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The People-centric Energy Transition in Asia Pacific: A Framework for Inclusive & Measurable Solutions

OCTOBER 2025

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About this Publication

- Asia-Pacific (APAC) accounts for more than half of global energy-related CO_2 emissions, making the region the decisive factor in the world's energy transition. While promising strides have been seen, actual funding that goes to people-centric levers remain low at less than 1% – the very factor that determines whether transitions succeed socially and politically.
- This is the second publication in the BCG–AVPN series on People-Centric Energy Transition. Building on insights from our first report, this edition addresses the funding gap by highlighting current strategies for a Just Energy Transition across Asia Pacific, examining the challenges, and providing a foundational framework to guide discourse and action.
- Drawing on insights from 30+ stakeholders, including governments, business leaders, financiers, and Non-Governmental Organizations (NGOs), this report sets out how projects can become more people-centric, how to measure success, and what "good" looks like. This report also introduces ASCENT, a new platform dedicated to People-Centric solutions, with Cathay Financial Holdings as the inaugural sponsor.

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This report aims to help primary actors in facilitating a Just Energy Transition through unlocking various benefits

Primary actors	Potential benefits unlocked with this report
Governments / International Standard Setters	Leverage guidelines and principles as a baseline to design national regulations, build people-centric taxonomies, attract blended finance, and drive stakeholder alignment, to help to gain social and political acceptance of energy transition
Investors / Funders *e.g., DFIs[1], MDBs[2], IGOs[3], Philanthropies and Alliances, private financial institutions*	Understand proven and replicable people-centric models to de-risk capital allocation and identify scalable opportunities, strengthening confidence that investments will generate both sustainable returns and social outcomes
Energy-intensive industry players *e.g., mining, utilities, manufacturing*	Adopt guiding principles and practical metrics to embed social inclusivity into transition strategies, so that workforce reskilling, community support, and fair access are built into decarbonization plans in alignment with sustainability expectations
NGOs incl. Think Tanks and Community Based Organizations	Apply principles to strengthen accountability in transition projects along with proven metrics drawn from case studies and benchmarks, pushing people-centric policies and helping intended people impact is achieved

1. DFI: Development Finance Institution 2. MDB: Multilateral Development Bank 3. IGO: Multilateral Development Bank

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  - **Korbinian Stinglhamer**, Project Leader, BCG
  - **Aravindan Srinivasan**, Executive Director of Climate Action Platform, AVPN
  - **Patrick Yeung**, Director of Climate Action, AVPN
  - **Shweta Eidnani**, Senior Associate, AVPN
  - **Saransh Maheshwari**, Senior Associate, AVPN
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  The extended BCG team: Nigel Lee, Damien Erasmus, Chong Sheng Yang
  The extended AVPN team: Naina Subberwal Batra, Komal Sahu, Global Energy Alliance for People and Planet (GEAPP), New Energy Nexus
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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.

Over the past year, momentum has grown significantly. The topic of a just and people-centric transition is now firmly on the agenda, with many organizations moving from awareness to action. Yet, despite this growing focus and investment in green energy, "People" – especially marginalised groups, workers in sunset fossil fuel or related industries and their communities, and vulnerable consumers – are still often overlooked. This must change and the People must be front and centre of the transition process.

This publication, developed in partnership with AVPN, is intended as both a framework and a call to action. It explores the current state of the Just Energy Transition, providing guiding principles to embed people-centricity, and introduces a new platform "ASCENT" for collective action in Asia Pacific. Our hope is that it serves as a springboard to accelerate action and collaboration, so that the transition is both inclusive and sustainable.

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Foreword by AVPN

The global energy transition is not just a technological or economic challenge—it is a deeply human one. To truly succeed, the shift to a sustainable energy future must be inclusive, equitable, and people-centric. This means ensuring that communities are resilient, workers are supported through transitions, and energy access and affordability are prioritized. Yet, financing such initiatives remains fragmented, with philanthropic, concessional, and private funders often struggling to identify scalable, high-impact opportunities that align with their goals.

This report marks a critical step toward bridging that gap. Over the past year, we have worked to build the foundational ecosystem needed to support people-centric energy transition projects. Our efforts have focused on three key pillars:

- Shaping the Narrative – Elevating the discourse around a just and inclusive energy transition to ensure that no communities are left behind.
- Curating Solutions – Collating case studies from our networks, highlighting key impact areas, financing mechanisms, and stakeholder collaborations.
- Designing Impact Frameworks – Developing an early-stage impact measurement framework, refined and validated through stakeholder convenings.

This report is both a reflection of progress and a call to action, in order to foster deeper collaboration and investment in people-centric energy solutions. The journey ahead requires bold ideas, blended finance models, and an unwavering commitment to equity. We invite philanthropic funders, concessional capital providers, and private investors to join us in shaping an energy future that works for all.

Naina Subberwal Batra
Chief Executive Officer,
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Aravindan Srinivasan
Executive Director,
Climate Action, AVPN

Patrick Yeung
Director,
Climate Action, AVPN

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Executive summary

Why this matters now: The urgency of embedding people at the heart of APAC's energy transition

Climate change is an existential threat that demands urgent and transformative action. **Current data suggests that current global funding, including in APAC, inadequately prioritise 'People' in the transition process** with only <1% channelled toward People-Centric levers. **4 key People stakeholders are put at the core** for a Just Transition, specifically focusing on Workers, Communities, Consumers, and SMEs, which shape the guidelines and principles in a people-centric approach.

What good looks like: Four guiding principles for inclusive, accessible transitions

To guide **more people-centric** energy transition projects, **four key principles** have been identified: **Tangible Impact, Engagement & Empowerment, Inclusivity & Fairness, and Transparency & Accountability**. This framework outlines targeted opportunities for improvement across **all project phases –** from inclusive policies and baseline studies in **Design**, to visible community benefits and participatory processes during **Implementation**, and transparent, public evaluations in **Delivery & Evaluation**.

How to measure success: Clear metrics to prove impact and guide better decisions

Each key People stakeholder group comes with **unique risks which require tailored solutions and specific impact metrics**. A structured impact measurement process should start by **selecting relevant groups and solutions and identifying the applicable impact areas and metrics** (outputs and outcomes). The approach calls for **continuous updates and active research** to keep metrics relevant and credible, maximizing stakeholder trust and sustaining investment momentum.

From ideas to action: Replicable solutions to inspire and mobilize change

A comprehensive solutions repository, organized by **beneficiary** and **solution type**, has been developed based on **primary and secondary research**. **People-centric energy transition solutions** have been mapped across four themes – **Beneficiaries, Actors, Region, and Solution Type** – for the upcoming **AVPN ASCENT Solutions Repository**. This will help users **identify relevant examples** of people-centric energy transition projects, enabling **replication, collaboration, and scale-up of best practices**.

Table of contents

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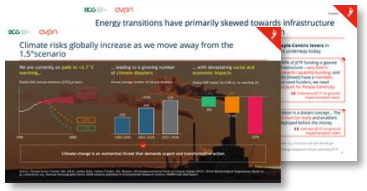
From urgency to action: Embedding people at the heart of APAC's energy transition

Why This Matters Now

The urgency of embedding people at the heart of APAC's energy transition

Energy transitions succeed only when they work for people as well as the planet – prioritizing inclusivity, sustainability, and lasting impact



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Four guiding principles for inclusive, accessible transitions

Four guiding principles define what "people-centric" looks like – and how projects can achieve meaningful, inclusive outcomes

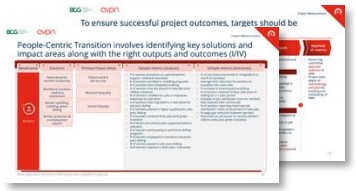
For **project owners** to refer as a guideline to improve energy transition projects around people-centric principles

How to Measure Success

Clear metrics to prove impact and guide better decisions

A clear, shared set of impact metrics brings accountability, reduces ambiguity, and shows what success really looks like

For **funders and project owners** to jointly agree on impacts for each project undertaken



From Ideas to Action

Replicable solutions to inspire and mobilize change

Proven, replicable solutions can inspire action, attract funding, and accelerate Asia's energy transition

For **project owners, funders, and general public** to refer as potential replicable initiatives

Why this matters now: The urgency of embedding people at the heart of APAC's energy transition

Section 1

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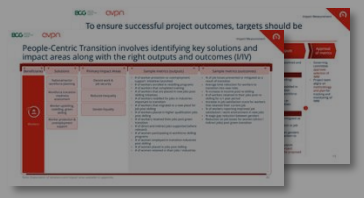

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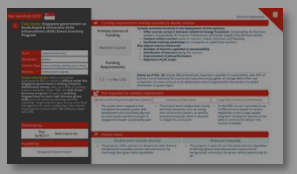
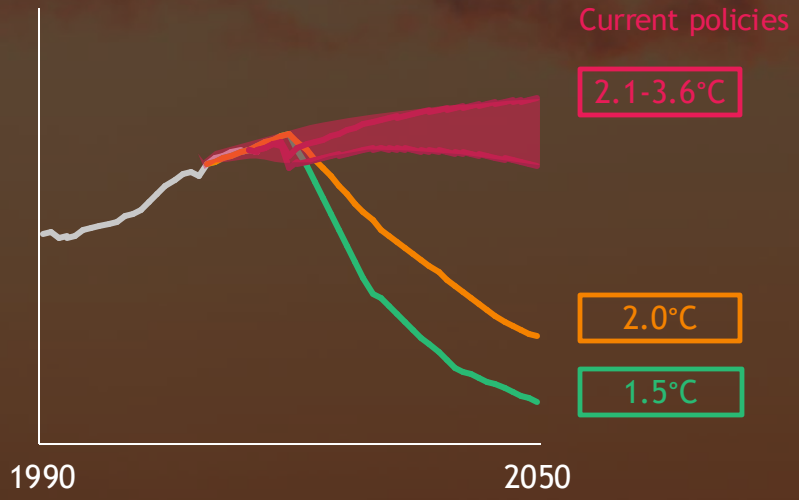


