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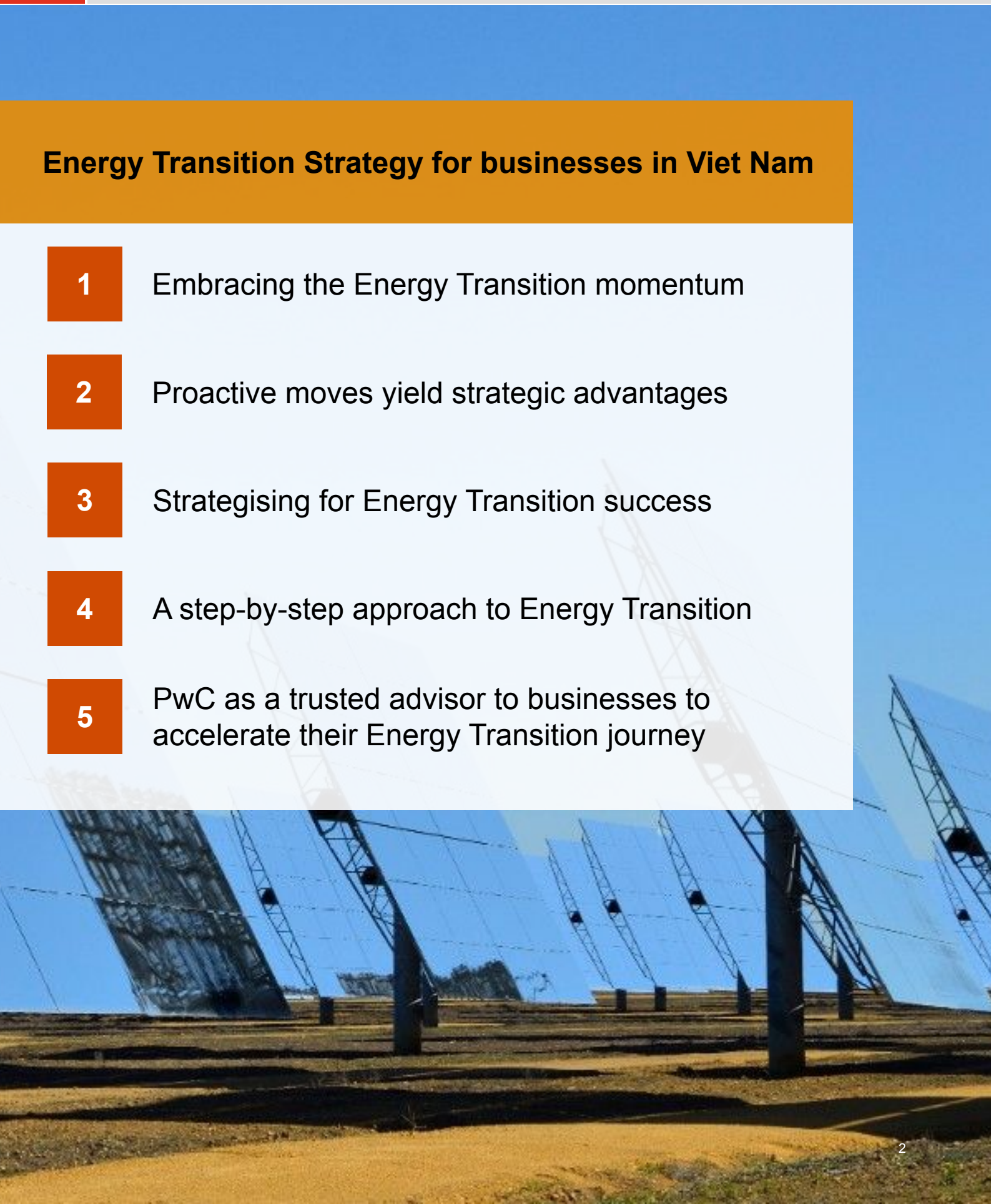
Energy Transition in Viet Nam

Strategic considerations for businesses

Content

Energy Transition Strategy for businesses in Viet Nam



1

Embracing the Energy Transition momentum

The global ambitions for Net Zero have put a value on energy transition action and made it a significant imperative for businesses

Net zero is the new narrative for action on climate change globally

We stand at a pivotal moment in our time with climate change being a critical issue. The 2021 United Nations Climate Change Conference (COP26), attended by 197 country representatives, emphasized the need for urgent action as global leaders sought to enhance global efforts in addressing the climate crisis.

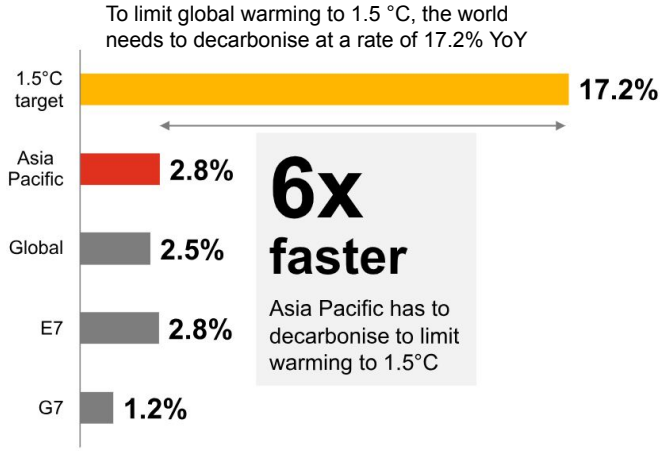
By 2023, around 120 countries committed or considered committing to net zero by 2050. Joining the Race to Zero, more than 9,000 businesses, more than 1,000 cities, more than 1,000 educational institutions, and more than 600 financial institutions have committed to taking action to cut global emissions in half by 2030.

Achieving net zero objectives requires holistic actions towards transitioning to sustainable energy practices

As we approach the middle of the 2020s, the transition to a net zero economy becomes paramount. It's a significant imperative for businesses to not delay but act now.

PwC's 15th Net Zero Economy Index assesses the progress in reducing energy-related CO2 emissions and decarbonising economies. It reveals that the world must achieve a daunting year-on-year decarbonisation rate of 17.2% from now until 2050, if we are to limit global warming to 1.5°C above pre-industrial levels (Figure 1).

Figure 1: Decarbonisation rate, 2022



Source: PwC's 15th Net Zero Economy Index

Asia Pacific, the world's fastest-growing region, contributes almost half of global emissions. Despite its economic growth, the region faces substantial climate risks, particularly developing economies in the areas most vulnerable to climate change, such as Viet Nam. Without climate actions, a high-emission scenario could lead to a severe 24% GDP loss due to climate change impacts by 2100.

