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UPDATE ARTICLE

On-site renewable energy generation, October 2024

In 2021, Ibstock Plc became one of the first UK building products manufacturers to procure 100% of its electricity from renewable sources, enabling the Group to make a significant step forward in its carbon reduction journey.

In early 2022, the Group set out further ambitious targets in its ESG 2030 Strategy, with one of the pillars focused on addressing climate change through:

- Carbon Reduction
- Water Efficiency
- Biodiversity Net Gain



In this summary report, Richard Capper, Energy Manager for the Group, provides an update on the ongoing evaluation and implementation of on-site renewable energy solutions across Ibstock factory locations. Richard highlights the progress made in assessing these initiatives and, in some cases, successfully integrating on-site renewable energy technologies. Richard also reflects on some of the learnings and the ongoing rapid evolution of the challenges we face.

Q: Why is on-site renewable energy important to the Ibstock Group?

A: We have a few drivers for moving to on-site renewable energy: first, it is our responsibility as an energy intensive business to reduce carbon emissions and ensure we play our part in addressing climate change; and second, we can manage our cost with on-site renewable power supply.

The energy market has been volatile over the past few years, with wholesale energy prices fluctuating dramatically because of multiple factors including macroeconomic conditions, which we can only anticipate will continue for some time and present businesses with cost uncertainty.

Q: What progress has been made?

A: Since 2020, we sourced 100% of our purchased grid electricity from a green tariff based on hydro, wind, and solar power. In 2021 our solar park at Leicester was established under a power purchase agreement (PPA) with partner BP Lightsource to produce power to our factories on that site.

Building on that work, in early 2024 our Atlas pathfinder factory in Walsall had roof solar panels installed, producing electricity directly to the factory.

We have also continued considerable research into the feasibility of on-site renewables across the wider Ibstock estate which comprises a mix of manufacturing facilities, office sites, car parks, quarries and land for possible future quarry extensions. This gives us a range of solar and wind options for future on-site installations.

In theory, we can add solar and wind to the remainder of our estate, each site with varying needs. However, there are both internal and evolving external factors that we need to navigate through as part of our ongoing work in this space. Examples include investment, government support, planning restrictions and the progress of innovation in both solar and wind solutions that we are starting to see increase.

Q: How do you prioritise where and what to invest in?

A: There are a number of key factors in prioritising investment. The process we go through includes understanding:

1. What space we have (land or roofing)
2. What our energy consumption data shows (half hourly)
3. What type of renewable and scale is achievable
4. What the investment options are

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The value to the business is in consuming the power that any renewable scheme generates itself. The data we collect shows when we are consuming most power so depending on local weather conditions modelling, a project can be designed to match, as close as possible, to consumption. We would be targeting 95%+ on-site consumption from renewable generation investment.

There are usually two investment options for renewables installation, either an upfront capital investment or a power purchase agreement (which requires no upfront investment from the business, but the power is purchased back from the supplier at a fixed rate usually over 15-20 years). The calculation for the return on investment is based on predicted future power costs from the grid.

In terms of the decision-making, a power purchase agreement (PPA) would normally be over a 15-year period for which you pay an agreed fixed price for the power. The partner would maintain the array and after 15 years the business (Ibstock) then owns the asset (which for solar would usually last about 25 years).

Private production of renewable energy means that the ratio between commodity price (the actual cost for delivering the power) and non-commodity price (taxes added power from the national grid) can change significantly.

Q: What is best wind or solar?

A: Strictly speaking wind is best because you can generate 24/7, providing greater amounts of power. However, planning permission is more difficult with wind as there are restrictions around locations, including residential areas. But we need as many renewables as we can get and both offer good solutions in different locations.

Q: What are the obstacles for greater take up of on-site renewables?

A: This comes down to the fundamentals of land availability, strength of roofing structures, investment priorities and grid export permissions are all key considerations.

Solar panel manufacture supply chains have also had a poor reputation. We are now seeing greater guarantees with solar panels on traceability of their manufacture. It is important to check that providers can trace products to their manufacture to eliminate these risks and tackle poor practices.

I would be asking Government for two areas of specific support in this space:

- Return of the feed in tariffs (FIT)
- Improved grid structure to allow more renewable generation

Q: How have things changed over the last 10 years?

A: A great deal has changed in the last decade as renewable technology has continued to evolve. Panel prices have come down and supply chains have matured. There are also more providers making the market more competitive. However, feed in tariff was removed which is a shame as this provided a higher export price.

The other development we are seeing is in micro and lightweight solar which can start to remove some of the obstacles of space and structural strength with some great technological innovation coming into the marketplace, which has been fantastic to see.

It has also been refreshing to see the increased energy and commitments from the new UK Labour Government on renewable and wider green energy solutions. I will of course be staying close to these developments as more is needed, particularly around supporting regulations to enable pace.

Q: What would you change?

A: Benefits of renewables are not considered in ISO50001 (the standard for energy management). Energy consumed regardless of its source (grid or off grid) is counting for 50001 so wind/solar etc is not classed as energy reduction.

And, of course hoping the Government will help drive the pace of the change that is needed, so we can all work faster towards net zero targets.