CBI Economics

bluefield

FLOATING SOLAR: THE MISSING PIECE IN THE UK'S ENERGY SECURITY STRATEGY

Building a resilient energy system to keep Britain secure and power the industries that will define its future

April 2026

Disclaimer

CBI Economics is the economic consultancy arm of the Confederation of British Industry (CBI), delivering independent, data-driven research and analysis to a wide range of public and private sector clients. Our work is grounded in robust economic methodologies and tailored to meet the specific objectives of each client project.

This report was produced by CBI Economics on a commissioned basis. The analysis, findings and recommendations presented herein are those of CBI Economics and do not necessarily reflect the views or policy positions of the CBI or its members. CBI Economics operates independently from the CBI's member-led policy teams, and its consultancy work is not influenced by CBI membership or advocacy priorities.

While care has been taken to ensure the accuracy of the information and analysis contained in this report, CBI Economics does not accept liability for any decisions taken based on the content of this document. Any errors or omissions remain the responsibility of CBI Economics.

Contents

Foreword

The UK's energy system is being reshaped by forces larger and faster moving than anything we have seen in decades. Geopolitical instability, tightening global gas markets, and rising competition for clean energy investment are converging at a moment when the UK must strengthen its resilience and secure a more stable foundation for sustained economic growth. As a long-term investor in UK infrastructure, I see both the risks and the compelling opportunities this moment presents.

Floating solar is one such opportunity that speaks directly to the challenges facing the UK today. We need more domestic generation that is affordable, quick to deploy, and insulated from global shocks. We need solutions that can be built close to where power is used, reducing pressure on the grid and supporting the industries that anchor our economy. And we need technologies that complement the many demands on land, from food production to housing. Floating solar offers a rare combination: scale without land constraint; innovation without delay; and resilience without dependence on volatile global markets.

The case for floating solar becomes even stronger when viewed through the lens of water sector reform. The UK is re-evaluating how its water companies operate, invest, and deliver value for customers. Reservoirs are among the most strategically important assets in the country, and floating solar gives water companies a way to enhance their own energy resilience, reduce exposure to wholesale price volatility, and create new revenue streams that support both customers and environmental improvements. It is an opportunity to turn existing national infrastructure into a source of long-term strength.

Image credit: Ciel & Terre

Bluefield has seen this potential first-hand. We own and operate the UK's largest floating solar project at the Queen Elizabeth II Reservoir - an array that supplies clean power directly to the nearby water treatment works. It is a practical demonstration of how floating solar can support essential public infrastructure while delivering reliable, low-cost generation. Building on that experience, we are now developing a pipeline of utility-scale floating solar projects across the country, working with waterbody owners to bring forward sites that can strengthen local resilience and contribute to the UK's wider energy security.

The UK has the engineering capability, the investment appetite, and the industrial base to lead in floating solar. The progress already underway shows what is possible, and with clear and coordinated policy the sector can scale far faster, bringing forward a major new source of capacity that has long been overlooked in the UK's energy strategy.

With the right signals, floating solar can become a cornerstone of a more resilient, more competitive, and more secure energy system. This report, produced with CBI Economics, sets out how we can unlock that potential. It shows that floating solar is not a marginal technology, but scalable, credible and perfectly aligned with the UK's strategic and economic priorities.

This is a moment to act and floating solar is ready to deliver.

James Armstrong

Founder and Managing Partner, Bluefield Partners LLP

Executive summary

Electricity demand in the UK is set to rise sharply as the country advances toward an ambitious clean power system, against a backdrop of elevated global energy risks. **Floating solar offers a credible and strategic solution to these challenges**. The technology is scaling rapidly worldwide and could help the UK expand its own clean power capacity while easing pressure on land use and supporting climate adaptation.

FPV also offers a clear UK growth opportunity: Supporting jobs and strengthening key domestic supply chains – from engineering to steel – provided the right policy signals are in place to unlock early deployment and drive costs down quickly through scale and learning.

This report finds that:

- **The UK has a substantial resource base for floating solar**, with around 65,000 hectares of water industry and man-made water bodies, alongside more than 47,500 hectares of freshwater assets located within 5km of urban areas.
- Under an ambitious package of Government intervention, deployment reaches scale rapidly. With 30% surface coverage across water industry and man-made water bodies, and 2.5% on natural water bodies, FPV capacity would reach **58.6 GW by 2050**. Early-stage deployment of **8.9 GW by 2030** drives strong learning effects, enabling **cost competitiveness with ground-mounted solar by the end of the decade**.
- In the central scenario: Coverage reaches 5% across water industry assets and 1.3% across man-made water bodies by 2030, with minimal use of natural water bodies, delivering **3.6 GW** of capacity. **By 2050,** this **rises to 40.9 GW** as coverage expands to 30% (water industry), 20% (man-made), and 1% (natural). In this scenario, **cost competitiveness is achieved in the mid-2030s**.

The UK's energy system is entering a critical phase of transition. Electricity demand is expected to rise sharply over the coming decades, driven by the electrification of transport and heating, the evolving needs of industry and the rapid expansion of artificial intelligence, 5G and other digital infrastructure. At the same time, the Government has set ambitious goals to deliver a predominantly clean power system by 2030, requiring a substantial and sustained increase in low carbon generation capacity.

Multiple geopolitical events, including the conflict in the Middle East, have underlined the vulnerability of global energy markets and the importance of accelerating the deployment of a domestic, diversified and resilient set of power sources.

Solar photovoltaics have played a central role in the transition to date. The UK has made strong progress in deploying both ground-mounted and rooftop solar, supported by falling technology costs and policy mechanisms such as the Contracts for Difference (CfD) scheme. However, further expansion is facing difficulty due to concerns relating to land use competition and landscape impact. For some projects, this means longer development timelines and a higher degree of scrutiny. These complexities highlight the need for complementary pathways to expand solar capacity.

Other technologies are also facing barriers to deployment. This includes floating offshore wind, where the Government has set an ambition to have up to 5 GW capacity by 2030, which is facing infrastructure and supply chain barriers. As constraints intensify across multiple technologies and global energy security risks increase, the UK must diversify and expand the routes through which new clean generation can be brought forward.

Floating solar photovoltaic (FPV) systems, solar panels mounted on buoyant platforms on water bodies, offer one such complementary route. By utilising existing freshwater water bodies, such as reservoirs, rather than competing for land, FPV can unlock additional generation capacity while reducing pressure on rural landscapes and helping to maintain a stronger social licence for solar deployment in areas where land-based development is subject to greater public scrutiny. FPV is growing globally, with at least 9.2 GW of cumulative installed capacity already and is emerging as a more cost-competitive option than floating offshore wind, which faces higher capital costs, complex supply chain requirements and longer development timelines.

FPV offers a distinct advantage as a renewable technology that can be deployed in or near urban areas, where electricity demand is highest. The UK is highly urbanised, with around 83% of the population living in towns and cities, and future growth expected to concentrate in these locations. Over time, water infrastructure has been developed to serve these demand centres, resulting in thousands of man-made freshwater assets, such as reservoirs, former quarries and treatment sites, located close to both demand and existing grid infrastructure. This proximity also creates opportunities for co-located demand, enabling electricity generated on-site to be supplied directly to adjacent users via private wire. As a result, the UK has a substantial pool of strategically located FPV projects that could be integrated into the energy system with relatively limited additional infrastructure.

This presents a strategic opportunity for water companies and other large, energy-intensive industrial organisations. These energy users are not insulated by the consumer price cap and remain exposed to wholesale electricity price volatility. FPV can provide a route to greater price stability, reduced operating costs and more operational resilience, while also supporting decarbonisation objectives.

In addition, **FPV can play a role in climate adaptation and improving water quality by reducing evaporation and limiting algae growth**, thereby enhancing the resilience of water infrastructure in the face of rising temperatures. Such operational efficiencies, combined with lower energy costs, create a pathway to reducing overall system costs and the potential to ease upward pressure on consumer water bills over time

Ultimately, FPV provides a straightforward and economically attractive way to support a more resilient and geographically diverse power system, strengthening overall energy security for households and businesses while enabling continued solar deployment without exacerbating land use pressures.

Realising this opportunity, however, will require targeted policy intervention in the near term that can help drive cost competitiveness and support the mobilisation of the UK's existing solar supply chain.

Economic and industrial value

FPV offers an opportunity for UK businesses to expand and strengthen their role across the solar value chain. Under the most ambitious deployment pathway that maximises the UK supply chain's capabilities, FPV could:

- Generate over **£30 billion in cumulative Gross Value Added (GVA) from capital expenditures** and support an average of almost **15,200 full-time equivalent (FTE) jobs in the UK on an annual basis** between 2027 and 2050.
- Support up to **16,000 permanent FTE jobs** in the operational phase in the most ambitious scenario and **over 9,300 FTE jobs in the central scenario** by 2050.
- Provide the necessary confidence to UK businesses to **develop capabilities in high-value segments** of the FPV value chain, including engineering, procurement and construction (EPC), mounting systems, and balance-of-system components while also reinforcing key industries like steel.

Realising this opportunity depends on developing domestic capabilities. While some components are likely to remain imported, the UK is well positioned to capture higher-value segments of the value chain. However, this requires a clear and sustained deployment pipeline. Without sufficient scale, these capabilities are unlikely to develop domestically, and economic value will instead be captured by more established international players in countries that have made a start on FPV deployment.

A credible pathway to cost competitiveness

Using the Department for Energy Security and Net Zero's (DESNZ) CfD methodology, we estimate that a typical FPV project in Allocation Round 7 would have had an Administrative Strike Price (ASP) of £106/MWh, which is broadly in the range of existing, established renewable technologies.[1] In Allocation Round 7 (AR7), the ASP for ground-mounted solar PV (GMPV) was at £75/MWh and £113/MWh for Offshore Wind. While FPV is currently more expensive than GMPV, this reflects early-stage market conditions rather than structural cost disadvantages. The elevated cost is primarily driven by higher hurdle rates and insurance costs reflecting FPV's limited deployment history, alongside higher current capital expenditure and fixed operating costs at the present level of deployment.

Importantly, this cost gap is surmountable. Our modelling demonstrates that FPV can be expected to exhibit strong learning dynamics as deployment scales, reflecting a trend that has been observed in GMPV to date. **Under supportive policy conditions, capital and operational costs will fall over time, enabling FPV to achieve cost parity with ground-mounted solar and onshore wind within the next decade**. Without early deployment, however, these learning effects do not materialise, and the cost gap persists.

These findings underline the case for targeted, time-limited intervention. Policy support – particularly through the CfD framework – can unlock early deployment, reduce the cost of capital, and accelerate the pathway to competitiveness.

Image credit: Zimmermann

---

[1] Department for Energy Security & Net Zero (2023) Contracts for Difference: Methodology used to set Administrative Strikes Prices for CfD Allocation Round 6. NB the methodology was unchanged for AR7.

The role of policy

In this report, we discuss **five priority policy levers** that are key to unlocking deployment. In most cases, these are measures the Government has previously taken for comparable technologies in recognition of their strategic importance:

1. **CfD support** is required to establish a viable pipeline by boosting developer confidence, reducing capital costs and signalling a strategic commitment to the supply chain.
2. **Planning reform** clarifies national need, facilitates rollout across water industry and man-made bodies, through the provision of Permitted Development Rights, and reduces development costs thereby accelerating deployment once a pipeline is established.
3. **Strategic grid classification** prevents connection bottlenecks that could otherwise undermine project viability and investor confidence as deployment scales.
4. **Offshore wind co-location** supports future scaling and system efficiency through a more integrated use of infrastructure.
5. **Innovation funding** is critical to enable early-stage rollout and support UK supply chain firms, helping ensure that as much economic value as possible is retained within the UK.

Across each, however, **water industry integration is an essential mechanism** that can enable immediate delivery across lower-complexity sites and improve water quality, if designed appropriately, by reducing evaporation and limiting algal growth.

This analysis finds that FPV represents a substantial but, so far, underutilised opportunity for the UK. At a time when global energy security, affordability, and decarbonisation are central to policy priorities, FPV has the potential to make a meaningful positive contribution across all three.

However, **realising this opportunity will require coordinated policy action to unlock the necessary scale to make an impact.** Without this, deployment is likely to remain limited in both pace and impact, and the UK risks ceding economic and strategic value to international competitors that are already moving to scale FPV deployment and establish supply chain leadership.

Introduction

The UK’s energy system is entering a critical phase of transition. Electricity demand is expected to increase significantly in the coming decades, driven by the electrification of transport and heating, industrial demand and the expansion of artificial intelligence, 5G and other digital infrastructure. At the same time, the Government has set ambitious targets to deliver a predominantly clean power system by 2030, requiring a rapid expansion of low carbon generation capacity.

Solar photovoltaics have been central to the transition so far. The UK has made substantial progress in deploying ground-mounted and rooftop solar, supported by falling costs and policy frameworks such as the CfD scheme. However, further expansion is becoming increasingly constrained. Concerns over land-use substitution and visual impacts are creating planning complexity and leading to a growing level of opposition which limits the pace at which new projects can be brought forward. As these constraints intensify, the UK must identify complementary routes to deploy additional capacity. FPV systems offer one such route.

Further, FPV offers important climate-adaptation co-benefits. By partially covering the water surface and reducing sunlight penetration, FPV systems can limit evaporation losses and suppress harmful algal blooms, both of which are likely to intensify with rising temperatures under climate change. This can help protect water quality, reduce treatment requirements, and conserve increasingly scarce water resources during hotter, drier summers. As a result, well-designed FPV installations can enhance the long-term resilience of water infrastructure and deliver on-site energy generation alongside tangible adaptation benefits that will only become more valuable under future climate conditions.

Image credit: Ciel & Terre

What is floating solar?

Floating solar (also known as floating photovoltaics or FPV) refers to solar photovoltaic panels installed on buoyant platforms deployed on inland freshwater bodies such as reservoirs, lakes, quarry lakes, and industrial ponds. The panels operate using the same underlying technology as ground-mounted solar PV, converting sunlight into direct current (DC) electricity, which is then converted to alternating current (AC) via inverters for export to the electricity network. The primary distinction lies in the supporting infrastructure: rather than steel piling and extensive earthworks, FPV systems use modular floating structures that sit on the water surface. [2]

The floating platforms are typically manufactured from durable, UV-resistant polymers and are designed to interlock into large, stable arrays capable of supporting solar panels, walkways, and electrical equipment. These floating structures are secured in place using engineered anchoring and mooring systems, which may be fixed to the bed, banks, or a combination of both. The anchoring design is bespoke to each site and takes account of local conditions such as water depth, wind exposure, wave action, and seasonal or operational water-level fluctuations, allowing the array to move safely while remaining securely positioned.

FPV components are generally assembled onshore, then launched, towed into position, and moored to anchors. Electrical infrastructure such as inverters and transformers may be located on floating platforms or onshore, depending on the design. Importantly, floating solar arrays are typically designed to cover only a proportion of the water surface. This approach helps to maintain natural light penetration, water circulation, and ecological processes within the water body, while allowing FPV to coexist with other operational, environmental, and recreational uses.

