



Blinkered ESG drive risks isolating green enablers

By Fraser HUGHES
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Climate goals could be pushed back if strict ESG criteria starve change-enablers of capital

We are in danger of jeopardizing the climate goals the planet needs by trying to make investors feel virtuous about carbon reduction. We need to shore up critical energy and transport with capital, while keeping a sharp eye on their progress to net zero.

- Thermal coal exclusions may allow investors to feel virtuous, but if applied uncompromisingly they entail big risks; essential grid network capital, reliability and customer affordability could be jeopardised, hampering long-term climate change efforts.
- A booster tonic of investor pressure and engagement is needed. This will foster and accelerate change and provide essential capital to spawn the next wave of low-to-no-carbon utility companies.
- If we are to hit global net zero targets, investors should engage with companies large enough to make a difference; the electric and heating sector account for 45% of carbon emissions, for example.
- Holistic solutions are needed because the climate problem affects all sectors. Industry, healthcare and IT all need to source energy as we transition to net zero.
- Orsted shows how positive change can happen fast and unexpectedly.

The Energy and Climate Intelligence Unit reports that 124¹ countries have set a

2050 target for reaching carbon neutrality.² So far, only Denmark, France, Hungary, New Zealand, Sweden and the UK have passed their carbon-neutral targets into law.

The EU, South Korea and Canada are working on proposed legislation and large countries like the USA, Germany, Japan, China and Brazil have set official policy for their climate targets. Most other countries remain 'under discussion' but pressure to act is growing.

In May 2021, the International Energy Agency (IEA) published the world's first comprehensive study of how to transition to net zero by 2050. The report charts how the global economy must move from the current level of 34 gigatonnes of CO₂/yr to zero in 2050, while ensuring stable and universally available affordable energy.

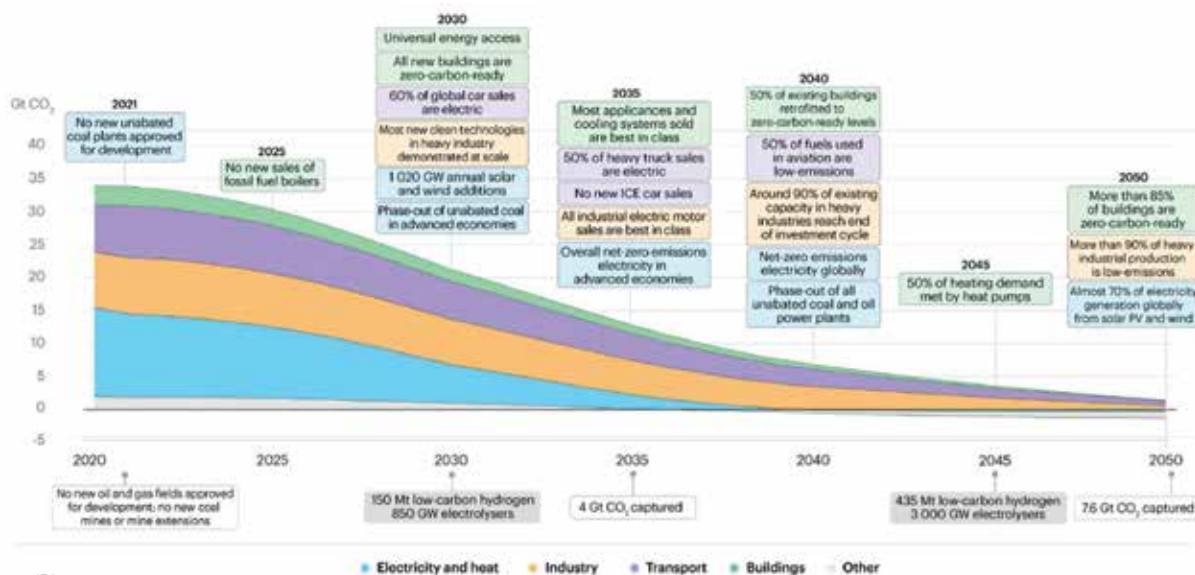
Central to this essential transition is energy and transport infrastructure, alongside real estate and heavy industry.

¹ The Energy and Climate Intelligence Unit tracks 137 countries.

² Carbon neutrality can be achieved purely through carbon offsets (i.e. no efforts to reduce actual Green House Gas (GHG) emissions), while net zero involves reducing actual GHG emissions as much as possible, then using carbon offsets/insets within the supply chain for residual emissions.

