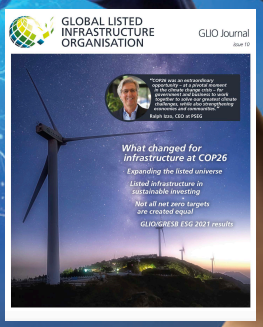
Thoughtful and patient capital – unlocking the electrification opportunity



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A once-in-a-generation opportunity for wealth creation is upon us, but there are no guarantees it will be realized. Transition finance and comprehensive metrics hold the key.

A badly-managed and expensive transition would be huge lost opportunity for investors to grow returns while catalyzing meaningful climate action.

The global energy system needs to be urgently reimagined. This immense challenge is necessary to stave off the worst effects of climate change, as global emissions need to decrease by 45% by 2030 versus 2010 to reach net zero by 2050, according to the Intergovernmental Panel on Climate Change. The next eight years will, then, be decisive.

Electric utilities – and by extension, infrastructure investors – are crucial to the success of this monumental effort. Not only is the electricity sector responsible for over 40% of all emissions, it is also the linchpin for decarbonization in the transportation, buildings, and industrial sectors. To bridge the gap, the International Energy Agency estimates that total electricity generation must increase more than two and a half times by 2050.

The speed and scale of this transformation is impossible to achieve without trillions of dollars in thoughtful and patient capital. This is where infrastructure investors come in, given their historic role in keeping the global economy running.

However, this goal will require investors to break from current practices. It will require a focus on more than just investment in carbon-free electricity, but a wider approach beyond emissions-only in terms of climate metrics.

Deepening commitments

As an example, consider the progress of the regulated US utility sector, which has seen a groundswell of emissions commitments in the past few years. While these are so far inadequate – with today's emissions commitments by the largest 20 utilities projected to

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overshoot a 1.5°C trajectory by 120% in 2030[1] – the fact that they are becoming the norm across the sector is a positive development.

Beyond forward-looking commitments, the US utility sector has made meaningful progress on decarbonization. Between 2010 and 2020, renewable energy assets on utility books more than tripled from ~$8bn to ~$28bn; utility-owned renewables capacity increased to 26GW (see Figure 1); emissions declined by ~35%.[2]

As seen in Figure 2, emissions reductions among US-regulated utilities have been primarily driven by shuttering or falling utilization of coal plants.[3]

Given these trends, the conventional view of climate progress would declare this an unmitigated success and call for more of the same – build more clean generation and emissions will fall, as the graph indicates.

However, a closer look reveals that over that same decade, fossil fuel assets on utility books increased from ~$95bn to ~$162bn. Even more notably, coal assets on utility books increased from ~$70bn to ~$95bn,[4] despite a wave of coal retirements (see Figure 3).

Figure 3. shows these trends matter; the success of a large-scale and rapid transition rests on more than the dollars flowing to clean energy, the speed of deployment, or even the pace of emissions reductions. The transition will live or die on how impacts on customers, workers, and communities are managed and mitigated. >

Figure 1: Utility-owned aggregate capacity (GW)

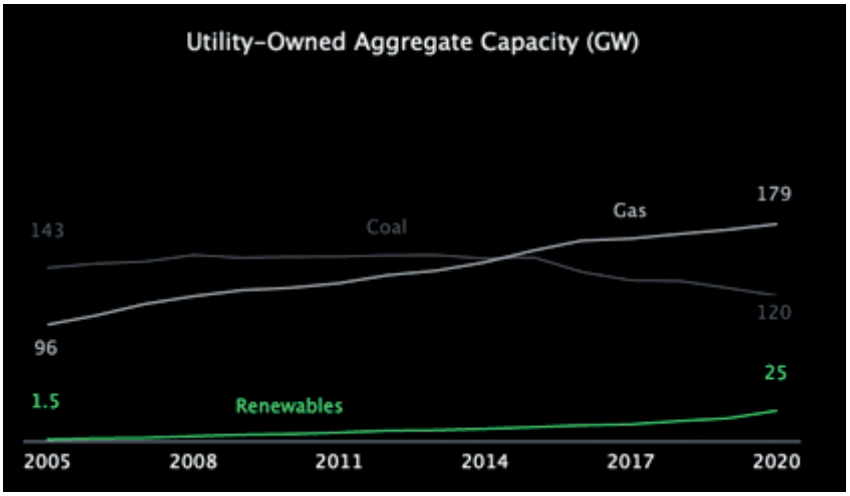


Figure 2: Scope 1 CO2 emissions (MMT)