Climate risks globally increase as we move away from the 1.5°C scenario

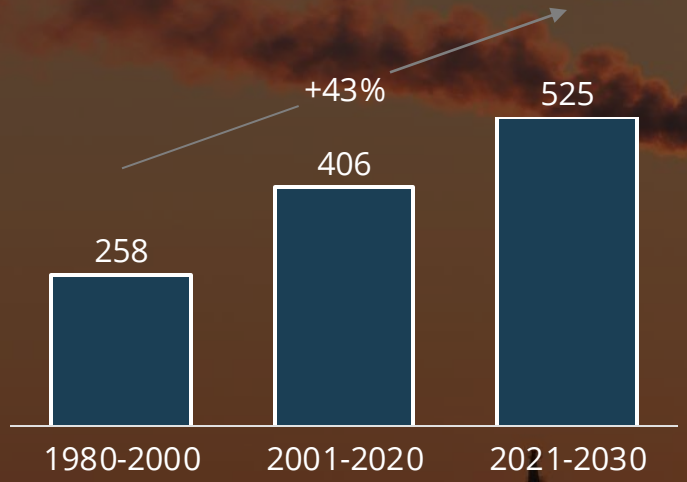
We are currently on **path to +2.7°C warming**...

Global GHG annual emissions ($GTCO_2e$/year)



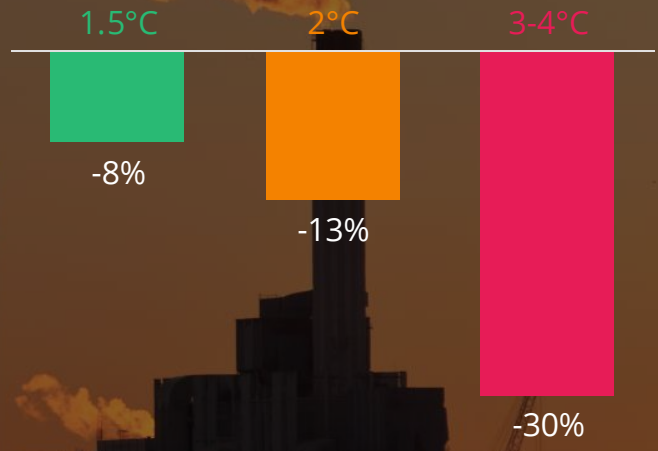
... leading to a growing number of **climate disasters**

Annual average number of natural disasters



... with significant **social and economic impacts**

Global GDP impact by 2100 vs. no warming (%)



Source: Climate Action Tracker (Dec 2023), Carbon Brief, Carbon Tracker, IEA, Reuters, UN Intergovernmental Panel on Climate Change (IPCC); World Meteorological Organization; Burke et al; carbonbrief.org, National Oceanography Centre (2018 research published in Environmental Research Letters); UNDRR GAR 2022 Report

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

52%
APAC share of 2023 global energy related CO_2 emissions

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

-41%
GDP loss by 2100 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]

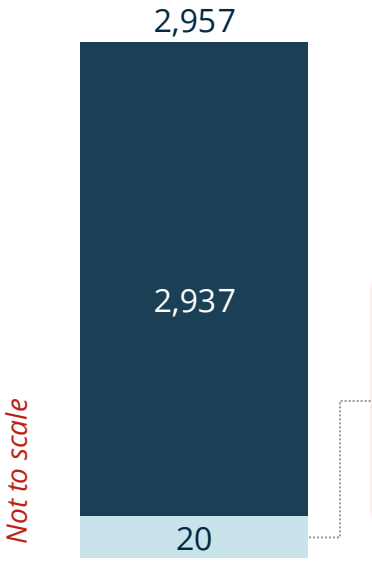
While many countries will struggle with the need to "re-skill" their existing workforce, APAC has the opportunity to proactively skill its young population (over 2B below the age of 30) to become the future workforce for green energy solutions

1. Youth defined as those aged below 30
Source: UNESCAP: 2024 Review of climate ambition in Asia and the Pacific : from ambitions to results sectoral solutions and integrated action; ADB: SAP; Youth Employment Support in Asia and the Pacific; BCG analysis

However, climate funding has primarily skewed towards infrastructure and technology, overlooking the people dimension

Global spending in People agenda remains **insufficient**

Total Global Government Energy Spending ($B USD, as of 2024)



<1%

According to IEA, less than 1% spent on People-Centric 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 2024; 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 Mobilization Plan; BCG analysis

A people-centric approach puts 4 key stakeholders at the core, prioritizing inclusivity, and long-term success

Main Objective of Just Energy Transition

Focused on the **fair distribution** of **costs and benefits** arising from the implementation of the climate transition across stakeholders

	1 Workers	2 Communities	3 Consumers	4 SMEs
Stakeholder Definition	Fossil fuel industry and value chain workers; new renewable and green energy workers	Fossil fuel dependent or marginalized communities	End users requiring accessibility, affordability, and security of energy	Small and medium enterprises (SMEs) that need to maintain commercial competitiveness
What are the risks if they are deprioritized	Decommissioning fossil fuel infrastructure may render workers across the value chain obsolete Risk surging unemployment, skills mismatches, displacement, where green jobs are not always created in the same regions where fossil jobs are lost	Communities may face significant shocks when fossil fuel industries decline without clear transition plans Loss of livelihoods, growing inequality, and social unrest where changes are perceived as top-down would slow down transition momentum	Policies such as fossil fuel subsidy removals may lead to higher upfront costs that fall unevenly across households Lower-income consumers are disproportionately affected; deepening inequality and reducing public support for energy transition	SMEs often operate on thin margins and face disproportionate compliance costs e.g., upgrade processes to green standards Risk eroding SMEs competitiveness, losing market access, and lagging in transition progress while larger players move ahead

Source: World Economic Forum (WEF); BCG analysis

What good looks like: Four guiding principles for inclusive, accessible transitions

Section 2

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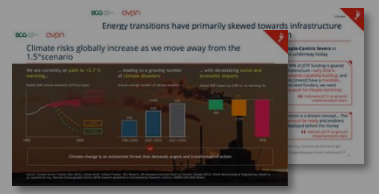

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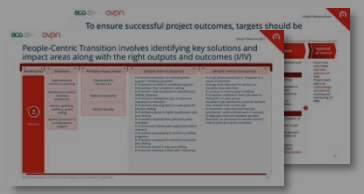

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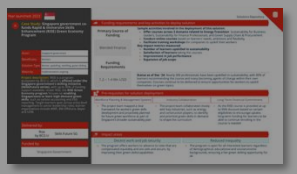

Principles will guide project owners, supporting the incorporation of people-centric elements to the highest standards

What are principles & guidelines?

A set of principles and guidelines ensures that energy transition projects are designed and implemented with a focus on people-centricity, emphasizing inclusivity and meaningful outcomes

Why are they being developed?

To serve as guidance for projects: Helping improve people-centric solutions and initiatives, leading to meaningful and inclusive results

To formulate recommendations through a people-centric lens: Validating projects and solutions against established principles to promote alignment

To provide best practices for all project stages: Offering project owners practical examples and references for implementing people-centric approaches effectively

How will they be used?

By project owners: To assess their projects and solutions, to confirm alignment with people-centric principles. The guidelines will also serve as a reference for implementing these principles at various project stages

By funders: To develop clear recommendations for aligning projects and solutions more effectively with people-centric principles

Four key principles identified to align energy transition projects with 'people-centricity'

Principles	Description
Tangible Impact	**Seek to deliver meaningful improvements for at least one stakeholder group** by designing and implementing actions that generate tangible benefits, such as job creation, reduced energy costs, and improved health outcomes
Engagement & Empowerment	**Empower stakeholder groups to actively shape and influence** the energy transition through inclusive processes that integrate diverse perspectives, so that critical decisions are collaboratively shaped
Inclusivity & Fairness	**Distribute the benefits and costs of the energy transition fairly**, such that stakeholder groups are not negatively impacted by the project overall
Transparency & Accountability	**Commit to detailed documentation and reporting on objectives, accountabilities, processes, and progress** during all stages from project selection to execution

Assessing projects against these principles, can help to identify gaps and areas for improvement