---

[2] The World Bank (2019) Where Sun Meets Water: Floating Solar Market Report [Available at: **https://documents1.worldbank.org/curated/en/670101560451219695/pdf/Floating-Solar-Market-Report.pdf**]

FPV is commercially deployable. The first commercial-scale installation was built in 2008 at a winery in California, where a 175kWp system was deployed to avoid using land better suited for grape cultivation. Market expansion accelerated after 2016, as plants with double- and triple-digit megawatt capacities began to emerge.[3] By 2024, global installed capacity had reached 9.2 GW, with approximately 90% located in Asia.[4] Growth continues, exemplified by the first gigawatt-scale project off the coast of Dongying in China, which began commercial operations at the end of 2025.[5] The sector is also gaining traction in Europe, with the Netherlands and France hosting the 7th and 10th largest FPV capacities globally.[6] International technology standards and guidance have been developed by leading industry players and independent assessors. Projections from Wood Mackenzie forecast that global capacity could reach 77 GW by 2033.[7]

Innovation is continuing to develop the technology and delivery of co-benefits. For example, in Germany vertical FPV systems have been deployed, helping to enhance output during the morning and evening.[8] Other projects have integrated floating ecosystems with the solar arrays to enhance the ecological benefits.[9] There are also promising future applications emerging that could mean systems can be coupled with electrolysers to produce green hydrogen using the same water on which they float, offering an alternative route to market beyond grid-based electricity supply.[10]

---

[3] The World Bank (2018) Where Sun Meets Water: Floating Solar Market Report

[4] International Energy Agency Photovoltaic Power Systems Programme (2026) Floating Photovoltaic Power Plants: A Review of Energy Yield, Reliability and Maintenance

[5] PV-TECH (2025) CHN Energy starts full operations at 1GW floating solar project in China [Available at: **https://www.pv-tech.org/chn-energy-starts-full-operations-1gw-floating-solar-project-china/**]

[6] International Energy Agency (2025) Photovoltaic Power Systems Programme: Insights 2025

[7] PV Magazine (2024) Wood Mackenzie forecasts 77 GW of floating solar by 2033 [Available at: **https://www.pv-magazine.com/2024/11/20/wood-mackenzie-forecasts-77-gw-of-floating-solar-by-2033/**]

[8] Offshore Energy (2025) Germany launches 'world's first' vertical floating solar power plant [Available at: **https://www.offshore-energy.biz/germany-launches-worlds-first-vertical-floating-solar-power-plant/**]

[9] Biomatrix Water (2019) Bringing Floating Solar to Life [Available at: **https://www.biomatrixwater.com/news/bringing-floating-solar-to-life/**]

[10] Examples of trials in this area include: Hayibo et al (2025) *Experimental integration of a foam-based floating photovoltaic (floatovoltaic) system with an anion exchange membrane electrolyzer for 5 kW-Scale green hydrogen production*, International Journal of Hydrogen Energy 138, 260-272.

The UK has already developed some limited FPV capacity. In 2016, a 6.3 MW FPV installation at the Queen Elizabeth II Reservoir connected directly into Thames Water's private network, supplying around 20% of the site's energy needs. More recently, in late 2025, approval has been granted for a 40 MW FPV array at the Port of Barrow, with the energy generated intended to support the area's advanced manufacturing operations and help control the port's electricity costs. Further studies have suggested that FPV can help overcome barriers such as limited grid capacity and a lack of charging infrastructure at the UK's ferry ports and potentially generate renewable electricity for charging electric vessels operating between UK and France.[11]

In its *Solar Roadmap*, DESNZ recognised the FPV opportunity and noted its application for assisting in the decarbonisation of energy-intensive sectors, though it did not incorporate its full potential into deployment forecasts. In light of this, DESNZ created two key actions. Firstly, to consider how FPV could be considered in the CfD scheme and secondly, how planning levers could further support FPV projects. This report aims to contribute to DESNZ's FPV evidence base by providing an analysis of market potential and the forward-direction of costs under different deployment trajectories, while also discussing how the CfD scheme and planning levers will affect these outcomes.

Considering its potential and more advanced deployment in other markets, FPV remains underutilised in the UK. Deployment has been relatively limited, and the technology is not yet fully integrated into energy planning frameworks. The UK's international counterparts are scaling rapidly, supported by clearer policy signals and mature supply chains. This puts them in a strong position to capture competitive advantage across key segments of the value chain.

---

[11] Qin et al. (2026) Techno-economic and environmental assessment of floating solar power with innovative charging systems for decarbonising maritime operations in the UK, Renewable Energy 256.

Overview of this study

CBI Economics was commissioned by Bluefield to assess the economic and strategic opportunity presented by FPV deployment in the UK, and the conditions required to realise it.

Specifically, it aims to:

- Quantify the potential contribution of FPV to the UK's future electricity system under different deployment scenarios
- Assess the economic value associated with deployment, including GVA and employment
- Examine the pathway to cost competitiveness with established technologies
- Identify the policy levers required to unlock deployment and support supply chain development
- Explore the relevant evidence around FPV's climate adaptation co-benefits

Our methodological approach to this assessment utilises scenario-based modelling, economic impact assessment using input-output methods aligned with HM Treasury *Green Book* guidance, and analysis of international evidence and industry insights.

Image credit: Zimmermann

Policy-driven deployment pathways

To assess how this opportunity could evolve, we model **three policy-driven deployment pathways** which are presented in the table below. These illustrate how different levels of intervention lead to markedly different outcomes for deployment, cost competitiveness, and economic value. A central finding of this report is that FPV will not be constrained by technical feasibility, but instead by the policy environment. The technology is mature, and the UK has the underlying capabilities to support deployment. However, without a clear and coordinated policy framework, investment will remain limited, supply chains will not develop domestically, and the UK will miss out on a sizeable opportunity.

Table 1: Scenario Overview

Scenario	Limited	Central	Ambitious
Intervention	• FPV is not supported in the CfD framework • No targeted planning reform • Not prioritised for grid connection	• Supported within the CfD framework • Permitted Development Rights on water industry and man-made to deliver 10% coverage by 2035 and 30% by 2050 • Strategic designation in the grid connection queue • Innovation funding allows the existing UK solar supply chain to test new products and services	• Large, ring-fenced pot within the CfD framework • Permitted Development Rights on water industry and man-made to deliver 15% coverage by 2035 and 30% by 2050 • Strategic designation in the grid connection queue • Innovation funding allows the existing UK solar supply chain to test new products and services
Impact	• Deployment remains negligible, reaching only 1.1 GW by 2050. • FPV fails to build confidence, with minimal engagement from the UK supply chain.	• Deployment scales from 3.6 GW in 2030 up to 40.9 GW in 2050 (or 22 GW if grid connection constraints persist) • Supply chain activation drives cost competitiveness and cost parity is achieved in the mid-2030s	• Deployment accelerates in the near term, reaching 8.9 GW by 2030 and 58.6 GW in 2050. • Early deployment centres on water industry and other man-made bodies, catalysing learning effects and expediting cost competitiveness with ground-mounted solar to reach cost parity around 2030.

The UK energy challenge and the role of FPV

Key takeaways

1. FPV is a mature, commercially deployable technology, with the advantage of being **installable near demand centres,** including cities and towns, data centres and industrial hubs.
2. FPV provides a complementary route to scale the necessary amount of solar, circumventing land-use concerns by utilising the **UK's significant volume of freshwater surface area**.
3. FPV may offer co-benefits, such as **reduced evaporation** and **algal blooms**, that could lower system costs, and, alongside potential utility revenues, **help ease upward pressure on consumer bills**.

The demand for low carbon energy will likely exceed forecasts

Energy has emerged as one of the defining structural challenges of the 2020s. The Russia–Ukraine conflict triggered a fundamental reassessment of the UK's energy security, exposing vulnerabilities associated with import dependence and prompting a renewed focus on domestic supply. The resulting surge in wholesale and retail prices brought affordability to the forefront of political debate, while persistently high industrial energy costs, among the highest in the G7, have placed acute and sustained pressure on energy-intensive sectors and the UK's manufacturing base.[12]

---

[12] The Guardian (2026) High energy prices threaten UK's status as manufacturing power, business groups say [Available at: **https://www.theguardian.com/business/2026/feb/22/high-energy-prices-threaten-uks-status-as-manufacturing-power-business-groups-say**]

More recently, shifting geopolitical dynamics, including conflict in the Middle East, have reinforced the strategic case for greater energy resilience and reindustrialisation. At the same time, structural demand pressures are intensifying. The rapid expansion of artificial intelligence, 5G and streaming technologies is driving growth in energy-intensive infrastructure, particularly data centres, which require substantial and reliable electricity supply. Ofgem has identified a "surge in demand" for grid connections, which could translate into an additional requirement of up to 50 GW of electricity – pushing total demand beyond even the most heightened forecasts.[13] Only recently, the cost of poor infrastructure was laid bare when OpenAI paused their plans for a UK data centre and cited concerns about high energy costs as their reason for doing so.[14]

These challenges point to an urgent imperative for the UK to significantly increase domestic energy production to safeguard supply, reinforce industrial competitiveness, and drive long-term prosperity.

The UK Government has set out an ambition to deliver on this challenge. The *Clean Power 2030* target aims to ensure that, by the end of the decade, clean electricity sources generate at least as much power as Great Britain consumes over the course of a year. This pathway includes deploying 43-50 GW of offshore wind, 27-29 GW of onshore wind, and 45-47 GW of solar capacity to significantly reduce reliance on fossil fuels. Current data suggests the UK is progressing towards these ambitions, with 21.5 GW of solar capacity already operational and more than 25 GW either awaiting consent or under construction. However, Cornwall Insight have suggested that delays to major wind projects will mean the UK falls below the Clean Power 2030 target.[15] This means substantial further deployment remains necessary to keep pace with both the target and rapidly evolving strategic landscape.

---

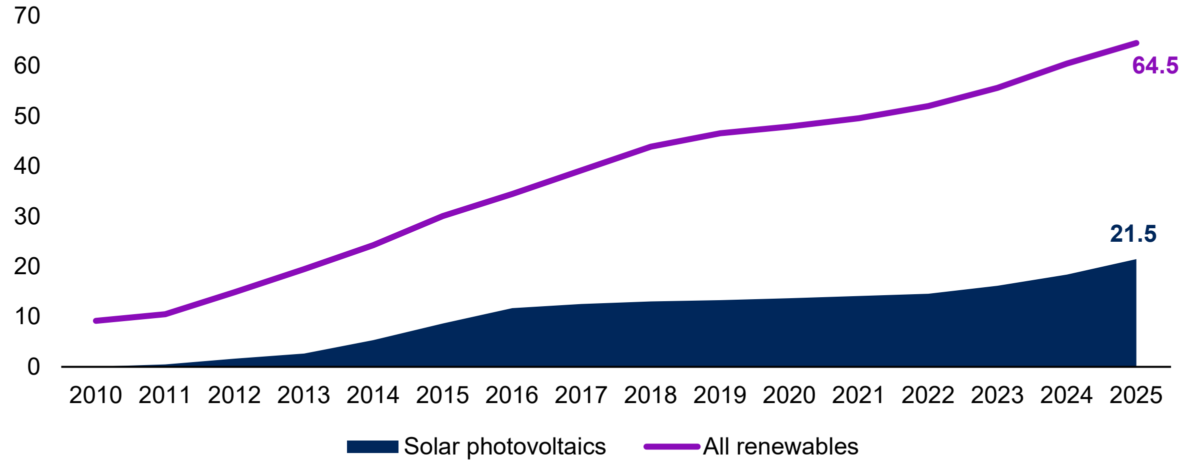
[13] OFGEM (2026) Demand Connections Reform [Available at: **https://www.ofgem.gov.uk/sites/default/files/2026-02/2026-02-12-Demand-Connections-Call-for-Input.pdf**]

[14] BBC (2026) OpenAI pauses UK data centre deal over energy costs and regulation [Available at: **https://www.bbc.co.uk/news/articles/clyd032ej70o**]

[15] EnergyLiveNews (2026) Wind farm delays put UK's 2030 clean power target at risk [Available at: **https://www.energylivenews.com/2026/01/14/wind-farm-delays-put-uks-2030-clean-power-target-at-risk/**]

Renewable generation plays a central role in strengthening the UK’s domestic energy system. By reducing reliance on imported gas, it helps to improve energy security and reduce exposure to global price volatility. Analysis by the Energy & Climate Intelligence Unit suggests that large-scale wind capacity is already exerting downward pressure on the day-ahead wholesale price of electricity by displacing gas power on the marginal pricing curve. Their analysis examined the counter-factual of there being less or no wind capacity to estimate that, in 2024, wholesale prices could have been up to 33% higher in their absence.[16]

Figure 1: Renewable and solar PV installation to date



Source: Department for Energy Security and Net Zero. There is an additional 82.8 GW of solar capacity that is either awaiting or under construction, of which 25.2 GW is solar photovoltaics.[17]

Moreover, Aurora Energy Research have found that it is possible to increase the supply of renewable energy technology, with their study focusing on offshore wind, without increasing consumer bills, which is how CfDs are ultimately funded. This is because, as a zero marginal cost technology like solar, the increase in CfD levies is offset by the drop in wholesale and capacity market costs.[18]

---

[16] Energy & Climate Intelligence Unit (2025) Marginal Gains [Available at: **https://ca1-eci.edcdn.com/Marginal-Pricing-ECIU-report-Oct-2025-Final.pdf?v=1759847236**]

[17] Department for Energy Security and Net Zero (2026) Solar photovoltaics deployment in the UK – January 2026 [Available at: **https://www.gov.uk/government/statistics/solar-photovoltaics-deployment**]

[18] Aurora Energy Research (2025) Achieving Offshore Wind Goals with No Burden on Billpayers [Available at: **https://auroraer.com/resources/aurora-insights/market-reports/achieving-offshore-wind-goals-with-no-burden-on-billpayers**]

FPV is structurally advantaged due to its proximity to demand centres

FPV is unique amongst generation technologies in that it can be deployed at a large-scale in or near urban areas, which fits well with the UK's highly urbanised geography. Around 83% of the population lives in towns and cities, with future growth expected to concentrate in these areas, driving sustained increases in electricity demand, particularly as energy-intensive uses such as data centres come into play.[19] UK water infrastructure has been developed over time to serve these urban and industrial centres, resulting in there being a large number of man-made freshwater assets, including reservoirs, former quarries and water treatment sites, located close to both demand and existing grid infrastructure. Analysis undertaken for this project identifies 4,705 water bodies larger than 2 hectares within 5km of an urban area with a total surface area exceeding 47,500 hectares, highlighting the scale of well-sited potential for FPV deployment.

FPV would capitalise on this by integrating energy generation into existing infrastructure, while also creating a new pathway for water industry assets to pursue on-site power production. Many of these sites are already connected, or located close, to the network. Their proximity to demand centres can further facilitate the supply of electricity to large, continuous users such as data centres. This will be particularly important as the Government seeks to deliver significant data centre capacity through AI Growth Zones. For example, the first of these zones is located in Oxfordshire, where a new reservoir with floating solar is planned in Abingdon, illustrating how water and energy infrastructure can be co-located with major sources of demand. Such strategic planning can therefore ensure that new sources of energy supply and demand are developed in tandem. The Government has recognised that access to reliable electricity is becoming a development constraint and subsequently holding back projects that will contribute to national priorities.[20] FPV has a role to play in navigating these challenges.

---

[19] Government Office for Science (2021) Trend Deck 2021 – Urbanisation [Available at: https://www.gov.uk/government/publications/trend-deck-2021-urbanisation/trend-deck-2021-urbanisation]

[20] Department for Energy Security and Net Zero (2026) Open Consultation: Accelerating electricity network connections for strategic demand [Available at: **https://www.gov.uk/government/consultations/accelerating-electricity-network-connections-for-strategic-demand/accelerating-electricity-network-connections-for-strategic-demand-accessible-webpage**]

Some energy infrastructure is facing opposition in places over land-use competition

Solar photovoltaics is generally expected to play a central role in delivering additional capacity. However, the expansion of renewable energy infrastructure is facing some opposition.

Concerns over land-use competition is causing difficulty at planning consent stage for some large-scale ground-mounted solar projects in particular. GMPV typically requires significant land in rural locations, creating tensions with agricultural use and concerns over changes to landscape character. These issues are increasingly reflected in planning decisions, with a growing number of projects facing delays or refusal. Altogether this creates additional risk and costs for developers, limiting the pace at which projects progress from consent to construction.

Recent planning decisions illustrate these issues. In 2025 alone, a 77ha site was refused in Doncaster, a 39ha site was refused in Buckinghamshire and a 110ha site was thrown out in Northumberland.[21] [22] [23] Opposition to these schemes tend to focus on the visual impact of such sites and the removal of agricultural land. Further, one Council pointed towards the cumulative impact of ground-mounted solar farms and how, alongside others in the vicinity, they would contribute to the changing character of the rural landscape.

