



# CARBON REDUCTION TECHNOLOGY

Smarter lighting by design

## Poultry Shed Lighting Upgrades

Waveguide Rods - The only true alternative to fluorescent tubes

- Reduce energy costs
- Discourage laying outside of nesting boxes
- 100,000+ hours operational lifetime

# Save time, avoid hassle, reduce costs

A lighting upgrade comes with multiple benefits including reduced energy costs and carbon emissions, and creating a more efficient environment for free range egg production. The high efficiency of LED technology makes payback via cost savings quick, and currently qualifies lighting upgrades for tax relief. The only question remaining is which LED technology do you go for?

## Discourage shed floor laying

Older lighting technologies, such as fluorescent tubes can degrade in both light intensity and clarity, resulting in areas of shade and shadow on the shed floor. These darker spots provide an enticing environment for poultry to lay outside of their nesting boxes, which can result in production losses and time wasted retrieving stray eggs from the shed floor.

The exceptional uniformity of Waveguide Rod lighting, combined with lighting design specific to your facility, eradicates areas of shade, discouraging hens from laying outside of the designated nesting areas.



## Benefits and features

- +50% energy / carbon savings
- Create a bright, shadow-free environment which discourages laying outside of nesting boxes
- Assistance with tax relief and funding applications
- Quick and easy installation
- Full package solutions available including installation, or we can liaise with your regular electrical contractor
- Ethical disposal of electrical waste, with audit paperwork

## Cut energy by more than half

To get the most from an LED lighting upgrade, it's important to choose a solution that features a hardy design and high quality components, which significantly extends the operational lifetime of the product. Lighting design with the intended space and internal features in mind is also crucial in creating a solution that completely removes areas of shadow and mitigates wasted energy where two or more lights are illuminating the same space.

A well designed solution can reduce lighting energy spend and carbon emissions by significantly more than fifty percent. Large savings result in a fast payback; even with an agricultural energy subsidy, it's possible to achieve full return on investment through cost savings within three years.

## Fluorescents will soon be unavailable

Fluorescent tubes, although currently widely used, will soon become obsolete. According to government policy, fluorescent tubes will no longer be manufactured in the UK from 2023 and can no longer be legally sold from 2025. In the short term this is likely to cause a rise in pricing for fluorescent tubes and potential stock shortages. Looking forward, owners of fluorescent lighting systems will no longer be able to replace tubes reaching the end of their useful lifetime and there is likely to be high demand for alternative installations.



## How are Waveguide rods different from LED tubes?

Waveguide rods are still powered by LED, and so benefit from the high efficiency associated with LED. Rather than a tube containing individual LEDs, which can be spotty and difficult to direct, Waveguide rods consist of a flawless acrylic rod with light projected in from either end. The rod acts as a mixing chamber, producing homogeneous light which can be very accurately directed through the application of a reflective surface to the top half of the rod, which is essential in an agricultural setting. Carefully designed heat sinks and high quality drivers more than double the expected operational lifetime of a Waveguide rod in comparison with a standard LED tube.

Unlike LED and fluorescent tubes, Waveguide rods maintain high operational efficiency and excellent colour rendering throughout their lifetime, with little to no degradation.

Technology	Avg. lifetime	Life @16hr p/d
Fluorescent tube	25,000 hrs	4 years
LED tubes	30,000 hrs	5 years
Waveguide LED rod	100,000+ hrs	18 years

Waveguide rods can integrate directly into pre-existing control systems and support dimming.



### Book a free survey or find out more

UK Patent No. 2518355B

If you'd like to have a no obligation conversation, book a free site survey or find out if there's an installation near you that you can visit, contact us today. Site surveys are quick, non-invasive and include a full financial project breakdown and forecast.

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# Case Study

## Dolfyr Farm, Powys

In August 2021, Dolfyr Farm in Powys was upgraded to LED Waveguide rods. Farmer Aled Price had become dissatisfied with the degrading light quality of the pre-existing fluorescent tubes, finding that he was spending a lot of time each day retrieving eggs from shadowed areas of the shed floor. In addition to improved lighting quality, Mr Price was also keen to see a reduction in costs and carbon, as well as moving away from the soon to be obsolete fluorescent technology.



- The Dolfyr Farm installation was a fully managed package solution, including survey, design, installation and safe, ethical disposal of the replaced lighting fixtures (including audit paperwork).
- The new installation was tied directly into Dolfyr Farm's pre-existing lighting control system, which manages dimming and scheduling.
- Calculation and forecasts based on an 84m x 20m shed, holding 16,000 free range chickens. The facility is lit 16 hours per day, at £0.16 per kWh. Forecast adjusted for expected inflation.

### Financial Breakdown

Capital cost of lighting solution	£6,000
Claim super deduction (HMRC)	£1,482
<b>Net capital cost</b>	<b>£4,518</b>
First year electricity saving	£1,644
Net cost benefit after five years	£5,517
Annual energy savings	10,247 kWh
Annual carbon savings	3 tonnes
Payback period (inc. energy subsidy)	31.1 months

## Happy chickens, happy farmer

'CRT Lighting installed the LED Waveguide Rods in my free range poultry house in August 2021. The installation was simple, took under a day, and the new lights integrated straight into my pre-existing dimming control system. I'm already seeing energy savings well above fifty percent!'



Aled Price | Dolfyr Farm, Powys