Principles	Does not fulfill principle for a people-centric solution[1]	Partially fulfills principle for a people-centric solution[2]	Fulfills principle fully for a people-centric solution[3]
Tangible Impact To what extent does the project deliver tangible benefits, such as job creation or reduced energy costs for affected stakeholders?	The project does not provide discernible benefits to any stakeholder group	The project provides some benefits to at least 1 stakeholder group	The project provides significant impacts and benefits to at least 1 stakeholder group
Engagement & Empowerment How inclusive is the decision -making process in engaging representatives of affected stakeholder groups?	The project does not include impacted stakeholders in decision-making processes	Stakeholders involved, but their influence on decisions is limited	The project demonstrates a fully inclusive process where stakeholders significantly shape the outcomes
Inclusivity & Fairness How well does the project support fair and inclusive distribution of benefits and costs to stakeholders?	The project causes stakeholder groups or part of a group to bear disproportionate costs	Key stakeholders are not worse off in the long term but may experience some costs in the short/medium term	Key stakeholder groups are better off in the long-term and do not experience major costs in the short/medium term
Transparency & Accountability To what extent does the project maintain clarity and accountability through clear, measurable goals and regular progress tracking?	The project does not have any clear goals, accountability, or progress tracking mechanisms	The project has goals that are somewhat measurable, and has some progress tracking for select measures	The project sets measurable goals, demonstrates accountability with point persons in charge for each distinct workstream, and provides transparent and detailed progress tracking that is readily accessible

1. Might be due to missing intention to become people centric; 2. Might be due to intention being fulfilled but execution support is missing; 3. Intention and execution support are fulfilled

Example 1 | Fulfilment of principles suggest a stronger focus on transparency such as centralized progress tracking

Case study: Empowering consumers by providing electricity access in a Southeast Asian country

Electric cooperatives in the Country have enabled over 90% electricity access by leveraging rural electric cooperative systems, renewable energy integration, and government support, focusing on affordability, accessibility, and sustainability for rural areas

Fulfillment of people-centric principles

Red: No fulfillment of the principle
Amber: Partial fulfillment of the principle
Green: Fulfills principle fully

Principles	Fulfillment of principles	Rationale
Tangible Impact		Measurable increase in electrification to rural areas which include consumers, communities and SMEs. Diverse long term job opportunities created nationwide directly and indirectly; however, three quarters of electricity generation still reliant on fossil fuels
Engagement & Empowerment		N/A (information not available)
Inclusivity & Fairness		Multiple stakeholder groups were benefited, without having any stakeholder groups bear the burden of the process
Transparency & Accountability		Information scattered across sources with no one source of truth that is consistently updated on newest progress and data; however, sufficient monitoring is done to provide estimate of electrification nationwide

Suggestions

This solution produces **significant impact nationwide** and **increases inclusivity** in electricity access

Further areas to improve include **increasing transparency**, such as on participation measures and centralized progress tracking

Note: Based on outside-in view

Example 2 | Fulfilment of principles suggest excellent fulfilment across all dimensions

Case study: Economic diversification for communities in an Asian country

The Country's Just Transition plan includes long-term economic diversification, reskilling pathways, and stakeholder engagement, supported by over USD $350M in funding to ensure sustainable livelihoods and community buy-in as coal mining phases out

Fulfillment of people-centric principles

Red: No fulfillment of the principle
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Green: Fulfills principle fully

Principles	Fulfillment of principles	Rationale
Tangible Impact		Workers affected by mine closure were offered opportunities to reskill; communities were also supported through diversifying verticals e.g. in tourism and technology
Engagement & Empowerment		Stakeholder engagements were orchestrated directly by the state-owned government to shape the transition process
Inclusivity & Fairness		Multiple stakeholder groups were benefited, without having any stakeholder groups bear the burden of the process
Transparency & Accountability		The Country published a clear Just Transition Plan, and tracked the progress of initiatives and impact across the project

Suggestions

This solution demonstrates **excellent fulfilment of principles** across the board, resulting in a comprehensive people-centric solution in transitioning away from coal mining

Note: Based on outside-in view

Best practices provide a guide for embedding principles across all project phases

Principles	Design	Implementation	Evaluation
Tangible Impact	Identification of specific, measurable benefits for stakeholder groups through baseline studies	Delivery of visible, immediate benefits e.g., job creation, energy access to achieve quick wins while executing for medium- and long-term solutions	Comparison of outcomes against baseline data to assess whether meaningful impact was achieved
Engagement & Empowerment	Identification of representatives for each affected stakeholder group and development of inclusive decision-making process	Facilitation of inclusive decision-making structures to promote participatory decision making and ongoing stakeholder input	Engagement of affected stakeholders on the extent, inclusivity and effectiveness of their involvement
Inclusivity & Fairness	Establishment of policies and guidelines to support fair distribution of benefits and costs	Tracking and adjustment to confirm no stakeholder groups bear brunt of project, and prevent inequities in how resources and benefits are allocated	Honest evaluation of the fairness of outcomes, and engagement of all affected stakeholder groups in this process
Transparency & Accountability	Communication of goals, processes, and roles to build trust and accountability from the start, e.g., make project information easily accessible and have a clear reporting structure	Sharing of regular, comprehensive updates and prioritize stakeholders to have access to information and open lines of communication	Sharing of all results openly, including lessons learned, and facilitation of public discussions on findings

How to measure success: Clear metrics to prove impact and guide better decisions

Section 3

From urgency to action: Embedding people at the heart of APAC's energy transition

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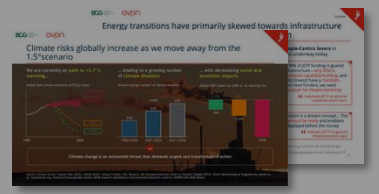

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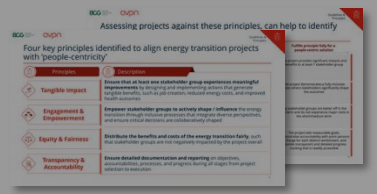

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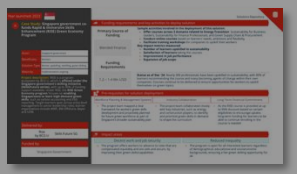


Impact metrics verify whether people-centric projects are delivering the targeted impact

What are the impact metrics?

A set of **transparent, quantifiable outcomes and outputs** tied to key impact areas for various stakeholders. These metrics are designed to **measure the effectiveness** of people-centric energy transition projects throughout their lifecycle.

Why are they being developed?

- **To ensure accountability and transparency:** Supporting the achievement of people-centric goals
- **To provide measurable evidence of progress:** Enabling data-driven, informed decision-making for stakeholders
- **To track and demonstrate tangible impact:** Showcasing the outcomes of energy transition solutions across diverse communities
- **To support better planning, replication, and investment:** Clearly articulating areas of success and outcomes to guide confident investment and replication of solutions that align with user priorities

How will they be used?

Before project start: Metrics will be jointly defined by the ASCENT committee and project owners before the project begins

During project implementation: Monitoring progress throughout the project lifecycle until completion and confirming that findings are published

Impact metrics were developed by integrating voices on the ground

Identified transition risks & opportunities

People stakeholders were engaged to understand how the transition may trigger risks, while also identifying potential economic opportunities

Developed a diverse pool of impact metrics

A repository of impact metrics across quantitative and qualitative dimensions, drawing from benchmarks and case studies

Enhanced metrics with frontline expertise

2 workshops conducted with 20+ industry experts to assess relevance of metrics to balance analytical rigor and practicality

People-Centric Transition involves identifying key solutions and impact areas along with the right outputs and outcomes (I/IV)

Beneficiaries	Solutions	Primary Impact Areas	Sample metrics (outputs)	Sample metrics (outcomes)
Workers	National/sector workforce planning	Decent work & job security	• # of worker protection or unemployment support initiatives launched • # of workers enrolled in reskilling programs • # of workers that completed training • # of workers that are placed in new jobs post skilling initiatives • # of workers reskilled for jobs in industries important to transition • # of workers that migrated to a new place for job post skilling • # of workers placed in higher qualification jobs post skilling • # of workers retained their jobs post green transition • # of direct and indirect jobs supported (where relevant) • # of women participating in workforce skilling programs • # of women employed in transition industries post skilling • # of women placed in jobs post skilling • # of women retained in their jobs / industries	• % of job losses prevented or mitigated as a result of transition • Average time reduction for workers to transition into new roles • % increase in income post re-skilling • # of workers retained in their jobs post re-skilling for a 1 year period • Increase in job satisfaction score for workers that retained their current job • % of workers reporting improved job satisfaction / work environment in new jobs • % wage gap reduction between genders • Reduction on job losses for women (direct / indirect jobs) post green transition
	Workforce transition readiness assessment	Reduced Inequality		
	Worker upskilling, reskilling, green skilling	Gender Equality		
	Worker protection & unemployment support			

Note: Elaboration of solutions and impact area available in appendix

People-Centric Transition involves identifying key solutions and impact areas along with the right outputs and outcomes (II/IV)

Beneficiaries	Solutions	Primary Impact Areas	Sample metrics (outputs)	Sample metrics (outcomes)
Communities	Community needs assessment	Economic diversification	• # of community needs assessments conducted • # of economic activities introduced / jobs created to impacted communities • # of new partnerships with industry for jobs/internships • # of community members that required to be re-trained to maintain employability • # of social dialogue and stakeholder engagements conducted • # of communities / individuals reached • # of community members trained in system installation, maintenance and administration • # of renewable energy systems installed (eg. rooftop, ground-mounted) • # of communities / individuals with access to inclusive finance • # $ of loans vs $ of other forms of finance • # of vulnerable groups (women) reached and benefitting from RE initiatives • # of women in leadership / entrepreneurial roles within local energy initiatives • # of women with access to inclusive finance	• $ value of new economic activities introduced within communities • % reduction in income inequality within communities • % of displaced community members successfully resettled with access to livelihoods • % change in internships / work placements facilitated in green energy sectors • # % of target communities gaining first time access to RE solutions • % of families that reported better access to clean energy sources • % of families that reported economic savings due to clean energy sources • % of RE solutions maintained and operational after 1 year period • % of projects with ongoing community engagement beyond initial installation period • $ of investment mobilized for rural development / energy transition (grants, loans, etc) • % increase in awareness and accessibility of community individuals towards financing • % of households with women contributing to energy related income generations • % of women reporting improved technical capabilities related to energy technologies
	Community transition & awareness	Community awareness		
	Economic diversification	Accessibility to inclusive finance		
	Inclusive finance & livelihood enablement	Social inclusion and fairness		

