



Pragmatic optimism: Moving faster by focusing on what works now



Cripps Leadership Advisors viewpoint

Our energy transition dinners bring together big thinkers, problem solvers and doers. These are people who are not afraid of making bold bets and leading from the front where they can see real value and returns for their stakeholders. All agreed that the climate crisis is real, and there's a need to accelerate the energy transition. The vote around the table was for a reframing of expectations: out with grand, unrealistic and (as yet) unaffordable ideas such as green hydrogen, and in with pragmatic solutions that work, such as increased use of lower carbon fuels and a greater focus on energy efficiency.

However, moving projects forward remains a challenge. It's not just that investors find many projects unbackable because of uncertainty around pricing, market growth, and shifting regulatory goalposts but that there's no clear plan to address these uncertainties. It was a common complaint among our diners that many policymakers lack the expertise to truly understand the complexities and challenges of the energy transition, which means decisions can be disjointed, misguided and have unintended consequences. As a result, investors are wary of financing projects that don't have the backing of existing energy giants that can deliver a ready market for these new molecules and provide long-term offtake contracts.

This isn't to say there aren't huge sums changing hands to find solutions to the greatest challenge facing our species. Innovation continues to attract investment at venture scale and there are examples of groundbreaking disruption beginning to emerge.

This is an exciting place to work so it's no surprise that at Cripps Leadership Advisors, we have been incredibly busy helping existing energy companies hire leaders who are better equipped to face the transition (see our paper, [Finding Solution-Driven Executives to Deliver the Energy Transition](#)) who are able to create and develop new divisions and scale growth companies. We see a clear market trend of leadership talent in the energy transition space draining from the energy majors. Jaded by Big Oil's recent strategy, U-turns and shelved projects, they are instead finding roles in scaling companies that are looking to add experience of large-scale project delivery and global markets to take their disruption to the next level. Interestingly, we see the desire to contribute to the transition outweighing the compensation reduction that often comes with a step down from global corporate to earlier stage companies, a financial calculation no doubt eased by the risk rewards of a well-constructed management incentive plan.

Going faster means going for low-cost wins that can be consolidated and compounded to deliver concrete gains. From blending biofuels to rethinking nuclear and optimising gas as a bridging fuel, it's about displacing the most polluting fossil fuels so we can really move the needle on emissions as quickly as possible. With a new administration headed to Washington, there's much for our movers and shakers to discuss at our next dinner – a mood of pragmatic optimism may be more needed than ever.



The challenges ahead

As world leaders arrive for COP29 in Azerbaijan¹, there's growing scrutiny of the widening gap between what they say and what's being done to curb further dangerous levels of global warming.

Speaking at the Singapore International Energy Week in October, Saudi Aramco's Amin Nasser flagged a "sizeable gap between prediction and reality" given that much of the world is unable to afford the eye-watering US\$100 trillion to US\$200 trillion price tag of the energy transition.

"Planners must stop assuming the world can replace its conventional energy needs with half-baked alternatives, almost overnight, particularly in the Global South," he said, noting that all sources of energy – both traditional and new – will be required for decades to come.



Rather than an energy transition, we are really talking about energy addition, where just the growth is mostly met by alternatives, instead of replacing conventional energy in any meaningful way."

Amin Nasser | Aramco

It was a sobering assessment of the scale of the challenge ahead if we're to decarbonise our world in time to offset catastrophic warming without further weakening of already economically precarious nations.

This was reflected in the conversations at the recent energy transition dinner in London, where industrial leaders and finance experts agreed that the initial sprint out of the gates has now been tempered by a more measured and common-sense approach to what will be a long journey to net zero. Increasingly, the focus is on measures that are already known to work and that can be readily iterated, repeated and scaled to deliver consistent and sustainable reductions in emissions.

Our experts also echoed Amin Nasser's remarks, with many conversations honing in on a key energy transition metric: affordability. This is not a dirty word. Ensuring solutions are affordable means there's scope for the profit margin that is essential to attract investors as well as ensuring a just transition to a net zero world.

¹ <https://cop29.az/en/home>



Pragmatic optimism in practice

This pragmatic optimism is about finding workable solutions that can be scaled relatively easily. Take road transport, for example. Rather than the hot air generated by the hydrogen bubble, it might prove more effective to continue to expand biofuel blending, a policy that leverages proven fuels and existing infrastructure rather than depending on the build out of a parallel and entirely new infrastructure.

Aviation is following this model, with IATA estimating that Sustainable Aviation Fuel (SAF) could contribute around 65% of the reduction in emissions needed by aviation to reach net zero by 2050². Research by the Air Transport Action Group (ATAG) suggest it is feasible to replace almost all fossil jet fuel with SAF over the coming decades³.

