

A New Paradigm for Green Growth

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Synopsis

- Thailand's economy faces increasing threats from both climate change and changing global trade rules and regulations.
- To adapt to these changes, Thailand must utilize technology that creates new business opportunities and increases resource-use efficiency.
- New business opportunities exist in clean energy, electric vehicles, and environmentally friendly packaging sectors, among others.
- Resource-use efficiency strategies such as energy and water conservation have been utilized in livestock agriculture, hotels, and buildings.
- The Thai government and businesses must both take part in developing green growth.

Future challenges and impacts on the Thai economy

In the future, Thailand will face novel risks, such as climate change and changes in trade rules and regulations. Therefore, conventional economic models will not lead to sustainable growth.

The 6th Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) AR6 Working Group 1 (IPCC, 2021) emphasized the connection between increasing global surface temperatures and extreme heat and heavy precipitation. Southeast Asian countries are at a high risk of experiencing both events. The Global Climate Risk Index has ranked Thailand as one of the countries that has been affected most by climate change since 2017. Thailand has been impacted by both a high number of deaths and economic loss (Eckstein, Künzel, & Schäfer, 2021). The Swiss Re Institute estimated that in the most severe scenario, wherein the global temperatures rise by 3.2 degrees Celsius, the Thai economy may shrink by up to 44% in 2050 (Guo, Kubli, & Saner, 2021).

Besides problems posed by climate change, Thailand may face additional challenges from changes in global trade rules and regulations. The European Commission has proposed the Carbon Border Adjustment Mechanism (CBAM), which would adjust prices of goods to reflect the true amount of carbon released during their production process. This policy will directly affect Thai businesses that export to the region. While CBAM will initially focus on a small number of high-polluting industries, other industries must also adapt to these regulations because other countries or regions may integrate greenhouse gas emissions into their future trading conditions.

During the COP26 event in Glasgow, United Kingdom, Thailand announced its plans to achieve net zero greenhouse gas emissions by 2065¹ under the condition that enhanced international support in finance, technology, and capacity-building would be provided. To achieve this goal, related sectors, including businesses, must play a role in driving ambitious targets to reduce greenhouse gas emissions.

Green growth through using technology to increase productivity

To handle these pressing challenges, Thailand should shift its current economic development model to focus on an economic model that emphasizes co-benefits: generating economic growth while considering the environment and societal well-being. Technology is key to total factor productivity (TFP) growth and to driving more efficient resource use and creating new business opportunities.

TFP can be enhanced in two ways: using technology to increase the efficiency of resource use and to develop product and service innovations that create value. Although these two methods could potentially drive economic growth, the former option poses lower risk to businesses.

Opportunities for green growth in the Thai context

This part presents examples of how technology has been used to create new business opportunities and to increase resource-use efficiency.

Using technology to create new business opportunities

Areas of new business opportunities, their drivers of growth, and business examples are shown in Table 1.

¹ At COP26, Thailand sets a target to achieve carbon neutrality by 2050 and a target to achieve Net Zero greenhouse gas emissions by 2065.

Table 1: Business opportunities under the green growth model

Sector	Drivers of growth	Example businesses
Electricity generation from clean energy	<ul style="list-style-type: none">• National Energy Plan's goal for carbon neutrality by 2065–2070• Trends toward a digital society• Demand for clean energy• Prosumers	SPCG BanpuNEXT BGrimm Power
Electric vehicles	<ul style="list-style-type: none">• Increasing consumer demands• Thailand's goal to produce 100% ZEV by 2035	PTT and Foxconn: developing end-to-end production platforms to produce a complete range of electric vehicles for various car brands around the world
Environmentally-friendly packaging	<ul style="list-style-type: none">• Increasing consumer interest• Measures to reduce single-use plastics by the government• High growth in the market	Gracz: packaging from natural plant pulp

Source: Thailand Development Research Institute

Although technology can help create new business opportunities, there are still challenges to be met. For the clean energy businesses, the government must adjust regulations that currently obstruct electricity trading, as well as carry out grid modernization to better support a decentralized power generation system and accelerate research and development of renewable energy technologies to reduce cost.