Note: Elaboration of solutions and impact area available in appendix

People-Centric Transition involves identifying key solutions and impact areas along with the right outputs and outcomes (III/IV)

Beneficiaries	Solutions	Primary Impact Areas	Sample metrics (outputs)	Sample metrics (outcomes)
Consumers	Consumer needs assessment	Affordability	• # of consumer protection programs launched • # of regulatory compliance measures implemented for consumer protection • # of RE adoption incentives provided • # of consumer awareness campaigns on subsidies and incentives launched • # of households receiving subsidies / financial incentives for installation • # of RE grid / equipment installed • # of hours with renewable energy • Kwh of RE powered electricity used • # of systems installed with battery storage / grid connection to ensure stability • # of systems meeting performance standards post installation period	• % reduction in household energy costs • % of households reporting improved affordability of clean energy solutions • % of households willing to make further investment in renewable systems after initial installation • % population with new access to renewable energy • % of consumers reporting improved access to renewable energy • % increase in green renewable usage • % of households reporting consistent RE supply
	Affordable RE[1]	Accessibility		
	Consumer protection & RE adoption incentives	Quality and Reliability		

1. Renewable energy; Note: Elaboration of solutions and impact area available in appendix

People-Centric Transition involves identifying key solutions and impact areas along with the right outputs and outcomes (IV/IV)

Beneficiaries	Solutions	Primary Impact Areas	Sample metrics (outputs)	Sample metrics (outcomes)
SMEs	Investor & SME landscape mapping	Access to capacity building support	• # of SMEs supported with capacity building in renewable energy implementation • # of SMEs that have awareness / knowledge of capacity building support • # of SMEs that accessed capacity building • # of jobs created as a result of energy transition initiatives • # of jobs displaced as a result of energy transition initiatives • # of SMEs linked to funders / investors • # of SMEs with funding from government financial programs • $ of funding unlocked for SMEs	• % of SMEs adopting sustainable practices or renewable energy • # of SMEs that improved business operations post capacity building • # of SMEs benefiting from capacity building across the green transition value chain • # of sectors benefiting from energy transition initiatives • Change in employment rate post energy transition initiatives • % change in SMEs exports in international markets • % change in SMEs profitability post-transition • % of SMEs with enhanced investment readiness
	SME capacity building	Access to financing		
	SME financial support	SME workforce transformation		

Note: Elaboration of solutions and impact area available in appendix

To support successful project outcomes, targets should be established and approved prior to the project's start

Selection of Project

Project selected

Step I. *Selection of stakeholder*

Minimum one group of stakeholders must be selected as 'beneficiaries' that will be positively impacted by the project.

Example:

Selected

1. Workers
2. Communities
3. Consumers
4. SMEs

Step II. *Selection of solution*

Minimum one solution topic for the stakeholder group must be selected that is relevant to the impact provided.

Example:

- National/sector workforce planning
- Workforce transition readiness assessment

Selected

- Worker upskilling, reskilling, green skilling
- Worker protection & unemployment support

Step III. *Selection of impact area*

Minimum one impact area for the stakeholder group must be selected that is relevant to the impact provided.

Example:

Selected

- Decent work & job security
- Reduced Inequality
- Gender Equality

Step IV. *Selection of min. outputs and outcomes*

Min. 3 outputs selected, to be baselined and tracked throughout

Example:

Outputs

- % of workers enrolled in upskilling/ reskilling programs
- % of workers redeployed or reskilled in industries important to transition
- % of women participating in workforce development programs
- Number of worker protection or unemployment support initiatives launched

Outcomes

- % of job losses prevented or mitigated as a result of transition
- % increase in worker satisfaction or job security post-transition
- % wage gap reduction between genders
- Average time reduction for workers to transition into new roles

In the event the project targets outputs different to those provided, the project owner is responsible for raising the proposed metrics for approval

Approval of metrics

- Governing committee approves selection of impact measurement metrics (IMM)
- Project team aligns on methodology and plan for tracking and monitoring of IMM

From ideas to action: Replicable solutions to inspire and mobilize change

Section 4

From urgency to action: Embedding people at the heart of APAC's energy transition

Why This Matters Now

The urgency of embedding people at the heart of APAC's energy transition

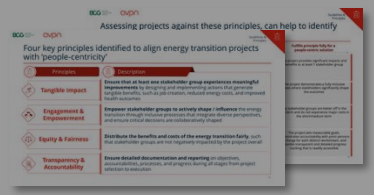
Energy transitions succeed only when they work for people as well as the planet – prioritizing inclusivity, sustainability, and lasting impact

What Good Looks Like

Four guiding principles for inclusive, accessible transitions

Four guiding principles define what "people-centric" looks like – and how projects can achieve meaningful, inclusive outcomes

For **project owners** to refer as a guideline to improve energy transition projects around people-centric principles

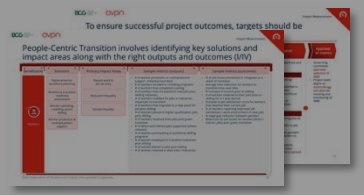


How to Measure Success

Clear metrics to prove impact and guide better decisions

A clear, shared set of impact metrics brings accountability, reduces ambiguity, and shows what success really looks like

For **ASCENT team and project owners** to jointly agree on for each project undertaken



From Ideas to Action

Replicable solutions to inspire and mobilize change

Proven, replicable solutions can inspire action, attract funding, and accelerate Asia's energy transition

For **project owners, funders, and general public** to refer as potential replicable initiatives

Three step approach to build a respository of impact-focused replicable solutions to inspire collective action

Key objectives

Improve Awareness, Clarity, and Visibility

- **Establish solutions repository** for People-Centric solutions, providing insight into best case practice, key metrics for success and potential partners to be engaged

Step I. *Conduct interviews to develop case studies*

Calls conducted to collect information on case studies

Examples:

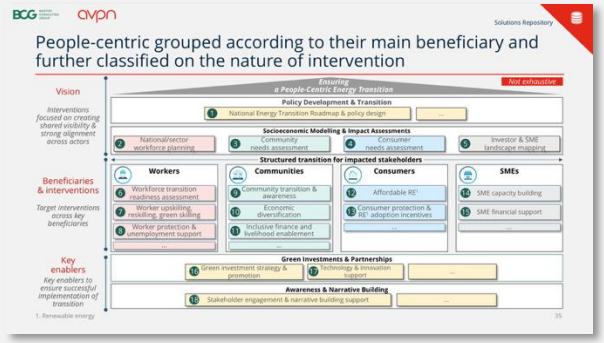
- New Energy Nexus
- Right Energy Partnership
- NIO
- RISE by BCG U
- JETP Indonesia

Case studies collected from multiple organizations, targeting different stakeholder beneficiaries

Examples:

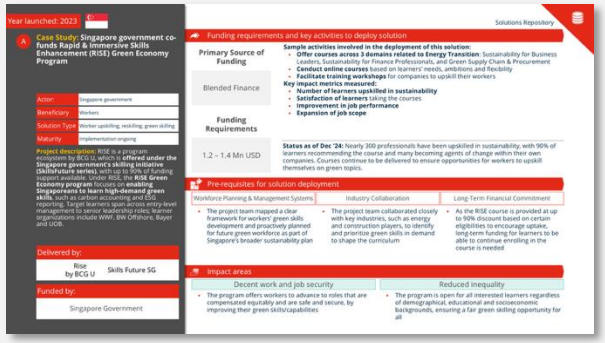
- Sabah RE2 Roadmap
- Growth Gateway
- Tonibung