SAF, which can reduce CO₂ emissions by up to 80%, can be produced from a wide array of feedstocks such as waste fats, oils and greases, municipal solid waste and agricultural and forestry residues, as well as being produced synthetically. These synthetic fuels are thought to hold great potential but will take a lot of investment to scale and require some big bets by first movers to build momentum.



² <https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet---alternative-fuels/>

³ <https://aviationbenefits.org/environmental-efficiency/climate-action/waypoint-2050/>



Green sky thinking

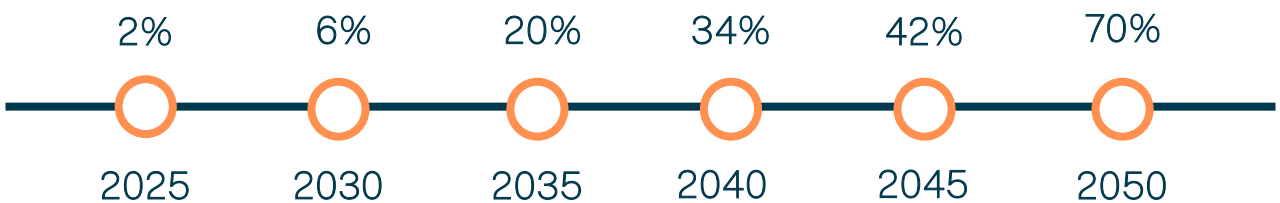
There was a clear vote of confidence in September, when Brookfield Asset Management announced a US\$1 billion funding package for Infinium, the world’s first producer of commercially available ultra-low carbon eFuels, including eSAF. This is a next generation sustainable aviation fuel, which can reduce lifecycle greenhouse gas emissions by approximately 90% or more compared to today’s conventional fuels. Infinium plans to use the additional capital to scale eSAF production to meet the ‘overwhelming’ demand from the aviation industry.

Legislation is helping to shape this market for new molecules. In October 2023, the EU adopted ReFuel EU Aviation, which requires aviation fuel suppliers to blend increasing amounts of SAF with kerosene, starting with a 2% minimum blend in 2025, rising to 70% in 2050. Europe has taken the stick approach when it comes to emissions, with enormous penalties for non-compliance in a way not yet seen in other sectors. For airlines, penalties will be at least twice the price, the difference between conventional fuel and the SAF multiplied by any shortfall quantity. This penalty outweighs the premium cost of SAF – in 2022, SAF added US\$500 million to industry costs⁴ - and there’s a scrabble now among airlines to source sufficient quantities of the new fuel. Many airlines are now entering into forward purchase agreements for SAF worth around a total of US\$45 billion, well in excess of today’s SAF availability, and growing numbers of airlines vertically integrating into the supply chain, with some committing equity and risk capital into SAF projects to capture adequate supply.

Inevitably, industry bodies such as IATA are keen that Europe’s ‘stick’ is matched by some of the ‘carrot’ that is favoured by regulators in the US, such as supply-side measures including production tax credits (such as those offered under the US Inflation Reduction Act). This creates a ready market that gives producers and distributors the confidence to invest in production and infrastructure, reduce project risk, decrease the opportunity cost of producing SAF, and foster a more compelling business case that allows supply and demand to develop into a sustainable market.

ReFuel EU Timeline

The mandated aviation fuel blend amounts of SAF with kerosene starting 2025 and ending 2050.



Timeline taken from [PACE](#).

⁴ <https://www.iata.org/en/pressroom/2023-releases/2023-11-24-01/>



LNG: A lesson in time

All of this takes time, perhaps more time than many expected, which is why these early years of the energy transition can feel like a hype-to-disappointment cycle on repeat. In a consumer-driven world of one-click-shopping and same day delivery, where disruptive innovations can up-end long-established industry value chains in a few short years, we have lost sight of the fact that most revolutions are slow burns. With a climate emergency declared, we were all perhaps a little guilty of expecting profound change to happen far quicker than was ever possible. When it comes to managing expectations, it's perhaps worth considering the development of LNG as a fuel market as a useful guide to the gap between hype and delivery.

There were once high hopes that LNG would be the bridging fuel to a low carbon future. While there's no doubt that LNG is a key component of the energy mix, its penetration as an alternative to diesel and gasoil in maritime and road transport respectively has underwhelmed.

While LNG is making inroads into global oil marine bunkers, and is expected, according to analysts at Wood Mackenzie, to displace around 600,000 bpd of oil by 2030⁵ (out of a global peak by the mid-2020s of around 5.3 million bpd) it is only really in China that LNG has impacted road freight. Indeed, China either already has - or is close to - reaching peak gasoil demand as growing sales of LNG-fueled heavy-duty trucks displace conventional powered trucks, according to S&P Global Commodity Insights⁶. LNG-fueled trucks have resulted in the displacement of about 8% of gasoil consumption this year, according to the analysts.

