BUSINESS FORUM MAGAZINE

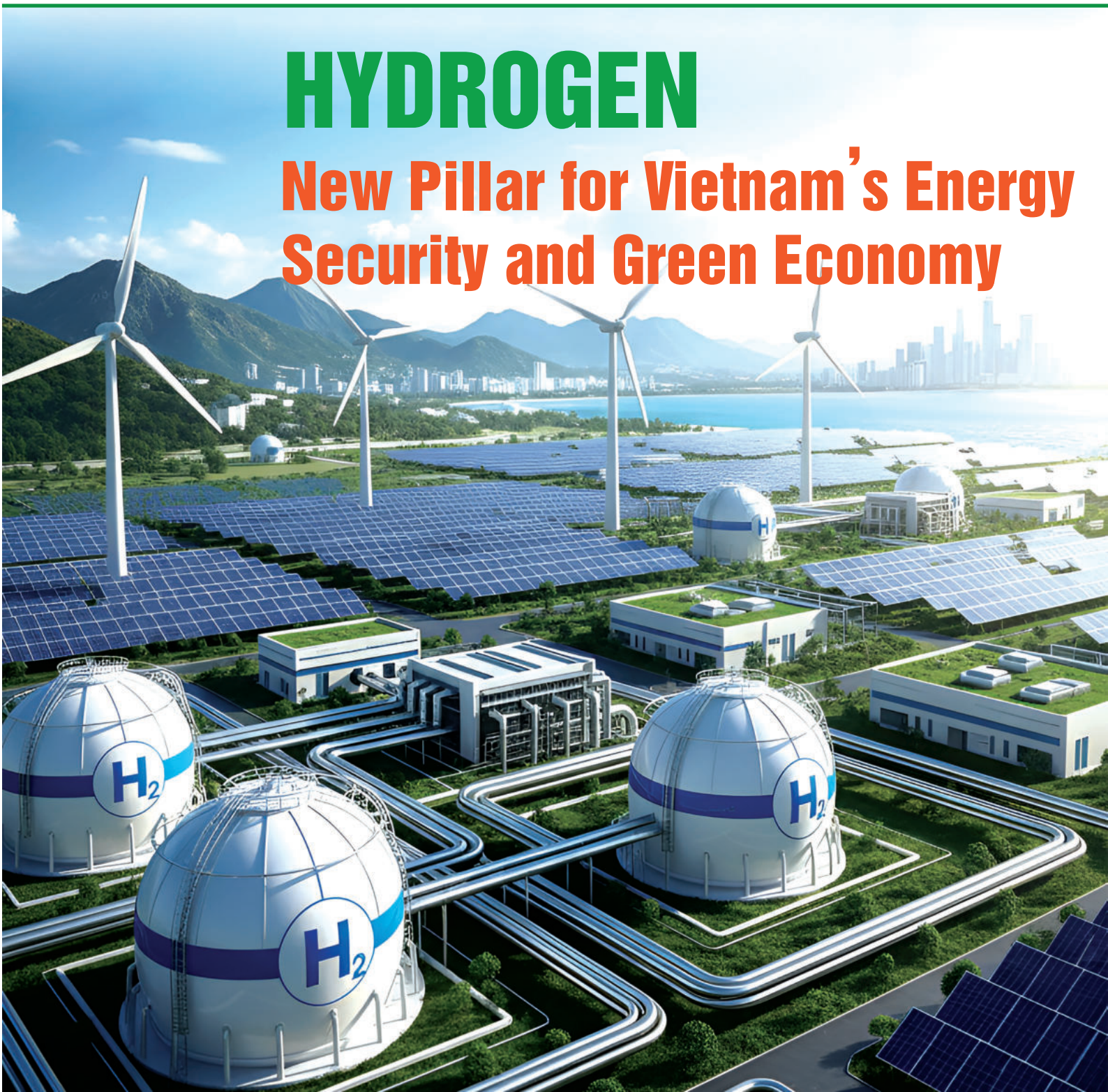
VIETNAM Business Forum

THE VIETNAM CHAMBER OF COMMERCE AND INDUSTRY - VCCI

VOL.06, NO.17 (1515), NOV 10 – DEC 9, 2025
ISSN 1859-0632

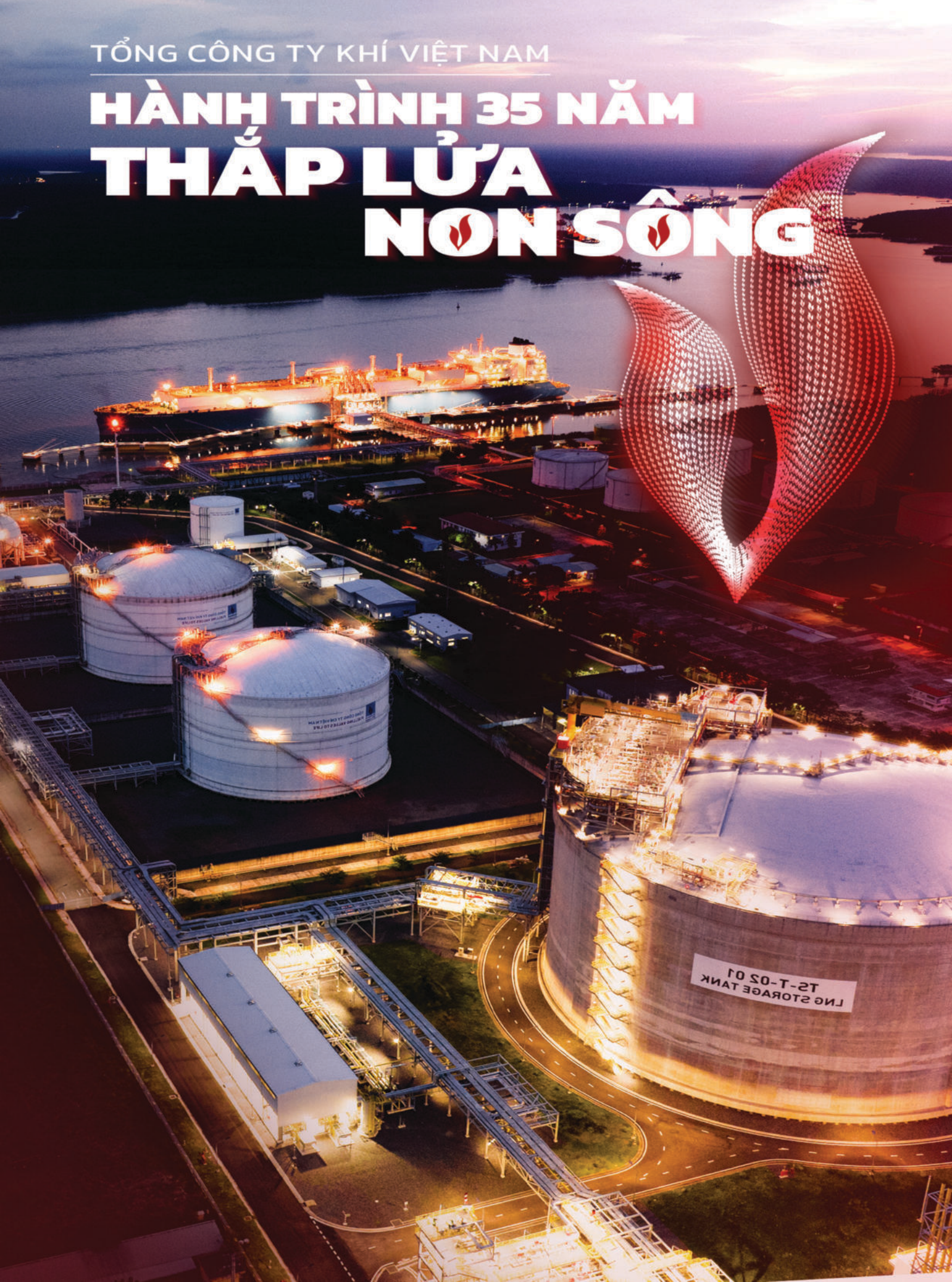
HYDROGEN

New Pillar for Vietnam's Energy Security and Green Economy



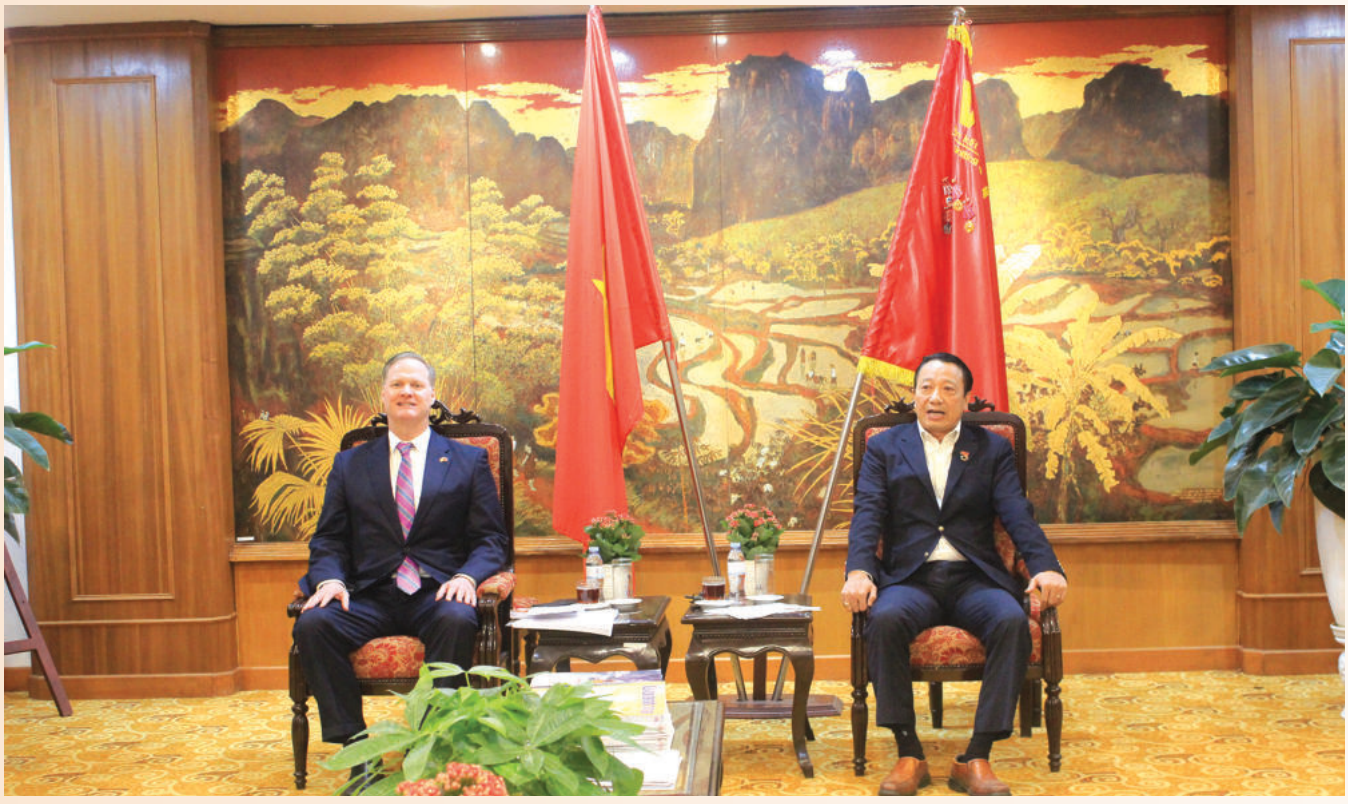
TỔNG CÔNG TY KHÍ VIỆT NAM

HÀNH TRÌNH 35 NĂM THẮP LỬA NON SÔNG



CONTENTS

Cover photo: *Vietnam has natural and logistical advantages to become the region's hydrogen hub, but it must "move fast" through international cooperation and "stand firm" by localizing technology*



VCCI Vice President Nguyen Quang Vinh (R) receives U.S. Commercial Counsellor Stephen L. Green

VIETNAM - U.S.

