

Financing the Energy Transition

▶▶ **E-FWD**

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Financing the energy transition: the devil in the details



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The world is intent on decarbonising. Delivering this on time will require substantial capital. Competition is fierce and getting fiercer.



Foreign funds

In the UK, governments have long lobbied for investors to keep more money at home. The thinking goes that the country's capital could address the energy transition investment challenge.

Such an investment theory clashes with practicality. UK investors are already exposed to UK risk. Furthermore, London market returns have been poor compared to US tech stocks.

Governments complicate efforts to incentivise domestic investors by offering tax cuts and appeals to patriotism.

Of course, there is some scope for domestic investors. But to succeed, the government - and industry - must make a more global pitch.

How can UK opportunities compete with international offerings? The country has a background of industrial innovation, abundant natural resources for energy and a government eager to grow the economy.

Complaints that the North Sea's future is driven by foreign companies miss the point. UK corporates are in no position to replace them and GB Energy may dream big but has a long way to go.

Risked investments

Since 2010, investments in UK renewable energy have surpassed £300 billion. The country must more than double this to £50bn per year to achieve net zero goals.

The country must continue its move towards blended finance, with the government playing a key role. State-backed lenders working with the private sector to achieve net zero goals can do more.

The UK's Allocation Rounds have made progress in demonstrating state support for these projects. The contracts for difference (CfD) are an attractive financial tool, guaranteeing a return on investment.

There's room for improvement. AR5 failed to secure offshore wind contracts, while AR4 was ostensibly successful but pushed prices down too far.

The government is incorporating feedback into the AR process. In October, it outlined ways to tweak new contracts, like phased CfDs for floating wind and rethinking asset co-location.

The new government is willing to support renewable energy projects, like easing permitting for onshore wind. At the same time, increases in the Energy Profits Levy (EPL) for oil and gas producers demonstrate the UK's risk.

Timing talks

The EPL illustrates the government's struggle to understand the industry. Insiders see higher taxes as accelerating the decline of the oil and gas industry, bringing forward government liabilities, reducing employment and failing to raise much revenue.

But it will also decommission facilities that can be used in the energy transition, for instance for hydrogen or carbon storage.

Renewable energy projects are also taking too long. Securing planning approval, licences and a grid connection are challenging. The government has talked of tackling these issues, but early signs show little progress.

Here are three articles based on conversations from E-FWD's event in Edinburgh, in September. They address the night's issues and outline a way forward. The UK must make progress on financing challenges for a successful energy transition.

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ANALYSIS

Attracting private capital to UK energy

By Ed Reed

The UK needs to invest £50 billion per year to deliver net zero, according to the Climate Change Committee. It is not just a cost, though, it is also an investment opportunity for private capital to kickstart much-needed growth in the country.



Talking about private capital in the UK energy sector on the night

But to attract this level of investment, the UK needs to determine what it wants in the energy sector and when. This needs to happen on a holistic basis for different investors to feel confident that they are providing capital into a robust, integrated energy plan.

While much has been written about the gaps between the status quo and such a plan, it should be recognised that the UK has had a good share of successes – and an established, globally-competitive energy industry to build upon.

But there is uncertainty around numerous areas, including sector development, such as speed and capacity to shift to electrification, and in policy evolution, such as support for oil and gas. This threatens to complicate broader energy sector plans and make the landscape for attracting diverse pools of capital more challenging.

Effective financing

Three themes emerged from the discussion on attracting capital to the UK energy sector at the EY-facilitated E-FWD workshop in Edinburgh:

- 1** The UK should establish a coherent energy transition narrative to attract global investment. The narrative should explain what is needed and why on a holistic basis – diverse providers of capital will then be able to target the opportunities most aligned to their objectives
- 2** Clarify the government's role and its agencies. Does GB Energy support or compete with industry? The hope in the room was that GB Energy would support rather than compete with industry
- 3** A balanced view of energy sources and their evolution would help the UK build on its hydrocarbon industry while supporting growth in newer technologies

One thing that the many competing energy narratives agree on is that infrastructure and clean energy plans require financial support to progress. Securing the right financing conditions is essential to capture the upside.

Chancellor Rachel Reeves acknowledged this in a recent speech at the Financial Conduct Authority (FCA). The government is eager to support growth – at least broadly – by pledging support for capital markets and easing IPO conditions.

Reeves linked financial markets with the energy sector. Infrastructure plans require unlocking “with the support of effective financial markets”, she said.