The net zero agenda needs engagement from many sectors given the expansive scope of energy transition required. Particularly, industries with substantial greenhouse gas (GHG) emissions, such as Electricity, Transportation, Agriculture, Industrial processes, and Construction, play a pivotal role in solving the climate problems (Figure 2 and 3).

Figure 2: Global GHG emission by sector

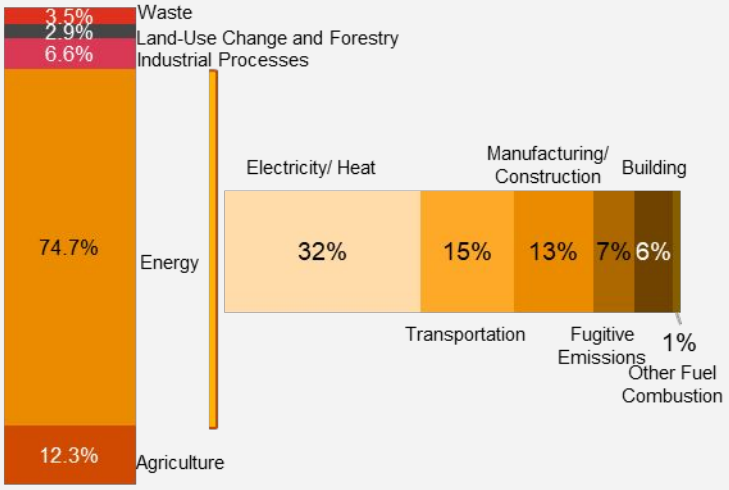
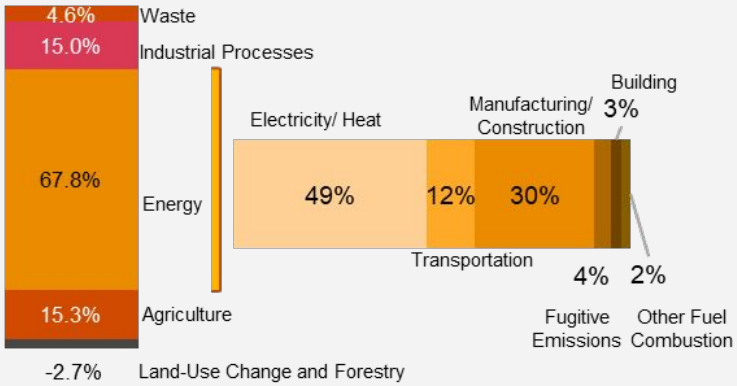


Figure 3: Viet Nam GHG emission by sector



Source: United Nations, IRENA - World Energy Transition Outlook 2022 (LHS), Global Source - Global Sustainability Consulting Services (RHS), Climatewatch, PwC Analysis

Energy transition is accelerating in Viet Nam but challenges remain

Viet Nam has made a stronger commitment to tackle climate change since COP26 (Figure 4). The government is pursuing continuous reforms and investments that aim to transition its economy towards the net zero agenda, including signing the Just Energy Transition Partnership (JETP) and approving the long-awaited Power Development Plan VIII (PDP VIII) and PDP VIII Implementation Plan.

However, the reality is that the nation cannot meet its net-zero commitment without serious actions and fundamental change. According to the Climate Action Tracker, while there has been significant momentum in the deployment of renewable energy in Viet Nam in recent years, the government's renewable energy targets are still considered lacking in ambition.

Viet Nam is facing severe climate change-induced droughts, with disruptions in hydropower generation and high-reliance on coal-fired generation ultimately challenging energy security. While the international support committed under the JETP and from other development financial institutions can support Viet Nam in closing some of the gap, further concrete actions are needed.

The private sector can play a pivotal role in driving this transformation. Tangible and actionable moves from the private sector can mitigate risks, unlock growth and productivity for businesses, and help Viet Nam get back on track to meet its net zero targets.

Figure 4: Viet Nam's goals and commitment on net zero and energy transition

UN Sustainable Development Goals

Universal access to energy services by **2030**

At least **32.3%** renewable energy share by **2030**

Maintain at least **6% GDP growth** per annum

Viet Nam's Aspiration

High-income status country by 2045

Net Zero Commitments (COP26)

Phase out coal by **2040**

Net zero by **2050**

Revised Nationally Determined Contribution (NDC)

Conditional NDC:
With international support:
43.5% GHG reduction compared to BAU by **2030**

Unconditional NDC:
Using domestic resources:
15.8% GHG reduction compared to BAU by **2030**

Viet Nam's National Green Growth Strategy

Key targets	Reduction in intensity of GHG emissions per unit of GDP	Primary energy consumption per unit of GDP	Proportion of renewable energy over total primary energy supply
By 2030	▼ At least 15% compared to 2014 levels	▼ 1-1.5% per year	▲ 15-20%
By 2050	▼ At least 30% compared to 2014 levels	▼ 1% per year	▲ 25-30%

Viet Nam Energy Efficiency Programme 3

	2019	2025	2030
Year			
Goals		**5–7% saving** of total national energy consumption	**8-10% saving** of total national energy consumption

Just Energy Transition Partnership (JETP)

Measure	NDC & national strategies	PDP VIII target	JETP target
Peaking date for GHG emissions	2035	2030	**2030**
Peak annual power sector emissions	240 Mt	-	**170 Mt**
Peak coal capacity	37 GW	30.1 GW	**30.2 GW**
Renewable Energy share in energy supply by 2030	36%	50%	**47%**

Just Energy Transition Program (COP28)

$7.75 billion Public financing

+

$7.75 billion Private investment

$15.5 billion

Initial finance mobilisation for next 3-5 years to support Viet Nam's green transition

Source: UN, Climate Action Tracker, Viet Nam revised NDC in 2022, VNEEP 3, VGGS, JETP, Public press, PwC Research and Analysis

2

Proactive moves yield strategic advantages

Viet Nam's power sector is undergoing a substantial transformation

Viet Nam's Eighth National Power Development Plan (PDP VIII), approved in May 2023, outlines an ambitious plan up to 2030 with a vision for 2050.