Such issues are not exclusive to ground-mounted solar, however. Plans for England’s largest onshore wind farm has met resistance over concerns relating to the impact on the moorland and ground-nesting birds.[24] Elsewhere, plans to roll out 60km of electricity pylons were opposed by Derbyshire County Council in 2025.[25]

Overall, the implication is that having an energy mix with a diverse range of generation technologies is likely necessary to deliver the capacity required to meet the UK’s energy needs.

---

[21] BBC (2025) Plan for 'green belt' solar farm rejected [Available at: **Doncaster council turn down Marr Solar Farm plans - BBC News**]

[22] Richard Buxton Solicitors (2025) Application for solar farm development refused [Available at: **https://www.richardbuxton.co.uk/case/application-for-solar-farm-development-refused**]

[23] BBC (2025) Solar farm rejected over harm to ‘rural paradise’ [Available at: **https://www.bbc.co.uk/news/articles/c33614v0k5vo**]

[24] BBC (2024) Opposition over England's biggest wind farm plan [Available at: **https://www.bbc.co.uk/news/articles/c0344pq9melo**]

[25] BBC (2025) Council votes to oppose electricity pylon plan [Available at: **https://www.bbc.co.uk/news/articles/cpwkn282n5yo**]

The UK can build on existing solar capabilities and foster an FPV-specific supply chain

FPV presents an opportunity for UK supply chain firms already engaged in the ground-mounted solar value chain to develop new products and services tailored to floating deployments. Our stakeholder engagement process and wider evidence review has found there to be particularly strong opportunities for UK firms to engage in the float structure manufacture, mooring and anchoring, engineering and construction and operations and maintenance.

With a sufficiently large project pipeline, FPV could also catalyse diversification among adjacent firms, enabling entry into a new and potentially high-growth market, while also providing new opportunities for people with adjacent skills from the offshore wind, oil & gas and other maritime sectors.

In its *Solar Roadmap*, DESNZ identifies scope for the UK to expand domestic capabilities across most solar components, with the notable exception of panel manufacturing where countries such as China have come to dominate. The UK also possesses significant strengths in solar research and development, exemplified by Oxford PV's recent advances in perovskite solar cell technology, which could offer substantial efficiency gains.[26] Integrating FPV into the energy mix could reinforce and extend these capabilities.

A strong FPV and ground-mounted solar pipeline would compound the opportunity for many of the firms DESNZ are looking to support with the *Solar Roadmap* by giving them the confidence to make the necessary investments to serve the market. A stronger signal would ensure more of the value chain is retained within the UK, while also supporting key strategic sectors such as steel.

---

[26] BBC (2025) Perovskite: The 'wonder material' that could transform solar [Available at: **https://www.bbc.co.uk/future/article/20251015-perovskite-the-wonder-material-that-could-transform-solar-energy**]

Delivering co-benefits for the water industry, its consumers and the environment

Beyond power generation, FPV can deliver co-benefits that enhance the economic and social value of UK water infrastructure. When designed and built to robust technical and environmental standards, FPV can reduce reservoir evaporation and help limit algal growth, supporting more stable raw water quality and lowering abstraction, energy, and chemical demands in treatment processes.

These benefits are increasingly important under climate change. The Environment Agency has warned that rising temperatures could contribute to a public water supply deficit of up to 5 billion litres per day in England by 2055, around one-third of current daily demand, due in part to increased evaporation.[27] Measures that retain water within existing storage assets can therefore play a meaningful role in improving long-term resilience. Algal blooms present a further challenge, with sector-wide costs estimated at over £50 million per year in 2016 due to higher treatment costs and loss of recreational access.[28] While not a standalone solution, targeted FPV surface shading can contribute to bloom risk mitigation where algae are a known pressure.

FPV can also provide water companies with a relatively low-risk revenue stream through leasing reservoir surface area, helping offset operational costs, support reinvestment, and ease upward pressure on customer bills. Collectively, these attributes position FPV as a complementary asset supporting decarbonisation, water resilience, and affordability. These impacts are explored further in the following case study prepared by Lancaster University and the UK Centre for Ecology & Hydrology, which examines the interaction between FPV deployment, water quality management, and long-term system value.

---

[27] Environment Agency (2025) England faces 5 billion litre public water shortage by 2055 without urgent action [Available at: **https://www.gov.uk/government/news/england-faces-5-billion-litre-public-water-shortage-by-2055-without-urgent-action**]

[28] Consortium on Risk in the Environment: Diagnostics, Integration, Benchmarking, Learning, and Elicitation (2016) CASE Study 1: Real-time forecasting of algal bloom risk for lakes and reservoirs [Available at: **https://www.credible.bris.ac.uk/2016/08/18/case-study-1-real-time-forecasting-of-algal-bloom-risk-for-lakes-and-reservoirs/**]

Floating Solar and Water Bodies: Evidence, impacts and deployment considerations

The UK has ambitious solar photovoltaic targets, causing increasing conflict with land used for agriculture and required for nature. Floating solar photovoltaics arrays on water is an alternative means of deployment, with the potential to deliver benefits to electricity, water provision and biodiversity, especially when deployed on managed water bodies, including reservoirs and quarries. In these contexts, floating solar may also offer co-benefits aligned with existing water management objectives, such as reduced evaporation, moderated surface temperatures and reduced algal growth.[29]

Robust scientific evidence is essential to understanding this potential, as well as other associated effects on hosting waterbodies. A global scale systematic review, by Lancaster University and the UK Centre for Ecology & Hydrology, synthesised how floating solar interacts with freshwater bodies and what this means for responsible deployment. The study reviewed over 90 published research papers published by July 2024, drawing on more than 400 individual findings within the studies, to better understand how floating solar affects water bodies. Synthesising all peer-reviewed scientific studies provides valuable insight for future deployments through identifying common patterns across multiple sites and highlighting the role of site-specific conditions on outcomes.[30]

The most consistent finding across the evidence base was that floating solar reduces evaporation - every study that examined evaporation reported lower water losses.[31] This finding is particularly relevant for reservoirs and water bodies where evaporation has consequences for associated operations (e.g.

---

[29] Armstrong, A., Page, T., Thackeray, S.J., Hernandez, R.R., Jones, I.D., 2020. Integrating environmental understanding into freshwater floatovoltaic deployment using an effects hierarchy and decision trees. Environ. Res. Lett. 15, 114055. https://doi.org/10.1088/1748-9326/abbf7b; Exley, G., Hernandez, R.R., Page, T., Chipps, M., Gambro, S., Hersey, M., Lake, R., Zoannou, K.-S., Armstrong, A., 2021b. Scientific and stakeholder evidence-based assessment: Ecosystem response to floating solar photovoltaics and implications for sustainability. Renew. Sustain. Energy Rev. 152, 111639. https://doi.org/10.1016/j.rser.2021.111639; Rocha, S.M.G., Armstrong, A., Thackeray, S.J., Hernandez, R.R., M Folkard, A., 2024. Environmental impacts of floating solar panels on freshwater systems and their techno-ecological synergies. Environ. Res. Infrastruct. Sustain. 4, 042002. https://doi.org/10.1088/2634-4505/ad8e81; Nobre, R., Boulêtreau, S., Colas, F., Azemar, F., Tudesque, L., Parthuisot, N., Favriou, P., Cucherousset, J., 2023. Potential ecological impacts of floating photovoltaics on lake biodiversity and ecosystem functioning. Renew. Sustain. Energy Rev. 188, 113852. https://doi.org/10.1016/j.rser.2023.113852

[30] Rocha, S.M.G., Armstrong, A., Thackeray, S.J., Hernandez, R.R., M Folkard, A., 2024. Environmental impacts of floating solar panels on freshwater systems and their techno-ecological synergies. Environ. Res. Infrastruct. Sustain. 4, 042002. https://doi.org/10.1088/2634-4505/ad8e81

[31] Ibid

potable water supply and agricultural irrigation), especially in more water scarce areas. Floating solar also commonly reduces surface water temperatures, often by around 1–2°C during warmer periods, helping to moderate warming during heatwaves.[32] Any reported increases in water temperature occurred during the winter and/or nighttime.[33] By limiting light reaching the water, floating solar can also suppress algal blooms or change which algae dominate.[34] This could support wider water quality objectives where algae are a concern, or are anticipated to be as algae blooms increase under climate change. Beyond these effects, insights were limited and outcomes varied between sites.

The evidence synthesis, along with understanding of water body function, highlighted that outcomes depend upon how ecosystem impacts will vary with coverage, design decisions like panel spacing and location on the water body, and water body sensitivity.[35] As such, water body functioning must be considered in the design and deployment process. Other uses of the water body, such as water supply or recreation, are affected by these ecosystem impacts, and should also be considered. Ecosystem responses are likely to be greatest at higher levels of coverage and for designs that allow limited airflow and light penetration and lowest where coverage is limited and airflow and light penetration is higher. Consequently, coverage, location and spacing decisions can be made to actively mitigate negative impacts and enhance positive outcomes. For example, water bodies with frequent and extensive algal blooms

---

[32] Exley, G., Armstrong, A., Page, T., Jones, I.D., 2021a. Floating photovoltaics could mitigate climate change impacts on water body temperature and stratification. Sol. Energy 219, 24–33. **https://doi.org/10.1016/j.solener.2021.01.076**; Nobre, R.L.G., Vagnon, C., Boulêtreau, S., Colas, F., Azémar, F., Tudesque, L., Parthuisot, N., Millet, P., Cucherousset, J., 2025b. Floating photovoltaics strongly reduce water temperature: A whole-lake experiment. J. Environ. Manage. 375, 124230. **https://doi.org/10.1016/j.jenvman.2025.124230**

[33] Liu, Z., Ma, C., Yang, Y., Li, X., Gou, H., Folkard, A.M., 2024. Water temperature and energy balance of floating photovoltaic construction water area—field study and modelling. J. Environ. Manage. 365, 121494. **https://doi.org/10.1016/j.jenvman.2024.121494**;

[34] Exley, G., Page, T., Thackeray, S.J., Folkard, A.M., Couture, R.-M., Hernandez, R.R., Cagle, A.E., Salk, K.R., Clous, L., Whittaker, P., Chipps, M., Armstrong, A., 2022. Floating solar panels on reservoirs impact phytoplankton populations: A modelling experiment. J. Environ. Manage. 324, 116410. **https://doi.org/10.1016/j.jenvman.2022.116410**; Nobre, R.L.G., Cucherousset, J., Boulêtreau, S., Azémar, F., Parthuisot, N., Colas, F., Millet, P., Tudesque, L., 2025a. Diatom assemblages colonizing floating photovoltaic floaters are distinct from those in benthic and pelagic compartments of gravel pit lakes. Knowl. Manag. Aquat. Ecosyst. 10. **https://doi.org/10.1051/kmae/2025006**

[35] Rocha, S.M.G., Nobre, R.L.G., Casas, D.A., Thackeray, S.J., Armstrong, A., Boulêtreau, S., Cucherousset, J., Folkard, A., 2026. The impact of small-scale variations in floating photovoltaics surface coverage and 'light island' designs on gravel pit thermal structure. J. Environ. Manage. 404, 129415. **https://doi.org/10.1016/j.jenvman.2026.129415**

may benefit from higher coverages whereas lower coverages are likely more appropriate for well-functioning and sensitive water bodies.

Consistent with best practice in water management, the review also highlights the importance of targeted, ongoing monitoring - particularly of dissolved oxygen concentrations, and nutrients and algae. Such monitoring is essential to ensure that healthy water conditions are maintained, support informed decisions on coverage, design, and location for future deployments, quantify potential benefits (including water treatment cost savings), and guide management actions.

Key takeaway:

Insight from more than 90 studies evidence that floating solar can be effectively deployed on water bodies, with water body outcomes optimised through careful consideration of coverage, technical design, and water body sensitivity.

Beyond these water management co-benefits, FPV also presents opportunities to enhance ecological value where biodiversity objectives are actively integrated into system design. In particular, combining FPV arrays with features such as floating wetlands or aquatic habitat structures has the potential to create new or improved habitats on otherwise open and structurally simple water bodies. Floating wetlands can support emergent and marginal vegetation, providing feeding, nesting, and refuge areas for waterfowl, while also contributing to nutrient uptake and local habitat complexity. Below the water surface, added shading and structural elements can create cooler refuge areas and shelter for fish and invertebrate communities, particularly during warmer periods. These design features can also help visually integrate FPV arrays into the landscape and act as localised wave barriers, reducing fetch and surface disturbance. When carefully located and proportioned, such interventions can enhance habitat diversity while remaining compatible with core water supply, operational, and recreational functions.

Implications for the UK energy transition

The chapter has highlighted that meeting the UK’s future electricity demand and clean power ambitions will require additional, complementary approaches to technology deployment. FPV provides one such route. As a mature, commercially deployable technology, it is well suited to addressing land-use constraints by utilising the UK’s substantial freshwater surface area, while contributing meaningful generation capacity to support energy security and improvements in water quality.

Policy choices and deployment pathways to 2050

Key takeaways

1. Deployment outcomes are highly sensitive to the policy environment including the **extent of support in the CfD framework, planning policy and grid connection status**.
2. We expect **short-term deployment to be mainly focused on water industry and man-made water bodies**, some of which will be connected via private wire foregoing the need for connection to the grid system.

Policy intervention will drive deployment and create opportunities to put downward pressure on bills

Our preparatory work for this assessment comprised a comprehensive evidence review, including a detailed examination of the historical drivers and barriers to renewable energy deployment, with particular reference to the growth drivers in GMPV and offshore wind. This analysis indicates that deployment outcomes are highly sensitive to the prevailing policy environment, as discussed further below. Drawing on this evidence base, we have developed a scenario-based policy framework to assess how different policy levers may support FPV deployment, while using historical deployment trends to inform and bound projections. We have undertaken an additional review of measures implemented in other countries to support FPV rollout.

International policy benchmarks

Globally, a growing number of countries have introduced national-level frameworks to support FPV deployment. Their approaches broadly fall into two categories, explicit national regulatory regimes that pre-authorise FPV on defined classes of public water bodies and national incentives or simplified consenting routes that facilitate FPV within existing planning systems. Across mature FPV markets in Asia, countries including China and South Korea have set national and regional targets, provided R&D support and funded pilot and demonstration projects. We present some specific interventions from European countries in the table below.[36]

In Europe, several countries have introduced targeted measures to enable FPV deployment within existing regulatory frameworks. Spain permits FPV to occupy between 5% and 15% of the surface area of certain government-owned reservoirs and dams. [37] The Dutch Government administers the SDE++ scheme, an operating subsidy that bridges the gap between generation costs and electricity market prices; recent auction rounds have further differentiated support by technology type, including dedicated categories and pricing for water-based solar. [38] Meanwhile, Türkiye has established a national regulatory framework that caps FPV coverage at 10% of surface area at normal water levels, while prohibiting rollout in for example, protected areas and flood-control reservoirs.[39]

---

[36] USAid and NREL (2022) Enabling Floating Solar (FPV) Deployment: Policy and Operational Considerations [Available at: **https://docs.nrel.gov/docs/fy22osti/83228.pdf**]

[37] CMS Law (2025) CMS Expert Guide to Agrivoltaics and Floating Photovoltaics in Spain [Available at: **https://cms.law/en/int/expert-guides/cms-expert-guide-to-agrivoltaics-and-floating-photovoltaics/spain**]

[38] Government of the Netherlands (2024) SDE++ 2024: Stimulation of Sustainable Energy Production and Climate Transition

[39] PV Magazine (2025) Türkiye publishes rules for floating solar [Available at: **https://www.pv-magazine.com/2025/12/12/turkiye-publishes-rules-for-floating-solar/**]

Methodological parameters

In developing the Solar Roadmap to 2050, DESNZ adopted a policy-led approach to scenario design, which we have replicated in our own deployment analysis. Furthermore, DESNZ assessed deployment potential through an evaluation of spatial availability; this methodological approach has also been applied in our analysis.[40]

As an initial step, Bluefield developed an estimate of the total surface area of available water bodies across the United Kingdom, as presented in the table below. The assessment then considers the feasible coverage by water body type, alongside the policy conditions required to enable deployment within each category. Throughout the analysis, a capacity assumption of 2 MW per hectare of utilised surface area has been applied.[41] The total surface area for each water body type is set out below.

