ennovus solutions

SUSTAINABILITY IN WAREHOUSING & LOGISTICS

Simple solutions to support your sustainability strategy

THE NET ZERO BLUEPRINT:

Decarbonising Warehousing and Logistics

The impact of climate change is becoming increasingly apparent, particularly for businesses reliant on global supply chains. High winds, excessive temperatures, and torrential rain leading to flooding all contribute to the operational risks of storing and moving the nations goods. In an ever-competitive marketplace it is essential for organisations to evolve to stay ahead of competition and meet clients demands, therefore, the need to change is clear. However, how we change, what we do first, and who with is much less clear. With so much to consider it is often easier to do nothing than do something.

Thankfully, the opportunity for economically viable decarbonisation is abundant: with large warehouse sites having flat roofs and ground space as well as electrically driven heating, cooling, and lighting loads, and the opportunities to reduce your impact by combining on-site renewables into your operations, the sector has the potential to slash costs, strengthen energy security, and really drive us towards a less energy intensive world.

At Ennovus Solutions our mission is to balance the needs of planet and people to ensure a sustainable future for generations to come by solving our clients' energy related problems through auditing, designing, building, operating, and maintaining renewable energy assets and energy efficiency technologies. Implementing tangible assets that make change a reality.

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Steve Lankfer is the associate director of Ennovus Solutions, part of the Consultus Group. Steve has over 20 years' experience in delivering large multi-million pound heavy engineering, communication, and security system capital investment projects involving civil, mechanical, electrical, control & instrumentation, and telecoms disciplines in different industries across the globe. A qualified Mechanical Engineer (BEng) with a Master's in Business Administration (MBA) and further qualifications in project management (PMP, PRINCE2), change management (APMG) as well as health and safety (CDM, NEBOSH, IOSH).

KEY STATS:
Challenges Facing the Sector

698,000 tonnes
Figures from The Carbon Trust based on typical energy usage place the industry's carbon emissions at roughly 698,000 tonnes of CO2 per annum.

Source: Carbon Trust

1,500
UK Warehousing Association (UKWA) in the UK alone there are over 1,500 warehouse units occupying almost 424 million square feet.

Source: UKWA

17 GW of solar capacity
Warehouse roofs have the potential to almost double the UK's current solar capacity (18.9GW). With 17.3 GW of potential identified, the sector holds significant opportunity and could reduce emissions by **~2 million tonnes CO2/year.**

Source: Solar Power Portal/UKWA

3.2 TWh
In total, the Carbon Trust places the estimated energy usage of the warehousing sector at 3.2 terawatt hours (TWh), or roughly 33 kilowatt hours per square metre (kWh/m²).

Source: Carbon Trust

29%
The domestic transport sector was responsible for 111.8 million tonnes CO2e in 2023 in the UK, accounting for 29% of UK greenhouse gas emissions.

Source: gov.uk

65% and 95%
Lighting accounts for between 65%-95% of energy use in ambient warehousing.

Source: Carbon Trust

15%
Energy bills make up 15% of the running costs of the average warehouse or distribution facility.

Source: Engineering Update

SPOTLIGHT ON:
SITE DECARBONISATION STRATEGY

TURNING EMPTY ROOFS INTO RESILIENT RETURNS

Warehouses across the UK represent some of the most promising opportunities for on-site energy independence. Their expansive roof and site footprints make them ideally suited for on-site generation such as solar PV and wind, while their long operational hours' drive consistent demand that can be matched to these technologies. Many warehouse operators are also transitioning to electric vehicle fleets, further increasing electricity needs and highlighting the importance of resilient energy infrastructure. With grid-supplied energy bills accounting for as much as 15% of total operating costs, warehouses are highly exposed to price volatility. This combination of space, demand, and risk makes the sector a prime candidate for strategic energy planning and investment in integrated low-carbon systems.

A Site Decarbonisation Strategy (SDS) provides a clear, structured roadmap for how a warehouse can reduce its reliance on grid energy, cut operating costs, and lower emissions while future-proofing its operations. It goes beyond assessing a single measure – by analysing the full range of viable technologies – from solar PV, solar thermal, wind and battery storage, to efficient HVAC, LED lighting, heat pumps, and EV charging infrastructure. Each option is evaluated for technical feasibility, financial return, and compatibility with site operations. The result is a tailored, engineered plan that integrates the most suitable technologies into a cohesive solution. For warehouses, the benefits are particularly strong: large, underutilised roof areas maximise renewable generation, while predictable

The benefits:

LOWER ENERGY USAGE

Investing in energy efficiency measures or optimising existing energy consumers will help to reduce the overall energy demand of the site. Why not take this a step further by investing in renewable generation assets to power your site, helping to further reduce the grid import requirements.

LOWER CARBON FOOTPRINT

Reducing the energy consumption of the site, through energy efficiency, optimisation, and renewable generation, will naturally have a direct positive impact on the site's carbon emissions. Significant improvements across both scope 1 & 2 emissions can be realised through sustainably driven assets.

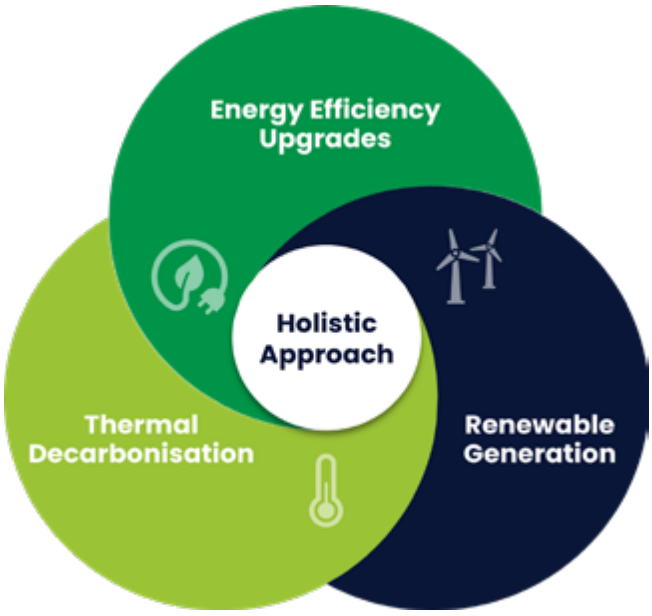
LOWER OPERATIONAL COSTS

Reducing the energy requirements will help to reduce the overall energy spend. Sustainable investments can be positive for both the planet and bottom line, with financial savings allowing opportunities for reinvestment into other areas of the business or simply a more profitable year.

operational profiles ensure efficiency measures deliver consistent savings. Combined with rising electrification from logistics fleets, a SDS equips warehouse operators with both the technical insight and a practical implementation roadmap. Combined, this approach reduces risk, stabilises energy costs, and positions their sites as leaders in resilient, low-carbon logistics.

A Holistic Approach

The warehousing sector has ample opportunity to reduce energy usage and decarbonise, but this means that strategy development and goal definition is even more important. By developing a considered and holistic site decarbonisation strategy, a site can ensure that the solution of integrated technologies is truly fit for purpose and work best in tandem to deliver maximum cost and carbon savings. For example, if a site has abundant roof space, a smaller solar PV array combined with solar thermal and rooftop wind technologies can provide superior generation across the year and offset gas usage – providing more resilience and less carbon emissions than just installing a larger solar PV array.



Robotic Electrification

As warehouses move towards automation, with robots increasingly used for handling, packing, and logistics, operational efficiency increases – but so does energy demand. This growing reliance on electrified systems can place significant strain on both site infrastructure and energy budgets if changes are not planned effectively. A Site Decarbonisation Strategy considers future demand scenarios alongside current use, ensuring that upgrades to electrical capacity and on-site renewables are designed with automation in mind. By integrating technologies such as solar PV, battery storage, and smart energy management, sites can meet the rising energy needs of robotics whilst keeping costs controlled and maintaining resilience against grid volatility.

Landlord engagement

Whilst engineering practicality is essential to delivering a Site Decarbonisation Strategy, so is stakeholder engagement. Across the warehousing industry it is common for the building itself to be landlord owned and then leased to the property, this can present a challenge to installing new technologies with 25-year lifespans. Early engagement and specialist consultation can help resolve these issues and explain how these technologies increase the assets value. Alongside this, PPA agreements specifically designed for leasehold scenarios can enable landlords and energy users to both benefit from the installation of new energy generation assets. This, is one of the many reasons why strategy and planning plays an important role in designing an implementable energy strategy for a site.

DELIVERING CARBON SAVINGS:
Popular Services for Warehousing and Logistics

Waste Heat Recovery

Naturally warehouse businesses can have large HVAC loads for controlling temperatures across their facilities. Generally, this heat is drawn from the building whilst another part of the facility may be heated by a small gas boiler. A scenario that makes very little sense.

Waste Heat Recovery technologies work by tapping into this heat source, harnessing and storing it for on-site heating processes like space heating or hot water requirements.

Ennovus solutions can design and integrate these systems into existing site infrastructure to remove or lower gas heating needs and further decarbonise a site.

Solar PVT

Solar PVT combines the benefits of solar electricity and solar heating in one system. These panels generate power like standard solar PV, but they also capture heat, providing hot water for showers, kitchens, or heating.

By cooling the PV elements, the system even improves electricity production, making PVT a highly efficient solution. With the right mix of traditional solar PV and PVT panels, warehouse facilities can significantly reduce both energy costs and carbon emissions from their sites.

Wind

A great option for generating clean energy, wind turbines are one of the best solutions for grid resilience. It's no secret that the UK is a particularly windy place, so wind power can make a big difference to your business.

With a consistent generation profile, wind turbines can be a more reliable solution than solar, but for greater grid independence, a combination of solar and wind can provide a plethora of benefits.

Ennovus design and install commercial scale wind turbines as well as roof mounted wind solutions to ensure that every warehouse can benefit from year-round on-site renewable generation.

Energy Audits

Understanding how your site uses energy is the first step towards reducing costs and cutting carbon.

Ennovus delivers structured, British Standards-aligned energy audits tailored to your needs. Our experienced team doesn't just highlight savings opportunities; we support you through implementation too.

With options ranging from visual inspections to deep dives into high-energy systems, our three audit levels suit every stage of the journey, from early assessments to ESOS compliance and investment-grade analysis.

Solar PV

Often having large roof spaces, warehouses are perfect for large solar arrays. Solar is one of the best ways a business can reduce their scope 2 emissions and meet their net zero targets, all whilst making significant financial savings over 25-years.

Our dedicated in-house teams of engineers and project managers provide a full turnkey service for roof, ground or carport mounted solar PV systems. From scoping to delivery Ennovus follow industry leading standards for insurance compliance, fire safety, ethical procurements and health and safety.

Smart Controls

Smart controls are an easy and effective way to cut energy waste and reduce your running costs.

Many buildings already use simple systems like motion sensors to switch lighting on and off automatically. But smart controls can go much further adjusting your heating, managing air conditioning, controlling plug sockets, and even opening or closing windows remotely.

With a well-designed system, you can monitor and control your building's energy use from your phone or computer, wherever you are. It's a simple step toward smarter, more sustainable facility management.

Solar Thermal

Solar thermal panels harness the sun's energy to produce hot water instead of electricity. This can be used for showers, kitchen facilities, space heating, or stored for later.

Even in the UK's cooler months, solar thermal systems provide a steady source of renewable heat, helping you reduce your reliance on gas and cut carbon emissions.

All you need is suitable roof space, and our team can design a system to match your site's specific needs.

Submetering & Virtual Energy Management

Sub-metering is the practice of installing additional meters beyond the main utility meter to measure usage in specific areas.

It's a great, cost-affective first step towards closer monitoring your energy consumption and identifying any areas for improvement. Paired with our Virtual Energy Management service, it can provide crucial insights into high-consuming areas and customised performance indicators against benchmarks.

With the Virtual Energy Management service, you will also receive alerts and triggers based on your typical usage, and commentary and analysis that can be used for reporting.

REMOVING BARRIERS

OUR FUNDING OPTIONS

Moving to green energy often requires significant capital, something that can be a barrier for many businesses within the warehousing and logistics industry. That's why we offer tailored funding solutions to remove financial roadblocks and get renewable energy projects moving.

Key Benefits at a Glance

- **Zero** upfront cost
- **Four** different models to choose from
- **Immediate** operational savings
- **Flexible** ownership models
- **Support** to hit sustainability targets
- **No disruption** to current operations

Go green without the upfront cost

Each funding mechanism follows a similar process from the initial engagement through to the end of the term. Ennovus Solutions will design, install, and commission the renewable generation or energy efficiency asset without any capital expenditure.

