

November 2021

Code Red -

Asia Pacific's Time

To Go Green



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Foreword

The world is experiencing far greater impacts from climate change and far sooner than predicted. The time for business to commit to net zero is now.

The window to decarbonise and limit warming to 1.5°C above pre-industrial levels is rapidly closing. The Asia Pacific region has a key role to play, not least because it will acutely feel the consequences of a warming world on its societal and economic growth fundamentals.

In our *Asia Pacific's Time* report, we emphasised that it has never been more important for our region to work together to sustainably grow a net zero economy. That need has only been escalated by the additional challenges of COVID-19.

However, while positive changes have been made, many governments in Asia Pacific are still navigating, and perhaps, in the early stages of planning their response to climate change and considering the appropriate actions needed to meet societal expectations.

This is not – and was never – a journey that governments can undertake alone. Businesses have a crucial role to play in the collective drive towards net zero, and it is unequivocally in their long-term financial and stakeholder interests.

Businesses have both a responsibility and an opportunity to proactively commit to decarbonise.

Not only does this align with the growing consensus of stakeholder capitalism, but the increasing demand for green technologies, products and services also offer unique opportunities to expand into new markets, leverage green finance and generate millions of new, sustainable jobs in an equitable manner; helping to minimise the impact on communities and workers in carbon intensive and hard to abate sectors. Consumer, financing and societal pressures provide a compelling commercial impetus to drive the pace of innovation.

A commitment to net zero requires every business to reimagine the possible, and based on that vision deliver an end-to-end transformation of its strategy, operating model and technology. Climate cannot be an operational afterthought or limited to a siloed Environmental, Social and Governance (ESG) capability.

Instead, it must be woven throughout the entire organisation and culture, embodied and wholeheartedly sponsored by the leadership.

Businesses that fall behind on this transition risk being outmanoeuvred by competitors – limiting access to finance, customers, and talent in the process. And instead of being part of the solution, they will be part of the problem: contributing to the systemic risk of a warming world.

PwC has committed to achieve net zero greenhouse gas (GHG) emissions by 2030. In addition, our emissions reduction targets have received formal validation by the Science Based Targets initiative (SBTi). It's a critical goal as we put ESG at the centre of our business strategy.

We are investing not only in our own ESG transformation but also those of our clients. We are establishing both regional and local ESG centres of excellence, upskilling or re-skilling our staff on ESG and complementing their skills with market leading digital assets.

As a fundamental aspect of our global strategy, *The New Equation* - we are dedicated to helping businesses and stakeholders to build trust and deliver sustained outcomes in their decarbonisation journey.

The 2020s will be pivotal in the transition to a net zero economy. Businesses cannot afford to wait. *The time for Asia Pacific to act is now.*

Raymund Chao

PwC Asia Pacific
and China Chairman



Report highlights

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- Currently the world is far below the required 12.9% per year decarbonisation rate needed to reach the 1.5°C target in the Paris Agreement.
- Global decarbonisation must accelerate to *five times* its current rate of just 2.5% in 2020. This requires a net zero transformation.

The current state of play in Asia Pacific

- Asia Pacific's vast population, economies and communities are extremely vulnerable to climate change.
- In 2020 decarbonisation in Asia Pacific was 0.9%.
- To achieve the 1.5°C target and reach net zero, the region needs to urgently accelerate its decarbonisation.
- The challenge is to shift away from fossil fuel derived energy towards low carbon and renewable energy sources while equitably enabling regional economic growth.

Government and business must collaborate

- Fewer than 25% of Asia Pacific governments have a firm net zero commitment.
- Targets, policy and regulation are crucial levers to make progress on climate change at the pace and scale needed.
- Businesses must partner with governments to drive fundamental change - COP26 has highlighted this.
- If the current commitments made by government and business at COP26 are fully delivered, the world will still only reach between 1.8 - 2.4°C of warming by 2100.

Reimagining business for net zero

- The time is now. Businesses have a responsibility to accelerate transformation to net zero.
- Business has a golden opportunity for green growth.
- Move first. Move fast. Move comprehensively. There is scope for business across Asia Pacific to proactively lead the transition and adopt net zero targets.
- When it comes to the impact a business has on the climate, change must start at the top.
- Every business and every market is different.
- There is no one-size-fits-all solution. Businesses must reassess their strategy. A journey to net zero should begin with a fresh look at purpose, performance and people.
- Investment is essential. Financing (and delivering) the shift to net zero needs innovative and sustainable partnerships between all stakeholders with public and private investment at scale and speed.
- Data and transparency are crucial. This should power a renewed governance and reporting model to align decision makers and build trust with all stakeholders.
- Businesses are rising to the challenge. Our case studies highlight examples of businesses setting the tone from the top and delivering transformative change as they transition to net zero.

2020 rates of decarbonisation

12.9%

Global average decarbonisation rate needed for 1.5°C

5.7%

G7 average decarbonisation rate

2.5%

Global average decarbonisation rate

0.9%

Asia Pacific average decarbonisation rate

0.8%

E7 average decarbonisation rate

G7 economies (US, Japan, Germany, UK, France, Italy, Canada), E7 economies (China, India, Brazil, Turkey, Russia, Mexico and Indonesia).

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The United Nations Secretary-General, António Guterres, described the 2021 Intergovernmental Panel on Climate Change (IPCC) WG1 report on climate change as a “code red for humanity”. The report underscores the urgency of limiting warming to 1.5°C above pre-industrial levels, which is the threshold required to avoid the most damaging impacts of climate change.

The overwhelming evidence is that existing efforts are falling a long way short of what is required to limit warming to 1.5°C, and that continuing the current trajectory will impose tremendous costs on the global economy and individual wellbeing for generations to come.

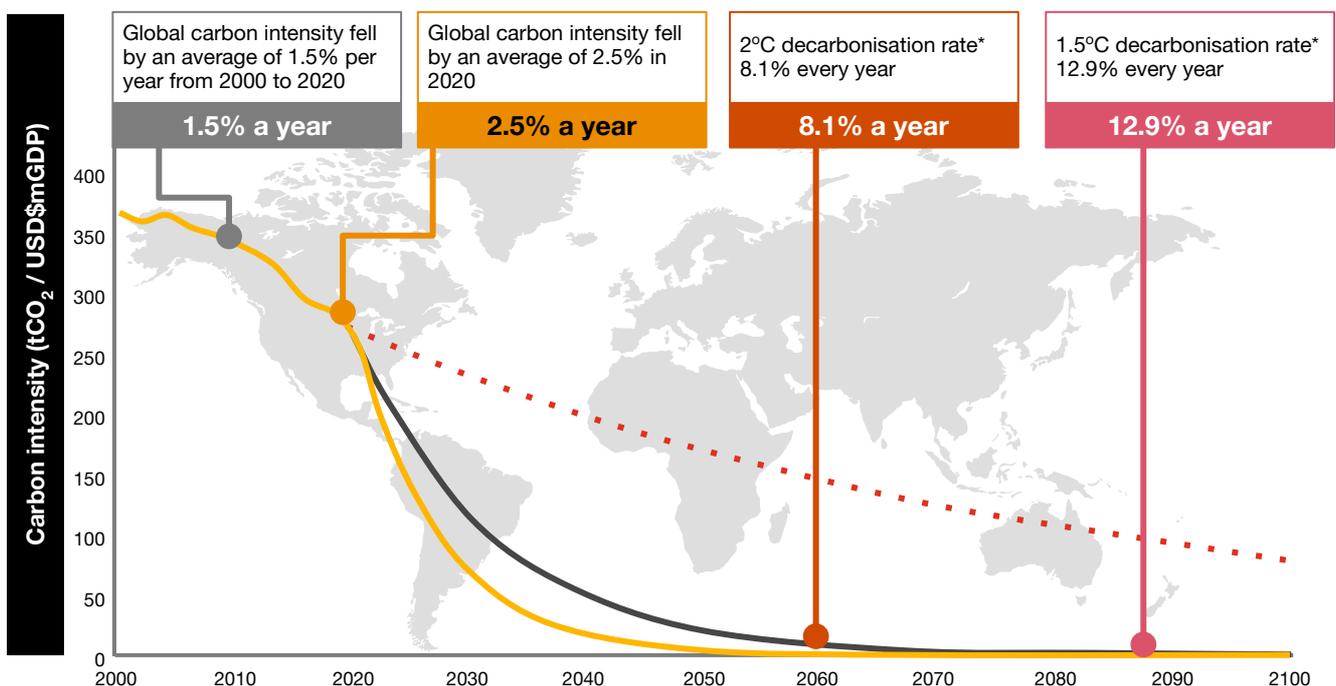
A net zero transformation is necessary.

