The People-Centric Energy Transition in Asia Pacific: The Now, The How, and The Future

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About this Publication

- This publication is a collaborative effort between Boston Consulting Group (BCG) and AVPN Limited, addressing key issues related to People in the Energy Transition across Asia Pacific.
- It examines the current strategies for a Just Energy Transition in the region to understand the challenges in advancing the People-Centric agenda. This publication serves as a foundational framework rather than an exhaustive analysis, setting the stage for more discourse and action on this agenda.
- Drawing from engagements with 30+ stakeholders including industry experts, government officials, business leaders and financial institutions, think tanks, foundations, and NGOs, this publication outlines recommendations on the way forward and introduces ASCENT, a platform dedicated to People-Centric solutions, with Cathay Financial Holdings as an inaugural sponsor of future initiatives emerging from ASCENT.

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  - **Marc Schmidt**, Managing Director & Partner, BCG
  - **Varad Pande**, Partner & Director, BCG
  - **Anis Mohd Nor**, Principal, BCG
  - **Omar Akbar Khan**, Consultant, BCG
  - **Woon Li Qi**, Associate, BCG
  - **Aravindan Srinivasan**, Executive Director of Climate Action Platform, AVPN
  - **Patrick Yeung**, Assistant Director of Climate Action, AVPN
  - **Saransh Maheshwari**, Senior Associate, AVPN
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  The extended AVPN team: Naina Subberwal Batra, Komal Sahu
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Foreword by BCG

Climate change is the defining challenge of our time, and governments, companies, investors and philanthropies worldwide are rising to the occasion with ambitious actions. BCG is at the forefront of the global climate change and sustainability agenda, shaping the dialogue and working hand in hand with organisations and governments to effect change.

We partner with our clients to accelerate their climate and sustainability efforts, from climate mitigation to adaptation and resilience. In all that we do, we take an ecosystem approach including looking at the people affected, in particular those most vulnerable in the world.

Despite growing interests and investment in Energy Transition, "People", especially marginalised groups, workers in sunset fossil fuel or related industries and their communities, and vulnerable consumers, are often overlooked. This must change and the People must be front and centre of the transition process. We have partnered with AVPN to explore the current state of the Just Energy Transition and identify the necessary solutions to ensure a truly People-Centric Energy Transition, in the short and medium-term.

This publication is a first step. We hope this publication will be a springboard for collective action on People-Centric Energy Transition in Asia Pacific. In partnership with AVPN, we will seek to make such a collective action agenda and platform a reality.

Marc Schmidt
Managing Director &
Partner,
Social Impact Lead for
SEA, BCG

Varad Pande
Partner & Director,
Sustainable Finance &
Investment, BCG

Anis Mohd Nor
Principal, Climate &
Sustainability, BCG

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Foreword by AVPN

We are delighted to present this joint publication between AVPN and BCG, which is dedicated to promoting a People-Centric Energy Transition in the Asia Pacific region. This region is home to more than 4.3 billion people, and is at a critical juncture in its Energy Transition journey. A People-Centric Energy Transition is not just about switching from fossil fuels to renewable energy sources. It is about empowering communities, creating jobs, improving health, and building resilient societies.

This report underscores the importance of a People-Centric approach to Energy Transition in this region, prioritising the needs of the four People groups, namely workers, communities, consumers and SMEs, to minimise the transition impact on them. Social investors can play a pivotal role in this transition in driving innovation, scaling up successful models, and creating an enabling environment for People-Centric energy solutions.

We hope that this report will inspire social investors including philanthropists, multilateral development banks, private investors, and governments to deepen their commitment to a People-Centric Energy Transition in the Asia Pacific region. We welcome broad participation by stakeholders in our upcoming collaborative platform. Together, we can create a future where everyone has access to clean, affordable, and reliable energy, and ensure that the benefits of the Energy Transition are shared equitably, with no one left behind.

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Executive summary

The importance of a successful Energy Transition in Asia Pacific

Energy transition is crucial for advancing climate mitigation efforts. Significant progress has been made in the Global North over the past few years, with the Global South also making strides. The **Asia Pacific region, as a contributor of 50% of the world's emissions, plays a pivotal role in achieving a successful global Energy Transition**, failing which the region may face drastic consequences, including 35% GDP loss in a mere ~25 years.

The Now: The often overlooked People-Centric dimensions of the Energy Transition in Asia Pacific

Current data suggests that emphasis has predominantly been on infrastructure, failing to adequately prioritise 'People' in the transition process with only <1% of funding channelled toward People-Centric levers. This publication examines the **4 key people stakeholders** essential for a Just Transition, specifically focusing on Workers, Communities, Consumers, and SMEs. It identifies the risks and opportunities associated with the transition for each stakeholder group and highlights successful examples from the region. Despite these successes, however, more effort is needed to scale them up.

The How: The key challenges and solution areas to a People-Centric Energy Transition in Asia Pacific

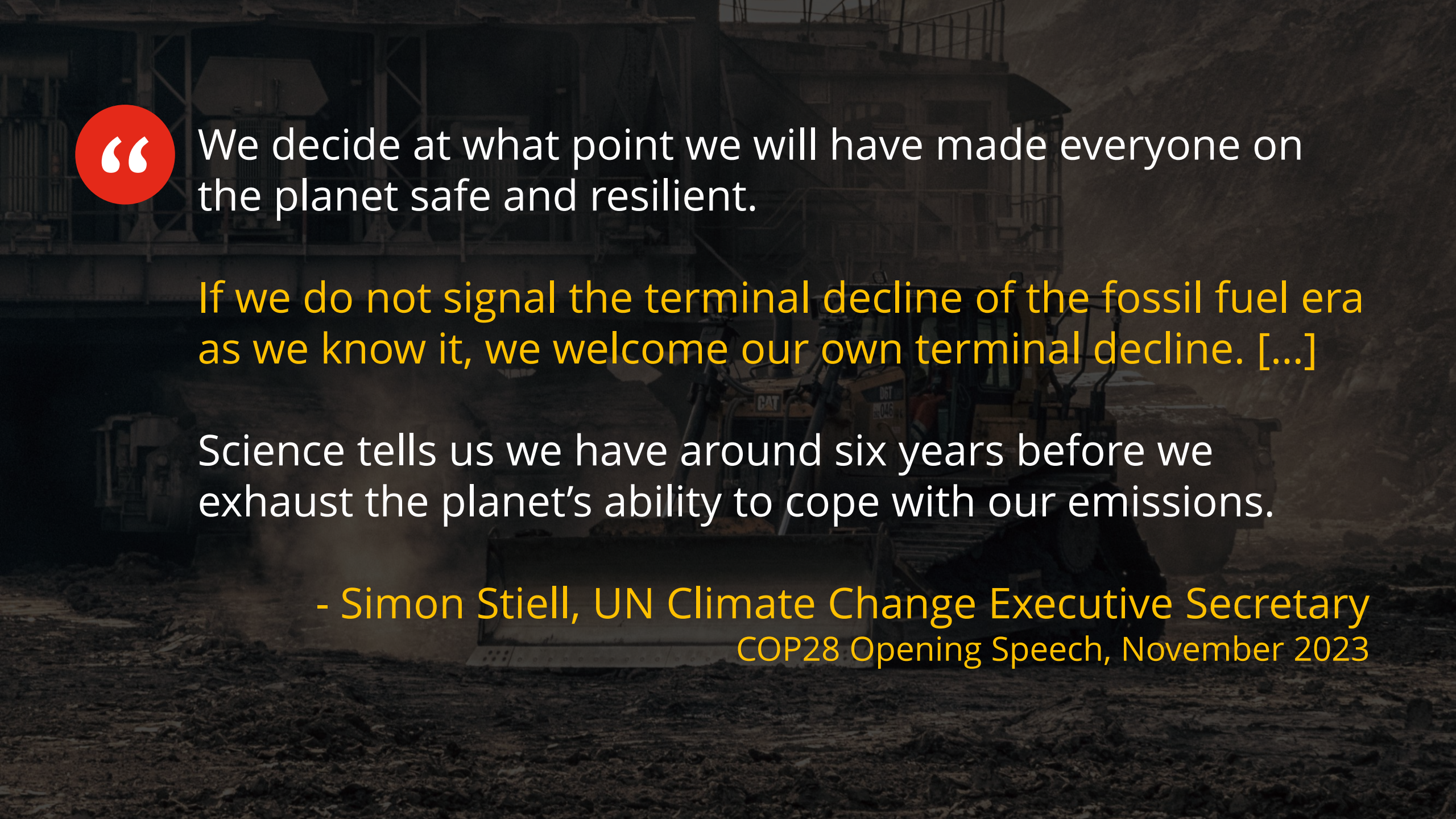
Specifically, three key challenges along the process of solution deployment need to be addressed. These **challenges include gaps in Awareness, Funding, and Delivery quality**. **Addressing these challenges will require a multi-actor effort** as each actor is positioned to contribute distinctly towards the unlock of each of the above challenges.

The Future: Launching a Collective Action Platform to drive the People-Centric agenda in Asia Pacific

Finally, the publication explores the **set-up of a collective action platform by AVPN and BCG** as a way to mobilise a concerted effort towards addressing the People-Centric Energy Transition in Asia Pacific. This dedicated platform aims to leverage a multi-actor approach to address key challenges along the process of solutions deployment – including **driving greater awareness and clarity among actors, mobilising greater funding with concessional and catalytic capital, and ensuring quality delivery by having strong executing partners.**

The importance of a successful Energy Transition in Asia Pacific

Section 1



“We decide at what point we will have made everyone on the planet safe and resilient.

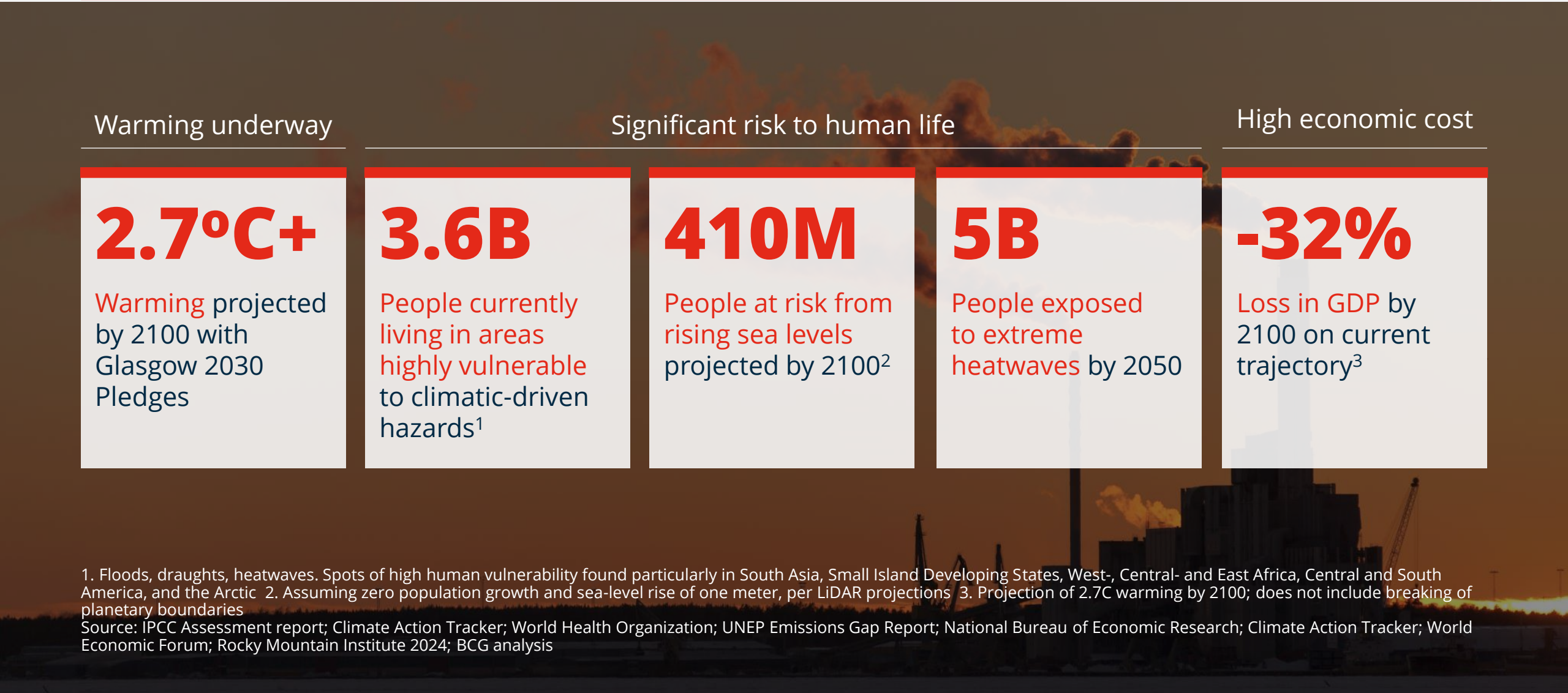
If we do not signal the terminal decline of the fossil fuel era as we know it, we welcome our own terminal decline. [...]

Science tells us we have around six years before we exhaust the planet’s ability to cope with our emissions.

