



Now is the time to take control of your energy usage!

The corona virus crisis has impacted every aspect of our lives and, let's be honest, the impact has been almost entirely negative, with many business premises currently standing unused and unstaffed. So, if you're a facilities or operations manager, taking control of your company's energy usage may well be the last thing on your mind. But, says Julian Grant of **Chauvin Arnoux**, this is actually a very important time to be ensuring that your business is not using and paying for energy it doesn't need.

"Why would I bother looking at energy consumption when operations have stopped, and offices are virtually empty? Surely there is no energy usage to speak of in such circumstances?"

Although this might at first sound like a valid thought, dig a little deeper and you will find that according to a survey carried out by **British Gas**, up to **46%** of the electrical energy used by SMEs was consumed outside normal business hours. And, when a business is shut down because of the coronavirus, all day every day is "outside normal business hours"! With that startling **46%** figure in mind, it's clear that energy usage during the shutdown is something that's well worth investigating.

The key to gaining accurate and dependable information about your electrical energy usage is to use a portable energy logger (PEL). These versatile instruments can be easily installed at a distribution switchboard where they will monitor and record energy usage, along with a lot of other useful information. Some types can monitor multiple circuits simultaneously, which makes it easy for you to collect separate information for energy used by lighting, by HVAC systems, by machinery, by IT installations and so on.

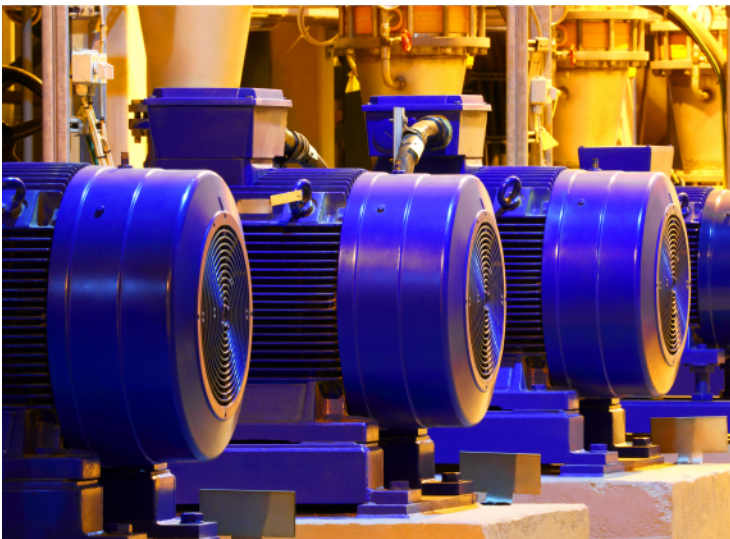


PEL 103 in action.

A PEL is an all-in-one instrument that measures a whole range of electrical parameters, such as voltage, frequency, current, real power, reactive power, harmonic levels and more. Crucially, the PEL doesn't only measure these parameters, it also stores the results over a period of time that can range from a few minutes to months. This is essential, as some key issues, like equipment that is not needed during the shutdown but is still switched on and off automatically by a timer, can only be identified by looking at time-stamped energy usage records.

Built with ease of use in mind, the best PELs have a large easy-to-read display and a clear logical menu system for selecting the parameters to be measured, stored and displayed. The ideal PEL should be supported by powerful yet intuitive software that can be used on a PC to analyse results. Further, in many applications the ability to monitor and analyse results in real time is valuable. A good PEL will be suitable for use on single-phase, split-phase and three-phase systems and will be designed so that it's easy to install – ideally without the need to turn off the power.

Another thing you should perhaps consider is the energy saving opportunities associated with individual motors. Motors consume around **40%** of all electricity used worldwide, and account for more than two-thirds of the electricity consumed by industry. Their performance degrades over time, and combined with advances in technology over the past few decades, replacing old motors can easily improve efficiency by **20% to 30%**.



The cost of running a motor for a year can be **10 times** what it cost to buy it in the first place, and most replacement programmes will have a payback time of 1 to 3 years. The efficiency of your motor operation is therefore critically important if you're aiming to lower your carbon footprint and reduce your energy bills.

Start with your biggest motors first, because this is where you're likely to be able to make the biggest savings. It will often be worth installing a PEL either temporarily or permanently, as this will provide a lot of useful information.

The log will, for example, show exactly when the motor was running, which is important because a good way to waste energy is to leave the motor running when it's not needed – during tea and lunch breaks, for example.

Data from the PEL will also let you work out whether the motor is oversized. This is a significant issue because the efficiency of a standard induction motors falls as the load on it decreases and, below about **50%** of its maximum loading, its efficiency will be decidedly poor. So, if the log reveals that the motor spends its whole life lightly loaded, it might pay you to fit a smaller replacement.

Next, look closely at how the motor is controlled. If it has simple start-stop control – that is, it's either running at full speed or stopped – you may well be able to make big savings by fitting a variable speed drive (**VSD**), especially if the motor is driving a fan or a pump.

You may be thinking that with the present restrictions on travel, you won't want to be visiting your business premises regularly to check on the data collected by a PEL. The good news is that if you choose a PEL from **Chauvin Arnoux**, you don't have to. Once the PEL has been installed you can access it remotely, so that you can safely and conveniently monitor energy usage and all of the other parameters it records from the comfort and security of your own home – or, indeed, any other location where you have internet access. The remote access feature is easy to set up using the PEL Transfer software package which is available free-of-charge from the **Chauvin Arnoux** website.



Buying a **PEL** can be a very profitable long-term investment and connecting to it remotely can give you valuable insights even if you can't regularly visit the site. Hopefully this article has shown you how a **PEL** can help you to save money in the present challenging business climate but, if you have questions or would like more help and guidance on achieving energy savings during lockdown please don't hesitate to contact **Chauvin Arnoux**. We'll also be happy to explain how your **PEL** can continue to provide valuable benefits when life returns to something nearer to normality. In the meantime, stay safe and keep an eye out on your **PEL** reports – you never know what efficiencies you may achieve as a result!



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