Step II. *Categorize case studies into types of solutions*



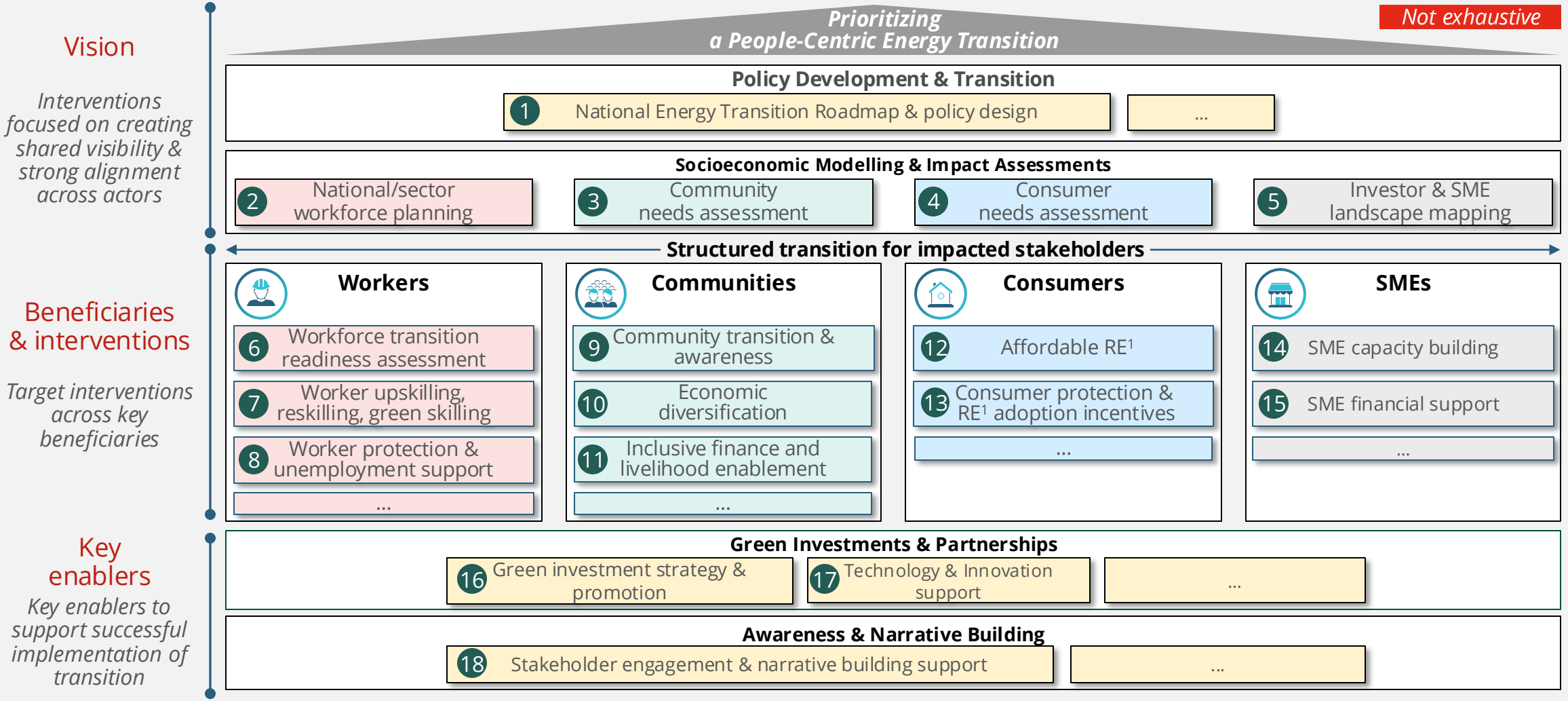
Case studies were grouped according to their main beneficiary, further categorized into **types of solution within each beneficiary**

Step III. *Result: Create solutions repository*



Web-based solutions repository to be created that showcases case studies based on filtering criteria, e.g., archetype, funding and beneficiary

People-Centric grouped according to their main beneficiary and further classified on the nature of intervention



1. Renewable energy

List of case studies collated to inspire actions (I/II)

No.	Beneficiary	Actor	Market	Solution Type	Description	Organisation
A	Workers	Government	Singapore	Worker upskilling, reskilling, green skilling	Singapore investing in developing 'green skills' of current workforce	Skills future SG
B	Communities	NGOs, Think Tanks, CBOs	Indonesia	Community transition and awareness	Solar-Powered Cold Storage in Bungin Island enables fisherfolk community to optimize fish sales while transitioning to clean energy solutions	New Energy Nexus
C	Communities	NGOs, Think Tanks, CBOs	Malaysia	Community needs assessment	Non-profit led consortium develops rural electrification roadmap for 206 Villages in Sabah	Sabah Renewable Energy Rural Electrification Roadmap
D	Communities /Consumers	NGOs, Think Tanks, CBOs	Indonesia	Community transition & awareness	Community Based Organization deploys mini-hydro solutions for rural village electrification in Kalimantan, Indonesia	Right Energy Partnership
E	Communities /Consumers	NGOs, Think Tanks, CBOs	Malaysia	Community transition & awareness	Non-profit led consortium sets up hybrid renewable energy & mini-grid solution for rural community	Tonibung
F	Communities /Consumers	Government, PFIs	Malawi	Affordable RE initiative	ATEC is making electric smart stoves accessible to peri-urban households in Malawi, and supporting long term adoption through direct carbon payments based on stove usage	ATEC

List of case studies collated to inspire actions (II/II)

No.	Beneficiary	Actor	Market	Solution Type	Description	Organisation
G	Communities /SMEs	Government, Foundations, PFIs, NGOs, CBOs	India	SME capacity building and Financial support	Sustainable livelihoods powered by DRE effectively blends DRE with rural livelihood avenues across India, anchored by a holistic ecosystem approach within the community fabric	Switch On Foundation
H	Communities /SMEs	Government, PFIs, NGOs, CBOs	Vietnam	Community transition and awareness	In Vietnam, 1516 provides cost-effective wind turbines to underserved households, improving livelihoods and supporting sustainability through community training	1516
I	SMEs	NGOs, Think Tanks, CBOs	Philippines	SME capacity building	Energy Efficiency Accelerator empowers clean energy companies to expand into the energy efficiency and conservation sector	New Energy Nexus
J	SMEs	NGOs, Think Tanks, CBOs	Indonesia	SME capacity building	Matangi Bali offers support and opportunities for entrepreneurs, esp. women, to create solutions for energy transition and climate change in Bali	New Energy Nexus
K	Communities	Government, PFIs	Taiwan	Community transition & resilience initiatives	Piloting an integrated model in Taiwan that combines solar PV with agriculture, livestock, and biogas to balance renewable energy generation with local livelihoods.	Cathay Electric
L	SMEs	Government, PFIs	Taiwan	Affordable RE initiative	Cathay Life proposed a Green Leasing program enables tenants to access green electricity based on their specific demand under a single electricity bill, without needing to manage multiple contracts with power suppliers or landlords.	Cathay Life Insurance

The path ahead: Strategic next steps and call-to-action for key actors

Section 4

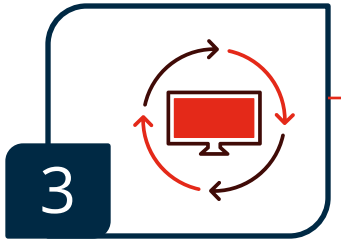
3 strategic next steps for ASCENT

Identify priority opportunity areas

- Develop a clear, shared understanding of the most pressing challenges faced by stakeholder groups in energy transition
- Pinpoint high-impact problem areas with detailed insights into their severity, potential, and investment needs

Explore innovative financing pathways

- Drive capital toward people-centric energy solutions by defining investable opportunities, fit-for-purpose financing structures, and clear impact and return pathways
- Lay the foundation for a catalytic fund that blends philanthropic, concessional, and commercial capital for effective deployment



Advance advocacy to drive community awareness

- Build local capacity and surface community-driven solutions to strengthen the enabling environment for a just energy transition
- Grow this into a community of practice that supports inclusive investment design and informs broader advocacy efforts

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

Key action that can be played by actor

People-Centric Actions	Government	Industry Players	International Standard Setters	NGOs incl. Think Tanks and CBOs	Philanthropies and Alliances	DFIs. MDBs and IGOs	Private Financial Institutions
Identify priority opportunity areas • Map the energy transition landscape to assess stakeholder needs and potential collaboration points	■	■	■	■	■		
Explore innovative financing approaches • Engage diverse funders to build joint capital mobilisation pathways	■				■	■	■
Foster strong knowledge network • Conduct regular capability building program to strengthen collective understanding of best practices	■	■		■	■	■	
Advance advocacy effort to drive awareness • Mobilize support for regulatory and market frameworks enabling ecosystem readiness for energy transition	■		■	■	■	■	
Build an investment pipeline of viable solutions • Curate a portfolio of projects ready for funding and scale-up	■	■		■	■		

Interested to find out more?

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Glossary

Non-exhaustive

- **People-Centric Energy Transition (PC-ET)** – Focused on distributing the costs and benefits of the climate transition fairly across stakeholders; for the purpose of this publication, this term is used interchangeably with Just/Inclusive 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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Appendix - Replicable case studies

Year launched: 2023 | Market: Singapore

A

Case Study: Singapore government co-funds Rapid & Immersive Skills Enhancement (RISE) Green Economy Program *(currently paused)*

Actor:	Singapore Government
Beneficiary	Workers
Solution Type	Worker upskilling, reskilling, green skilling
Maturity	Implementation ongoing

Project description: RISE is a program ecosystem by BCG U, which is **offered under the Singapore government's skilling initiative (SkillsFuture series)**, with up to 90% of funding support available. Under RISE, the **RISE Green Economy program** focuses on **enabling mid- to senior-level leaders to build the vision, roadmap, and expertise for their companies to achieve net zero and reduce climate impact**. Target learners span across entry-level management to senior leadership roles; learner organizations include WWF, BW Offshore, Bayer, and UOB.