- Simon Stiell, UN Climate Change Executive Secretary

COP28 Opening Speech, November 2023

Climate change is among the most pressing priorities of our time…



Warming underway

2.7ºC+

Warming projected by 2100 with Glasgow 2030 Pledges

Significant risk to human life

3.6B

People currently living in areas highly vulnerable to climatic-driven hazards[1]

410M

People at risk from rising sea levels projected by 2100[2]

5B

People exposed to extreme heatwaves by 2050

High economic cost

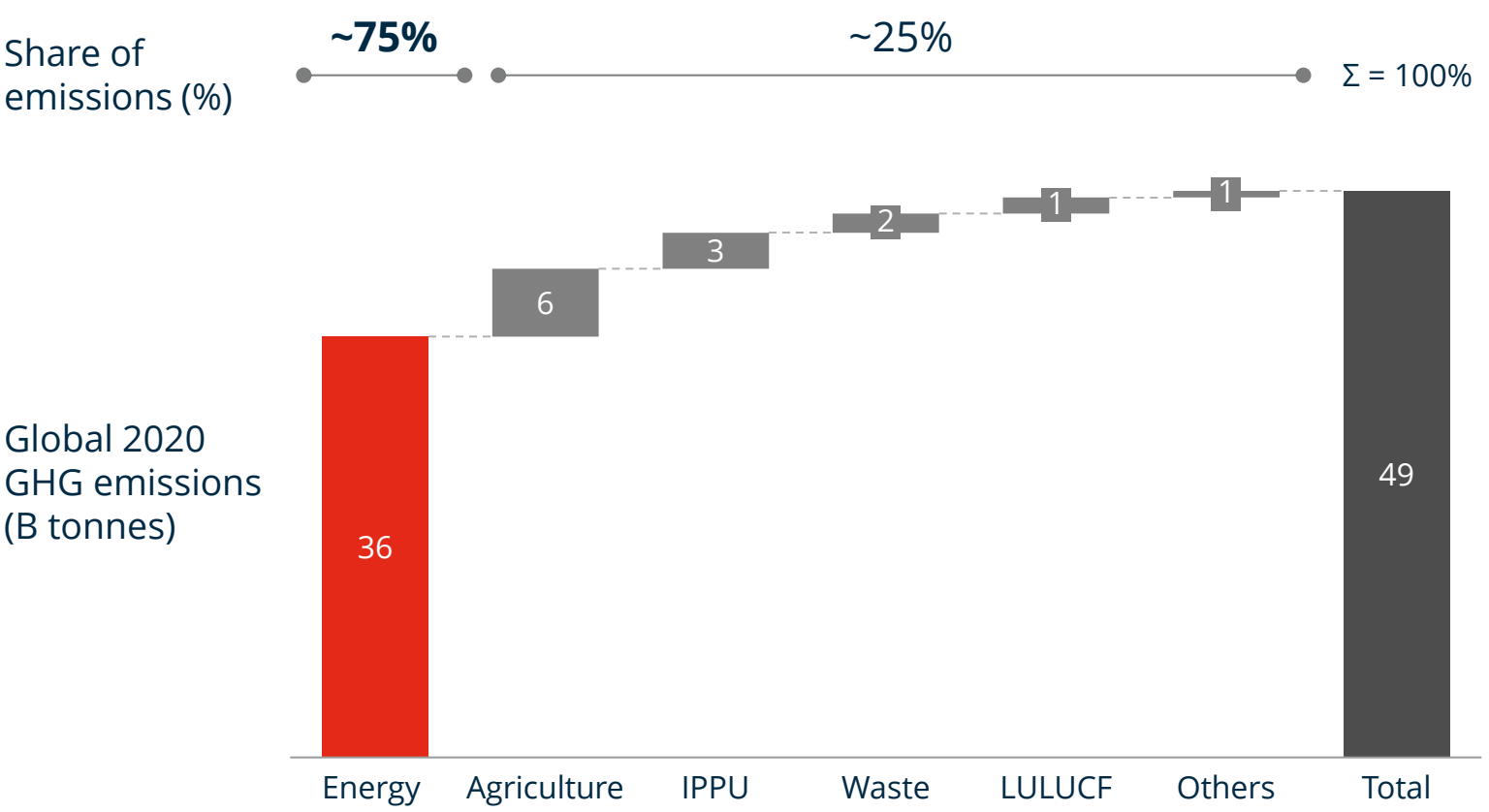
-32%

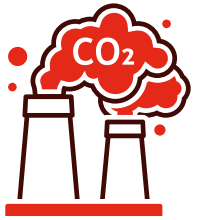
Loss in GDP by 2100 on current trajectory[3]

1. Floods, draughts, heatwaves. Spots of high human vulnerability found particularly in South Asia, Small Island Developing States, West-, Central- and East Africa, Central and South America, and the Arctic 2. Assuming zero population growth and sea-level rise of one meter, per LiDAR projections 3. Projection of 2.7C warming by 2100; does not include breaking of planetary boundaries

Source: IPCC Assessment report; Climate Action Tracker; World Health Organization; UNEP Emissions Gap Report; National Bureau of Economic Research; Climate Action Tracker; World Economic Forum; Rocky Mountain Institute 2024; BCG analysis

A successful Energy Transition will be key to mitigate the effects of climate change, as it represents three-quarters of the challenge





Energy sector accounts for three-quarters of total carbon dioxide emissions

The Energy Transition will be a key unlock for mitigating future climate change

Note: IPPU is Industrial Processes and Product Use; LULUCF is land use, land use change and forestry
Source: Our World in Data; United Nations Framework Convention on Climate Change (UNFCCC); International Energy Agency (IEA); BCG analysis

Asia Pacific (APAC) region will make or break the success of global Just Energy Transition efforts

APAC is enduring **severe environmental and economic consequences** of climate change

51%

APAC share of annual global GHG emissions

APAC is a significant contributor to global emissions - the region's actions will significantly influence global outcomes

-35%

GDP loss by 2050 in APAC

APAC economies are at risk of major economic loss from effects of climate change and natural hazards, if no action is taken

89%

of APAC classified as "developing"

Cost of capital for Energy Transition remains a burden for majority of developing areas in APAC; most green investments today are in advanced economies

Substantial **opportunities** for Just Energy Transition remain untapped

43%

Revenue opportunity available by 2030

Asia is projected to unlock $4.3T of the $10.1T global revenue opportunity from sustainability activities e.g., renewable power and energy efficiency by 2030

55%

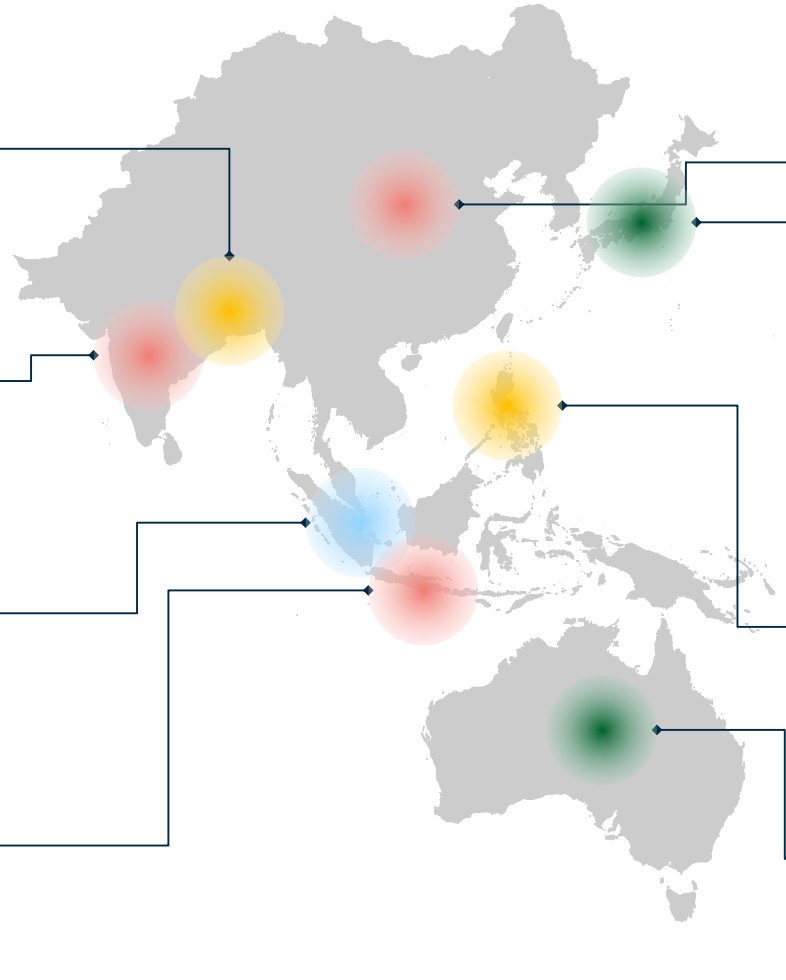
Population in APAC that are youths[1]

While many countries will struggle with the need to "re-skill" their existing workforce, APAC has the opportunity to proactively skill its young population (over 2B below the age of 30) to become the future workforce for green energy solutions

1. Youth defined as those aged below 30

Source: World Economic Forum: Accelerating Asia's Advantage: A Guide to Corporate Climate Action 2023; World Economic Forum: Catalysing Climate Action in Asia 2023; SAP; ADB: Youth Employment Support in Asia and the Pacific; BCG analysis

APAC is diverse, and has varying starting points on the Transition journey



Bangladesh
- Share of emissions: 1%
- Share of population: 4%
- Share of GDP: 1%

India
- Share of emissions: 15%
- Share of population: 35%
- Share of GDP: 9%

Singapore
- Share of emissions: 0.3%
- Share of population: 0.1%
- Share of GDP: 1%

Indonesia
- Share of emissions: 5%
- Share of population: 7%
- Share of GDP: 7%

China
- Share of emissions: 60%
- Share of population: 34%
- Share of GDP: 51%

Japan
- Share of emissions: 4%
- Share of population: 3%
- Share of GDP: 14%

Philippines
- Share of emissions: 1%
- Share of population: 3%
- Share of GDP: 1%

Australia
- Share of emissions: 2%
- Share of population: 0.6%
- Share of GDP: 5%

Colour legends: *(Deep dive of archetypes on next page)*
- Emerging, Energy Intensive
- Emerging, Energy Scarce
- Developed, Energy Intensive
- Developed, Energy Efficient

Share of emissions, population and GDP indicate share of metrics against total APAC metrics

- Share of emissions indicates necessity for action
- Share of population correlates to the amount of people affected by the Energy Transition
- Share of GDP indicates capability to fund own Energy Transition journey

Note: Share of emissions, population and GDP relative to rest of Asia Pacific; figures have been rounded to nearest whole number; coloured regions have been grouped into archetypes available as deep dive on following content
Source: World Bank; Our World in Data; International Monetary Fund; EU Emissions Database for Global Atmospheric Research (EDGAR); BCG analysis

4 archetypes observed within APAC

Non-exhaustive

	1 Emerging, Energy Intensive	2 Emerging, Energy Scarce	3 Developed, Energy Intensive	4 Developed, Energy Efficient
Features	High Energy Intensity, Low Financial Capacity Populous, high absolute emissions and intensity	Moderate Energy Intensity, Low Financial Capacity Populous, low-moderate absolute emissions and low-moderate intensity	High Energy Intensity, High Financial Capacity Non-populous, low absolute emissions but high intensity	Moderate Energy Intensity, High Financial Capacity Non-populous, low-moderate absolute emissions and low-moderate intensity
Examples within APAC	China, India, Malaysia, Indonesia, Vietnam, Thailand	Sri Lanka, Philippines, Bangladesh, Pakistan	Singapore	Australia, New Zealand, Japan, South Korea
Key dimensions – Share of Emissions	61%	11%	<1%	27%
Key dimensions – Share of Population	71%	20%	<1%	9%
Key dimensions – Share of GDP	34%	8%	2%	56%

Note: Descriptions are generalised to provide a directional view of archetyping, examples may not fall perfectly within a specific archetype. Emissions, population and share of GDP data do not include China, and reflect the percentage of these metrics against the total of these metrics for AP region (e.g., Archetype 1 contributes 61% of emissions within all AP emissions)
Source: World Economic Forum; World Bank; Our World in Data; International Monetary Fund; EU Emissions Database for Global Atmospheric Research; BCG analysis

Macro challenges across APAC observed at varying “degrees” implies need for differentiated approach

Macro challenges related to Energy Transition	Selected quotes from interviews	Archetypes: Emerging, Energy Intensive	Emerging, Energy Scarce	Developed, Energy Intensive	Developed, Energy Efficient
Ambiguity in translation of government policies on fossil fuels into action and pace of transition resulting in delayed changes toward capital allocation by investors	“There will be a natural lag in focus on "worker transitions" for economies that have not yet begun to actively phase out coal – important to have country-specific focus as some regions would have invested equity that is locked into these assets[1]” - Regional Commercial Bank-				
Limited alignment on green taxonomy and data availability across the region	“A significant barrier to building a successful ecosystem of actors and actions is the limited alignment on what constitutes "green" and where demand is in (industries and communities)” - SEA Leading Stock Exchange-				
Limited capability to support Energy Transition agenda within the region	“While securing committed funding is critical, the underlying people element cannot be overlooked. Capabilities of local actors in governments and industry are essential to enable the transition” - Vietnam JET-P implementation team-				
Low societal pressure for transition toward green energy and products, as access and affordability remain top of mind	“There is a diverging focus of priorities across Asia Pacific; on one hand, there are countries concerned about "greening" their supply, while on the other, many are struggling with basic access and affordability issues” - International EPC Player-				