Strengthening Partnerships, Connecting Business Community

Vietnamese and U.S. enterprises are entering a deeper phase of cooperation, focusing on expanding investment, strengthening market connections, and promoting bilateral economic projects.

THU HA

This was highlighted during a recent meeting in Hanoi between Nguyen Quang Vinh, Vice President of the Vietnam Chamber of Commerce and Industry (VCCI), and Stephen L. Green, U.S. Commercial Counsellor to Vietnam. The discussion focused on prospects for bilateral economic cooperation and plans to support businesses from both countries.

According to VCCI Vice President Vinh, after 30 years of diplomatic relations, Vietnam-U.S. ties have developed comprehensively across many sectors. Vietnam is currently the eighth-largest trading partner of the U.S. and the fourth-largest export market in the ASEAN region. Conversely, the U.S. is Vietnam's second-largest trading partner and its largest export market.

VCCI has collaborated with major U.S. corporations, including Google and Mastercard, which are globally influential partners. It also regularly works with U.S. partners, especially the U.S. Embassy, to organize and host trade promotion delegations in both markets. In addition, VCCI has expanded the distribution of its handbook on U.S. trade defense regulations to Vietnamese enterprises.

Additionally, VCCI frequently works with the U.S.-ASEAN Business Council (USABC) and the U.S. business community in Vietnam to organize bilateral trade and investment forums, discussing policies on trade, tariffs, and the global investment environment.

The annual Vietnam-U.S. Business Summit is a key platform connecting the governments and business communities of both countries. The Prime Minister has attended the summit four times and has confirmed participation in this year's event on November 12.

U.S. Commercial Counsellor Stephen L. Green emphasized that Vietnam remains a strategic partner in the U.S.' economic engagement in the Asia-Pacific region. Organized by the U.S. Department of Commerce, SelectUSA is the leading federal

initiative promoting foreign direct investment into the U.S. Its roadshows and conferences give global investors and local businesses a unique opportunity to meet U.S. economic development officials abroad and start planning their U.S. expansion. The 2025 ASEAN Roadshow was held in Vietnam and Indonesia from November 3 to 7, providing a platform for targeted investment connections, workshops, and site visits.

"We hope to see more Vietnamese companies investing in the U.S. while encouraging U.S. businesses to expand operations in Vietnam, a dynamic and promising market," Green emphasized.

"VCCI encourages Vietnamese enterprises to participate actively, dedicating time to meet potential partners, explore opportunities, and establish meaningful, long-term investment collaborations. We also request that U.S. trade promotion agencies support Vietnamese businesses in identifying opportunities in the U.S. market," Vinh added.

He also said that in 2024, the Vietnamese business delegation was one of the largest from ASEAN to attend the SelectUSA Investment Summit. In 2025, Vietnam continued to lead with 134 delegates, ranking third globally and first within ASEAN.

On October 26, 2025, Vietnam and the U.S. agreed to issue a Joint Statement on the Framework for a Reciprocal, Fair, and Balanced Trade Agreement. This marks an important step in the new phase of cooperation between the two countries. Maintaining the current 20% reciprocal tariff rate and the potential for expanding tariff reductions on selected product groups will create new export growth opportunities for Vietnamese enterprises, particularly for competitive products listed in the annex of the joint statement.

"This is the time for Vietnamese companies to take a more proactive approach in going global, especially in the U.S. market, in sectors with strong potential such as real estate, trade, and renewable energy," VCCI Vice President Vinh added.■

DUAL TRANSFORMATION

Improving Capacity, Advancing Sustainable Business Growth

Forum "Dual Transformation - A Driver for Economic Growth: From Policy to Practice" held by VCCI and Business Forum Magazine

Dual transformation, which includes digital transformation and green transformation, has become an important factor enabling enterprises to improve competitiveness and pursue sustainable development. Although the Government's directions and commitments are clearly defined, gaps and obstacles remain between policy formulation and implementation.

ANH MAI

At the recent forum "Dual Transformation - A Driver for Economic Growth: From Policy to Practice" held in Hanoi by the Vietnam Chamber of Commerce and Industry (VCCI) and Business Forum Magazine, in cooperation with relevant agencies, VCCI Vice President Hoang Quang Phong highlighted that digital and green transformation is advancing rapidly in the manufacturing sector. This progress not only enhances the internal capacity of enterprises but also supports Vietnam in meeting its national commitments to sustainable development and achieving the Net Zero target.

In terms of policy, the Politburo's Resolution 57-NQ/TW and Resolution 68-NQ/TW provide clear directions to promote the private sector through innovation, digital transformation, green transformation, and sustainable business practices, aiming to make Vietnam a developed, high-income country by 2045. These resolutions are being implemented through a range of mechanisms and policies that support enterprises.

According to the Ministry of Industry and Trade, applying digital technologies and smart energy management systems can help businesses reduce operating costs by 10-15%, increase productivity by 20%, and lower CO_2 emissions by 5-8% annually. McKinsey & Company also estimated that digital transformation in manufacturing could boost labor productivity by up to 30% and cut supply chain costs by 15-20%. ☞

Nguyen Hong Hien, Director General of the Department of Science, Technology, Innovation, and Digital Transformation under the Central Policy and Strategy Commission, emphasized that the experience of many enterprises shows that growth is truly meaningful only when supported by a sustainable foundation, with dual transformation serving as the key driver.

"Digital and green transformation enable Vietnam not only to accelerate but also to grow more sustainably, targeting double-digit growth driven by productivity, technology, and innovation," emphasized Hien.

For enterprises, digital transformation is a tool to improve efficiency, reduce costs, expand markets, and enhance customer experience, while green transformation helps save energy, cut emissions, optimize resources, and meet increasingly strict ESG standards in global markets.

According to the OECD report "Digitalization and Green Growth" (2023), adopting digital technologies, particularly IoT, big data, and artificial intelligence (AI), can help businesses reduce energy consumption and CO_2 emissions by 10-20%, while significantly enhancing productivity and operational efficiency across the value chain. This demonstrates that digital transformation not only drives output growth but also advances green and sustainable growth, two objectives that were once seen as separate but are now mutually reinforcing.

Nguyen Hong Hien said that with advantages in geographic location, rapid digital infrastructure development, a young and adaptable workforce, and strong integration capacity, Vietnam is well positioned to become a regional hub for smart, green, and digital manufacturing. This represents not only an opportunity to strengthen the "Make in Vietnam" brand on the global value map but also a foundation for Vietnam to move forward in new supply chains, where value depends not on low labor costs but on productivity, technology, and environmental responsibility. To optimize resources and make dual transformation a genuine growth driver, he identified four key directions for action.

First, "One infrastructure, two goals": all essential infrastructure, whether public or private, should support both digitalization and the green transition at the same time. Examples include green data centers, energy-efficient cloud platforms, and ESG management systems that integrate operational data.

Second, "Two-in-one strategy": every digital transformation project should incorporate green criteria, while every green project should be built on digital technology to enable measurement and effective management.

Third, Hybrid human resources combining digital and green skills: enterprises should develop a workforce proficient in both digital technologies and green production processes. This "dual human capital" is a decisive factor for long-term competitiveness.

Fourth, green finance and innovation: businesses should leverage green credit, innovation funds, and science and technology funds to reduce investment costs and accelerate implementation.■

COMMUNICATION AND MODEL ACTIONS ARE TWO KEY FACTORS

TRAN THI THU TRANG, CHAIRWOMAN OF HANEL PT NEXTTECH JSC AND PRESIDENT OF THE BAC NINH INDUSTRIAL MANUFACTURING ASSOCIATION (BACLINK)

To make digital and green transformation, the two pillars of "dual transformation," real drivers of growth, communication and exemplary actions are essential. The government and local authorities should support pilot enterprises in implementing dual transformation while conducting broad campaigns to demonstrate the benefits of digitalization. This approach helps businesses change their mindset, awareness, and practices from the ground up. Communication should be practical, linked to concrete success stories, to inspire innovation and readiness for change across enterprises of all sizes.

Dual transformation, covering both digital and green initiatives, should also become a key criterion for evaluating and recognizing enterprises within the pioneering and "go global" business network.

EACH ENTERPRISE NEEDS ITS OWN ROADMAP AND SOLUTIONS

NGUYEN DOAN KET, VICE CHAIRMAN AND DEPUTY GENERAL DIRECTOR OF RANG DONG LIGHT SOURCE AND VACUUM FLASK JSC

We aim to create a dynamic innovation environment where scientists, experts, and businesses collaborate, particularly by establishing technology exchange platforms that allow small and medium-sized enterprises to easily access, select, and apply new technologies at reasonable costs. It is necessary to enhance access to green financing, enabling businesses to implement environmentally friendly and sustainable projects, thereby producing green products that meet the standards of markets such as the United States and the European Union.

Importantly, the government and regulatory agencies must continue to provide a supportive environment for businesses, especially SMEs, to access high-quality talent in digital technologies and artificial intelligence. These elements are critical for driving smart, green, and sustainable economic growth.

INSTITUTIONALIZING AND STANDARDIZING NATIONAL ESG STANDARDS IN ALIGNMENT WITH INTERNATIONAL BENCHMARKS

PHAM BICH HONG, DEPUTY GENERAL DIRECTOR OF GARMENT 10 CORPORATION

As a large, long-established enterprise, the company has faced challenges in accessing capital and green financing. Investment in renewable energy and circular economy projects requires substantial funding, yet green finance remains limited and difficult to obtain, highlighting the need for stronger support. Integrating production systems with logistics and operational management also remains complex.

Regarding ESG standards, companies must currently comply with multiple, differing international criteria from global clients, which significantly raises compliance costs. Additionally, the pace of digital and green transformation has outstripped workforce training, resulting in a shortage of skilled personnel for dual transformation.

To provide maximum support for enterprises during dual transformation, it is essential to implement green finance mechanisms, including green credit packages with preferential interest rates. At the same time, national ESG standards should be institutionalized and harmonized as fully as possible with international benchmarks to reduce compliance costs and enhance competitiveness. Investment in data infrastructure and workforce training is also critical, along with policies encouraging large enterprises to develop data-sharing initiatives and train high-quality personnel for digital and green transformation.