This has to be achieved through rapid decarbonisation; the removal or reduction of absolute emissions from the atmosphere. Currently the world is far below the required 12.9% per annum rate of decarbonisation to reach the 1.5°C target, with an annual rate of decarbonisation of just 2.5% in 2020, up slightly from 2.4% in 2019. This means annual global decarbonisation must accelerate to *five times* its current rate in order to stay on track to not exceed 1.5°C of warming.

Net zero emissions are achieved when human-caused emissions of greenhouse gases to the atmosphere are balanced by human-caused removals over a specified period. The IPCC Working Group 1 report (2021) reported that limiting global warming to **1.5°C** would require “rapid and far-reaching” transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of carbon dioxide (CO₂) would need to fall by about 45% from 2010 levels by 2030, reaching net zero around 2050. This means that any remaining emissions would need to be balanced by removing CO₂ from the air.

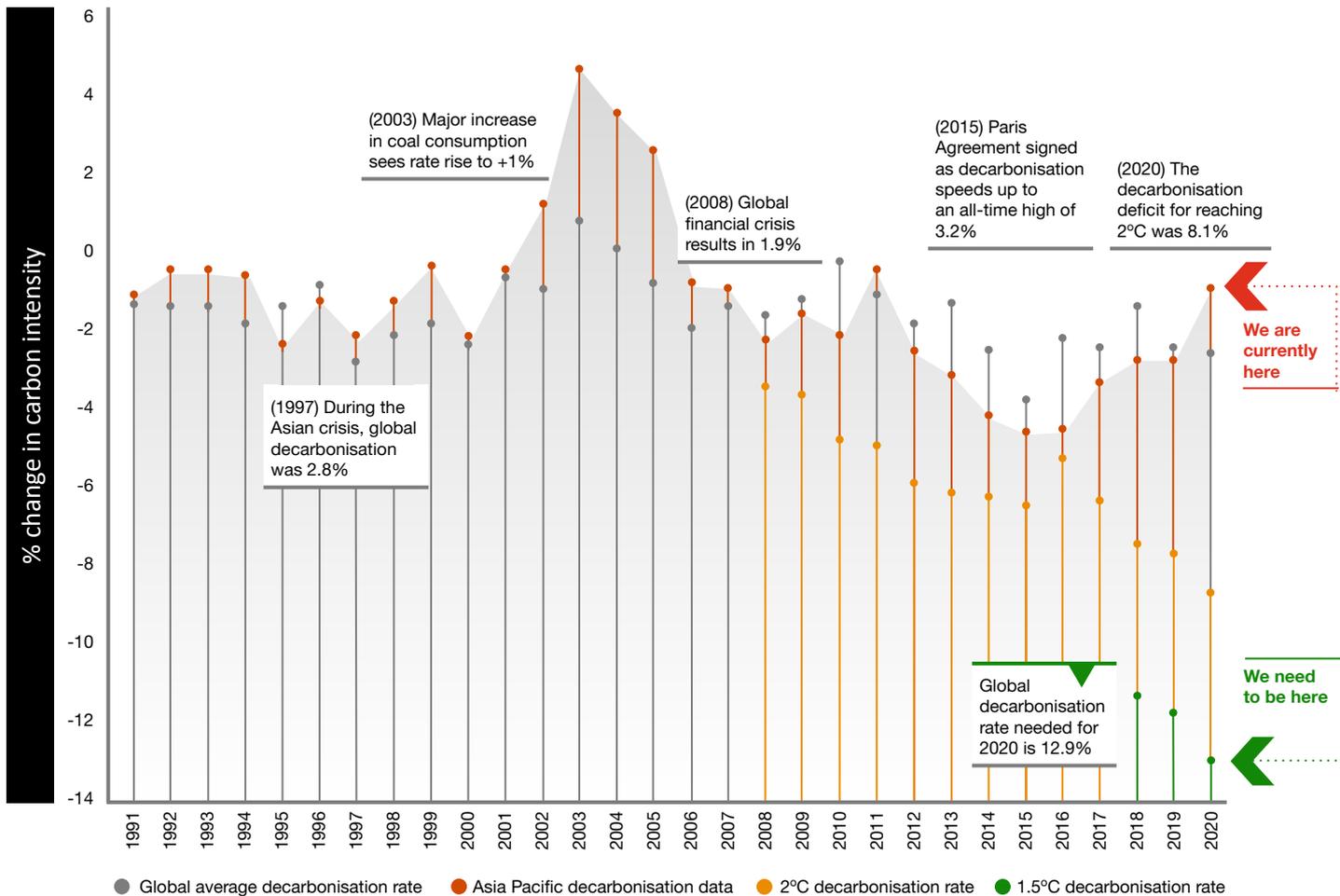


Figure 1: The global decarbonisation deficit continues to grow



* Measured through a reduction in carbon intensity or CO₂ emissions per dollar of GDP

Figure 2: Global and Asia Pacific decarbonisation rates since 1990



Data sourced from the BP Statistical Review of World Energy - see methodology for further information.

Each year that the world falls short of the target to reach net zero will see the required rate of decarbonisation rise to levels that will be increasingly difficult and expensive to achieve, eventually falling out of reach. The pace of decarbonisation has actually slowed in recent years, with the highest being 3% in 2015, the year of the Paris Climate Accord (Figure 2).