Delivered by:

Rise by BCG U | Skills Future Singapore

Funded by:

Singapore Government

Funding requirements and key activities to deploy solution

Primary Source of Funding

Blended Finance

Funding Requirements

1.2 – 1.4 Mn USD

Sample activities involved in the deployment of this solution:

- **Offer courses across 3 domains related to Energy Transition**: Sustainability for Business Leaders, and Sustainability for Finance Professionals
- **Conduct online courses** based on learners' needs, ambitions and flexibility
- **Facilitate training workshops** for companies to upskill their workers

Key impact metrics measured:

- **Number of leaders supported** in developing net zero strategies
- **Adoption of climate roadmaps** within companies
- **Progress on company-level** emissions reduction initiatives

Status as of Dec '24: In past pilots, ~300 leaders participated in sustainability programs, with strong positive feedback. Future iterations were planned to expand this support; while the program is currently paused, prior pilots show strong positive learner outcomes and potential for replication, with 90% of learners recommending the course and many becoming agents of change within their own companies. Courses continue to be delivered to support opportunities for workers to upskill themselves on green topics.

Pre-requisites for solution deployment

Workforce Planning & Management Systems

- The project team mapped a clear framework for workers' green skills development and proactively planned for future green workforce as part of Singapore's broader sustainability plan

Industry Collaboration

- The project team collaborated closely with key industries, such as energy and construction players, to identify and prioritize green skills in demand to shape the curriculum

Long-Term Financial Commitment

- As the RISE course is provided at up to 90% discount based on certain eligibilities to encourage uptake, long-term funding for learners to be able to continue enrolling in the course is needed

Impact areas

Decent work and job security

- The program offers entry-level to senior managers to advance to roles that are compensated fair and are safe and secure, by improving their green skills/capabilities

Reduced inequality

- The program is open for all interested learners regardless of demographic, educational and socioeconomic backgrounds, focusing on a fair green skilling opportunity for all

Note: As of 2025, the program is temporarily paused, though the design and early results provide important lessons for worker upskilling and corporate sustainability transformation

Year launched: 2024 | Market: Indonesia

B

Case Study: Solar-Powered Cold Storage and Electric Boat solutions in Bungin Island enables fisherfolk community to optimize fish sales while transitioning to clean energy solutions

Actor:	New Energy Nexus
Beneficiary	Communities
Solution Type	Community transition and awareness
Maturity	Implementation ongoing

Project description: The Dilau Initiative on Bungin Island, which is a 5–year plan, aims to empower coastal communities by introducing solar-powered cold storage and promoting sustainable fishing practices. This solution enhances income stability, reduces spoilage, and lowers operational costs while empowering the Bungin Island fisherfolk community to be a part of the energy transition by shifting to clean energy solutions, driving economic growth and supporting a carbon-neutral future for Bungin's fisherfolk. In addition, electric boats will be introduced to the fisherfolk community, which will offer significant economic and environmental benefits.

Delivered by:

New Energy Nexus Manussa

Funded by:

Milkywire

Funding requirements and key activities to deploy solution

Primary Source of Funding

Grants

Funding Requirements

90k – 100k USD

Sample activities involved in the deployment of this solution:

- Feasibility studies where surveys and interviews were conducted with fishers, fish collectors, startups, and local stakeholders, to assess on-ground conditions prior to implementation of solution
- Tech deployment of solar-powered cold storage and electric boats
- Community engagement to raise awareness about sustainable tech and climate change
- Capacity building and training for fisherfolk on the skills needed to operate and maintain sustainable tech

Key impact metrics measured:

- **Electricity cost savings**
- **Ice cube (traditionally used for keeping catch fresh) cost savings**
- **Fish sales optimization as a result of implementing cold storage solutions**

Status as of Dec '24: The solar-powered cold storage solution has has already been set up, whereas the electric boat and beneficiaries for the solution are being prepared for implementation

Pre-requisites for solution deployment

Community Engagement and Buy-In

- Engaging the fisherfolk community ensures awareness, acceptance, and active participation in adopting sustainable technologies such as solar-powered cold storage and electric boats, and foster ownership of sustainable solutions in the community

Technical Expertise and Training

- Technical expertise and training are critical to help fisherfolk operating and managing new technologies effectively while bridging knowledge gaps and building confidence for long-term adoption

Financial Aid and Funding

- Given the high number of fisherfolk in Bungin Island, financial support is crucial to support all fisherfolk in transitioning to sustainable technologies

Impact areas

Community transition to clean energy

- Solar-powered cold storage and electric boats accelerate the shift towards clean energy, reducing reliance on fossil fuels and fostering environmentally sustainable practices for the entire Bungin Island community

Affordability

- The adoption of solar-powered cold storage reduces operational costs, e.g. electricity and ice expenses, while increasing their income potential through optimized fish sales.

Year launched: 2021 | Market: Malaysia

C

Case Study: Non-profit led consortium leads the development of a rural electrification roadmap for 206 Villages in Sabah

Actor:	Sabah RE Roadmap Consortium
Beneficiary	Communities
Solution Type	Community needs assessment
Maturity	Implementation ongoing

Project description: Sabah accounts for 72% of unelectrified rural Malaysians. The Sabah Renewable Energy Rural Electrification Roadmap (SabahRE2) **helped map un-electrified villages across Sabah providing a comprehensive Demand Map comprising of over 400 Villages.**

The project subsequently **conducted feasibility studies to prioritize 206 villages suitable for the deployment of hybrid (solar/mini-hydro) renewable energy solutions** with storage and mini-grid systems.

Delivered by:

SABAH RE² ROADMAP — Formed by: TONIBUNG, Green Empowerment, PACOS Trust, Energy Action Partners

Funded by:

UK PACT

Funding requirements and key activities to deploy solution

Primary Source of Funding

Grants

Funding Requirements

1-2 Mn USD

Sample activities involved in the deployment of this solution:

- **Conduct stakeholder consultations** to understand community needs and priorities
- **Develop a comprehensive Demand Map** for rural electrification needs
- **Perform feasibility studies** to assess technical and economic viability of renewable energy solutions
- **Collaborate with government and renewable energy players** for funding and technical delivery support

Key impact metrics measured:

- **Number of villages** identified requiring electrification

Status as of Dec '24: First phase of project concluded with the identification of 206 villages requiring electrification; project is currently continuing on to its 2nd phase to identify funding for the deployment of renewable energy solutions.

Pre-requisites for solution deployment

Community Engagement and Buy-In

- The RE Consortium focused on understanding the demand by the local communities, to prioritize communities for electrification

Centralized Coordination

- A central coordination system enabled multiple delivery and funding partners, as well as government and RE players, to create electrification demand map for a large region, to obtain a clear view of priorities

Impact areas

Affordability

- Project focused on securing philanthropic capital to minimize cost transfer of electrification initiative to local communities

Accessibility

- Project focused on mapping the needs of rural and off-grid communtiies previously reliant on diesel generators for energy needs

Year launched: 2022 | Market: Indonesia

D

Case Study: Community based organization deploys mini-hydro solutions for rural village electrification in Kalimantan, Indonesia

Actor:	Right Energy Partnership (REP), TONIBUNG
Beneficiary	Communities, Consumers
Solution Type	Community transition and awareness
Maturity	Completed

Project description: Deas Tandungus of the Lumbis Ogong district is an unelectrified village in East Kalimantan. The Right Energy Partnership with Indigenous Peoples facilitated the **upskilling of local communities to deploy mini-hydro solutions for electrification**. Technical expertise for this project was provided by TONIBUNG Malaysia, an indigenous lead non-profit group that develops sustainable alternatives for rural electrification.

Delivered by:

Right Energy Partnership with Indigenous Peoples (REP)

Funded by:

Aliansi Masyarakat Adat Nusantara

JLIFAD

Funding requirements and key activities to deploy solution

Primary Source of Funding

Grants

Funding Requirements

200 – 300k USD
(for Minimum Viable Product)

Sample activities involved in the deployment of this solution:

- Established dialogue with on-ground local communities to provide FPIC (Free, Prior, Informed Consent) and secure buy-in
- Conducted workshops to educate local residents on renewable energy systems
- Set up of infrastructure to provide electrification to the community
- Formed and trained local committees to manage the energy systems, such as overseeing daily operations and supporting infrastructure maintenance

Key impact metrics measured:

- **Number of families gaining electrification**
- **Number of hours with clean energy**
- **Number of diesel generators displaced as a result of using clean energy**
- **Amount of carbon dioxide emissions avoided**

Status as of Dec '24: The 30-household community now enjoys 24/7 clean energy, replacing 6 diesel generators and avoiding ~13,000 liters of diesel use (~35,000 kg CO_2e), with additional savings on transport and maintenance. A study on productive end use of energy,to develop local enterprises to create economic spinoffs and jobs in the community, is to be carried out once funds are secured.

Pre-requisites for solution deployment

Community Engagement and Buy-In

- Community engagement is critical to confirm that solutions deployed meet community needs, and that local people are provided with FPIC – Free, Prior and Informed Consent

Centralized Coordination

- Centralized coordination with multiple parties to provide relevant support e.g., Tonibung RE expertise and other in-kind sponsorship is required to realize these programmes that are done on philanthropic basis

Financial Aid and Funding

- Funding is important as philanthropic / concessionary capital is required in deployment of these solutions to avoid debt-burden transfer to local communities

Impact areas

Economic diversification

- Electrification empowers economic diversification by enabling sustainable industries, education, and local entrepreneurship in previously unelectrified areas

Accessibility

- The project provides the villagers with accessibility to reliable energy which leads to improved living standards in the rural community

Year launched: 2024 | Market: Malaysia

E

Case Study: Community based organizations set up hybrid renewable energy generation via solar and pico hydro systems to electrify rural communities and establish RE-powered socioeconomic centre for the community of Kg. Walou Sabah

Actor:	TONIBUNG, Right Energy Partnership (REP)
Beneficiary	Communities, Consumers
Solution Type	Community transition & awareness
Maturity	Implementation ongoing

Project description: Sabah accounts for 72% of unelectrified rural Malaysians, with many communities having inadequate accessibility to energy and electrification, which impacts productivity and economic levels. The **hybrid solar and pico hydro system**, which is being implemented by TONIBUNG in partnership with The Right Energy Partnership with Indigenous People (REP), will provide **reliable energy access** for the 18 households who have been relying on traditional energy sources thus far.

