No country for old energy

As the energy mix evolves, renewables look increasingly attractive, despite market scepticism.

Update
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We're back!

Following on from our trip to Europe earlier this year, Alan and I return once more, armed with a format that has struck a chord with our readers. Less formal and more conversational than our usual style, but an effective way of genuinely getting to grips with a topic. At its core, it's simple: one person knows a subject matter inside out, and the other takes advantage of that knowledge by asking the questions investors actually want answered. Not just the complex ones, but also the seemingly obvious ones, the kind you think you understand until you try to explain them properly.

In investing, it is very easy to get lost in the detail, whether through the terminology, ever-evolving themes or the sheer volume of information available to us. Over time, that can cloud understanding. But we think this format helps combat this. It allows us to strip things back, peel away the layers and help connect the moving parts to build a clearer, and perhaps more complete picture.

This time round, we are turning our attention to the world of renewables, a sector that has grown rapidly but one that has become increasingly complex and, at times, difficult to navigate for those not immersed on a day-to-day basis. As with our trip to Europe, Alan takes the role of the tour guide, and I play the curious tourist, asking the obvious, the overlooked and, occasionally, the uncomfortable questions. The aim is to cut through any confusing narrative and truly understand how the asset class and sector tick.

Josef Licsauer

How do renewable energy trusts make their money?

Alan Ray

At a very basic level, renewables trusts make money by selling electricity, but importantly, in most cases, this is not at the prevailing spot price, which can be volatile. More often than not, renewables trusts have quite a lot of certainty over the price they will receive for several years. This is where things very quickly become jargon- and acronym-heavy, but the fundamental concepts are straightforward enough. One of the other potentially confusing things is that the system in the UK and Europe has evolved over time, with various legacy systems still in play. But the UK's current system is gradually being adopted, with local variations, across Europe.

The way that renewables trusts get a fixed price is based on a contract for difference (CfD). Here, a 'strike price' for the price of electricity is set. If the electricity market's wholesale price rises above that strike price, the renewables trust pays the difference over to, in effect, the UK government. If the wholesale price falls below that level, the reverse happens. Thus, the renewables trust either gives up excess profit over its agreed strike price or is compensated if the market falls below it. When you read about the UK's auctions for renewable energy projects, what's happening is an auction to set the strike price for how much a project can charge. This is attractive for investors as it gives a high level of predictability over revenues, and by extension, dividends.

An important nuance is that this system is designed to encourage new projects, and the auction referred to above is to set the price before a project is built. Signing an initial 15-year contract with a fixed price of electricity gives a developer enough certainty to finance and build a new renewables project.

When these contracts expire, the assets can become 'merchant', meaning they are free to sell power at the prevailing price. But very often, renewables trusts will look to sign a power purchase agreement (PPA) with a corporate buyer of electricity. These contracts are conceptually very similar to a CfD and once again secure a more predictable income stream that matches the goal of paying a high

and predictable dividend. The way these work is that the renewables trust sells its power to the grid at the wholesale price, and then the corporate buys electricity from the same grid at that price. A PPA will be structured with a strike price, and the differences between the strike price and the wholesale price paid between the two will effectively create the same fixed price that a CfD creates. As you can imagine, large corporates are keen to have long-term certainty over the price of electricity they consume, so these contracts are common between renewables trusts and well-known corporates in the UK and elsewhere. Contract terms can vary depending on specific needs, but the basic concept is usually the same. Finally, you will often see renewables trusts referring to inflation links, as strike prices in both government and corporate contracts can be adjusted for inflation over the life of the contract.

There are some other aspects of the system that are gradually becoming more pertinent. Energy storage, usually using large batteries, is an important enabling technology, and it is likely we will see more of this owned by renewables trusts. These assets also come with a lot of jargon, but essentially have a more 'merchant' business model, without the same fixed prices described above. Batteries store power when it's not being consumed and release it when demand rises, making profits from the difference between the live electricity price, which fluctuates according to demand throughout the day. This means profits are related to price volatility more than absolute price, providing a revenue stream with different characteristics.

There are a couple of specialist battery storage funds, with **Gresham House Energy Storage (GRID)** being the one I know quite well, as in another role I helped with its IPO, and you can see from the price performance that battery revenues on their own are more variable. The big, diversified renewables trusts have taken a careful approach to adding this technology, but as it has become more accepted and part of the mix, you are seeing trusts like **The Renewables Infrastructure Group (TRIG)** add a small proportion of battery storage into the portfolio.

Energy storage isn't a new thing on the UK's grid. Readers may have heard of the Dinorwig 'electric mountain' in North Wales, the most well-known of the UK's pumped storage facilities, which opened in 1984. Here, water is pumped from a lake at the foot of the mountain up to a chamber inside the mountain during times of excess power on the grid, then later released back through turbines when the grid needs it. Batteries are just another form of this and help to stabilise the greater variability of output, or 'intermittency' of renewable energy, compared to more traditional forms of power generation. It also highlights that although the technology changes, some things don't: whether it is coal, gas, wind or nuclear, electricity demand does not always neatly match when it is generated.