Figures 1 & 2: IEA's Key milestones in the pathway to net zero

Sector	2021	2025	2030	2035	2040	2045	2050
Buildings		No new sales of fossil fuel boilers	Universal energy access, all new buildings are 'zero carbon ready'	Most appliances & cooling systems sold are best in class	50% of existing buildings retrofitted to 'zero carbon ready'	50% of heating demand met by heat pumps	More than 85% of building are 'zero carbon ready'
Transport			60% of global car sales electric	50% of heavy truck sales are electric, no new internal combustion engine car sales	50% of fuels used in aviation are low emissions		
Industry			Most new clean tech in heavy industry demonstrated at scale	All industrial electric motor sales are best in class	Approx. 90% of existing capacity in heavy industries reaches end of investment cycle		
Electric & Heat	No new unabated coal plants approved for development		1,020 GW annual solar & wind additions, phase out of unabated coal in advanced economies	Overall net zero electricity emissions in advanced economies	Net zero emissions globally, phase out of all unabated coal & oil power plants		
Other	No new oil & gas fields approved for development, no new coal mines						



Source: IEA

The IEA pathway outlines more than 400 milestones to guide the global journey to net zero by 2050. These include, from today, no investment in new fossil-fuel supply projects, and no further final investment decisions for new unabated coal plants. By 2035, there are no sales of new internal combustion engine passenger cars, and by 2040, the global electricity sector has already reached net zero emissions.

Currently the electricity and heating

sector makes up approximately 45% of carbon emissions according to the IEA report. In the near term, the report describes a net zero pathway that requires the immediate and massive deployment of all available clean and efficient energy technologies, combined with a major global push to accelerate innovation.

The pathway calls for annual additions of solar PV to reach 630 gigawatts by 2030, and those of wind power to reach 390 gigawatts. Energy >

Global utilities must be key players in the energy transition because the electric and heating sector accounts for 45% of carbon emissions.

storage is also vital from a reliability perspective.

To get this into perspective, this is four times the record level set in 2020. For solar photovoltaic systems (PV), it is equivalent to installing the world's current largest solar park roughly every day.

We require a historic surge in clean energy investment this decade. The estimated \$750bn expected to be spent worldwide on clean energy technologies and efficiency in 2021 is far less than required in climate-driven scenarios.

Clean energy investment would need to double in the 2020s to maintain temperatures well below a 2°C rise, and more than triple to keep the door open for a 1.5°C stabilization, according to the IEA.

A major push to increase efficiency³ is also a key ingredient, namely a global rate of energy efficiency improvements averaging 4% a year through 2030 – about three times the average of the last two decades.

This efficiency gain would mean that in 2050, total energy consumption would be less than it is today even though the global economy will be 40% larger. The key milestones from the report are highlighted in Figure 1.

The rise and rise of ESG investing

Bloomberg Intelligence (BI) estimates that ESG assets under management (AUM) could climb to more than a third of a projected \$140.5tn⁴ global total by 2025.⁵

ESG assets are on track to reach \$53tn, based on their analysis, up from \$37.8tn at the end of 2020. They jumped to \$30.6tn in 2018 from \$22.8tn in 2016.

While Europe accounts for half of global ESG assets, the US is expected to have the strongest expansion in 2021 and may

Figure 3: S&P 500, ESG and ESG Elite Index – sector weights difference

Sector	500 (#505) (\$37.5tn)	500 ESG (#315) (\$28.2tn)	500 ESG Elite (#100) (\$11.5tn)
IT	26.2%	28.5%	26.7%
Healthcare	13.0%	12.9%	14.2%
Consumer Discretionary	12.1%	13.9%	11.9%
Financials	11.9%	11.2%	12.0%
Communication Services	11.1%	10.2%	12.4%
Industrials	8.9%	7.5%	9.7%
Consumer Staples	6.0%	5.7%	7.1%
Materials	2.8%	2.8%	3.1%
Energy	2.8%	3.1%	0.0%
Utilities	2.6%	1.5%	0.3%
Real Estate	2.5%	2.6%	2.6%

As at 28 May, 2021, number of companies (#) & mkt cap (\$)

Figure 4: ESG strategies penalize Utilities

Provider	Utilities	ESG Utilities %
MSCI World	2.87%	1.89% (ESG Leaders)
S&P Global	2.7%	2.7% (DJSI)
FTSE Global Developed	2.92%	1.98% (FTSE4Good)

Source: Providers factsheets as at 31 May, 2021



“It is important to recognize that embodied carbon impacts occur immediately and potentially account for the majority of lifetime emissions where large quantities of concrete and steel are required. Avoiding/minimizing embodied emissions will require innovative approaches to design and selection of new materials/processes. We require the adoption of a ‘whole life carbon approach’ to manage the carbon emissions.”