Table 3: Overall hectare estimate, by water body type

	Water industry	Man-made	Natural
Hectares	25,000	65,000	295,000

Source: Bluefield provided estimates (2026). Additional capacity is incorporated from 2035 and 2040 to account for new reservoir construction.

---

[40] Department for Energy Security & Net Zero (2025) Solar roadmap: Annex I – Analytical Methodologies. The referred research is a study carried out by LCP Delta which quantifies the technological potential of deploying rooftop solar on UK warehouses. From this, DESNZ have applied 50% as a benchmark to account for other, unspecified barriers to deployment.

[41] Naturally, this value will vary based on site-specific characteristics. 2 MW has been selected as a reasonable mid-point and can be reasonably expected to increase over time as solar panels continue to become more power dense.

Scenario overview

We outline three deployment scenarios:

- Under a **Limited scenario**, where FPV is not supported in the CfD framework, receives no targeted planning reform and is not prioritised for grid connection, deployment remains negligible - reaching only 1.1 GW by 2050. In this case, FPV fails to build investor confidence and supply chain capability and therefore remains confined to isolated projects.
- Under a **Central scenario**, where FPV is supported within the CfD framework, backed by planning policy and recognised as a strategic project for grid priority, deployment scales progressively to 3.6 GW by 2030, 18.3 GW by 2040 and 40.9 GW by 2050. Deployment focuses primarily on water industry bodies in the short-term. We also include a lower-bound sensitivity to reflect grid connection constraints, under which deployment reaches 22 GW by 2050. Cost parity is achieved in the mid-2030s and FPV becomes a stable contributor to the energy mix. From 2035 onwards, further capacity is delivered through co-location with offshore wind that amounts to 10% of additional offshore wind capacity. We also assume that UK firms provide goods and services amounting to 2.5% of the European FPV market.
- Under an **Ambitious scenario**, with ring-fenced CfD support, streamlined planning through Permitted Development Right, strategic prioritisation in the grid queue and integration with offshore wind, scaling accelerates rapidly. Capacity reaches 8.9 GW by 2030, 33 GW by 2040 and 58.6 GW by 2050. Early deployment centres on water industry and man-made bodies, which catalyses learning effects, expedites cost parity and positions the UK as a potential first mover in FPV supply chains. From 2035 onwards, further capacity is delivered through co-location with offshore wind that amounts to 20% of additional offshore wind capacity. We also assume that UK firms provide goods and services amounting to 5% of the European FPV market.

Image credit: Ciel & Terre

Policy levers shaping deployment

In this chapter, we consider each policy lever in turn, alongside its implications for deployment across the scenarios. Further data on each scenario is presented in the Appendix.

Core assumption: Water industry integration

Throughout this analysis, we assume that **water bodies owned by water utility companies will be the first to come forward for FPV deployment**, making integration with the water industry a **critical delivery mechanism**. This reflects their potential to offer a more immediate pathway for scaling solar in the near term, given existing governance frameworks.

If systems are designed appropriately and to the necessary standards, there are also clear ecological and financial benefits for the water sector, particularly the opportunity to deploy behind-the-meter generation to reduce their own energy costs, which are likely to incentivise uptake.

However, realising this opportunity depends on asset owners being willing to transact. To support this, **Government intervention will be required to work alongside water companies to nurture the right conditions for deployment**. This could include issuing targeted guidance to encourage the water industry to explore FPV, alongside mechanisms such as incorporating on-site FPV generation into the Over-Delivery Incentive framework.

Policy lever 1: CfD mechanism

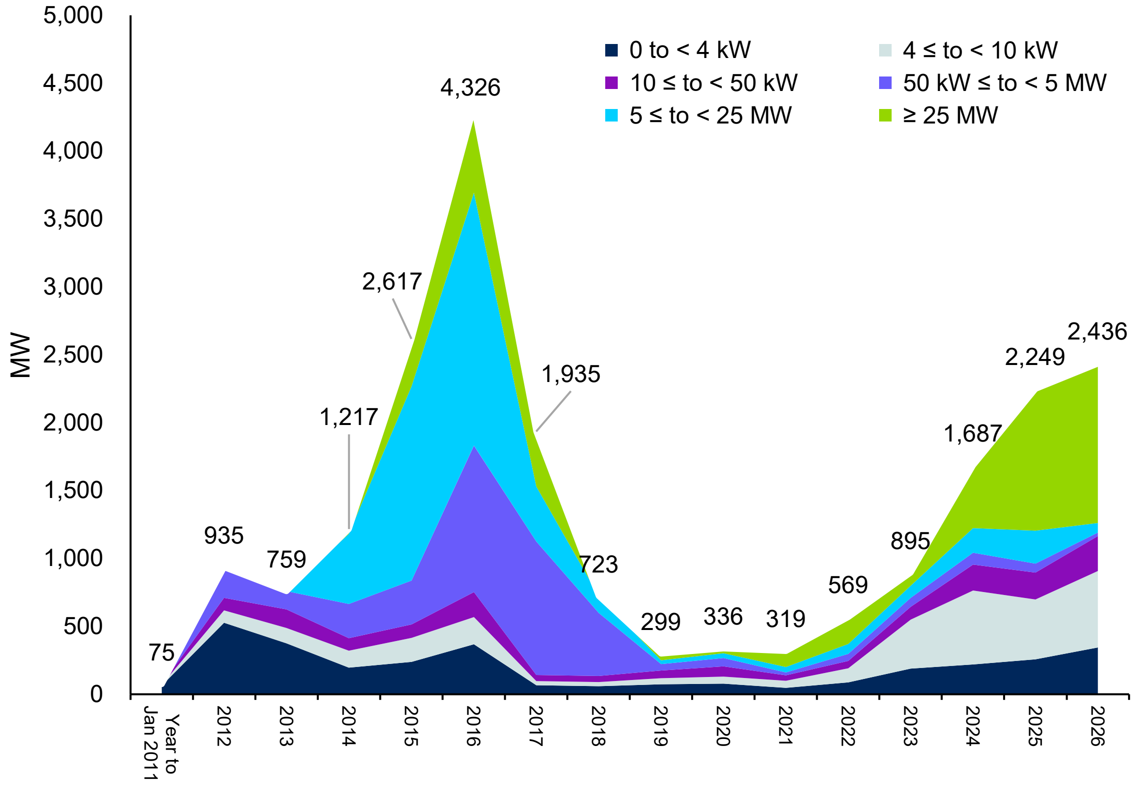
As discussed above, the CfD scheme is the Government’s main mechanism for supporting low carbon electricity generation. The core objectives of the scheme are to give investors the confidence they need to invest in UK renewable energy projects and to attract greater investment at a lower cost of capital and from a wider pool of resources. An early policy evaluation of the scheme found that it is successfully meeting these objectives while also delivering value for money for consumers.[42]

---

[42] Department for Business, Energy & Industrial Strategy (2022) Evaluation of the Contracts for Difference scheme

An analysis of the data presented affirms the importance of the CfD framework for deployment. **Figure 2** below shows that significant new deployment came online in the early-mid 2010s which has been attributed to the introduction of the Feed-in-Tariff (a predecessor to CfDs) and Renewables Obligation schemes at the start of the decade. However, growth slowed substantially after this when the policy was weakened for installations over 50kW.[43] [44] Likewise, the first of the CfD Allocation Rounds (AR1), held in 2014/15, was designed to support larger-scale deployment and delivered 72 MW of solar capacity. However, no funding was allocated for established technologies, such as solar, in AR2 or AR3 which explains the very low levels of additional deployment towards the end of the 2010s. Funding for established technologies was re-introduced from AR4 and has been steadily increasing, alongside other changes such as longer contract lengths which help to further boost investor confidence and lower capital costs. This resulted in a record solar allocation in AR7 of 4.9 GW. As shown in **Figure 2**, a favourable policy environment has supported deployment during the first half of the 2020s.

Figure 2: Additional Solar PV deployment, per annum (2011 – 2026)



Source: DESNZ (2026)[45]

---

[43] LSE Business Review (2022) The story of solar power in the UK

[44] Business Green (2011) Curtain falls on solar subsidy boom

[45] Department for Energy Security and Net Zero (2026) Solar photovoltaics deployment in the UK – January 2026 [Available at: https://www.gov.uk/government/statistics/solar-photovoltaics-deployment]

A key finding of this report is that, to unlock large-scale FPV deployment and provide a sufficient activation signal to investors and the supply chain, support within the CfD framework is fundamental. We discuss each scenario, in turn, below:

- Our **limited scenario** reflects no support within the CfD framework. This fails to signal that the Government perceives FPV to be a viable part of the UK's future energy mix and consequently, investors are warned off further exploration beyond a few specific schemes brought forward by organisations for Behind the Meter use. The vast majority of components will be imported, the involvement of the local supply chain will be limited and Capital Expenditure (CapEx) will remain persistently high
- Our **central scenario** reflects support within the CfD framework, with a good technology minimum that recognises the strategic case for FPV. This stimulates early-stage deployment towards cost competitiveness with GMPV and provides a signal to investors and the supply chain that FPV will form part of the UK's future energy mix. This assumption broadens the type of water bodies we consider viable for FPV making deployment viable across water industry, man-made and some natural water bodies. Nevertheless, a mix of Behind the Meter and Grid solutions still come forward. In this scenario, the UK supply chain responds and CapEx falls accordingly.
- Our **ambitious scenario** reflects support within the CfD framework, with significant funding in a technology-specific ring-fenced pot to support a high-level of deployment. This stimulates significant deployment in the short and medium-term, helping to expedite cost competitiveness with GMPV, as shown later in this report, and providing a strong signal to investors and the supply chain that FPV will be central to the UK's future energy supply. This assumption elevates the overall quantum of delivery across the relevant water types and increases the overall speed of deployment. In this scenario, the UK supply chain responds strongly and CapEx falls at pace.

In the most recent Allocation Round, AR7, 4.9 GW of solar successfully bid for contracts. Approximately, 1.3 GW of this is set to become operational in 2027; 1.7 GW in 2028 and 1.9 GW in 2029. We have used this data to inform our deployment assumptions.

Image credit: Zimmermann

Policy lever 2: Planning

The UK's planning and development system presents a powerful lever to determine the level of deployment. While the planning system has come under some criticism in recent years with respect to renewable energy deployment, largely for being slow with lengthy times to decide applications, the Government has signalled an ambition for reform, through the Planning and Infrastructure Bill, with the aim of streamlining the application process.[46] Nevertheless, analysis of the Renewable Energy Planning Database indicates that the average time projects spend awaiting a planning decision has declined somewhat and exhibits a downward trend.

However, SolarPowerPortal identifies planning refusals as a major constraint on solar development, with refusal rates reaching 25% since the start of 2024, up from 15% and 20% in 2022 and 2023 respectively. They also highlight cases where projects have waited up to 177 weeks for a decision.[47] For FPV, this raises a clear risk: if projects remain delayed in the planning system or are refused due to limited familiarity with the technology among local planning authorities, the UK supply chain may fail to capitalise on the opportunity and instead cede competitive advantage to European counterparts.

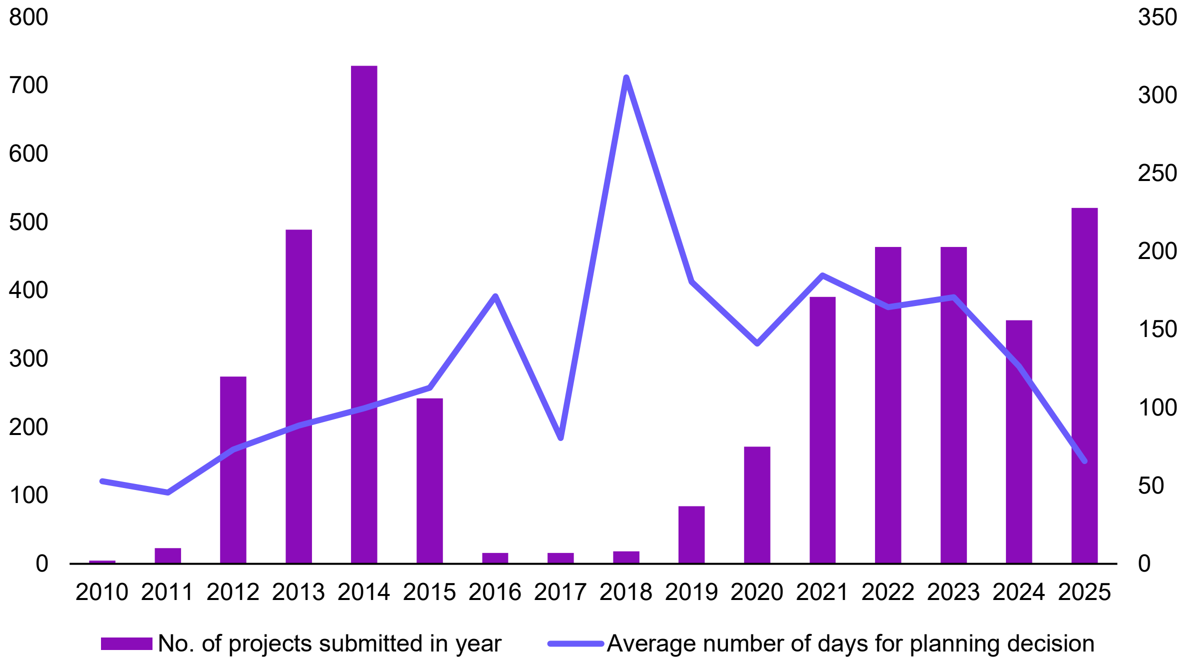
A clear framework signalling the national-level direction for FPV, supported by a shared and robust evidence base, could help to mitigate these challenges. As initial projects are delivered in the near term, proactive data collection can support the development of centralised guidance on the interactions between the array and the host water body and best practice in project design, thereby encouraging further deployment and reducing uncertainty for asset owners. It would also support those adopting a phased approach - for example, starting with 10% coverage and increasing to 20% - by enabling the development of effective monitoring guidance to track system interactions over time.

---

[46] CBRE (2025) Changes to the planning system could accelerate renewable energy deployment and help decarbonise UK real estate

[47] SolarPowerPortal (2025) UK solar applications spike ahead of CP30 but planning process remains slow [Available at: **https://www.solarpowerportal.co.uk/solar-projects/uk-solar-applications-spike-ahead-of-cp30-but-planning-process-remains-slow**]

Figure 3: Average number of days awaiting a planning decision (Solar PV projects >5 MW)



Source: Renewable Energy Planning Database: January 2026 (Quarter 4).

The Government has historically used planning policy to support solar deployment. Permitted Development Rights, which cover systems up to 50 kW on domestic roofs, means that installing solar panels on a roof or in a garden to generate energy for direct consumption does not usually require planning permission. Likewise, since December 2023, there has been no limit on the size of a system that can be installed on a non-domestic roof.[48] On the continent, Spain has allowed managers of 106 public water reservoirs for FPV to cover between 5% and 15% of the total surface area, depending on the water’s trophic state.[49]

---

[48] House of Commons Library (2024) Planning for Solar Farms [Available at: **https://researchbriefings.files.parliament.uk/documents/CBP-7434/CBP-7434.pdf**]

[49] Renewables Now (2024) Spain approves rules for floating solar installations on reservoirs [Available at: **https://renewablesnow.com/news/spain-approves-rules-for-floating-solar-installations-on-reservoirs-863132/**]

Our scenarios rely on the assumption that policy intervention on planning is necessary to unlock deployment. This assumption informs each scenario as follows:

- Our **limited scenario** assumes no policy intervention. As a result, projects will often face delays in coming forward as the projects are treated as novel due to a limited awareness amongst planning officers. Such delays ultimately fail to ignite supply chain and investor confidence. Only sites with a particular commercial interest for the end-user come forward.
- Our **central scenario** assumes a supportive planning policy, with a central intervention granting Permitted Development Rights (i.e. no need to seek planning permission) on water industry and man-made bodies to deliver 10% coverage by 2035 and 30% by 2050. Project modularity means that some projects may come forward incrementally, allowing for additional coverage over time. This would be accompanied by a National Policy Statement to establish a national need and reduce planning risk and a nationally relevant evidence base, or understanding, on ecology and water quality interactions using modelling techniques and guidance to support higher coverage (greater than >30%). This will expedite the pre-development stage in most cases while helping to mitigate against the risk of planning refusal. In our modelling, it means we assign delivery on water industry and man-made bodies at a similar rate of deployment as observed across the time-series of GMPV deployment. However, we assume that natural water bodies go through the discretionary planning system given the likely higher sensitivities around these sites. To recognise the streamlined planning process, we reduce pre-development costs by a third in our forward-looking assessment.
- Our **ambitious scenario** sees the interventions of the central scenario but with a greater level of coverage, up to 15% by 2035 and 30% by 2050, granted Permitted Development Rights, supporting deployment of utility-scale projects on water industry and other man-made bodies.[50] Further, the least sensitive waters that have little ecological value are given a simplified planning zone allowing asset owners to deploy to a much greater scale, up to 70%, without interruption. Water industry bodies would see further encouragement through support to assess FPV technology or through integration into their performance indicators. This helps to ensure strong deployment of FPV on water industry bodies, particularly in the short-term, and increases delivery on man-made bodies to consistently emulate the periods of significant additional GMPV delivery. In this scenario, we similarly assume that natural water bodies are subject to the standard discretionary planning system.