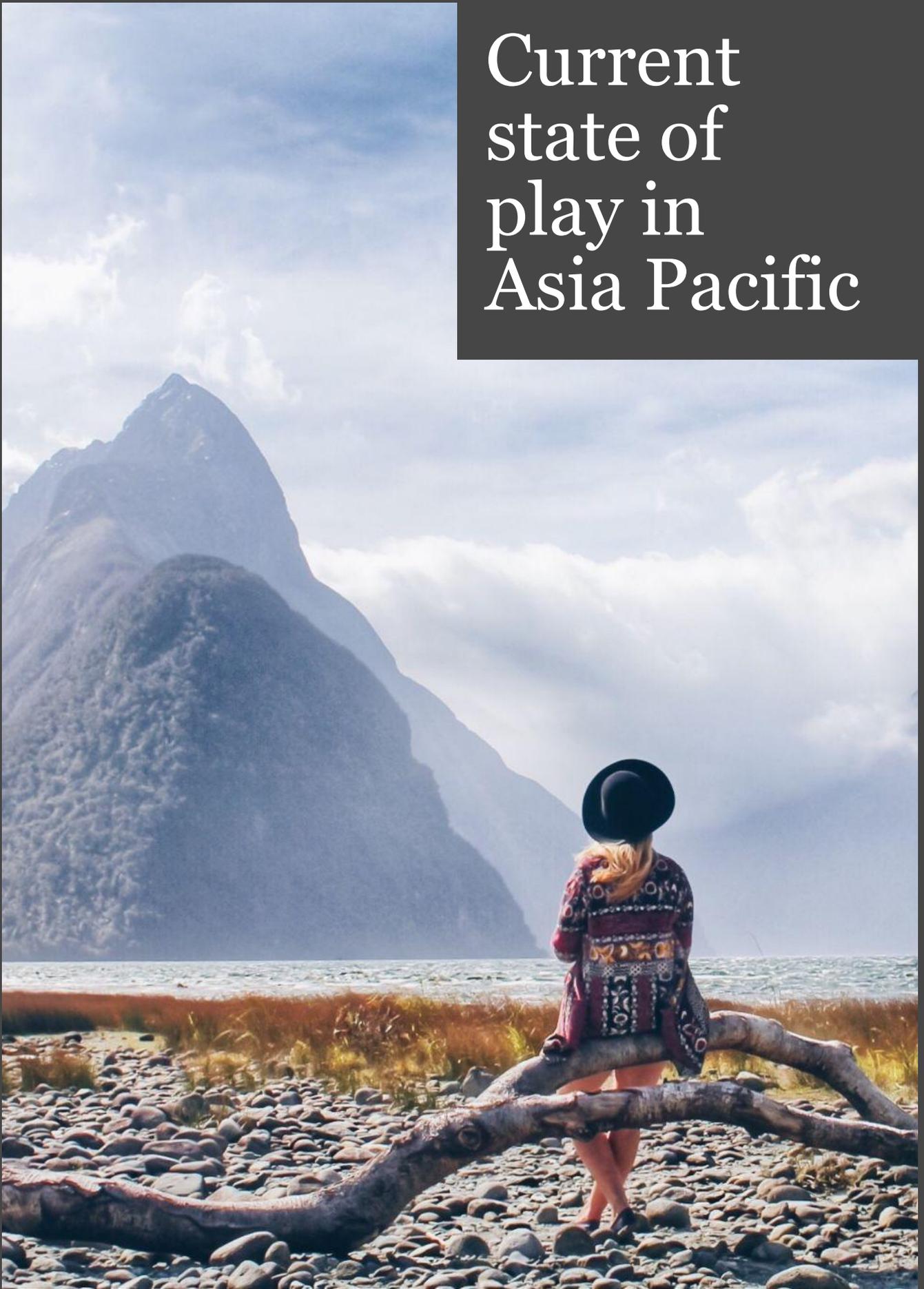
COP26 Highlights

Talks at the COP26 climate conference in Glasgow, have yielded the potential for a 'big step forward' as leaders have made a variety of pledges to reduce emissions. Pledges agreed so far would keep the world's rising temperatures **to between 1.8°C and 2.4°C** of pre-industrialised levels - **and only if all commitments are implemented in full.**

The US-China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s brings the world's two largest emitters together to scale up efforts to cut emissions to levels the scientists say are needed to meet the 1.5°C goal.

Alok Sharma MP - the President of COP26 - said the new commitments represented important progress but that more would have to be done at this COP to bring the 1.5°C goal within reach.

Current state of play in Asia Pacific



The **Asia Pacific region decarbonised at a rate of 0.9% in 2020**, which is lower than the 2.9% in 2019. To put itself on the current 1.5°C trajectory, the region needs to significantly increase its efforts to decarbonise. This will not be easy.

In 2020, Asia Pacific was responsible for 52% of the global CO₂ energy related emissions. While territories across the region are at different stages of development and have very different socio-economic conditions, demand for energy will necessarily vary across the region. As long as fossil fuels make up a significant portion of the region's energy mix, decarbonisation will be too slow.

The region is decarbonising at a significantly slower rate than the global average rate of decarbonisation. To compound these issues, the region has increased its fossil fuel energy use over the last 12-18 months which coincides with the COVID-19 pandemic period.

Case study: smart

To make meaningful progress on the journey towards net zero, businesses need to put sustainability at their very core, informing decision-making from the boardroom to the mailroom to the factory floor. Headquartered in China, automotive brand **smart** is doing precisely that, as Vice President of Global Sales, Marketing & After-Sales, **Daniel Lescow** explains:

“Our purpose is to design a smarter future and that entails a better future for both the environment and society. Everything we do at smart has to contribute to that – and everybody who works with smart has a part to play. So, that principle of a smarter future informs all our strategy discussions, meetings, and our arrangements with supply chain partners.”

This approach allows smart to prioritise sustainability, says Lescow: “For example, we’re the first - and according to our knowledge - so far only automotive brand to completely abandon combustion engine cars and make the complete transition to electric vehicles. We’ve also introduced a target that new smart cars will contain no less than 20% recycled steel and recycled aluminium and our vehicles will soon be produced in a new factory in China which is powered partially by solar energy, reducing millions of tons of carbon emissions annually.”

The smart purpose also extends to the other end of the product life cycle, explains Lescow: “We are currently setting up a system in China and Europe to trace every single battery used in our products, ensuring they are returned and recycled correctly.”



COP26 Highlights

India has committed to a target date for net zero emissions of 2070. Given it is the world's third biggest emitter, the pledge will make a material difference to global temperatures. India's 2030 targets (500GW of non-fossil fuel capacity and 50% of electricity to be renewable) both require near-term changes in the energy system, which will be key to delivering and de-risking the pathway for a longer term net zero target.

Fossil fuel derived energy still dominates

Faster decarbonisation will require a fundamental shift in energy systems away from fossil fuel dependent energy sources. It will need industries, economies, societies and – crucially – businesses to all be on board to commit and pursue greater ambition to bend the regional emissions trajectory in this decisive decade.

The challenge for the region is supporting the shift away from fossil fuel derived energy towards low carbon and renewable energy sources. In the future, the opportunity is to adopt and implement clean-growth focused economic policy that drives economies towards net zero. We can see this beginning to happen across Asia Pacific (in Table 1).

Case study: Nomura

Asia Pacific's net zero aspiration requires a public commitment – backed by action – from every business, across every industry, in every nation. In September, Japanese financial services group Nomura pledged to reach net zero GHG emissions for its own operations by 2030, and to transition attributable emissions from its lending and investment portfolios to align with pathways achieving net zero by 2050.

With an integrated network spanning more than 30 countries, Nomura has a sizeable task and opportunity on its hands. A two-pronged approach to sustainability will help put its targets within reach. In terms of Nomura's own operations, it will heighten its focus on energy saving and accelerate its uptake of renewable energy. And to boost broader decarbonisation for clients, Nomura targets to deploy USD\$125 billion in sustainable financing over the next five years to March 2026.