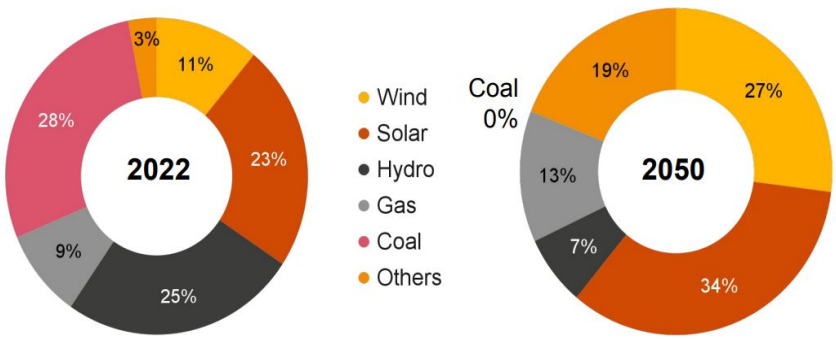
In April 2024, Prime Minister's Decision No. 262/QD-TTg ("PDP VIII Implementation Plan") was issued. The plan signals a substantial shift in Viet Nam's power sector, emphasising the development of renewable energy, battery storage, hydrogen, and ammonia.

Aligned with the government's commitment to net zero by 2050, PDP VIII addresses uncertainties but involves implementation challenges, impacting investors and industry stakeholders.

Viet Nam's commitment to transitioning to renewable energy is articulated in the installed capacity targets outlined in PDP VIII and PDP VIII Implementation Plan (Figure 5):

- **Phasing out coal-fire power:** Coal-fired power capacity is projected to reach its peak in 2030 and will gradually phase out to zero capacity from 2030 to 2050. An additional removal of 13,220 MW of coal-fired power is proposed compared to the revised National Power Development Plan VII.
- **Prioritising renewable energy development:** The plan aims for a substantial share, targeting 30.9 - 39.2% and 67.5 - 71.5% of total electricity from renewable sources in 2030 and 2050, respectively.
- **Transmission grid projects to facilitate connection of renewable energy projects:** The plan highlights the priority of transmission grid projects to facilitate onshore wind, biomass, and waste-to-energy sources, enabling the national electricity system to support the country's transition to a more sustainable energy mix.
- **Inter-regional renewable energy industry and service centres** will be established by 2030, one in the Northern region and one in the South Central - Southern regions, to serve as the hubs for developing renewable energy value chains, eco-industrial and low-carbon industrial parks, R&D and education.

Figure 5 - Share of installed capacity in Viet Nam power sector: The shift from 2022 - 2050



Source: Viet Nam's PDP VIII: Insights and key considerations for investors

Businesses in Viet Nam which actively embrace the energy transition can mitigate risks and capture significant opportunities

The evolving energy market presents both heightened risks and abundant opportunities within a new energy ecosystem. Proactive adopters of the energy transition are poised for success.

Active adopters can mitigate several relevant risks:
The transition in the energy market creates material and increasing risks for energy users, including rising energy costs, exposure to volatile events, and others. Businesses who are active in the energy transition can be more resilient to relevant climate risks, and avoid the Risk of Irrelevance in a Clean Future Energy System.

Significant opportunities await proactive businesses:
There are also substantial opportunities for businesses as both energy suppliers and users in the energy transition journey. Early and proactive transitioners offer a first-mover advantage, aligning business activities with evolving consumer attitudes, new technologies, and emerging markets.

Figure 6: Transit to a clean energy system: passive vs proactive approach
Businesses – both energy suppliers and users – have to face a choice between:

Energy transition serves as a risk mitigation strategy for businesses in Viet Nam

Initiating timely risk responses to sustain value

With the impact of climate change and growing momentum for net zero, most companies are affected by at least some if not all of these factors below, depending on company type and location:

Compliance for regulations	As more stringent regulations require companies to shift towards sustainability, companies may be required to reduce scope 2/3 emissions (emissions beyond their direct operations) or potentially face carbon taxes
Rising energy costs	Energy costs are likely to increase substantially. While methods such as procurement arrangements and energy efficiency can give partial mitigation, this remains a notable risk for businesses.
Energy price volatility	Market participants will be exposed to more volatile price events as renewable energy penetration increases in a complex grid and market that is not fit for purpose
Energy supply security	Companies will face growing pressure on the stability and security of their energy supply, and may experience increasing number of blackouts or have to invest in alternative supply or storage arrangements

Source: PwC analysis

Rising regulatory requirements result in heightened complexity

As the Vietnamese Government is imposing more stringent energy transition and decarbonisation requirements on businesses, existing and forthcoming regulations could be either risks or opportunities, depending on company actions.

Non-exhaustive

Law

Law No. 72/2020/QH14 on Environment Protection

- Systemisation and the development of a **domestic carbon market** to be promoted
- The Prime Minister to establish a **list** of fields and facilities where **GHG must be inspected/ aggregated** (list to be updated every 2 years)
- Facilities on the list to develop/maintain **GHG emission database** and submit **results** of inspection/ aggregation to and GHG reduction plans to Ministry of Natural Resources and Environment (MONRE).
- **National database** on **climate change** to be developed/ maintained.

Decree

Decree 06/2022/ND-CP on mitigation of greenhouse gas (GHG) emissions and protection of ozone layer
Provide a specific roadmap for the reduction of GHG emissions, requirements on certain entities to conduct GHG inventory and prepare plans for GHG reduction, significant measures for mitigating the use of ozone-depleting substances, and an plan for establishing the domestic carbon market in Viet Nam.

Circular/ Decision

Decision 01/2022/QD-TTg promulgating the list of sectors, greenhouse gas-emitting establishments subject to greenhouse gas inventory
A detailed list of 1,912 facilities (across 6 sectors: energy, transport, construction, industrial processes, agriculture – forestry – land use, waste) are required to submit GHG report and GHG reduction plan to government authorities by end of 2025

Decision 167/2022/QD-TTg approving "2022-2025 program to support private sector enterprises in sustainable business"
Support **~10,000 private sector enterprises** in sustainable business; contributing to the national target of 5-7% energy efficiency; increasing the average labour productivity by around 7%/year

Circular 96/2020/TT-BTC providing guidelines on disclosure of information on securities market
Require public companies to publish ESG report annually

Source: Thuvienphapluat, PwC analysis

Engaging in energy transition is a compelling business move for companies to unlock significant opportunities