Matthew Brundle, Evora Global

dominate the category in the future. The next growth wave could come from Asia – particularly Japan.

In a recent report citing similar AUM figures as BI,⁶ PWC notes massive opportunities for asset and wealth management to fund future infrastructure investment in the light of government shortfalls.

In developed markets alone, there are considerable openings to refurbish roads, airports, and other such infrastructure while accelerating developments in areas such as 5G and renewable energy.

As a result, PWC expects AUM in infrastructure funds to double by 2025 to over \$2tn. ESG factors such as the adoption of a ‘whole life carbon approach’ should have a material impact on where capital is deployed.

ESG indices risk blocking climate change enablers

The S&P 500 ESG Index was launched in 2019. According to S&P⁷: “The S&P 500 ESG Index aims to offer a more sustainable version of the broad-based S&P 500, with similar risk and returns, making it a compelling tool for core replacement”.

In September 2020, the methodology of the index was updated in an extraordinary rebalance to exclude companies deriving more than 5% of revenues from thermal coal. This rule change resulted in the exclusions of 11 US utilities.

As a result,⁸ utilities fell from 2.6% in the parent S&P 500 to 1.5% in the S&P 500 ESG.

In December 2020, the S&P 500 ESG Elite Index was launched, excluding exposure to nuclear power and resulting in a total utilities weight of 0.3%.

3 See: ‘A sleeping giant in the energy transition: efficiency’ by Hundeshagen & Schnellhammer, GLIO Journal – Issue 8, page 44.

4 As at 2020, global AUM was \$110tn – more than 20 times the US federal budget according to a report by PWC.

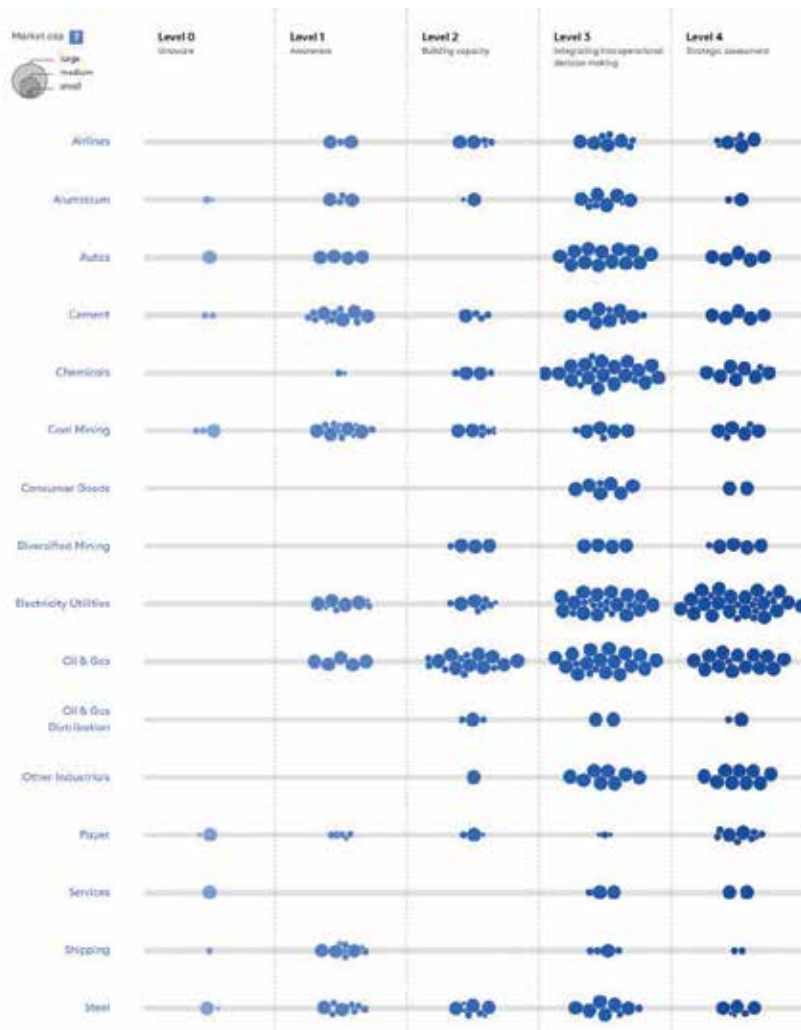
5 Assuming 15% base rate growth, half the pace of the past five years.