Accountability for performance against targets runs right to the top of the Nomura organisation. The company has formed a Sustainability Committee made up of the same members as its Executive Management Board – the organisation's highest decision-making body.

And, like many proactive Asia Pacific businesses, Nomura is actively collaborating with other organisations within the ecosystem in which it operates. As well as leading various projects in areas such as renewable energy and district energy systems, Nomura's 2020 acquisition of Greentech Capital has enabled environmental advisory services to be shared among its franchise.

COP26 Highlights

Vietnam and Indonesia – major regional producers of coal – are among 40 countries to have committed to ending all investment in new coal power generation domestically and internationally. 18 countries, including New Zealand committed to stop public financing for fossil fuel projects abroad by the end of 2022, and redirect their spending into clean energy instead. China, Japan and South Korea have committed to stop overseas funding for coal, the pledge made by all G20 nations.

Table 1: Converting climate pledges into action

	Renewable energy target	Resubmitted NDC	Phase out coal	Carbon pricing	EV target	TCFD in legislation	Net zero commitment
Australia	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists
China	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	2060
India	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	2070
Indonesia	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	2055	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	2060
Japan	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists
Malaysia	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	No target has been set, but policies implemented to support uptake of EV	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists
New Zealand	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Long lived gas only
Philippines	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	No target has been set, but policies implemented to support uptake of EV	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists
Singapore	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists
South Korea	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	No target has been set, but policies implemented to support uptake of EV	Policy/legislation exists to support this climate action exists	2050
Taiwan	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists
Thailand	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists
Vietnam	Policy/legislation exists to support this climate action exists	There is a commitment to develop policy/legislation sometime in the future	Investment in building overseas coal fired power plants has stopped	Policy/legislation exists to support this climate action exists	No target has been set, but policies implemented to support uptake of EV	Policy/legislation exists to support this climate action exists	Policy/legislation exists to support this climate action exists

There is a commitment to develop policy/legislation sometime in the future
 Investment in building overseas coal fired power plants has stopped
 No target has been set, but policies implemented to support uptake of EV
 Policy/legislation exists to support this climate action exists
 No policy/legislation exists

Table 1: Converting climate pledges into action
 The data in this table is accurate as of 30 September 2021.
 NDC data is correct as of 12 October 2021.

- A. Renewable energy target: A renewable energy target relates to a national ambition targeting the amount of energy a country will source from renewable energy sources. Renewable energy targets can take a wide range of forms and are often embedded into integrated sector-level resource plans, national renewable energy action plans, or broader national development plans. Sources: UNFCCC, IEA
- B. Updated Nationally Determined Contributions (NDCs): Territories that have either updated their first NDC, or submitted a second NDC. Territories denoted with a * submitted an updated submission but did not increase their ambition from their first submission. In order to increase the ambition of NDCs over time, parties were asked to submit their next round of NDCs (either new or updated NDCs) by 2020, and every five years from then onwards. Sources: UNFCCC, Climate Action Tracker
- C. Phase out of coal: Commitment to phase out coal consumption in the energy sector is supported by no further investment in coal fired power plants. Sources: Climate Analytics
- D. Carbon pricing: Either a carbon tax or emissions trading scheme in place at the national level. Carbon pricing is a mechanism to put a financial value to the emission of greenhouse gases. There are two main methods of doing this: an emissions trading system, where emissions can be traded to meet emissions targets; and carbon taxes, which directly set a price for carbon by quantifying a tax rate for greenhouse gas emissions. Source: World Bank
- E. Electric vehicle (EV) target: An EV target relates to a national-level ambition targeting the amount of EV stock, the proportion of EV sales in the country by a given year, the proportion of EV vehicles on the road by a given year, and/or the phase out of internal combustion engine (ICE) vehicles. The aims included in this analysis include legislative measures, targets as part of legislation, ambitions, and government proposals. All data is based on the IEA's 'Global EV Policy Explorer' report and is supplemented by subsequent announcements where further data is available up to 30 September 2021. Source: IEA
- F. TCFD: The country has legislated for Task Force on Climate-Related Financial Disclosure (TCFD) to develop consistent climate-related financial risk disclosures for use by companies, banks, and investors in providing information to stakeholders. All data is based on the recommendations of the TCFD and the Financial Stability Board and is supplemented by subsequent announcements where further data is available up to 30 September 2021. Source Financial Stability Board
- G. Net zero commitment: Net zero commitment (enshrined in law) target is for 2050 unless stated otherwise. Sources: Energy & Climate Intelligence Unit, UNFCCC, Climate Action Tracker

Targets, policies and regulation are crucial

Table 1 gives an indication of where and how Asia Pacific governments are (and are not) backing up climate pledges with policy, regulatory reform and investment.

The data shows that territories across the region are at varying stages of their journeys to net zero. That's no surprise, given inherent differences in socio-political and economic circumstances.

However, all have one thing in common: each can only make progress at the necessary pace and scale if policy and regulation complements or accelerates the growing momentum in the business sector.

Under the Paris Agreement, governments are required to submit enhanced climate commitments, or NDCs, every five years.

Around 90 governments globally have submitted revised NDCs, (including 30 Asia Pacific territories) but not all have increased their level of ambition. Current submitted NDCs, alongside legally binding net zero commitments, are forecasted to result in between 1.8°C - 2.4°C of warming by the end of this century - which is a significant step in the right direction, albeit still short of the 1.5°C target.

The conclusion is inescapable: urgent acceleration in efforts is needed if the Asia Pacific region is to deliver the rates of decarbonisation required to align with a 1.5°C trajectory.

However, despite the lack of progress to date and the economic headwinds, there is an encouraging shift in momentum.

COP26 Highlights

The overarching aim of the recent COP26 climate summit in Glasgow was to mobilise stronger and more ambitious climate action from governments to keep the 1.5°C Paris Agreement goal within reach. But capital and investment will be needed to fund the significant strengthening of climate commitments from all countries.

Developing countries in particular need support. Unleashing trillions of dollars in climate-related finance was a priority for COP26, to power the world towards net zero by the middle of the century.

Developed countries were expected to go to COP26 with the intention to deliver on their promise to raise at least USD\$100 billion every year in climate finance to support developing countries. This commitment was also reiterated in the joint G20 Energy-Climate Ministerial Communique at the just concluded G20 summit in Italy.

Government and
business must
collaborate



Governments will invest billions of dollars in establishing the policy and regulatory environment to reach net zero. But to drive decarbonisation at the necessary pace and scale, they will also need to join forces with business that can invest trillions of dollars.

Collaboration between governments and business – sharing the costs, research and development, innovation, supply chain, and coordination of the global transition to net zero – is essential. Businesses and investors have the resources, innovation capacity, and reach needed to radically decarbonise and there are tremendous opportunities for businesses that move early. This is the most urgent and critical example of adopting a partnership-led approach to deliver impact - driving sustained growth as discussed in [Asia Pacific's Time](#).

Some Asia Pacific businesses are already seizing the initiative. As Table 2 illustrates, these companies are responding to momentum from a range of stakeholders by pursuing more aggressive emissions reductions; often at a faster rate than governments.

There are 45 companies within Asia Pacific that have signed up to the [Science Based Targets initiative](#) Business Ambition for 1.5°C. [CDP](#), a not-for-profit that runs a global disclosure system, has placed 75 Asia Pacific companies on its "A-List" for their climate disclosure and activities.

