

Achieving a Global, 1.5-Aligned Energy Transition

Good morning and welcome. This is an important event at a critical time. We're exactly a month away from Egypt's COP27. And we're already a quarter of the way through what must be the "decade of delivery" for the net zero transition.

Our planet's average temperature is already 1.1 degrees Celsius warmer than pre-industrial levels, and the last seven years have been the warmest on record.¹ While the Glasgow commitments of governments could limit warming to 1.8 degrees Celsius by 2100, their policies are still only consistent with warming of around 2.5 degrees C.² We must not just 'mind this gap' but urgently close it, for as the IPCC sets out, the global carbon budget is a binding constraint that will be exhausted within a decade on the current trajectory.³

Transitioning to net zero as rapidly as necessary and as smoothly as possible requires wholesale transformations of our economies and financial systems.

And not before time. Events this year have put into sharp relief the many failings of the global energy system. Energy is being used as a weapon in a horrific, unjust war. Households in developed economies are facing crippling bills. Across the developing world, the grind of energy poverty is worsening. All the while, the climate crisis grows, building future costs that will dwarf even current hardships.

In short, our current energy system is unreliable, unaffordable, inaccessible, and unsustainable. We need to transition to one that supports both climate stability and a thriving, inclusive economy.

To get there, we need a revolution in energy, business, and finance.

¹ World Meteorological Organisation

² Based on [Climate Action Tracker](#), Mid-year update (June 2022), which indicates current policies and actions are consistent with 2.5-2.9C warming by 2100. This update doesn't include the impact from the US Inflation Reduction Act and EU RePowerEU plans.

³ IPCC sixth assessment report

At the 11th hour, it has begun. Over the past two years, the proportion of global emissions covered by country net-zero targets has risen from less than one-third two years ago to almost 90%.⁴ Under the Glasgow Climate Pact, countries agreed to close the gap between ambition and action. For the first time, nations agreed to phase down unabated coal power and inefficient subsidies for fossil fuels. And across the private sector, more than 1,700 companies have set science-based emissions reduction targets.⁵

Financial institutions are playing leading roles. As part of the Glasgow Financial Alliance for Net Zero (GFANZ), over 500 major financial institutions from 46 countries are committing to manage their balance sheets, totalling over \$130 trillion of assets, in line with a 1.5 degree C net-zero transition. That's around 40% of global private financial assets.⁶

If last year was about mainstreaming net-zero commitments, this year is about operationalising them.

To that end, GFANZ is providing the global financial system with the tools it needs to manage the transition to net zero. This process begins with pan-sectoral guidance on financial institution net-zero transition planning. Drawing on extensive stakeholder feedback, our framework outlines the metrics, governance and strategies that all financial institutions can adopt to translate their climate pledges into action. The framework also provides a clear definition of transition finance that will help drive decarbonisation in the real economy.

Transition finance naturally begins with climate solutions and companies already aligned with net zero. And it includes financing high-emitting companies with credible transition plans and funding plans to accelerate the managed phaseout of assets that will be stranded by the transition. All four strategies are essential for the world to get to net zero.

⁴ <https://unfccc.int/documents/310475>

⁵ <https://sciencebasedtargets.org/>

⁶ <https://www.gfanzero.com/>

Of course, finance is an enabler—it makes decarbonisation possible. The real action is in the real economy. That’s why, a few weeks ago, GFANZ set out the financial sector’s expectations for the transition plans of companies to help financial institutions determine which high-emitting companies can get on viable paths to net zero. In the new year, we plan to release guidance on the use of third-party sectoral pathways to help companies in oil and gas, aviation, and steel align their business models with 1.5 degree C pathways. These approaches help turn commitments into action.

In parallel, GFANZ is focused on mobilising private capital to emissions reduction opportunities in emerging markets and developing economies.

Given institutions’ net-zero commitments, finance on the scale required—an extra \$1 trillion a year by the end of this decade—is now a possibility. In partnership with governments, philanthropy and multilateral development banks, GFANZ is working to leverage Country Platforms and Just Energy Transition Partnerships (JETP) to channel capital to support the energy transitions of emerging economies with critical energy transitions. We’ve dedicated significant resources to advance private sector mobilization under the Indonesian and Vietnamese JETPs and Egypt’s Country Platform. We look forward to working with other countries and stakeholders to ensure that the energy transition is truly just and global.

Finally, with commitments and action must come unprecedented accountability. That’s why all our work – from our global net zero transition planning framework to our regional tools and guidance – will be underpinned by a new Net-Zero Data Public Utility that provides consistent, accurate, openly available climate transition-related information to allow financial institutions, regulators, civil society, and the general public to track climate progress.