6 Asset and wealth management revolution: The power to shape the future – The future of financial services. PWC 2020.

7 S&P estimate that \$11tn is indexed or benchmarked against the S&P500 as at 31 December, 2019.

8 As at 28 May, 2021 the number of constituents of the S&P 500 ESG Index was 315. 185 companies were excluded for the following business activities: Thermal coal >5% of revenues, Tobacco, Controversial weapons, low UNGC score, low ESG score.

Figure 5: TPI management of GHG, risks & opportunities



Source: www.transitionpathwayinitiative.org/sectors

See Figure 3. for a comparison of weights versus the S&P 500. Sectors which gained are highlighted in green, sectors which decreased are highlighted in red.

In June, FTSE Russell announced that 208 companies risk deletion⁹ from FTSE4Good if they do not improve 'climate performance' over the next 12 months. The index is tracked by a range of exchange traded funds and investors, such as the Japanese Government Pension Investment Fund, the world's largest pension fund according to the FT.

The new climate standards are based on parameters drawn up by the Transition Pathway Initiative (TPI),¹⁰ backed by more than 100 investors collectively managing nearly \$25tn in assets.

Companies in "primary impact subsectors" – such as fossil fuel, forestry, mining, transport and utilities – must show that the risks and opportunities of the transition to a low-carbon economy are integrated into their operational decision-making.

TPI covers 415 global companies in developed and emerging economies across electric utilities, oil & gas, industrials and materials, airlines, autos and shipping.

The electric utilities sector contains the largest number of companies (68) from any of the sectors, and with the exception of the Japanese utilities, most are constituents of the GLIO Index & GLIO/GRESB ESG Index.

Figure 5. breaks down the sectors according to how companies manage their GHG emissions and the risks and opportunities to the low-carbon economy. The vast majority of US and Europe-based utilities fall into the level 3 (integrating into operational decision making) or level 4 (strategic assessment) category. >



"We view this strict criteria-based ESG investing as counter-productive. By definition, it does not allow investors to participate in the utilities that are reducing emissions the most. Many of these companies will be adding the most new renewables to replace coal, and ESG investors will only be eligible to buy them after they have succeeded, and their stocks have already run up!"

Steve Fleishman, Wolfe Research

⁹ FTSE have not made the list public.
¹⁰ www.transitionpathwayinitiative.org/



“Insurers are well positioned, and due to the scale of their collective assets under management and their direct interest in the climate-related outcomes they are particularly well placed, to drive change. There is currently material discussion and progress being made on addressing climate change risks, and ESG is rising – as it should – in prominence on the corporate agenda.”

Gareth Mee, EY

A specialist ESG take on infrastructure from GRESB

A report published by EDHECinfra in March 2021 examines a broad range of ESG frameworks applied to infrastructure assets/companies. It outlines the schemes and guiding frameworks designed specifically for the infrastructure sector, or covers the infrastructure sector in some detail including the SuRe standard, SASB, GRESB infrastructure asset assessment, CEEQUAL, the Envision rating tool, PPIAF and the IS Rating Scheme.¹¹

EDHECinfra states that the others are not sector-specific; they include infrastruc-

ture bundled with other sectors and thus do not capture infrastructure very well. This is a key reason why GLIO partnered with GRESB to produce the asset class-focused GLIO/GRESB ESG Index,¹² which we believe is an accurate reflection of the current state of public disclosure for infrastructure companies.

Moreover, the GLIO/GRESB ESG Index is non-exclusionary – all companies are included and rated on materiality and transparency, and weighted up or down accordingly. We see company engagement now and in the future as fundamental to encourage and drive change.

Corporate engagement

EY highlights that two years ago, UK insurers faced \$56bn in global insured losses from natural catastrophe events, with secondary perils (often associated with climate change) accounting for more than 50% of losses.

What is important here is having sufficient capital to cover higher-than-expected losses.

