

Energy transition – time to get the finger out

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Conversations with the industry this week leave this infra hack considerably more concerned at the end than the start... worrying about hitting Net Zero targets, the pace of delivery of renewables projects and – pretty much – energy transition in general. But most of all, the need to get the finger out.

While IJGlobal tracks the project finance of renewable energy projects (as well as all the other infra / energy asset classes) around the world, we're only too aware that more is delivered than enjoys a PF debt package... but it's the dataset that we (primarily) work in.

To clarify, if we track an airport project financing – the likes of [JFK International Airport New Terminal 1 Phase 1 PPP](#) in New York (a splendid example) – but Heathrow wanting to build a third runway is of no interest as it doesn't involve PF.

The same stands true for, say, a balance-sheet financed solar PV park in Spain which is not on our radar... unless they leverage it up. The farm down of offshore wind is an excellent example of this.

Taking a look at the IJ data for project finance renewable energy projects to have reached financial close in the last calendar year (2023), we have global data on 310 transactions with a total deal value (equity and debt) of a little more than \$91 billion, giving an average deal size of \$304 million.

This ranges from the likes of the splendid 1.1GW [Baltic Power Offshore Wind Farm](#) in Poland with €4 billion of debt against it... to the more humble 80MW [Blake Solar PV Plant](#) in West Virginia with \$95 million of loans.

There's a lot more being delivered across the globe than appears on the IJ database... but looking at that alongside the bigger picture of what has been realised to date – we aren't doing enough to meet Net Zero targets.

As one source says: "We're slow cooking when we need to be stir frying."

The bigger picture

When you look for global figures, prepare to wade through the alphabet soup of credible organisations that have published assessments of international investment requirements.



The International Energy Agency (IEA) is a good starting point for headline figures. It states that global annual renewable capacity increased by almost 50% to nearly 510GW (75% of that solar) in 2023.

Under existing policies and market conditions, the IEA estimates global renewable capacity will reach 7,300GW by 2028. On this trajectory, global capacity will increase 2.5x on its current level by 2030 – falling short of the 3x target.

For Europe alone, the IEA predicts additional renewable energy capacity of 523GW by 2028 – solar 70%, wind 26%. Sticking with this region, SolarPower Europe points to a record 56GW of solar capacity installed across the EU in 2023, an improvement on the 40GW added in 2022.

Wind Europe totals up an 18.3GW of new wind power capacity installed in 2023 – 79% of which was onshore – with the EU-27 responsible for 16.2GW of that sum.

“We expect Europe to install 260GW of new wind power capacity over 2024-30,” says Wind Europe. “The EU-27 should install 200GW of this – 29GW a year on average.

“To meet its 2030 climate and energy targets, the EU now needs to build 33GW a year on average. We therefore expect the EU to fall around 30GW short of its 425GW ambition needed to meet the 42.5% renewable energy target.”

The European Union has adopted the target of 42.5% renewables in the EU energy mix by 2030 (hoping for 45%). It also seeks to reduce energy consumption across the EU level by 11.7% by 2030, compared with 2020 reference scenario projections.

The invisible hand

Response from the market as to how we solve this global problem varies from a shrug while clamouring to get in on the next big-ticket renewables deal, through to palming it off on politicians as falling firmly in that bailiwick.

Some rightly point out that the issue lies with grid connectivity, installation capacity and storage, while also saying the focus should be on the decarbonisation of industry, improved energy efficiency... and let's not rule out Adam Smith's invisible hand.

When it comes to decarbonisation, we have the wonderful example of [H2 Green Steel](#) (H2GS) in Sweden which raised €6.5 billion in financing to support construction of its hydrogen-powered plant.

H2GS will produce green steel – reducing CO₂ emissions up to 95% compared to traditional steel making at its fully-integrated, digitalised and circular plant in Boden. By replacing coal with green hydrogen (powered by renewables) water and heat are the primary emissions. And that's not the end of it... they see this as a pioneer to decarbonise other heavy industries.

However, as one old infra chum says: “That is a 95% reduction in the amount of carbon emissions from producing steel relative to using a blast furnace. But one of the things we need to be careful of in the European steel industry – much the same as the car industry – if we are going to decarbonise and shut down these dirty blast furnaces and replace them with electronic arc furnaces... that uses loads of electricity. This puts a massive energy demand on the grid – which is fine. It decarbonises that industry, but it passes it on somewhere else.”

Given H2GS is in northern Sweden where clean energy is plentiful, this should not prove to be an issue. However, as similar solutions are rolled out further afield across heavy industry, the need to keep building new alternative energy facilities is not about to diminish.

Which leads on to one of the other solutions – improved energy efficiency. An excellent example of what can be done on this front is provided by [Sustainable Development Capital](#) (SDCL) which in November closed its [Green Energy Solutions Fund](#) at its €650 million target.

SDCL tilted its lance at this space from the get-go, having launched in 2007, identifying the need to slash energy usage, working towards the solution from the other end of the equation.

But it's Adam Smith's "invisible hand" that stands as the most compelling solution. A lot of people place hydrogen firmly in the "build it and they will come" camp – and not without good reason – but it's more the unknown unknowns that have one cautiously optimistic.

Just this week a company was mentioned that inspired hope – Herschel Infrared Heaters. It has developed an alternative to heat pumps that it claims provides "the easiest way to switch to 100% net zero carbon heating".

The intellectual horsepower that is focused on this below-radar sector where innovation is the order of the day... well, it's a gamble... but you've gotta have hope.

Nuclear – the visible hand

And then there's nuclear which has one old mate from the infra community raging quietly that the bull needs to be grasped by the horns.

He opines that the time has come for "policy makers and those of us in finance to view this problem with some intellectual honesty".

He says: "Solar and wind have been great for meeting lending targets, deploying equity and collecting bonus cheques... but this will not get us to net zero.

"In fact, this has created a whole set of additional problems with grave environmental consequences that no one is owning up to – go check out a lithium or a cobalt mine and you'll be left in no doubt about the environmental disasters we are creating.

"And that's not even mentioning used solar panels leaching mercury and other heavy chemicals into the waterways of the developing world because that's where E waste is ending up."

To his mind, the only solution is to invest in civil nuclear energy... but not the way the UK has done it by chasing private finance nuclear, but the way the UAE has acted and how historic nuclear programmes have been developed.

"Governments should run serious technology competitions – 1 for large nuclear and 1 for SMRs – pick a single design each and then directly fund the construction with appropriate contractual structures to incentivise performance," he states.

"Accept costs overruns on the first couple of projects in return for a pipeline approach that overall will be on time and budget.

"Then – once you have cheap energy – electrify transport, industrial supply chains... the whole lot."

While this suggestion will not be welcomed by the project finance and asset management community, their sovereign bond colleagues will make hay.

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