Ranking risks

How much money does the UK's energy industry need and what would it go on? Different answers to this question complicate investment decisions: there is not an aligned view on the opportunity set.

A coherent narrative around the energy transition would allow capital providers to contrast the UK with other investment opportunities. The narrative is far too often simplified to be a story of renewables vs oil and gas. The reality is much more complex and includes an investment decision between UK energy vs something else or somewhere else.

Clarity on funding needs, opportunities and quite how government and industry will intersect would allow the country to secure the investment required.

There are diverse capital providers, each with different risk and return objectives. For instance, Pension funds, infrastructure investors, venture capital and internal capital from existing energy companies may invest in the UK's opportunities. But they will not all be attracted to invest in the same things, or in the same way.

This diversity of capital can be a positive. But the UK can only succeed with a clearly articulated, integrated energy plan that enables the matching of opportunities to potential investors.

The CfD success case

The UK has clear successes. The recent Allocation Round (AR) 6 secured significant wins for new solar and offshore wind projects.

Reallocating awards for vintage offshore wind contracts helps support projects that would have stalled at the agreed prices.

The AR process has attracted investors to the UK market. Adjustments to the CfD process could be made with little immediate government commitment.

Increasing the CfD contract length to 20 years from 15 would have an impact. Reducing the revenue risk would lower financing costs and reduce the agreed strike price.

The government could make other tweaks, like including the repowering of wind assets in CfDs. While offshore wind has been a success, the UK is not on track to meet its goals. Setting capacity targets for ARs – to meet 2030 targets – would help clarify.



Government's challenge

A key challenge is in the successful delivery of large and innovative infrastructure projects. In early October, Prime Minister Keir Starmer clarified plans for carbon capture and storage (CCS) projects.

The government will provide £22 billion for the first two projects, Track 1. The funding will run for 25 years, marking a slight reduction from the previous government's commitment of £20bn over 20 years.

Progress on the first two projects is a welcome development. Despite past missteps, the UK has a chance to lead in the CCS sector.

The government's desire to achieve its targets has led it to set out plans to invest in industry. The new National Wealth Fund will oversee the existing UK Investment Bank (UKIB) and British Business Bank (BBB). This move will provide more state-backed funding for companies to grow.

GB Energy is another government arm to pursue its net zero power policies by 2030. Here, there is less clarity about its intentions, with scant details in its establishing bill.

There has been talk of supporting community energy investments, taking pre-CfD risks – with Crown Estate – and pursuing more developed opportunities. Some in the industry are worried about investments in areas such as offshore wind.

Will it co-invest or compete? What's the GB Energy appetite for risk? A business plan is promised, but its role is uncertain. The company will be independent, with its own board and executives, but the government holds the purse strings – and sets the aims.

Changing the rules

Risk does not deter investors, it informs pricing. Higher risk indicates an expectation for higher reward. Uncertainty, however, can be fatal. Changing the rules deters investors as it undermines attempts to price risk. This is particularly true for the energy sector, given its need for long-term investments.

The government's decision to increase the Energy Profits Levy (EPL) and remove investment allowances is such a move. The oil and gas industry was struggling under the original EPL, but tightening this noose further will deter investors. Many plans are in limbo ahead of the upcoming Budget.

The government said North Sea oil and gas will be a "key component" of the energy mix for decades. However, such talk is contradicted by the EPL increases, and companies have warned that investment plans are at risk.

If the government believes domestic oil and gas has a part to play in meeting demand, it should prove it. Despite the gloom about the UK's energy sector, there is also much to celebrate.

There are challenges in the oil and gas sector, but there are bright spots in the wider energy sector. The allocation rounds, and resulting contracts for difference (CfD), have successfully attracted global capital. The UK has the resources to deliver the energy transition, with aligned industry, supply chain, financiers and government. Connecting these areas should allow capital – new and old – to implement the necessary changes.

ANALYSIS

De-risking innovation: being braver and bolder



By Ed Reed

The clean tech sector has benefited from global decarbonisation goals and climate change commitments. But companies still encounter significant barriers when it comes to securing investment.

Addressing these funding challenges is crucial for the UK and Scotland to maintain a competitive edge in clean technology and achieve its climate goals. As global demand for sustainable solutions continues to rise, this will only become more important.



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- 1** The UK is failing to deliver the innovation it needs, particularly for growth companies. The country needs to get started as global competition is not waiting
- 2** There is scope for new ways of funding and new ways of thinking through how to deliver
- 3** Government support is important in more than just providing cash. It can give policy certainty and also provide incentives to back up innovation

Valley of death

The UK has several grant schemes, such as Innovate UK and government-backed green funds. But these are often focused on early-stage research and development rather than scaling successful pilots to commercial production.