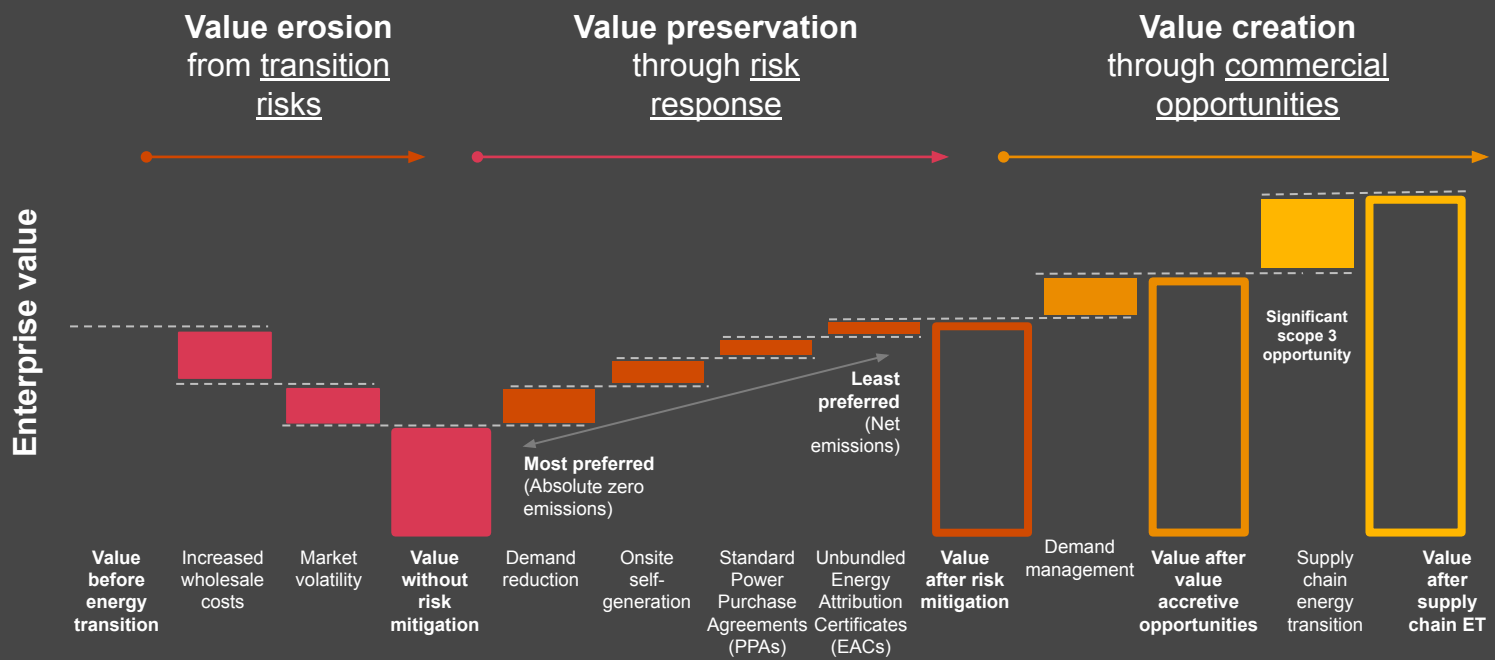
Seizing commercial opportunities

New revenue streams	Opportunities to unlock new revenue streams through providing services to the grid, e.g. through on-site generation, demand side response, and storage
Efficiency and cost reduction	New solutions and technologies are driving energy efficiency and offering reduced costs. For instance, the cost of solar is now better than traditional fossil fuel based solutions.
Driving climate transition	Leading the response to climate change will position the company as part of the solution, and ultimately help the economy transition to net zero by 2050
Brand improvements	Positioning the company at the forefront of climate responsiveness is becoming increasingly important for various stakeholders, including governments, investors, lenders, customers and employees

Source: PwC analysis

Generating opportunities for growth and value creation

Taking proactive steps can also allow private companies in Viet Nam to both preserve value at risk from energy transition and pursue value growth opportunities:



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Strategising for Energy Transition success

Sustainability Transformation Models can range from incremental changes to radical transformation

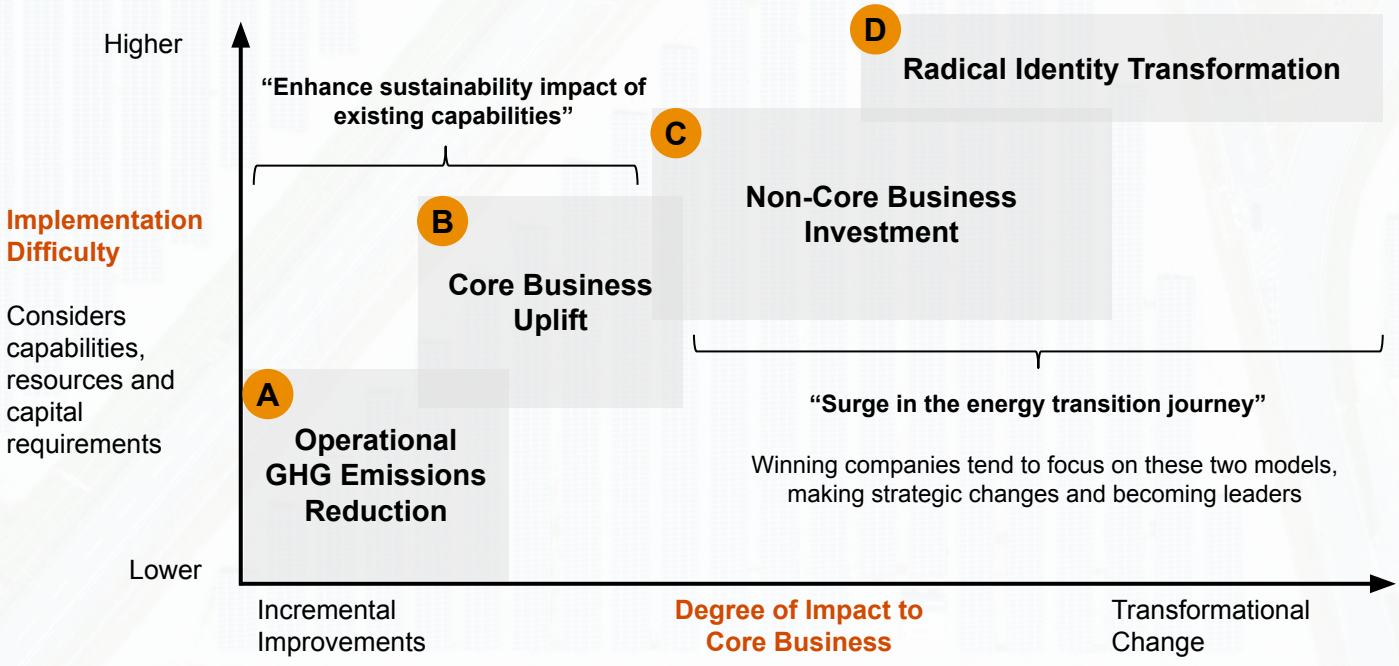
Evolving Sustainability Transformation Models from incremental to transformational

Although current changes in Viet Nam have been largely **incremental**, the widespread adoption of renewable and smart energy technologies, fuelled by the pace of innovation, may pave the way for businesses to embrace more **radical transformation.**

Implementation difficulty is the main challenge hindering businesses in adopting radical transformation models.
When assessing these strategy models (Figure 7), it is important to consider the Viet Nam context at hand to execute effectively, including but not limited to:

- **Availability** of advanced technologies to pursue operational efficiency initiatives
- **Feasibility** of technological upgrades and conversion of existing technologies to operate more sustainably
- **Suitability** of new transformational businesses with Vietnamese regulatory constraints or limitations

Figure 7: Profiles of Various Sustainability Transformation Models



Source: PwC analysis

The Capabilities-Driven Strategy framework can be leveraged for the energy transition to address implementation challenges

A framework that makes energy transition doable, affordable and profitable

Capabilities-Driven Strategy helps to align **strategic aspirations in energy transition** with the **unique capabilities** of each company. This helps companies to achieve sustainable success in energy transition by growing in a way that fits their capabilities system and value proposition.

How to leverage this framework?

Way to Play in Energy Transition (Value Proposition)

How are you going to face the energy transition?
Successful companies have a clear understanding of **their potential positioning** in the energy transition journey

Archetypes	Energy supplier	Supplier and user	High energy user	Low energy user	Enabler
Description	Provider of energy to other businesses	Companies that both supply energy, and use large amount of energy	Company with energy intensive activity; considerable energy costs in operation	Companies that are neither suppliers, or use large amounts of energy in operations	Companies that can enable the energy reduction of other firms
Potential energy transition role	Renewable energy supplier, work with customers on intensity reduction	Explore in-house best practices and partner with other stakeholders (e.g suppliers and customers) across the value chain to enable energy transition	Reduction in energy use, share best practice with other energy users	Focus on demand consolidation	Provision of technology, finance or other assistance
Example industries	Energy companies Energy generators	Oil and Gas	Steel Chemicals Manufacturing Construction	Agriculture Fast-moving consumer goods Retail Consumer technology	Professional and financial services Climate and measurement technologies Demand response

Distinctive Energy Transition Capabilities

What gives you a competitive advantage in the energy transition journey?
The engine of value creation in a company's energy transition journey is the system of **3-6 differentiating capabilities** that allow companies to deliver their identified value proposition. This includes strengths in capabilities, and in capital and non-capital resources.

Portfolio of Energy Transition Options and Enablers

What energy transition enablers would you use?
It is critical for a company to identify the suitable energy transition options, enablers, or solutions, that can help to leverage a consistent capabilities system (see details on page 13)

Source: Strategy& Capabilities-Driven Strategy Framework, Transforming Energy Demand White Paper January 2024 (World Economic Forum, PwC), PwC analysis

Energy transition options and enablers are available along the value chain

Identify tangible actions and initiatives

There are multiple options for energy transition. By categorising them into distinct levels within the carbon management hierarchy, businesses can easily identify the suitable options (Figure 8).

A structured overview of options can facilitate coherent choices across business units. This overview should take into account different business units (if heterogeneous), including a high-level description of the strategic option, a description of likely impacts, and a time dimension to facilitate the development of a strategic story.

Figure 8: Carbon management hierarchy to identify options and enablers to reduce emissions along businesses' value chain

Carbon management hierarchy		Decarbonisation entry points	Emission reduction (*)
Avoiding through switching to renewable sources or energy or low carbon energy	AVOID	Fuel switch - Switch to biofuels	20 - 30%
		Renewable energy - Renewable electricity generation or procurement	50 - 75%
Minimising emissions through energy and resource efficiency measures	MINIMISE	Energy efficiency and resource efficiency - Energy efficient equipments	10 - 15%
		Process enhancement - Efficient route planning	5 - 20%
Making equivalent emissions elsewhere through sequestration activities	OFFSET	Carbon sequestration - Afforestation activities	100%

Note: (*) Emission reduction percentages are indicative figures
Source: PwC research and analysis

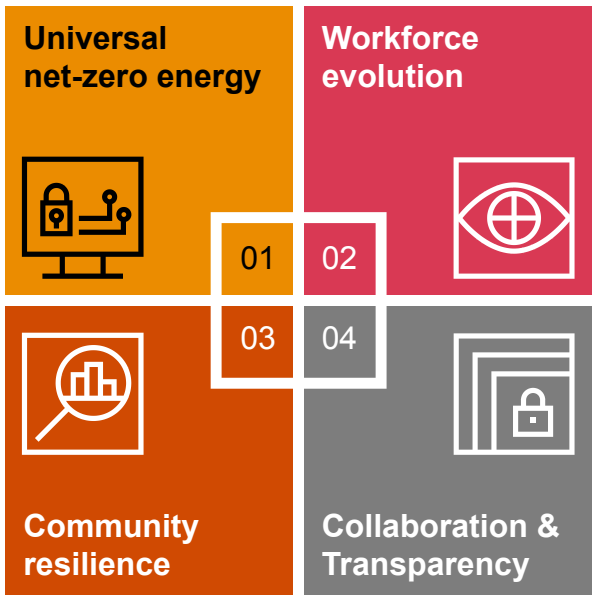
Navigating the path for a just and sustainable energy transition

Towards a Just Energy Transition

A just transition refers to achieving net zero targets while considering the social and economic impacts on individuals, workforces and communities (Figure 9).

The Vietnamese government commitment in **Just Energy Transition Partnership (JETP)** demands a **Just Energy Transition** approach from businesses, to balance the environmental impact with commercial feasibility and the impact to all stakeholders while transitioning towards net zero.

Figure 9: A four-pillar framework for Just Transition



Source: Just Transition: Framework for Company Action (Inclusive Capitalism), World Business Council for Sustainable Development, PwC analysis

Considering the wider social and economic impacts from corporate climate action can help Vietnamese companies to minimise disruption, creating new opportunities and goodwill

Workplace Productivity	• Poor management internally could damage innovative capacity and employee engagement • Lack of proper engagement on and understanding of the importance of climate action can reduce resilience in crisis situations
Supply Chain Disruption	• Supporting business partners (typically small to medium enterprises - SMEs) on their climate efforts can strengthen local supply chains • As large organisations are serviced by SMEs, leaving them behind in the transition would result in economic inefficiencies
Public Recognition to Operate	• Neglect of wider community considerations can lead to weak relations and potential operational, consumer, client and regulatory repercussions • Community buy-in can improve reputation and reduce transaction costs

4

A step-by-step approach to Energy Transition

Implementing an energy transition strategy for Vietnamese companies through a step-by-step approach would enable positive outcomes

Implementing Transformational Changes can be challenging to companies in Viet Nam. Hence, we suggest a step-by-step approach to help you develop an energy transition strategy and suitable business models to succeed in a climate-resilient and sustainable future.