Key Takeaway

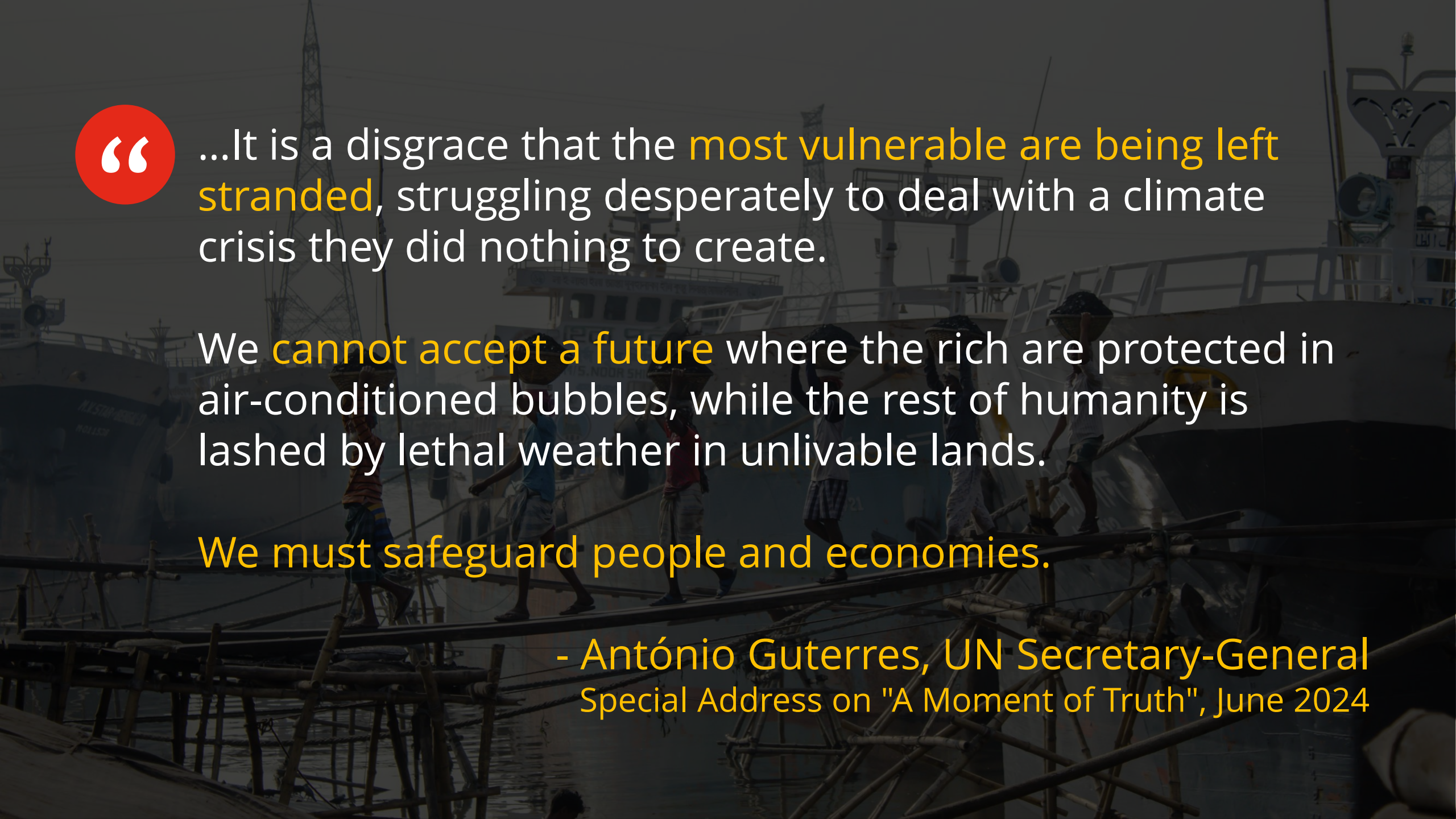
Differentiated approach given varying starting points on key enablers including regulatory environment, availability of aligned taxonomy and data, local capability, and societal urgency

1. Renewable projects on average funded through ~30% of Equity , and ~70% Debt, and one-fourth the deal-size of coal-fired projects

Source: Infralogic 2024 – assessment of 98 projects with financial close between 2019-2023; Closed Group Consultations; BCG analysis

The often overlooked People-Centric dimensions of the Energy Transition in Asia Pacific

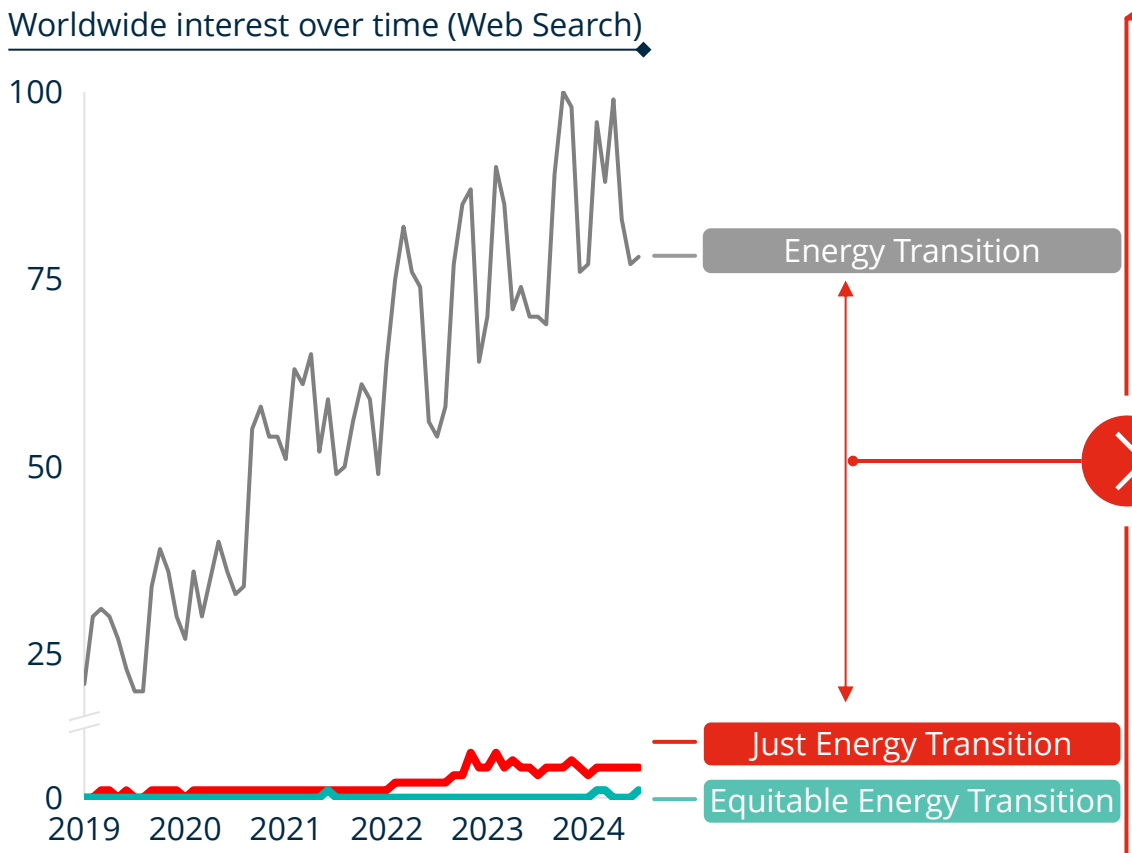
Section 2



> …It is a disgrace that the most vulnerable are being left stranded, struggling desperately to deal with a climate crisis they did nothing to create.
>
> We cannot accept a future where the rich are protected in air-conditioned bubbles, while the rest of humanity is lashed by lethal weather in unlivable lands.
>
> We must safeguard people and economies.

- António Guterres, UN Secretary-General
Special Address on "A Moment of Truth", June 2024

The missing "Just" in Just Energy Transition – the often-overlooked People-Centric perspective



Future Energy Transition efforts must account for People-Centricity as an indispensable component

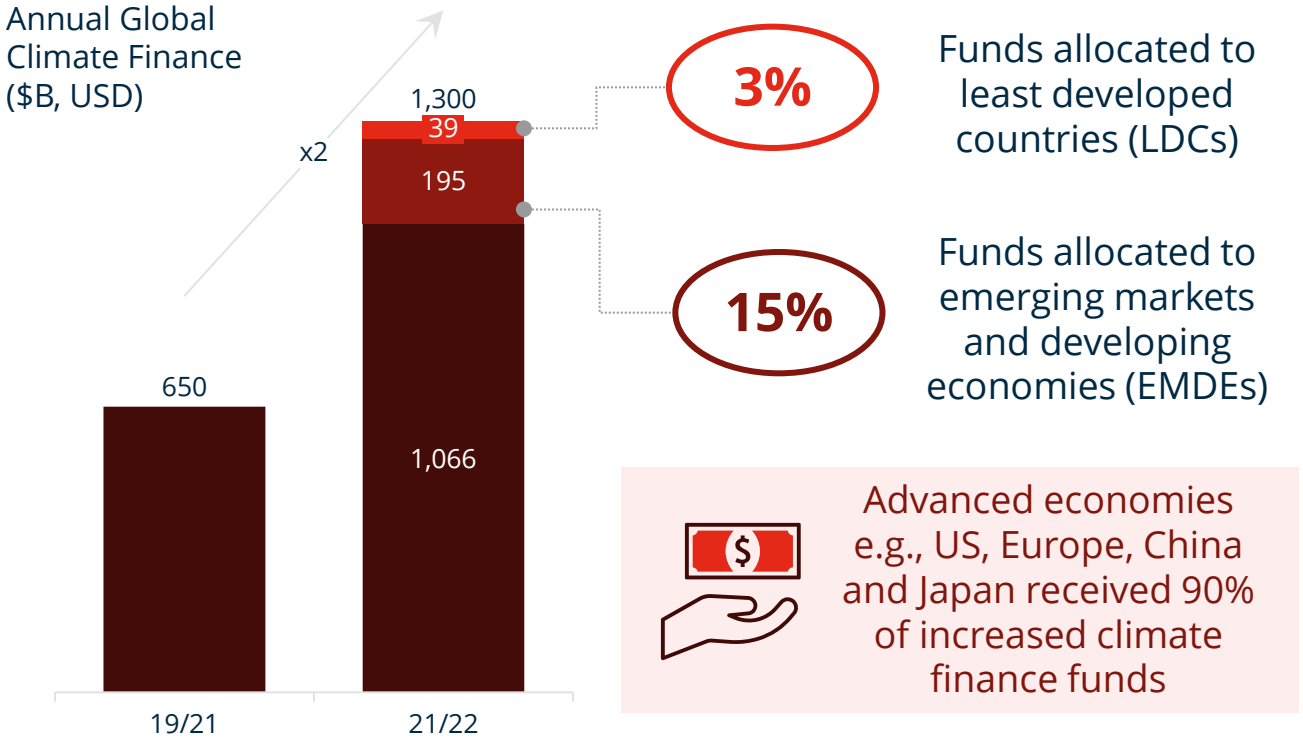
- Overall, much greater interest in "Energy Transition" compared to "Just/Equitable Energy Transition"
- In addition, while interest in "Energy Transition" has grown over time, interest in "Just/Equitable Transition" has remained relatively flat
- Moving forward, it is important to embed elements of "Just Transition" as a critical criteria for a successful Energy Transition

> "There is a need for a clearly defined proposition for what a People-Centric Transition means – embedding this proposition into all Energy Transition efforts is critical."
>
> - Indonesia JET-P expert-

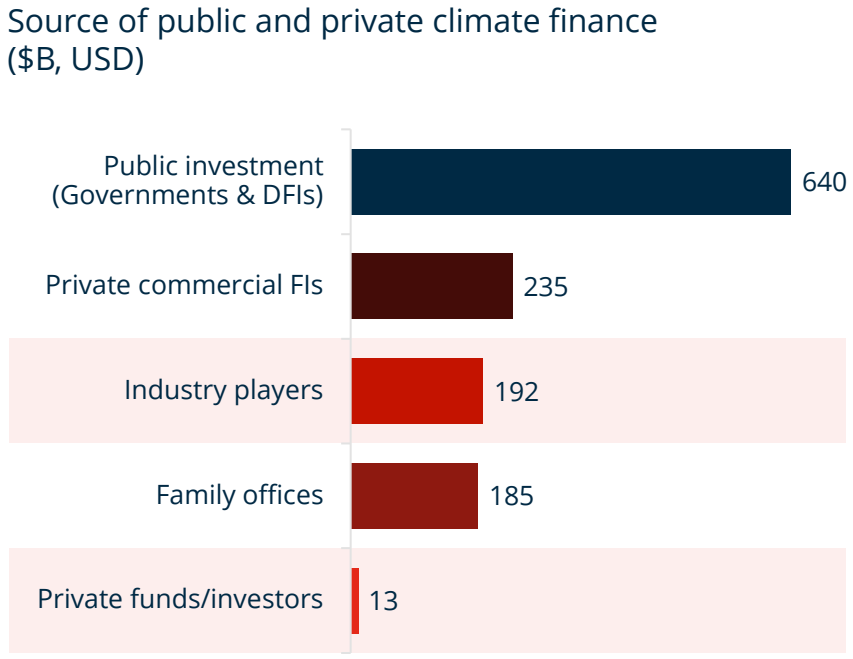
Note: Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term ; Insufficient data available to plot "People-Centric Energy Transition"
Source: Google Trends (2024); BCG analysis