A SHIFT IN MINDSET AND BUSINESS MODEL

PHAM HONG QUAT, DIRECTOR GENERAL OF THE NATIONAL AGENCY FOR STARTUPS AND TECHNOLOGY ENTREPRENEURSHIP, MINISTRY OF SCIENCE AND TECHNOLOGY

Dual transformation fundamentally means changing the business model, not merely adopting new technologies. Digital transformation in particular is now moving toward AI transformation, emphasizing foundational technologies and ecosystem-based business models. This shift introduces new challenges for corporate growth models, requiring a change in mindset, perspective, and business model to strengthen internal capacity and meet increasingly intense regional and global competition.

People play a decisive role in dual transformation, while technology functions only as a tool. Therefore, before discussing dual transformation at the enterprise level, attention must focus on changes in the mindset and awareness of entrepreneurs. Recent startup fundraising practices show that investors evaluate the vision and capabilities of founders and business leaders before deciding to invest.

Dual transformation is an opportunity rather than a challenge for businesses. Vietnamese enterprises are naturally dynamic, adaptable, and creative in finding solutions and applying knowledge to optimize resources. With approaches tailored to their specific industries and development contexts, they can turn dual transformation into a pathway for sustainable and competitive growth.

DEVELOPING MODEL DIGITAL AND GREEN TRANSFORMATION ROADMAPS FOR SMEs

MAC QUOC ANH, VICE PRESIDENT OF HANOI SMALL AND MEDIUM ENTERPRISE ASSOCIATION

It is essential to develop model roadmaps for digital and green transformation specifically for SMEs. Large enterprises that have successfully implemented dual transformation should share their processes with SMEs. At the same time, evaluation and certification systems for digital and green enterprises should be established, allowing consumers to identify products and businesses that have achieved recognized digital and green transformation.

The VCCI serves as the main connector, linking SMEs to the network of dual-transformation enterprises to provide them with information and guidance. The government sets strategic goals and priorities over a three- to five-year horizon and delegates local authorities and relevant departments to support enterprises in implementation. Small, incremental transformation steps for SMEs require substantial community support, including short-term training programs, advisory services, and technology transfer from research institutes and universities. Additional support should include the provision of fintech and low-cost digital solutions and enhanced communication programs to raise consumer awareness, thereby motivating SMEs to pursue digital and green transformation.

Vietnam, UK Sign Agreement on Administrative Assistance in Customs

During the official visit of General Secretary of the Communist Party of Vietnam To Lam to the United Kingdom, Minister of Finance Nguyen Van Thang, authorized by the Government of Vietnam, signed an agreement between Vietnam and the United Kingdom of Great Britain and Northern Ireland (UK) on Cooperation and Mutual Administrative Assistance in Customs. The signing marks an important step forward in the international cooperation of Vietnam Customs, aimed at facilitating trade and promoting transparent and sustainable supply chains.

Under the witness of Party General Secretary To Lam, Minister of Finance Nguyen Van Thang presents cooperation documents with the UK, including the Agreement on Administrative Assistance in Customs

HIEN PHUC

Strengthening the legal foundation for bilateral cooperation

According to the Department of Vietnam Customs, the official document exchange ceremony took place on October 30, 2025 (local time) in the United Kingdom, witnessed by senior leaders of both countries. The event was one of the highlights of General Secretary To Lam's official visit, underscoring the importance both Vietnam and the United Kingdom place on strengthening their partnership in finance and customs.

Before this agreement, cooperation between Vietnam Customs and UK authorities was carried out through an arrangement with His Majesty's Revenue and Customs (HMRC) and several memoranda of understanding with the UK Border Force. However, these previous commitments were mainly technical and non-binding, limiting cooperation to information exchange, professional training, and equipment support.

The newly signed intergovernmental agreement elevates bilateral cooperation to a higher level, providing a clear and comprehensive legal framework with stronger binding force. The scope of cooperation now includes key areas such as customs control, anti-smuggling investigations, trade fraud prevention, and professional information sharing. This milestone enhances coordination capacity and ensures a more transparent, secure, and efficient flow of trade between the two countries.

Practical cooperation to facilitate trade and authorized economic operators

A key feature of the agreement is the commitment to cooperate on the Authorized Economic Operator (AEO) program, which grants preferential treatment to companies with strong compliance records. Mutual recognition and support in implementing the AEO framework will shorten clearance times, reduce costs, and strengthen business confidence in a transparent and stable bilateral trade environment.

According to the Department of Vietnam Customs, the agreement also helps implement provisions under the UK-Vietnam Free Trade Agreement (UKVFTA), promoting trade facilitation and protecting legitimate supply chains. Enhanced coordination in information exchange, mutual recognition of standards, and investigation support will bring direct benefits to importers and exporters through simpler, faster, and more predictable customs procedures.

Beyond the signing ceremony, both customs agencies have been advancing practical cooperation through bilateral activities.

On the sidelines of the Investment Promotion Conference led by Minister of Finance Nguyen Van Thang in the United Kingdom on September 15-17, 2025, a Vietnam Customs delegation headed by Director Nguyen Van Tho met with Megan Shaw, the authorized representative of HMRC.

At the meeting, both sides agreed to accelerate internal procedures to finalize the agreement, as reflected in the "Statement of Intent on Cooperation between the Department of Vietnam Customs and His Majesty's Revenue and Customs." This marked an important step affirming the shared commitment to deepen customs cooperation and advance state management modernization amid increasingly deep international economic integration.

Toward sustainable cooperation and global trade facilitation

The signing of the Agreement on Cooperation and Mutual Administrative Assistance in Customs is not only a diplomatic milestone but also a practical step forward in expanding the international partnerships of Vietnam Customs. In today's era of globalization, as cross-border trade continues to grow, cooperation among customs authorities plays an important role in ensuring legitimate trade, preventing fraud, and protecting the legitimate interests of businesses.

Experts note that the agreement will lay the groundwork for deeper data sharing, risk management collaboration, and coordinated border control between the two sides, moving toward modern, transparent, and business-friendly customs standards. This development also marks an important step in affirming Vietnam Customs' active and constructive role within the global customs network, consistent with its strategic reform and modernization goals through 2030.

By signing this agreement with the United Kingdom, a major trading partner in Europe, Vietnam Customs not only strengthens the legal foundation for bilateral cooperation but also reaffirms its proactive, professional, and business-focused approach to global economic integration.■

During the official visit of General Secretary of the Communist Party of Vietnam To Lam, Vietnam and the United Kingdom established a Comprehensive Strategic Partnership. The joint statement highlights six key areas of enhanced cooperation, including political, diplomatic, defense, and security cooperation; economic, trade, investment, and financial cooperation; science and technology, innovation, digital transformation, and healthcare cooperation; environmental protection, energy, and green transition cooperation; cooperation in education, culture, sports, tourism, people-to-people exchanges, equality rights, and other areas; and coordination on regional and international issues.

Vietnam, Cambodia Customs Strengthen Anti-Smuggling Cooperation

Cooperation deal signed between Vietnam and Cambodia Customs at the 6th Vietnam-Cambodia Border Customs Meeting

The 6th Vietnam-Cambodia Border Customs Meeting, held in Lam Dong province at the end of October 2025, represented a new milestone in cooperation between the customs forces of both countries, especially in combating smuggling, trade fraud, and drug trafficking, while supporting border security and enhancing bilateral trade.

LE HIEN

Close coordination to safeguard border security

Speaking at the meeting, Vu Quang Toan, Head of the Anti-Smuggling and Investigation Department and Head of the Vietnamese customs delegation, emphasized that over the past five meetings, the two sides have continuously strengthened information exchange, coordinated in border inspection and control, and implemented many practical professional cooperation activities. These efforts have helped maintain order, safety, and smooth trade in the border region.

The sixth meeting, held from October 29 to 30, further clarified specific coordination measures and provided a platform to share best practices in combating smuggling and the illegal cross-border trade of goods.

According to the Department of Vietnam Customs, as of ☞

Delegates from both countries at the 6th Vietnam-Cambodia Border Customs Meeting

September 15, 2025, the entire sector had detected, detained, and handled more than 13,000 violations, initiated legal proceedings in 15 cases, and transferred 93 cases for prosecution. Along the Vietnam-Cambodia border alone, 156 cases were detected, one case was prosecuted, and nine cases were referred for prosecution.

Violations have become increasingly sophisticated, with offenders exploiting corporate legal status to falsify declarations, smuggle restricted goods, or misuse transit shipments to conceal prohibited items. Other methods include intellectual property infringement and falsification of origin documents to legitimize smuggling and trade fraud.

These results reflect the proactive and effective coordination between the two Customs agencies in managing a long and complex border, thereby ensuring security, order, and the smooth flow of legitimate trade between Vietnam and Cambodia.

Cooperation in drug prevention strengthens strategic trust

Alongside anti-smuggling efforts, Vietnam Customs has also intensified its fight against drug trafficking. As of mid-September 2025, customs forces nationwide detected and handled 152 cases involving 194 suspects, seizing nearly 2.3 tons of drugs, mainly synthetic narcotics. Along the southwestern border with Cambodia, 10 cases involving 20 suspects were recorded, highlighting the area as a continuing hotspot requiring close cooperation.

In the spirit of practical collaboration, representatives from both countries' customs agencies agreed to strengthen coordination in controlling high-risk goods at key border gates, update contact points from central to local levels to ensure fast, accurate, and effective information exchange, and jointly raise awareness among border residents and businesses about the economic, social, and national security risks of smuggling, trade fraud, and drug-related crimes.

Speaking at the meeting, Nou Sytha, Director of the Anti-Smuggling Department under Cambodia's General Department of Customs and Indirect Tax, expressed gratitude to the Vietnamese Customs for their warm hospitality and praised the reliability and effectiveness of the bilateral coordination mechanism. He confirmed that Cambodia Customs will continue close operational cooperation, regular information exchange, and technical support to build strategic trust and strengthen long-term relations between the two forces.

At the meeting, both sides signed the Minutes of the 6th Vietnam-Cambodia Border Customs Meeting, agreeing to strengthen operational exchanges between technical points, maintain a regular meeting schedule, and use direct communication channels to address issues promptly.

The meeting's success reaffirmed the shared commitment and leading role of both countries' customs authorities in combating smuggling, trade fraud, and drug trafficking, contributing to a peaceful, stable, cooperative, and sustainably developed border.

Building on growing mutual trust, Vietnam and Cambodia Customs are jointly working toward a secure, smooth, and friendly border, facilitating economic and social development, trade, and investment between the two countries.■

Customs, Businesses Work Together to Promote Legal Compliance

Recently, in Thanh Hoa, Customs Sub-Department of Region X held a signing ceremony for a memorandum of understanding and awarded certificates to 12 companies participating in the 2025 Voluntary Customs Compliance Incentive Program.

Duong Minh Duc, Head of Customs Sub-Department of Region X, emphasized that the collaboration and engagement of businesses are key factors for the program's effective implementation, with the ultimate goal of building a transparent, fair, and sustainable business environment.

According to Duong Minh Duc, participating in the program allows businesses to receive preferential treatment during customs procedures. At the same time, it provides customs authorities with a stronger basis for risk management, reducing the frequency of physical inspections and shortening clearance times.