As I noted at the outset, that progress is increasingly urgent. Today, the energy that keeps our lights on, heats our homes, transports our goods, and fuels their production accounts for around three quarters of global

carbon emissions. These emissions must fall rapidly to have any chance of keeping global average temperatures below 1.5 degrees C.

This will be hugely challenging. Fossil fuels power over 60% of the world's electricity and 80% of the world's energy.⁷ We can't simply decree the most complex energy transition in history by fiat. It is not enough to just say no. Transition means transition, and this requires not only a decline in fossil fuels but also a massive acceleration in clean energy investment.

Moreover, *how* we transition demand alongside supply matters tremendously for consumer prices, stagflation, and social costs. Recent IMF simulations indicate that an exclusive focus on either the supply-side or demand-side policies could mean the difference between oil at \$20 a barrel or nearly \$200 a barrel by the end of this decade.⁸ Solely restricting hydrocarbon supply without curtailing demand will simply boost rents in the energy sector, while constraining governments and hobbling households. In contrast, focusing on energy efficiency and increasing clean energy supply will deliver a lower cost economy, boosting household incomes, employment, and growth. Adjustment would then be concentrated in declining industries, and can be smoothed by governments that are in more robust financial health.

Addressing energy supply in the current conjuncture appears—at first glance—particularly challenging. European energy markets have ruptured, with negative spillovers cascading around the globe. The resulting scramble for alternatives is boosting emissions in the near term and leading some to argue for 'temporarily' setting aside our climate goals. But the climate doesn't care about why emissions happen, only how much. The more we emit now, the more radical the action will be needed later. We need to speed up the transition, not slow it down.

More fundamentally, there is no energy security without sustainability. The folly of our lean, fossil fuel based global energy system has once again

⁷ Our World in Data, <https://ourworldindata.org/electricity-mix>

⁸ [International Monetary Fund](#), World Economic Outlook, April 2022, pg 35

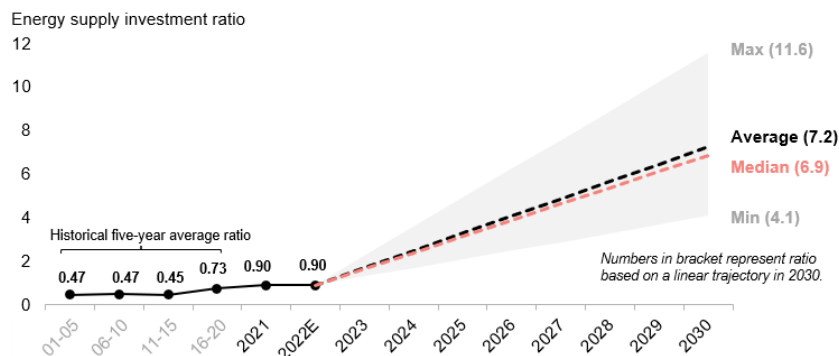
been laid bare. In contrast, once built, clean energy systems will be more affordable, efficient, resilient and reliable. No one owns the sun and wind. Hydrogen is everywhere.

Transition means change on an enormous scale. Investment in clean energy has begun to grow rapidly, but its pace needs to rise to more than three-fold this decade in order to get the world on track for 1.5 degrees C.

Let me draw that out. By examining what different 1.5 degree C scenarios mean for energy investment, BloombergNEF research estimates that, by the end of this decade, we need to scale clean energy investment such that for every dollar maintaining necessary fossil fuel energy capacity, at least four are invested in the clean energy infrastructure.⁹ Today that ratio has risen to around one to one, in coming years it will need to go further.

This analysis underscores that the biggest threat to achieving 1.5 degrees C will be the speed with which we can increase clean energy investment. Absent this ramp up, the world won't be able to transition away from fossil fuels.

Exhibit 1: Linear ratio growth trajectory to meet decade-average targets



⁹ BloombergNEF, Investment Requirements of a Low-Carbon World: Energy Supply Investment Ratios, <https://about.bnef.com/blog/investment-requirements-of-a-low-carbon-world-energy-supply-investment-ratios/>.

Moving towards this 4:1 ratio of investment in clean energy to conventional energy can provide a useful yardstick for governments, companies and financial institutions. It also underscores the speed with which demand for fossil fuels needs to shift, including in transportation, industrial processes, manufacturing and real estate.

And if there is a shortfall, the question should be what more can governments and companies do to make it up.

To be clear, a smooth transition will still require some limited and targeted investment in fossil fuels. The ratio rises from 1:1 to 4:1 not 4:0. That's because declining production of existing fields means some capacity must be rebuilt even as overall use of fossil fuel falls. There is also value in shifting to less carbon-intensive sources and reducing scope 1 emissions such as methane leakage. In addition, Russia's unjust war underscores that a resilient system needs more diversified and reliable suppliers.

