power quality. In recent times, we have worked on ISO:55000 projects to address both energy efficiency and power reliability. This holistic approach brings a clear payback to our clients.

How are you addressing site safety in the pharmaceutical sector?

About ten years ago, we received requests from a number of large US multinational clients to run Arc Flash studies on their sites.

An electrical Arc Flash is a short circuit that results in an extreme thermal blast and shockwave. It can be extremely hazardous to any worker in proximity to electrical equipment. In Europe, in contrast to the US, Arc Flash is poorly understood. Such incidents are rarely recorded as Arc Flash events but rather as electrical shocks or electrical explosions.

An Arc Flash study models the electrical infrastructure of a site, identifying the potential energies that would be released during an Arc Flash incident at any given point on the network. This lays the foundation for the treatment of the hazard, allowing sites to control and mitigate the risk to personnel.

In addressing this hazard, we have become the market leader in electrical safety generally. We help sites to develop effective risk assessments and workable procedures. In fact, we have been speaking at our own events and other conferences across the UK and Ireland on the topic.

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For instance, at the MSD Ballydine site in Ireland, we instituted an 18-month electrical safety program to audit their entire electrical system, with four deliverables: an arc flash study, an update

of their risk assessment, a review of their procedures and an update to their change controls. It was the first time in Europe that a program like this had been implemented, and it was so successful that MSD then rolled it out across all its European sites. In 2015, Ballydine was nominated in the Health and Safety category at the Irish Pharma Industry Awards 2015.

How difficult was it to break into the market?

Fortunately, we build up an excellent reputation with our clients through our early days specializing in power quality. We have not ever had to rely on a traditional sales approach; on the contrary, our engineers on the ground and our specialist expertise have made it possible to engage our customer base with new and enhanced offerings.

At this point, we have actually worked with all the top pharma companies in Ireland in some capacity, which is a testament to the value we can offer.

Maintaining that word-of-mouth reputation is very important for us, particularly as Ireland is such a small country and the industry is very tight-knit.

What is the biggest challenge Premium Power is currently facing?

We see a lot more we could be doing with our clients. Our challenge is to move our customers up along the value chain, or what we call the ‘path to reliability’. This means away from firefighting as a reaction to problems as they emerge, up to what is known as the IEEE493 gold standard for reliability. The endgame is to work with our clients’ electrical systems and prevent problems from arising to begin with.

The main difficulty for us is to communicate and quantify the value of having a safe and reliable electrical system.

There is a strong link between safety, resilience and efficiency. Research by experts such as Ron Moore has demonstrated this clearly. We need to work to help our clients understand this and give them the tools and services to address it.

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In practical terms, this means making greater use of electrical system modelling. When we use models to address Arc Flash hazard, the model can actually be used to address many other problems related to electrical capacity, reliability and energy efficiency. This is precisely what we are doing on many sites. It can improve decision-making around changes to processes, integration of renewables and power factor correction.

For instance, in 2013, we worked with four pharma companies in Lower Harbor, Cork, to install wind turbines on site. Wind power is not a constant supply of energy, so it was important that they reconciled that with the facilities' constant demand of energy. Our work was to design and commission the entire project for them, and this was another very successful project.

Our strategy is to construct a business case linking electrical safety to resilience and efficiency. Having all three of them together builds a good case for an engineering director to pitch his CFO for the budget to upgrade the electrical system.

What is Premium Power's positioning within the Irish market at the moment?

As we are such a niche company and our expertise is so specialized, we do not face any direct competition – we are in a league of our own! There are companies out there who look at power quality, but they cannot offer the solutions we can, in terms of the overall package promoting safety, reliability and efficiency.

The pharma sector would have been 60 to 70 percent of our business up to two years ago. We have also seen a reassuring shift from their demand for our firefighting services to our optimization and reliability services. A new growth area for us would be data centers, who have a great need for our services. The demanding nature of the pharma industry's electrical systems means that we would have built up our service and product offerings to a very high standard, which puts us in a good stead to move into the data center market.

We also have quite an international footprint, operating across Europe for our pharmaceutical clients but also globally for our data center clients. I would say the US is still leading the industry in terms of electrical safety; it is the American companies that are driving industry standards, but Ireland is very much ahead of the rest of Europe because we have taken our guidelines from the US. We now have an office in the UK and are developing our business there.

What sort of innovations are you bringing to the market?

We look to meet our clients' needs as best as we can and we are continuously improving. For instance, we now have staff working on client sites on full-time electrical safety programs, because there is so much work to be done that our clients have requested to station one of our engineers on-site for a year to implement the necessary solutions. We have people on two sites at the moment and we are looking to expand on that as it is a more efficient way of improving their systems.

We also have developed a product called **SafeSite Live**, which is a contractor and permit management system. This can really help drive safe behaviors, through its permit management, induction coordination and incident reporting. It integrates with engineering tools like Building Information Modelling (BIM) drawings and single-line diagrams that facilitate site visibility. Given our background, we take an engineering approach to the problem and we incorporate that expertise into our software. For instance, before telling someone to work on a system, **SafeSite Live** allows the contractor to first visualize the problem on screen, as well as suggest potential solutions. A number of our pharma clients have seen the first-release beta version and we have received very good feedback on it.

Ultimately, we want to ensure that our clients have the best solutions for their problems and needs, whether it is a matter of hardware or software or consultancy expertise.

Looking forward three years, where would you like to see Premium Power?

We have a stable footprint within Ireland but we want to increase our presence on existing sites. We also want to move our clients and the industry at large further up the value chain, so that it is less focused on firefighting and more on having an optimized electrical system and a safer system that uses available information in the best way. We would also like to strengthen our presence in the UK.

We have worked hard to develop trusted relationships with our clients and we want to continue to be seen as an electrical consultant of choice.

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