Despite rising interest in Energy Transition, funds are inequitably distributed and focused on advanced economies

Global climate finance doubled over the past year, but **only 18% deployed in developing economies**



Most funding is coming from the public sector; mobilising investments from other sources is key

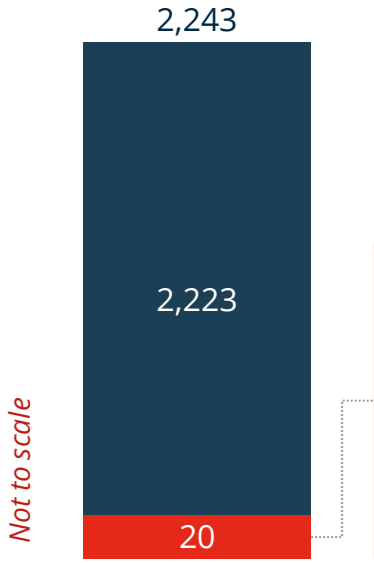


Source: Global Landscape of Climate Finance 2023 (Climate Policy Initiative); UNFCCC; BCG analysis

Energy Transition focus has been skewed towards infrastructure development, with limited emphasis on People-Centric levers

Global spending in People agenda remains **insufficient**

Total Global Government Energy Spending ($B USD, as of 2023)



<1%

According to IEA, less than 1% spent on People-Centred Transition out of total energy spend

Similarly in APAC, **low focus on People-Centric levers** in countries where Energy Transition is underway today

Funding allocation from initial IPG[1] commitments for People-Centric levers

Indonesia

3%

Out of $11.5B USD

More than 90% of JETP funding is geared towards infrastructure – very little is dedicated towards capability building, and those that do [invest] have a mandate… we don't just need funders, we need funders who push for People-Centricity

“ Indonesia JET-P on-ground implementation team

Vietnam

0.3%

Out of $7.8B USD

A 'Just' Transition is a distant concept… The 'People' side must be ready and enablers should be deployed before the money

“ Vietnam JET-P on-ground implementation team

1. International Partners Group

Note: People-centred transition spending in chart do not include energy access and affordability, as those measures include fossil fuel subsidies e.g., fuel price cap and natural gas subsidies; overall global government spending includes commitments in force from previous years so actual annual figures are smaller

Source: International Energy Agency (IEA) Government Energy Spending Tracker 2023; Just Transition Forum in Asia; 6th Asia Pacific Climate Change Adaptation Forum; Indonesia JET-P Comprehensive Investment and Policy Plan 2023; Vietnam JET-P Resource Mobilisation Plan; BCG analysis

Taxonomies for climate finance demonstrate limited coverage of People-Centric components

Non-exhaustive

Selected Global Taxonomies	Coverage of People-Centric components							
	Employment	Labour Conditions	Health and Safety	Gender Equality	Diversity and Equity	Marginalised Groups	Community Engagement	Capacity Building
1 Australia's Sustainable Finance Taxonomy	✓	✓	✓	✓	✓	✓	✓	
2 ASEAN Taxonomy for Sustainable Finance	✓	✓			✓		✓	✓
3 Japan Green/Sustainability-Linked Bond Guidelines	✓		✓		✓		✓	✓
4 Taiwan Sustainable Taxonomy	✓	✓	✓	✓	✓			
5 EU Taxonomy for Sustainable Activities		✓	✓					
6 Singapore-Asia Taxonomy for Sustainable Finance		✓	✓					
7 Mainland China's Green Bond Endorsed Projects Catalogue			✓					
8 Hong Kong's Green Bond Framework								
9 The Korean Green Taxonomy								

Note: Information accurate at time of publishing
Source: Government announcements for taxonomies; BCG Analysis

People-Centricity places 4 key 'People' stakeholders at the heart of the Energy Transition

Main Objective of Just Energy Transition

Ensuring that the **costs and benefits** arising from the implementation of the climate transition are **distributed fairly** across stakeholders

	1 Workers	2 Communities	3 Consumers	4 SMEs
Stakeholder Definition	Fossil fuel industry and value chain workers; new future renewable and green energy workers	Fossil fuel dependent or marginalised communities	End users requiring accessibility, affordability, and security of energy	Small and medium enterprises that need to maintain commercial competitiveness
Why it is important to consider these People stakeholders	As the key driving force behind nations' economies, ensuring workers are engaged and supported, e.g., through upskilling and reskilling, is critical to maintain and improve country productivity and economy	Communities reliant on fossil fuels, vulnerable, or isolated will be most affected by the green energy shift due to limited transition opportunities, yet are best suited to identify local priorities	Consumers must be protected against negative impacts of Energy Transition, such as minimising access disruption and maintaining nationwide affordability, to encourage adoption	SMEs comprise 97% of APAC enterprises and 70% of national employment, with fewer resources than large enterprises to meet transition goals; crucial to support SME policy navigation, technical sourcing, and financing

Source: World Economic Forum (WEF); BCG analysis

Facilitating a People-Centric Transition involves identifying key People risks and ensuring they are addressed

	Risks faced by People groups	Opportunities (People-Centric solutions)
1 Workers	Rising unemployment (from fossil fuels phase-out)	National workforce planning
	Skills mismatch between existing and new industries	Redeployment, job matching, counselling
	Geographic displacement of workers	Reskilling, upskilling, green skilling
		Protection and unemployment support
2 Communities	Economic disruption and loss of livelihood	Skills and green skills-led economic diversification
	Rising inequality, e.g., socioeconomic and gender disparity	Infrastructure, green infrastructure-led economic diversification
	Slow transition progress due to unequitable cost burden	Public consultation and awareness building (incl. energy literacy)
	Community conflicts from lack of consultation	
3 Consumers	Rising inequality, e.g., socioeconomic and gender disparity	Energy accessibility and reliability programmes
	Slow transition progress due to unequitable cost burden	Green energy adoption measures e.g., subsidies and incentives
4 SMEs	Loss of SME competitiveness due to transition costs	Technical, skill support (incl. technical assistance and incubators)
	Slow transition progress due to unequitable cost burden	Direct finance for SMEs
	Loss of international market access (e.g., CBAM)	Green energy adoption measures e.g., subsidies and incentives

Source: World Economic Forum 2024; World Bank: Diversification and Cooperation in a Decarbonising World; UN Environment Programme; Economic and Social Commission for Asia and the Pacific; BCG analysis

Energy Transition also offers benefits to the 4 People stakeholder groups if addressed equitably

1 Workers

- New employment opportunities with competitive pay and career growth potential for 14M green jobs in APAC by 2030
- Improved working conditions and less occupational hazards related to fossil fuel industries (e.g., miner lung disease)

2 Communities

- Diversification of community economy, such as increased export variety, leads to new regional economic growth and heightened productivity – e.g., 10% of increase in export variety leads to 1.3% increased productivity
- Resilience against economic shifts as community economy is not solely reliant on fossil fuel industry

3 Consumers

- Lower cost of living in the long-term, e.g., cost savings of $0.2-0.6M USD per annum predicted for behavioral energy efficiency potential in India
- Health benefits (improved air quality, harmful emissions reduction – 70% of total annual deaths due to air pollution is in APAC)
- Improved quality of life (slowed global warming, less extreme weather shifts)

4 SMEs

- Lower energy costs and improved energy efficiency, which could unlock cost savings up to 30%
- Access to new markets and funding opportunities including government incentives

Source: International Labour Organization; World Economic Forum 2024; World Bank: Diversification and Cooperation in a Decarbonizing World; UN Environment Programme; UN Economic and Social Commission for Asia and the Pacific 2023; UNDP Insurance and Risk Finance Facility 2024; Leap4SME EU; Alliance for an Energy Efficient Economy, Oracle Utilities; Carnegie Endowment for International Peace; BCG analysis

Progress seen today on pushing forward People-Centric levers in different ways

1 Workers

1A. National workforce planning: In-depth analysis by **South Africa** for future green jobs and skilling needs to ensure strong workforce supporting the Just Energy Transition, including women, youth, and vulnerable communities empowerment in green skills, targeted to be completed by end 2025

1B. Reskilling, upskilling, green skilling: Singapore proactively mapped top 20 green skills in its Green Plan 2030, and launched multiple initiatives on green skilling for current and future workforce

2 Communities

2A. Economic diversification: Australia is diversifying the Collie economy into tourism and creative industries from being WA's major coal field, even prior to Collie plant closure in 2029, by providing funding of ~AUD$547M

2B. Economic diversification: A large coal state in **India**, Chhattisgarh has set up a welfare fund and dedicated green council in 2022, to support communities in fossil fuel dependent regions, with more than USD $10M of funding mobilised as of 2024, impacting 100k lives across the region

2C. Awareness building: Malaysia, a country reliant on fossil fuels for >90% of its national energy mix, is proactively managing dialogue on Energy Transition to encourage public awareness and adoption, e.g., via the National Energy Transition Roadmap (NETR) in 2023

3 Consumers

3A. Accessibility and reliability: The Philippines electrified rural and secluded regions in the archipelago beginning nearly 50 years ago, through establishing rural electric cooperatives to ensure energy access and reliability, with access rates in 2024 reaching ~95%, forming a strong foundation for the country to explore RE generation via its electric cooperatives

3B. Accessibility: Tata Power in **India** launched a project in 2019 to build 10k microgrids by 2026, which would serve ~25M people in India's countryside and rural regions, while creating new job opportunities

4 SMEs

4A. Incentives and subsidies: Singapore provides up to 70% of funding support to businesses with minimum 30% local shareholding, to assist their adoption of energy efficient equipment to support decarbonization and emission reduction; this initiative began in 2022 and will be expanded to include more sectors in 2024

4B. Incentives and subsidies: To support **Malaysia**'s SMEs which make up 97% of all businesses in the country, Malaysia is driving green energy adoption through SMEs by providing tax exemptions and allowances across the past decade, spurring investments of ~RM5B

Deep dives available in following pages

Non-exhaustive

Case study: Workers | South Africa assessing and planning for impact of Energy Transition to jobs and skills

South Africa

1A

Energy transition context

- South Africa (SA) is among the world's most carbon-intensive developing economies, with coal contributing ~90% to South Africa's power supply
- There is also an urgent domestic need to maintain energy access that is reliable for its people given under-maintained and old power infrastructure, which can consequently lead to economic activity slowdown as 'load shedding' occurs – this is a national energy crisis when there are widespread national blackouts of power supply
- In addition, South Africa faces a high unemployment rate, with close to 1 out of 3 people unemployed in end 2023; this can be exacerbated when considering a shift away from coal, as South Africa employs ~200k workers across its coal sectors, incl. mining, power plants, and transportation of coal
- Hence, it is crucial to balance the need to shift away from its status as a high emission producer and improving an unreliable power supply, with protection of its workers, particularly the unemployed and the fossil fuel industry workers

How People-Centricity was considered

- South Africa is the first nation to engage in a Just Energy Transition Partnership (JET-P)
- Government recognised the need to supply workers with green skills due to the need for localization of key value chains, such as local component manufacturing for wind/solar/batteries and maximising job creation and worker retention
- Government undertook an in-depth analysis down to city level, and identified potential ~384k FTE jobs by 2050 (net increment of ~196k jobs)
- However, >300k total new jobs require skills currently not prevalent in SA; therefore, as part of its JET-P, government of SA is exploring the idea of a skilling programme e.g., a national low carbon academy to ensure workforce protection and supply
- In addition, through South Africa Just Energy Transition Jobs First (SAJJOF), women, youth, and vulnerable groups will be supported in areas including in green skills development and employment programmes in renewable energy e.g. wind and solar

Key learnings

- Proactive planning for workforce needs is critical to ensure continuity of a skilled and capable workforce to minimise dependence on import of skilled labour and smoothen transition from fossil fuel dependency
- Actors can contribute by creating visibility and understanding of need for green taxonomy, and providing financial aid to government to undertake similar workforce planning analyses

Source: NBI Research; SAREM 2022; Green Cape; International Institute for Sustainable Development; South Africa Just Energy Transition Partnership project team; Crisis24; Development Aid 2023; World Resource Institute: South Africa - Strong Foundations for a Just Transition; African Development Bank Group; Demystifying employment in South Africa's Just Energy Transition: Exploring emerging decent work themes 2024; BCG analysis

Case study: Workers | Singapore investing in developing 'green skills' of current workforce

Singapore 1B

Energy transition context

- Singapore has developed the Singapore Green Plan 2030 to build in sustainability into the nation's way of life
- Singapore's green economy, alongside the digital economy and care economy, has been identified as one of they three key growth areas for Singapore
- A need to prioritise green skills among others has emerged as a result of Singapore's Energy Transition