Delivered by:

TONIBUNG — Right Energy Partnership with Indigenous Peoples (REP)

Funded by:

MATAHIO

Funding requirements and key activities to deploy solution

Primary Source of Funding

Grants

Funding Requirements

200 – 300k USD
(for Minimum Viable Product)

Sample activities involved in the deployment of this solution:

- **Engaged local stakeholders and communities**, to deliver the project through a community-led approach
- **Facilitated and ensured sufficient capacity building and high-level ownership** of the newly deployed solar and pico hydro renewable energy systems
- **Prioritized conservation of the natural forested landscape of Sabah**

Key impact metrics measured:

- **Total energy capacity installed**
- **Number of families gaining electrification**

Status as of Dec '24: Status as of Dec '24: The project is ongoing as of December 2024.

Pre-requisites for solution deployment

Infrastructure and Equipment

- The right infrastructure set-up of solar and pico hydro systems was central to the project, to allow electrification of the village

Technical Expertise and Training

- Having the right technical expertise to navigate previously unelectrified terrain and to safeguard the functionality and safety of the set-ups was crucial, along with training local stakeholders to continue monitoring and maintaining the systems

Impact areas

Economic diversification

- Electrification empowers economic diversification by enabling new industries and business to be established, as well as increasing productivity hours due to having reliable power source

Accessibility

- The project provides those staying in the village with accessibility to reliable energy which leads to improved living standards in the rural community, including better access to education and healthcare

Year launched: 2025 | Market: Malawi

F

Case Study: Digital Carbon IoT Stoves in Malawi: 76k households transitioning to clean cooking and generating 1M+ tons of carbon credits

Actor:	ATEC
Beneficiary	Communities, Consumers
Solution Type	Affordable Renewable Energy
Maturity	2030 (Implementation ongoing)

Project description: In Malawi, ATEC is embarking on a 1M ton Cookstove project with the Govt of Switzerland (Kilk Foundation). The initiative aims to distribute 76k IoT induction electric smart stoves to peri-urban households. It is designed to reduce over 1M tons of CO2 by 2030, phase out charcoal use, and significantly improve
public health.
Households will receive direct carbon credit revenues, estimated at an average of $50 per household, making electric cooking 70% cheaper than charcoal.

Delivered by:

ATEC
ATEC Australia International Ltd.

Funded by:

TRIREC, Elea

Funding requirements and key activities to deploy solution

Primary Source of Funding

Blended Finance

Funding Requirements

15 M USD

Sample activities involved in the deployment of this solution:

- Manufacture and distribute IoT eCook stoves via Last Mile Distributors
- Engage and onboard consumers, monitoring usage via dMRV
- Sell generated carbon credits to partners like Kilk Foundation, governments and other international standard sellers
- Provide "Cook-to-Earn" payments and after-sales support to users.

Key impact metrics measured:

- Metric tons of CO_2 abated
- Number of households with fuel cost savings
- Number of users received direct carbon payments
- Number of households with consistent usage of eCook stoves

Status as of Dec '24: All partnerships are in place and the program is officially underway. A dedicated team and live dashboard are in operation to track usage through the dMRV system. eCook stoves have been distributed, and carbon abatement is already in progress.

Pre-requisites for solution deployment

Financial Aid & Funding

- Upfront capital for stove procurement, dMRV operations, and “Cook-to-Earn” incentives; sustained funding beyond the pilot to prioritize retention, refinement, and scale-up.

Market Linkages & Business Support

- Strategic donor engagement to validate the model, attract larger-scale investment, and create linkages for long-term expansion.

Technical Expertise & Training

- Guidance on IoT device management, data analytics for carbon credit verification, and compliance with international carbon market standards to support robust implementation

Impact areas

Affordability

- Project focused on allocating carbon revenues and overall lower energy costs to make cooking 70% cheaper, easing overall household expenses

Accessibility

- Project focused on distributing cookstoves to lower-income communities, building product awareness and enabling them to use the cookstoves

Year launched: 2018 | Market: India

G

Case Study: Powering sustainable livelihoods by blending DRE with rural livelihood avenues across India

Actor:	SwitchON Foundation
Beneficiary	Communities, SMEs
Solution Type	SME Capacity building & Financial support
Maturity	Implementation Ongoing

Project description: The project utilizes DRE to power essential agricultural equipment, with an aim to promote economic asset ownership among rural women. Women are encouraged to run these assets as small businesses – creating new income opportunities and strengthening their role in the value chain.

The project introduces innovative financing models like affidavits over loans, and offering FLDGs to extend credit to women who were previously excluded. So far over 4000 irrigation pumps have been installed.

Delivered by:

SwitchOn Foundation

Funded by:

Good Energies Foundation, MacArthur Foundation, and others

Funding requirements and key activities to deploy solution

Primary Source of Funding

Grants

Funding Requirements

~ 4M USD
(400,000 USD for Minimum Viable Product)

Sample activities involved in the deployment of this solution:

- Community awareness and capacity building around operations and maintenance of RE infrastructure
- Curation of innovative financing mechanisms to enhance financial inclusion
- Collaboration with govt agencies and scheme linkages
- Establishment of DRE operated assets managed by rural women

Key impact metrics measured:

- Enhanced productivity and cropping intensity
- Reduction in working hours
- Reduction in carbon emissions
- Increased participation of women in resource conservation

Status as of Dec '24: The project is under implementation

Pre-requisites for solution deployment

Financial aid & Funding

- Long term commitment from financial institutions for implementing FLDGs to expand banking access to un bankable groups, prioritizing women's participation and ownership

Community engagement and buy-in

- Engaging community through initial awareness, scheme and loan linkages infrastructure installation and training on operation and maintenance of assets

Market linkages & Infrastructural support

- Well established infrastructure to support efficient distribution and utilisation of RE, with strong market linkages that produce value added products and reach broader markets

Impact areas

Community Awareness

- Project focused on equipping local communities with skills on operation and maintenance of renewable energy assets leading to long- term community buy-in

Affordability

- Reduces upfront capital barriers through innovative financing and leverages govt schemes to lower cost of RE adoption

Gender Equality

- Enables rural women to run market-driven services and expands livelihood sources beyond traditional farming

Year launched: 2016 | Market: Vietnam

H

Case Study: Affordable and durable wind turbines powering low-income houses and schools

Actor:	1516
Beneficiary	Communities, SMEs
Solution Type	Community transition & awareness
Maturity	Completed

Project description: In Vietnam, by designing cost-effective and durable wind turbines, 1516 empowers poor households and schools without electricity. These installations enhance living conditions, support education and reduce reliance on polluting energy alternatives. 1516 has successfully implemented 500 projects across 15 provinces and cities.

Beyond deployment, they also provide training support to communities to prioritize long-term sustainability and usage.

Delivered by:

1516

Funded by:

UNDP, British Business Group Vietnam, FES

Funding requirements and key activities to deploy solution

Primary Source of Funding

Grants

Funding Requirements

Undisclosed

Sample activities involved in the deployment of this solution:

- Conducting feasibility studies to identify suitable locations with energy needs
- Designing and testing small wint turbine models optimised for Vietnam's geographical conditions
- Collabrating with local communities to raise awareness and training on operation and maintenance
- Deploying wind turbined with prper setup, safety and functionality
- Working with local governments, NGOs and businesses to secure funding and expand project

Key impact metrics measured:

- Number of households and schools gaining reliable electricity
- Increased study hours for students due to better lighting
- Reduced energy costs and improved livelihood opportunities
- Reduction in kerosene and diesel generator usage, lowering carbon emissions
- Number of locals trained in maintaining the systems

Status as of Dec '24: The project is completed as of Dec '24

Pre-requisites for solution deployment

Financial aid & Funding

- Upfront capital for funding design, production, transportation and installation of wind turbines.

Community engagement and buy-in

- Community engagement to drive awareness, ensure technical capacity building to support ongoing monitoring and maintenance led by the community

Business support

- Support procurement of cost-effective materials, enabling future investment to go beyond pilots and provide affordable pricing models

Impact areas

Community Awareness

- Project focused on equipping local communities with skills to operate and maintain turbines, while promoting overall understanding of renewable energy

Accessibility & Affordability

- Use of cost-effective durable material to make it financially viable and accessible for low-income households and schools

Year launched: 2020 | Market: The Philippines

I

Case Study: Energy Efficiency Accelerator and Startup Acceleration Program supports clean energy companies and enterprises in addressing energy efficiency and conservation

Actor:	New Energy Nexus
Beneficiary	SMEs
Solution Type	SME Capacity Building
Maturity	Implementation ongoing

Project description: The **Energy Efficiency Accelerator** program is a 4-month hybrid program newly launched in 2024 that supports clean energy companies and enterprises to **expand their markets and diversify their offerings to address the growing demand for energy efficiency and conservation**, whereas the **Startup Acceleration Program** is an annual accelerator since 2020 to **equip startups with essential tools for success**. So far, they have supported more than 50 startups spanning across ~10 clean energy sectors such as e-mobility and energy access.