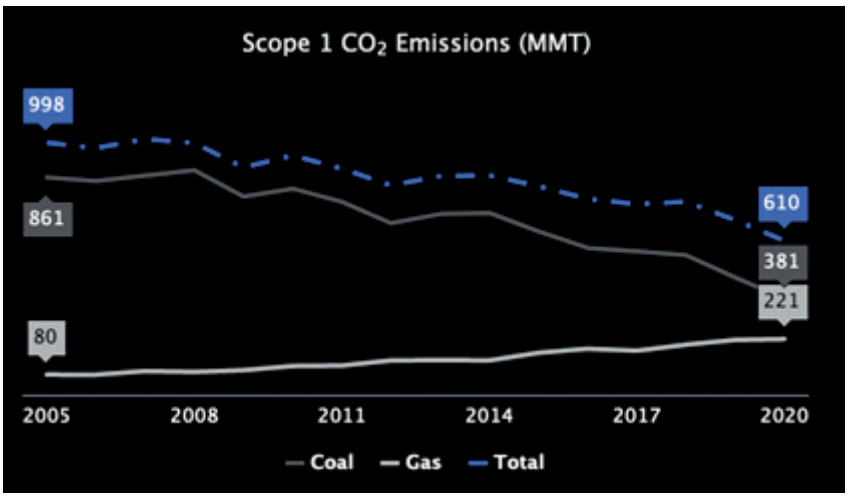
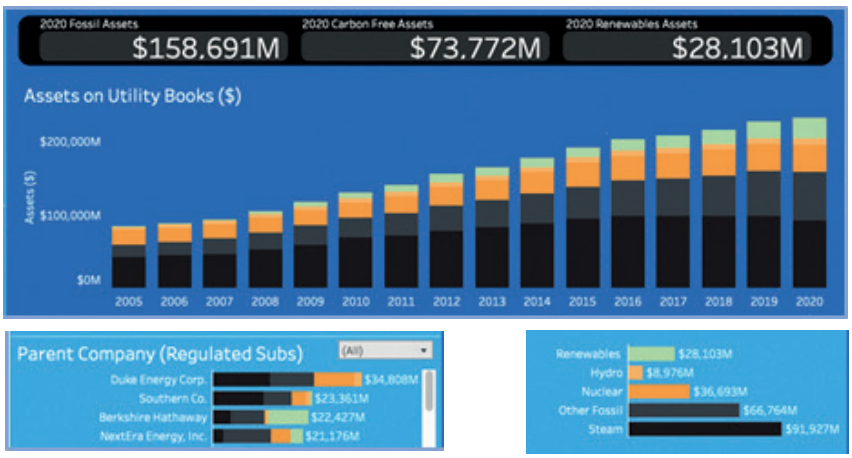


Figure 3: Utility assets



1 Based on latest utility commitments from SEPA's Carbon Reduction Tracker and RMI's view on a 1.5°C-aligned trajectory for the US electricity sector. This is based on the Paris climate goal to limit global warming to well below 2, and preferably 1.5, degrees Celsius below pre-industrial levels.
2 Emissions from generation owned by US-regulated utilities. "Steam" is a proxy for coal and "Other Fossil" for natural gas.
3 This emissions chart shows CO2 emissions from generation owned by regulated US utilities, broken out by plant technology type (not plant fuel type). "Steam" is a proxy for coal and "Other Fossil" for natural gas.
4 These refer to "steam" assets, which are predominantly coal.

An expensive transition that damages communities will be unpopular. That means inevitable mounting regulatory, political, and financial risks as opposition grows. If electricity becomes or stays expensive – due, for example, to fossil assets remaining on utility books far longer than needed – the momentum for electrification of the rest of the economy will be stymied. This loss of momentum may come from utility regulators stepping in, politicians passing legislation, customers shying away from electrification due to rising prices – or all of the above.

A badly-managed and expensive transition would be huge lost opportunity for investors to grow returns while catalyzing meaningful climate action.

A better way forward

So what can investors do? First, investors must prioritize transition finance. The opportunity to electrify the US economy is conservatively valued at ~$1.3tn by 2030,[5] but fully realizing it is conditional on a much smaller (~$150bn) transition[6] – the retirement of US fossil power plants. Thus, infrastructure investors can unlock the larger opportunity through thoughtful and proactive participation in the smaller one.

Financial tools such as ratepayer-backed securitization have been gathering significant momentum in the USA over the past few years, as feasible avenues to transition fossil fuel plants, reduce customer costs, and support workers and communities along the way.

Second, investors must include a more comprehensive set of metrics to track progress on climate action and prioritize climate-aligned investments. This means including metrics that not only track outcomes of interest, such as current emissions, but also *drivers* for the future of the utility sector – historic investments, utility resource plans, trends in customer bills, and so on.

Figure 4: Visible and invisible climate change drivers

Less-visible drivers, often below the surface, exert immense influence on the outcomes above the surface and are crucial to a successful and profitable climate transition.

5 High-level estimate based on the amount of wind and solar needed to electrify the US economy along a 1.5°C-aligned trajectory.
6 Cumulative undepreciated net plant balance of all existing fossil fuel plants owned by regulated US utilities.

Proactive climate due diligence may be especially relevant for investors in the infrastructure space that often manage illiquid assets and investment horizons far into the future.

Figure 4. illustrates how these less-visible drivers often sit below the surface. However, they exert immense influence on the outcomes above the surface and are crucial to a successful and profitable climate transition.

Improving visibility with deeper metrics

Developing and collecting a more comprehensive set of metrics requires some up-front effort, but can go a long way to help investors maximize the bang for their buck – from both a climate and profitability perspective.

Better metrics enable investors to identify and unlock opportunities most likely to boost long-term returns while sidestepping current or emerging downside risks. This type of proactive climate due diligence may be especially relevant for investors in the infrastructure space that often manage illiquid assets and investment horizons far into the future.

While this discussion focuses on the USA, the insights bear relevance for utilities around the world, even across differing business models and market frameworks. After all, over 93% of all global coal is impervious to competitive forces and will require thoughtful transition finance that unlocks the broader electrification opportunity.

And while the availability and quality of utility data varies across different geographies, the drivers for the utility transition – investments, regulation, policy, operations, customers, and communities – are largely consistent and remain relevant to a zero-carbon utility sector.

Climate change presents an immense challenge to the global economy, but it comes with a once-in-a-generation opportunity that infrastructure investors are uniquely positioned to realize. Investors must leverage transition finance and better metrics to seize this opportunity, and the time to do so is now.

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