How People-Centricity was considered

- SkillsFuture Singapore (SSG) identified the top 20 priority skills for the green economy, as well as specific top 20 skills needed to support the built environment and energy and power sectors
- A report on skills demand mapped green skills across the dimensions of demand growth and transferability into 4 quadrants, where the highest demand growth and transferability included skills such as environmental and social governance, carbon footprint management, and sustainable manufacturing
- The Singapore government also offers multiple green skilling programmes, including:
  - RISE (Rapid and Immersive Skill Enhancement) on sustainability
  - Green Economy courses on green skillsets, e.g., solar PV[1] know-how, sustainable finance and impact investing, green architecture, and carbon footprint reduction roadmap development
  - SkillsFuture Series to learn about emerging skill areas
  - SkillsFuture Advice and Career Conversion Programmes for information on career planning and transfers to new occupations/sectors
- Many of these programmes are also subsidised by Singapore government to encourage uptake of the skilling programmes

Key learnings

- It is important to have a holistic view of green skills needed in the future to accelerate the Energy Transition, and invest resources into developing top priority green skills through green skilling, up- and re-skilling, career planning etc.
- Actors can support these initiatives by providing funding to similar initiatives or directly assisting development and maintenance of these programmes

1. Photovoltaic

Source: SkillsFuture Singapore; Skills Demand for the Future Economy 2023/24 Report; BCG analysis

Case study: Communities | Australia plans for economic diversification for communities affected by power stations and mine phase out

Australia

2A

Energy transition context

- Collie has been Western Australia's only productive coal field for over 100 years and was a major electricity provider
- In 2018, the WA state government announced Collie power station closure in late 2029, and launched what would become the Just Transition Working Group, as a foundation for the 10–15-year transition away from Collie being coal-dependent - WA government requires power stations to provide at least 3 years notice of closure
- In 2020, the town of Collie had 23% of its employees working in mining, another 28% in related supporting industries

How People-Centricity was considered

- Principles were developed to guide the Just Transition effort, including:
  - Providing choices to those affected to reskill, retrain, or take an alternative pathway within reasonable timeframe
  - Organise local, long-term economic diversification that drives continuous improvement in living standards
- AUD $547.4M allocated to diversifying the Collie economy to fund projects in energy, tourism, creative industries, technology, and services, such as Collie mountain bike and hiking trails, main street upgrades, Collie replica underground mine, and expansion of the Wellington National Park and Collie Mural Trail
- The power station and mine being state-owned allowed the government to play a key driving role in designing the transition process, orchestrating stakeholder engagement directly

Key learnings

- Community transition requires long-term notice to ensure sufficient transition time for communities
- When diversifying, taking into account culture, history, and unique traits of a community is paramount – there is no one-size-fits-all solution, and programmes should be tailored and customised to preserve the communities' unique traits, while ensuring growth in other verticals of the economy to sustain livelihoods, via direct engagement and funding of the transition process
- Understanding the nuances in a community is also critical to secure buy-in and support of the community. For instance, many affected communities in Australia do not want to move away from their lifelong homes
- Actors can play a part in supporting community transitions by committing funds towards community development programmes or directly supporting the local government in funding provision

Source: Collie's Just Transition Plan; Closed Group Consultations; BCG analysis

Case study: Communities | Major coal producing state in India supports communities through welfare fund and diversification to 'green' jobs

India

2B

Energy transition context

- Chhattisgarh is the 9th largest state in India, and is one of the major coal producing states in India alongside Odisha, Jharkhand, Madhua Pradesh, Telangana, Maharashtra, and West Bengal; however, 45% of Chhattisgarh's rural residents fall below the poverty line, nearly double of the national average
- Need to diversify the state's economy in line with India's NDCs[1] and agenda in the Just Energy Transition, as well as providing support to communities affected by mining-related operations

How People-Centricity was considered

- District Mineral Foundations (DMFs) in India are to benefit communities and areas affected by mining operations; funds for DMFs come from payment from mining companies/lease holders
- So far, 23 states in India incl. Chhattisgarh have DMFs across a total of 645 districts; at least 70% of funds must be used for high priority areas including welfare for the community's most vulnerable, and skill development
- Chhattisgarh also recently set up the first-of-its-kind State Green Council with Swaniti Initiative, a social enterprise, as its Technical Advisor to deliver development solutions across Chhattisgarh and support regional economic growth
- The Council's key goals include developing sustainable economic opportunities for marginalised communities, adopting new tech and programmes to reduce emissions, engaging investors to create an economic alternative to the fossil fuel industry via green livelihoods, and developing Chhattisgarh as a green leader
- Interventions taken include identification of government schemes for self-help groups' (SHGs) green product scaling, market studies for Minor Forest Produce opportunities, and establishment of market linkages with help from experts
- So far, 100K lives have been impacted with USD ~10M funds mobilised, over 30 MOUs facilitated between state government and nature-based companies for long term collaboration, and 12 SHGs engaged to establish production distribution clusters to promote financial stability

Key learnings

- Having a state-level central coordinating body with a focused mandate to drive community development in coal-dependent regions can facilitate efforts and allow targeted intervention
- Actors can help to accelerate this impact by providing technical assistance especially for regions that have more vulnerable communities, and supporting funding and further policy development efforts

1. Nationally Determined Contributions

Source: Ministry of Mines India; Swaniti Initiative website; India Press Information Bureau; Times of India; Centre for Science and Environment India; Closed Group Consultations; BCG analysis

Case study: Communities | Malaysia, as a fossil fuel dependent country, proactively manages national-level narrative and dialogue on Energy Transition

Energy transition context

- Malaysia is among the largest oil and gas producers in APAC, with 91% of primary energy mix derived from fossil fuels, and the national oil and gas company has ~50k employees
- Fossil fuels are a significant contributor and key driver of growth for Malaysia's economy, where petroleum-related revenues made up nearly 30% of government revenue in 2022
- ~12% of Malaysia's GDP is spent on fossil fuel subsidies; residents are accustomed to affordable petrol prices
- Malaysia has recognised the importance of a national Energy Transition and has been active in global dialogues on mitigation ambitions, announcing its intent to reduce GHG emission intensity of GDP by 45% by 2030 against 2005 levels

How People-Centricity was considered

- In its national effort to transition away from fossil fuels, Malaysia has developed multiple policies to foster communication around the Energy Transition, including the National Energy Policy (NEP) in 2022 and National Energy Transition Roadmap (NETR) in 2023; both of these policies explore People-Centric levers in depth:
  - NEP looked at shift in workforce demand and new requirements for skills in emerging energy sectors, and discussed the need for energy education, workforce planning, and creation of schemes to support those at risk in declining sectors
  - NETR included analysis on workforce planning and job creation, with emphasis on green skilling, community resilience, and energy literacy, and builds the case for a strong governance to oversee the national agenda in Energy Transition
- Development of Malaysia's Energy Transition policies were done in conjunction with multiple government stakeholders and agencies, alongside think tanks, NGOs, and other entities to achieve a comprehensive view, ensure visibility among leaders across different sectors, and ensure a united front in communicating Malaysia's Energy Transition strategies
- Roadmaps were well-publicised to acclimatise society, and are a clear signal to markets, providing confidence that Malaysia is committed and taking concrete steps in the transition

Key learnings

- A national-level change management, although diverging from the status quo that society is used to, must be undertaken to encourage public energy literacy encompassing understanding, acceptance, and adoption of transition strategies
- Actors can support by advocating for and funding policymaking and supporting publicisation and rollout of Energy Transition roadmaps/policies

Source: Asia Natural Gas and Energy Association 2023; PETRONAS website; Bank Negara Malaysia Economic and Monetary Review 2022; Malaysia National Energy Policy 2022-2040, Malaysia National Energy Transition Roadmap; International Monetary Fund 2021; United Nations Framework Convention on Climate Change (UNFCCC); BCG analysis

Case study: Consumers | Electric cooperatives in the Philippines are empowering consumers by providing electricity access

The Philippines

3A

Energy transition context

- The Philippines comprises over 7k islands, with ~2k islands inhabited, clustered into 3 major groups: Luzon, Mindanao, and the Visayas
- Historically, electrification was limited to only high-density urban areas where electric utility operations were viable, with other less populated and rural areas deprived of reliable and secure energy supply

How People-Centricity was considered

- A study by USAID[1] recommended adoption of the rural electric cooperative (EC) system which led to the setup of the first two rural ECs in Mindanao and the Visayas, supported by the National Rural Electric Cooperative Assocation (NRECA) among others
- The National Power Corporation (NPC) provides electricity to off-grid areas via its Small Power Utilities Group, especially for regions that see little private investments due to infrastructure underdevelopment and security/political concerns
- New Power Producers (NPP) were competitively selected for long-term concessions, based on lowest generation cost, for power supply agreements with ECs; the NPC also provided output-based subsidies to bridge gap between user prices and generation cost
- Today, all three major island groups have ECs serving about half of all Philippine households, with most beneficiaries in rural areas
- Electricity access rate of the Philippines is at ~95%, with the Philippine Rural Electrification Programme (REP) providing energy access to ~50M Filipinos across ~40 years
- However, fossil fuels still contribute to power generation at ~78%; important for the Philippines to explore RE through ECs while maintaining affordability, accessibility, and reliability for rural regions
- The CORE initiative, under the Alliance for Rural Electrification (ARE) in collaboration with the National Electrification Administration (NEA), is focusing on renewable energy optimisation via solar hybrid mini-grid system design
- Aim of CORE is to equip local ECs with abilities to design, assess and execute solar hybrid mini-grid systems, with a training programme for knowledge transfer recently completed in early 2024, on optimisation on RE resources, feasibility study development, and project proposal evaluation skills tailored to the Philippines' unique context

Key learnings

- Strong government commitment and central funding is critical to ensure successful Energy Transition initiatives such as establishment of islanded distribution systems via rural electric cooperatives
- Actors can accelerate the shift towards RE by supporting and financing RE projects through ECs, including technical assistance to develop models for nationwide RE adoption

1. United States Agency for International Development

Source: National Electrification Administration (NEA) Philippines; Alliance for Rural Electrification (ARE); International Trade Administration; NRECA International; Energypedia; Reiner Lemoine Institute; Closed Group Consultations; BCG analysis

Case study: Consumers | India leverages solar microgrids to address energy gaps in rural electrification

India

3B

Energy transition context

- Tata Power is India's largest integrated power company with ~11k MW of installed generation capacity and over 2.6M customers
- Although India has made immense progress over last five years in grid extension, its government acknowledges that at least 100M Indians are not individually connected and may have insufficient access to electricity, either because it is unavailable or unreliable

How People-Centricity was considered

- TP Renewable Microgrid Ltd was launched, which aims to build 10k new microgrids by 2026, reduce annual consumption of diesel fuel by 57M litres and associated carbon emissions by 1M tonnes per year at scale
- The project combines improved microgrid technology manufactured by a 3rd party supplier, The Institute for Transformative Technology
- It will provide high-quality distributed energy alternative to diesel and power grid. TP Renewable Microgrid is expected to be the world's largest microgrid operator when the project is completed and will operate as a private rural utility
- Apart from households, TP Renewable Microgrid customers include shops, medical clinics (for refrigeration), electric mobility providers, telecom towers, teaching centres, and roadside eateries in villages
- Impact will be across ~5M homes supplied with clean power, reaching 10k villages across rural India and directly impacting 25M people across next decade
- Project is poised to create 10k new green jobs, support 100k rural enterprises, deliver irrigation to 400k local farmers, and improve access to health services and safe drinking water to communities they serve

Key learnings

- Engagement of national utility providers with deep knowledge and expertise of nationwide energy ecosystems to drive Energy Transition can greatly ease implementation processes and increase adoption by consumers
- Actors can emulate by partnering with regional power distributors to support accessibility initiatives

Source: Tata Power website; Rockefeller Foundation website; Smart Power India website; Economic Times India; BCG analysis

Case study: SMEs | Singapore co-funds energy efficient equipment for businesses to undergo Energy Transition journey

Singapore

4A

Energy transition context

- Small and medium enterprises (SMEs) may face financial constraints in adopting energy efficient or green equipment for their businesses, such as prohibitive initial costs or tighter cash flow to be allocated to longer-term investments including energy-efficient technology
- Navigation and identification of appropriate platforms to apply for such grants may also be a deterrent or confusing to SMEs

How People-Centricity was considered

- As part of Singapore's effort in Energy Transition, Singapore created the Energy Efficiency Grant (EEG), which aims to support SMEs in adopting energy efficient equipment to combat rising energy costs and improve energy efficiency
- The EEG is eligible for companies with minimum of 30% local shareholding, within the Food Services, Manufacturing, and Retail sectors; equipment supported includes air-conditioner, LED lighting, water heater etc.
- On 1st April 2024, the EEG parameters were enhanced under Budget 2024
- Under the base tier EEG, SMEs will continue to receive enhanced support of up to 70% until 31 March 2026, whereas non-SMEs will receive 30% (both capped at SG$30k) for pre-approved EE equipment. Under the advanced tier EEG, companies can receive up to SG$350k with demonstration of energy savings above 350 tonnes lifetime carbon abatement
- The grant will also be expanded to more sectors including maritime, construction, data centres, and their users by the end of 2024
- Singapore is:
  - Empowering SMEs to adopt green and energy-efficient technologies and reduce portfolio and supply chain emissions
  - Prioritising energy efficiency as a key decarbonization initiative
  - Encouraging green tech adoption, as expansion of grant parameters into other carbon intensive sectors may signal further provision of green allowances for related sectors in the future