“Insurers are well positioned, and due to the scale of their collective assets under management and their direct interest in the climate-related outcomes, they are particularly well placed to drive change,” notes Gareth Mee, partner at EY.

“There is currently material discussion and progress being made on addressing climate change risks, and ESG is rising – as it should – in prominence on the corporate agenda,” he adds.

One of the significant steps forward was the UK Stewardship Code 2020,¹⁴ which



“Our mission is clear. Deliver energy that is affordable, reliable, and clean. We will continue to build and sustain long-term value for our stockholders and customers by focusing on the fundamentals of our business: safety, reliability, operating efficiency, financial discipline, customer care and environmental stewardship.”

**Gale Klappa,
WEC Energy Group Chairman**

Figure 6: Energy Intelligence Green Utilities Report 2020 – how GLIO Index Utilities rank

El Rank	Company	Country	Capacity (GW) 2019
2	Iberdrola	Spain	45.7
5	Orsted	Denmark	7.5
6	NextEra Energy	USA	51.7
8	EDP	Portugal	26.7
10	Enel	Italy	84.4
17	Engie	France	61.7
19	SSE	UK	9.3
36	PG&E	USA	7.7
39	Dominion Energy	USA	29.4
44	PSEG	USA	11.5
49	Southern Co	USA	45.8
51	Duke Energy	USA	53.4
58	Entergy	USA	25.9
67	Xcel Energy	USA	18.7
73	Alliant Energy	USA	6.7
75	Pinnacle West	USA	6.2
78	Emera	Canada	9.2
82	OGE Energy	USA	7.8
88	CLP Holdings	HK	19.2
91	Tenaga Nasional	Malaysia	15.1
93	WEC Energy	USA	8.6
96	AEP	USA	28.4

Source: Energy Intelligence, November 2020¹³

11 EEI & AGA's ESG/Sustainability Reporting Template is not included in EDHECinfra's research.

12 See: <https://www.glio.org/glio-gresb-esg> for background information.

13 The rankings are computed which awards a total of 200 points. 100 points are awarded for emissions intensity or kg CO2/MWh generated, and 100 points are based on non-hydro renewable capacity and reflects efforts to decarbonize.

14 The UK Stewardship Code 2020 is a good example of how insurers engage with companies.

sets standards for those investing money on behalf of savers and pensioners.

While this is a UK initiative, it is simply fast tracking expected guidance coming from Europe and globally to increase focus on stewardship. This requires signatories to address ESG directly and calls for collective action to amplify the effects. Long term, it will have a real impact and drive value.

New green capacity accelerating

Every year Energy Intelligence (EI) publishes its green utilities report. It estimates that the top-100 companies in the ranking represent just under half of the world's power capacity.

The latest report¹⁵ states that wind, solar and hydropower accounted for 70% – or 56 GW – of new capacity added by the world's top 'green' utilities and IPPs.

This was instrumental in reducing average carbon dioxide emissions intensity of the companies to 425 Kg/MWh, versus 564 Kg/MWh when the ranking started in 2011.

EI states that the change is largely due to the progressive switch of the large incumbents' capacity to renewables and,

among fossil fuels, to more gas at the expense of coal.

EI reports a 60% reduction in total emissions in Europe since 2011; transition has seen 47 GW of renewables added and 148 GW of fossil fuel assets retired.

Iberdrola, Orsted, EDP, Enel and Engie have been central to this transition, and are now among the top renewables players globally. It is predicted that 75% of European electricity will be carbon-free by 2030, and fully decarbonized by 2050.

US companies in the original ranking have reduced carbon emissions by 41% since 2011, and US companies in the latest ranking emitted 392 kg/MWh in 2019 – down from 620 kg/MWh in 2011. 140 GW of fossil-fuel assets have retired.

A growing number of US firms have set decarbonization targets in line with their European peers. Many US companies have committed to 50% reductions in emissions by 2030 (from 2000-2010 levels), and 80-100% by 2050.

NextEra Energy plans to reduce emissions intensity 67% by 2025 (from 2005 levels)

despite doubling its generation. Southern Company achieved a 52% reduction in GHG emission from 2007 to 2020. WEC Energy Group is planning to reduce total emissions from electric generation (net mass), 60% by 2025 and 80% by the end of 2030 (from 2005 levels).