So overall, the system encourages enough predictability to stimulate new asset development but also allows more mature assets to secure predictable cash flows. This is why, despite share price volatility in recent years, the main renewables trusts have had very predictable dividends.

JL: I've heard that investments in renewables are often structured in clever ways. Can you expand on that?

AR: Yes, this knowledge is often assumed in, for example, annual reports, so it's worth spending a couple of minutes thinking about this. Assets are usually held within individual companies that the trust itself is the sole shareholder in, and you will very likely see a list of these somewhere at the back of a renewable trust's annual report. You might see these referred to as SPVs, or special purpose vehicles, but they are basically just a company with the sole purpose of owning an asset. Often, they borrow, or gear, which is something we are all familiar with from conventional investment trusts. But in renewables and infrastructure generally, it's very common to borrow one step removed.

This has some advantages. The first is that, as we discussed above, assets have a life and so borrowings can be matched to that, amortising over the life, rather like a capital repayment mortgage. Second, and this is usually hypothetical, debt held this way has no recourse to any other assets the investment trust owns, so if things go awry, the lender cannot impose any restriction on the trust, only on the specific asset. Third, it's usually more tax efficient to own assets this way. While investment trusts don't usually pay much tax, owning infrastructure assets can be more 'leaky' and structuring this way brings them back to a similar position to more conventional investment trusts, where little or no tax is paid on revenues and capital gains inside the trust. Unfortunately, just like any other investment trust, we shareholders will still have to pay tax on dividends and capital gains, unless we own them through an ISA or SIPP.

JL: What are the key risks investors should be aware of before allocating to the sector?

AR: Well, of course, the last few years have shown that the renewables trusts are 'interest rate sensitive', and I mean this in two ways. The first is the most obvious: if interest rates are higher, then borrowing costs can also rise, which can impact returns on what is, as discussed above, a geared asset class. But probably the greater impact has come from the reaction in share price terms. Before interest rate rises in 2022, many of the largest shareholders owned renewables trusts for their yield, as an alternative to government bonds, which yielded almost nothing. When it became possible to buy government or investment-grade bonds at much higher interest rates, there was a switch out of more risky yield assets, and renewables were one of the sectors impacted.

This is why we often show their dividend yields as a 'spread' over the UK's ten-year government bond. Although it's not a perfect comparison, it has had a very big effect on investor behaviour. So, investors need to be aware that rate rises are very likely a negative for share prices, but the opposite is also likely to be true.

I have found over the years that some investors can get a bit fixated on new technology that will supplant what we have today, and it's often said, 'we should just build more nuclear power stations.' I actually think that's right, as a diversified power mix is really the best solution, but it's worth bringing this back to the commercial realities. The UK's newest nuclear power station, still under construction, has a 35-year power price agreement. The price was set based on 2012 prices, which was when the deal to construct it was originally in discussion, and has risen in line with inflation since, currently about £130 per MWh, before the plant has even started generating electricity. This is expected to start in 2030, at which point a 35-year inflation-linked power price contract kicks in.

In contrast, recent UK renewables auctions have seen solar achieve a strike price of about £62 per MWh, onshore wind £72 per Mwh and offshore wind £91per MWh, with contracts that run for 15-20 years. Again, these are also inflation linked, but they highlight just how expensive nuclear power is. It has clear advantages, not least that it's 'always on', but it also presents enormous, and expensive, technical challenges to get it up and running. As we discussed earlier, the differences in strike prices reflect the varying risk and complexity across technologies, with offshore wind requiring a higher return, but still well below nuclear.

Elsewhere, I mention how a diversified strategy can make sense, but those higher strike prices for wind highlight that there are great opportunities to be a bit more focused. One of the largest players in the sector, **Greencoat UK Wind (UKW)**, is a great way to access a mix of offshore and onshore wind assets in the UK. This is appealing as, although offshore sits a bit higher up the risk curve, the rewards are also quite high, and potentially double-digit, which, for a long-term, predictable cashflow model, is really very attractive.

So, while we can't just dismiss technology risk, the economics of the most obvious competitor are very different, and the timelines to become operational are long. There is a big effort behind smaller nuclear power stations that will be faster and cheaper to build, but these are far from being operational. While the theory of having many, more widely dispersed small nuclear power stations is great, and even more enticing because the UK's Rolls-Royce is a bit of an expert in this field, I can't help wondering what happens when the planning application to build one near my or your town goes in!