Representing the business sector, Lo Huai Sung, Deputy General Director of Alena Vietnam Footwear Co., Ltd., said that signing onto the program demonstrates long-term trust and cooperation between businesses and customs authorities. "We view legal compliance as a core criterion for sustainable development, while also enhancing our competitiveness in international markets," he said.

After two years of implementation, the Voluntary Customs Compliance Incentive Program has produced clear positive outcomes. Businesses have improved their legal awareness and taken proactive control of internal processes, while customs authorities can focus resources on high-risk areas.

The frequency of physical inspections at participating companies has decreased significantly, clearance times have been shortened, and logistics costs have been reduced, contributing to stronger national competitiveness. In parallel, customs authorities regularly organize dialogues, provide consultations, issue risk warnings, and offer compliance guidance, helping businesses proactively prevent violations and maintain stable compliance levels.

Seeking Feedback on Centralized Customs Clearance Model

To finalize the centralized customs clearance plan, the Department of Vietnam Customs has issued an official notice to regional customs sub-departments, seeking feedback from local authorities and the business community on its implementation.

Accordingly, regional customs units are proactively coordinating with local authorities to compile feedback. They are also gathering input from businesses and business associations on potential advantages, challenges, and obstacles that could arise under the new model. Comments should clearly outline the plan's impact on customs clearance activities in each locality.

The customs sector has largely completed the reorganization of its operations under the new structure, which now consists of the central department at the national level and 20 regional customs units overseeing 157 border and non-border checkpoints. At the same time, the sector continues to implement reform measures, streamline administrative procedures, and digitize operations, moving toward paperless customs clearance in full alignment with the spirit of Politburo Resolutions 57/NQ-TW (December 22, 2024) and 66/NQ-TW (April 30, 2025).

Some local customs units have already piloted the centralized model on a smaller scale. One example is the "Centralized Customs Clearance at Mong Cai Customs," implemented by the customs sector of Quang Ninh province. Early results show significant improvements in processing times, transparency, and cost reduction for businesses.

The Department of Vietnam Customs emphasized that developing and implementing the centralized customs clearance model is an urgent and objective requirement at this stage. It aims to realize the Customs Development Strategy through 2030, moving toward digital and intelligent customs that ensure strict control while maximizing trade facilitation.

Thanh Nam

Vietnam Tax Authority Strengthens Int'l Cooperation

The Department of Taxation of Vietnam recently held working sessions with a delegation from the Organization for Economic Co-operation and Development (OECD) on the Country-by-Country Reporting (CbCR) initiative. These meetings were part of the ongoing technical cooperation program between the two sides, aimed at enhancing Vietnam's capacity in data analysis, risk management, and alignment with international tax standards.

NAM HUNG

Improving processes and enhancing the use of CbCR data

According to representatives of the Department of Taxation, the discussions focused on issues related to the Base Erosion and Profit Shifting (BEPS) program, particularly mechanisms for international tax information exchange and the application of data in risk assessment. This is one of the key areas in Vietnam's implementation of international commitments on tax transparency.

The Deputy Chief of the Office of the Department of Taxation said that through this program, Vietnam is receiving direct technical assistance from OECD experts in three main areas.

First, Vietnam is working to refine procedures for collecting, exchanging, and using CbCR data in line with international standards, ensuring that tax information is managed in a unified, secure, and analytically robust manner.

Second, the cooperation focuses on improving the knowledge,

(continued on P.17)

Enhancing Communication on Global Minimum Tax

Ahead of the official implementation of the global minimum tax, tax authorities across Vietnam are intensifying outreach efforts to ensure that multinational enterprises operating in the country fully understand the new regulations. The goal is to help these corporations adapt quickly, comply with tax obligations, and maintain stable production and investment activities.

HIEN KIEN

The Department of Taxation has issued Official Letter 4441/CT-DNL, instructing local tax departments, the Tax Management Department of Large Enterprises, and the E-Commerce Tax Administration Department to immediately begin disseminating and explaining the new corporate income tax (CIT) regulations under the global anti base erosion framework.

This move follows the Government's issuance of Decree 236/2025/ND-CP on August 29, 2025, which details the implementation of National Assembly Resolution 107/2023/QH15 on applying the supplementary corporate income tax for multinational groups. The decree took effect on October 15, 2025, and applies to the 2024 fiscal year. It targets entities within multinational groups that recorded consolidated revenues of at least €750 million in at least two of the four most recent fiscal years.

Accordingly, Vietnamese subsidiaries of multinational corporations are required to declare and pay the supplementary corporate income tax to ensure an effective minimum tax rate consistent with international standards.

The official letter emphasized that, for uniform implementation nationwide, tax authorities must proactively inform all taxpayers under their management about the new rules. Tax officers must clearly understand the procedures, accurately identify entities subject to the regulation, and guide businesses in filing and paying taxes correctly.

In particular, taxpayers who previously submitted returns or notifications in person or by mail are now required to use the electronic public service portal at https://dichvucong.gdt.gov.vn/tthc/homelogin. The Department of Taxation will handle inquiries and provide assistance via the dedicated email address thuetndnbosung@gdt.gov.vn, helping businesses fulfill their tax obligations in line with international standards.

Taxpayers must make payments in the declared currency and promptly report any difficulties so that tax authorities can consolidate feedback and provide consistent guidance.

The rollout of the global minimum tax marks a major shift in international tax policy, aiming to promote fairness and transparency in investment competition. For Vietnamese companies that are part of multinational groups, this presents both a compliance challenge and an opportunity to improve financial governance, enhance credibility, and strengthen global integration.

The tax authority is proactively creating a "support buffer" for businesses, not only by issuing detailed filing and payment instructions but also through regular dialogue and problem-solving mechanisms to accompany enterprises during the transition period.

According to the Department of Taxation, communication efforts, staff training, and information technology upgrades will continue to be expanded to ensure smooth implementation of the global minimum tax. This will help prevent base erosion and profit shifting, protect state budget revenues, and reinforce Vietnam's commitment to international tax standards. The country's swift completion of the legal framework and coordinated outreach reflects both strong policy commitment and the adaptability of Vietnamese businesses to the global trend toward transparent, fair, and sustainable tax governance.■

Tax Payment Information

- State budget account: 7111

- Managing authority: Tax Management Department of Large Enterprises (Code 1131367)

- Payment description: Supplementary Corporate Income Tax under Global Minimum Tax Regulations

- Program code: NNT – Subitem 1058

- Treasury office: Transaction Department, State Treasury

Tax Sector Supports Shift from Presumptive to Declared Tax

The nationwide 60-day campaign to move small businesses from the presumptive tax model to declared tax is underway, aiming to help business owners adapt smoothly, improve operational transparency, and adopt modern tax management.

LE HIEN

The tax authority cooperates with many partners to develop modern tax management

Coordinated implementation lays foundation for real change

At a recent workshop in Ho Chi Minh City organized by Tuoi Tre Newspaper, titled "Preparing Small Businesses for the End of Presumptive Tax," Deputy Director of the Department of Taxation Mai Son emphasized: "Moving from presumptive tax to declared tax will make small businesses more transparent, ensure taxes reflect actual revenue, and support sustainable growth."

This initiative marks a major step in Vietnam's tax reform roadmap, implementing the spirit of Resolution 68-NQ/TU of the Politburo dated May 4, 2025, on promoting sustainable development of the private sector. The Ministry of Finance issued the "Project on Transforming the Tax Management Model and Method for Small Businesses Following the Abolition of Presumptive Tax," providing the legal framework for the transition.

The tax sector has since undertaken coordinated measures, including reviewing the entire database of small businesses, establishing clear coordination channels between tax offices and local authorities, and preparing technical infrastructure and personnel for implementation. On October 31, 2025, the Department of Taxation launched the "60-Day Peak Campaign to Transition from Presumptive to Declared Tax," mobilizing the entire local administrative system.

Tax leaders described the campaign as a "key operation" to ensure that by 2026, all small businesses can uniformly adopt the declared tax model, representing a significant advance in transparency and digital tax management.

Supporting small businesses reduces costs and increases transparency

Practical support for small businesses is the top priority of the 60-day campaign. Tax offices nationwide are required to intensify outreach, guidance, and technical assistance to help taxpayers adapt to electronic filing. All registration, declaration, and tax payment processes online are free of charge, with no additional fees for software.

Under the slogan "60 Days of Action, Real Transformation, Elevating Small Businesses Through Transparent, Modern Tax Declaration," the tax sector is redefining its service approach by putting taxpayers at the center. Small businesses are supported in moving from manual recordkeeping to electronic management applications accessible on smartphones.

Currently, more than 110 accounting and electronic invoice software providers operate nationwide. Many have partnered with the tax sector to reduce initial costs by 50%, and some offer free invoicing software and a one-year digital signature for newly transitioning businesses.

Notably, MISA Joint Stock Company announced a program providing three months of free software for two million small businesses. The platform supports sales management, invoicing, digital signatures, accounting, and electronic tax declaration in one integrated solution. This "six-in-one" solution helps small businesses from startup to growth into full-scale enterprises.

Promoting fairness and sustainable development

The tax sector emphasized that the shift to declared tax is not only an administrative reform but also a step toward fairness and transparency. Presumptive tax often did not reflect actual revenue, requiring low-earning businesses to pay the same as high-revenue businesses and even taxing losses. The declared tax model corrects this by aligning tax obligations with actual business performance.

Simplified accounting procedures transform manual ledgers into user-friendly digital records. Small businesses are encouraged to obtain invoices for inputs to validate legitimate expenses and ensure traceable goods, safeguarding consumer rights while minimizing legal risks for business owners.

For specific sectors such as agricultural products and fresh food, the tax sector continues to survey operations to ensure the principle of "tax only on profit," reflecting real conditions. Additionally, sales on e-commerce platforms will be monitored systematically, with platforms responsible for declaration, deduction, and tax payment on behalf of small businesses.■

Ensuring Full Transition of Household Businesses to New Tax Model

With the message "60 Days of Action, Real Transformation, Elevating Household Businesses to Transparent, Modern Reporting," Vietnam's tax authorities have launched a nationwide campaign to end the presumptive tax system and adopt a fair, transparent, self-declaration model. This represents a key step in modernizing tax administration and lays the foundation for sustainable growth and deeper integration of the private sector into the digital economy.

HUONG HAU

The tax information portal is integrated with AI through a business advisory chatbot

Real transformation, elevating household business reporting

On October 31, 2025, the Department of Taxation issued Decision 3352/QD-CT, launching the nationwide "60-Day Campaign to Transition Household Businesses from Presumptive Tax to Self-Declaration." The campaign runs from November 1 to December 30, 2025, implementing the Politburo's Resolution 68-NQ/TW dated May 4, 2025, the Law on Tax Administration 38/2019/QH14, and National Assembly Resolution 198/2025/QH15.

Starting January 1, 2026, household businesses currently paying presumptive tax will transition to self-declaration or may choose to upgrade to small and medium-sized enterprise status to access preferential policies. This represents a fundamental shift in tax administration, promoting transparency, fairness, and an accurate reflection of each business's actual capacity.