Leadership from businesses and investors in the [race to net zero](#) is critically important. It is essential for a healthy, resilient recovery from COVID-19 that prevents future threats, creates jobs and unlocks inclusive, sustainable growth. In the lead up to COP26, many business leaders had sent a resounding signal to governments that they stand ready to contribute to achieving the Paris Agreement goals and create a more inclusive, resilient economy.

COP26 Highlights

Almost 500 global financial services firms agreed to align USD\$130 trillion (40% of global financial assets) – with the climate goals set out in the Paris Agreement, including limiting global warming to 1.5°C. Initiatives announced by the World Bank Group and the Asian Development Bank will share risk with developing countries and aim to raise up to USD\$8.5 billion in new finance in support of climate action and sustainable development.

Science Based Targets initiative (SBTi): The SBTi defines and promotes best practice in science-based target setting. Offering a range of target-setting resources and guidance, the SBTi independently assesses and approves companies' targets in line with its strict criteria.

Table 2: Application of climate change policies across top 20 listed companies in Asia Pacific territories

Net zero policies	SBTi	TCFD	
18	4	18	Australia
4	1	2	China
6	2	5	India
1	1	1	Indonesia
7	3	17	Japan
5	2	8	Malaysia
9	7	14	New Zealand
2	0	8	Philippines
7	4	10	Singapore
3	3	14	South Korea
8	3	15	Taiwan
7	2	9	Thailand
0	0	0	Vietnam

Table 2: Climate policies of the top 20 listed companies in each of Asia Pacific territories
The data in this table is accurate as of 30 September 2021.

Huge upside for businesses that lead

To close the decarbonisation and emissions gap, all actors in the economy need to urgently raise their game. For a start, decarbonisation will drive a substantial increase in demand for low emissions and renewable technologies. Products or services that contribute to the decarbonisation journey, producing a net zero or [circular economy](#), will enjoy a significant boost in demand - and through economies of scale will drive costs of delivering those products and services down.

Such is the momentum towards net zero, that those businesses making early commitments will enjoy a first mover advantage, positioning themselves favourably with changing consumer attitudes, new technologies and new markets.

Consumer attitudes are driving a shift in purchasing behaviour, with an increasing expectation that business will have a clear and committed stance when it comes to reaching net zero. Businesses that ignore this shift will risk alienating a substantial and growing proportion of their customer base.

A clear commitment to decarbonisation is also crucial when it comes to attracting and retaining the next generation of talent. Workers from Generations Y and Z are climate conscious and expect their employers to have clear climate change and ESG commitments.

Business has an opportunity to help shape policy in a way that preserves its interests while contributing to the drive for net zero. Increasingly, we will see new and ambitious partnership opportunities between business/sectors and government to bring together interrelated elements of trade, climate change and sustainable development to reach the 1.5°C target.

The response to the [European Union's Carbon Border Adjustment Mechanism](#) suggests that policy levers will increasingly seek to prevent unintentional importing of embedded emissions (e.g. [Carbon markets](#), Free Trade Agreements, pathfinder agreements such as [the European Union's Carbon Border Adjustment Mechanism](#)).

The urgency around decarbonisation cannot be overstated. Businesses that get on the front foot have an opportunity to outperform sector expectations and [create long-term value for shareholders and stakeholders](#) as well as reinforce a positive brand image. Ultimately, it is not a matter of if, but when, businesses will take on the challenge and race to net zero.

Membership of the Race to Zero campaign across the Asia Pacific region has grown to a total of 1,064 members in the last 18 months. This is a great start and represents 12.9% of total membership. Across Asia Pacific, 491 businesses are now part of the Race To Zero Campaign, joining 220 cities and regions, 35 institutional investors, and 292 higher education institutions.

Globally the Race to Zero membership totals 8,267 organisations which forms the largest ever alliance committed to achieving net zero emissions by 2050 at the latest, collectively making up nearly 25% global CO₂ emissions and over 50% GDP.



Table 3: Membership of Race to Zero campaign

Race to Zero Category	Global	Asia Pacific	% in Asia Pacific
Business Ambition for 1.5°C	972	143	14.6
Business Declares	57	0	0
CBN Expert Community	62	0	0
Certified B Corporation	1,560	147	9.1
Cities Race to Zero	1,076	216	20.1
Exponential Roadmap Initiative	42	1	2.4
Fashion Charter for Climate Action	110	27	24.6
Health Care Without Harm	52	9	17.3
International Wineries for Climate Action	10	2	20
Japan Climate Initiative Race to Zero Circle	29	29	100
Net Zero Asset Managers Initiative	218	25	11
Net Zero by 2050 (The B Team)	6	1	16.7
Net Zero Insurance Alliance	13	1	7.7
Paris Aligned Investment Initiative	38	4	10.5
Race to Zero for Universities and Colleges	1,034	292	28.2
Scotch Whisky Association	9	0	0
SME Climate Hub	2,308	113	4.9
Sports for Climate Action	46	4	6.5
Tech Zero	185	2	1.1
The Climate Pledge	201	11	4.5
UN Climate Change secretariat	2	0	0
UN-Convened Net Zero Banking Alliance	92	13	14.1
UN-Convened Net-Zero Asset Owner Alliance	61	6	8.2
Under2 Coalition	21	4	19.0
Water UK	21	14	61.9
TOTAL	8,267	1,064	

Criteria for individual actors (such as regions, cities, businesses and investors) to join the Race to Zero campaign can be found [here](#).

For business, the race to net zero is both a responsibility and an opportunity

Net zero aligns with the pivot towards stakeholder capitalism, where the interests of all stakeholders (from the supply chain to employees, and from customers to the broader community) are factored into all business decisions. This is underscored by the fact that climate change will affect stakeholders at every level.

Increasingly, businesses are becoming legally obligated to shareholders and investors to quantify how their actions will create or destroy value in light of the pressures caused by climate change. This requires robust and reliable information, which is also crucial when it comes to assessing opportunities and risks, enabling businesses to act with confidence in a dynamic world.

Reducing the effects of climate change is unequivocally in the long-term interests of all businesses. Climate change impacts businesses in many ways, including supply chains, insurance costs, energy costs, the erosion of capital, and regulatory landscape, along with the risks posed by extreme weather, regional conflicts, and international trade.

In the disruption of the COVID-19 pandemic, businesses face a once in a generation opportunity to underwrite their own future by leading a sustainable agenda. This will not only reduce risk locally and globally but also promote their own recovery and enhance outcomes for stakeholders. All these factors accumulate to make net zero a realistic and beneficial strategy for businesses.

COP26 Highlights

Net zero as the critical infrastructure of the new financial system.

Mark Carney (Vice Chairman and Head of Impact Investing at Brookfield Asset Management) made clear the importance of businesses having absolute clarity in purpose and planning of net zero: “It is about client focus, going to where the emissions are to help get them down. So, companies that have plans in place to reduce the emissions, will find the capital, those who don’t won’t. So highly recommend getting those plans in place”.

Case study: Axiata

To achieve net zero, large multinationals in Asia Pacific simultaneously face the challenge of complexity (operating in numerous markets) and the opportunity of scale (positive change can have a powerful impact on the lives of literally millions of people).

Axiata Group Berhad is a perfect illustration of this. The Malaysian-based regional digital telco group has a footprint in 11 ASEAN and South Asia countries, in nations as diverse as Pakistan, Singapore, Cambodia and Indonesia.