This brings us to policy risk. There is no doubt that pro-renewables policies in the UK and elsewhere are coming under pressure. We've seen a second energy price shock in just a few years, and any extra costs included in consumers' bills are obvious targets for political discussion. It's hard to say what a change of government might mean, but we do know that renewables are very often the largest source of electricity on the grid in the UK, and it would be difficult for any government to walk back from that once they are faced with the reality of government rather than the luxury of opposition. But again, we shouldn't just dismiss this, and we need to keep a careful eye on it.

The last thing I'd highlight is that there is a shift in the sector to taking on more development and construction risk. First, it can generate higher returns, often double-digit, with an attractive balance between risk and reward. Second, renewables trusts have evolved from simply buying operational assets by issuing shares into more fully-fledged power-generating companies. With wide discounts to net asset value, raising new capital through share issuance is more challenging, but the trusts have grown beyond their initial remit and have the skills and experience to build new assets.

This will be a gradual process, as trusts are keen not to put their dividend cover under pressure. Allocating capital to construction means that, initially anyway, there is no yield on that capital, so we are seeing incremental increases rather than dramatic shifts, as the renewables carefully model how much capital they can use for construction without impacting on dividends. Ultimately, this will lead to a more self-sustaining business, and while it moves things up the risk curve a little, I think the balance of higher reward will be worth it.

JL: How does investing in renewables compare to more traditional infrastructure or utility investments?

AR: It's no coincidence that the AIC sector name is 'Renewable Energy Infrastructure' as it shares many characteristics. We already looked at how investments are structured, and this is very much the way that traditional infrastructure is done as well. We've talked about how renewables trusts get paid, and while this is different to broader infrastructure, at a higher level, it shares the same basic characteristics of predictable long-term cash flows. In infrastructure, you will see investments that are 'availability' based as well as 'demand based', and the renewables definitely fall into the 'demand based' in that they do have to generate electricity to get paid! So, you can view renewables as a specialist subset of infrastructure.

JL: How do you value a renewables asset?

AR: As the saying in financial analysis circles goes, valuation is an art as much as a science, and the same is true in renewables. NAVs are calculated using very standard techniques and forecasts, but the very fact that forecasts are among the inputs means that NAVs can be viewed as being slightly 'plus or minus'. While I know that many people like the accuracy implied by a NAV to one or two decimal places, it's probably better as an investor not to look too hard at the numbers to the right of the decimal point, and to treat the first number to the left as indicative.

Overall, though, I think they veer more towards the scientific than the art. When you hear an equity fund manager talking about valuing the cash flows of a 'real' company, what they are doing is, conceptually at least, the same thing that renewables trusts do to calculate their NAVs. In the very simplest terms, this involves lining up all the predicted cash flows over as many years as can be sensibly forecasted, and then these are discounted back to give a 'present value'. This discounted cash flow, or DCF, method isn't the only way to value a company, but it is one of the well-established techniques. When you see a renewables trust referring to the 'discount rate', this is not the discount to NAV that we investment trust folk usually mean, but the rate at which future cash flows are discounted back to the present. A higher discount rate indicates that future cash flows are regarded as less probable, or more risky, but also means that potential returns are higher. So, as discount rates across renewables have trended slightly higher in recent years, we can say that there is a little more caution built into valuations. But therein lies the opportunity!

So, what are the main inputs? Renewables trusts often refer to power price forecasts or the power price curve. These are third-party forecasts that give expected power prices many decades into the future. As we saw earlier, quite a lot of revenues in the renewables trusts are fixed, but not all, and usually asset lives extend far beyond the period that revenues are currently fixed. This means a future forecast of power is an important input. Different renewables trusts will have slightly different approaches, but generally they all take independent forecasts from the same group of specialist firms, and sometimes may take the average of more than one forecast. So, yes, there can be some variation, but essentially the renewables trusts are all valued using similar power price forecasts.

More general inputs will be assumptions about long-term interest rates and inflation, and these are usually third-party consensus forecasts. You are unlikely to find much difference between the various renewables trusts.

One very obvious thing about all the renewables technologies we discussed earlier is that they are weather dependent. In fact, there's quite a good inverse correlation between sunshine and wind, which is why, as an overall national strategy, it's good to have some of both, as they tend to perform best at different times. One of the most important pieces of analysis that goes to valuing assets is the range of output they achieve, based on probability. In the industry, there are three standard scenarios, referred to as P50, P10 and P90.

P50 is the base case, with a 50% likelihood of happening, whereas P10 is the optimistic case, with a 10% probability, and P90 is the low case, with a very likely 90% probability. Weather is obviously an incredibly important part of modelling this, but other factors like the technical performance of the equipment over time and the maintenance required will also be factored in. Renewables trusts' NAVs will be calculated on the P50 scenario, but when you read the annual report for a renewables trust, you will usually come across a sensitivity analysis that shows how much variation the NAV will experience for a given movement in any of the above inputs, including the difference variation between P10 and P90. This is incredibly useful as it means investors who have their own views about inflation, interest rates, or power prices can form their own opinion. This means that renewables trusts are, once one gets used to all the technical language, actually rather transparent.

