

# SPE Energy



Left to right: John Skipper LLB FloD, director with Jeff Jones CEng MIET, technical director and Mike Porter, sales director



Our office and factory in Abercarn, Wales - our small size means we can quickly respond to customer needs

Access to a safe and reliable power source is one of the most fundamental requirements for all businesses, anywhere in the world. SPE Energy help make that happen by designing and manufacturing innovative, high-quality medium voltage switchgear panels and circuit breakers that are cost-effective, environmentally-friendly and safe. From airports and hospitals to breweries, refineries, mines, smelters, factories, electrical distribution networks and nuclear plants, they work with clients in any industry, anywhere in the world. Amongst others these include Cardiff Airport, London's Royal Free Hospital, Croydon University Hospital, Premier Foods and Top Energy NZ. John Skipper, director, explains how the business has evolved.

Our business is almost unrecognisable from the venture that started in 1983, when our focus was on the North Sea oil industry. We've changed our name from Systems Power Engineering to SPE Energy, and our home to Abercarn in Wales. Most important, we've grown to become the only small, independent UK company that manufactures its own circuit breaker mechanism.

The pace of change has heated up in the past few years. In late 2014, we undertook a fundamental review and realised it was decision time with regards to the fate of the business. It was clear that many of our systems and processes needed modernising. We have upgraded all our computer systems and processes, particularly to improve production, and we totally revamped our management systems. Crucially, we started a major investment programme to improve our SPE product range and develop new solid di-electric switchgear control panels and ring equipment for Brecon Energy (BE), a subsidiary we established with Elmecon Ltd, a switchgear design business, in 2015.

## FACTS ABOUT SPE ENERGY LTD

- » Directors: John Skipper LLB FloD, director, Jeff Jones, CEng MIET, technical director, and Mike Porter, sales director
- » Established in 1983
- » Based in Abercarn, Wales
- » Products: MV switchgear and circuit breakers
- » Services: HV/MV switchgear product and systems design, manufacture and control
- » No. of employees: 20
- » SPE Energy and joint venture partners have invested over £3 million in R&D over the past three years
- » [www.speenergy.com](http://www.speenergy.com)



We have installed Orion in a number of key sites, including Croydon University Hospital

## » KEY DEFINITIONS

**Circuit breaker:** an automatic and manually controllable medium voltage switching device for stopping the flow of electrical power acting also as the principle disconnection point in the event of abnormal destructive power flow conditions.

**Switchgear:** generally located in purpose built substations and defined as “the aggregate of switching facilities for power stations and/or points of electrical distribution”.

**Solid di-electric switchgear:** equipment using an alternative insulating material, to replace a gas called SF6, which is damaging to the environment.

**Arc-proof switchgear:** is designed to protect the operator of the equipment by redirecting any electrical arcing containing destructive power up and out of the equipment.

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## Fruits of our investment

We are now about to enjoy the fruits of more than £3 million that we and our joint venture partners have spent on research and development in the past three years, marking the start of a major new chapter for the business.

With these funds we have developed high-quality new products. This includes our ‘Orion’ integrally earthed switchgear panel, incorporating a vertically-isolated horizontally withdrawable vacuum circuit breaker. It’s named after the constellation you can see from anywhere in the world.

Not only is Orion a clean, environmentally-friendly product, but it’s also arc-proof to deliver enhanced operator safety. In the unlikely event of an internal fault it is designed to deflect any hot gases produced to the rear of the unit, away from the operator. To further enhance operator safety the vacuum circuit breaker truck assembly is optionally fitted with local or remote electrically operated (motorised) raise and lower facilities. All circuit breakers have the facility for local and remote control.

Orion is symptomatic of our focus as a business in 2018, which is to provide products that are innovative, cost-effective, reliable, safe and green.

They are also of a high quality and intended to last for decades.

We have installed Orion in a number of key sites including Croydon University Hospital. Our challenge there was to replace a switchboard within the original space, while avoiding interruption to the power supply – essential when nearly 120,000 people attend its Accident and Emergency department each year alone.

Another client, food manufacturer Premier Foods, needed to upgrade some of its existing switchgear panels that contained oil insulated breakers with a more environmentally-friendly product. They chose one of our new specially designed retrofit vacuum circuit breakers to fit their existing panels, prolong the life of the equipment, enhance safety and obtain benefits from reduced maintenance costs, with no need to test or change oil.

While our major recent investment drive may be complete, we don’t plan to stop there. We will continue to heavily invest, because we don’t believe that any switchgear company can thrive unless it’s continually investing in research and development.

## A big opportunity

Our investment in R&D over the past three years puts us in a strong position. For a small, innovative British business like ours, with the right products and highly skilled employees – and the ability to attract more experts to grow the team – the opportunity is great.

Why? First, because rapid advances in technology are enabling SMEs like SPE and BE to mass produce products at the same quality as much larger businesses. That wasn't possible just 10 years ago and marks a major change.

Similarly, information and data is accessible to entrepreneurs in a way it has never been before – again, this means large organisations don't have the same advantage they did in the past. Coupled with this levelling of the playing field is the smaller companies' ability to be nimble and respond more quickly to customers than their larger competitors.

Finally, helping companies that want to take advantage of this entrepreneurs' nirvana are the various government schemes on offer. In our case, we secured Innovate UK funding in late 2017 for developing a novel new solid dielectric product for BE called GENiSYS I, for use in primary distribution networks. We have also benefited greatly from export services provided by the Department for International Trade, formerly UKTI, which has helped us hugely to break ground in new markets such as Oman where SPE has appointed a distributor. UK Export Finance is a key enabler for exports.

## Retrofitting in the Commonwealth

Commonwealth countries in particular provide ripe business opportunities as much of the switchgear used in the Commonwealth and across the Middle



We thrive because of our employees' deep expertise

East, Africa and South America is reaching the end of its useful life.

We're excited about reinvigorating old trade relationships with Commonwealth countries and beyond. We operate in a global market and are working hard to internationalise so that we can serve any type of business, anywhere in the world.

“We operate in a global market”

## » SPE ENERGY RETROFITTING IN A NUTSHELL

Switchgear equipment is generally segregated into two parts. The first part contains all necessary electrical control equipment and wiring, also protective devices which detect abnormal external electrical fault situations. The second part contains the main circuit breaker with capabilities of breaking normal and abnormal electrical power flow. Customers typically have a choice between replacing everything with brand new equipment, or they can have vacuum circuit breakers retrofitted to existing panels with superior electrical performance when compared with the existing circuit breaker.

That's where we come in, with our environmentally-friendly solutions. While most existing circuit breakers rely on unfriendly oil or SF6 gas as insulating materials, which are damaging to the environment and dangerous, our circuit breakers use vacuum technology. Retrofitting in this way not only saves time and capital expenditure, but also reduces the amount of electrical disruption to the site, is safer, contributes to carbon reduction and is more environmentally-friendly. By retrofitting, we can potentially extend the life of the equipment for another 15, 20 or more years.