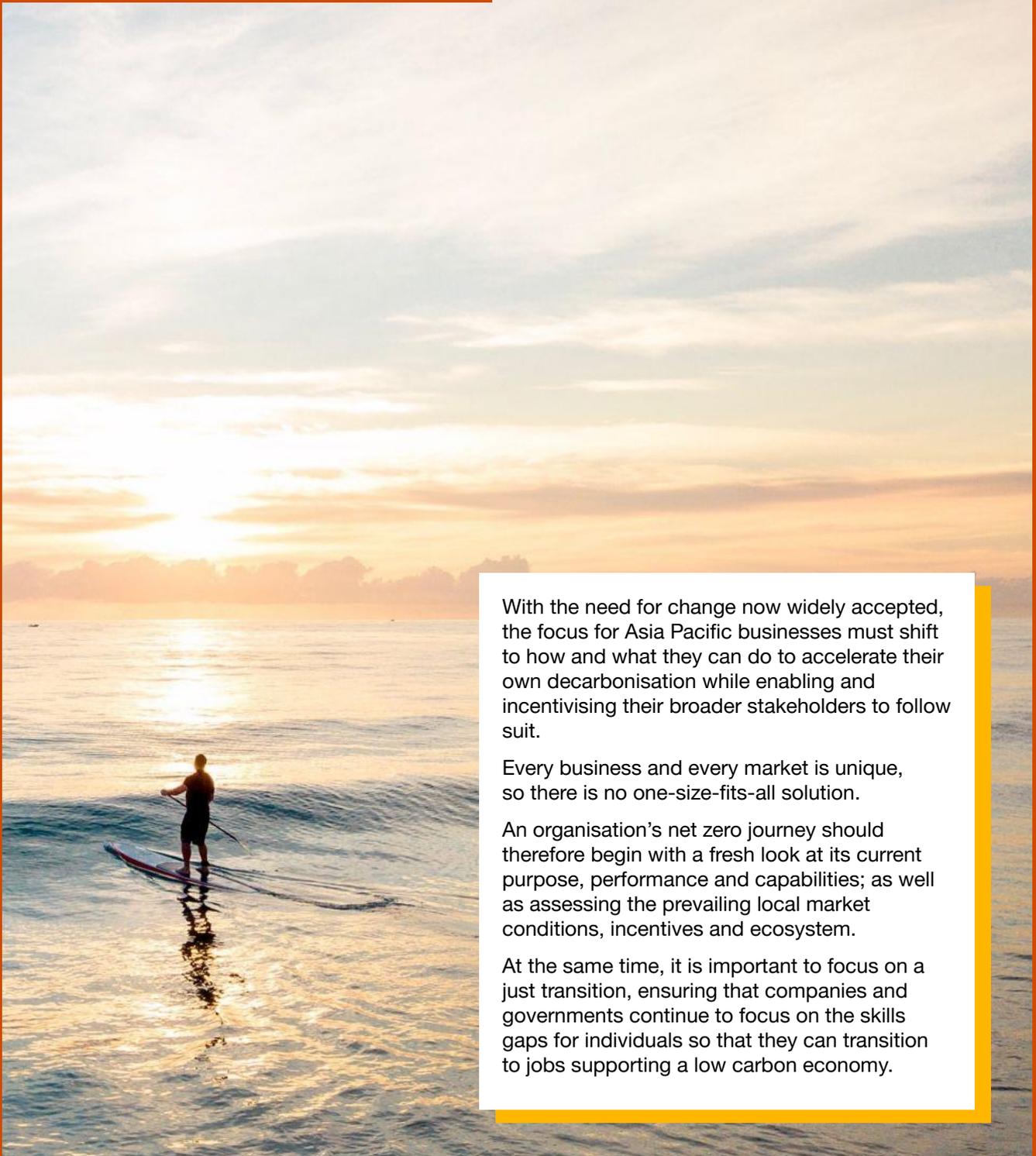
Having pledged to achieve net zero by 2050, with science based targets, Axiata has started on a firm footing, as President & Group CEO, **Dato’ Izzaddin Idris**, explains:

“We recently concluded a carbon inventory exercise to capture the full impact of the ways in which we use energy. We now have a standardised process of data collection and analysis for carbon reduction strategies.”

With standardised measurement and reporting in place, Axiata’s leadership can manage its energy and carbon performance (including direct and indirect - or hard to abate - carbon emissions), while also identifying opportunities for operational efficiencies and future technology innovations (e.g. energy storage advancements). To access their broader impact, Axiata has introduced a measurement of National Contribution and is continuing to refine this.

Dato’ Izzaddin Idris says accountability runs right to the top of Axiata, with sustainability-related key performance indicators (KPIs) included in the annual KPIs of the Group CEO. The ripple effect of Axiata’s activities will stretch far and wide: “Our pursuit of net zero allows us to build partnerships and collaborations within telco and other industries to collectively drive bigger impacts in transitioning to a lower carbon economy. And the regular and active dialogues with Governments in our footprint will help influence policy formulation and encourage national efforts towards regulated climate action.”

Reimagining business for net zero



With the need for change now widely accepted, the focus for Asia Pacific businesses must shift to how and what they can do to accelerate their own decarbonisation while enabling and incentivising their broader stakeholders to follow suit.

Every business and every market is unique, so there is no one-size-fits-all solution.

An organisation's net zero journey should therefore begin with a fresh look at its current purpose, performance and capabilities; as well as assessing the prevailing local market conditions, incentives and ecosystem.

At the same time, it is important to focus on a just transition, ensuring that companies and governments continue to focus on the skills gaps for individuals so that they can transition to jobs supporting a low carbon economy.

Ambition for action

When it comes to the impact a business has on the climate, change must start at the top. Leaders need to take transparent and vocal ownership of their organisation's commitment to net zero. From there, they can drive a comprehensive end-to-end review of their entity's strategy and operating model. This allows them to define what capabilities they have (and what they need) to make good on their commitments.

During this process, leaders must ensure that everyone in the organisation has bought in and that no one is left behind. In practice, for businesses to transition, they need to integrate net zero into every aspect of their operations and critical enablers including culture, reporting, supply chains, technology, talent, and supporting governance.

COP26 Highlights

The UK will be transformed into the world's first net zero finance centre. Over USD\$130 trillion of private finance is now committed to net zero targets and near term milestones, through the Glasgow Financial Alliance for Net Zero (GFANZ). GFANZ is a global coalition of leading financial institutions committed to accelerating the decarbonization of the economy - with a key focus on supporting developing countries and emerging markets.

Case study: Delta Electronics

For [Delta Electronics](#) headquartered in Taiwan, the path to net zero is inextricably part of a long-term ESG strategy. CSO, **Jesse Chou**, takes up the story: "These priorities have been part of our corporate DNA since Bruce Cheng founded Delta in 1971. His vision was stakeholder value in line with the business mission "To provide innovative, clean and energy-efficient solutions for a better tomorrow" rather than simply shareholder value and so we've had decades of dialogue with employees, customers, suppliers, investors, media and communities on climate change. That has also informed our commitment to continuous innovation in energy efficiency and climate action toward carbon neutrality by 2030."

