

We need to get energy efficiency back on track

September saw the launch of the Three Percent Club, a coalition of countries, businesses and international organisations committed to driving a 3% improvement in global energy intensity each year.

Launched at the UN Climate Action Summit in New York, the Three Percent Club seeks to address the fall in the annual improvement in energy intensity to just 1.3% in 2018, and International Energy Agency research showing that the right efficiency policies could deliver over 40% of the emissions cuts needed to reach the goals of the Paris Agreement, without requiring new technology.

So how do we achieve this annual level of improvement in energy efficiency? Improving energy efficiency fundamentally comes from three things:

- improving the efficiency of existing assets – the buildings, processes and systems we already have – through improved energy management (without significant investment into new equipment);
- improving the efficiency of assets and systems through investment into energy efficiency – investment that can either be purely driven by the desire to improve efficiency (retrofit), normal end of life upgrades (renovation), or investment in new facilities such as buildings and industrial processes; and
- changing the mix of the economy to more energy efficient goods and services.

To improve energy management of existing assets we need to improve training in energy management and increase appreciation of the value of good energy management among senior management people.

Systems such as ISO 50001: Energy Management can help do this. Policy measures should encourage the use of ISO 50001, through mechanisms such as Ireland's Large Industry Energy



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Network, the US's Superior Energy Performance programme or Sweden's programme for Improving Energy Efficiency in Energy-Intensive Industry, which provides a waiver on energy tax for companies that implement such measures.

We also have to recognise that, in many organisations, energy management is under-staffed and so the use of newly emerging AI systems to optimise energy use in buildings and processes will become more attractive as they get cheaper and more capable.

Rate of investment

Clearly we need to increase the rate of investment into energy efficiency in all forms but we also need to improve the quality of energy efficiency investments. Quality is improved by using standardised, state-of-the-art, project development methodologies such as the Investor Confidence Project's Investor Ready Energy Efficiency to develop projects that perform better. We can increase the depth of savings from investments by adopting integrated design techniques, an approach that is still woefully under used.

We also have to recognise that there are limits to how far any building or process can be improved by retrofitting. End-of-life renovation provides an opportunity to improve efficiency, an opportunity that is often missed or under-used.

Once a major renovation happens, the fundamental level of energy efficiency is locked in for a long period, twenty to thirty years or even more. It is critical that we make the most of each and every one of those opportunities to maximise the improvement in energy efficiency. This requires several things; policies that drive maximum efficiency and building capacity among senior management to ensure customers demand the highest levels of efficiency.

A third important factor would be banks and financial institutions lending for these kinds of projects working to ensure higher levels of

efficiency than simply 'business as usual' are achieved. Banks such as ING's commercial property division already do this by providing assistance and refusing to lend to low performing buildings.

For building and industrial process owners, just building a new facility to legal requirements (either planning requirements or even current best practice) and claiming it as energy efficient is not good enough. Owners need to demand the highest levels of efficiency and low carbon energy supply – this does not mean untested technology, just using existing technology in the best way.

The finance community

We need to build capacity on the demand side, the supply side and in the finance community. We need to ensure that senior managers know what is possible and actually demand high quality energy management programmes, high quality investments into efficiency and the use of integrated design. Leading companies, including Johnson Controls, Schneider Electric and 3M, have achieved more than 3% improvement in energy productivity per annum year after year, in some cases for several decades – so it can be done.

We also need to build capacity in the financial sector to understand, evaluate and invest into energy efficiency.

Changing the mix of the economy to more energy efficient goods and services is another area that we should not forget. Dematerialisation and integration of devices – such as smart phones replacing cameras, radios and just about everything else, helps. Switching to renewable energy supplies greatly helps as the inherent inefficiency of thermal power stations – driven by the laws of thermodynamics – is replaced by direct generation with no thermal processes with their massive losses.

The Three Percent Club is a way of focusing attention on the problem with a clear target against which progress can be measured. EnergyPro fully supports this new initiative. ●

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