Decision 3352/QD-CT also implements the national plan "Transformation of Tax Models and Management Methods for Household Businesses after Eliminating Presumptive Tax" under Ministry of Finance Decision 3389/QD-BTC dated October 6, 2025. The campaign covers all regions, focusing on areas with many presumptive taxpayers, including traditional markets, commercial streets, and business lodging zones.

Under the Department of Taxation's guidance, all units are responsible for promoting awareness and instructing household and individual taxpayers on the benefits and obligations of switching to self-declaration or upgrading to enterprise status.

Tax authorities will set up mobile support points in markets and commercial areas and organize direct and online guidance sessions with a hands-on approach to ensure all businesses receive practical assistance.

Technical infrastructure, electronic data systems, and digital management tools are being prioritized for completion, allowing taxpayers to register, declare, and pay taxes in a single electronic transaction. Tax authorities at all levels are responsible for resolving all household business issues within 24 hours and maintaining dedicated 24/7 contact points for timely support.

The Department of Taxation requires all units to avoid creating any costs during the transition. Processes, forms, and guidance must be publicly accessible, transparent, and consistent across all areas. Local authorities must set clear targets, assign responsible officers for each area, and ensure implementation of electronic invoices generated from cash registers in compliance with Government Decree 70/2025/ND-CP.

Ensuring 100% of household businesses transition before 2026

During the 60-day campaign, the Department of Taxation aims for 100% of household businesses to access information and receive support to transition from presumptive tax to self-declaration, or to register for electronic invoices in full compliance with regulations.

Provincial and municipal tax departments are tasked with implementing key communications programs focused on four areas: the benefits of switching to self-declaration, the goal of transparency and fairness, the advantages of upgrading to enterprise status, and detailed guidance on using electronic invoices.

The Department of Taxation emphasized that the transition is not just a technical change in tax calculation but a fundamental reform of the management model, fostering voluntary, proactive, and transparent tax compliance. The campaign helps create a fair business environment, supports

(continued on P.15)

Building Three Strategic Pillars for Modern Tax Management

As digital transformation reshapes the economy, Vietnam's tax sector is driving the modernization of tax management with the goal of "digital tax - digital management - digital trust." The three strategic pillars of data, cross-sector connectivity, and a service-oriented mindset form the foundation of a transparent, efficient, and taxpayer-centered digital tax ecosystem.

HIEN KIEN

Tax authority and MISA JSC partner to provide tax-related support for the business community, including individuals and household businesses

Data as core asset and foundation of modern tax management

In line with the Tax System Reform Strategy through 2030 and the National Digital Transformation Resolution, the tax sector sees modernization as essential for improving revenue collection efficiency, lowering compliance costs for taxpayers, and enhancing economic transparency. Central to this effort is the understanding that data is a core asset, a "source of energy" that shapes governance quality and decision-making within the tax system.

To support this, the Department of Taxation has built a multi-layered data ecosystem that integrates information on tax declarations, payments, and refunds, along with electronic invoices, with data from other ministries and agencies, including Customs, State Treasury, banks, social insurance, and the Ministry of Public Security. A key milestone is the nationwide rollout of electronic invoicing, enabling the tax sector to shift from managing isolated documents to tracking transactional data streams in real time.

From this extensive data repository, the tax sector uses Big Data and artificial intelligence to analyze risks, detect fraud, and streamline accurate tax refunds. The system can identify unusual business activities, such as false invoicing, circular invoice trading, or discrepancies between invoices and VAT returns, preventing fraudulent refund claims. Moving from "document management" to "data management" allows the tax sector to oversee compliance proactively while reducing the manual declaration and reconciliation workload for businesses.

Cross-sector connectivity and service-oriented mindset

If data is the resource, then APIs, the application programming interfaces, are the pipelines that deliver it securely and efficiently. The tax sector is developing a network of APIs for cross-sector connectivity, creating an integrated management system across government agencies. This model allows two-way data sharing between the tax sector and ministries such as Finance, Industry and Trade, the Securities Commission, banks, and the Ministry of Public Security, establishing the foundation for a "digital tax government."

Key API connections, including exchange of tax declarations, financial reports, tax refund and exemption decisions, registration data, and e-commerce information, are fully automated. This digital integration minimizes manual intervention, shortens processing times, and ensures transparency while strengthening oversight and data reconciliation between agencies.

Alongside data infrastructure and connectivity, the tax sector is transforming its service mindset, placing taxpayers at the center of management. A Compliance Relationship Management (CRM) system has been implemented to assess risk based on taxpayer behavior, segment taxpayers, and apply appropriate support measures.

New services such as automated personal income tax refunds have been introduced, cutting processing times to just one to three business days for low-risk filings. In addition, a 24/7 early warning system, powered by electronic invoice data, can detect unusual transactions and automatically notify businesses for timely adjustment. The tax sector is also exploring pre-filled tax declarations for small and micro businesses to ease reporting burdens and promote voluntary compliance.

By 2030, the tax sector aims to establish a Big Data Center integrating all invoice, financial report, and cross-sector data, applying AI and machine learning to analyze transaction chains, assign risk scores, and support inspection and audit decisions. Concurrently, legal frameworks for secure data sharing, information safety, and personal data protection will be finalized to maintain taxpayer trust.

The tax sector is also prioritizing the development of digital talent, training staff not only in technology skills but also in data analytics, risk management, and CRM-oriented taxpayer support. This human resource strategy is viewed as essential for sustaining the modernization process.■

VIETNAM'S ELECTRONICS SUPPORTING INDUSTRY

Going Green to Stay Competitive in Global Supply Chain

Under increasing pressure from major markets and global Net Zero commitments, Vietnam's electronic supporting industry enterprises must adopt green transformation or risk being excluded from international supply chains. This change is both a challenge and an opportunity to improve production capacity and reinforce their position in the global value chain.

Keynote speakers discuss solutions to strengthen the electronics supporting industry

BUI LIEN

Pressure to decarbonize in global supply chains

At the roundtable discussion "Electronics under Geopolitical Pressure: Developing Green and Sustainable Supply Chains," held on October 31 by the Vietnam Electronics Industries Association (VEIA) in cooperation with VINEXAD National Trade Fair and Advertising JSC and Vietnam Green Innovation Joint Stock Company (Green In), experts agreed that global supply chains are experiencing major disruptions and that Vietnam, as a key electronics manufacturing hub, is also impacted.


Samsung can be seen as a supporter, helping Vietnam's supporting industry integrate into global value chains

At the forum, Do Thi Thuy Huong, a member of VEIA's executive board, emphasized that if Vietnamese firms do not shift to green production, they risk being excluded from global supply chains. She highlighted strict export-market policies in the EU, the U.S., and Japan, particularly the EU's carbon border adjustment mechanism (CBAM) and emission-reduction requirements from major global companies such as Apple, Samsung, and Intel.

She said that Vietnamese firms must adjust their manufacturing models toward energy efficiency, invest in clean technologies and establish transparent ESG (Environmental, Social and Governance) management systems. These steps are now essential to maintain competitiveness as global trade shifts toward "green supply chains."

In fact, many supporting-industry electronics firms in Vietnam rely heavily on orders from foreign-direct-investment (FDI) corporations, and when those global "big players" demand strong ESG evidence, Vietnamese suppliers cannot afford to lag. Failure to move quickly could lead to loss of market share or even exclusion from supplier lists.

Going green - inevitable path for Vietnamese enterprises

What was once considered a long-term goal has now become a matter of survival. "Vietnamese businesses should not wait to grow before going green; they should go green to grow," said Nguy Thi Giang, Chairwoman and CEO of Green In.

In fact, the world has already introduced multiple tools to encourage greener production. For example, the Electronic Product Environmental Assessment Tool (EPEAT), administered by the Global Electronics Council, applies to product categories such as computers, televisions, and mobile phones. These standards require manufacturers to cut greenhouse gas emissions,

extend product life cycles, and increase the use of recycled materials.

In Vietnam, domestic regulations are also tightening. More than 2,100 enterprises are now required to conduct greenhouse gas inventories, many of which belong to the electronics sector. At the same time, both manufacturers and importers must recycle post-consumer electronic products.

According to Dr. Bui Thanh Minh, Deputy Director of the Office of the Research and Development Board for the Private Economic Sector, in a rapidly changing world, enterprises must proactively transform by leveraging both government policy support and market pressure to strengthen their internal capacity. "If they wait, businesses will lose the opportunity to redefine their position in the supply chain," he said.

Lai Hoang Duong, Director of Thanh Giong Computer and Communication JSC, warned that failure to meet ESG standards could lead to losing business contracts. He noted that companies that do not work toward ESG compliance may be forced to shut down. Even small steps, such as using electric vehicles for transportation, are an important starting point, he said.

Green transformation is both a challenge and a "ticket" for Vietnamese electronics supporting-industry enterprises to move up the value chain. Once they meet international standards, these firms will not only secure their position in global supply chains but also gain opportunities to expand exports and participate more deeply in high-value segments.

Vietnam has major advantages, including an abundant workforce, fast technological innovation, and a broad network of free trade agreements (FTAs). If government support policies are effectively connected with businesses' proactive efforts, building a green supply chain in the electronics industry is entirely achievable. As "greening" becomes a common trend from multinational corporations to small producers, this shift is not only necessary but also an opportunity for Vietnam to strengthen its position on the global value chain map.■

Press conference on CIEIE 2025

CIEIE 2025: Opportunities to Boost Supporting Industries and E-Commerce

The China International E-commerce Industry Expo in Vietnam 2025 (CIEIE 2025) will take place from December 1 to 3, 2025, at Sky Expo Vietnam in Ho Chi Minh City. Covering more than 10,000 square meters, the event will showcase 300 enterprises from China, Vietnam, Indonesia, Malaysia, Thailand, and other countries.

The exhibition is expected to attract over 15,000 industry visitors and showcase more than 2,000 brands.

A key highlight this year is the participation of numerous companies from the supporting industry supply chain, especially in electronics, information technology, and smart products, sectors that are attracting strong investment interest in Vietnam.

Exhibitors will present products across ten major categories, including consumer electronics, 5G communication devices, AI applications, drones, fashion accessories, cosmetics, food and beverages, new energy solutions, smart home technology, and healthcare products.

CIEIE 2025 will also host several specialized events, such as the China-Vietnam High-Quality E-Commerce Development Forum, the Vietnam Investment Forum, B2B Matching Conference, and cross-border e-commerce livestreams featuring KOLs and entrepreneurs. These activities aim to connect manufacturing, service, and logistics enterprises while promoting Vietnamese supporting industry products on international e-commerce platforms.

Speaking at the event, Nguyen Dinh Hung, Chairman of the Board of Sky Expo Vietnam, said the exhibition serves as a bridge between supporting industries and e-commerce, creating collaboration opportunities not only between Vietnam and China but also across the broader Southeast Asian market.

CIEIE 2025 is organized by the Trade Promotion Committee of the China Council for the Promotion of International Trade (CCPIT) in coordination with Sky Expo Vietnam.

Le Hien

(from P.12)

sustainable development for household businesses, and gradually integrates them into the formal economy.

With a "support first, supervise later" approach, the tax authorities place taxpayers at the center of all reforms. The 60-day campaign represents a key step in modernizing Vietnam's tax system, aiming for transparent and fair management without relying on rigid administrative measures, instead using consensus as a driving force.