Clean tech firms often struggle to transition from small pilot projects to full-scale operations due to a lack of scale-up financing. This gap can prevent promising technologies from achieving the scale needed to reach market viability.

The funding gap, between early stage development and commercial scale production is sometimes called the “valley of death”. Many clean tech innovations, especially those related to new energy technologies, face high upfront costs and long development timelines.

To tackle this requires sustained and often very significant investment. For many private and VC investors, though, this is beyond their risk appetite. This leads to a gap in available financing.

For these projects to be of interest to these investors they will need to have proven commercial and market viability.

High-risk worries

Investors can perceive early stage clean tech projects as high risk, particularly when compared to more mature sectors like software or financial technology. The higher costs to prove commercial viability also compare unfavourably to others.

These risks arise from factors such as regulatory changes, technological uncertainty and long timelines to commercialisation. These risks become more acute on the higher price tag of innovation.

Technologies like new energy storage systems or green hydrogen production have large upfront capital requirements before they can generate any revenue.

The UK financial landscape for such capital-intensive projects is limited. Most VC funds prefer sectors that require less initial outlay and have quicker returns. This suggests the clean tech sector requires more specialist or niche investors.

This is further exacerbated by current global market conditions. Appetite for very large deals has fallen, with a growing focus on opportunities that are closer to delivering a commercial return and overall lower company valuations. Since the peaks in investment activity globally seen in 2020, 2021 and the second half of 2022 there has been an overall reduction in available equity investment, the amounts raised by funds and a growing pressure to deliver returns.

Policy shifts

Government policy plays a crucial role in the clean tech sector, as regulations, subsidies, and incentives can determine the viability of new technologies.

The UK's policy environment has been uncertain due to political shifts, including Brexit and changes in government.

Shifts in subsidies for renewable energy, tax credits, and changes to carbon pricing can create uncertainty for investors. As a result, they are more hesitant to back projects that may fall victim to future policy changes.

Some of these are not necessarily unique to the UK. However, the policy responses in other countries have been of a different scale and can go some way to mitigate some of these uncertainties for investors. The US and its Inflation Reduction Act (IRA), China's targeted stimulus backed by cheap debt and the European Union's Green Deal all aim to boost clean tech and capture domestic manufacturing.

Although the UK government has set ambitious climate targets, there is sometimes a disconnect between public policy goals and private sector investment motivations and incentives.

Time to market

At the E-FWD event, in the Scottish Enterprise-led “de-risking innovation” workshop, there was a consensus: momentum and timing were key. Speed, clarity, and certainty are required to deliver the energy transition at pace and at scale.

There was also an acknowledgement that traditional asset classes might not work for those innovations that are required in the energy transition. Investors require a radical shift in approach and attitude to risk.

Building stronger alliances between the public and private sectors could help de-risk early-stage investments through shared funding models. There is scope to think about the evolution of financing and new models more suited to the need of clean tech innovation.

Blended financing, perhaps involving more sub-commercial government funding, performance bonds, guarantees or equity, is one way to provide some directional support and encourage more private sector investment.

Flexible funds

The public sector can also find new ways to deploy funds flexibly. Initiatives like the UK Infrastructure Bank (UKIB) could be expanded to provide more targeted support for clean tech scale-ups, ensuring that innovative technologies can transition from pilot phases to commercialisation.

This is likely to be an area where the Labour government takes steps for change. Indeed, the National Wealth Fund (NWF) is stepping in to bridge UKIB and the BBB, while also providing an additional £7.3 billion of funding.

Government can play a broader role in reducing risk for innovation. A stable policy environment with clear, long-term commitments and targets to decarbonisation and clean energy incentives could help reduce investor uncertainty and encourage more long-term investment.

And government could help incentivise investors to support these early-stage areas. It could provide additional tax incentives or credits for investments to help offset the perceived risks and attract more venture capital into the sector.

The concept of government providing a catalyst for innovation is a powerful one. And it may be that one significant role it can provide is by bringing different parties together. This aim leans on the reputation of government and its agencies as a convening agent, rather than necessarily having to stump up the funds themselves.

The challenge is not just about money, after all. It's about how to unlock the barriers that are preventing change.

Company drivers

Another lever the government controls is the contracts for difference (CfDs) regime. These have been an incredible success in derisking large-scale investments in renewable energy technology. But there is room for further modifications.