---

[50] DESNZ have recently opened a consultation to allow small scale domestic onshore wind turbines to be installed without planning permission, subject to a set of conditions. The aim is to support a range of non-domestic settings including businesses, farms and public sector organisations to reduce their bills, become more energy independent and decarbonise their operations. Further detail: **https://www.gov.uk/government/consultations/permitted-development-rights-for-onshore-wind-turbines-in-england**

Policy lever 3: Grid connection

The National Energy Systems Operator (NESO) is delivering a programme to the electricity connections process across both transmission and distribution networks. These reforms are designed to align network connections with national policy frameworks such as Clean Power 2030 and a forthcoming Strategic Spatial Energy Plan. Under this approach, projects will be assessed and filtered based on both their deliverability and their contribution to system needs.

From mid-2026, NESO will move to a prioritised connections framework, whereby projects that demonstrate sufficient readiness and strategic alignment are progressed with firm connection offers, while others remain in the pipeline with only indicative parameters and no guaranteed access to capacity. In practice, this means projects must demonstrate a credible route to delivery, by evidencing land rights or progressing through planning, and align with national energy objectives, including the Clean Power 2030 Action Plan.[51]

Projects can also be given 'Designated' status, allowing them to be prioritised within the queue and thereby receive earlier connection dates or preferential access to available capacity. Designated status will be awarded for projects that are critical to security of supply or that can demonstrate significant additional consumer, decarbonisation or other benefits to the GB Energy system and energy consumers. This includes projects that are new technologies or highly innovative. Achieving significant FPV deployment will depend on the technology receiving designated status at least to 2035.

Not receiving 'Designated' status would represent a material risk to FPV rollout. With the overall 'connection queue' estimated to exceed 700 GW, FPV projects risk becoming stuck in the process and not securing connection dates. In such a scenario, investor confidence could be undermined, limiting further project development and constraining FPV's role within the wider energy system, while also failing to stimulate the domestic supply chain.

---

[51] NESO (2025) Gate 2 Criteria Methodology [Available at: **https://www.ofgem.gov.uk/sites/default/files/2025-04/Appendix-to-Decision-Gate-2-Criteria-Methodology.pdf**]

These reforms were designed to remove so-called 'zombie projects' from the pipeline, i.e. those with little prospect of ever becoming operational.[52] DESNZ state that under the new changes, solar projects will be one of those accelerated for grid connection.[53] Their new process means that projects aligned to national energy targets and are 'ready-to-build', such as those with planning permission or land rights, will be prioritised.[54]

- Our **limited scenario** assumes that FPV is not recognised as a viable part of the UK's future energy supply and as a result fails to meet the requirements for expedited grid connection. Deployment falters on man-made and natural water bodies and covers only behind the meter solutions on water industry bodies.
- Our **central scenario** assumes that FPV is recognised as a viable technology amongst others that comprise the UK's future energy mix but importantly, receives Designated Status. Though we do reasonably assume some delayed connection across natural bodies given the present evidence on the mounting connection queue. In this scenario, deployment is lead off by water industry bodies and private organisations on man-made with a reasonable amount coming via Behind the Meter solutions (accounting for 1/3rd of all projects up to 2030, 1/5th of all projects up to 2040 and 1/10th thereafter), foregoing the need for a conventional grid connection process. The remainder would be for grid export and thus require a place in the queue. In this scenario, we model a lower-bound where only half of the deployment for utility-scale comes forward due to grid queue constraints.
- Our **ambitious scenario** assumes that the strategic importance of FPV is fully recognised with Designated status allowing for expedited grid access. This enables heightened levels of deployment across the relevant water body types and could potentially see further upside to Behind the Meter connections as organisations respond to a supportive policy environment and view FPV as an increasingly viable solution.

Further, as mentioned in the introduction, there are emerging future applications for FPV that could mean, for example, systems can be coupled with electrolysers to produce green hydrogen using the same water on which they float, offering an alternative route to market beyond grid-based electricity supply. However, this has not been incorporated within this specific analysis.

---

[52] Solar Power Portal (2025) NESTO lays out timeline for connections reform. [Available at: **https://www.solarpowerportal.co.uk/energy-policy/neso-lays-out-timeline-for-connections-reform**]

[53] Department for Energy and Net Zero (2025) Clean energy projects prioritised for grid connections [Available at: **https://www.gov.uk/government/news/clean-energy-projects-prioritised-for-grid-connections**]

[54] National Energy System Operator (2025) NESO implements electricity grid connection reforms to unlock investment in Great Britain [Available at: **https://www.neso.energy/neso-implements-electricity-grid-connection-reforms-unlock-investment-great-britain**]

Policy lever 4: Off-shore wind co-location

The UK has a world-leading offshore wind sector and has set a target of 50 GW of installed capacity by 2030. In the Netherlands, they have begun to utilise the space between wind turbines for solar panels and found that by using just 3-5% of this space can boost energy output by over 20%.[55] This informs each assumption as follows:

- Our **limited scenario** assumes no additional FPV uplift from offshore wind co-location.
- Our **central scenario** assumes some additional FPV uplift from offshore wind co-location, adding 10% to the energy output from additional offshore wind deployment from 2035. We assume this intervention comes into fruition from 2035 to allow a lag for FPV to become a recognised deployment technology and subsequently be integrated into development plans.
- Our **ambitious scenario** assumes that FPV aligns with the findings from the Netherlands and adds 20% to the energy output from additional offshore wind deployment from 2035.

Image credit: Zimmermann

---

[55] SolarPower Europe (2025) World's first commercial project: offshore solar floats between wind turbines [Available at: **https://www.solarpowereurope.org/news/world-s-first-commercial-project-offshore-solar-floats-between-wind-turbines**]

Policy Lever 5: Innovation Funding

Our industry engagement, presented throughout this report, indicates that a strong and reliable project pipeline is critical to activating the UK supply chain for FPV. In turn, we find this to be a necessity to maximise the economic value retained domestically.

Establishing such a pipeline will require the Government to set a clear deployment target. Innovation funding would then enable firms across the supply chain to trial new products and techniques, generate the evidence needed for regulatory clearance, and monitor interactions with the marine environment in an appropriate setting. In combination, pipeline visibility and innovation funding would help to increase investor confidence across the supply chain and support more rapid deployment.

The Government has rolled out similar support for other technologies. For example, the GB Energy Supply Chain Fund allocated up to £300 million in capital grand funding to build UK manufacturing capacity in key constrained components in offshore wind and enabling electricity networks sectors.[56] In each assumption we assume:

- Our **limited** scenario assumes no innovation funding, restraining deployment and keeping UK supply chain involvement low.
- Our **central** and **ambitious** scenarios assume funding is made available for a University-based test centre which makes the UK a hub for FPV research and development in Northern Europe. Alongside this, the Government provides capital funding for supply chain firms to help the UK build manufacturing capacity. This enables rapid deployment and ensures the UK supply chain can meaningfully and promptly react and consequently, capture economic value from development.

Deployment trajectories

We now present the deployment trajectories for each scenario within the outlined policy environment. These projections reflect both the policy assessment and a judgement on the feasible pace and scale of GMPV deployment to ensure deliverability. They are indicative only and do not incorporate specific commercial negotiations or project-level pipeline detail.

---

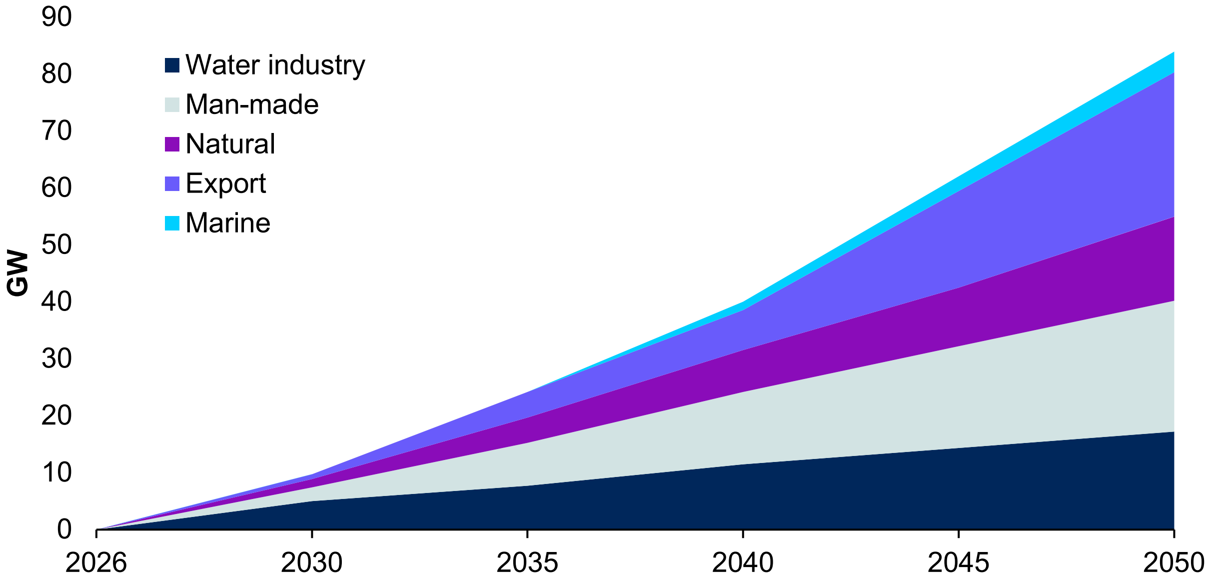
[56] Great British Energy (2026) Great British Energy (GBE) Supply Chain Fund: Offshore Wind and Networks **https://www.gbe.gov.uk/funding-opportunities/supply-chain-fund-offshore-wind-networks**

Ambitious Scenario

In this scenario, deployment begins with clear leadership from water industry and man-made water bodies up to 2030. By 2030, 10% of water industry bodies are covered compared to just 3% of man-made bodies. Natural water bodies are only a small consideration in the medium-term, reflecting their greater delivery complexity, with only 0.25% covered by 2030.

From 2035 onward, deployment accelerates markedly. Water industry and man-made bodies maintain strong growth with both reaching approximately 30% coverage by 2050. Natural water bodies also see considerable growth though to a much lower level of coverage overall, with only 2.5% covered by 2050. In terms of deployment unlocked by offshore-wind co-location (labelled marine in **Figure 4**), we see 1.5 GW in 2040 growing to 3.6 GW by 2050. We have also included export-related capacity in Figure 4. This should be interpreted as additional production by UK firms of goods and services destined for international markets, where the associated electricity generation occurs in other countries on the continent.[57]

Figure 4: Deployment trajectory under the Ambitious scenario



Source: CBI Economics modelling (2026)

---

[57] In the Central and Ambitious scenario, we assume the UK captures 2.5% and 5% of the European FPV market, respectively. We assume European FPV market capacity to total approximately 510 GW in 2050 or 25% of total surface area.

EQUANS UK are a leading EPC provider that has delivered around 1.4 GW of solar and storage projects in the UK over the past five years, and their broader European business have experience delivering FPV projects in Belgium and France and noted the technology’s relative maturity in these markets.

FPV has historically lagged in the UK, in part due to the success of GMPV which has been supported by the amount of available land, favourable planning policy, and grid access. However, as these have become constrained, EQUANS UK see **FPV as a complementary solution to meet our energy needs**. Technological advances, particularly bifacial panels, have improved energy efficiency and water’s reflective properties have the potential to boost generation further which will help to narrow the cost gap with GMPV.

European markets such as the Netherlands and France demonstrate that FPV can scale where there is a clear policy framework and project pipeline. In the UK, EQUANS identified key barriers to deployment such as policy uncertainty and a lack of long-term performance data. Skills constraints are also emerging, with design expertise concentrated in Europe and risks of labour migration without additional domestic, solar projects in the short-term (2-3 years).

Targeted support, such as a ring-fenced CfD allocations, clearer planning policy, and demonstration projects, could unlock deployment while enabling the UK to build domestic capability and export design expertise.

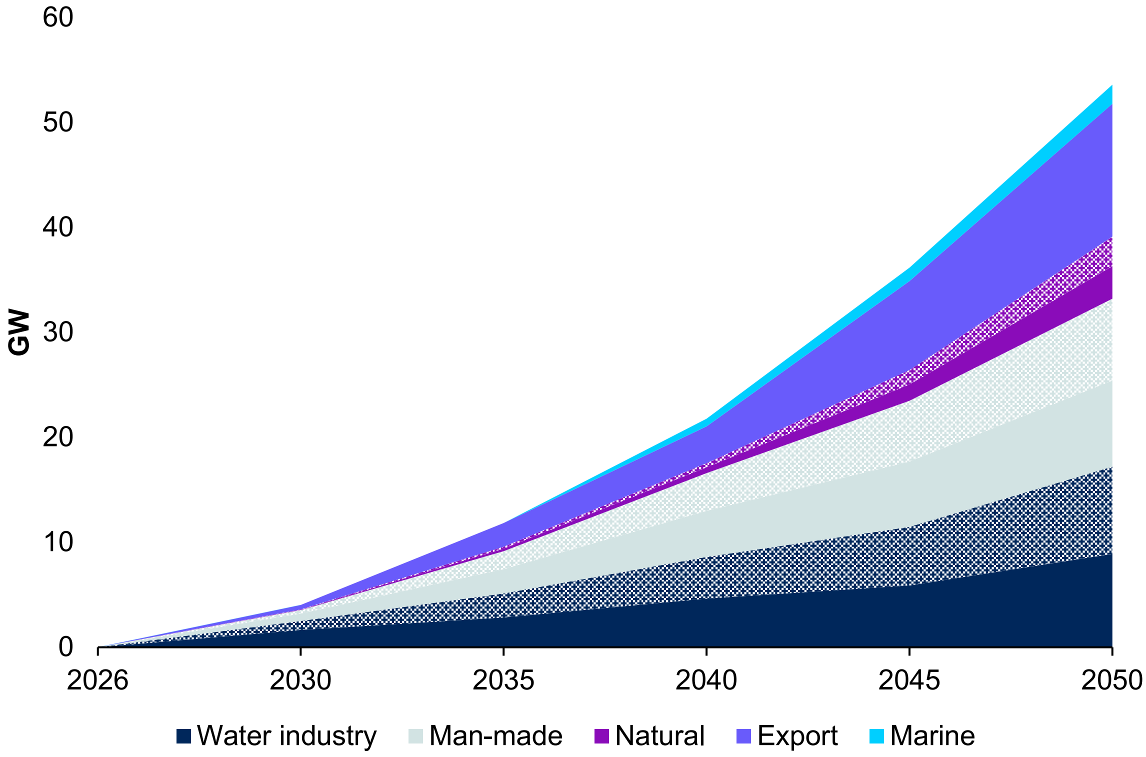
Central Scenario

In the central scenario, short-term growth to 2030 is again led by water industry and man-made water bodies, though at a more moderate scale than in the Ambitious case. Following 2030, man-made sites continue to exhibit good deployment, while water industry assets provide steady, incremental additional capacity. Natural water bodies contribute only marginally before 2035.

After 2035, deployment expands more gradually than in the Ambitious scenario. The UK begins to service more export opportunities while marine (offshore wind co-location) deployment also kicks in. By 2050 (just above 50 GW total), the deployment profile remains concentrated in water industry and man-made sites, with export contributing to UK manufacturing output also.

In this scenario, we also include a lower-bound case to reflect deployment at risk from grid connection constraints. Under such constraints, we estimate that deployment would reach only 22 GW by 2050. The lower-bound assumes only half of the utility-scale export capacity of the Central scenario is realised. This is illustrated by the hatched area in the figure below.

Figure 5: Deployment trajectory under the Central scenario



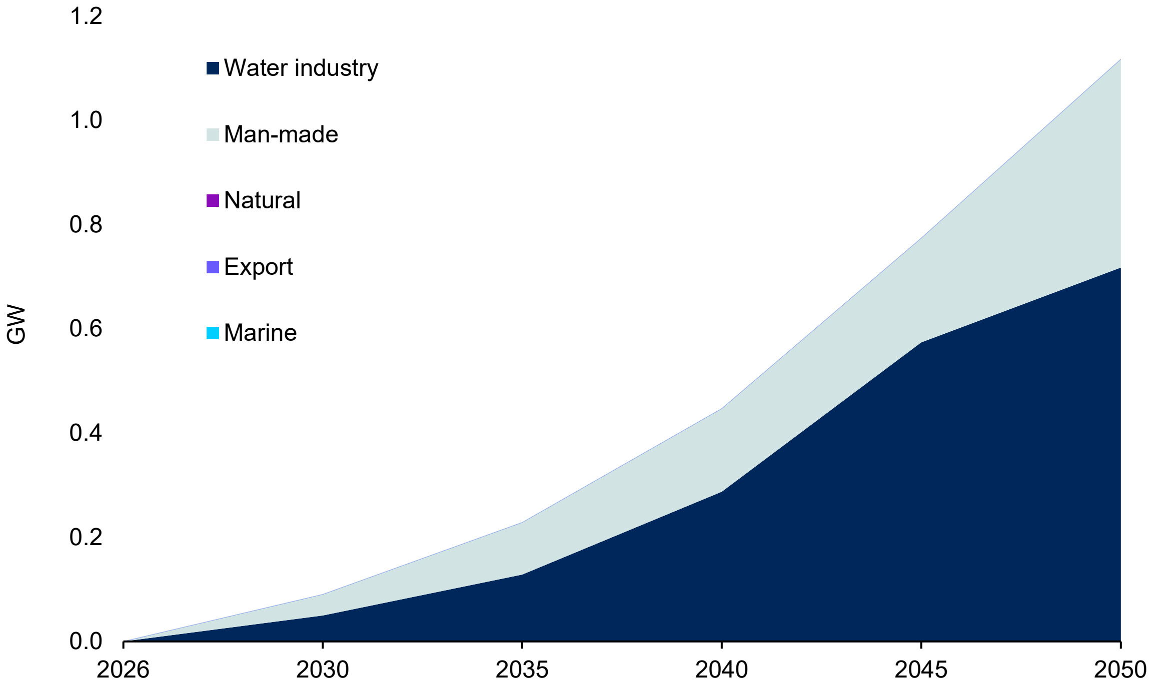
Source: CBI Economics modelling (2026). Hatched area indicates delivery at risk under the lower-bound scenario where grid connection constraints apply.

Limited Scenario

The limited scenario is characterised by very low short-term uptake, with only marginal deployment by 2030 and activity confined to a fragmented few water industry and man-made water body sites. Man-made sites dominate, albeit at very low penetration levels, reflecting minimal policy intervention.

Beyond 2035, expansion remains shallow and narrowly concentrated. There is no material contribution from natural, export, or marine water bodies across the period. By 2050 (around 1 GW total), deployment remains restricted to small-scale utilisation of lower-complexity water industry and man-made sites.

Figure 6: Deployment trajectory under the low scenario



Source: CBI Economics modelling (2026)

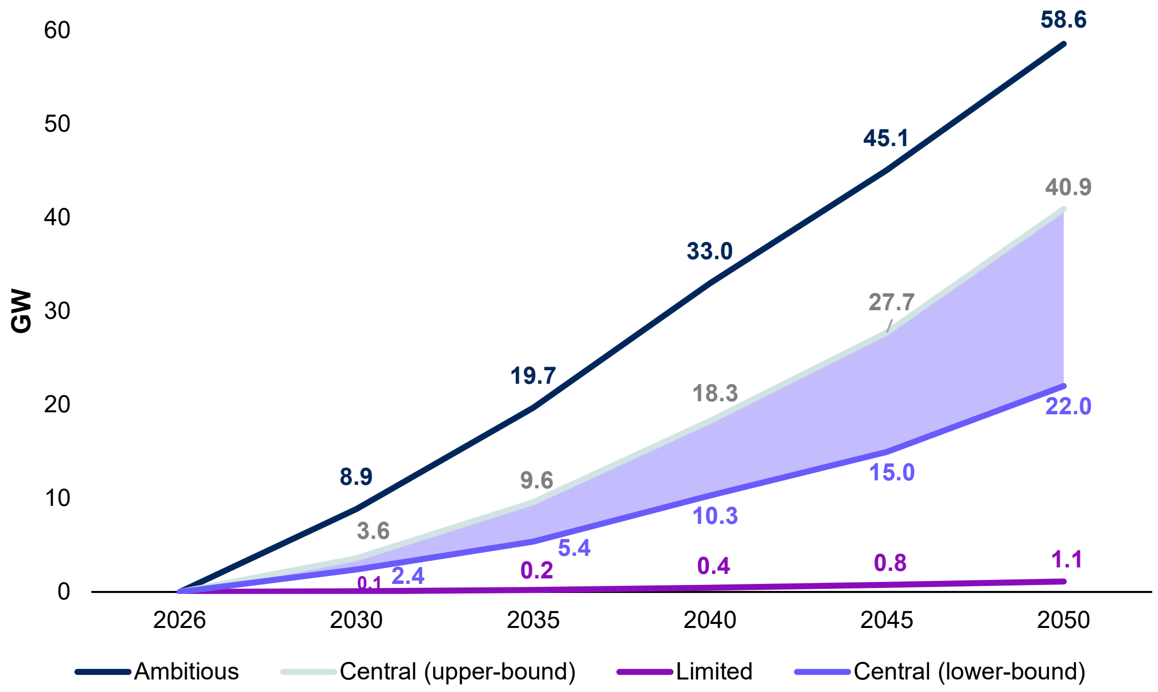
Comparing domestic deployment

In the short term to 2030, deployment remains relatively modest across all scenarios, but there is some divergence. In the Ambitious scenario, we see deployment reach 8.9 GW by 2030, while in the Central scenario it grows to just 3.6 GW (or 2.4 GW in the lower-bound) and in the Limited scenario it remains negligible at 0.1 GW. This indicates that early acceleration is highly sensitive to enabling conditions.

From 2030 to 2040, the gap widens substantially. The Ambitious scenario grows substantially to 33 GW in 2040, reflecting strong scaling dynamics. The Central scenario follows a similar trajectory but at an overall lower magnitude (18.3 GW in 2040 for the upper bound and 10.3 GW for the lower bound) while the Limited scenario remains effectively flat, reflecting the low recognition for the technology.

By 2050, the divergence becomes pronounced: 58.6 GW in the Ambitious scenario, 40.9 GW in the Central upper-bound scenario, 22.0 GW in the Central lower-bound scenario and only 1.1 GW in the Limited scenario. The Ambitious and Central pathways both exhibit sustained growth over time, whereas the low scenario demonstrates a constrained technology with minimal scaling.

Figure 7: Domestic deployment across the Ambitious, Central and Limited scenarios



Source: CBI Economics modelling (2026)

Tata Steel UK (TSUK) is exploring opportunities to supply steel for FPV mounting structures, building on its existing capabilities in coated and galvanised steel for ground-mounted solar. This represents a clear opportunity to strengthen UK-based supply chains within the clean energy sector.

Solar deployment is an increasingly important source of demand for UK steel producers. Ground-mounted solar requires an estimated 28,000–30,000 tonnes of steel per GW, with FPV likely to generate similar demand. However, realising this opportunity depends on the establishment of a clear and credible deployment pipeline. Visibility over future demand is essential for TSUK and others to justify investment in new products and manufacturing processes.

While carbon steel and existing galvanisation processes are already suitable for many applications, investment in product development and adaptation requires long-term market certainty. Government therefore has a key role in providing stable deployment signals and a supportive industrial policy environment. This includes a defined FPV pipeline, competitive energy costs, and procurement frameworks that enable UK manufacturers to capture value from the energy transition

Unlocking deployment: the role of CfDs and early-stage support

Key takeaways

1. Early-stage **policy support is required to unlock deployment and enable cost reductions** through learning effects. Under heightened deployment in the **Ambitious scenario, we expect FPV to be cost competitive with GMPV by the end of the 2020s**. In the **Central Scenario, cost competitiveness is reached in the mid-2030s**.
2. Targeted support within the **Contracts for Difference** mechanism is a key, credible and time-limited pathway to **cost competitiveness**.

A pathway to cost competitiveness through CfD

The Contracts for Difference (CfD) scheme is the UK's primary policy instrument for supporting the deployment of low carbon electricity generation. The mechanism is designed to incentivise investment in renewable energy projects in the UK, while reducing costs for the consumers by providing revenue certainty to developers.

Renewable electricity generation projects are typically characterised by high upfront capital costs and long asset lifetimes. The CfD mechanism supports deployment by managing risks associated with these factors by guaranteeing a set price for electricity generation throughout the lifetime of the contract. When wholesale prices fall below this level, generators receive a 'top-up' payment; when prices exceed it, they return the surplus. This structure protects consumers and developers from price volatility.

Allocation of CfDs takes place through competitive bidding rounds. At the start of each round, the Government sets an ASP for each technology, which represents the maximum price per MWh that projects of that technology can receive. However, the final strike price is determined through bidding. As this second part of the process cannot be simulated, our analysis focuses on ASPs which can be treated as a strong general guide for the price direction between allocation rounds.

In Allocation Round 7 in 2026, the ASP for GMPV was £75/MWh. Using DESNZ's framework for setting the ASP, we estimate that a typical FPV project in AR7 would have had an ASP of £106/MWh. While this represents a cost premium, it is driven primarily by early-stage market conditions, which we describe in further detail below. In later chapters, we explore the forward-trajectory of these conditions and the impact it will have on the ASP in future allocation rounds.

Key modelling assumptions:

- **Load factor:** We have aligned the net load factor (the measure of actual output as a percentage of the maximum capacity) for FPV with GMPV. This reflects a deliberately conservative modelling assumption. While some organisations, including the World Bank, suggest that FPV systems may achieve a 5-10% higher performance ratio due to the cooling effect of water bodies, emerging evidence from stakeholder engagement does not currently provide sufficient certainty to justify incorporating this uplift into our core assumptions.[58]
- **Hurdle rates and insurance costs:** Through our industry engagement and in acknowledgement that there are relatively low levels of deployment of FPV at present (in comparison to GMPV), we have formed an assumption that the hurdle rate (the minimum required return on an investment to be deemed acceptable) and insurance costs will be comparatively higher for FPV. These are key cost inputs that are expected to reduce to parity with GMPV as deployment scales.[59] The World Bank expects financial risk to reduce as global deployment builds a 'track record' for FPV systems.[60]
- **Capital and operational expenditure costs** are based on industry benchmarks and are assumed to decline as deployment scales.

---

[58] The World Bank (2018) Growing Exponentially, Floating Solar Opens Up New Horizons for Renewable Energy. [Available at: **https://www.worldbank.org/en/news/press-release/2018/10/30/floating-solar-opens-new-horizons-for-renewable-energy**]

[59] In the forward-looking ASP assessment, we assume that the hurdle rate and insurance costs are equal from 2027 and 2030, respectively.

[60] The World Bank (2019) Floating Solar Market Report [Available at: **https://documents1.worldbank.org/curated/en/670101560451219695/pdf/Floating-Solar-Market-Report.pdf**]

Table 4: Key inputs to AR7 DCF

	FPV	GMPV	Units
Project size	52	52	*MW*
Degradation	0.4[61]	0.3	*%*
Load factor	12.5	12.5	*%*
Hurdle Rate	9.0	7.2	*%*
Reference price	17.4	17.4	*£/MWh*
Pre-development	12 – 59	12 - 59	*£/kWp*
CapEx during construction	550 – 750	423 - 601	*£/kWp*
Infrastructure	80 – 150	91 - 129	*£/kWp*
Fixed O&M	8.45	6.1	*k£/MWp/yr*
Insurance	2.25	1.6	*k£/MWp/yr*
Connection and UoS charges	1.6	1.6	*k£/MWp/yr*
Land costs	1	1	*k£/MWp/acre*
Property and business rates	2.34	1.8	*k£/MWp/yr*
Community benefits payments	0.6	0.6	*k£/MWp/yr*

Source: Industry engagement; Arup for DESNZ (2025)[62]

The following chapters examine the likelihood of learning rates occurring and consider their implications for ASPs in future Allocation Rounds.

---

[61] In the forward-looking ASP assessment, we assume that degradation is equal to GMPV at 0.3% from 2030 onwards to reflect technology development.