The main obstacles for electric vehicles include the lack of clear incentives by the government and the lack of clear guidelines for the management of used batteries. Therefore, a framework must be established to promote the electric vehicle industry, and the necessary infrastructure such as charging stations must be provided.

For businesses producing environmentally friendly packaging, the high cost per unit compared to conventional packaging is still an important obstacle. Therefore, the government should raise awareness of the benefits of environmentally friendly packaging and create a clear pathway for banning or discouraging packaging that is harmful to the environment.

Using technology to increase resource-use efficiency

Three examples of businesses that have used technology to increase resource-use efficiency are shown in Table 2.

Table 2: Examples of enhanced resource efficiency under the green growth model

Sector/ Business	Action	Results
Agriculture: BETAGRO	<ul style="list-style-type: none"> • Biogas technology to generate electricity • Wastewater treatment • Improving machine efficiency 	<ul style="list-style-type: none"> • 30–50% electricity-use reduction • Emissions reduced by 10 tCO₂e/day • 2 million Baht saved in electricity costs • 19% water savings • 300,000 megajoules of energy saved
Tourism: SIVATEL Hotel	<ul style="list-style-type: none"> • Food waste management • “Golden Waste Bank” project • LED lighting • Split air conditioning units • Shift from plastic to reusable glass bottles 	<ul style="list-style-type: none"> • Reduced food waste • Additional income from selling recyclable waste • Energy savings • Reduced plastic bottle waste by 200,000 bottles/year
Green buildings: SCG	<ul style="list-style-type: none"> • LED lighting • Solar power • Wastewater treatment and water-saving toilets 	<ul style="list-style-type: none"> • Saved 250,000 kWh of electricity/year • 99,000 kilowatt hours/year of electricity from solar energy • 74% of water saved

Source: Thailand Development Research Institute

Even though the technologies presented here can increase TFP with relatively low risk, obstacles still exist. Small livestock farmers often lack access to the necessary technologies. The government, therefore, should accelerate research and development of technologies that reduce greenhouse gas emissions and increase resource efficiency without affecting overall productivity, as well as increase access to funds and technology.

For green commercial and residential buildings, the main challenges are the high cost of acquiring green building certifications and a lack of substantial government support. Therefore, the government may use tax measures to help reduce the financial burden for green businesses. For example, hotel operators should be allowed to use the green hotel certification expense to further reduce corporate income tax. In addition, the government should support green hotels through green procurement policies, such as choosing a green hotel as a venue for organizing meetings.

Conclusion: Next steps for green growth

With the cooperation of all its sectors, Thailand can shift toward green growth by adopting technology to increase TFP.

The government must enable the green growth movement by getting rid of inflexible regulations such as regulations on the purchase of electricity from renewable energy producers. As well as bringing technology, innovation, and new ideas to drive environmentally friendly business models, government should also communicate the impacts of climate change and new business opportunities to all relevant sectors. Skilled labor must be simultaneously developed to support the growth of environmentally friendly technology.

The business sector also plays an important role. It may implement the 4P's guideline, namely: (1) Pledging: making commitments and setting clear goals; (2) Planning: pathways for short-, medium-, and long-term goals; (3) Proceeding: actions to achieve commitments, such as policy adjustments, investing in new equipment or technology, and modifying business; and (4) Publishing: enhancing transparency and accountability by disclosing progress toward achieving the set goals.

The financial sector is also important. It provides funding for businesses and entrepreneurs to access green technologies through green loans or green bonds.

The public can also contribute by changing consumption behavior to support environmentally friendly products and services.

References

Eckstein, D., Künzel, V., and Schäfer, L. (2021). GLOBAL CLIMATE RISK INDEX. Available at https://www.researchgate.net/publication/348759719_GLOBAL_CLIMATE_RISK_INDEX_2021

Guo, J., Kubli, D., and Saner, P. (2021). The Economics of Climate Change: No Action Not an Option. Available at <https://www.swissre.com/dam/jcr:e73ee7c3-7f83-4c17-a2b8-8ef23a8d3312/swiss-re-institute-expertise-publication-economics-of-climate-change.pdf>

IPCC. (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Available at https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf