

Strengthening ASEAN SMEs in Mitigating and Adapting to Climate Change

Guidelines for SMEs



Guidelines for SMEs

Introduction

As the world grapples with the complex and far-reaching impacts of climate change, it is more important than ever that businesses of all sizes take action.

Small and medium-sized enterprises (SMEs) are the backbone of the economy of countries in the Association of Southeast Asian Nations (ASEAN), contributing between 30% and 53% of each ASEAN country's GDP, and between 52% and 97% of total employment.

SMEs may feel like they lack the resources or influence of larger corporations, but they have the power to make a meaningful impact on the environment. SMEs can not only reduce their own carbon footprint and mitigate their own risks, but also drive positive change throughout their industry and seize new opportunities.

This guideline will highlight the various climate risks and opportunities that SMEs should consider in their business planning, and provide tools (checklists, carbon calculator, links to other resources) for SMEs to prepare for climate change.



1. About the Guideline

Southeast Asia is highly vulnerable to the effects of climate change (both **physical risks** and **transition risks**) with climate change being a key security concerns in the region for the past few years. SMEs must start taking actions to remain competitive and resilient in the face of climate change.

South-east Asia among regions hardest hit by climate change, must prioritise adaptation: IPCC



Cars partially submerged during a flood in Shah Alam, Selangor on Dec 21, 2021. PHOTO: AFP

Southeast Asia could lose \$28 trillion if it fails to act fast on climate change, report finds

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A man walking past wind turbines at the Phu Lac wind farm in southern Vietnam's Binh Thuan province.

2. How to use the Guideline

This Guideline consists of two major content areas which aim to help SMEs like yourself understand i) why should you be concerned about climate change, and ii) how should you prepare for climate change. These content areas are further broken down into step-by-step guide to assist you to futureproof their businesses against climate-related risks.

Content Areas	
<p>Climate impact matters: Why should SMEs be concerned about climate change?</p> <ul style="list-style-type: none"> → ASEAN mitigation and Net Zero targets → Climate related physical risks → Climate related transition risks → Climate related opportunities 	<p>Climate action: How to prepare for climate change?</p> <ul style="list-style-type: none"> → Assessing climate impacts on businesses → Reviewing insurance policies → Role of the management as an agent of change → Technological solutions to support SMEs → Quantifying greenhouse gas emissions → Support available for SMEs and women-owned SMEs → Tracking progress



Why should SMEs be concerned about climate change?

3. Why should SMEs be concerned about Climate Change?

SMEs in Southeast Asia have a crucial role to play in helping the region achieve its ambitious climate goals.

Many Southeast Asian countries have set ambitious targets for reducing greenhouse gas emissions and transitioning to a low-carbon economy.

For example, Indonesia has pledged to reduce its emissions by 29% by 2030, and countries such as Singapore, Malaysia and Viet Nam has committed to Net Zero greenhouse gas/carbon emissions by 2050. In order to meet these targets and achieve a more sustainable future, it will be important for SMEs in Southeast Asia to adopt more sustainable practices and technologies.

SMEs that fail to act urgently on climate action stand to lose a great deal in the face of rising physical and transition risks, but those that take decisive action now will not only mitigate these risks but also position themselves to capitalize on the numerous opportunities that the transition to a low-carbon economy presents.

As climate change intensifies and the risks it poses become increasingly apparent, SMEs in Southeast Asia must prioritize and act urgently on climate action. From rising sea levels that threaten coastal communities and businesses, to more frequent and intense natural disasters such as cyclones and floods, the impacts of climate change are already being felt in the region. In addition to these direct impacts, SMEs in Southeast Asia may also face indirect challenges such as supply chain disruptions and rising energy costs.











SMEs that fail to adapt and mitigate their carbon emissions risk being left behind as the global economy shifts towards sustainability. By taking decisive action now, Southeast Asian SMEs can not only protect themselves from these risks, but also position themselves as leaders in the low-carbon economy of the future.

Taking action on climate presents numerous opportunities for SMEs in Southeast Asia, including improved resource efficiency, diversification into low-carbon products and services, and access to new markets. As the demand for low-carbon products and services increases and supply chains prioritize low-carbon alternatives, SMEs that are able to meet this demand will be well-positioned to succeed in the transition to a low-carbon economy.

Women-owned businesses, which make up 40% of the total number of SMEs in ASEAN, are even more vulnerable to changing environmental conditions as they tend to be smaller and have less access to key resources, such as finance, networks, technology, and information. Nonetheless, research has shown that women are recognized globally as more sustainable consumers than men, and female founders are more likely to build businesses that prioritize environmental and social goals. Due to this unique leadership trait, it is important that climate change adaptation and mitigation opportunities for the business sector actively engage women and have both gender and climate-related targets and milestones.

3. Why should SMEs be concerned about Climate Change?

ASEAN countries have set climate mitigation targets, and some have announced to achieve Net Zero. They have pledged to achieve their goals through measures like investing in renewable energy sources, boosting gas use to produce electricity, and cutting the use of coal.

Countries	Mitigation Targets	Net Zero Targets
Brunei Darussalam 	Reduce GHG emissions by 20% below business-as-usual (BAU) levels by 2030.	Net Zero GHG emissions by 2050
Cambodia 	GHG emissions reduction target of 41.7% by 2030 compared to BAU.	No Net Zero target; carbon neutral by 2050
Indonesia 	Committed to unconditionally reducing 29% of its GHG emissions by 2030, compared to the BAU scenario	Net Zero GHG emissions by 2060
Lao PDR 	60% reductions in GHG emissions relative to the baseline scenario	Net Zero GHG emissions by 2050 (conditional)
Malaysia 	Aims to cut its economy's carbon intensity (as a percentage of GDP) by 45% by 2030, compared to 2005 level	Net Zero GHG emissions by 2050
Myanmar 	Unconditional emissions reductions contributions by 244.52 million tCO ₂ eq by 2030	Partial Net Zero goal; Net Zero emissions from LULUCF by 2040 (conditional)
Philippines 	2.71% reduction in GHG emissions (unconditional), 72.29% reduction in GHG emissions (conditional) compared to BAU scenario by 2030	No Net Zero target
Singapore 	Peak emissions at 65 MtCO ₂ eq around 2030, which will allow a 36% reduction in emissions intensity from 2005 levels by 2030.	Net Zero GHG emissions by 2050
Thailand 	Reduce its GHG emissions by 20% from the projected BAU level by 2030.	Net Zero GHG emissions by 2065 and carbon neutral by 2050
Viet Nam 	By 2030, decrease total GHG emissions by 43.5% compared to BAU.	Net Zero carbon emissions by 2050

*LULUCF: land use, land use change and forestry

3. Why should SMEs be concerned about Climate Change?

The IPCC estimated that global warming is expected to reach the dangerous 1.5C level as early as the 2030s. This will worsen the already extreme situations of flooding and droughts around the world. In Southeast Asia context, this means that every monsoon season is potentially a “stress test” with increasing magnitude to a country’s infrastructure. The inability of the existing infrastructure to cope with irregular rainfalls will result in floods and economic losses. For example, the 2011 Bangkok Flood was one of the most disastrous floods in the region, which caused half a million of SMEs to lose their businesses.

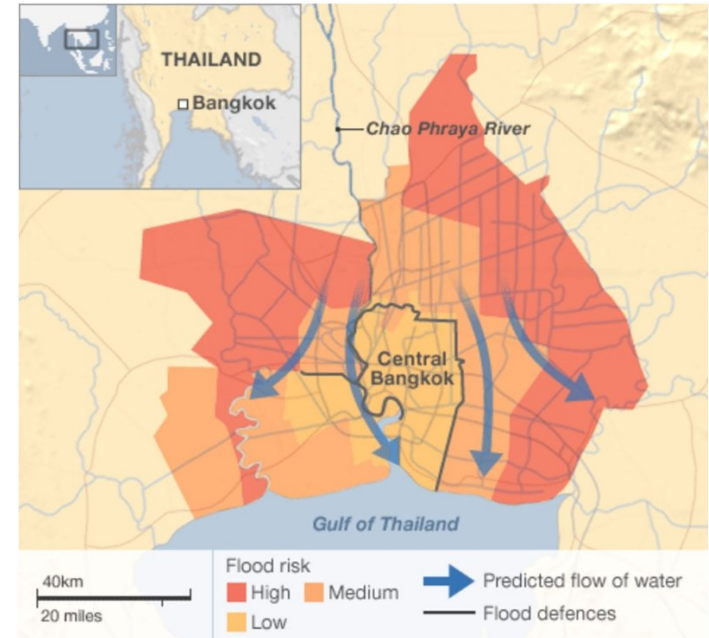
Flooding in Bangkok, the capital of Thailand

Vulnerability of Bangkok

- Flooding is a common phenomenon in Bangkok, Thailand, with the city typically experiencing six months of rainy season during May to October and located near to the Chao Phraya River Basin.
- Bangkok is just 1.5 metres above mean sea level, and as it is built on soft clay, the city is sinking while facing the threat of sea level rise.

2011 Bangkok Flood

- Bangkok faced its most dramatic flood in approximately 70 years in 2011, which had disrupted the businesses of over 550,000 SMEs, accounting for loss of over THB 71 billion per month and led to over 2.3 million unemployment.
- Several industrial parks were damaged in the 2011 floods, and many businesses shut down operations for several months. Transportation was disrupted by the flooding of surrounding roads, which resulted in the supply chain to be cut off.
- The automotive industry were hit heavily as suppliers of the automotive parts were inundated by the floods and led to the supply chain to break.



3. Why should SMEs be concerned about Climate Change?

However, flood is not the only climate-related [physical risks](#)¹ that will affect the SMEs' businesses. SMEs in Southeast Asia are also prone to other [extreme weather events](#) such as cyclones, heat waves and drought. The Philippines, for instance, is one of the most cyclone-prone countries in the world, with about seven to nine cyclones reaching landfall in the country each year. [Longer term shifts in climate variables](#) such as rising temperature and sea levels can also have adverse implications on businesses.

Climate-related Physical Risks



Acute

Extreme weather events e.g., floods, cyclones, heat waves, droughts



Chronic

Longer term shift in climate variables e.g., rising mean temperature and sea level rise

Flooding is a common physical risk of climate change which can disrupt businesses in various sectors.

- **Manufacturing:** In Viet Nam, many firms in the manufacturing sector are located in flood-prone areas with immovable infrastructure, placing them at the frontline in terms of loss and damage caused by flooding.
- **Agriculture:** In 2013, severe flooding in Laos PDR killed thousands of livestock and destroyed 15,000 ha of rice crops.
- **Transportation:** The 2011 flooding in Bangkok resulted in most of its transport network cut-off or destroyed, which led to large-scale disruption of the national food supply chains.





Food for Thought for SMES

1. Are your operations, suppliers, and/or employees located in a vulnerable area with high exposure to the physical risks of climate change e.g., flood, cyclone, heat wave, drought, sea level rise?
2. Has your business been affected by climate change e.g., production and logistics, employee's health, access to raw materials, energy, and water?
3. Is your organisation prepared to respond to the range of physical impacts of climate change?
4. Can your business insurance protect you from business disruptions caused by climate change?

1– risks related to the physical impacts of climate change

3. Why should SMEs be concerned about Climate Change?

Besides natural disasters (physical risks), there are also climate-related **transition risks**² that may render SMEs' business model uncompetitive in the markets in addition to making their products or services irrelevant to the markets. Transitioning to climate-resilient models requires upfront investment and this can be particularly challenging for female business owners who typically have lower access to finance.






Climate-related Transition Risks	
 Policy	Carbon pricing, energy efficiency regulations (energy performance standards and energy efficiency labels), prohibition in deforestation activities
 Technology	Barriers in adopting low-carbon technology leading to reduced competitiveness, early adopters of new technologies may face risks of failure, risk of stranded assets
 Market	Shift in consumer preference, increased operating cost (e.g., higher operating cost from higher energy prices)
 Reputation	Stakeholder perceptions

Food for Thought for SMES
1. Is legislation in your country requiring changes in your products and/or business operations due to climate change concerns (e.g.: energy efficiency equipment, no single-use plastic, need for eco-labels, etc.)
2. Are your consumers showing a preference or demanding more sustainable products/operations?
3. Has your business been affected by transition risks of climate change? e.g., carbon intensity requirements for export to other countries
4. Do companies that you are supplying to require you to share non-financial disclosure such as sustainability disclosure?

2 – risks related to the transition to a lower-carbon economy


3. Why should SMEs be concerned about Climate Change?

As a result of mitigating and adapting to climate change, there are **opportunities** that SMEs can tap on **such as reducing operating costs by improving resource efficiency, using low emission energy alternatives, and developing new low-emission products and services** that may improve the SME's competitive position in the market.

Climate-related Opportunities		
	Resource Efficiency	More cost-effective use of resources and facilities
	Energy Source	Use of lower-carbon sources of energy (e.g., wind, solar, hydro, geothermal, nuclear, biofuels)
	Products & Services	Development of new products or services that contributes to climate mitigation and/or adaptation
	Markets	Access to new markets (wider supply chain increasingly demand low carbon products and services)
	Resilience	Resource diversification, use of renewable energy, climate adaptive resiliency

Food for Thought for SMES

1. Is your business planning on making the switch to renewable energy?
2. What is your business doing to eliminate single-use plastic?
3. Are you taking climate action to enhance the reputation of your brand and to differentiate your business from competitors?



How to prepare for climate change?

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

CONNECTING
FOUNDERS




As an SME, staying competitive requires adaptability and a forward-thinking approach. When it comes to climate change, the stakes are high, and the challenges can seem daunting.

While SMEs may feel that there is lack of knowledge or resources to take meaning climate action, the good news is that even small steps can make a big impact for your business and the planet in the long run.

In this Guideline, we will provide simple steps on conducting a climate impact assessment, reviewing insurance policies, discussing the role of the management team, exploring technological solutions, and quantifying greenhouse gas emissions to help SMEs to strengthen their climate resilience.

Join us to learn more about how SMEs can thrive in the face of climate change.



How to prepare for climate change?

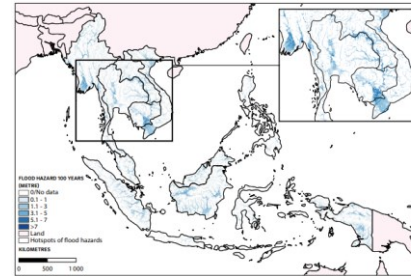
*Checklist for assessing the impact of climate
change on your organisation*

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

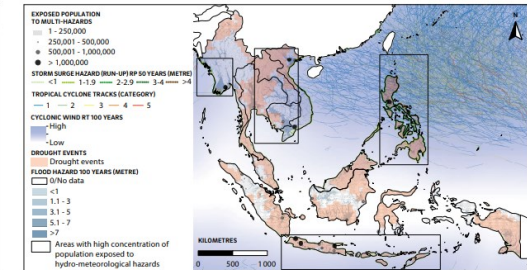
Step 1: Assessing climate impacts on your business

Did you know?

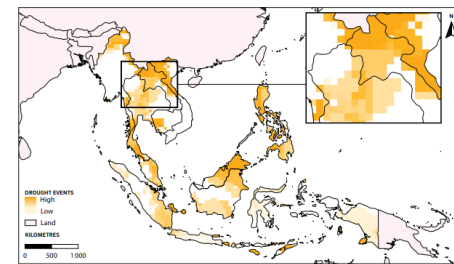
- **Flood, cyclone, drought, heat wave, and sea level rise** are the common physical risks of climate change in Southeast Asia.
- Several Southeast Asian countries, in particular Viet Nam, Lao PDR, and Thailand, have extremely high exposure to flooding while the Philippines have high exposure to cyclones.
- Historically, women-owned SMEs are more vulnerable³ to these risks. Our localised study revealed the same trend⁴.
- Therefore, it is particularly useful to study some disaster mappings, and **plan out your business operations properly – such as not establishing your factory in a disaster-prone zone**.
- Where assets already exist in disaster prone zone, SMEs should include a **disaster recovery plan** that outline steps to minimise disruptions from disasters and ensure that the business can continue to operate or resume critical functions. This can include emergency preparedness measures, business continuation and building repair plans, and insurance programme.



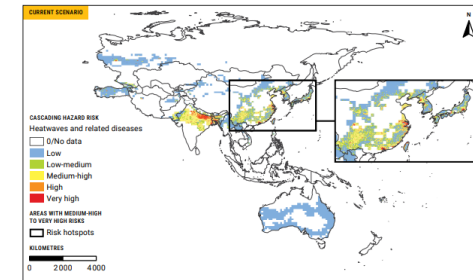
Flood mapping



Cyclone mapping



Drought mapping



Heat wave mapping

3 – Women-owned businesses which make up 40% of the total number of SMEs in ASEAN, are more vulnerable to changing environmental conditions as they tend to be smaller and have less access to key resources, such as finance, networks, technology, and information.


4 – Up to 90% of women-owned SMEs who participated in our study have experienced floods and storms which indirectly affected their delivery of supplies and consequently their ability to serve customers timely.

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Questions to guide your climate impact assessment	Risk impact to your business
Is your business, suppliers, and/or employees located in a vulnerable area with high exposure to the physical risks of climate change e.g., flood, cyclone, heat wave, drought, sea level rise?	High
Are your business operations affected by climate change e.g., disruption in your supply chain, production and logistics, risks to employee's health, lower access to raw materials, energy, and water or increase in prices of such inputs?	High
Is your business or assets insured against climate physical risks?	High
Is the machinery & equipment used by your business able to withstand high heat or water resistant?	Medium
Are the products produced by your business able to withstand high heat or water resistant?	Medium
Is legislation in your country requiring changes in your products and/or business operations due to climate change concerns (e.g.: energy efficiency equipment, no single-use plastic, need for eco-labels, etc.)	Medium
Are your customers showing a preference or demanding more sustainable products/operations?	Medium
Is your business prepared to respond to the key climate change challenges in your industry/sector?	Medium
Is your business well-equipped to meet investors' growing green expectations to ensure access to capital?	Medium

■ High urgency, less time to plan for contingency, large impact on business operations

■ Medium urgency, more time to plan for contingency, moderate impact on business operations



How to prepare for climate change?

*Reviewing insurance policies for coverage against
the physical impacts of climate change*

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 2: Review insurance policies for coverage against physical impacts of climate change

- According to a recent estimate, [only 43% of the global overall losses \(US\\$280 billion\) to natural disasters in 2021 was insured](#). While losses within the [Asia-Pacific region](#) have remained modest at 18% of overall losses, the [insurance gap](#) was still extremely high at 83%.
- With natural calamities, such as floods, occurring more frequently due to the effects of climate change, SMEs should review their business insurance coverage to ensure that their interests are adequately protected for.
- Having insurance can [protect your business's equipment, structure, income, as well as your livelihood from severe damage](#).
- Ensure that you have adequate coverage to pay for the [indirect costs of the disaster](#), which includes the disruption to your business and the cost of repair or rebuilding.
- For a business, the [costs of a disaster can extend beyond the physical damage](#) to the premises, equipment, furniture and other business property. There is the potential loss of income while the premises are unusable, and possibly the extra expense of keeping the business going at a temporary venue.
- Make sure the [policy limits are sufficient](#) to cover your company for more than a few days. After a major disaster, it can take much longer than many people anticipate to get a business back on track.

There are several insurance products that may be suitable for SMEs to insure against physical risks of climate change. Some examples include:

- **Property insurance:** This type of insurance policy covers the physical assets of a business, such as buildings and equipment, against a variety of risks, including natural disasters.
- **Business interruption insurance:** This type of insurance policy can help a business recover from financial losses that result from a natural disaster or other event that disrupts operations.
- **Flood insurance:** This type of insurance policy covers damages caused by flooding, which can be a common risk in many parts of Southeast Asia.
- **Transportation insurance:** This type of insurance policy covers the risks associated with transporting goods, including losses or damages due to natural disasters.

It is worth noting that the specific coverage offered by these insurance products may vary depending on the location and the specific policy. It is always a good idea to carefully review the terms and conditions of any insurance policy before purchasing it.


4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Southeast Asia Disaster Risk and Insurance Facility (SEADRIF)

- At the regional level, SEADRIF is the first regional catastrophe risk facility established in Asia by ASEAN member states.
- While ASEAN countries are heavily exposed to a variety of natural catastrophe risks, the regional catastrophe risk insurance markets are still underdeveloped in terms of non-life catastrophe insurance penetration.
- SEADRIF will increase insurance cover and boost regional disaster resilience in Asia by providing participating countries with climate and disaster risk financing solutions.
- The SEADRIF Insurance Company was created to provide disaster risk financing and insurance products to participating countries. SEADRIF's first insurance product provides cover against flood risks to Lao PDR (with potential to expand to additional countries). The product is designed such that payouts are made quickly to support urgent relief needs and early recovery operations.

Pacific Insurance and Climate Adaptation Programme (PICAP)

- PICAP aims to improve the financial preparedness and resilience of Pacific people towards climate change and natural hazards.
- Women, youth and MSME who are disproportionately affected by natural disasters will be the target segments of the Programme. Heavily reliant sectors such as agriculture, fisheries, retail and tourism will also be of focus.
- PICAP is developing sustainable market-based Climate and Disaster Risk Financing (CDRF) instruments such as parametric insurance, specifically focusing on:
 1. Affordability: the market-based parametric insurance scheme is financially affordable to Pacific people
 2. Fast Recovery: there will be no waiting for lengthy assessments post-disaster as pay-outs are linked to predefined triggers
 3. Resilience: by purchasing parametric insurance coverage, there will be financial protection against natural hazards



How to prepare for climate change?

Management's role in preparing for climate change

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 3: Role of the management as an agent of change

The effort to identify climate risk, coordinate the mitigation of risks and identify where opportunities are, is multi-faceted for every business and is most effective when there is a strong, coordinated approach. This would require engagement from board level downwards, depending on the size and complexity of the business and management approach. C-Suite engagement ensures that climate risk management and opportunity identification is given the appropriate level of priority within the company.

Taking into consideration the differing definitions of company sizes across the ASEAN markets, the following suggested roles and responsibilities might be applicable to all SMEs regardless of size, or typically only applicable to medium-sized firms with more distinct and formalised responsibilities between Board of Directors, C-suite and senior management team.

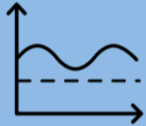
There will need to be a concerted effort to support the upskilling and development of personnel all the way from Board of Directors, Senior management and staff. Please refer to resources under "[Support available to SMEs and women-owned SMEs on Climate Change](#)" to identify where there are national programmes or donor funded programmes for training.

A key success factor to ensure adoption of climate strategies across SMEs is to carry out pilot projects or resiliency exercises that are geared towards fostering awareness among employees first and foremost. There is a fair amount of tailoring required to suit the specifications of companies, depending on their size, industry and geographic location of operations. It is therefore an imperative for Boards to mobilize their Management Teams to properly screen, do due diligence and qualify climate action solutions before rolling them out across the entire organisation. An effective mechanism to narrow the range of options available in the market is to test, iterate and solicit feedback from the first responders of any organisation: its employees. Staff provide the most meaningful feedback to generate effective iterations of any project, and most importantly, serve as ambassadors that will ensure wider scale adoption.

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 3: Role of the management as an agent of change

LEADERSHIP



- Define company goals & targets
- Review business model & identify necessary changes in operations / incentives for staff
- Define roles & responsibilities for implementing strategy
- Secure Financial & Human Capital for transition

STAFF TRAINING



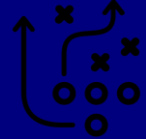
- Improve management and staff understanding of the impact of climate change on business (risks & opportunities)
- Train staff on revised strategy and how this will affect operations (new normal)

PARTNERSHIPS & ENGAGEMENT



- Public commitment
- Supplier engagement
- Partnerships with community & national champions

MONITORING



- Monitor & Report Progress
- Evaluate strategy and adjust as needed
- Monitor Supplier participation

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 3: Role of the management as an agent of change


The governance mechanism to address climate risk and opportunity should be aligned for each company according to its existing risk management and investment management governance approaches. Typically, this involves the Board of Directors, C-suite and Senior management individuals or committees. The following tables outline the typical roles & responsibilities, including key department leadership.

Key personnel	Roles & Responsibility	Applicability (All SMEs, Medium sized companies and above)
Board of Directors	<ul style="list-style-type: none"> Identify Board committee or independent and non-executive individual that will be provide oversight for climate risk and opportunity Update organisation vision and mission to include consideration of climate issues Approve organisational targets Approve monitoring and evaluation mechanism 	All companies. In companies with constraints in appointment independent and non-executive individual, a committee approach would be preferable.
CEO, CFO, COO, or when appointed Chief Sustainability Officer	<ul style="list-style-type: none"> Define organisational targets and approve plans to achieve targets Define role and responsibilities for staff within the organisation and identify working-level champions to lead effort in senior management team Lead regular reviews of progress towards targets and report to board Approve key investment needs 	All companies.
Senior Management individuals or a committee	<ul style="list-style-type: none"> Lead development of climate risk management and opportunity assessment strategies, metrics to measure success Coordinate implementation of plans to achieve targets, progress reporting and risk/opportunity identification Execute, review, propose key investment needs, and iterate 	Medium sized and above.

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 3: Role of the management as an agent of change

Key personnel	Roles & Responsibility	Applicability
Finance/Procurement Department Heads	<ul style="list-style-type: none"> Identify, quantify capital expenditure needs to support climate strategy and decision making, including using life-cycle costing and incorporating internal carbon pricing approaches Support financial savings estimates and reviews in a timely fashion Establish appropriate procurement guidelines and policies that integrate and encourage climate considerations (e.g. energy efficiency, emissions calculations reporting) into procurement process Engage suppliers on company's climate strategy and vision, and structure win-win solutions that are fair to all stakeholders involved 	<p>All companies. Depending on how company is organised internally, the different responsibilities might be combined or separated</p>
Risk/ Compliance Department Heads	<ul style="list-style-type: none"> Identify and assess materiality of the different climate risks, including regulatory level risks, and consider whether any should be categorised as principal risks for the business Suggest appropriate departmental responsibility for ownership of risk management Establish risk management approach to regularly report level of risks and mitigation progress 	
Energy/ Technical Design Department Heads	<ul style="list-style-type: none"> Lead responsibility for the delivery, review, and development of the energy efficiency and transition strategy or technical assessments of product design to align to climate strategy Capture the status of actions from previous reviews Assess any external and internal capacity to deliver strategy Assess any risks and opportunities under the strategy Report regularly to the senior management on progress and actions for continued improvements Support assessment of key investment projects needs 	
Human Resource Department Heads	<ul style="list-style-type: none"> Rollout induction and regular training programmes company-wide for different levels (C-Suite to staff) Ensure hiring matrix includes relevant knowledge base on climate issues in key roles 	
Marketing and Communications Department Heads	<ul style="list-style-type: none"> Creation of internal communication channels to regularly disseminate information on climate risk, approach, challenges and successes Establish external stakeholder engagement strategy and implementation plan for climate risk Ensure clear description of climate risk assessment process and strategy in annual reporting 	



How to prepare for climate change?

*Exploring the role of technologies in mitigating and
addressing the impacts of climate change*

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 4: Exploring technological solutions to address impacts of climate change

Climate technologies are widely available in the market. However, not all of them are commercially viable and proven. Prior to investing in certain technologies, SMEs are advised to consider the listed aspects below, and always refer to the official verifiers' sources of proven technologies.

Considerations Prior to Technological Investments

Is the technology commercially proven?

- Have you heard of the technology?
- Is this a mature technology with multiple commercial applications e.g. LED lighting, variable speed drive?
- Is this an emerging technology that is undergoing commercial trial (electric two/three wheelers) or scale-up (e.g. hybrid cars)?
- Is the technology registered on green technology directories like the **MyHIJAU Mark Platform** and **Singapore Green Labelling Scheme Directory**?

Tip: Technologies that are registered in the above technology directories are commercially proven and would have met certain energy efficiency or green performance criteria.

Types of Technology

Climate mitigation:
technologies with low-carbon or high energy efficiency

Climate adaptation:
technologies that protect businesses against the physical impacts of climate change

Technology verifiers (resources)

- [MyHIJAU Mark Platform](#) (Malaysia government)
- [Singapore Green Labelling Scheme Directory](#) (Singapore Environment Council)
- [Energy Technology List](#) (UK government)
- [Green Technology Selector](#) (European Bank for Reconstruction and Development)
- [Compendium of Decentralised Renewable Energy Technologies](#) (Clean Energy Access Network)
- [Technologies to Support Climate Change Adaptation in Developing Asia](#) (Asian Development Bank)

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 4: Exploring technological solutions to address impacts of climate change

Considerations Prior to Technological Investments

What is the upfront capital expenditure (CAPEX) requirement for the technological investment?

- What is the dedicated budget for technological investment (e.g. energy efficiency or renewable energy)?
- Are there any existing rebates and incentives to alleviate the upfront cost?
- Are there energy efficiency financing options?

What is the payback period of the technological investment?

The payback period is the amount of time it will take you to recoup your original investment in the project. Below are the steps to calculate the payback period of your investment.

➤ Step 1: Determine the Total Project Cost

If installing a LED lightbulb cost \$20, and a company need to retrofit 25 existing lightbulbs with LED lightbulbs for a 100 sq-metre retail store, the total project cost will be $\$20 \times 25 \text{ LED lightbulbs} = \500

➤ Step 2: Calculate Annual Savings

If the monthly savings from the retrofit is \$50 (based on the difference of the electricity bill before and after the retrofit), the total annual savings from the retrofit is $\$50 \times 12 \text{ months} = \600 .

➤ Step 3: Calculate Payback Period

The payback period will be $\$500/\$600 = 0.83 \text{ years}$. This means that the capital cost is recovered in just ten (10) months from the energy saved from the retrofit.

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 4: Exploring technological solutions to address impacts of climate change

Level of disruption:

In addition to CAPEX consideration (in the previous slide), the investment required to adopt new solutions should also consider the manpower hours required to oversee, implement, train, and integrate the necessary update to your data collection tool. This might lead to potential revenue loss in the short to medium term as the business adjusts to the new way of operating.

Considerations Prior to Technological Investments

- How much training do your employees need to go through to be comfortable adopting these solutions on a regular basis?
- How much new data will you need to collect to monitor the effective use of these solutions?
- How much potential revenue are you anticipating/prepared to lose in the short to medium-term due to changes to business as usual?



Case Study

*SME owner who implemented technological change
and resulted in cost and energy savings*

Case Study: Ampersand Gelato

Background

- A woman-owned and led ice-cream manufacturer, retailer, and wholesaler operating in Bangkok. It has about 30 fridges and freezers.
- Purchased a total of 4 units (1 fridge; 3 freezers) from YENERGY, an initiative of the **ASEAN LCEP programme** in Thailand to support F&B companies switch to energy efficient equipment
- As part of the programme, she benefitted from a preferential payment plan: a 30% down payment plus the remainder paid in monthly installments over 3 years

Key reasons to join the programme


- Keen to save on electricity costs – estimated at an average of 30-60% for the specific units purchased
- Interested to reduce company's greenhouse gas emissions

What she liked most about the programme

- A delayed payment plan which allows small businesses to adopt new technology without a considerable upfront investment
- A strong customer support to navigate questions and concerns



Yim Sasivimol Phetnamsin
Gelatologist/Owner



How to prepare for climate change?

Quantifying your organisation's GHG impact

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 5: Understanding your impact on climate change

SMEs in Southeast Asia will soon face external regulatory and supply chain push to reduce their impact on climate change (i.e, reduce their own greenhouse gas emissions).

Regulatory push:

- Several countries in Southeast Asia have plans to implement carbon pricing mechanisms soon. This means large emitters will be required to pay for emitting greenhouse gases into the atmosphere.
- Singapore implemented a carbon tax in 2019, with the price set at S\$5/tCO₂e from 2019 to 2023 to provide a transitional period to give emitters time to adjust. However, it recently announced that the carbon tax will be raised to S\$25/tCO₂e in 2024 and 2025, and S\$45/tCO₂e in 2026 and 2027, with a view to reaching S\$50-80/tCO₂e by 2030. Other countries have / or are looking into carbon tax as a form of carbon pricing.
- Indonesia has announced plans to introduce a carbon tax on coal-powered power plants in 2022. The proposed tax is priced at 30,000 IDR/tCO₂e (or US\$2.02 /tCO₂e).
- Viet Nam is planning to develop a carbon pricing mechanism, whereas Thailand and Philippines are also actively involved in carbon market study.
- The European Union (EU) will implement a Carbon Border Adjustment Mechanism where EU importers will buy carbon certificates corresponding to the carbon price that would have been paid, had the good been produced under the EU's carbon pricing rules.

Supply chain push:

- Corporates are increasingly requiring actors along their supply chain to account for their greenhouse gas emissions.
- For example, Kellogg Co announced that it will expand commitments into the supply chain by requiring all key suppliers to measure and publicly disclose their own emissions and reduction targets.
- In time to come, more and more SMEs will face a similar supply chain push from larger corporates

Therefore, climate change could result in changes in the ways of doing business. SMEs therefore have to be equipped with the tools to help understand these risks and identify where there could be opportunities. A key first step is to understand your organisation's impact on climate change, that is, *what is the amount of greenhouse gas being emitted by your business.*

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Step 5: Understanding your impact on climate change

- The Greenhouse Gas Protocol provides requirements and guidance for companies preparing a corporate-level GHG emissions inventory.
- The standard covers the accounting and reporting of seven greenhouse gases – carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃).
- GHG emissions can be categorised into three “Scopes”.

Scope 1: Direct GHG emissions from owned or controlled sources

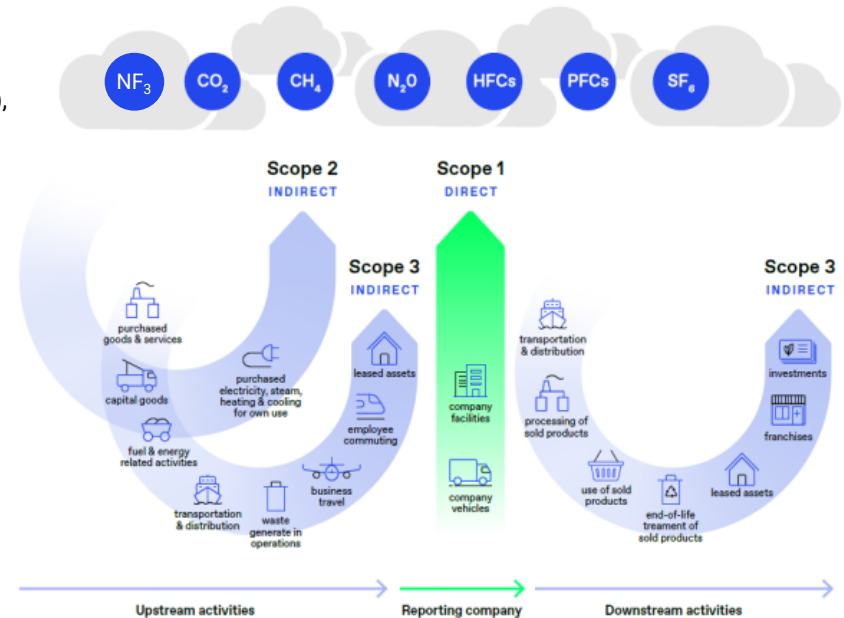
- Example sources: Direct fuel combustion, tailpipe emissions from vehicles owned by the company, fugitive emissions due to leakage within company’s facilities.

Scope 2: Indirect GHG emissions from the generation of purchased utilities

- Example sources: Electricity from the grid or direct supplier (*Purchase of heat and steam, however, this is less common for SMEs in ASEAN*).

Scope 3: Indirect GHG emissions that occur in a company’s value chain

- Example sources: There are 15 sub-categories including product distribution, business travel, embodied emissions of purchased goods (feedstock) and services, etc.



The GHG Protocol Corporate Accounting and Reporting Standard can be accessed here: <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

How to calculate your organisation's Scope 1 GHG emissions?

Scope 1: Direct GHG emissions from owned or controlled sources

$$\text{Scope 1 GHG emissions} = \text{Activity Data} \times \text{Emission Factor}$$

What is an activity data?

- Data that measures consumption of a fuel-based activity controlled or owned by an organisation. More information on data collection is available in [Annex 1](#).
- Examples of data source and indicators:

Scope 1 GHG Emission Activity Source	Indicator
Diesel/LPG Consumption – <i>in boilers for example</i>	Volume consumed (m ³) or energy produced (ktoe, Btu, etc)
Coal Consumption – <i>in boilers for example</i>	Mass consumed (tonnes)
Compressed Natural Gas/Liquefied Natural Gas Consumption – <i>in boilers for example</i>	Volume consumed (m ³)
Gasoline Consumption – <i>in company owned vehicle</i>	Volume consumed (litres)

What is an emission factor?

- Coefficient that describes the average pollutant emission rate of a given activity, such as fuel combustion. More Scope 1 emission factors are available in [Annex 2](#).
- Examples of emission factors:

Scope 1 GHG Emission Activity Source	Emission Factor
Diesel/LPG Consumption – <i>in boilers for example</i>	Diesel - 2.51 kgCO ₂ e/litre LPG - 1.56 kgCO ₂ e/litre
Coal Consumption – <i>in boilers for example</i>	2.8 kgCO ₂ e/tonne
Natural Gas Consumption – <i>in boilers for example</i>	2.02 kgCO ₂ e/m ³
Gasoline Consumption – <i>in company owned vehicle</i>	2.19 kgCO ₂ e/litre

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

How to calculate your organisation's Scope 2 GHG emissions?

Scope 2: Indirect GHG emissions from the generation of purchased utilities (electricity)

$$\text{Scope 2 GHG emissions} = \text{Activity Data} \times \text{Grid Emission Factor}$$

What is an activity data?

- Data that measures consumption of a purchased utility for activities controlled or owned by an organisation. More information on data collection is available in [Annex 1](#).
- Purchased utility also includes heat and steam. However, as mentioned earlier slide, this is less common for SMEs in ASEAN.
- Example of data source and indicator:

Scope 2 GHG Emission Source	Indicator
Electricity from the grid	Electricity consumed (kWh/MWh)

What is a grid emission factor?

- Coefficient that describes the average pollutant emission for each unit of electricity provided by an electricity system. More country-based grid emission factors are available in [Annex 3](#).
- Examples of country-based grid emission factor:

Country	Grid Emission Factor (tCO ₂ e/MWh)
Brunei Darussalam	0.687
Lao PDR	0.560
Myanmar	0.474
Singapore	0.408
Thailand	0.432
Viet Nam	0.880

4. How to prepare for climate change? (step-by-step process for developing a climate strategy)

Sample calculation of scopes 1 and 2 Greenhouse Gas emissions

A steel mill manufacturing plant located in the Luzon region of the Philippines produces 50,000 tonnes of specialty hot rolled steel plates and coils per month. Key energy consuming equipment in the plant include a natural gas-powered reheating furnace and an electric-powered reversible rolling mill. Each month, the reheating furnace consumes 250,000 MMBtu (or 7 million m³) of natural gas and 5,000 litres of diesel. The plant's monthly electricity consumption – for the rolling mill and lighting and other ancillary services – is 10 GWh, all of which is supplied by the grid.

The plant's scopes 1 and 2 greenhouse gas emissions are calculated as follows:

Consumption of <i>[in relevant units]</i>	Quantity	Emission factor (kgCO ₂ e/ unit)	GHG emissions (kgCO ₂ e)
Diesel <i>[in litres]</i>	5,000	2.51	12,550
Natural Gas <i>[in m³]</i>	7,000,000	2.02	14,140,000
Total Scope 1 GHG emissions			14,152,550 kgCO₂e 14.153 ktCO₂e

Consumption of <i>[in relevant units]</i>	Quantity	Emission factor (tCO ₂ e/MWh)	GHG emissions (tCO ₂ e)
Electricity <i>[in GWh]</i>	10	0.712	7,120
Total Scope 2 GHG emissions <i>[in ktCO₂e]</i>			7.12 ktCO₂e

The plant's total scope 1 and 2 greenhouse gas emissions is **21.27 ktCO₂e**

Annex 1: Activity Data and Collection

What type of activity data should I use to calculate my organisation's scopes 1 and 2 GHG emissions?

Higher quality data should be used when calculating organisational footprint. This refers to data that directly measures the fuel consumed. However, this data is not always captured, especially in organisations that are new to measuring its footprint.

Oftentimes, activity data needed to calculate your organisation's scope 1 GHG emissions is already being collected for other purposes such as for payment to suppliers as part of procurement or internal reporting. Whereas for scope 2 electricity, it can be known from your electricity bill or metering. Here, we discuss the best sources of activity data:

1. Primary Data

Activity data that directly reflects the amount of resource consumed. Primary Data should be collected and provided wherever practically possible. Examples of primary data include:

- kWh of electricity consumed at a site,
- litres of fuel consumed by the vehicle fleet.

2. Estimates based on proxy data

Where primary data is not available, estimates should be made based on proxy data that reflects the actual consumption as closely as possible, Examples of estimates based on proxy data:

- number of miles travelled by a vehicle.
- purchase invoices

3. Estimates based on similarities

Where no direct data is available estimates should be made based on best-available comparisons

- by using consumption figures from a comparable site
- using benchmark figures, e.g. for energy consumption per square meter

Accuracy

Annex 2: Emission Factors of common fuel sources

Fuel type	Fuel source	Emission factor (kgCO ₂ e/unit)	Source
Gaseous fuels	Natural Gas (unit: m ³)	2.02	Greenhouse gas reporting: conversion factors 2021 - GOV.UK (www.gov.uk)
	LPG (unit: litres)	1.56	
	Biogas (unit: tonnes)	1.22	
Liquid fuels	Diesel (unit: litres)	2.51	
	Petrol (unit: litres)	2.19	
	Fuel oil (unit: litres)	3.18	
	Bioethanol (unit: litres)	0.00901	
	Biodiesel (unit: litres)	0.168	
Solid fuels	Coal (unit: tonnes)	2.88	

Emissions factors provided are typical values which may otherwise vary due to the following factors:

- (1) Policies, such as renewable fuel mandates, may affect the proportion of renewable fuels introduced into the region's fossil fuel supply, thereby affecting overall emission factor. *The user may calculate emissions factors for specific biofuel blends using the methodology detailed in the source.*
- (2) Production processes, including the types of raw materials used in fuel production, may affect a fuel's composition, thereby affecting overall emission factor.

Assumptions:

1. Diesel and petrol are assumed to have equivalent emission factors of UK average biofuel blends as many ASEAN countries have existing biofuel mandates.
2. Biodiesel is assumed to use first-generation feedstocks, rather than advanced raw materials (i.e. HVO), to provide a more conservative estimate.
3. Emission factors for biomass and wood-burning is not included here as many policy frameworks consider these solid fuels as zero-carbon at point of combustion.

Annex 3: Grid Emission Factors of ASEAN Countries

Country / Region	Grid emission factor (tCO ₂ e/MWh)	Source
Brunei Darussalam	0.687	IEA estimation Emissions Factors 2021 - Data product – IEA , no local study
Cambodia	0.591	GEF-Cambodia_2010-2012.pdf (iges.or.jp)
<ul style="list-style-type: none"> Kampot-Sihnouk Kampong Cham 	0.724	
Indonesia (2016)		Emission Factor in 2016, Directorate General of Electricity, Ministry of Energy and Mineral Resources
<ul style="list-style-type: none"> Jawa-Madura-Bali 	0.877	
<ul style="list-style-type: none"> Sumatera 	0.832	
<ul style="list-style-type: none"> East Kalimantan – Mahakam 	1.128	
<ul style="list-style-type: none"> Many others... 	...	
Lao PDR	0.560	Calculation for the emission factor of electricity generation in Lao PDR
Malaysia (2017)		Grid Electricity Emission Factors for Malaysia
<ul style="list-style-type: none"> Peninsular Malaysia 	0.645	
<ul style="list-style-type: none"> Sabah 	0.564	
<ul style="list-style-type: none"> Sarawak 	0.967	
Myanmar	0.474	IEA estimation Emissions Factors 2021 - Data product – IEA , no local study
Philippines (2015 - 2017)		2015 – 2017 National Grid Emission Factor, Department of Energy
<ul style="list-style-type: none"> Luzon & Visayas 	0.712	
<ul style="list-style-type: none"> Mindanao 	0.780	
Singapore (2022)	0.408	Statistics, Energy Market Authority.
Thailand	0.432	CO₂ Emission per kWh, Energy Planning and Policy Office Final Report on the Study and Development of Emission Factor (EF) for Vietnamese Electrical Grid in 2018, r Ministry of Natural Resources and Environment, Vietnam.
Viet Nam (2018)	0.880	



Grid Emission Factors change with time as new power generation assets are installed and connected to the grid.

With increasing decarbonisation and more renewable energy assets, these emission factors are expected to reduce over time.

More grid emission factor here: [IGES List of Grid Emission Factors](#) or [Emissions Factors 2021 - Data product – IEA](#)

Note:

- These links provide updated grid emission factors at point of publication. Users are advised to check that the source links provided continue to be updated.
- Values presented here refer to simple operating margin emission factors.



What support is available to SMEs and women-owned SMEs on Climate Change?

5. What support is available to SMEs and women-owned SMEs on Climate Change?

Fiscal and financial support provided to SMEs

- Some ASEAN countries have fiscal and/or financial support to help the SMEs in greening their businesses.
- This could be SME-focused credit line, credit guarantees, credit support, and/or tax incentives
- Some of these SME-focused incentives are also provided by international organisations from time to time partnering with local institutions
- There are also equity and debt instruments offered in the non-public sector by investment firms and commercial banks.
- Gender lens investing is on the rise in ASEAN although focus at the intersection of climate and gender remains nascent.

Existing support schemes*		
Public Sector		Non-Public Sector
International & Regional	<ul style="list-style-type: none"> • Investing in Women • ADB Ventures 	<ul style="list-style-type: none"> • Teja She Economy Fund in Southeast Asia • Beacon Fund • Root Capital
Country-specific	<p>Malaysia</p> <ul style="list-style-type: none"> • Green Technology Financing Scheme 3.0 • Sustainable and Green Biz Financing (SGBF) • Green Investment Tax Allowance (GITA) • Green Income Tax Exemption (GITE) <p>Philippines</p> <ul style="list-style-type: none"> • Green Financing Program • Energy Efficiency Savings (E2SAVE) Financing Program • inBEST Ventures <p>Singapore</p> <ul style="list-style-type: none"> • Enterprise Financing Scheme-Green • 3R Fund • Energy Efficiency Fund (E2F) • Energy Efficiency Grant (EEG) • Building Retrofit Energy Efficiency Financing (BREEF) Scheme • Green and Sustainability-Linked Loans Grant Scheme <p>Thailand</p> <ul style="list-style-type: none"> • PGS Soft Loan Plus (phase 3 which could cover EE) – Special covid recovery fund that is given to eligible SMEs based on various criteria 	<p>Indonesia</p> <ul style="list-style-type: none"> • BIDUK: Investing in Business for Progress • Capital 4 Development Partners (C4D Partners) • Mana Impact • YCAB Ventures • Ratu Nusa Fund <p>Malaysia</p> <ul style="list-style-type: none"> • Sustainable Business and banking products • U-Green Financing <p>Philippines</p> <ul style="list-style-type: none"> • Manila Angel Investors Network (MAIN) <p>Singapore</p> <ul style="list-style-type: none"> • OCBC SME Sustainable Financing • UOB Sustainable Financing <p>Thailand</p> <ul style="list-style-type: none"> • SCB's SME Go Green • Kasikorn's Go Green project • Bualuang Green Loan (Bangkok Bank)

* Programmes that are in i) English (or with confidence that the local language is meant for the same purpose), ii) with a direct link, and iii) schemes that are consistently offered

5. What support is available to SMEs and women-owned SMEs on Climate Change?

Transaction Enablers

- A “Catalogue” created by governments or associations to make specific transactions possible.
- This could be portals to help businesses to make informed green investment, purchases, or contracting decisions such as Product labels, Certifications of female ownership, List of accredited professionals, (auditors, ESCOs).
- This also includes climate champions within the business community.

Existing support schemes*		
	Public Sector	Non-Public Sector
International & Regional		<ul style="list-style-type: none"> • W+ Standard • WEConnect International • SME Climate Hub
Country-specific	<p>Laos</p> <ul style="list-style-type: none"> • Lao Energy Efficiency campaign (Supported by the UK aid-funded ASEAN Low Carbon Energy Program (LCEP)) • Gender Development Association <p>Malaysia</p> <ul style="list-style-type: none"> • SIRIM Eco-labelling Scheme • MyHIJAU Mark Platform • List of ESCO • Solar PV provider • Solar PV investor <p>Philippines</p> <ul style="list-style-type: none"> • List of ESCO <p>Singapore</p> <ul style="list-style-type: none"> • Energy Efficient Singapore <ul style="list-style-type: none"> • List of ESCO <p>Thailand</p> <ul style="list-style-type: none"> • List of Green Label Products <p>Viet Nam</p> <ul style="list-style-type: none"> • The Women's Initiative for Startups and Entrepreneurship (WISE) 	<p>Cambodia</p> <ul style="list-style-type: none"> • Clean Energy Organisations in Cambodia <p>Indonesia</p> <ul style="list-style-type: none"> • List of certified green products <p>Myanmar</p> <ul style="list-style-type: none"> • Conyat Create <p>Singapore</p> <ul style="list-style-type: none"> • Singapore Green Label • SLEB Smart Hub • UOB Sustainability Compass <p>Thailand</p> <ul style="list-style-type: none"> • List of ESCO • We-BRAND • TheCommons • NornNorn <p>Viet Nam</p> <ul style="list-style-type: none"> • EQUO

* Programmes that are in i) English (or with confidence that the local language is meant for the same purpose), ii) with a direct link, and iii) schemes that are consistently offered

5. What support is available to SMEs and women-owned SMEs on Climate Change?

Human capacity development –
Staff skills training is important in understanding what is needed for climate change decision making

- With more than [3,900 current supporters](#) worldwide, TCFD strives to be the leading framework for managing climate risks and opportunities.
- Central banks and regulators in the region have adopted the TCFD-aligned recommendations in developing climate-related reporting requirements and standard.
- This trend is expected to increase in ASEAN as a result of regulatory and supply chain push
- Some other related trainings such as ESG and sustainability will also provide relevant knowledge needed

Existing support schemes*		
	Public Sector	Non-Public Sector
International & Regional	<ul style="list-style-type: none"> • TCFD trainings by SSE Academy • Sustainability trainings by ASEAN SME Academy • ADB Climate 	
Country-specific	<p>Brunei</p> <ul style="list-style-type: none"> • Global Compact Network Malaysia & Brunei <p>Cambodia</p> <ul style="list-style-type: none"> • Inclusive Green Economy and Finance (IGEF) OXFAM in Cambodia • Khmer SME Skills Development Fund <p>Indonesia</p> <ul style="list-style-type: none"> • Indonesia Stock Exchange <p>Malaysia</p> <ul style="list-style-type: none"> • Bursa Malaysia, • Human Resource Development Corporation • Global Compact Network Malaysia & Brunei <p>Singapore</p> <ul style="list-style-type: none"> • Singapore Exchange • MySkillsFuture • Global Compact Network Singapore • Enterprise Sustainability Programme <p>Thailand</p> <ul style="list-style-type: none"> • WE-CAN • Stock Exchange Thailand • Global Compact Network Thailand 	<p>Indonesia</p> <ul style="list-style-type: none"> • Trainings provided by Centre for Risk Management & Sustainability such as ESG, SRI, business sustainability <p>Malaysia</p> <ul style="list-style-type: none"> • Trainings provided by Malaysian Rating Corporation Berhad such as ESG, SRI, business sustainability <p>Viet Nam</p> <ul style="list-style-type: none"> • TVL Group

* Programmes that are in i) English (or with confidence that the local language is meant for the same purpose), ii) with a direct link, and iii) schemes that are consistently offered

5. What support is available to SMEs and women-owned SMEs on Climate Change?

Technical Assistance grants from international organisations

- Funds offered from international organisations with local partners (such as banks) which provide finance, business case development for SMEs or women-owned SMEs, to overcome their reluctance to use technologies which they may be unfamiliar with.

Existing support schemes / portfolios*		
Public Sector		Non-Public Sector
International & Regional	<ul style="list-style-type: none"> Water and Energy for Food (WE4F) Collaborative Actions for Single-Use Plastic Prevention in Southeast Asia (CAP SEA) 	<ul style="list-style-type: none"> THRIVE (Train Her to Promote Resilient, Inclusive Value Chains and Economic Empowerment) GrowHer
Country-specific	Singapore <ul style="list-style-type: none"> SMEs Go Digital programme Thailand <ul style="list-style-type: none"> Go Green Plus 	Indonesia <ul style="list-style-type: none"> 'Womenwill' Indonesia

5. What support is available to SMEs and women-owned SMEs on Climate Change?

Feedback and engagement channels

- Organisations which engage women-owned SMEs in a systematic, supportive way. These platforms can be leveraged to provide access to climate information and resources to SMEs, especially women-owned SMEs, support collaboration and knowledge sharing as well as opportunities to capture direct feedback on SMEs' climate-related needs and solutions.