[62] Arup for the Department of Energy Security and Net Zero (2025) Renewable Energy Generation Cost and Technical Assumptions – Onshore Wind and Solar PV [Available at: https://www.gov.uk/government/publications/onshore-wind-and-solar-cost-and-technical-assumptions]

Under the scenarios exhibiting scaled deployment, FPV is anticipated to see notable learning rates

Learning rates are a key feature of technology development and innovation literature. In this report, as in the DESNZ report, we refer to the learning rate of a component as the percentage reduction in cost each time cumulative installed capacity (GW) doubles. As businesses learn how to execute processes more efficiently, they are able to reduce costs. In the classic model, learning relies on building volume and as a consequence, experience, faster than competitors.[63] In our analysis, we assume that learning reduces construction and operational costs on a £/GW basis. However, we do not assume learning rates occur for associated infrastructure costs.[64]

We break down learning rates on a per component basis and utilise DESNZ's own learning rate estimates for GMPV where appropriate given the broad similarities with FPV. These were as follows:

Table 5: DESNZ learning rates for GMPV, by component

	Learning rate
Panels/module	31.3%
Electrical balance of plant, inverter and steel/racking	7.2%
Civil works (EPC)	16.3%
Others	26.8%

Source: Department for Energy Security and Net Zero

---

[63] Boston Consulting Group (2018) Competing on the Rate of Learning. [Available at: **https://www.bcg.com/publications/2018/competing-rate-learning**]

[64] In line with Arup's report for DESNZ, we assess the learning rate for construction and operational costs only. No further learning is anticipated for infrastructure costs due to the maturity of grid connection technology. [Available at: https://assets.publishing.service.gov.uk/media/68ba91f411b4ded2da19fe92/onshore-wind-and-solar-pv-cost-electricity-report-update-2024.pdf]

The main difference between FPV and GMPV is the mounting structure. For this reason, we depart from the DESNZ estimates and adopt a higher initial learning rate of 12.5% for the FPV mounting structure. This is reduced annually by 1% in the Ambitious scenario and 0.5% in the Central scenario until they reach the 7.2% suggested by DESNZ for GMPV. The initial higher figure aligns with more typical learning rates for solar technology components and reflects the relative immaturity of the UK's FPV mounting structure compared to GMPV's steel racking systems in the initial phase of deployment. Engagement with the World Bank and wider industry indicates that local manufacture of floats is more economical, supporting our economic modelling assumption that a UK-based supply chain will emerge.[65]

For all technologies except the PV module, learning rates are linked to FPV deployment. For the PV module itself, we assume that costs for FPV systems are equivalent to those in GMPV systems, and we apply DESNZ estimates in our calculations. Their estimates for the forward direction of GMPV CapEx and OpEx are presented in **Figures 8** and **9**.[66]

Image credit: Zimmermann

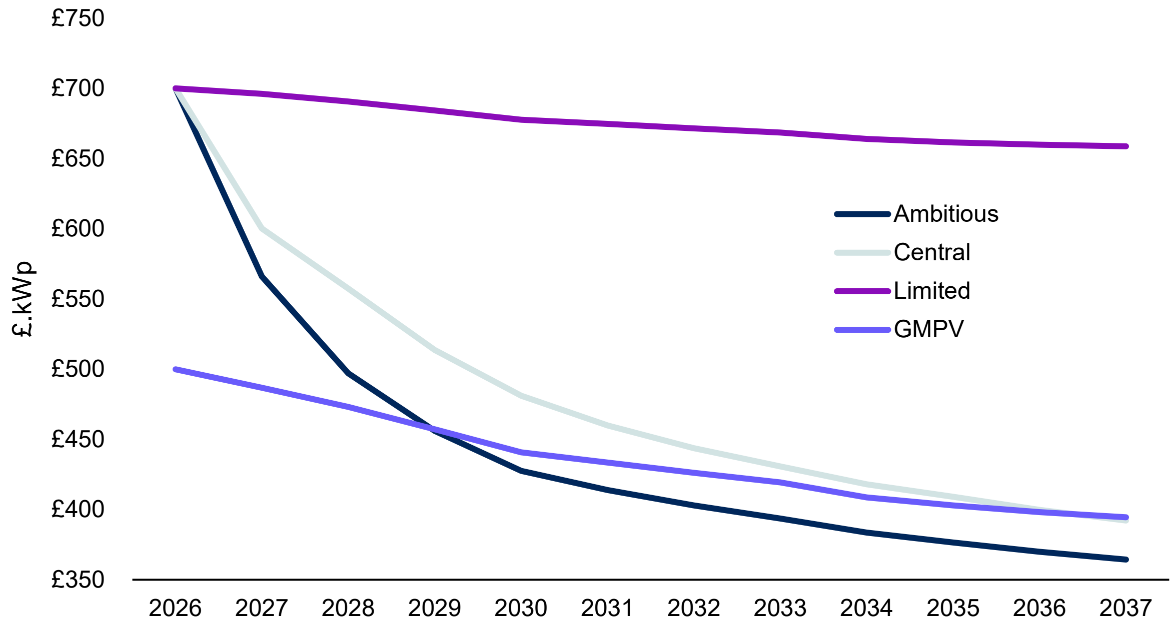
---

[65] The World Bank (2019) Where Sun Meets Water: Floating Solar Market Report [Available at: **https://documents1.worldbank.org/curated/en/670101560451219695/pdf/Floating-Solar-Market-Report.pdf**]

[66] To note, linear interpolation has been applied to DESNZ's figure to estimate the intervening years.

Figure 8 shows that, under the elevated deployment rates in the Ambitious Scenario, CapEx parity with GMPV is achieved before the end of the decade. In the Central Scenario, which assumes more moderate deployment, CapEx parity is reached in 2037. In the Low Scenario, deployment is assumed to be insufficient to drive meaningful learning effects and as a result, only the module cost declines in line with GMPV scaling. While not directly modelled here, it should be noted that DESNZ's medium-case forecast for onshore wind capital costs projects only a 10-percentage point reduction by 2050.[67]

Figure 8: Estimated total Capital Expenditure, due to learning rates, to 2050



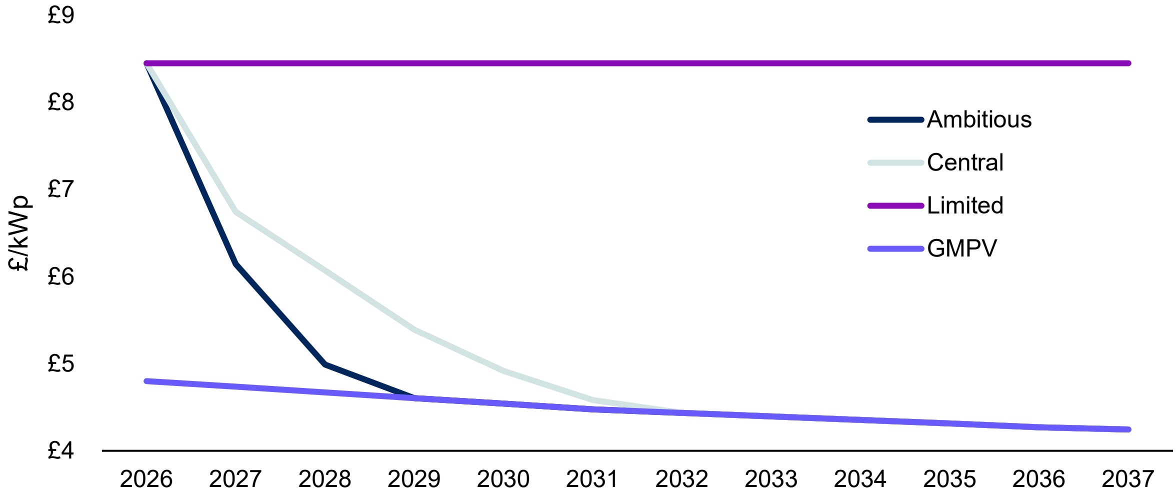
Source: CBI Economics modelling (2026). Please note all modelling beyond this point for the Central Scenario reflects the upper-bound.

---

[67] Arup for the Department of Energy Security and Net Zero (2025) Renewable Energy Generation Cost and Technical Assumptions – Onshore Wind and Solar PV [Available at: **https://www.gov.uk/government/publications/onshore-wind-and-solar-cost-and-technical-assumptions**]

We similarly apply learning rates to the Fixed O&M value as deployment scales. These follow a largely similar pattern to capital expenditure trajectories as they are tethered to the same deployment rates. The operational expenditure (OpEx) learning rate is set at 15.7% until it reaches parity with GMPV, after which it is assumed to follow the same cost trajectory.[68]

Figure 9: Estimated total Operational Expenditure, due to learning rates, to 2050



Source: CBI Economics modelling (2026)

We utilise these input estimates to simulate future Allocation Rounds to assess how the ASP will change as a result.[69] The recently published Clean Energy Industries Sector Plan reported that an Allocation Round is expected to run every year up until 2035. We have forecasted beyond this to 2037 to cover when we expect the Central Scenario to reach CapEx cost parity.

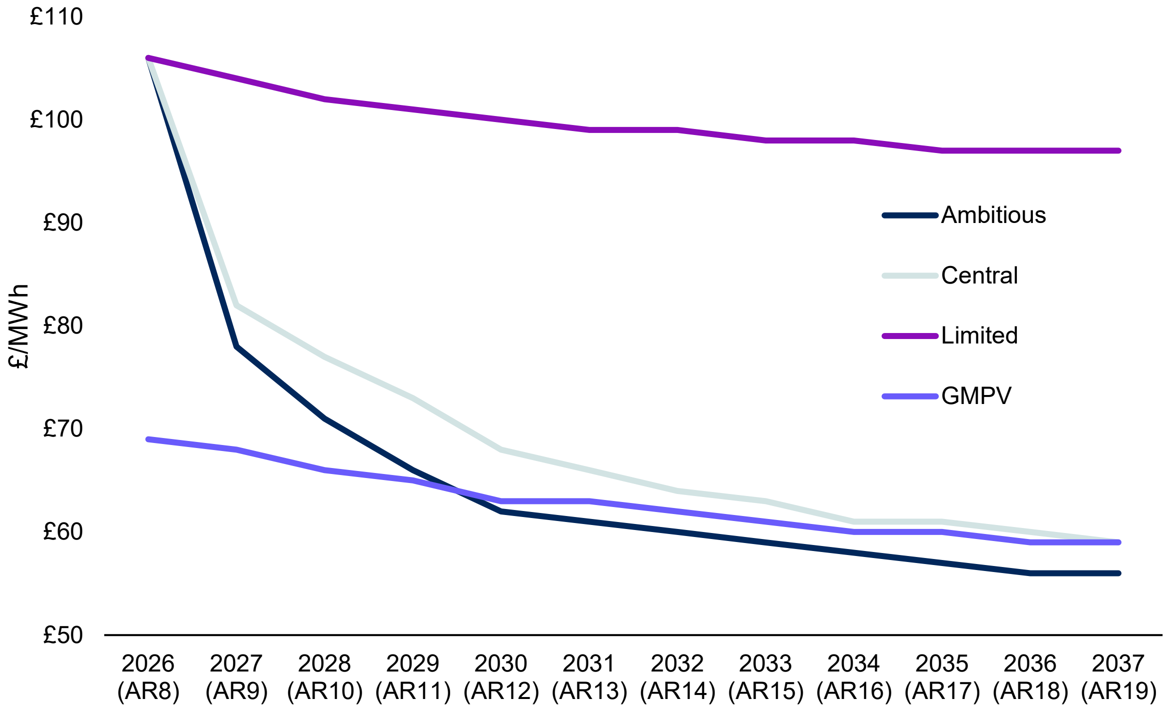
---

[68] Steffen et al. (2020) Experience Curves for Operations and Maintenance Costs of Renewable Energy Technologies [Available at: **https://www.sciencedirect.com/science/article/pii/S2542435119305793**] Using data from Germany, estimates that with each doubling of cumulative experience, there is a cost reduction of 15.7% - 18.2%. We have applied the lower bound here.

[69] Please note that, in projecting forward, we have held other key inputs constant, including the hurdle rate and insurance costs. We consider this assumption to be robust, as specific support in the CfD scheme would represent a significant milestone and a key signal to investors.

Figure 10 shows that, in the Ambitious Scenario, ASP parity is achieved by AR12 (2030), after which the ASP is projected to track just below GMPV. In the Central Scenario, ASP parity is reached at AR19 (2037). Importantly, in both scenarios, the technology can be considered **cost-competitive** once the ASP enters a broadly comparable range to GMPV, reflecting the dynamics of the Allocation Round bidding process. Put simply, the FPV with less expensive developments costs will bid lower than GMPV despite the higher ASP. Ultimately this shows that, with a supportive policy environment, FPV could become competitive contributor to the UK's future clean energy mix in a relatively short amount of time.[70]

Figure 10: Forward-looking estimate of Administrative Strike Price in future Allocation Rounds



Source: CBI Economics modelling (2026)

---

[70] We can apply the same principles explored by Aurora Energy Research that is set out above. In their scenario described as the most likely trajectory for Great Britain's energy market, wholesale prices are £78/MWh in 2025; £80/MWh in 2030 and £74/MWh in 2035. All else equal, this would indicate the path to exerting downward pressure on bills occurs by AR8 in the Ambitious scenario and AR10 in the Central scenario.

The economic opportunity presented by FPV

Key takeaways

1. FPV represents a **significant economic opportunity for the UK**, with the potential for capital expenditure to generate over **£30 billion in cumulative GVA** and support an **average of around 15,200 FTE jobs** annually up to 2050 under the Ambitious scenario.
2. In the operational phase, **over 16,000 permanent FTE jobs** could be supported by 2050 delivering up to **£1,975 million in annual GVA.**
3. The extent to which the UK captures this value depends critically on policy – specifically whether **deployment is sufficient to activate domestic supply chain development.** A large share of value risks being captured overseas in a low deployment scenario.

A policy-driven economic opportunity

FPV represents a significant opportunity to generate economic value across the UK economy. Under higher deployment scenarios, the technology has the potential to support substantial GVA and employment across construction, manufacturing, utilities, and the wider supply chain.

However, the scale of economic value captured domestically depends on whether the UK develops the capability to supply key components and services, or whether these are imported from international markets.

The UK's opportunity to capture value in the FPV supply chain

The UK is well placed to capture value from FPV deployment, particularly in segments of the value chain where it already has capability. In the Ambitious and Central scenarios, the UK can strengthen its solar supply chains, allowing manufacturers to diversify into FPV-related goods and services, and capture large sections of the value domestically. However, in the Limited scenario, much of the value chain will be imported as UK firms do not see a sufficient signal to invest and adapt to meet the market.

We assess the economic contribution of FPV through GVA and FTE jobs across all phases from construction to manufacturing and utility operations sectors as well as their supply chains.

As discussed above, a central finding of this analysis is that the size of opportunity for the UK depends on the extent to which the UK captures value domestically for FPV components and services or relies on imports. Our industry engagement indicates that FPV is well placed to support the ambition set out in the Solar Roadmap and expand the UK's domestic solar supply chain and manufacturing capacity. Further, we align with the Solar Roadmap's assessment that panel manufacturing is currently concentrated in a small number of dominant international markets, and the UK is therefore unlikely to develop substantial manufacturing capability in this component. However, the Solar Roadmap also states that UK can develop a competitive advantage in other segments of the value chain, specifically balance of system components, EPC services, and mounting structures, which our modelling reflects.[71]

These segments align with existing UK industrial strengths, including advanced manufacturing, steel production, and engineering services. With sufficient scale, FPV deployment could strengthen these sectors further, enable firms to diversify into new markets and contribute to wider industrial strategy objectives around strengthening economic security and driving innovation.

The size of the opportunity depends on the development of a stable and visible project pipeline. Without this, firms cannot make the case to invest in adapting their capabilities to support FPV, and value will instead be captured by international competitors.

---

[71] Department for Energy Security and Net Zero (2025) Solar Roadmap [Available at: https://www.gov.uk/government/publications/solar-roadmap]

What determines domestic value capture

To assess how much economic value is retained within the UK, we model the share of FPV-related expenditure captured domestically, accounting for the extent to which different components are imported or supplied by UK firms.

First, some components are likely to remain imported throughout the period. Solar PV modules are assumed to be sourced internationally, reflecting the current structure of global supply chains. As a result, we do not attribute UK GVA or employment impacts to this component, representing a conservative assumption.

Second, for other components, domestic value capture increases over time as deployment scales and supply chains develop. Under the Central and Ambitious scenarios, we assume that:

- Certain components, such as mounting structures, are initially imported but increasingly produced domestically as demand grows
- Engineering, construction, and site-specific services transition more rapidly to domestic supply, reflecting existing UK capability

For example, mounting structures are assumed to be fully imported in early years, before import dependence falls to 50% by 2035 and to standard industry levels thereafter. In contrast, under the Limited scenario, import dependence remains high throughout, reflecting insufficient scale to support domestic production.

Image credit: Ciel & Terre

These assumptions (outlined in **Table 4**) are informed by industry engagement and reflect observed patterns in the development of other renewable energy supply chains.

Table 6: Key percentage import assumptions of FPV components over time

Component	2027	2030	2035	2040	2045	2050
Mounting & M/E						
Ambitious and Central	100%	50%	50%	35%	35%	35%
Limited	100%	100%	100%	100%	100%	100%
EPC						
Ambitious and Central	75%	3%	3%	3%	3%	3%
Limited	75%	75%	75%	75%	75%	75%
Site-specific costs						
Ambitious and Central	75%	3%	3%	3%	3%	3%
Limited	75%	75%	75%	75%	75%	75%
Civils (Site prep and others)						
Ambitious and Central	75%	3%	3%	3%	3%	3%
Limited	75%	75%	75%	75%	75%	75%

Reflects where a standard Input-Output table import propensity has been applied

Appendix 1 provides our full set of assumptions.

Our industry engagement reinforces the importance of deployment certainty in driving supply chain investment. We present a case study below to illustrate this.

Solarport is a UK-based manufacturer and supplier of solar mounting systems and carports for utility-scale, commercial, and residential projects. Founded in 2015, the company has grown alongside the expansion of the UK solar sector and now supplies systems supporting around 1 Gigawatt-peak (GWp) of solar capacity annually. While it has begun delivering projects in Europe, its primary focus remains on supporting UK deployment and strengthening domestic supply chains.