Delta's ESG strategy is comprehensive, says Chou: "There are three main categories of activities for us. First is environment: energy, water and waste management. Second is society: where we focus on human capital development and social participation. And third is corporate governance: which concentrates on our competencies, ESG disclosure enhancement, supplier ESG management and responsible business alliances."

This holistic approach recognises that the E, the S and the G are all interdependent. For example, Delta has established strong reporting governance frameworks for its whole business, which allows Chou and his colleagues to understand and be accountable for the entire carbon footprint and environmental data: "We are on a strategic journey to hit our Science Based Target goals and for that we need solid numbers. Whether our data relates to a product, a factory, in energy or water, it's vital that we can verify and certify our performance."

Through a combination of education, communication and incentivisation, climate has become a core competency among Delta's workforce. For example, energy efficiency is a key KPI for R&D and manufacturing staff.

The results speak for themselves: "The accumulated electricity savings achieved by Delta's high frequency products saved 33.5 billion kilowatts hours between 2010 to 2020," says Chou. "That is enough to power Taiwan for nearly 1.5 months! We are also proud that Delta is nurturing e-mobility – we have accumulated shipments of over one million EV chargers to our worldwide customers over the past decade. And looking forward, we have a new internal carbon price increment which we're implementing with internal business groups and our manufacturing team to further boost innovative thinking towards achieving net zero."

A comprehensive 'green' transformation

Any truly transformative net zero strategy must also consider the current landscape in Asia Pacific. Embracing decarbonisation will provide profitable opportunities for first movers, as competitors, consumers and regulators move along a similar trajectory.

Decarbonisation, revenue growth and profitability are not the mutually exclusive concepts they were once thought to be. Embedding net zero into the business strategy can yield tactical opportunities to re-position, re-define and re-purpose existing products and services into higher yielding and/or premium offerings.

Rather than waiting to see how governments and competitors respond, businesses should get on the front foot now. High impact areas to focus on include:

- **Operating model:** Take a fresh look at how legacy capabilities, products and services are structured and prioritised, in addition to accelerating divestment and decommission of legacy high emission operations to generate capital.
- **Rebalancing supply chains:** As articulated in [Asia Pacific's Time](#), resilience in supply chains should be built with a net-zero lens considering circularity, actively supporting net zero obligations 'down' through the supply chain; encouraging behaviour change and creating incentives for procurement management.
- **Innovation:** Drive focused innovation and product development efforts aligned to 'green' segments, sectors and customers/clients to set the market.
- **Talent:** Invest in re-skilling and upskilling the entire workforce (including all sales/frontline, development/production and support staff). This will increase talent retention, build trust and create a 'moat' to protect differentiating capabilities by keeping them 'in house'.

Of course, none of this can be done in isolation. Now more than ever, businesses will benefit from collaboration with technical, academic, supply chain and digital partners to create their own differentiated ecosystems to deliver decarbonisation at scale.

Case study: Ports of Auckland

Over the past 175 years, the commercial port in New Zealand's largest city has grown in a way that is familiar for many harbour cities across the Asia Pacific region. Such ports are traditionally carbon intensive operations that rely on diesel and largely operate in isolation from the local community.

However, [Ports of Auckland \(POAL\)](#) is rewriting the rulebook. With a vision to become a trusted and valued part of the community, PoAL is pursuing a strategy to create positive social and environmental impacts in a fiscally sustainable way.

"Our core focus for our sustainability strategy is on climate action," explains **Rosie Mercer**, General Manager Sustainability at POAL. "This has required a shift in mindset because everything we do has to focus on partnering. For example, to establish our green hydrogen pilot, we collaborated with Auckland Council, Auckland Transport and Kiwi Rail. Another example is the carbon calculator we've developed and shared with our suppliers to demonstrate the commercial value of low carbon decisions."

Like many ports, Auckland has not historically partnered effectively with the community. "This is new for everyone so we don't have a template or a textbook to follow," says Mercer. "We had to step outside our comfort zone to test and trial new things. It's daunting but also incredibly rewarding when you nail something like our bio-diesel trials. The impact we can have is massive – not just for POAL but for others as well. No organisation can solve environmental issues alone but, by working together to find solutions, we can multiply our positive impact."

With a carbon mitigation pathway now clearly mapped – and progress being made – POAL's next priority is to use its purchasing power for good. "Sustainable procurement to achieve supplier carbon targets is going to be a game changer," Mercer enthuses. "The flow-on effect will be huge."

Leveraging emerging sources of capital

Immediate capital investment is required for businesses to engage in strategic repositioning, enter new markets, exit legacy markets, pursue large-scale innovation and build capability. The good news is that the sources and uses of capital for decarbonisation are growing fast:

- More than half of all assets under management (representing more than USD\$55 trillion) is already being directed towards businesses that have committed to climate action.
- Private wealth held at major private banks increased in the Asia Pacific by 15% in 2020 to a record ~USD\$2.3 trillion (excluding China onshore) with significant focus placed on investing in climate and ESG more broadly.
- In the Asia Pacific region, private equity capital that is committed but unallocated comprised an incremental ~USD\$477 billion in 2020.

This presents a unique opportunity for Asia Pacific businesses to fund their transformations by expanding the breadth of their traditional capital sources. Proactive financing activities include:

- Adjusting existing capital structures and pricing to reflect revised carbon-reduced strategy, operations and capabilities through more commercially favourable, long-term deals.

- Working directly with funds, institutional investors and private wealth managers to secure from alternative sources capital in longer-term, sector-transformative areas; and partnering with private businesses as needed.
- Leveraging innovative financing structures such as credit enhancements, guarantees, aggregation, warehousing and sustainability-linked securitisations to reduce overall risk profiles on and off the balance sheet.

Deployment (i.e. allocation and project prioritisation) of this capital should coincide with a revised framework to embed long-term sustainability and decarbonisation in return on investment (e.g. renewable-driven property, plant and equipment, sustainable supply chain inputs, longer-term skilled talent).

USD\$130 trillion in Private Finance now committed to net zero under the Glasgow Financial Alliance for Net Zero.



COP26 Highlights

The Asia Development Bank and other Multilateral Development Banks (MDBs) have agreed to a set of principles to help countries make a just transition from the use of fossil fuels to green, renewable energy. The MDBs will work with national development banks and other financial institutions to develop funding and policy strategies that will promote economic diversification and inclusion for marginalized groups impacted by the transition.

Indonesia and Vietnam are part of the 'Energy Transition Mechanism' - a program comprising public, private, and philanthropic financing designed to pilot the formation of a facility in each country—to purchase coal-fired power plants and accelerate their retirement and jumpstart reliable and affordable clean energy.

Building trust through targeted reporting

Businesses that can demonstrate genuine progress and performance against net zero targets will put themselves in the best possible position to secure capital investment. This requires robust evidence of how business decisions are impacting decarbonisation today and tomorrow. A comprehensive approach includes:

- Using dedicated technical specialists to determine absolute emissions impacts across and within the value chain of the business and adequately expanding the risk universe to include carbon emissions drivers and associated stakeholder impacts.
- Building a digitally enabled information model to adequately capture a 'baseline', and using that to inform strategic and operational decision-making (well ahead of planned regulatory regimes).
- Revising governance, reporting and controls throughout the value chain to embed both decarbonisation targets and drivers. These should include SBTs or – for the bold – partnering with organisations such as CDP or the Global Reporting Initiative to co-develop targets for a sector, segment or channel.
- Proactively working with regulators and capital providers to set the standards of reporting and transparency that will be required to capitalise on commercial incentives.