Delivered by:

New Energy Nexus

Funded by:

USAID Energy Secure Philippines (ESP)

Funding requirements and key activities to deploy solution

Primary Source of Funding

Grants

Funding Requirements

100k USD
(for Minimum Viable Product)

Sample activities involved in the deployment of this solution:

- Knowledge transfer on energy audit and energy management tools, reducing 3K tonnes of carbon emissions annually on a cumulative basis
- Refining business models and prototyping and production
- Networking with potential clients and partners, such as industry leaders and policymakers, and securing funding, with 1.3 Mn USD raised after the program

Key impact metrics measured:

- **Number of companies/startups supported**
- **Amount of funds raised**
- **Amount in tonnes of carbon emissions avoided annually**
- **Net Promoter Score**

Status as of Dec '24: SMEs continue to be supported via these ongoing programs in capacity building and financial support

Pre-requisites for solution deployment

Technical Expertise and Training

- Technical expertise and training is key to enable SMEs and startups to learn about the new energy sector, and develop business capabilities such as pitching, and production

Market Linkages & Business Support

- Market linkage and business support is important to provide SMEs with the right connections, expand into new markets and grow operations

Training and Curriculum Development

- A proper and robust training framework must be provided to enable SMEs to independently navigate their business operations in the new energy sector once completing the program, so that they have obtained the necessary knowledge and skills

Impact areas

SME Capacity Building

- SMEs are empowered to diversify their capacity and capabilities by expanding into the market

SME Financial Support

- SMEs are provided support financially through linking SMEs with investors, helping them to refine business models and securing funding

Year launched: 2022 | Market: Indonesia

J

Case Study: Matangi Bali offers support and opportunities for entrepreneurs, especially women entrepreneurs to create solutions for energy transition and climate change in Bali

Actor:	New Energy Nexus
Beneficiary	SMEs
Solution Type	SME Capacity Building
Maturity	Implementation ongoing

Project description: "Matangi", directly translating to "wake up", aims to develop an innovative and entrepreneurial approach that promotes the creation of green growth in Bali. Initially, capacity building support was extended specifically to women climate entrepreneurs, however broader participation is now welcome, including men and youth. Currently, ~60% of the 333 entrepreneurs supported are women; the program has also reached close to 1K participants where >60% are<30 years old. The program has successfully mobilized ~USD 27K in funding.

Delivered by:

Koalisi Bali Emisi Nol Bersih | World Resources Institute | IESR (Institute for Essential Services Reform) | New Energy Nexus | CAST (Culture Arts Science Technology)

Funded by:

Climateworks Foundation | ViriyaENB

Funding requirements and key activities to deploy solution

Primary Source of Funding

Grants

Funding Requirements

150k – 200k USD

Sample activities involved in the deployment of this solution:

- Networking and convening of discussion platforms to share and test ideas
- 1-on-1 mentoring opportunities
- Lab scale prototyping and grant projets
- Knowledge and policy analysis
- Communication workshops and fellowships
- Engagement with local communities to understand their needs and priorities

Key impact metrics measured:

- **Number of entrepreneurs and early stage startups supported**
- **Total amount of funding mobilized**
- **Number of participants reached**

Status as of Dec '24: Project is still ongoing, with status currently under review for continuation for the next 1 year.

Pre-requisites for solution deployment

Technical Expertise and Training

- Technical expertise and training is key to enable entrepreneurs to develop business capabilities and launch innovative new solutions that adequately and sustainably address climate change

Industry Collaboration

- Industry collaboration, such as connecting entrepreneurs with mentors, is crucial in helping entrepreneurs connect their solutions to the existing industry, enabling them to leverage on existing expertise and tools, potentially secure future funding, and enable larger scale solutions through infrastruture and capacity access

Impact areas

SME Capacity Building

- SMEs are empowered through creation of a platform to ideate, develop, and produce solutions to tackle climate change

Gender Equality

- Women entrepreneurs are provided fair and equitable support, to be able to build their businesses and provide sustainable solutions to climate change in Bali

Year launched: 2022 | Market: Taiwan

K

Case Study: Electricity investor piloting a sustainable circular model which integrates photovoltaic with agriculture and provide alternative livelihood to the local community

Actor:	Cathay Electric
Beneficiary	Communities
Solution Type	Community transition & resilience initiatives
Maturity	Experimental

Project description: Cathay Electric has cooperated with the government to develop a multi-use integrated model with **photovoltaics, agriculture, animal husbandry and biogas power generation**. Compared to traditional photovoltaic installation approaches that occupy large tracts of land to build solar panels for power generation which compete with farming activities, this project attempts to maximise the resource utilisation to **balance between the photovoltaic industry and local livelihood**.

Delivered by:

Shu Guang Energy

Funded by:

國泰電業 Cathay Power Inc.

Solution archetype , funding requirements and key activities to deploy solution

Archetype: Accelerator
*Solutions **driven locally** that help **drive the transitionos***

Primary Source of Funding

Self - funded

Funding Requirements

50 million New Taiwan Dollar

Sample activities involved in the deployment of this solution:

- The solar tracking photovoltaic system is installed, coupled with elephant grass plantation. Automated irrigation and forage harvesting are performed
- Best practices of agrivoltaics are explored through crop selection, standard farming procedures, and automated agricultural machinery and equipment
- The crop is provided to nearby livestock farms as feed, then the livestock waste is used to generate biogas power, while the biogas residue is used as fertilizer

Key impact metrics measured:

- solar power generation (kWh), biogas energy generation (kWh), yield of elephant grass compared to which without solar panel covered (%)

Status as of Dec '24: The project has generated 3.5 million kWh power throughout the 2 years, with crop yield estimated as 90% of original yield.

Pre-requisites for solution deployment

Policy Support

- In Taiwan, non-greenhouse agrivoltaics is legally prohibited. The government is supportive to pilot projects for assessing feasibility of this integration, but legal restriction needs to be lifted to allow scaling of this model

Industry Integration

- The project was developed near animal husbandry area which has the customers of the elephant grass. The distance is a key factor since transportation cost would significantly reduce the competitiveness of the graze

Solar Condition

- Southern Taiwan has a better sunlight resource than in northern Taiwan, contributing 20% more power generation. The use of solar tracking photovoltaic system do not only increase efficiency but also allow light penetration to the crop

Impact areas

Economic diversification

This pilot project assessed the potential of elephant grass farming that integrates with photovoltaics is well-suited to the local circumstances. The solar power may no longer compete the land resources with the agriculture. The local livestock industry demands for pasture that was originally imported from overseas, which can now be provided locally with cheaper price due to subsidies from the photovoltaic operation. The use of livestock waste as farming fertilizer also reduce water pollution.

Year launched: 2022 | Market: Taiwan

L

Case Study: Landlord centralised platform for "renewable energy group purchase", allowing tenants to acquire renewable energy and facilitate energy transition

Actor:	Cathay Life
Beneficiary	SMEs
Solution Type	RE electrification initiatives
Maturity	Implementation ongoing

Project description: Cathay Life advised the Government to establish the Green Leasing Program 2.0, where Cathay Life as the landlord assists tenants to adopt renewable energy , and distribute RE to tenants based on specific demand. This system could effectively solve multiple tenants' problem of green electricity purchase under one electricity bill. In addition, the tenants can use RE without the burden of signing multi-party contracts with power suppliers and landlords.

Delivered by:

國泰人壽 Cathay Life Insurance

Funded by:

國泰人壽 Cathay Life Insurance

Solution archetype , funding requirements and key activities to deploy solution

Archetype: Accelerator
*Solutions **driven locally** that help **drive the transitions***

Primary Source of Funding

Not applicable

Funding Requirements

Not applicable

Sample activities involved in the deployment of this solution:

- Cathay Life as landlord supports tenants to assess their office electricity usage and distribute the proportion of green electricity required, in order to support their green energy planning for achieving energy transition goal.
- Assist the administrative process of purchasing green electricity through centralised contracting process, ensuring smooth access of SMEs to green electricity and related certificates.

Key impact metrics measured:

- Number of tenants (including SMEs) supported for more convenient green energy access

Status as of Dec '24: There are 38 commercial buildings implementing Green Leasing Program in 2024, which grew from 8 buildings in 2023.

Pre-requisites for solution deployment

Ambitious Landlord

- Landlord has set ambitious renewable energy adoption targets of their properties, so that it is willing to invest into assisting tenants to acquire renewable energy, and bear the excessive energy purchased.

Simplifying Processes

- Complex admin processes to purchase clean energy is the key challenge to SMEs. Centralised process with digitalisation and capacity building for property management are essential to smoothen the processes.

The Increased Demand

- SME tenants are facing regulatory requirements and transformation pressure, or they have set their ESG targets to fulfil renewable energy goals. These create the strong demand for renewable energy by SMEs.

Impact areas

Accessibility

- Under the original regulations, green electricity supply to SMEs required the signing of multiple tripartite contracts among the tenants, landlords, green electricity suppliers, complicated obligations between the building landlords and tenants. This project can largely reduce challenges of SMEs in green electricity procurement, such as high energy costs, contract barriers, and government administrative review processes

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