The Department of Taxation expected that, following the campaign, household businesses nationwide will undergo a strong transformation, forming a unified management data foundation that will play an important role in building a modern, digital, and sustainable national financial system.

The Department of Taxation expected that, following the campaign, household businesses nationwide will undergo a strong transformation, forming a unified management data foundation that will play an important role in building a modern, digital, and sustainable national financial system.■

HCM CITY INTERNATIONAL FINANCIAL CENTER

Asia-Pacific's Premier Financial Hub

An international financial center (IFC) in Ho Chi Minh City will bring together a wide range of professional financial intermediaries, both domestic and international, enabling them to collaborate effectively to support and strengthen the national economy.

Dr. DOAN DUY KHUONG - Dr. NGUYEN DUC THO

The Thu Thiem New Urban Area on the banks of the Saigon River, Ho Chi Minh City

Financial services - a catalyst for sustainable growth

In today's globalized world, where knowledge and networks are key, urban centers are increasingly important as hubs of economic, social, and cultural activity, and as sites for economic governance and policy experimentation.

A well-functioning market economy with sound economic governance depends on understanding how cash flows from available resources to manage financial health and guide strategic planning. Businesses and organizations must track the sources of cash (inflows) and its uses (outflows) to meet obligations and achieve financial goals. Key components of economic governance include cash flows from operations (core business activities), investments (long-term assets), and financing (debt and equity). Careful analysis of these cash flows enables accurate forecasting, effective liquidity management, and optimal productivity. Bottlenecks arise when resources are not efficiently converted into cash flows or transparently valued within national socio-economic development plans.

In Vietnam, although the economy ranks 33rd in the world by GDP, economists have identified unsustainable practices in financial resource management across three main sectors:

First, the government is actively implementing Resolution 68-NQ/TW on private sector development with a target of 2 million enterprises by 2030. The Budget Law has also been revised to support fiscal policy, accelerate disbursement, and promote public-private partnerships (PPP).

Second, enterprises are key drivers of innovation and digital transformation. However, the number and scale of businesses remain small compared with actual needs. Many still operate with short-term strategies rather than sustainable plans. Furthermore, numerous companies do not base operations on sound financial investment tools, such as Internal Rate of Return or Net Present Value, instead prioritizing short-term market trends, inflated pricing, reduced quality standards, or delayed project schedules, leading to debt accumulation, liquidity challenges, cross-ownership issues, unfair competition, corruption, waste, and opportunity costs for society.

Third, households, despite limited income due to wage policies, contribute significantly through remittances, which have ranged from US$16 billion to US$18 billion annually in recent years, positioning them as important investors in the economy. However, statistics indicate that a large portion of these funds is invested in residential real estate rather than productive sectors. Most investment targets high-end commercial housing, fueling speculation, price surges, real estate bubbles, and inflation risks.

Most economic governance experts agree that all financial resources must be managed effectively and systematically to ensure sustainable economic growth. In Vietnam, a breakthrough in development must prioritize financial resource management, as the financial and banking sector is the lifeblood of the economy and international trade, even if it is not a growth sector itself. Banks shape and support economic activity, infrastructure development, and financial technology. Consequently, financial services should be recognized as a growth tool for priority industries and as a means of increasing individual net worth in a country of nearly 100 million people.

Long-term strategy needed

To strengthen sustainable management of the nation's financial resources and enhance global integration, the National Assembly issued Resolution 222/2025/QH15 on establishing an IFC in Vietnam. The development of an IFC in Ho Chi Minh City is a long-term strategic initiative. Saigon Marina IFC is designated as the inaugural project, providing modern infrastructure and high-quality office space to support financial, investment, and international business activities in the city. An IFC located in Vietnam's economic hub will concentrate a wide range of professional financial intermediaries, both domestic and international, working together to serve national economic stakeholders efficiently.

However, establishing an IFC requires a multi-faceted approach, considering both theoretical and practical aspects. Financial experts emphasized that for Ho Chi Minh City to become an IFC, five key priorities should be pursued:

First, develop financial infrastructure to build a strong, modern foundation supporting sustainable IFC growth and establishing credibility from the outset. This includes fostering

relationships between domestic financial institutions and foreign organizations, as well as connecting the IFC to other markets. Expanding capital markets to provide opportunities for foreign investors is also essential.

Second, develop a comprehensive, highly liquid money market to offer ample investment opportunities for domestic and international investors, a critical factor in IFC development. Transparency in monetary policy, including exchange rates and interest rates, and enhanced market management, foreign exchange reserves, and precious metals oversight are also important.

Third, the government should guide sustainable IFC development through clear national policy messages emphasizing accountability in public investment and taxation. Prompt implementation of Decision 1250/QD-TTg dated October 26, 2023, with concrete guidance for executing the 2023 Pricing Law (Law 16/2023/QH15), will improve pricing quality and effectiveness.

Fourth, strengthen macroeconomic stability and sustainable resource governance. Effective management of financial resources and markets ensures the continued flow of capital, the lifeblood of the national economy, in a volatile global market. Macroeconomic stability reduces inflation, balances trade and budgets, and supports the IFC's prominent position among leading international financial centers.

Fifth, enhance international cooperation. Developing comprehensive strategic partnerships and participating in global financial mechanisms will increase foreign capital inflows, mitigate exchange rate risks, and strengthen Vietnam's global market position. International collaboration should also support fintech, AI, Big Data, and machine learning adoption to improve analytical and forecasting capabilities. Piloting digital asset markets and establishing a comprehensive risk management system to ensure cybersecurity are important steps. Additionally, a strategy combining professional training with a stable and attractive work environment is necessary to retain skilled IFC personnel.

Developing Ho Chi Minh City IFC requires integrating sustainable governance of the nation's five resource sectors with active international cooperation. With its historical role as the country's economic leader, coupled with decisive government guidance and implementation of these priorities, the Ho Chi Minh City IFC will contribute to building a modern megacity and establishing the city as a leading urban center in the Asia-Pacific region.■

(from P.9)

skills, and practical capacity of tax department units, particularly staff engaged in risk analysis, tax inspection, and audits of foreign-invested enterprises.

Third, the program reinforces sustainable cooperation between Vietnam and the OECD, enabling Vietnam to progressively meet all BEPS minimum standards and thereby enhance its credibility and tax administration capacity within the global system.

A representative of the Compliance Management Department of the Department of Taxation added that Vietnam has been actively implementing measures to meet BEPS requirements. Among these, CbCR data plays an important role in helping tax authorities accurately assess transfer pricing risks, evaluate corporate compliance, and ensure tax fairness among countries.

At present, the Department of Taxation is working with the OECD to review the legal framework and procedures for receiving, storing, and using CbCR data in a more standardized and modernized way. Access to OECD's technical tools, analytical methodologies, and advanced risk assessment processes will allow Vietnam to make better use of global data, directly supporting tax inspection and audit activities involving multinational corporations.

Strengthening international cooperation toward a transparent investment environment

Speaking at the meeting, Nicole Casey, representative of the OECD expert delegation, emphasized that the exchange and analysis of CbCR data bring dual benefits to participating countries. On one hand, tax authorities can improve their ability to identify transfer pricing risks early; on the other, businesses benefit from a more transparent, equitable, and predictable business environment.

According to Nicole Casey, the OECD viewed Vietnam as an active partner in implementing the BEPS program and remains ready to provide technical assistance, training, and analytical tools. "We highly appreciate Vietnam's efforts to gradually build a modern tax data and management system aligned with international practices. The OECD will continue to accompany Vietnam in standardizing procedures for collecting, analyzing, and applying CbCR data for effective risk management," she said.

The cooperation between the OECD and Vietnam represents an important step in the country's tax sector integration process. Beyond strengthening institutional capacity, access to advanced management models helps Vietnam narrow the gap in tax risk governance compared with developed economies, while meeting the growing demand for transparency in managing multinational enterprises.

A representative of the Department of Taxation affirmed that in the coming period, the tax authority will continue to work closely with the OECD to refine professional procedures, develop a centralized data system, and strengthen specialized training for staff. These efforts are essential for Vietnam to effectively implement BEPS standards and adapt to the global shift toward data-driven and intelligent risk-based tax administration.

Building capacity toward modern tax management

The OECD's cooperation with Vietnam in implementing CbCR reflected the international community's strong commitment to Vietnam's tax integration process. When CbCR data are effectively used, tax authorities obtain a comprehensive understanding of multinational corporate activities, allowing for more accurate tax assessments, reduced revenue loss, and greater fairness between domestic and foreign enterprises.

Beyond technical aspects, the partnership with the OECD also enhances Vietnam's strategic management capacity, guiding the tax system toward a modern, data-centered management model. This is a necessary trend in the digital and globalized economy, where cross-border transactions are increasingly complex and require more sophisticated monitoring tools.

With OECD support, the Department of Taxation expected to soon complete its data infrastructure, analytical processes, and legal framework to fully leverage CbCR. This effort will not only strengthen risk management and financial transparency but also reinforce investor and business confidence in Vietnam's investment and tax environment.■

Hydrogen - New Pillar for Vietnam's Energy Security and Green Economy

Low-emission hydrogen is anticipated to become a "strategic feedstock" that ensures energy security while driving the growth of green industries. In an interview with Business Forum Magazine, Le Ngoc Anh Minh, Chairman of the Vietnam ASEAN Hydrogen Club (VAHC), emphasizes that Vietnam's natural resources and logistics advantages position it to emerge as the region's hydrogen hub, but this requires "moving fast" through international cooperation and "moving steadily" through domestic technology localization.

How can hydrogen become a "new pillar" for Vietnam's energy security and green economy, and what are the targets to not only follow but lead the region?

Low-emission hydrogen produced from wind, solar, biomass, gas with CO_2 capture, or nuclear, or from natural deposits is both a flexible energy carrier (for large-scale storage) and a clean feedstock for hard-to-abate sectors such as steel, cement, chemicals and heavy transport. Combined with Vietnam's coastal renewable-power advantage and logistics capacity, hydrogen can help the country reduce fossil-fuel dependence, strengthen energy security and open a new export frontier.

The International Energy Agency (IEA)'s Global Hydrogen Review 2025 highlights the role of ASEAN, in which Vietnam stands out with domestic production-consumption and export potential to Northeast Asia.

The Vietnamese government has set targets for the 2025 to 2030 period: produce 100,000 to 500,000 tons per year by 2030-2035, progressing toward 10 to 20 million tons by 2050; ensure that at least 15 to 25% of electricity used in electrolysis comes from renewable sources by 2030; and achieve 30 to 40% domestic value-added in the electrolysis supply chain during 2030-2035. These objectives are fully achievable with coherent, integrated solutions and decisive, effective implementation.

During the 2025-2035 period, what are the "breakthrough" sectors where hydrogen can make a transformational impact on Vietnam's economy?

The breakthrough will occur in heavy industry (steel, cement, chemicals, fertilizers): hydrogen will substitute traditional fuels for oxygen-free processes and green fertilizer production, delivering the largest reduction in emissions and stable demand.

