IN FOCUS: SOLAR SOLUTIONS

Overcoming Barriers to Solar PV Adoption

Solar photovoltaic (PV) technology has immense potential to transform commercial real estate, but its widespread adoption faces challenges like complex grid connections, upfront financing, and retrofitting difficulties. Despite these obstacles, opportunities for innovation and leadership exist.

This article, based on our Solar Solutions research, examines the key barriers to solar adoption in UK logistics and industrial real estate. It delves into grid connectivity, financial constraints, and retrofitting challenges while presenting a clear, actionable roadmap for policy changes and industry collaboration to drive a sustainable future.

The Gridlock in Grid Connectivity

One of the most significant obstacles standing in the way of large-scale solar projects is the difficulty of connecting to the national grid. All but the smallest solar PV systems require a G99 application to the local grid operator (referred to as the Distribution Network Operator or DNO) to ensure what is being connected meets current regulations. In addition to meeting technical regulations, this application is necessary for any energy generator who wishes to sell excess energy to the wider energy markets.

85% of grid connection applications currently fail. This high failure rate stems from several interconnected issues. Many applications are submitted for connections in parts of the network that are already too constrained to handle additional capacity. Furthermore, the system planners who review these applications often lack the resources to fully assess each proposal's viability, leading to denials that can be brief and lack constructive feedback, forcing applicants back to square one. Without adequate understanding of the technical wording within DNO response letters, applicants may believe a project is unfeasible whereas a simple amendment to size or proposal may be all that's required to sail through the application process.

This gridlock not only halts individual projects but also creates a chilling effect on the market, deterring landlords and developers who see the process as too lengthy, uncertain, and costly. Without a reliable way to export surplus energy, the financial model for many potential solar installations simply falls apart.

The Financial Hurdle: High Costs and Long Paybacks

For many stakeholders, the financial equation remains the biggest deterrent. The high upfront capital investment required for a solar PV installation is a primary concern, cited by a majority of industry professionals in our survey as a major barrier. While the cost of solar panels themselves has decreased, installation costs have not fallen by the same margins, with potential improvements to return on investment (IRR) and payback periods not being realised.

This financial pressure is compounded by the current economic climate. In a market with moderating rental growth and a delicate occupier landscape, committing significant capital to a project with a long-term payback can be a difficult decision. This is especially true for smaller buildings or those with tenants who have low energy consumption profiles. For example, a 20,000 sq ft building might see an IRR of just 4% and a payback period of around 15 years, a timeline that can be unappealing for many investors.

Financing the installation is just one part of the puzzle. Other financial considerations, such as securing insurance for the array and budgeting for ongoing maintenance and repairs, add further layers of complexity and cost that can stall a project before it even begins.

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The Technical Challenge of Retrofitting

While new-build properties are increasingly being designed "solar-ready," the UK's vast portfolio of existing legacy stock presents a different set of challenges. Retrofitting older buildings for solar PV is often a complex and expensive undertaking. Many of these properties were not constructed with solar installations in mind, leading to a host of technical constraints.

Key issues include:

- **Structural Integrity**: The roof's loading capacity may be insufficient to support the weight of the solar panels and mounting equipment.
- **Roof Design**: The pitch of the roof, the presence of parapet walls, and the orientation of the building can all impact the efficiency and maximum size of a potential array.
- **Existing Infrastructure**: Roof-mounted amenities like skylights, air outlets, access walkways, and HVAC plant can significantly reduce the available space for panels, thereby diminishing the system's potential output and financial viability.
- **Misaligned maintenance schedules**: Some units require roof repairs to be undertaken in order to facilitate the installation of solar PV. Depending on lease arrangements, the cost to complete these works may not have been allowed for by the landlord or occupier for a number of years. This can lead to time consuming negotiations and delays to project start dates.

Undertaking the necessary enabling works to prepare an older roof for a solar installation can add anywhere from 10% to 20% to the total project cost. This additional capital expenditure can be the tipping point that makes a retrofitting project financially unfeasible.

Forging a Path Forward: Solutions and Strategies

Overcoming these barriers demands unified action through policy and industry collaboration. The aim is to make solar adoption practical, profitable, and standard. With 82% of industry stakeholders agreeing it's vital for decarbonising supply chains, the time to build the framework is now.

Policy Initiatives to Accelerate Change

Government and regulatory bodies have a crucial role to play in clearing the path for solar. Based on our research into the adoption of Solar PV within the logistics and industrial sector, we set out three key policy initiatives that we believe would likely accelerate the adoption of Solar PV within the sector:

1. **Streamline Grid Connectivity**: We need policy certainty that prioritises grid infrastructure upgrades. This includes improving the planning response process and shortening the lead times for securing a connection. Greater investment in the grid is essential to unlock the full potential of distributed energy generation.
2. **Enhance Financial Incentives**: Widespread communication and education around existing capital allowances are needed. Furthermore, extending these financial incentives specifically to cover the higher costs of retrofitting existing buildings would accelerate adoption where it is most challenging.
3. **Mandate Solar-Ready New Builds**: A minimum roof space allocation for solar PV installations should be required for all new logistics and industrial properties. This standard, scaled to the property size, would ensure that future assets are built for the clean energy era without compromising other critical amenities.

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A Call for Industry Collaboration and Best Practices

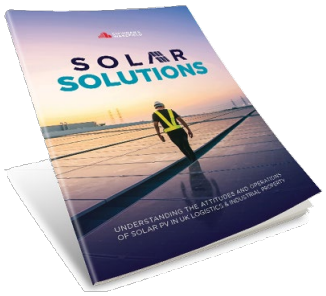
The real estate sector itself must step up to drive change from within. We cannot wait for policy alone to solve these challenges.

- **Standardisation is Key**: The industry must work together to establish clear best practices and standardised agreements for leasing, ownership, and energy consumption. Creating templates for Power Purchase Agreements (PPAs) and defining responsibilities for maintenance and liability will reduce friction and complexity for both landlords and tenants.
- **Upskilling and Knowledge Sharing**: A general lack of expertise is a frequently cited challenge. As a sector, we must invest in upskilling our professionals. Property agencies, consultants, developers, and investors need a deep understanding of solar technology, financial modelling, and operational logistics to guide clients effectively.
- **Strategic Portfolio Analysis**: Landlords and investors should proactively analyse their portfolios to identify the best candidates for solar PV. This means prioritising buildings with suitable roof specifications and, crucially, those occupied by energy-intensive tenants, where the financial returns and carbon reduction impact will be greatest.
- **Misaligned maintenance schedules**: Some units require roof repairs to be undertaken in order to facilitate the installation of solar PV. Depending on lease arrangements, the cost to complete these works may not have been allowed for by the landlord or occupier for a number of years. This can lead to time consuming negotiations and delays to project start dates.

A Challenge Worthy of Our Ambition

The obstacles to widespread solar PV adoption are real, but they are not permanent. By working together, we can turn empty rooftops across UK logistics & industrial properties into clean energy sources, driving our economy forward and securing a sustainable legacy for generations to come.

Click to download the full report and explore the future of solar energy in UK logistics and industrial real estate.



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