

## Clyst Vale is Changing: Introduction by Bruce Greig, Head of Science

Clyst Vale is changing. We have been lucky enough to gain a place on the Ashden Awards Scheme in recognition of our plans to revolutionise our approach to energy usage over the next decade. The college's energy issues are highlighted at this time of year. How many people in the middle of December or January, with the central heating running, would then open and close the front and back door of their house simultaneously for five minutes once every hour? Over the lunch hour of course, this changes to opening and closing them once every few minutes!

The energy bills of households in the UK are set to increase by up to 50% in the next 5-7 years. The college is no different. We are the equivalent of many households in terms of our energy use, which has been steadily growing over the past decade.

Currently, the college has about 70 teaching spaces all of which are, of course, heated and well lit. Our numerous offices, student spaces, sports facilities, ICT rooms, not to mention the canteen along with a 24 hour ICT commitment are all essential to the day-to-day running of Clyst Vale. Bright, heated corridors connect our teaching spaces together, with outdoor areas well illuminated when required. All of this energy comes at a significant and growing cost to the college year on year. It is a cost that we are not willing to cut in terms of what we provide, but one that we are convinced that we can meet in a more sustainable, smart and economical way.

Most students never get a glimpse of the scale of what happens behind the scenes to keep them warm or cool and able to see the work they are doing. We have *two* electricity meters which are fed by our own miniature sub-station which had to be installed a few years ago due to our persistent habit of blowing the main fuse between us and the grid. Our *five* gas meters feed *twelve* boilers that heat the MFL, English, Post-16, Music, Science labs, Reprographics, Technology and Skills Room areas. Our annual gas usage is a *seven figure sum* (no, not pounds, but in terms of the meter readings which we take on a monthly basis presently). The main block, Giraffe House, Science, Maths and Sports Hall buildings are all heated by two oil-fired boilers, consuming between twenty-four and thirty *thousand* litres of oil per year on average. The college is also on metered water and so literally, every drop is paid for, whether it is for washing brushes in Art, filling test tubes in Science, washing up in the canteen or cleaning floors at the end of the college day.

As each morning at 8.50AM, a thousand student conversations give way to the purposeful hum of the college at work, it's almost possible to hear the various meters clicking away, much like the reels on a set of fruit-machines. The energy to feed the requirements of our thousand fluorescent lights, eight hundred networked PCs and monitors, seventy five digital projectors, two hundred radiators, eighty laptops, ovens, power tools, WiFi relays, servers, CCTV systems, water fountains and a myriad of other electrical devices flows constantly through our meters and into the college. We couldn't do without the devices we use, but we could use them much more effectively and less wastefully than we do currently. Ultimately, the future of any plans that we develop as a college depends entirely on our own behaviour and attitudes to energy usage. The future will be defined largely by rising demand and cost of global energy. Correspondingly, drinking and irrigation water in the face of rising sea levels leading to the growth of salt-marshes in coastal and inland areas places further pressures on our ability to remain successful as a species. Whilst we're not suggesting that Clyst Vale can solve any of these problems single-handed, we can allow our students to gain a perspective on these issues and then take action to address what *can be* done on around the college to preserve

resources, meet the needs of ourselves and others but in the main to save money better spent on resources and equipment for our students.

Our involvement with the Ashden Awards Scheme will allow us to make things happen. Whether this is as simple as turning lights off when rooms are not in use or something as important as our own renewable, microgeneration network equivalent in generating potential to a medium sized power station, the support of the scheme will be pivotal. With a wealth of experience and connections within the energy market, the award to Clyst Vale of a place on the scheme is recognition of the potential that we have to develop. Initially working with a representative from Okehampton College we will be undertaking an 'energy audit' to look at the current issues we face and the most cost effective ways to address them. We have already met with different energy suppliers, renewable energy industry experts, local companies and other institutions to learn more about what possibilities there are for meeting our energy needs. Our first surveys have already taken place and more are to follow of both our energy usage and then beyond this, possible schemes for the installation of renewable energy technology for microgeneration.

Our vision is ambitious but achievable. Within a decade, we hope to be energy self sufficient. Within fifteen years we hope to be supplying some of our community with some of its energy needs as well. Our commitment to our students remains the same as it has always been, to help them achieve their goals and realise their ambitions. The various projects which we have planned will save us energy certainly, as well as improve our long-term financial security, ultimately providing more resources for the college and its students. Some of the things we have begun doing and will be doing are going to cost almost nothing and could save us tens of thousands of pounds. Others will cost significantly more and could make us millions over the next 10-15 years.

The Ashden Award represents the beginning of something which is set to alter the way that Clyst Vale students, staff and hopefully people in our immediate community think about and consume energy. Clyst Vale is changing, but if we get it right, at least to start with, almost no one will notice. We will still be warm and the lights will still be on. The lights may be LED replacements for our fluorescent lamps; brighter yet requiring less power to run, some rooms may be warmed in part by the heat taken from our computer suites or extracted from the vast South-facing school fields. Toilets will still flush but using rainwater collected from our vast roof spaces instead of mains water from a metered supply.

Eventually, the College may even generate its own electricity from photo-voltaic cells, its own heat from biomass or biogas furnaces or any number of possibilities still to be realised. Our own behaviour however, must be the first thing to change. The ways that we currently use heat, light and electricity needs to be addressed. Some of our existing technology needs to be improved or used differently, some needs to be changed, but the only way we can make these systems work effectively is if we *all* appreciate the energy we use as a finite resource. If not the energy itself, the money that we use to pay for it is most definitely a finite resource and one that most of our staff and students could easily find many uses for. Halving our electricity bill, for example would allow for each and every student to have an additional £70 spent on their education - every year. A decade ago, schools began to consider that paper was a resource that could be used more sparingly and at the very least recycled by everyone who used it where possible. The term 'waste paper basket' is hardly, if ever, used these days by teachers and never by students and all teaching rooms have

recycling 'bins' for paper and card. The idea that incandescent bulbs would disappear from our shelves and that a 14 Watt bulb would be considered 'quite powerful' would have seemed like science fiction to Clyst Vale students even ten years ago. After recent research into domestic lighting, some 3 Watt LED systems could be the upper limit for a bulb you would want in a reading lamp.

Our journey with energy usage is about to move into a higher gear. The changes we will make are going to have a profound effect on our habits, our policies, our students but most importantly on our ability to decide how to deploy resources to sustainably improve the life of the college community for decades to come.

Interested in taking part in a more direct way?

Got a 'killer' idea for a project that would make us millions?

Know someone who could help us to develop or install a microgeneration project?

Contact Mr Greig or Mr Colin to find out more.