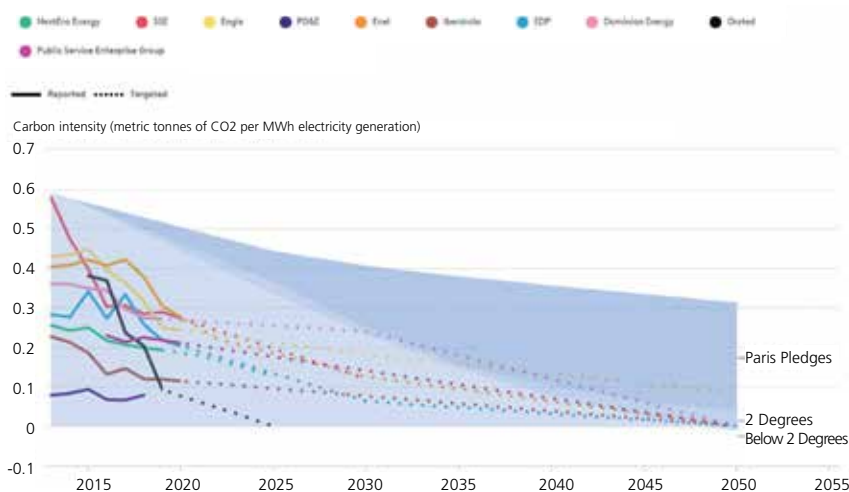
If we combine the GLIO Index utilities in the EI ranking, with reported (2011-2019) and future-targeted (2020-2050) carbon intensity from TPI, we can create a picture of the companies who can take a central role in the energy transition.

Figure 7. maps the reported and targeted carbon intensity of the top ten leading green utilities in the GLIO Index, ranked by EI in the *Green Utilities Report*. Six companies are European and four are from the US. Our Orsted case study (black line) is due to hit zero by 2025, hitting its target 21 years ahead of schedule.

Substantial progress has been made by most companies in the sample, and the majority are targeted to follow the path to net zero.

President Biden's goal of decarbonizing the US electricity sector by 2035 will also see targets revised and the Public >

Figure 7: TPI carbon performance: Electric Utilities (top ten ranked by Green Utilities Report)



Source: Transition Pathway Initiative

As investor pressure, technology and experience grow so does the opportunity for the global utilities to revise and beat net zero targets, providing sufficient capital is available.



“As the key agents of change in the energy transition, the utilities have many stakeholders – their regulators, customers, employees and investors. Undoubtedly they have to manage all of these while transitioning at the fastest pace that is acceptable to all. This ‘momentum for change’ is a key enabler of the transition that simplistic ESG strategies do not take into account.”

Tim Humphreys, Ausbil Investment Management

Service Enterprise Group (PSEG) has already accelerated its net zero vision aggressively to 2030.¹⁶

PSEG plans to direct half of its current 2021-to-2025 capital spending program of approximately \$14-16bn toward de-

carbonization, emission reduction, methane reduction, clean energy transition and climate and storm adaptation.

We have applied the same exercise to the GLIO Index companies ranked 11-20 in the Green Utilities Report. We note com-

panies start from a higher level of carbon reported in 2011 versus the top ten. WEC Energy Group, CLP and Alliant Energy have made big steps towards the pathway in recent years.

All companies in the sample are targeting net zero in 2050.¹⁷

The Edison Electric Institute (EII) reported in June that US investor-owned utilities’ capital expenditures in 2020 totaled \$132.7bn, marking the ninth consecutive record high.

Projected total industry capex between 2021-2023 has also been revised up to \$421.6bn. Figure 9. highlights that wind and solar energy make up the bulk of capacity additions between 2021 and 2025. The updated projections confirm that the industry plans to maintain an elevated level of capital spending for at least the near term.

The companies continue to invest in clean energy resources to work towards their accelerated carbon reduction and net zero goals, as well as transmission and distribution infrastructure necessary to improve energy efficiency, reliability, and safety.