Key learnings

- It is important for governments to provide financial support, e.g., grant provisions to SMEs in overcoming financing challenges for the transition, namely the capital expenses of switching to energy efficient equipment
- Actors can assist by taking similar initiatives in providing grants to SMEs for specific Energy Transition levers

Source: Singapore National Environment Agency website; Budget 2024; BCG analysis

Case study: SMEs | Malaysia provides subsidies to encourage adoption of renewable energy by corporates

Malaysia

4B

Energy transition context

- SMEs, including micro-enterprises, make up more than 97% of formal enterprises in Malaysia, contributing to nearly half of employment and more than one-third of GDP in Malaysia, forming the backbone of the Malaysian economy
- SMEs have been found to contribute significantly to industrial pollution despite their small enterprises sizes. This is partly due to less heavy regulation on SMEs compared to larger enterprises, and the association of compliance to policies with increased expenses

How People-Centricity was considered

- Under the Malaysian Green Technology Corporation (MGTC), a government agency in Malaysia, incentives were introduced to support SME participation in green economy.
  - Green Investment Tax Allowance (GITA) is applicable for companies acquiring approved green technology assets, or undertaking qualifying green technology projects, with newest additions from the 2024 National Budget including green hydrogen, EV charging stations, and wind energy
  - Green Income Tax Exemption (GITE) is applicable for approved green tech service provider companies
  - Further tax deduction for carbon projects (FTC) up to RM 300K for companies incurring expenses on measurement, reporting, and verification (MRV), and activities related to carbon projects development
  - Green technology financing scheme (GTFS) for 6 sectors (Energy, Manufacturing, Transport, Building, Waste, Water) which is a soft loan provided by the government to support the development of green businesses; Malaysia's Budget 2023 increased total financing under GTFS to RM3B for utilisation from 2023 to 2025
- GITA and GITE have spurred investments of up to RM 5.2B, leading to operational cost savings of RM 880M annually for more than 1,000 companies, reducing an equivalent of 10.7M tonnes of CO_2 between 2016 to 2023

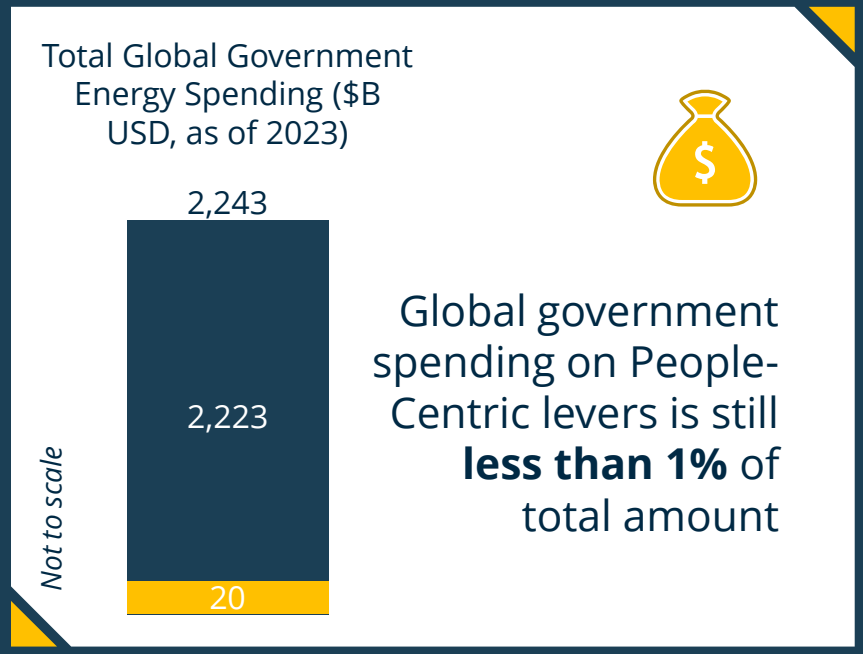
Key learnings

- Incentive provision including tax exemptions and allowances can spur SMEs to adopt greener practices and technology to drive towards the national Energy Transition agenda and achieve committed targets
- Actors can support these initiatives by setting up similar loans or incentives to be granted for SMEs adopting green measures in their businesses, or providing technical assistance to SMEs in understanding and applying for similar government schemes

Source: Malaysian Green Technology and Climate Change Corporation (MGTC) website; Malaysian Investment Development Authority (MIDA); ASEAN Investment Report 2022; press search; BCG analysis

Meaningful progress is emerging, but further action is needed to accelerate the Just Energy Transition

Despite growing interests, spending on Just Energy Transition remains insufficient



Placing People at the heart of the Transition is not optional; a Transition that is not Just will be hard to achieve and sustain.

Continued effort in empowering Workers, Communities, Consumers, and SMEs must be top of mind for funders and investors to create a fair and successful Just Energy Transition.

Note: People-centred transition spending does not include energy access and affordability, as those measures include fossil fuel subsidies e.g. fuel price cap and natural gas subsidies; overall global government spending includes commitments in force from previous years so actual annual figures are smaller
Source: International Energy Agency (IEA) Government Energy Spending Tracker 2023; UNFCCC; BCG analysis

The key challenges and solution areas to a People-Centric Energy Transition in Asia Pacific

Section 3

Because of a boom in climate-related innovation, [...] there's more reason to be optimistic than most people realise.

But it's still a big challenge, and since the world has finite resources for fighting it, we need to focus on the efforts that will save and improve the most lives.

That means funding more innovations that reduce carbon emissions while making clean energy affordable for everyone, help people, especially in poor countries, survive and thrive in a warming world...

- Bill Gates,

Gates Foundation Notes on COP28, December 2023

7

Actors critical to a successful People-Centric Energy Transition

Primary role of actors

Governments (national and sub-national gov'ts)
Support policy development and People-Centric policy frameworks e.g., taxonomies, labour market information systems, and demand planning

Industry Players
Invest in organisational shift towards People-Centricity in Energy Transition efforts and drive innovation and market adoption of clean energy technologies, while safeguarding stakeholders and license to operate

International Standard Setters
Define and advocate for improved harmonisation of standards and metrics in measuring outcomes of People-Centric solutions, to ensure consistent approach to People-Centric Energy Transition

Non-Government Organisations including Think Tanks and Community-Based Organisations (CBOs)
Contribute to thought leadership, inform policy, and facilitate collaboration among actors to benefit core stakeholders (workers, communities, consumers, SMEs)

Philanthropies and Alliances
Set up platform to improve matchmaking and pooling of funds, and offer catalytic funding and direct support to projects

Development Finance Institutions (DFIs), Multilateral Development Banks (MDBs) and Intergovernmental Organisations (IGOs)
Create visibility of "demand" through close engagement with government, offer technical assistance to shape policy or concessional funding to enable solution deployment, structure innovative/blended finance models needed for People-Centric Energy Transition

Private Financial Institutions
Adopt investment and disclosure standards to signal investment priorities, and deploy private capital to invest in sectors and projects that advance a "People-Centric" Energy Transition, participate in innovative/blended finance models needed for People-Centric Energy Transition

Plays critical role in creating visibility and supporting delivery

Plays critical role in advocating for better standards and shaping policy

Plays critical role in providing catalytic finance and/or direct financing

Actors have vested interest in facilitating a People-Centric Transition due to the array of benefits that can be unlocked

Primary Actors/ Benefits unlocked	Socioeconomic Impact	Environmental Impact	Financial Returns	Cost Avoidance	Market Access and Differentiation
Governments Industry Players International Standard Setters NGOs incl. Think Tanks and CBOs Philanthropies and Alliances DFIs, MDBs and IGOs Private Financial Institutions	• **Job creation and reduced unemployment or underemployment** by facilitating people transition • **Reduced inequality / more equitable societies** through improving energy access while maintain affordability • **Economic growth** through greater innovation and investment • **Improved health outcomes** and quality of life as households transition to cleaner fuel sources (e.g., improved air quality indoors and outdoors)	• **Climate change mitigation** through reduced greenhouse gas emission • **Environment and biodiversity conservation** as decreased fossil fuel extraction prevents destruction of natural habitats and biodiversity	• **Enhanced corporate value** as companies that prioritise environmental, social, and governance (ESG) issues see improvement in brand value • **Greater access to capital and lower cost of debt** through green finance alternatives • **Long term stability** as carbon pricing is internalised and fossil fuel subsidies are removed • **Diversified portfolio of investments** as transition from fossil fuel takes place	• **Limitation of reputational risk and higher cost of inaction** in later stages of the transition (e.g., payout to impacted communities) • **Reduced costs associated with workforce adjustments** that would otherwise arise without effective people transition strategies	• **Creation of differentiated value proposition** and potential revenue upside through green premiums • **Safeguarding of license to operate** in country of operations • **Maintenance of access to international markets** amidst tightening regulation

Source: BCG analysis

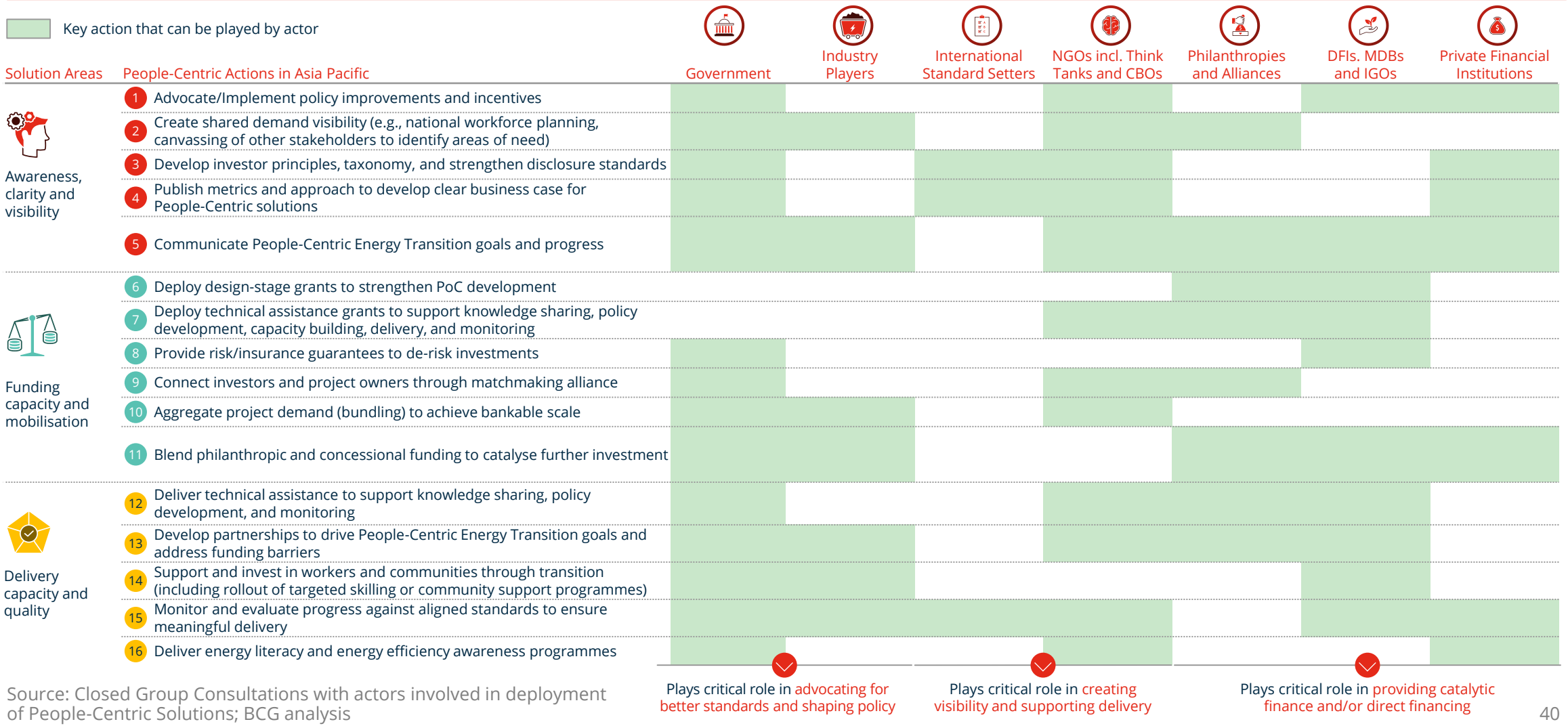
Consultations with actors identified 10 key challenges which can be grouped in three areas: awareness, funding, and delivery

Solution area	10 key challenges			Quotes from closed group consultations
 Awareness, clarity and visibility	Limited awareness and importance of People-Centric Solutions within the context of Energy Transition	Incomplete needs assessment and low pipeline visibility of potential People-Centric projects to fund	Limited role clarity on how to contribute and support People-Centric Energy Transition	We have not seen many transactions focused on the People-Centric aspects of Energy Transition, and even when there are, impact milestones for financiers are unclear - Regional Commercial Bank -
 Funding capacity and mobilisation	No common approach to define business case for People-Centric solution deployment	Unattractive perceived risk-return profile due to inherent below/no-market returns vs infrastructure projects		The large focus of investment directed toward Energy Transition emphasises bankable technologies; as a result, projects focusing on the decarbonising aspects of the Transition tend to attract much more funding than projects focused on People-Centric components that have lower perceived bankability - Regional Think Tank-
	Limited investments toward untested People-Centric solutions e.g., undeveloped proof of concept/limited track record	Ticket size mismatch resulting in project-investor demand mismatch		
 Delivery capacity and quality	Limited capability to deliver high-quality People-Centric solution that often involves multiple stakeholders	Low disbursement of committed funds due to challenge in aligning investor mandates	Difficulty in defining success metrics and tracking long-term impact of People-Centric Solutions	Government programmes are often underutilised and have varied results, more technical assistance on implementation is key to ensuring "last mile" delivery -NGO in India-