At the same time, given the constraints of the carbon budget, oil and gas investments must stay within clearly defined guardrails. Oil and gas investments *can* (but not necessarily will) be transition-aligned only if they incorporate optimal methane and other greenhouse gas emissions controls; have operating lifetimes consistent with net-zero timetables; and provide either energy security benefits or a combination of lower-than-market production costs and emission intensities. Investments which do not adhere to these guardrails will, as the global economy decarbonizes, either become stranded or exhaust the world's limited carbon budget. Our first panel today will cover some of the opportunities and challenges energy companies face in transitioning to a net-zero economy.

The IPCC analysis estimates that emissions from current fossil-fuel-based energy infrastructure alone would exceed a 1.5 degrees C carbon budget by a third, rising to two thirds if all currently planned infrastructure is taken

into account.¹⁰ So an imperative of meeting our climate goals will be the early retirement of much of this infrastructure. Finance cannot simply shun these assets, many of which will be needed to meet our near-term needs. Instead, it should help responsibly manage these assets out of the economy, as part of a just transition to green growth. This is the subject of our second panel today.

Finally, it is imperative that achieving the 4:1 ratio involves a step change in financing of emerging markets and developing economies. Based on analysis from the IEA, for the world to reach net-zero emissions by 2050, emerging markets and developing economies alone will likely need an additional \$1 trillion annually in clean energy investment by the end of the decade—a sevenfold increase from current levels.¹¹ Mobilising capital for the energy transition in emerging markets and developing economies will be the subject of our third panel.

I said a moment ago that finance on the scale required for the energy transition in the developing world is now a possibility. But much is required to turn that possibility into a reality. Finance can't drive the transition in isolation. De-risking investment through public policy and supportive official financing will be crucial to enabling private finance to meet the clean energy needs of these economies.

In all countries, public policy must accelerate the removal of barriers such as permitting delays, trade frictions, producer subsidies, power purchase agreements, monopolies, and anti-innovation market frameworks. These policies are impeding the growth of commercial clean energy options. If not addressed, they will frustrate the next wave of clean energy innovations.

¹⁰ IPCC. Climate Change 2022, Mitigation of Climate Change

¹¹ International Energy Agency, Financing clean energy transitions in emerging markets and developing economies, <https://www.iea.org/reports/financing-clean-energy-transitions-in-emerging-and-developing-economies>. The IEA's analysis on emerging markets and developing economies excludes China.

Encouragingly, there has been progress in recent months.

- RePowerEU is tripling the pace of the clean energy transition in the EU this decade with the additional investment of around €300bn by 2030, supporting clean energy (in this strategy) at a ratio of 24:1 to fossil fuels.¹²
- The Inflation Reduction Act (IRA) will catalyse the US energy transition, with nearly \$370 billion dedicated to emissions-cutting measures such as tax breaks for low-carbon energy and electric vehicles. Estimates suggest that, thanks to the IRA, the share of US electricity from renewables and nuclear could increase to as much as 80% by 2030.¹³
- Finally, the UK's Energy Security Strategy targets will make offshore wind the leading source of electricity generation in the UK within the next few years.

These climate wins came together in response to, not in spite of, the energy crisis. If we continue to seize this moment to build true energy security and sustainability, low-carbon investment will grow at unprecedented speed and scale.

I will conclude with a caveat and a call to action.

First, the caveat: finance will not drive the net-zero transition on its own. It is an enabler, a catalyst that can speed what governments and companies initiate. The scale of the financial net-zero commitments is such that, if the

¹² Carbon Brief, How the EU plans to end its reliance on Russian fossil fuels, <https://www.carbonbrief.org/in-depth-qa-how-the-eu-plans-to-end-its-reliance-on-russian-fossil-fuels/>.

¹³ Megan Mahajan et al., Updated Inflation Reduction Act Modeling Using the Energy Policy Simulator, Energy Innovation, August 2022. Note that this modeling assumes that “necessary transmission will be built, interconnection delays are addressed, supply chains provide the necessary materials to deploy these levels of clean electricity, and “a sufficient workforce can supply the labor.”

world truly wants a sustainable, resilient, and fair energy system, finance will be there.

Now the call to action: the shock of the energy crisis must prompt a comprehensive response because, until recently, the world has been caught in a timidity trap, knowing what needs to be done, but dithering towards climate disaster.

Fortunately, despite the challenges this year, there are some reasons for cautious optimism. Companies are increasing their climate ambition. Policymakers are beginning to step up. The new GFANZ transition framework and the Climate Data Steering Committee's Net Zero Data Public Utility will not just operationalise commitments but also reveal what more needs to be done.

For now, we know there is no shortage of work ahead.

Now I'm excited to turn things over to Tim Gould, Chief Energy Economist at the IEA, for our next keynote presentation.