1 Baseline and assess

1.1. Assess energy and value chain footprint	1.2. Identify opportunity value	1.3. Assess value
Assess baseline energy usage, costs and scope 1/2/3 emissions across the company and different value chain players	Identify potential opportunities to be explored	Design a value model and create value estimates based on company and value chain energy opportunities

2 Prioritise and plan

2.1. Capability assessment and targets	2.2. Energy strategy	2.3. Transformation roadmap
Conduct an assessment of current capabilities against energy decarbonisation pathways to establish clear targets	Develop a business strategy to commercialise the energy transition opportunities	Create a high level implementation plan including priority initiatives required for the transformation

3 Execute and transform

3.1. Energy procurement	3.2. Operations and logistics	3.3. Partnership facilitation	3.4. Supply chain energy transition
Refine energy procurement transformation in line with strategy	Conduct implementation and project management of onsite transformation in line with energy strategy	Identify and facilitate partnership introductions, including financing options	Set up an engagement framework to assess key value chain suppliers and explore potential energy transition opportunities

Initial baseline and assessment are the first important steps to form a value-driven energy transition strategy

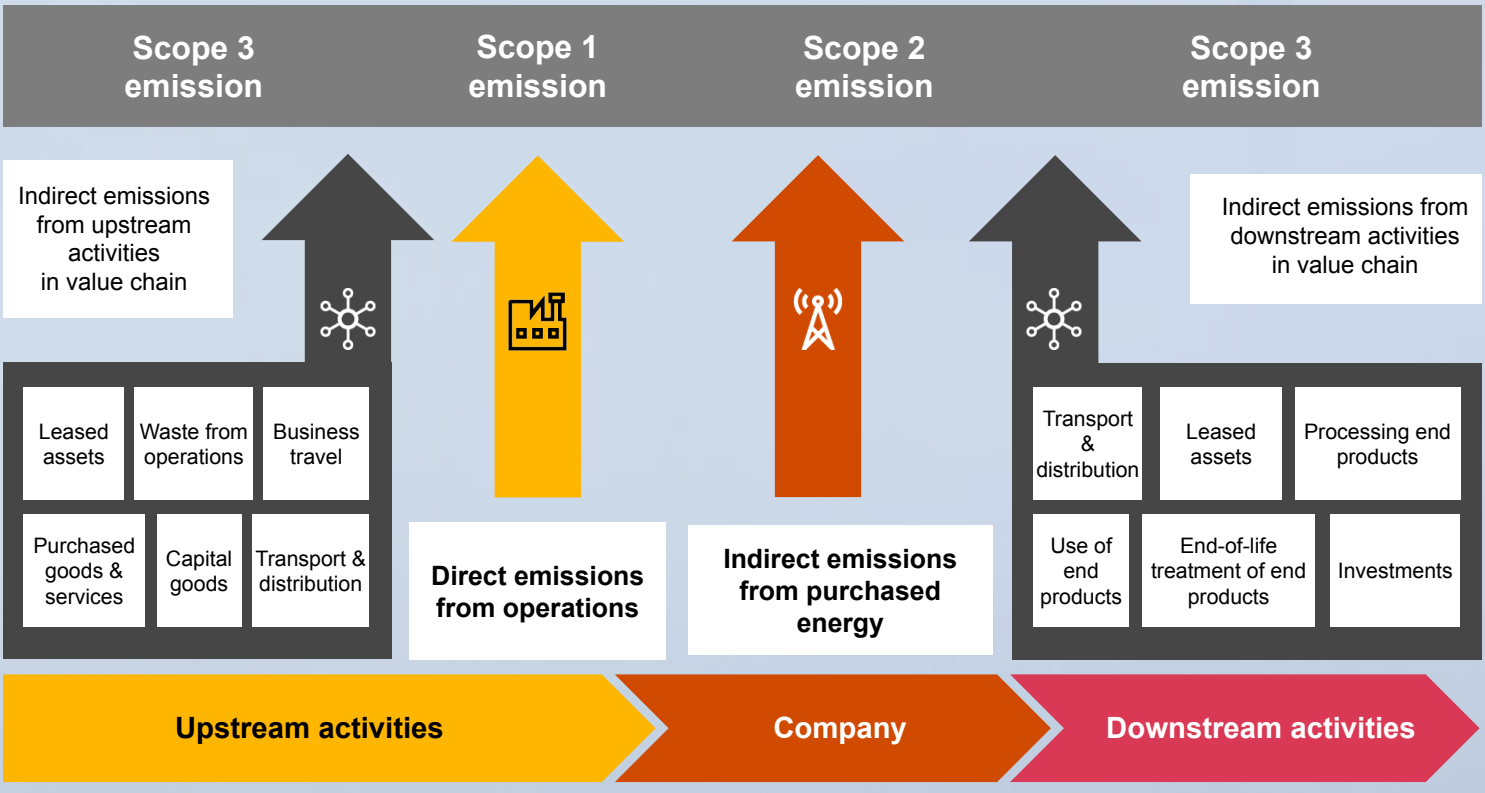
1 Baseline and assess

When establishing an energy transition strategy, a company should commence with an assessment of its energy and value chain footprint. This involves evaluating baseline energy usage, costs, and scope 1/2/3 emissions across the company and its various value chain participants.

This assessment aids in identifying potential opportunities to explore, whether they arise internally within the company or from upstream and downstream activities (see Figure 10).

Ultimately, this would form a value model, which identifies the value chain energy opportunities of the company. This ensures that the energy transition strategy of the company includes value-driven activities, with a focus on creating values on the existing business and creating values through materiality driven decarbonisation.

Figure 10: Illustration of emission footprint and opportunities across a value chain



The second step involves identifying the necessary capabilities, setting targets, and developing a strategy and implementation plan

2 Prioritise and plan

Here is an illustration of the process.

Capability assessment: Identifying Key Business Areas Requiring Energy Transition Capabilities

Businesses can develop a shortlist of key current state capabilities - including policies, systems, tools, people and skills, knowledge and behaviours. Subsequently, a high-level assessment should be conducted to gauge the gap between current state and the capabilities required for each decarbonisation priorities (e.g. the risks and opportunities), including strengths and potential areas for improvement (refer to the sample below).