With an annual manufacturing capacity of circa 3 GWp, **Solarport** can scale production in line with project demand while continuing to serve multiple projects simultaneously.

Solarport is keen to explore FPV. From a manufacturing standpoint, adapting existing metalwork and steel fabrication processes to FPV structures is not expected to pose significant challenges. However, new designs would still require validation, certification, and testing to ensure structural integrity and reliable performance across different water environments.

Solarport highlights that clear signals on future market size would support manufacturers in testing and investing in technologies like FPV. Its own growth has historically tracked the pace of solar deployment in the UK, suggesting that a stable, expanding project pipeline could enable domestic manufacturers to scale accordingly.

This reinforces a consistent finding across our industry engagement: supply chain investment follows deployment certainty.

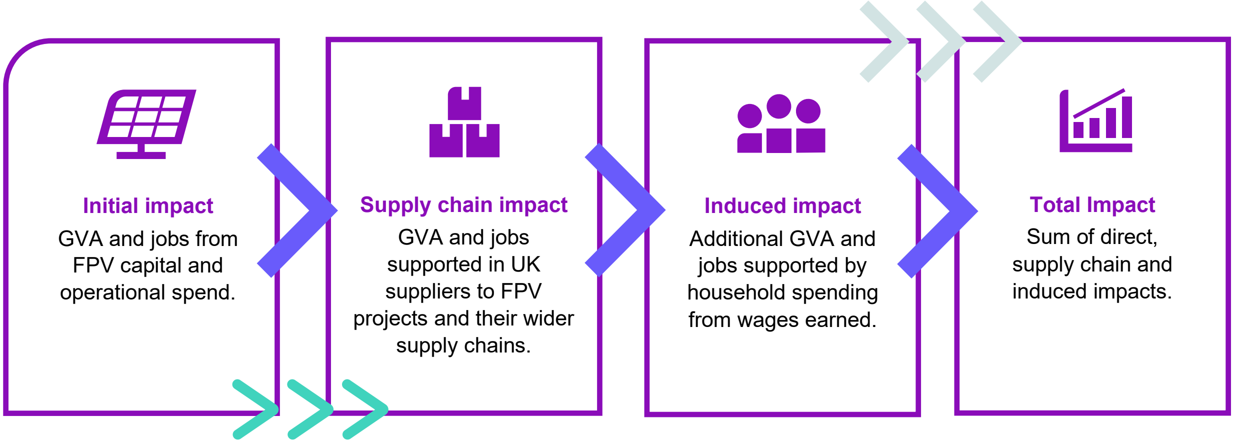
Quantifying the economic contribution

We consider CapEx and OpEx separately for each scenario.

- **CapEx** refers to upfront investment in physical assets and infrastructure, such as the construction of projects and the purchase of key components. Employment associated with capital expenditure is typically measured in person-years reflecting the temporary, project-based work that lasts only for the duration of the build phase.
- **OpEx** covers the ongoing costs of running and maintaining assets, from employing maintenance engineers to specific cleaning expenditure, once they are in use. Jobs supported through OpEx are therefore permanent as they are required continuously throughout the operational life of the project.

Applying the import propensities to annual capital and operational expenditure, which we total using the deployment and learning rate assumptions by scenario, enables us to estimate total UK-attributable expenditure in each year. This expenditure is then modelled using CBI Economics' in-house input-output model to estimate the initial, supply chain and induced economic impacts in terms of GVA and FTE employment. Figure 11 illustrates the framework used to calculate total GVA and FTE impacts.

Figure 11: Initial and wider economic impacts



Economic impact across scenarios

Our analysis shows a clear divergence across scenarios. Table 7, shows that, in the Ambitious scenario, capital expenditure could support up to **364,040 person-years of employment by 2050**, equivalent to an average of around 15,200 FTE jobs per year, alongside generating over **£30 billion in cumulative GVA**. Even within a short time horizon, the Central scenario delivers substantial impacts, delivering **approximately £1,397 million in cumulative GVA by 2030 and £17,209m by 2050** while supporting around **18,496** and **238,989 person-years of employment in 2030 and 2050**, respectively.

Table 7: Headline economic impact outputs for Capital Expenditure

Capital Expenditure	Ambitious	Central	Limited
Total cumulative GVA (£m) by 2030	£4,411	£1,397	£7
Total person-years of employment supported by 2030	50,983	18,496	81
Total cumulative GVA (£m) by 2050	£30,373	£17,209	£412
Total person-years of employment supported by 2050	364,040	238,989	5,437

Source: CBI Economics analysis (2026)

A similar pattern is observed in the operational phase. By 2030, ongoing activity is estimated to support around **750 FTE jobs** under the Ambitious scenario and **333 FTE jobs** under the Central scenario. By 2050, this rises to approximately **16,038 FTE jobs** in the Ambitious scenario and **9,327 FTE jobs** in the Central scenario. These represent permanent, recurring roles associated with expenditures both on-site, across the supply chain and through induced expenditure. In terms of economic output, annual GVA is projected to reach **£1,975 million** by 2050 in the Ambitious scenario and **£1,148 million** in the Central scenario.

Table 8: Headline economic impact outputs for Operational Expenditure

Operational Expenditure	Ambitious	Central	Limited
Total GVA (£m) by 2030	£92	£41	£1
Total FTE jobs supported by 2030	750	333	5
Total GVA (£m) by 2050	£1,975	£1,148	£80
Total FTE jobs supported by 2050	16,038	9,327	650

Source: CBI Economics analysis (2026)

Image credit: Ciel & Terre

Supporting innovation and capability development

Beyond immediate economic impacts, FPV presents an opportunity to strengthen the UK’s innovation ecosystem. International experience demonstrates the role of coordinated research and testing in accelerating deployment. The case study below illustrates this.

FPV presents a strong opportunity to **enhance university–industry collaboration** in the UK by anchoring joint R&D around a clearly defined goal. The Solar Energy Research Institute of Singapore (SERIS) has accelerated deployment through large-scale testbeds, comparative technology trials and the generation of performance data. However, this innovation is largely focused on tropical reservoir conditions.

The UK has an opportunity to develop a differentiated approach, focusing on performance in northern European environments. This creates a space for innovation and experimentation on mooring and structural design, materials durability and system performance, alongside environmental questions such as water quality and ecological impact.

Establishing a small number of “living lab” testbeds, analogous to SERIS but adapted to UK conditions, would provide a focal point for collaboration, enabling manufacturers to test and validate technologies in environments relevant to their markets. This would help generate an open-source data bank, which future projects could use

With targeted public funding to de-risk early deployment, the UK can create a clear proposition that attracts international technology providers while strengthening domestic innovation capability.

Implications for the UK economy

The analysis in this chapter demonstrates that FPV represents a significant economic and industrial opportunity for the UK. However, capturing this opportunity depends on early deployment at sufficient scale to support domestic supply chain development.

Without this, much of the value associated with FPV deployment will be realised overseas. With it, FPV has the potential to support economic growth, strengthen industrial capability, and position the UK as a leading participant in a novel technology market.

Conclusion

The UK faces a defining challenge in delivering sufficient low carbon electricity capacity to meet rising demand while maintaining energy security, affordability, and industrial competitiveness. Significant progress has been made in expanding renewable generation, particularly in offshore wind and solar. However, the next phase of the transition will be shaped by navigating emerging constraints such as land availability and planning complexity.

FPV offers a practical solution to this challenge. By enabling solar deployment on freshwater bodies such as reservoirs, lakes, and industrial ponds, FPV provides a complementary pathway to expanding generation capacity without competing for land. In doing so, the UK can strengthen its energy resilience, deliver on Clean Power 2030 and other generation ambitions while also delivering a more diversified energy system.

Beyond its contribution to energy generation, FPV represents a significant economic opportunity. Under higher deployment pathways, the technology has the potential to generate substantial economic value, enable the development of domestic supply chains in areas where the UK has existing strengths and support employment across multiple sectors including in key strategic sectors such as steel. In this respect, it can meaningfully contribute to the ambitions DESNZ outline in their solar roadmap.

Moreover, FPV can support climate adaptation and improve water quality by reducing evaporation and limiting algae growth, helping to enhance the resilience of water infrastructure under rising temperatures. Such operational efficiencies, as well as allowing the water industry to lower their energy costs through on-site provision, provides a pathway to reducing overall system costs and may help ease upward pressure on consumer bills over time.

However, the central finding of this report is that the scale of deployment, and the associated economic value, will be highly sensitive to the policy environment. Without targeted intervention, FPV is likely to remain a marginal technology, with low levels of deployment and minimal, if any, domestic value capture. Under these conditions, supply chains will not engage, cost reductions will not occur, and the UK will cede advantage to international competitors.

In contrast, a coordinated policy framework can underpin deployment at scale. Specific support within the Contracts for Difference mechanism provides a credible pathway to reducing financing costs and accelerating investment. Planning reform can reduce uncertainty and enable projects to progress more quickly. Strategic grid designation ensures that viable, ready-to-go projects can connect in a timely manner. Together, these measures create the conditions necessary for early deployment, which in turn drives cost reductions through learning effects and activates domestic supply chains.

FPV does not require permanent ring-fenced CfD support to be viable, but it does require early-stage intervention to overcome initial barriers and reach cost competitiveness. The experience of other renewable technologies demonstrates that costs fall rapidly with scale.

The UK now has an opportunity to define the role of FPV within its future energy system. Doing so will require clear strategic recognition of FPV, supported by targeted interventions that enable early deployment and provide confidence to investors and industry.

More broadly, FPV highlights a wider lesson for the energy transition. As the system evolves, new constraints will emerge that cannot be addressed by existing technologies alone. Meeting future energy needs will depend on identifying and enabling complementary solutions that expand the set of viable deployment pathways. FPV is one such solution.

Decisions taken in the near term will determine whether FPV remains a marginal technology or becomes a meaningful contributor to the UK's energy system and economic growth.

Image credit: Zimmermann

Appendix: Further data tables

Table 9: Deployment Scenarios - percentage surface area covered by water body type

Water industry	2026	2030	2035	2040	2045	2050
Ambitious	0%	10%	15%	20%	25%	30%
Central	0%	5%	10%	15%	20%	30%
Limited	0%	0.1%	0.3%	0.5%	1.0%	1.25%
Man-made	**2026**	**2030**	**2035**	**2040**	**2045**	**2050**
Ambitious	0%	3%	9.4%	15.9%	22.3%	28.7%
Central	0%	1.3%	5%	10%	15%	20%
Limited	0%	0.1%	0.1%	0.2%	0.3%	0.5%
Natural	**2026**	**2030**	**2035**	**2040**	**2045**	**2050**
Ambitious	0%	0.25%	0.75%	1.25%	1.75%	2.5%
Central	0%	0.01%	0.08%	0.16%	0.5%	1%
Limited	0%	0%	0%	0%	0%	0%

Table 10: Import propensity assumptions 2027 - 2050

Component	2027	2030	2035	2040	2045	2050
Mounting & M/E						
Ambitious and Central	100%	50%	50%	35%	35%	35%
Limited	100%	100%	100%	100%	100%	100%
EPC						
Ambitious and Central	75%	3%	3%	3%	3%	3%
Limited	75%	75%	75%	75%	75%	75%
Site-specific costs						
Ambitious and Central	75%	3%	3%	3%	3%	3%
Limited	75%	75%	75%	75%	75%	75%
Civils (Site prep and others)						
Ambitious and Central	75%	3%	3%	3%	3%	3%
Limited	75%	75%	75%	75%	75%	75%
Modules						
Ambitious and Central	100%	100%	100%	100%	100%	100%
Limited	100%	100%	100%	100%	100%	100%
Electrical BoP						
Ambitious and Central	26%	26%	26%	26%	26%	26%
Limited	26%	26%	26%	26%	26%	26%
Contingency & Margin						
Ambitious and Central	14%	14%	14%	14%	14%	14%
Limited	14%	14%	14%	14%	14%	14%
Operations						
Ambitious and Central	21%	21%	21%	21%	21%	21%
Limited	21%	21%	21%	21%	21%	21%

Table 11: Capital Expenditure: GVA contribution under each scenario, broken down by phase (2027 – 2050) [£m]

Ambitious	2027	2030	2040	2050
Initial GVA	£455	£1,970	£7,790	£13,511
Direct GVA	£211	£935	£3,661	£6,338
Indirect GVA	£139	£643	£2,603	£4,532
Induced GVA	£205	£862	£3,461	£5,992
Total GVA Contribution	**£1,010**	**£4,411**	**£17,515**	**£30,373**
Central	**2027**	**2030**	**2040**	**2050**
Initial GVA	£155	£574	£3,341	£7,002
Direct GVA	£77	£300	£1,714	£3,613
Indirect GVA	£54	£220	£1,319	£2,815
Induced GVA	£79	£303	£1,788	£3,779
Total GVA Contribution	**£366**	**£1,397**	**£8,161**	**£17,209**
Limited	**2027**	**2030**	**2040**	**2050**
Initial GVA	£-	£3	£66	£169
Direct GVA	£-	£1	£34	£88
Indirect GVA	£-	£1	£25	£66
Induced GVA	£-	£1	£34	£89
Total GVA Contribution	**£-**	**£7**	**£159**	**£412**

Table 12: Capital Expenditure: FTE jobs supported under each scenario, broken down by phase (2027 – 2050)

Ambitious	2027	2030	2040	2050
Initial	4,551	18,693	81,054	141,403
Direct	2,692	11,558	45,275	78,191
Indirect	1,891	8,682	34,908	60,695
Induced	2,859	12,049	48,370	83,751
Total	**11,993**	**50,983**	**209,607**	**364,040**
Central	**2027**	**2030**	**2040**	**2050**
Initial	1,835	7,173	46,334	98,900
Direct	1,041	4,053	23,151	48,860
Indirect	750	3,037	18,007	38,417
Induced	1,099	4,234	24,987	52,811
Total	**4,724**	**18,496**	**112,478**	**238,989**
Limited	**2027**	**2030**	**2040**	**2050**
Initial	-	32	801	2,088
Direct	-	18	458	1,197
Indirect	-	12	342	905
Induced	-	19	479	1,248
Total	**-**	**81**	**2,080**	**5,437**

Table 13: Operational Expenditure: GVA contribution under each scenario, broken down by phase (2027 – 2050) [£m]

Ambitious	2027	2030	2040	2050
Initial GVA	£2	£20	£173	£434
Direct GVA	£2	£21	£175	£439
Indirect GVA	£4	£40	£338	£848
Induced GVA	£1	£12	£101	£253
Total GVA Contribution	**£9**	**£92**	**£787**	**£1,975**
Central	**2027**	**2030**	**2040**	**2050**
Initial GVA	£1	£9	£87	£253
Direct GVA	£1	£9	£87	£255
Indirect GVA	£3	£18	£169	£493
Induced GVA	£1	£5	£50	£147
Total GVA Contribution	**£6**	**£41**	**£393**	**£1,148**
Limited	**2027**	**2030**	**2040**	**2050**
Initial GVA	£-	£0	£4	£18
Direct GVA	£-	£0	£5	£18
Indirect GVA	£-	£0	£9	£34
Induced GVA	£-	£0	£3	£10
Total GVA Contribution	**£-**	**£1**	**£20**	**£80**

Table 14: Operational Expenditure: FTE jobs supported under each scenario, broken down by phase (2027 – 2050)

Ambitious	2027	2030	2040	2050
Initial	5	54	457	1,147
Direct	14	155	1,323	3,320
Indirect	35	375	3,200	8,032
Induced	15	165	1,410	3,539
Total	**70**	**750**	**6,390**	**16,038**
Central	**2027**	**2030**	**2040**	**2050**
Initial	3	24	229	667
Direct	10	69	662	1,931
Indirect	24	167	1,600	4,671
Induced	11	74	705	2,058
Total	**48**	**333**	**3,196**	**9,327**
Limited	**2027**	**2030**	**2040**	**2050**
Initial	-	0	12	46
Direct	-	1	34	135
Indirect	-	3	82	326
Induced	-	1	36	143
Total	**-**	**5**	**165**	**650**

CBI Economics

April 2026

cbi.org.uk