For instance, the CfD regime could help to provide more incentive for experimentation by industry and/or could provide incentives to work with early-stage innovators, perhaps by supporting the local supply chain and innovation. These larger industrials could also do more on collaboration, offering space for testing and demonstration projects to reduce cost and risks for innovators.

Those larger companies could also do more to support innovation. Playing it safe, and conservatively, avoids risks – but also helps frustrate change. Government support, for instance via CfDs or tax incentives, could help to provide more incentive for experimentation.

A recurring complaint on the night was around challenges of operating under the UK's planning system and grid restrictions. Delays impact timing of projects, viability and certainty for investors.

There has been talk of changing the planning system, while the TMO4+ reforms aim to simplify the grid queue. Delivering on these reforms will help provide investors with more certainty for projects.

New fund flow

One participant highlighted that, according to the Glasgow Financial Alliance for Net Zero (GFANZ), we've got a pot of global cash available. But it's not being deployed quickly enough.

Providers of project finance are looking for investable propositions, but require projects and technologies that are de-risked, rather than taking a punt on something truly pioneering or game-changing. The availability of risk capital to make manifest changes is still incredibly difficult to secure.

There needs to be a radical shift in how we fund decarbonisation. Traditional funders and government need to take a wider view and do things differently. One way to do this might be via a central pot designated as truly risk capital.

If the GFANZ banks, serious about ESG, for example, could consider contributing 1% of their balance sheet to this pot as a renewables-enabling fund to allow inventors and entrepreneurs to get their ideas to market much more quickly that would be transformative.

Ultimately, it's clear there's a need for all parties to do more and for more joined up policy and support. And there is appetite for the energy transition – and net zero – as a whole.

As one person on the night said, "there's a need to be, as a society, as a government, a bit braver and a bit bolder". It is only through collaboration and iteration that the UK will be able to achieve its true potential for clean tech innovation.

ANALYSIS

Industrial policy & government support: What's the plan?



By Seb Kennedy

Why do large infrastructure projects move at a glacial pace in Britain, even in the best of times? This question lies at the heart of the challenges facing industrial policy and government support for major energy transition investments.



On the stage, L-R: Daniel Johnson MSP, Jimmy Williamson of Scottish National Investment Bank, and Seb Kennedy of E-FWD during the debate feedback session. Image: Eve Conroy/DC Thomson

E-FWD members convened in Edinburgh in September to discuss how to remove obstacles to **Financing the Energy Transition**. The debate in the Industrial Policy & Government Support tent focussed on the various ways in which government can de-risk investment and unlock private capital.

Five themes emerged:

- 1 Avoid white elephants: Holistic policy can future-proof supply-side investments
- 2 Time is precious: The opportunity cost of waiting for perfection is often insurmountable
- 3 Look over the garden wall: The UK can learn from international best practice
- 4 Leverage abundance: Industrial investment must be spatially coordinated around areas with structural excess of renewable energy
- 5 No skills? No investment: A credible worker transition plan is a prerequisite for creating new industries and infrastructure.

Avoiding white elephants

A perennial obstacle facing energy investments is the temporal mismatch problem: the time horizon for realising returns is almost infinitely longer than the political cycle. The larger the infrastructure, the wider the time delta and the greater the risk to investors.

As a result, large investments in speculative new energy industries face the classic 'chicken and egg' problem. Supply-side investment won't flow without certainty that a market will emerge. But that market won't emerge without a supply-side push.

Investors are fearful of committing capital to infrastructure that is stranded by a different version of the future prevailing. However, while forecasts are always changing, the fundamental need to provide affordable, secure and clean energy is not.

Therefore, a clear political vision, backed up by robust and holistic policy, has the power to break that Catch-22.

Underpinning confidence in the business case for big-ticket infrastructure often boils down to questions of trust, certainty and predictability. Trust in the overall direction of travel. Certainty that a market will emerge for innovative new products. Predictability that the policy environment will not swing dramatically during the decadal development process.

The absence of these values from British political discourse presents an opportunity to the Labour government. If they can muster the conviction and consensus to back tomorrow's industries, private capital and investment will flow to where it is needed.

The value of time

One of the most memorable lines of the evening was that "governments under-value the cost of time". The phrase speaks to the opportunity cost of indecision. It's rooted in an institutional risk aversion that has allowed the UK to fall behind in the race to secure global capital.

E-FWD members expressed their frustration at the UK's culturally cautious approach to planning reform and subsidy control that hinders decisiveness. Only once momentum has been created can delivery be 'left to the market', because without timely decisions, there will be no market left.