Also, maritime transport & logistics: shifting shipping fuel to ammonia/hydrogen on regional routes; Vietnamese ports could become bunkering hubs for the Western Pacific.

Heavy & urban transport: long-haul trucks and urban buses, segments where batteries are constrained, will benefit from hydrogen fuel cells or ammonia-fueled engines.

Green-energy exports: establishing coastal H_2 hubs, leveraging land availability and competitive renewable-energy cost to produce and export hydrogen and derivatives (ammonia, methanol). This could become a strategic foreign-currency earner if costs fall. The IEA assesses Vietnam as especially promising at major industrial-port zones such as Ba Ria-Vung Tau, Dung Quat, Nghi Son, Hai Phong, and Hon Khoai (Ca Mau).

Major global corporations from Europe, the US, China, Japan, and Korea are ramping up hydrogen investments. Should Vietnam pursue a "move fast" strategy through international cooperation or a "move steadily" approach with technology self-sufficiency and gradual localization?

In my view, Vietnam needs a pragmatic strategy: do both

Prime Minister Pham Minh Chinh and other leaders attend the COP26 Conference

"move fast" and "move steadily" in parallel.

Move fast through international cooperation: Attract investment, technology and demonstration projects from the EU, Japan, Korea, the United States, China and Australia to quickly build infrastructure and market. Pilot projects help Vietnam test commercial, logistics and export models early. In reality, companies such as PetroVietnam Gas (PV Gas) and Obayashi Corporation have already begun; this must be expanded into power, urban transport, long-haul trucking, maritime and rail.

Move steadily through localization: Invest in R&D, training, develop components (electrodes, electrolyzers, storage, ammonia logistics). The goal is to reduce dependence on imported technologies within a decade. At the same time, diversify hydrogen sources, not only electrolysis but also natural hydrogen exploration as in the Philippines and Indonesia. Water is also a key issue: to produce 1 kg of pure hydrogen needs over 9 liters of ultra-pure water. In the context of climate change, Vietnam needs to integrate seawater-filtration or artificial-reservoir technology to both supply hydrogen production and address household and agricultural water needs (especially in the Mekong Delta).

A combined strategy: Prioritize a "technology import with transfer" model through public-private cooperation that includes mandatory clauses on technology transfer, joint ventures, and localization. In practice, VAHC works regularly with international companies, from major corporations to startups, to negotiate local manufacturing and technology transfer while encouraging Vietnamese engineers to enhance and upgrade systems in collaboration with partners.

What is the biggest barrier to hydrogen becoming a genuine industry?

Not only Vietnam but many countries face major bottlenecks:

- Incomplete legal framework & incentives: no reference price for H_2, no preferential public procurement mechanism, no export policy for H_2/ammonia. Lacking technical standards, safety norms and licensing for production, storage and transport.

- Lack of domestic market (demand signal): no binding green procurement, no roadmap to phase out "dirty" fuels, no regulation for hydrogen/ammonia-fueled engines (ships, buses, ports, airports). Without a framework for consumption, it is hard to build a market.

- Financial and cost challenges: Production costs remain high and risks are significant, causing many international projects to be postponed or canceled. Governments find it difficult to maintain long-term subsidies. With a limited budget, Vietnam needs innovative mechanisms: monetizing land and water-use rights for investors, encouraging companies to develop secondary revenue streams (such as O_2, graphene from LNG, and materials from recycled aluminum). Hydrogen should serve not only as a main product but also as a valuable by-product of emerging technologies.

Priority solutions:

1. Establish a clear legal framework across the entire supply chain, guarantee origin, safety & quality standards.

2. Develop pricing & carbon-credit mechanisms. If price support is not yet feasible, support through resource rights or long-term offtake contracts with domestic, Japanese or Korean partners.

3. Build Hydrogen Hubs near major ports (on the Japan model) to co-locate production, equipment, logistics, consumption and export.

4. Forge strategic cooperation with the Hydrogen Council and the IEA and major associations; proactively send Vietnamese representatives to shape global standards and mechanisms.

What breakthrough proposals has VAHC put forward to help the Government unlock bottlenecks?

Against the backdrop of global energy transition, Vietnam is gradually building a green hydrogen value chain toward its net-zero-2050 goal. However, implementation still faces many bottlenecks, requiring coordinated action by both government agencies and enterprises. In response, we have proposed breakthrough solutions to open new pathways for the domestic hydrogen industry.

Diversify incentive mechanisms, don't rely on old models: Vietnam should not default to models many countries once used (such as fuel-price subsidies or focusing only on electrolytic hydrogen). International experience shows mandatory price subsidies often lack sustainability. Instead, the hydrogen industry in Vietnam should expand incentives that enable companies to research, develop technology and reduce costs. At the same time, the domestic hydrogen industry should exploit multiple sources: agriculture, coal, gas (with full CO_2 capture), and natural hydrogen exploration, rather than relying solely on electrolysis.

Strategic international cooperation: We emphasize that trade cooperation in low-emission hydrogen with countries possessing strong production capacity and infrastructure, such as China and Russia, provides a fast and effective pathway. Russia's experience demonstrates that leveraging existing gas storage and transport infrastructure can reduce costs, shorten deployment timelines, and enhance safety.

☞

☞ Domestic technical & policy framework: We are ready to collaborate with regulatory agencies to develop the technical and policy framework for government review. The objective is to create a step change to remove mechanism bottlenecks while shaping safety, quality and emissions standards across the hydrogen value chain.

Boost R&D and international investment: In addition to cooperating with domestic and international research institutions, Vietnam needs to facilitate outbound investment by companies, particularly in countries with favorable renewable energy conditions such as Australia and several African nations. Active participation in global value chains will allow Vietnamese firms to accumulate technology, strengthen competitiveness, and narrow the gap with advanced economies.

Think-tanks and high-quality human resources: One of our core proposals is to establish think-tanks or private research institutes dedicated to monitoring hydrogen and new-energy policies and technologies globally. From this, domestic companies can develop strategic plans or engage in M&A of leading technology firms to capture core technologies and proactively manufacture supply-chain equipment. Additionally, attracting top international hydrogen experts will help Vietnam master technology and build a robust foundation for a sustainable green-hydrogen value chain.

With the above solutions, VAHC expects to contribute to a leap-forward, enabling Vietnam's hydrogen industry to develop in a coordinated, sustainable and proactive manner, while positioning itself on the map of clean-energy leadership regionally and globally.

On the journey to Net Zero 2050, should Vietnamese companies remain mere "technology followers" or strive to become "strategic partners" in the global hydrogen value chain?

First, enterprises need to identify a suitable competitive niche: for example, offering integrated EPC + O&M services for hydrogen projects across the region; manufacturing components such as plate stacks for electrolyzers; or developing mid-scale green ammonia projects. In practice, some Vietnamese companies (for example Lilama Corporation) have already participated in large-scale electrolyser equipment fabrication, demonstrating they can keep pace with the global market.

Second, companies need to form international alliances to both learn technology and expand their export channels. Countries such as Russia, China, Japan and Korea are potential partners due to geographic proximity and large green-energy demand.

Third, to engage deeply in global supply chains, firms must invest heavily in standards, QA/QC to meet strict export market requirements.

With the right strategy and policy support, Vietnamese companies can advance toward exporting comprehensive green solutions, from modular hydrogen plants and electrolyzer equipment to operational services for ports and maritime bunkering. In practice, several Vietnamese consultancies have secured wind, solar, and hydrogen contracts in the Philippines, Taiwan (China), and Africa, while major firms such as PetroVietnam Technical Services Corporation (PTSC) export structural components and undertake offshore wind EPC projects internationally. These are clear indicators that Vietnamese enterprises are not merely followers but are positioning themselves as strategic global partners in the hydrogen industry.

How do you evaluate Vietnam's prospects for engaging in the global hydrogen value chain, particularly in relation to the major hydrogen production hubs in the Middle East, Australia, and Northeast Asia?

Vietnam has the opportunity to upgrade its role into a regional goods-preparation and logistics hub thanks to its geographic proximity to Northeast Asian markets, coastal land availability, major ports and competitive labor costs. However, to link with hubs in the Middle East/Australia/Northeast Asia, Vietnam needs to develop conversion hubs (turning hydrogen into ammonia/liquid fuels for long-haul transport) as well as CO_2-certification and traceability systems to ensure origin integrity. It must establish those standards and legal frameworks urgently and reliably to engage in international cooperation. Though Australia's green-hydrogen projects claim large scale, they too face investment and incentive constraints. Vietnam, beyond focusing on domestic production, can also explore policies to attract investment from countries such as Australia and some African or Latin American nations with strong renewable-energy incentives to produce and export into Europe or Northeast Asia. Regarding the Middle East, I believe they are a strong competitor because they already have longstanding hydrogen/ammonia fertilizer production based on oil & gas platforms and substantial financial resources. Cooperation with them via trade into ASEAN may be more appropriate.

How will VAHC become a "strategic roundtable" for both government and industry in transforming the Net Zero 2050 vision into specific, feasible action?

In my capacity as Chairman, I envision VAHC as a "strategic roundtable" connecting government and business communities, built on three key pillars: (i) policy development, (ii) public-private-international collaboration, and (iii) standardization and training.

1. Policy development and ongoing dialogue: organize forums and workshops with government and international partners, providing concrete recommendations on pricing mechanisms, investment incentives, and safety standards based on economic modeling, global experience, and Vietnam's realities.

2. Promote PPPs and Hydrogen Hubs: attract investment for large-scale demonstration projects (port, electrolysis, export centers); propose establishing Hydrogen Hubs in Ba Ria–Vung Tau, Nghi Son, Dung Quat, Gia Lai, and Van Phong.

3. International connectivity and carbon-neutral cities: build partnerships between leading hydrogen cities in Japan and ASEAN and Vietnamese localities; expand business-to-business cooperation.

4. Training and standardization: establish an H_2 training and certification center with foreign associations; develop a best-practice handbook for SMEs joining the supply chain.

5. Mobilize green finance: connect JETP funds, multilateral development banks, and green bonds; engage major corporations to launch demonstration projects.

With these three pillars, VAHC will serve not only as a forum but as a strategic bridge turning the Net Zero 2050 vision into concrete, achievable, and globally relevant action.

Thank you very much!

During his visit to the UAE for COP28, Prime Minister Pham Minh Chinh attends the Vietnam Business Forum themed "Mobilizing Resources for Green Transformation"

COPs, HYDROGEN, AND NET ZERO JOURNEY

From Global Commitments to Vietnam's Action Plan

From the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 21) in Paris to COP28 in Dubai, the world has experienced a transformative decade in climate action. Central to this shift is hydrogen, especially green hydrogen, which is emerging as the "technological key" to a new energy era, enabling the achievement of net-zero emissions. For Vietnam, the Net Zero commitment announced at COP26 is now becoming a concrete action plan, paving the way for green industrial development aligned with the national hydrogen strategy.

Global momentum for future energy

COPs have served as the world's premier diplomatic platform for climate policy, shaping the trajectory of global energy transitions. Hydrogen (H_2) has increasingly been recognized as a strategic solution in this shift, addressing sectors that are challenging to decarbonize, such as heavy industry, maritime, aviation, and chemicals. It also acts as a "bridge" between energy production, storage, and transportation, stabilizing renewable energy systems that are weather-dependent.