Key priorities		Relevant business areas				
		Strategy	Finance	Sustainability	Operation	Procurement
Risks	Emission target compliance	☑	☑	☑	☑	☑
	Rising energy costs	☑	☑		☑	☑
	Price volatility	☑	☑		☑	☑
	Energy security	☑			☑	☑
Opportunities	Efficiency	☑			☑	
	New revenue streams	☑	☑	☑	☑	
	Brand improvement	☑		☑		

Setting credible targets: based on the assessment of current capabilities

Clarity in defining the scope, boundaries (including Scope 1, 2, or 3 of the value chain), timeline of targets, and target types is crucial for businesses. Various types of energy transition targets exist, each differing in their approach to scope, boundaries, and carbon offset purchases. Consider six key features required for credible energy transition targets as follows:

Target boundary	Decarbonisation rate	Target year	Interim abatement targets	Neutralisation strategy	Disclosure strategy

Forming business strategy with implementation plan: following the Capabilities-Driven Strategy Framework

Businesses can leverage the capabilities assessment and target setting to formulate a comprehensive business strategy for capitalising on energy transition opportunities, following the Capabilities-Driven Strategy Framework. This includes developing a high-level implementation plan encompassing priority initiatives necessary for transformation.

In executing an energy transition strategy, businesses will need to consider a mix of energy solution initiatives

3 Execute and transform

Energy solutions are not mutually exclusive; they are highly complementary. In fact, successful energy transition strategies typically demand a synergistic combination of these approaches.

The following example illustrates the blend of initiatives in executing an energy transition strategy, including enablers and challenges that can pose complexities for companies in Viet Nam.

Strategy

Transformation strategy and execution stage: *Non-exhaustive*

3.1. Energy procurement	3.2. Operations and logistics	3.3. Partnership facilitation	3.4. Supply chain energy transition

Internal initiatives

Demand reduction
Energy savings and energy efficiency initiatives

Demand management
Managing energy demand profile via storage, Demand Side Response, or grid services

Self-generation
Installation of rooftop solar to create your own onsite renewable energy supply

Electrification of assets
Electrifying assets to decarbonise and improve efficiency – e.g. Electric vehicles and low carbon fleet

External initiatives

Stakeholders engagement
- Forming partnerships with various suppliers to fund green transportation options
- Cost allocation: Developing passing on mechanisms of sustainable costs to customers

Carbon credit trading
Trading of Energy Attribution Certificates (EACs) on the wholesale energy market

Implementation

Initiatives	Main enablers	Main considerations
Demand reduction	• Energy Efficiency	• Limited access to funding for energy efficiency projects
Self-generation/ Alternative energy options & New technologies	• Rooftop solar • Offshore wind • Liquefied natural gas (LNG) • Hydrogen, ammonia • Waste to energy, Biofuels • Mini hydro power	• Regulatory and policy uncertainties (e.g. future power development implementation plan, pricing or bidding mechanism etc.) • Limited access to funding and investment • Technical and operational complexities in integrating renewable energy systems • Need to transition key pilots into valid business cases and mitigate against operational risks
Demand management	• Grid solutions such as interconnectors • Battery storage	• Urgent demand for necessary grid balancing systems and mechanisms • Potential for off-grid/mini grid in industrial parks
Electrification of assets	• Electric vehicles (EVs)	• Governmental Support and Tax Incentives for EVs • Potential disruption to existing business models and operations
Stakeholders engagement	• Passing on mechanisms to allocate sustainable costs to customers • Partner with suppliers to fund energy transition	• Stakeholders awareness on energy transition needs • Stakeholder alignment on the strategic case for energy transition • Key stakeholders inclusion to identify and pursue energy transition initiatives
Carbon credit trading	• Certified Emission Reductions (CER) · • Voluntary Emission Reductions (VER)	• Uncertainties in the future development of the domestic carbon market in Viet Nam

5

PwC as a trusted advisor to businesses to accelerate their Energy Transition journey

PwC has deep expertise to support businesses in their energy transition journey to achieve business goals with sustainable impact

PwC leverages our diverse composition of practice offerings, solutions, and skill sets to catalyse value-driven energy transition for businesses

Our Capital Projects & Infrastructure services team has delivered a wide range of energy transition projects. In these projects we support our clients through all phases of their energy transition journey, from baselining and target setting, through to strategy development, organisational transformation and transparency and reporting. We have designed and implemented energy transition strategies for clients in the power, oil and gas, energy and industrial manufacturing industries, among others.

How we can support businesses

Baseline and Targets
Building the strategic case, establishing the emissions baseline, understanding current state of performance against peers, and assessing the value implications as part of a strategic case for action and goal setting.

Strategy Development
Understanding and evaluating the strategic sustainability issues for business, assessing the business case for change and sustainable investments and developing and implementing business strategies and decarbonisation actions which have sustainable development issues at the core.

Organisational Transformation
Alignment of the organisations operating model to the net zero strategy will enable your focus on the priority areas such as investment decision making, people and talent development, supply chain management, product and service design, R&D investment, infrastructure design and investment and customer experience to deliver net zero.

Transparency and Reporting
Transparency in internal and external measurement and reporting is an increasingly important facet to businesses being able to attract and retain responsible investment as well as for managing the reputation of the business.

Leveraging our expertise in key sectors:

- Government and Public Sector
- Power & Utilities
- Oil & Gas
- Manufacturers
- Transportation
- Real Estate Development and Operations
- Agriculture

Bringing Value to You: Achieving Business Goals with Sustainable Impact

Growth
Expanding ‘green growth’ market opportunities

Cost reduction
Delivering on investor criteria leading to a lower cost of capital

Efficiency
Increased energy efficiency, reduced energy costs, reduced waste

Skill
Talent attractiveness, working for progress and clear environmental and social benefit

Regulatory dialogue
Enabling endorsement and wider trust

Case study:

PwC facilitated the transformation of an Oil & Gas Services company into the premier Energy Technology player in the post-carbon era

The Challenge

A **global energy giant** who deploys advanced technologies to serve energy and industrial companies was looking for more efficient, more reliable and cleaner solutions. They developed new propositions and services to support companies across a range of sectors to become more energy efficient and reduce emissions. However, they also needed **to be able to tell a credible story about their own journey to net zero.**

In 2019, the company set the target of net zero by 2050 in which the **36 month, five phase programme** aimed to achieve:

- 50% cut in emissions by 2030
- Net zero by 2050
- Development of solutions to drive net zero across energy

The PwC Solution

PwC helped the company to develop and deliver their emissions reduction & energy transition strategy in two years. We brought our expertises from the UK, the US and the Middle East to deliver:

- Gap analysis on systems, architecture, data availability and policies/ procedures
- Sustainability & Energy Transition Strategy Alignment and Roadmap
- Next steps and future state

Our approach is a blended solution, including a set of metrics and targets to meet net zero commitments through leading energy transition solutions.