That variability of weather and the different times of the day or year that different technologies work best is why some renewables trusts take a diversified approach, owning a range of different wind and solar assets in different locations or even countries. Two of the best examples are TRIG and **Octopus Renewables Infrastructure (ORIT)**, which both own assets in different European countries, with the UK as the largest single country. TRIG is so large that even though it is diversified across many assets, it has a stake in the UK's giant Hornsea One offshore wind array, which generates enough to power over a million homes. ORIT's manager will be very familiar to readers as it is part of the group that includes one of the largest domestic energy companies in the UK, and ORIT benefits from all the expertise that comes from a much larger group with huge experience of developing and operating assets in the UK and elsewhere.

JL: Renewables had a difficult couple of years. Was that a structural issue, or more about the environment they were operating in?

AR: Earlier, we looked at how interest rates have had a huge impact on share prices. It's notable through that period that dividends have not been cut, and while, yes, NAVs have fallen, it's not to anything like the same extent as share prices. One thing to keep in mind is that performance tables used across the industry are 'total return', and a key element of total return is that dividends

are reinvested. Total return gives us an 'apples with apples' comparison of performance across different types of funds in different sectors, so perhaps we could say it is, like democracy, the least worst of all the various systems. But very often, investors in high-yielding investment trusts are not reinvesting the dividends, so their actual performance experience will be different.

That's not to diminish the frustration felt from a falling share price, but reinvesting in a falling share price is obviously going to magnify the loss, and many, perhaps most, investors won't have done that. Interestingly, we are seeing some of the value specialists, such as **MIGO Opportunities (MIGO)**, picking up shares in the renewables trusts in recognition of the value on offer.

Everyone has to decide for themselves if they can live with a share price that might be more volatile than the underlying NAV, but one of the key things to think about is dividend cover and how sustainable it is. If a renewables trust can keep paying, and growing its dividend, then with yields often above 10% at the time we are writing this, the old phrase 'being paid to wait' really comes into play.

JL: ESG as a topic has fallen by the wayside in recent years. From the initial spurt of green washing and labelling ESG for the sake of it, anything ESG has performed poorly. Where are we now, and do renewables fall into this camp, given the E of ESG? Or, are these investments really as green as they're often marketed?

AR: This is a big topic, and yes, the climate has changed rapidly, no pun intended. But stepping away from renewables for a moment, one thing I think is worth thinking about is how ESG investing is evolving to accommodate the defence industry. It's not true to say every 'ESG' equity fund is now open to defence stocks, but there has certainly been an evolution of exclusion policies. Turning that logic around and applying it to renewables, even if, as an investor, one doesn't care at all about net zero, energy security is arguably part of a holistic defence strategy. So, I think it is possible for investors of all kinds to find some common ground. And as we looked at earlier, renewables assets are commercially viable, so you don't have to be an ESG investor to find a reason to invest.

Also, I'd note that, unlike other ESG scores, which involve quite a lot of subjectivity, renewables trusts' main impact is measurable and is usually in the first one or two lines of any trading update, i.e. how much electricity has been generated.

AR: Final thoughts

I'm going to leave the closing to Joe, but I'd conclude with one thought, which is here we are again in another unfolding energy crisis that exposes how vulnerable the UK is to fossil fuel prices, and at the same time, the big renewables infrastructure trusts are trading at the widest spreads compared to UK government bonds that they have ever done. I know that UK government bond yields might go up, I know that the renewables trusts don't immediately profit from spikes in electricity prices, and I know the political climate is a bit tricky, but I just find this to be such a strange anomaly, and I think in the fullness of time others will see the same thing.

JL: Final thoughts

What struck me most from this discussion with Alan is that renewables are both more complicated and more straightforward than they first appear. The jargon can be off-putting, from PPAs to P50 assumptions and discount rates, but the core idea is relatively simple: these are long-life, income-producing assets selling something the world needs more of, not less.

That does not make the sector risk-free, far from it. Interest rates, politics, power prices, weather and construction risk influence the asset class, and we should not ignore them. But equally, it feels too narrow to judge the sector purely through the lens of recent share price weakness, or to dismiss it as yesterday's ESG trade. These assets are already embedded in the energy system. In the UK, renewables now account for more than half of electricity generation, which makes the sector look far more like core infrastructure than a niche allocation.

What has changed, perhaps, is the narrative. The case for renewables is no longer just about decarbonisation, but something more pragmatic: energy security, affordability and meeting rising electricity demand as economies continue to electrify. For me, that is the key takeaway. Renewables sit at the intersection of infrastructure, income and lonG-term demand for electricity and power. To me, that feels increasingly relevant, particularly in today's environment.

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