For a business, these steps can build trust with all stakeholders – sending a clear message to the market, supply chain, employees and governments that the business is transparent and accountable in its transformation.

COP26 Highlights

35 countries agreed to mandatory actions to ensure that investors have access to reliable information about climate risk to guide their investments into greener areas. And to ensure common standards, 36 countries welcomed the announcement of a new international body, the International Sustainability Standards Board.

Case study: Frasers Property

Frasers Property is a Singapore-headquartered multinational real estate company that develops, owns, and manages a diverse, integrated portfolio of properties covering five asset classes and five REITs in over 20 countries. With total assets of about S\$40.3 billion, Frasers Property provides some inspiration. "In our 2050 net zero carbon goal, we made a commitment towards tackling all three scopes of carbon emissions, with business practices and processes aligned to interim targets based on a Science-Based approach. The leadership team fully supports this ambition and reinforced with governance at different levels," said **Paolo Bevilacqua**, Sustainability Project Management Office Lead who is also General Manager of Real Utilities – a Frasers Property subsidiary that provides greener energy for their buildings in Australia.

"At the board level, our Risk Management & Sustainability Committee monitors progress and advises on sustainability issues. At the Group level, we have a governance committee that comprises three senior leaders. And then we have a global taskforce, which includes experts from different parts of the business reviewing updates and learning from one another, while getting guidance from the governance committee."

The governance structure has been instrumental in setting a clear strategy and giving Frasers Property the momentum to drive sustained change and innovation. All business and Group leaders have sustainability KPIs; and the autonomy to map the path to Net Zero.

"When it comes to decarbonisation, there is no one-size-fits-all solution. We've achieved 'buy in' and employee engagement by offering flexibility for our businesses in different geographies and asset classes to come up with their own tailored initiatives and strategy," explained Bevilacqua. "As a business, you need the vision and courage to plant that flag on the hill, even not knowing a clear pathway, and empower your people to work out how to get there. That's how we believe we 'build to zero'."

Bevilacqua added that Net Zero requires leaders to be comfortable with stepping into the unknown: "There will always be some uncertainty – for example, how technology in the 2030s and 2040s might contribute – but that's okay. It's about establishing a transformative mindset and culture that is receptive to new ideas."

A golden opportunity for green growth

Businesses that can reimagine the possible and successfully transition to net zero will not only reap commercial rewards, they could also earn the right to work proactively with government to refocus and accelerate national agendas. Together, business and government can develop, design and deliver policies that simultaneously advance commercial and climate interests.

The size of the opportunity in front of Asia Pacific businesses is immense. The growth trajectory of the Asia Pacific region has been widely documented in recent years. Net zero transformation ensures that business growth not only benefits the bottom line, but also leaves a lasting legacy for people and the planet. **The time for Asia Pacific to act is now.**



Methodology

The data in this report tracks the decarbonisation of energy-related CO₂ emissions in the Asia Pacific region.

The analysis is underpinned by the bp Statistical Review of World Energy, which reflects carbon emissions based on the consumption of oil, gas and coal for combustion-related activities. The analysis does not consider emissions from other sectors (e.g. AFOLU) or from any other greenhouse gases, and does not allow for any carbon that is sequestered. As a result, this data cannot be compared directly with national emissions inventories. The purpose of our model is to calculate carbon intensity (tCO₂ /USD\$m (PPP)GDP) for different countries and the world, and the rate of carbon intensity change needed in the future to limit warming to 1.5°C and 2°C by 2100.

The territories the study focuses on are individual Asia Pacific economies, as well as world totals. Asia Pacific includes Australia, Bangladesh, China, Hong Kong, India, Indonesia, Japan, Malaysia, New Zealand, Pakistan, Philippines, Singapore, Sri Lanka, South Korea, Taiwan, Thailand, and Vietnam.

For GDP data, the study draws on World Bank historical data. For long-term GDP projections the study draws on the latest version of PwC's 'World in 2050' model. This was last published in February 2017 and details and a methodology summary can be found here: <http://www.pwc.com/world2050>. In 2021 we used near-term economic forecasts from the OECD to account for the impact of the COVID-19 pandemic on GDP in 2021 and 2022.

For emissions, the study considers energy-related CO₂ emissions drawn from the bp Statistical Review (2021). We use the Intergovernmental Panel on Climate Change global estimated carbon budget data on fossil fuel emissions taken from the IPCC Special Report on Global Warming of 1.5°C, to estimate the energy-related CO₂ emissions associated with limiting warming to 1.5°C and 2°C by 2100.



Glossary

Carbon intensity: Energy-related CO₂ emissions per dollar of GDP.

Carbon neutral (or carbon neutrality): is the balance between emitting carbon and absorbing carbon emissions from carbon sinks.

COP26: The 197 countries that have ratified the Convention are called 'Parties to the Convention'. The Treaty entered into force in 1994 and the first Conference of the Parties (COP) to the Convention was in 1995. COP has been held every year (excluding 2020) since 1995 in a different country. The COP is the supreme decision-making body of the UNFCCC. COPs are attended by countries engaged in formal climate negotiations, as well as non-state actors e.g. business and civil society. The 26th COP will be held in Glasgow in November 2021.

Decarbonisation: The rate of reduction in energy-related carbon intensity upfront

GHG emissions: Greenhouse gas emissions are both natural and anthropogenic emissions that contribute to the 'greenhouse effect', such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases.

IPCC: Intergovernmental Panel on Climate Change – dedicated to providing regular assessments of the science of climate change, its impacts, and options for adaptation and mitigation.

Just transition: This aims to ensure that the economic benefits of a transition to a green economy are shared widely, and that those who stand to lose out economically from this transition are supported financially

NDC: Nationally Determined Contributions – they capture the efforts of a country to reduce national emissions and adapt to the impacts of climate change and are important commitments required under the Paris Agreement.

Net zero: This refers to achieving a balance between the emissions released into the atmosphere and the emissions removed from the atmosphere. When this balance is achieved, or there is a deficit of emissions released into the atmosphere, net zero has been achieved.

Paris Agreement: Legally binding international climate change agreement, adopted by 196 countries in December 2015 at COP21, entering into force in November 2016. Its goal is to limit global warming to well below 2°C, and pursue efforts to limit to 1.5°C.

Race to Zero: A global campaign to gain support from businesses, cities, regions, and investors for a zero carbon recovery that prevents future threats and promotes sustainable growth.

Stakeholder capitalism: Requires business leaders to define their mission as creating long-term value not only for shareholders but also for customers, suppliers, employees, communities, and others.

Scope 1, 2 and 3 GHG emissions:
Scope 1 - Direct emissions - Direct emissions from owned or controlled sources; Scope 2 - Purchased energy - Indirect emissions from the generation of purchased electricity; Scope 3 - Indirect emissions - All other indirect emissions that occur in the value chain, upstream and downstream

TCFD: The Task Force on Climate-related Financial Disclosures was created in 2015 by the Financial Stability Board, with the aim of increasing and improving the reporting of climate-related financial disclosures.

UNFCCC: The United Nations Framework Convention on Climate Change is an international treaty that was adopted in 1992 during the 'Earth Summit' in Rio de Janeiro. UNFCCC's aim is to prevent 'dangerous' human interference with the climate system.

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