Power Purchase Agreement (PPA)

This is typically a long-term arrangement, whereby you pay for the units of energy produced via the generation asset.

Here's how it works:

Step 1: A renewable system (e.g. solar PV) is installed on-site
Step 2: Ennovus owns and maintains the system
Step 3: You buy the electricity generated, typically at a lower rate than your current tariff
Result: You save money from day one whilst moving towards your Net Zero goal!

Supply Contract Integration (SCI)

As part of the Consultus Group, we are in a unique position of offering Supply Contract Integration. If you purchase your energy through Consultus, we can add a small uplift onto your p/kWh import rate (typically ~ 1p/kWh) to repay the upfront investment cost.

Hire Purchase (HP)

A typical financing arrangement where you spread the asset costs across fixed monthly instalments. At the end of the term, you take ownership of the asset. You are responsible for the operation and maintenance costs from day one.

Energy as a Service (EaaS)

A very similar mechanism to HP; however, the asset is owned and operated by Ennovus Solutions during the term length and doesn't appear on your balance sheet.

Find out more about our funding solutions.

EVERYTHING UNDER ONE ROOF: Our Sister Brands

consultus sustainability

CONSULTUS SUSTAINABILITY

Are you ready to start your Net Zero journey? Or looking for support with an existing strategy? We help businesses build holistic, achievable sustainability strategies – from setting Net Zero roadmaps and Scope 3 reporting to compliance with ESOS regulations and other frameworks. We believe in human-led consultancy, not generic AI tools, and aim to create long-term value, with realistic steps to success.

Service Highlight: Net Zero Pathway
We work with warehousing businesses to simplify sustainability. With a range of packages to choose from to suit your needs, we create Net Zero strategies that work.

www.consultus-sustainability.co.uk
0116 234 6164

connectus utilities

CONNECTUS UTILITIES

Managing utility infrastructure can often feel like a juggling act, especially across multiple sites. That's where our team steps in, handling all your utility connections including electricity, gas, water, telecoms, and sewerage, across industrial, commercial, and residential projects. From new connections, to sub-metering and G99/100 applications, we're here to help.

Service Highlight: Submetering
With so many energy-intensive facilities, managing energy costs in warehouse environments can be tricky. With submetering, you can easily track which areas of your business are consuming the most energy and identify areas for improvement.

www.connectus-utilities.co.uk
0330 221 6565

consultus international

CONSULTUS INTERNATIONAL

As we transition to a low carbon economy, our experts ensure you can benefit from next-generation energy management to reduce risk, control costs and achieve demand reduction targets. From our electricity, gas and water procurement, to our full suite of bureau services and Cost Optimisation and Recovery Audits, we can help you save time, money and energy.

Service Highlight: Energy Procurement and Risk Management
Not ready to start with onsite generation just yet? Consultus International specialise in business energy procurement and risk management.

As huge energy consumers, we work with warehousing and logistics businesses to find utility solutions that save time, money, and provide long-term security. With over £1.1 million saved for our customers annually, we deliver savings through market-wide tendering, tariff optimisation, and bill validation.

www.consultus.com
0330 221 1000

assured energy

ASSURED ENERGY

For many SMEs, navigating the energy market can be overwhelming, especially when you're focused on running your business. Assured Energy simplifies procurement by helping organisations secure the best energy contracts tailored to their specific needs. Our experts scan the market for competitive tariffs, provide clear advice, and handle the switching process end-to-end, so you can focus on what matters most. We're independent, experienced, and always on your side.

Service Highlight: Fixed-Term Procurement
For smaller logistics businesses looking for budget certainty, our fixed-term energy contracts offer stability in a volatile market. Lock in competitive rates and gain peace of mind with a procurement partner who understands your sector.

www.assured.energy
0330 221 9899

READY TO GET STARTED?
Contact Ennovus Solutions

ennovus solutions

Get in touch:

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Webform: www.ennovus.co.uk

Ennovus Solutions is a specialist, multi-disciplinary, net zero engineering, design, and build consultancy, helping Warehousing and Logistics businesses reduce energy costs, improve resilience, and lower carbon emissions. We deliver end-to-end support across energy audits, system optimisation, and the design and installation of technologies such as solar PV, battery storage, wind turbines, EV infrastructure, and heat recovery.

The Consultus Group supports thousands of businesses including: dunbia, Lineage, Sysco At the heart of food and service