Delivered sustained outcomes

A framework that influences strategic decisions and is integrated with corporate strategy, planning and performance management

An Energy Transition strategy and an aligned ESG programme

A programme and best practices that moved the client to the front of the pack in terms of carbon mitigation

We bring global experience in energy transition to help business generate material profit improvements and carbon savings

Our selected credentials across the global network:

Energy Transition Strategy and Roadmap for an energy company in Brazil

PwC facilitated strategy discussions about the future of energy transition and how the client should be positioned in order to grow and create value:

- Decarbonisation agenda, renewables growth strategy and distributed generation positioning
- Requirements and upsides for the network manager role in a more volatile and intermittent system
- Hydrogen applications and level of investments
- EV charging business model and partnerships

Conducting a U.S. hydrogen market study for an engineering and construction company

The client had experienced a strong decline in revenue from its historical tank construction division due to lower demand for crude oil storage, and wanted to identify opportunities in the hydrogen storage market as part of its growth strategy. PwC assisted the Client in:

- **Deep Dive –** Established a fact base for the US hydrogen market
- **Competitive Profiling** – Detailed the competitive environment for each of the identified sub-markets
- **Voice of Customer** – Interviewed industry experts to understand market dynamics and required capabilities
- **Right to Win Needs** – Developed a perspective of "what it takes to win" in each sub-market
- **Strategic Plan** – Developed a target market prioritisation framework to assess the hydrogen market relative to other growth opportunities

Developing a hydrogen roadmap for a major steel producer in India

PwC supported the client to decarbonise its steel production. We helped them to assess options for captive utilization of hydrogen produced from plant operations, evaluating feasibility timelines for its inhouse applications, developing a holistic scenario of green hydrogen take-off in terms of commercial viability, and creating a preparedness roadmap.

Innovation Fund 2nd call: Full application process support for a large-scale project for energy storage in Italy

PwC supported the client whose investment was aimed at building their first large scale plant for long duration energy storage (project CAPEX: 30 mln €). PwC collaborated in the preparation of the required documentation for the call, covering the following aspects:

- Technical assistance in carrying out a feasibility and cost-benefit study of the project
- Benchmark analysis to understand the state of the art for the innovations implemented at European level for the project reference market
- Support in GHG calculation and the construction of a project implementation plan
- Optimisation of the project's economics and elaboration of the project's relevant costs and financial model

Analysis of creating shared value in energy transition for a global automobile company in Japan

The automobile industry is required to formulate a customer value and economic value (CSV) strategy that effectively addresses the challenges of energy transition while balancing social and economic value.

Based on the hypothesis that the strategy for realising CSV is energy transformation using renewable energy, we advised the client on the following:

- PEST/3C (external environment): politics, economy, society, technology, industry, customers, and competition
- Focusing on crucial factors in energy transition such as carbon pricing, CO2 reduction technology, and consumer trends

Functional evaluation support for EV charging service solutions for a Japanese trading and investment company

PwC helped the client to clarify the strengths of European partner companies' EV charging services in order to develop EV charging services in Japan.

We proposed what kind of functions will be required of EV charging services in Japan, and how we could leverage the strengths of our client companies' charging services in the future.

We actively collaborate with businesses in Viet Nam to initiate and accelerate their energy transition journeys

Our selected credentials in Viet Nam:

A Vietnamese oil and gas group on energy transition strategy

PwC is supporting a major Vietnamese oil and gas group on its Green Energy Transition Strategy (GETS). PwC reviewed the Group's current energy transition strategy, and now assisting the group to develop a new Green Energy Transition Strategy based on decarbonisation and growth ambitions including a road map and action plan for GETS.

Impact: PwC engagement would deliver the following impacts:

- Gap analysis and development of Group's GETS and organisational structure taking into consideration international best practices
- Expert advice regarding the Group's GETS strategy, road map and action plan
- Development of a capacity building plan and a comprehensive implementation plan

A Vietnamese Electricity Utili company on energy transitio & climate action

PwC is supporting a Vietnamese Electricity Utility company in implementing the country's COP26-related commitments; through deep analytics on energy sector, decarbonisation scenarios and implementation roadmaps in order to maintain a sustainable economic development growth.

Impact: The project has national significance as it is supporting one of the major state owned enterprises in developing a holistic energy sector transition plan to meet the net zero ambitions including developing a coal phase out plan and a just transition plan. It also analyses the climate risks to the utilities' assets.

Viet Nam Smart and Energy Efficient City Project

PwC advised the client to identify and prepare energy efficiency investments including smart street lighting and public building retrofitting in the six cities and provinces of Viet Nam.

Impact: PwC delivered three specific outputs:

- A sovereign investment project prepared in the selected cities and provinces
- Replicable public-private partnership (PPP) model developed for the municipal energy efficiency projects and innovative municipal financing options investigated
- Capacity strengthened and awareness increased of various stakeholders.

Rooftop solar projects in HCMC and Da Nang

PwC advised our client's solar rooftop project to distribute energy in urban areas of Danang and Ho Chi Minh City.
We conducted comprehensive analysis about the regulatory framework for solar energy projects, and identified existing inefficiencies and remedies to the current transaction structures.

Impact: The project concluded with a comprehensive review of existing transaction structures, proposal of potential revision, and transaction advisory support for selected projects
This included analysis on Viet Nam's regulatory stance towards battery storage as a business model.

Climate Finance Accelerator (CFA) Program in Viet Nam

The Climate Finance Accelerator (CFA) is a global technical assistance programme funded by the UK government with the aim of encouraging the flows of finance required to deliver on countries' ambition to limit global warming to 1.5°C.

Impact: CFA Viet Nam Phase 1 was implemented from December 2022 to May 2023 with nine (09) projects selected from a wide range of sectors. CFA Viet Nam Phase 2 has been running from August 2023 to May 2024. Eleven (11) exciting projects that help to tackle climate change in Viet Nam have been selected as our second project cohort with sectors including clean energy and energy transition (biomass and new technologies such as green hydrogen/ ammonia and energy storage), etc.

Implementing the E-mobility assessment in Viet Nam

PwC provided support to inform the development of the first E-mobility framework in Viet Nam including identifying the impact of e-mobility developments with regard to new targets set by the government in 2022 on the power sector across the value chain.

Impact: The assessment identified possible challenges for the power system and related needed investments. Furthermore, the assignment identified circular economy and job creation opportunities related to the development of e-mobility solutions.

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