Figure 10. shows how US utilities are spending a significant and growing amount of resources on critical adaptation, hardening, and resilience (AHR) initiatives to the tune of around \$20bn

Figure 8: TPI carbon performance: Electric Utilities (top 11-20 ranked by Green Utilities Report)

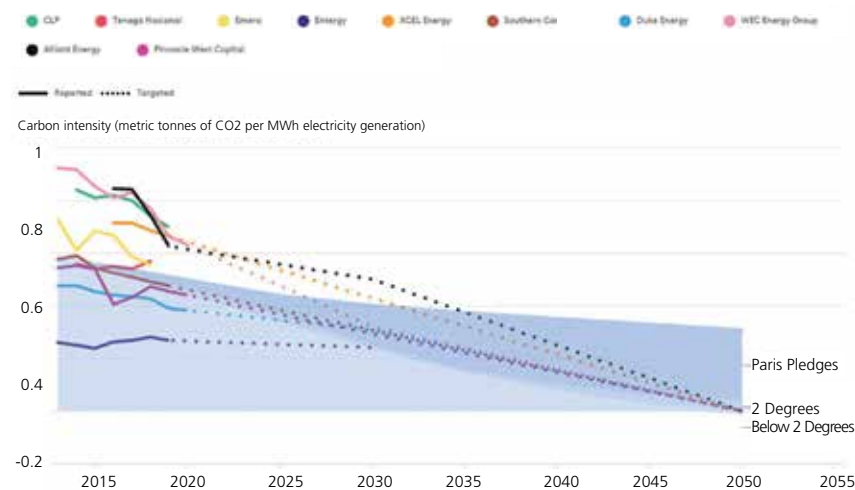
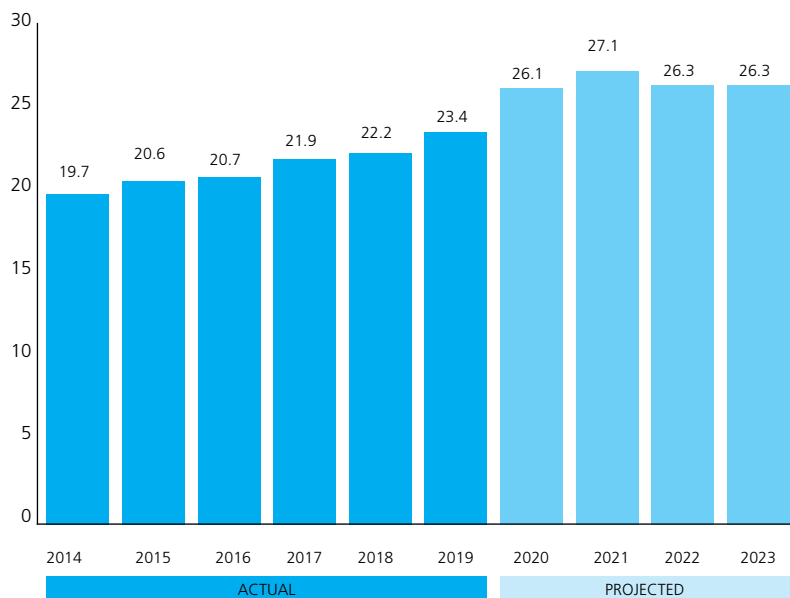


Figure 9: Stage of announced capacity additions (MW) 2021-2025

Fuel	Proposed	Feasibility	Application Pending	Permitted	Site Prep	Under Construction	Testing	Total
Coal	106	0	0	454	0	0	0	560
Natural Gas	20,090	876	10,099	13,183	-	13,392	722	58,362
Nuclear	4,773	1,900	-	197	-	2,200	-	9,070
Wind	57,970	3,200	15,464	8,130	412	12,062	1,821	99,059
Solar	95,482	200	24,173	20,086	565	17,480	1,026	159,012
Other	1,546	1,897	194	568	5	278	5	4,493
Total	179,967	8,073	49,930	42,618	982	45,412	3,574	330,556

Notes: Others include biomass, diesel/fuel oil, fuel cells, geothermal, landfill gas, pet coke, waste heat, water, wood and energy storage. Totals may reflect rounding. Data includes new plants and expansions of existing plants, including nuclear uprates. Data includes projects with an expected online date up to 2025. Source: Hitachi ABB Power Grids; EII Finance Department, March 2021

Figure 10: Actual & projected transmission investment 2014-2023 (\$bn)



Investments of investor-owned electric companies and stand-alone transmission companies. Actual investments figures were obtained from the RRI Property & Plant Capital Investment Survey supplemented with FERC Form 1 data. Projected investment figures were obtained from EEI Transmission Capital Budget & Forecast Survey supplemented with data obtained from company 10-k reports and investor presentations.

Source: EEI Business Analytics. Updated November 2020



“This is a hugely exciting time for investors wanting to be a part of financing the transition to a zero-carbon world. Investors must ensure that their capital is deployed into investment strategies and companies that are genuinely a part of real-world carbon reduction solutions. ATLAS sees the electricity networks as playing a crucial role in facilitating the energy transition, but doing so will require enormous levels of investment over the coming years. We firmly believe that this investment will in turn drive substantial asset growth and should support healthy investment returns.”

David Bentley,
ATLAS Infrastructure

per year for transmission and distribution infrastructure. The maintenance, upgrades and buildouts of the network are a fundamental part of the day-to-day business of the utilities, and this will be critical in transmitting the green energy of the future.

As investor pressure, technology and experience grow so does the opportunity for the global utilities to revise and beat net zero targets, providing sufficient capital is available. A funding shortfall risks the opposite, and could have dire consequences for the overall green transition.

The best evidence that it can be done – Orsted¹⁸

Just 12 years ago, when it was called DONG Energy (Danish Oil & Natural Gas), the company earned most of its revenues by selling heat and power, 85% of which came from coal.

In 2009, a major strategic shift was announced: the company would seek to flip its generation mix upside down and

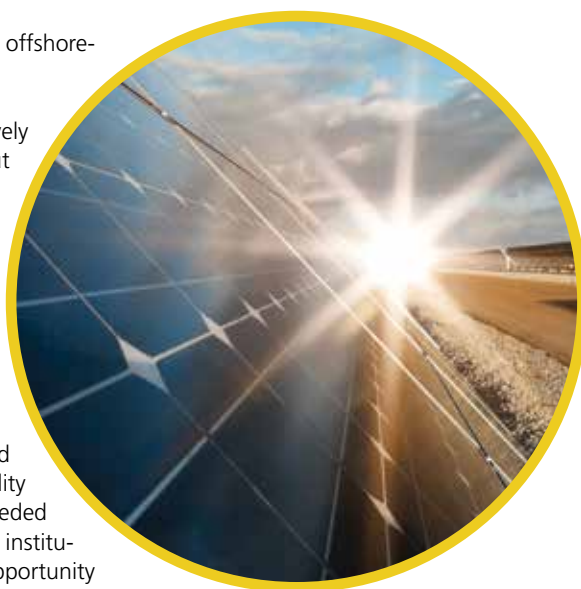
generate 85% of heat and power from renewable sources by 2040. The message was: DONG will clean up its act, but don't expect an overnight miracle.

Today it's the world's leading offshore-wind power producer.

The company invested aggressively in offshore wind and phased out coal. By 2019, it had become the world's largest producer of offshore-wind energy.

The company also raised its renewable-generation share to 86% – hitting its target 21 years ahead of schedule.

In 2016, DONG Energy completed an IPO which provided the company with the flexibility and access to equity that it needed to fund growth. It also gave institutional and retail investors an opportunity to take part in a green transition, while sharpening the company's profile as a renewable pure-play. >



¹⁸ Orsted's renewable-energy transformation – McKinsey Sustainability, July 2020 Interview with Martin Neubert, Orsted



Renamed Orsted, it has turned its focus to becoming a global renewable-energy major in the past five years. The first step was divesting its oil and gas business, which concentrated the business almost entirely on renewables.

Orsted also invested in the conversion of domestic heat and power plants, away from coal toward biomass. As a result, it will exit coal in 2023, and the company's power generation will be carbon-neutral in 2025.

In the past couple of years, the company has re-entered the onshore-wind market and moved into solar PV and storage solutions. This will help diversify the technology mix to better meet the demands of its customers.

It is important to note that it has adopted these technologies at scale. North America, for example, is a large market

for onshore wind and storage solutions, and Orsted is investing there.

In fact, in late June, we saw New Jersey move further forward with its ambitious goal of 7.5 GWs of offshore wind by 2035 – now at over 3.7 GWs. This now completely utilizes Orsted's Ocean Wind lease area of 2.3 GWs.

In total, Orsted has won over 4 GWs of offshore wind projects in the USA – making it the leader.

"Everything we do reflects our vision to create a world that runs entirely on green energy," Orsted's Offshore Wind CEO Martin Neubert told McKinsey in 2020.

"And while offshore wind has the potential to power the world, we're convinced that a broader technology mix will support the growth of our company even better." 🌍



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.....
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Liz O'Leary is a writer and researcher who specialises in simplifying complex business ideas. She is a former correspondent for Reuters news agency in Europe as well as a former investment research editor in the European banking sector.