This is solid progress, spurred on by a slump in LNG prices that has favoured sales of greener trucks. But this trend has not happened quickly: it has been a slow burn for more than a decade and this again underscores that any switch to new fuel sources, even in highly directed markets like China, will not happen quickly.

Highlights from S&P Global's report: 'China nears peak gasoil demand as LNG-fueled heavy duty truck sales surge'

According to Commodity Insights, it's believed that the LNG-fueled trucking fleet will expand its share within registered heavy trucks to an estimated 10% by the end of 2024, up from 7.5% in 2023.

In January – May 2024, China's gasoil production fell 3.9% year-on-year to 4.25 million b/d.

PetroChina Planning and Engineering Institute's, (CPPEI) Jinyuan Chang stated, *"In northwestern and northern China, we expect LNG-fueled trucks' replacement ratio will be over 50% in seven provinces in 2024. Among these, the ratio in Ningxia and Xinjiang will be over 60% to 70%, making them the only two provinces with ratios over 50% in 2024."*

⁵ <https://www.woodmac.com/news/opinion/full-steam-ahead-the-changing-outlook-for-global-marine-fuels-to-2050/>

⁶ <https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/lng/062624-china-nears-peak-gasoil-demand-as-lng-fueled-heavy-duty-truck-sales-surge>



Electric: Electrons on the move



Price differentials may be helping drive sales of LNG-powered trucks, but longer-term alternative forms of propulsion will take over. Wood Mackenzie analysts expect synthetic fuels, or e-fuels, to become more widespread after 2040 but forecast that electric vehicles will prove the main threat to diesel in the long term⁷.

Electrification is going to be key to driving decarbonisation forwards. And, as we've noted before, the scale of this challenge is huge, not only in terms of eye-watering capex but also numerous technical, commercial and regulatory hurdles, not least a supply crunch in the critical transformers essential to build out of the grid⁸.

The impetus to overcome these hurdles has been helped by the energy-hungry appetites of big technology companies, which are now bringing their financial clout and innovative thinking to bear on this challenge in order to power AI data centres. Sometimes this kind of innovative thinking means doing what would once have been politically unthinkable. In September, for example, Microsoft signed a 20-year power purchase agreement with Nasdaq-quoted Constellation, which is restarting Three Mile Island Unit 1 in Pennsylvania, which was shuttered five years ago for economic reasons. The nuclear plant, the site of Unit 2, which was shut down in 1979 after the worst nuclear energy accident in the US, will deliver 800 MW of carbon-free reliable energy as part of Microsoft's efforts to help decarbonise the grid as it seeks to become carbon negative.

It's not just nuclear that is being given a second chance. In Japan, polluting coal-fired power plants are being given a new lease of life under an innovative project to use ammonia. The introduction of ammonia (NH₃), which doesn't produce CO₂, into the Hekinan Thermal Power Station, should, if an initial trial works as planned, reduce coal usage and CO₂ emissions by 20%. If the proportion of ammonia used increases to 50% or 60% in the future, coal usage and CO₂ emissions will decrease proportionately.

⁷ <https://www.woodmac.com/press-releases/lng-truck-sales-impacting-chinese-road-diesel-demand/>

⁸ <https://www.ft.com/content/a0fa2e61-b684-42b7-bd12-6b9d7c28285c>



Efficiency: The first fuel

The conversations also underscored the importance of doing more with the energy we already have, with growing impatience at how slow progress has been in pushing the energy efficiency agenda. Whether its hull design, better home insulation or smart energy grids, energy efficiency is the ‘first fuel’ of the energy transition. With most power generation being only 33% efficient, there is plenty of scope for improvement to make every barrel do more and thereby limit the number of barrels needed.

It’s not just in combustion that fossil fuels are inefficient. The International Energy Agency (IEA) has set milestones for energy saving in its Net Zero Scenario, which include improving efficiency by almost 40% in residential buildings, by just under 35% in car travel and by just over 15% in industry by the end of the decade⁹. This means that gains which took around two decades in the past will need to be achieved in six years. Yet again, time wasted debating new hype technologies has only increased the pressure to deliver those ‘under-hyped’ solutions that already work but need the funding and policy framework to really gain traction.

Our next event in Houston takes place shortly and I look forward to sharing the views around the table as the US prepares for a change of administration.

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Murray co-leads our energy practice focusing on mid and downstream and leads our work across the energy transition globally.

His 16 years working across commodity markets, mid and downstream oil, gas and LNG, and petrochemicals puts him in the middle of key energy markets today and in the future. These segments face the biggest transition risk and opportunity where one of the key enablers of the energy transition and path to net zero is the substitution of hydrocarbons for cleaner alternatives.

Murray’s coverage includes advising corporates, investors and portfolio companies in their core business and in transforming through the energy transition.

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⁹ <https://www.iea.org/energy-system/energy-efficiency-and-demand/energy-efficiency>



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