The upshot is that offshore wind farms take longer to secure planning permission and consents than to build. Meanwhile, supply chains fragment as business drifts off to competing markets. Other countries, meanwhile, are seemingly able to take bold decisions without repercussion and are thriving as a result.



In the tent: E-FWD members debated the role of Industrial Policy & Government Support in driving investment. Image: Eve Conroy/DC Thomson

Look over the garden wall

One advantage of falling behind in a global race is the opportunity to learn from international best practice.

The US Inflation Reduction Act (IRA) is a good example. By mapping the investment landscape to identify gaps, the government helped to crowd private investment into energy storage. The IRA also incentivises buying of green hydrogen, providing demand security.

Norway's approach to taxation is another. Their tax policy effectively connects tax allowances to investments closer to business operations.

E-FWD members explained that both fiscal and physical proximity are crucial for effective energy transition policies and incentives. Clear connectivity between tax benefits and taxable economic activities is key. If the tax benefit is too distant from the investment, the connection will be lost and the investment won't happen.

For example, imposing a levy on oil and gas operators on the one side, and offering a contract for difference (CfD) mechanism to encourage wind investment on the other, is too siloed for some financiers.

This remains the case even as oil and gas companies transition into energy companies. Different divisions and initiatives are not always aligned internally.

Clustering complementary assets, like carbon storage near emission sources, can help create this proximate connection.

Leveraging abundance

The UK's early investment in renewable energy is creating structural excesses. This is a nice problem to have, but the industrial opportunity will go squandered without central co-ordination.

Establishing centres of demand closer to areas with structural surpluses necessitates a place-based approach to industrial policy. Simply having negatively priced energy in certain locations is not enough to drive industrial momentum and critical mass.

Government must play a role in this by:

- 1 Creating heat networks — it may be more socially acceptable to use excess energy to heat homes rather than curtail renewable generation.
- 2 Aggregating energy demand near locations with structural energy surpluses. The market has not yet figured out how to amass demand centres.
- 3 Strategically locating energy-intensive industries like data centres in renewables-rich, grid-poor regions such as north-east Scotland to alleviate transmission constraints. Policy is needed to encourage investment in the right areas.
- 4 Exploring models like Green Freeports, which offer a template for a place-based, cluster-based approach, not tied to any specific technology. This model could offer a place-based framework for industrial support.

The core challenge is co-ordinating locational supply and demand, and using policy tools to crowd in the right industrial investment in the right places. Government has an important role to play in enabling a place-based industrial policy.



No skills? No investment

It is people that build infrastructure, so the skills gap poses a major impediment to finance. Green Freeports and place-based industrial policy might help here too.

Freeports can cluster industrial activity, creating blue and white collar engineering jobs that are attractive for a cross-section of society.

Government is uniquely placed to oversee the retooling of the British energy workforce for new energy transition industries. The private sector can deliver the training programmes, but effective implementation hinges on strategic central oversight and co-ordination.

Contingency planning is vital, because big infrastructure projects are prone to delays. Enabling infrastructure such as ports can be mothballed in the event of delay, but workers lives cannot.

The North Sea investment climate has a direct bearing on jobs and skills. Oil companies outsourced supply chains over decades. It is those offshoot companies that bear the brunt of every investment hiatus. Fragmentation of supply chains undermines reskilling initiatives, hurting the investability and deliverability of big infrastructure projects.

Supply chain mapping exercises are helpful here. The Scottish Offshore Wind Energy Council's Strategic Investment Model (SIM) encouraged early engagement between the supply chain and ScotWind project developers. It had a particular focus on ports and manufacturing opportunities.

For finance providers, innovative initiatives like the SIM can provide valuable insight into the pipeline of funded supply chain projects and potential gaps that must be filled, and by when, with targeted investment.

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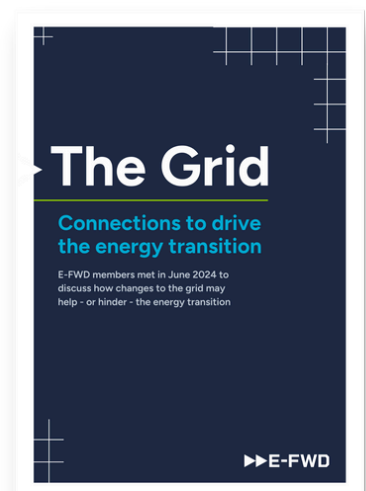
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