Source: Closed Group Consultations; BCG analysis

To accelerate and ensure effective deployment of People-Centric solutions, actors can take action collaboratively

Not exhaustive

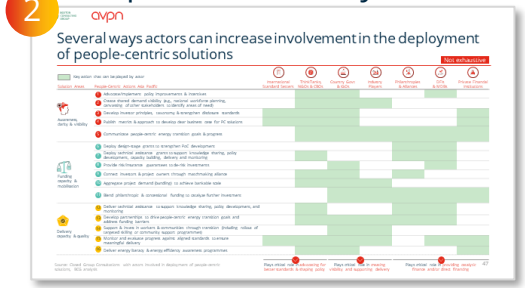


Source: Closed Group Consultations with actors involved in deployment of People-Centric Solutions; BCG analysis

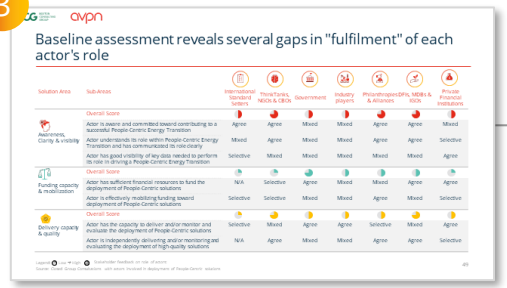
Subsequent pages aim to help actors explore potential way forward to push forward People-Centric agenda

1 Primary role of actor

2 Proposed actions by actor



3 Assessment of role fulfilment



4 Additional actions for actor to expand the impact of its core activities

5 Sample case study describing effort taken by actor to further agenda of People-Centric Energy Transition

Not Exhaustive

Potential way forward: Government[1]

What is their role?

Create visibility of "demand" and support policy development that would provide the necessary incentives to spur action by other private and public actors

What actions can they take?

1. Advocate/Implement policy improvements and incentives
2. Create shared demand visibility (e.g., national workforce planning, canvassing of other stakeholders to identify areas of need)
3. Develop investor principles, taxonomy, and strengthen disclosure standards
4. Publish metrics and approach to develop clear business case for People-Centric solutions
5. Communicate People-Centric Energy Transition goals and progress
8. Provide risk/insurance guarantees to de-risk investments
9. Connect investors and project owners through matchmaking alliance
10. Aggregate project demand (bundling) to achieve bankable scale
11. Blend philanthropic and concessional funding to catalyse further investment
12. Deliver technical assistance to support knowledge sharing, policy development, and monitoring
13. Develop partnerships to drive People-Centric Energy Transition goals and address funding barriers
14. Support and invest in workers and communities through transition (including rollout of targeted skilling or community support programmes)
15. Monitor and evaluate progress against aligned standards to ensure meaningful delivery
16. Deliver energy literacy and energy efficiency awareness programmes

How are they doing today?

Awareness, clarity, and visibility

High levels of awareness, clarity, and visibility, but a greater role can be played in providing visibility to other actors

Funding capacity and mobilisation

Large funding capacity and mobilization – initiatives may be underutilised due to lower awareness and reception of initiatives launched

Delivery capacity and quality

Large delivery capacity, with mixed results on quality aspects often due to the large-scale nature of this actor's efforts

What can they do differently?

- Set up central coordinating agency to promote and facilitate an orderly multi-stakeholder Just Energy Transition
- Work closely with industry players and investor community to co-develop and fund solutions to facilitate orderly transition away from fossil fuel industries
- Set up regional development corridors to promote and facilitate investment into economic diversification activities ahead of impending fossil fuel transition
- Empower sub-national government agencies to facilitate transition at local-level given closer proximity to industry and community stakeholders
- Revise national education curriculums and engage investor and SME networks to promote greater energy literacy and energy efficiency awareness

Legend: Low → High

Case Study

Australian Government set up the Net Zero Economy Agency to promote an orderly and positive economic transformation. In addition, it worked closely with industry players to help co-fund training and education of its workforce to support transition away from fossil-fuel related industries.

1. Includes national and sub-national governments e.g., local councils and agencies

Source: Closed Group Consultations with actors involved in deployment of People-Centric Solutions; BCG analysis

Not Exhaustive

Potential way forward: Industry players

What is their role?

Create visibility of "demand" and drive innovation and market adoption of clean energy technologies while safeguarding stakeholders and license to operate

What actions can they take?

- 2 Create shared demand visibility (e.g., national workforce planning, canvassing of other stakeholders to identify areas of need)
- 5 Communicate People-Centric Energy Transition goals and progress
- 10 Aggregate project demand (bundling) to achieve bankable scale
- 11 Blend philanthropic and concessional funding to catalyse further investment
- 13 Develop partnerships to drive People-Centric Energy Transition goals and address funding barriers
- 14 Support and invest in workers and communities through transition (including rollout of targeted skilling or community support programmes)
- 15 Monitor and evaluate progress against aligned standards to ensure meaningful delivery

How are they doing today?

Awareness, clarity, and visibility

High levels of awareness, clarity, and visibility, but a greater role can be played in providing visibility to other actors

Funding capacity and mobilisation

Large funding capacity, although "locked-in" investment equity within existing fossil fuel assets, and reliance on in-country policy direction and regulation may limit funding mobilised

Delivery capacity and quality

Large delivery capacity – however, may require technical assistance to deliver multi-faceted People-Centric Solutions

What can they do differently?

- Engage with community-based organisations to strengthen identification of "needs" among workers, communities, consumers, and SMEs (supply chain) to ensure a People-Centric Transition for all impacted stakeholders
- Work closely with Government, IGOs, and investor community to co-develop and fund solutions to facilitate orderly transition away from fossil fuel industries
- Participate in high-quality carbon credit offset (or blended finance) programmes developed by DFIs/MDB and philanthropies to pursue early retirement options and unlock equity held in fossil fuel assets

Legend: Low → High

Case Study

BHP made the decision to cease mining operations at Mt. Arthur Coal Mine by 2030; to ensure that this transition away from coal is done in a just manner, BHP engaged extensively with workers and communities following the decision. Clear asset-level transition plans were developed for impacted workers (including suppliers and contractors) with BHP offering counselling, reskilling, and alternative pathway options for those affected.

Source: Closed Group Consultations with actors involved in deployment of People-Centric Solutions; BHP Annual Report (2023); BCG analysis

Not Exhaustive

Potential way forward: International Standard Setters

What is their role?

Develop taxonomies, advocate for improved harmonisation of standards, and propose metrics to ensure consistent approach to deliver People-Centric Solutions

What actions can they take?

3 Develop investor principles, taxonomy and strengthen disclosure standards

4 Publish metrics and approach to develop clear business for People-Centric solutions

15 Monitor and evaluate progress against aligned standards to ensure meaningful delivery

How are they doing today?

Awareness, clarity, and visibility

International Standard Setters have made efforts to develop global, regional or national taxonomies and disclosure standards in APAC. However, there remains room for more uniform adoption across countries, sectors, and firms

Funding capacity and mobilisation

International Standard Setters have had some success in creating awareness around taxonomies and disclosure standards, However, there is limited translation into mobilisation of funding by investor groups, with investors highlighting "lack of data, clear definitions, tools and client mandates" to align investment portfolios with Net Zero ambitions

Delivery capacity and quality

International Standard Setters have limited capacity to monitor adoption rates and ensure compliance by adopters of these standards, especially where regulation has not yet been updated to make disclosures compulsory

What can they do differently?

- Engage Think Tanks, NGOs, and CBOs, Government and Industry to better contextualise standards
- Build industry coalitions to improve acceptance of developed principles and standards
- Offer capacity building activities to strengthen monitoring and evaluation practices by "implementers"

Legend: Low → High

Case Study

PRI and ITUC developed guide for investor action on the just transition, including Just Energy Transition considerations in investment strategy, corporate engagement, and capital allocation.

Source: State of Net-Zero Investment in Asia, AIGCC (2024); Sustainability Disclosures in Asia Pacific, ISS Corporate (2024); Closed Group Consultations with actors involved in deployment of People-Centric Solutions; BCG analysis

Not Exhaustive

Potential way forward: Non-Governmental Organisations, Think Tanks and Community-Based Organisations

What is their role?

Contribute to thought leadership, shape policy, and facilitate collaboration among actors to benefit core stakeholders (workers, communities, consumers, SMEs)

What actions can they take?

1. Advocate/implement policy improvements and incentives
2. Create shared demand visibility (e.g., national workforce planning, canvassing of other stakeholders to identify areas of need)
3. Develop investor principles, taxonomy and strengthen disclosure standards
4. Publish metrics and approach to develop clear business case for People-Centric solutions
5. Communicate People-Centric Energy Transition goals and progress
7. Deploy technical assistance grants to support knowledge sharing, policy development, capacity building, delivery and monitoring
9. Connect investors and project owners through matchmaking alliance
10. Aggregate project demand (bundling) to achieve bankable scale
12. Deliver technical assistance to support knowledge sharing, policy development, and monitoring
13. Develop partnerships to drive People-Centric Energy Transition goals and address funding barriers
15. Monitor and evaluate progress against aligned standards to ensure meaningful delivery
16. Deliver energy literacy and energy efficiency awareness programmes

How are they doing today?

Awareness, clarity, and visibility

High awareness and clarity of role translating to areas of work in technical assistance, policy shaping, and community-based initiatives

Funding capacity and mobilisation

Limited capacity to fund large-scale People-Centric Solutions and may therefore opt for smaller scale solutions within specific communities

Delivery capacity and quality

High delivery capacity and quality, often playing a leading role in developing Proof of Concepts, especially for community-based initiatives

What can they do differently?

- Frame People-Centric topic to resonate with funders and investors by highlighting aspects of risk-returns profile and overall bankability
- Bridge community needs with that of industry and private financial institutions to fund solutions at scale

Legend: Low → High

Case Study

PowerTrust plays a critical role in aggregating community-based solar projects (5 KW- MW)[1] in developing countries through an accountable and transparent way to improve bankability, thereby removing barriers for funders looking to invest in distributed energy solutions.

1. Prioritised project capacity (Not a hard limit to investment decision)

Source: Closed Group Consultations with actors involved in deployment of People-Centric Solutions; PowerTrust Website (2024); BCG analysis

Not Exhaustive

Potential way forward: Philanthropies and Alliances

Primary Role

Provide philanthropic and catalytic capital to identify, develop and champion specific causes, and mobilise further funding and action from other actors

What actions can they take?

- 2 Create shared demand visibility (e.g., national workforce planning, canvassing of other stakeholders to identify areas of need)
- 5 Communicate People-Centric Energy Transition goals and progress
- 6 Deploy design-stage grants to strengthen Proof of Concept development
- 7 Deploy technical assistance grants to support knowledge sharing, policy development, capacity building, delivery and monitoring
- 9 Connect investors and project owners through matchmaking alliance
- 11 Blend philanthropic and concessional funding to catalyse further investment
- 12 Deliver technical assistance to support knowledge sharing, policy development, and monitoring
- 13 Develop partnerships to drive People-Centric Energy Transition goals and address funding barriers

How are they doing today?

Awareness, clarity, and visibility

High levels of awareness and clarity; visibility is constrained to direct causes and communities which they are focused on

Funding capacity and mobilisation

Moderate/Small funding capacity relative to concessional and commercial providers of debt/equity, with niche focus on providing catalytic capital necessary to de-risk or enhance returns to improve viability for large capital providers

Delivery capacity and quality

Moderate/Small capacity and generally unable to deliver large scale programmes on their own. However, through the use of catalytic capital, they are able to mobilise multiple actors to deliver larger-scale solutions

What can they do differently?

- Work closely with governments to identify, develop and champion specific causes to guide philanthropic and concessional funding toward priority impact areas
- Work closely with concessional funders and Private Financial Institutions to offer targeted "bridge-financing" to enable deployment of unbankable solutions
- Act as intermediary between stakeholders (workers, communities, consumers, SMEs) and primary actors (Government and IGOs, DFIs and MDBs, Private Financial Institutions) to pool greater funds for large-scale programme delivery

Legend: Low → High

Source: Closed Group Consultations with actors involved in deployment of People-Centric Solutions; BCG analysis

Case Study

GEAPP, ADB, and MAS have launched a blended finance platform aiming to accelerate a Just Energy Transition in Asia. Under the Financing Asia's Transition Partnership (FAST-P), each partner will contribute distinctly to the platform: GEAPP offers access to coalition partners, contributing philanthropic capital and sharing experience in Energy Transition solution delivery, ADB provides origination, transaction and technical support, while MAS enables policy support (transition guidance and taxonomy building) and mobilising Singapore's financial ecosystem.

Not Exhaustive

Potential way forward: Development Finance Institutions, Multilateral Dev. Banks, and Intergovernmental Organisations

What is their role?

Provide large-scale technical assistance and concessional funding programmes to enable solution deployment; may also play a role in creating visibility of demand through close-engagement with government

What actions can they take?