Existing support schemes*		
	Public Sector	Non-Public Sector
International & Regional	<ul style="list-style-type: none"> (ANDE) Aspen Network of Development Entrepreneurs WeEmpowerAsia 	<ul style="list-style-type: none"> Asia Gender Network GrowVentures She Loves Tech
Country-specific	<p>Myanmar</p> <ul style="list-style-type: none"> The Myanmar Agriculture Network (MAN) <p>Thailand</p> <ul style="list-style-type: none"> WeEmpowerAsia, Thailand WE-CAN <p>Viet Nam</p> <ul style="list-style-type: none"> The Women's Initiative for Startups and Entrepreneurship (WISE) 	<p>Cambodia</p> <ul style="list-style-type: none"> SHE Investments <p>Indonesia</p> <ul style="list-style-type: none"> Impact Hub Jakarta <p>Myanmar</p> <ul style="list-style-type: none"> Myanmar Women Entrepreneurs Network (MYANWEN) The Lab <p>Philippines</p> <ul style="list-style-type: none"> Impact Hub Manila Business & Professional Women (BPW) Makati Connected Women <p>Thailand</p> <ul style="list-style-type: none"> GEN Thailand Connecting Founders Federation of Business and Professional Women of Thailand Bangkok Recycling Chain <p>Viet Nam</p> <ul style="list-style-type: none"> TVL GROUP - LINH THAI

* Organisations that are consistently supporting the community

5. What support is available to SMEs and women-owned SMEs on Climate Change?

Case study: Viet Nam Association of Seafood Exporters and Producers (VASEP)

SMEs can engage collectively through trade associations to learn and act on climate issues. Trade associations, such as VASEP, can support SMEs in implementing measures for emissions mitigation and climate adaptation, tailored to the specific local context.

VASEP Overview

Organisation Structure	Non-governmental organisation established in 1998, comprising enterprises and authorities in seafood exporting and processing sectors.
Support for SMEs	<ul style="list-style-type: none">• Organising training activities, reaching up to 1,500 people annually across 15-20 topics to support seafood businesses• Raising businesses' awareness of regulations and global markets• Providing updated market information through its live portal in Vietnamese• Coordinating seminars and conferences, including the annual Viet Nam Fisheries International Exhibition, to establish market linkages and international relations

The UK Government's ASEAN Low Carbon Energy Programme (LCEP) supported VASEP to provide energy efficiency technical assistance to 3 SMEs:

VASEP closely coordinated with LCEP to provide capacity building to its member seafood factories and identified 3 SMEs to receive further technical assistance from the Programme. As a result of the energy audits, capacity building and energy management support, the 3 factories successfully carried out energy efficient measures and achieved the following climate and operational benefits:

- ✓ Increased awareness of leadership and key staff on energy management
- ✓ Increased operational efficiency through usage of the energy management systems
- ✓ Increased cost savings through energy conservation measures and investments into energy efficient appliances

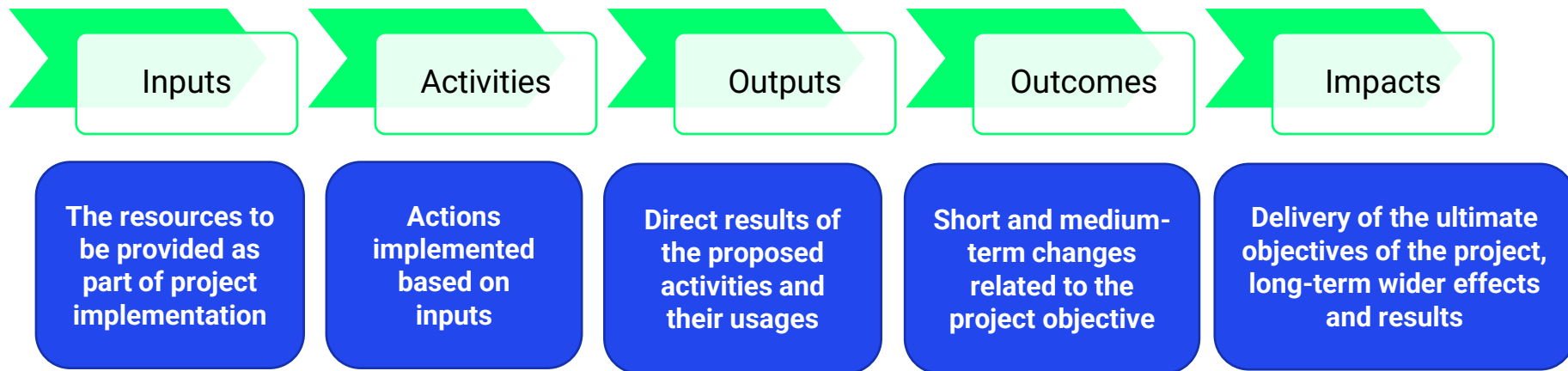


How to track progress?

6. How to track progress?

Monitoring and Evaluation Framework

Monitoring and evaluation (M&E) framework and processes are an essential part of implementing climate mitigation and adaptation technologies for every company. This ensures that the investment, both in monetary and in human capital forms, are achieving their desired impact. M&E frameworks and processes should be designed to be iterative, to allow for learning and adjustment over time, as well as well documented to ensure good basis for communications with key stakeholders on climate-related action (e.g. Government regulatory needs, investors, key buyer relationships, community).



The framework enables early thinking on how project success will be measured and understood and help formulate evaluation questions through the identification of the anticipated outcomes and impacts.

6. How to track progress?

Monitoring and Evaluation Framework

To ensure a robust M&E framework, one key first step is to identify the roles and responsibilities of each department involved, and ensure the flow-through of information towards Board level, to support decision making. Depending on the complexity of the organization and the investment type discussed (e.g. energy efficiency investment vs adaptation investment), an example of roles and responsibilities that can be developed is as below. All parties should be highly engaged from the early stage of the process to ensure clear ownership of role in climate action management and monitoring.

The essential part of M&E is to ensure the data and information are used to discuss and evaluate outcomes (including intermediate and projected).

Typical evaluation questions:

- What has worked well, less well and why?
- To what extent and how have the anticipated target been achieved?
- How much of the improvement from the baseline can be attributed to the project or technological investment?
- Is the project or technological investment a good use of resources?

Role	Responsibility	Reporting
Senior Management individuals and/or committees	Identifying the right indicators that link the resource investments to the right high-level climate targets to be achieved by company, indicate frequency of reporting Ensure good data governance and data quality processes are in place and assessed Make decisions based on data and impact evaluation	Reports indicators to the C-Suite, and ultimately the Board
Energy management/Facilities team (e.g. where flood adaptation technology is being considered/used)	Ensure the right monitoring and analysis tools and systems (e.g. smart meters) are in place for consistent reporting (e.g. identifying the data source), the right baselines have been developed (e.g. Energy intensity use for the process prior intervention) Develop data collection processes comparing actuals vs. targets vs. Baselines Assess data, evaluate impact and issues for reporting	Reports to senior management
Delivery teams (e.g. engineering teams responsible for processes where new technology is deployed)	Regularly collect indicators in required frequency, and identify data / implementation issues, suggest corrective actions	Reports to energy management / facility management teams

Glossary

Terms	Definition
Climate change	A change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.
Climate adaptation	Adjusting to actual or expected future climate, to reduce our risks from the harmful effects of climate change, such as sea-level rise and more intense extreme weather events.
Climate mitigation	Avoiding and reducing emissions of heat-trapping greenhouse gases into the atmosphere to prevent the planet from warming to more extreme temperatures.
Greenhouse Gas Protocol	An international standard for corporate accounting and reporting emissions, categorizing greenhouse gases into Scope 1, 2 and 3 based on the source.
Net Zero	Achieving Net Zero involves making deep reductions in greenhouse gas emissions to get as close to zero as possible, and then actively removing from the atmosphere any emissions that really cannot be avoided.
Physical risks	Risks related to the physical impacts of climate change.
Transition risks	Risks related to the transition to a lower-carbon economy.



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