1. Advocate/Implement policy improvements
5. Communicate People-Centric Energy Transition goals and progress
6. Deploy design-stage grants to strengthen PoC development
7. Deploy technical assistance grants to support knowledge sharing, policy development, capacity building, delivery and monitoring
8. Provide risk/insurance guarantees to de-risk investments
11. Blend philanthropic and concessional funding to catalyse further investment
12. Deliver technical assistance to support knowledge sharing, policy development, and monitoring
13. Develop partnerships to drive People-Centric Energy Transition goals and address funding barriers
14. Support and invest in workers and communities through transition (including rollout of targeted skilling or community support programmes)
15. Monitor and evaluate progress against aligned standards to ensure meaningful delivery

How are they doing today?

Awareness, clarity, and visibility

High levels of awareness and clarity, visibility of key data required to deploy solutions is bolstered by close engagement with government

Funding capacity and mobilisation

Large funding capacity with ability to unlock further investment from private financial institutions given its credibility. However, deploying funding for smaller ticket size projects due to high transaction costs poses a challenge

Delivery capacity and quality

Large capacity and highly capable at delivering high-quality programmes

What can they do differently?

- Blend funding with philanthropies and alliances to enable funding of sub-scale/ early-stage projects that would otherwise be ineligible for funding
- Work with governments to develop innovative funding mechanisms to accelerate People-Centric transition
- Engage with NGOs (incl. think tanks and CBOs) to ensure meaningful stakeholder consultations are conducted as part of large programmes

Legend: Low → High

Source: Closed Group Consultations with actors involved in deployment of People-Centric Solutions; BCG analysis

Case Study

ADB launched the Energy Transition Mechanism (ETM), a multi-partner fund catalysing public and private capital to accelerate the transition away from carbon-intensive coal-based power plants including in Indonesia, the Philippines, and Vietnam. Early success includes the early retirement of 600 MW Coal Plant (Cirebon-1) in Indonesia – ETM has made commendable progress in cutting emissions, and further opportunities to strengthen impact include emphasising consultations with key stakeholders, as identified by local community organisations

Not Exhaustive

Potential way forward: Private Financial Institutions

What is their role?

Adopt investment and disclosure standards to signal investment priorities, and deploy private capital to invest in sectors and projects that advance a People-Centric Energy Transition

What actions can they take?

3 Develop investor principles, taxonomy and strengthen disclosure standards

4 Publish metrics and approach to develop clear business case for People-Centric solutions

5 Communicate People-Centric Energy Transition goals and progress

11 Blend philanthropic and concessional funding to catalyse further investment

15 Monitor progress against aligned standards to ensure meaningful delivery

16 Deliver energy literacy and energy efficiency awareness programmes

How are they doing today?

Awareness, clarity, and visibility

Moderate levels of awareness on the importance of the topic, with some investors taking multiple measures to strengthen internal governance; clarity of role is limited often due to lack of visibility of pipeline and reliance on government and industry players signal for investment

Funding capacity and mobilisation

Large funding capacity and critical to financing a People-Centric transition. However, mobilisation of funding toward People-Centric Energy Transition remains limited due to visibility and clarity reasons

Delivery capacity and quality

Moderate capacity and ability to deliver monitoring and evaluation support for People-Centric initiatives. However, this capacity is not directed toward this objective yet, as many PFIs continue to deliver impact through CSR / foundation arms instead of through core business operations

What can they do differently?

- Engage international standard setters and government regulating agencies to champion the development of clearer taxonomies and disclosure standards
- Work with philanthropies and alliances, DFIs, MDBs, and IGOs to co-fund the deployment of people-centric solutions
- Collaborate with NGOs, Think Tanks and CBOs to deliver energy literacy and energy efficiency awareness programmes to increase uptake of green-financing options

Legend: Low → High

Case Study

Climate Action 100+ delivered by 5 investor networks working with ~700 global investors has established a common high-level agenda for company engagements to achieve clear commitments to cut emissions, improve governance, and strengthen both climate-related financial disclosures and transition plans. The alliance included 'Just Transition' indicators into their Net Zero Company Benchmarks in 2022.

Source: Closed Group Consultations with actors involved in deployment of People-Centric Solutions; BCG analysis

Recap: Macro challenges across APAC observed at varying "degrees" implies need for differentiated approach

Macro challenges related to Energy Transition	Selected quotes from interviews	Archetypes: Emerging, Energy intensive	Emerging, Energy Scarce	Developed, Energy Intensive	Developed, Energy Efficient
Ambiguity in translation of government policies on fossil fuels into action and pace of transition resulting in delayed changes toward capital allocation by investors	"There will be a natural lag in focus on "worker transitions" for economies that have not yet begun to actively phase out coal – important to have country-specific focus as some regions would have invested equity that is locked into these assets[1] - Regional Commercial Bank-				
Limited alignment on green taxonomy and data availability across the region	"A significant barrier to building a successful ecosystem of actors and actions is the limited alignment on what constitutes "green" and where demand is in (industries and communities) - SEA Leading Stock Exchange-				
Limited capability to support Energy Transition agenda within the region	"While securing committed funding is critical, the underlying people element cannot be overlooked. Capabilities of local actors in governments and industry are essential to enable the transition - Vietnam JET-P implementation team-				
Low societal pressure for transition toward green energy and products, as access and affordability remain top of mind	"There is a diverging focus of priorities across Asia Pacific; on one hand, there are countries concerned about "greening" their supply, while on the other, many are struggling with basic access and affordability issues - International EPC Player-				

Key Takeaway

Differentiated approach given varying starting points on key enablers including regulatory environment, availability of aligned taxonomy and data, local capability, and societal urgency

1. Renewable projects on average funded through ~30% of Equity , and ~70% Debt, and one-fourth the deal-size of coal-fired projects

Source: Infralogic 2024 – assessment of 98 projects with financial close between 2019-2023; Closed Group Consultations; BCG analysis

Potential considerations for primary actors looking to mobilise support and funding to APAC

Relative ease of funding and delivering solution in this area: High Moderate Opportunistic

Key Considerations

Archetype	Emerging, Energy Scarce (e.g., Sri Lanka, Bangladesh, Philippines)	Emerging, Energy Intensive (e.g., Malaysia, Indonesia, Vietnam)	Developed, Energy Intensive (e.g., Singapore)	Developed, Energy Efficient (e.g., Australia, New Zealand, Japan)
Archetype description	Government stance on fossil fuels and pace of transition unclear with relatively low societal urgency for transition due to access and affordability concerns	Govt has clear roadmap to phase out fossil fuel usage, pace of transition may be unclear as fossil fuel assets are considered strategic/critical to economy; low-moderate societal urgency for an accelerated transition	Govt has clear roadmap and is actively phasing out fossil fuel usage; moderate-high societal urgency for accelerated transition	
Availability of opportunity for stakeholder engagement	Workers, Consumers, Communities, SMEs	Workers, Consumers, Communities, SMEs	Workers, Consumers, Communities, SMEs	Workers, Consumers, Communities, SMEs
Prioritised impact-level	Asset Level, Community Level, Regional, National	Asset Level, Community Level, Regional, National	Asset Level, Community Level, Regional, National	Asset Level, Community Level, Regional, National
Types of funding	Philanthropic, Concessional, Blended, Commercial	Philanthropic, Concessional, Blended, Commercial	Philanthropic, Concessional, Blended, Commercial	Philanthropic, Concessional, Blended, Commercial
Funding pools				
Rationale	An opportunistic approach – targeting small and quick wins may allow for quicker and more impactful deployment of solutions	A programmatic approach – aligned with government focus areas may allow for quicker and more impactful deployment of solutions	A systemic transformation approach – is possible where strong commitments toward an accelerated People-Centric Transition are present	

Note: All People-Centric Solutions should be place-based and contextualised to local needs; this page serves only as a guide to the type of opportunities that may be more prominent within each archetype

Legend: Industry Players; Government; NGOs (including Think Tanks and CBOs); Philanthropies and Alliances; DFIs, MDBs, and IGOs; Private Financial Institutions

Note: Limited examples of international standard setters playing a direct funding role identified and therefore not evaluated
Source: BCG analysis

The path ahead: Launching a Collective Action Platform to drive the People-Centric agenda in Asia Pacific

Section 4

“ In COP21[...] it was mainly the public sector and NGOs.

Fast forward to COP26 — we have a different picture. [...] The trend that we are seeing now is to have foundations, to have development finance institutions, to have a private sector working together and each of them trying to use what they are bringing to the table to increase overall impact.

This is what I see: a world which is more sustainable, where we use all instruments that we have to de-risk investment and bring more investment in the poorest countries, in the more fragile countries.

- Makhtar Diop, Managing Director and Executive VP of IFC,
World Economic Forum AM23 Preview 2023

In summary, 3 key 'needs' identified from this study of People-Centric Energy Transition in APAC

Key takeaway

Action in Asia Pacific is behind where it needs to be; more People-Centric platforms are needed to bring attention to the People-Centric agenda

This effort needs to adequately address three key solution areas on Awareness, Funding, and Delivery

Mobilising a multi-actor approach is critical as it allows for the whole to be greater than sum of its parts

Implication for a Collective Action Platform

Legend: International standard setters; NGOs (incl. Think Tanks and CBOs); Govt and IGOs; Industry players; Philanthropies and Alliances; DFIs and MDBs; Private Financial Institutions

Source: BCG analysis

ASCENT to be launched as platform to address gaps and accelerate action on People-Centric Energy Transition

ASCENT : A dedicated platform enabling multi-actor action for a People-Centric Energy Transition in Asia Pacific

Proposed "Starting Point" of ASCENT

Improve Awareness, Clarity and Visibility

- **Conduct convening activities and contribute thought leadership** on the topic of People-Centric Energy Transition
- **Establish solutions repository** for People-Centric solutions, providing insight into best case practice, key metrics for success and potential partners to be engaged

Raise and Mobilise Funding

- **Provide deal sourcing, listing and matchmaking service** focused on mobilising investment into small-scale projects that would otherwise not receive funding
- **Establish People-Centric Energy Transition catalytic fund** to mobilise capital toward small-scale/early-stage solutions

Strengthen Delivery Capacity and Quality

- **Offer targeted capacity building support to selected flagship People-Centric initiatives** e.g., to strengthen business case development, pitch training, and/or safeguard execution certainty

Moving forward, Cathay Financial Holdings to be an inaugural sponsor of ASCENT

ASCENT Theory of Change

Preliminary

Mission

To build dedicated platform enabling **multi-actor action** for a People-Centric Energy Transition in Asia Pacific

	Interventions	Activities	Target Outcomes
Improve Awareness, Clarity and Visibility	Conduct convening activities and contribute thought-leadership on the topic of People-Centric Energy Transition	• Host People-Centric case competition • Launch entrepreneurial idea fund for JET	Expanded adoption of People-Centric rating framework and evaluative components in green transition
	Design and establish solutions repository for People-Centric solutions, providing impact measurement metrics, benchmarks, and KSF	• Launch People-Centric rating framework for green projects in APAC	
Raise and Mobilise Funding	Provide deal sourcing, listing and matchmaking service focused on mobilising investment into People-Centric projects	• Expand funding in capacity building and technical assistance for small-scale and/or SME-led projects (e.g., where return-risk profile mismatch is observed	Increased funding to entrepreneurial/small-scale projects for Just Energy Transition
	Establish People-Centric Energy Transition catalytic fund to mobilise capital toward small-scale/early-stage solutions		
Strengthen Delivery Capacity and Quality	Offer targeted capacity building to supported flagship People-Centric initiatives e.g., to strengthen business case development, pitch training, and/or safeguard execution certainty	• Launch industry leader and investor enablement programme with shared vocabulary and roadmap	Increased participation of key stakeholders to People-Centric initiatives

Interested to find out more?

Please contact:

Marc Schmidt
Managing Director & Partner
Climate & Sustainability
Schmidt.Marc@bcg.com

Varad Pande
Partner & Director
Sustainable Finance & Investment
Pande.Varad@bcg.com

BOSTON CONSULTING GROUP

Aravindan Srinivasan
Executive Director, Climate Action
Aravindan.Srinivasan@avpn.asia

Patrick Yeung
Associate Director, Climate Action
Patrick.Yeung@avpn.asia

avpn

Glossary

Non-exhaustive

- **People-Centric Energy Transition (PC-ET)** – Ensuring the costs and benefits arising from the implementation of the climate transition are distributed fairly across stakeholders; for the purpose of this publication, this term is used interchangeably with Just/Equitable Energy Transition
- **Stakeholders –** The four key groups identified in the WEF publication on Just Energy Transition (Workers, Communities, Consumers, SMEs)
- **Actors –** The seven critical entities facilitating a successful PC-ET, including Industry Players, Government, International Standard Setters, NGOs (incl. Think Tanks and Community-Based Organisations), Philanthropies & Alliances, Development Finance Institutes (DFIs) and Multilateral Development Banks (MDBs), and Private Financial Institutions
- **People-Centric Solutions –** Energy Transition and stakeholder solutions that prioritise fair distribution of costs and benefits arising from the Energy Transition
- **People-Centric Actions –** Activities undertaken by actors to promote a People-Centric Energy Transition
- **Risks –** Risks that are faced by People groups due to the Energy Transition
- **ASCENT –** Asia's Clean Energy Transition Initiative

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info@avpn.asia

avpn.asia

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