At COP21 in Paris (2015), the international community agreed to limit global warming to below 1.5°C. By COP26 in Glasgow (2021), hydrogen was identified as a breakthrough solution for hard-to-abate sectors. The turning point came at COP27 in Egypt (2022) and COP28 in Dubai (2023), where hydrogen was officially incorporated into the "Just Energy Transition Pathway," becoming a cornerstone of global climate negotiations. Over 40 countries signed declarations committing to the development of global hydrogen cooperation, with total investment pledges exceeding US$300 billion by 2030. Notably, green hydrogen produced from renewable electricity via water electrolysis is projected to reduce global CO_2 emissions by up to 20% by mid-century.

The Ministry of Industry and Trade's conference on policies and mechanisms to promote hydrogen development

Currently, more than 45 countries have announced national hydrogen strategies. The European Union aims to produce 10 million tons of green hydrogen annually by 2030. Countries such as Japan, South Korea, Australia, and Saudi Arabia are establishing global Hydrogen Hubs, large-scale centers for hydrogen production, export, and trade.

COPs and Vietnam's commitments

Vietnam is among the most climate-vulnerable nations, with over 3,200 km of coastline, the Mekong Delta, and millions dependent on agriculture, fisheries, and coastal ecosystems. Active participation in COPs is both a diplomatic action and a national security strategy, seeking international support, policy insights, technology transfer, and investment to transform the economy.

At COP26 in Glasgow (2021), Vietnam committed to achieving net-zero emissions by 2050, turning an international goal into a domestic policy framework. This commitment has shifted national policy from reactive management to proactive emission reduction planning with clear timelines and budgets. Concurrently, Vietnam joined the Just Energy Transition Partnership (JETP), a public-private international mechanism focused on transitioning from coal to clean energy. The initial JETP package committed approximately US$15.5 billion to support large-scale projects, capacity building, and offsetting transition costs. JETP serves as a crucial financial tool to share investment risks in renewable energy, grid infrastructure, and transition-related projects.

Vietnam also joined the Global Methane Pledge, developing an action plan to reduce methane emissions by 30% by 2030. This commitment is significant, as methane has a global warming potential far greater than CO_2 and constitutes a substantial portion of Vietnam's emissions, particularly in agriculture, solid waste, and oil and gas sectors. Methane reduction measures, such as alternate wetting and drying (AWD) in rice cultivation, landfill gas recovery, and reducing leaks in the oil and gas industry, offer rapid and cost-effective emission cuts.

COP (Conference of the Parties) refers to the annual meetings of nearly 200 countries under the United Nations Framework Convention on Climate Change (UNFCCC) to discuss and agree on global climate actions. The first COP was held in Berlin, Germany, in 1995. At COP26 in Glasgow (2021), Vietnam and over 150 countries committed to achieving net-zero emissions by 2050.

From COPs, commitments have been translated into policies: the revised Power Development Plan VIII adjusts the share of renewable energy, and the green growth strategy is being accelerated. Notably, Decision 165/QD-TTg (February 7, 2024) integrated hydrogen into the national energy roadmap, signaling Vietnam's readiness to leverage industrial tools to achieve net-zero emissions while tapping into renewable energy advantages. These documents reflect a mindset of using international commitments as a "compass" for planning, prioritizing sectors, regions, and projects accordingly.

However, challenges remain in mobilizing sufficient low-cost and sustainable capital. Additionally, establishing a legal framework, standards, and a measurement, reporting, and

Vietnam Australia Hydrogen Workshop - H2 Mobility & Decentralized System

verification (MRV) system to ensure transparency and traceability, especially for green hydrogen, is crucial. Another issue is ensuring a just transition for coal-dependent regions and affected workers. Furthermore, developing human resources, project management capabilities, and domestic technology is essential. Addressing these risks requires strong alignment between national policies, businesses, and international partners.

Participation in COPs has shifted Vietnam from a phase of "risk identification" to "action orientation" with specific commitments. Success depends on the ability to transform these commitments into feasible policies: completing the legal framework, creating attractive financial mechanisms to attract private capital, developing the MRV system, and ensuring social equity in the transition. If achieved, COP commitments will mark the beginning of a sustainable transformation and clean growth journey for Vietnam.

Achieving net-zero emissions by 2050 is feasible but requires clear policies, coordination among the state, enterprises, and international partners, and a smart capital mobilization strategy. If Vietnam effectively addresses financial mobilization, standardizes the hydrogen market, and accelerates grid infrastructure, the net-zero commitment could transform into an opportunity for green industrialization, enhancing supply chain value and boosting national competitiveness.

From commitment to action

In the journey toward net-zero emissions, hydrogen is emerging as the "heart" of the global low-carbon economy. According to the International Energy Agency (IEA), to achieve carbon neutrality by 2050, hydrogen production must increase sixfold from current levels, reaching over 500 million tons per year, with two-thirds derived from green hydrogen produced using renewable electricity. Hydrogen is not only a clean fuel but also the only feasible decarbonization solution for sectors like steel, cement, chemicals, maritime, and aviation.

Currently, more than 45 countries have announced national hydrogen strategies, forming H2 Valleys, integrated clusters for hydrogen production, storage, and consumption connected with electricity infrastructure, ports, and industry. The European Union aims to produce 10 million tons of green hydrogen annually by 2030, with an equivalent amount for import, while Japan and South Korea are leading in technical standards and LNG-hydrogen supply chains.

In the United States, the Inflation Reduction Act (IRA, 2022) offers tax incentives up to US$3 per kg for green hydrogen, stimulating numerous gigawatt-scale projects. Saudi Arabia is implementing the US$8.4 billion NEOM Green Hydrogen Project, aiming to export green ammonia to Europe and Asia. According to BloombergNEF, global investment in hydrogen is expected to exceed US$400 billion by 2030, indicating an accelerating clean energy race.

For Vietnam, hydrogen has been institutionalized in Decision 165/QD-TTg. The Ministry of Industry and Trade is finalizing the national hydrogen development strategy through 2050, targeting annual production of 100,000–500,000 tons by 2030 and 10–20 million tons by 2050, prioritizing green hydrogen. Vietnam's greatest advantage lies in abundant renewable energy sources, particularly offshore wind in the Central and Southern regions and solar power in the Central Highlands and South-Central Coast, providing an ideal foundation for large-scale water electrolysis.

Companies such as PetroVietnam, PV Gas, and BCG Energy are researching and preparing pilot green hydrogen projects connected to industrial zones, ports, and transportation. The longer-term goal is to establish national H2 Hubs in Ho Chi Minh City to serve domestic demand and export to markets such as Japan, South Korea, and the EU, regions in need of reliable green hydrogen sources.

Thus, hydrogen becomes a crucial link connecting Vietnam's Net Zero goals with the global community. By effectively leveraging renewable energy advantages, establishing a transparent policy framework, and fostering international cooperation, Vietnam can position itself as a new player in the global green energy map, where hydrogen is not only a clean fuel but also a symbol of a sustainable, independent development strategy deeply integrated into the global Net Zero value chain.■

VIETNAM'S HYDROGEN STRATEGY

From Energy Vision to Action

When Decision 165/QD-TTg was issued in early 2024, hydrogen (H2) officially became a key component of Vietnam's national energy roadmap. This marked a milestone in the country's pursuit of clean energy and opened a new pathway for green industrialization. To realize this strategy, collaboration among the State, enterprises, and technology sectors is essential, with businesses playing a central role by linking technological innovation with infrastructure investment and mobilizing green financial resources.

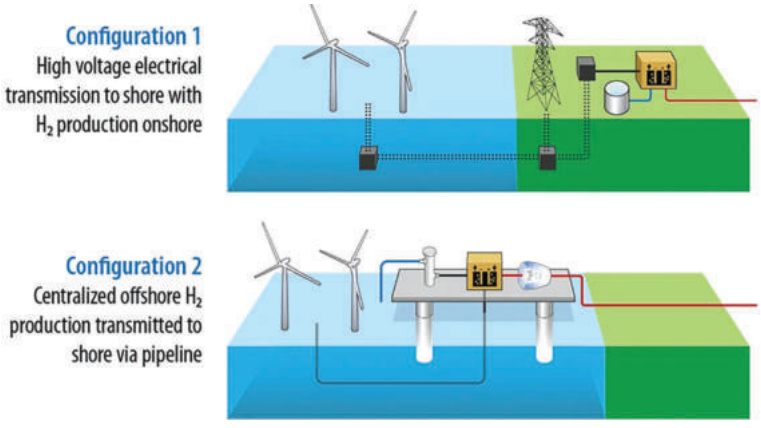


Diagram of a hydrogen electrolysis system using offshore wind power

NGO KHUYEN

Vietnam's H2 vision

Building on its commitment to achieve Net Zero emissions by 2050 and reduce deep emissions in heavy industries, Vietnam approved the National Hydrogen Energy Development Strategy under Decision 165/QD-TTg dated February 7, 2024. This policy breakthrough aims to establish a comprehensive H2 ecosystem encompassing production, storage, transportation, utilization, and export, with a focus on "green hydrogen" produced from renewable electricity. The strategy marks the first time hydrogen has been included in the national energy planning framework, closely aligned with Power Development Plan VIII and the National Green Growth Strategy. It represents a new direction for Vietnam's energy security structure and sustainable industrialization.

Globally, hydrogen is viewed as a "decarbonization key" for sectors that are difficult to electrify directly, such as steel, cement, chemicals, fertilizers, maritime transport, and aviation. Advanced economies including Japan, South Korea, the European Union, and the United States have identified hydrogen as a cornerstone of their energy transition, aiming to build a global clean hydrogen market by the 2030s. With its coastal geography and abundant wind and solar resources, Vietnam has the potential to produce green hydrogen at competitive costs, creating an opportunity to become a clean energy export hub in the region. However, technological barriers, high electrolysis costs, limited transportation infrastructure, and strict safety standards remain major challenges that require international cooperation and flexible policy mechanisms to overcome.

Integrating hydrogen into the national energy strategy not only opens new opportunities for public-private investment but also establishes a framework to attract global green capital sources such as green bonds, the Just Energy Transition Partnership (JETP), and climate funds, while promoting the transformation of industrial value chains toward lower emissions and higher added value.

From vision to action roadmap

Under the national plan, Vietnam aims to produce between 100,000 and 500,000 tons of H2 annually by 2030, prioritizing green hydrogen generated from renewable electricity. By 2050, production is expected to expand to 10-20 million tons per year, with the establishment of clusters for green ammonia production, processing, and export, along with the development of refueling networks for transportation and pilot projects to blend hydrogen into power generation. H2 is defined as a "dual lever" that both reduces dependence on fossil fuels and decarbonizes hard-to-abate industries such as steel, cement, and fertilizers.

The plan is structured around six interconnected pillars: improving institutions and policy frameworks; mobilizing green and international financing; promoting research and development in electrolysis, fuel cells, and storage materials; building transportation and storage infrastructure; developing human resources and ensuring safety; and expanding international cooperation and export markets. These pillars form a unified support system where without infrastructure, production cannot advance, without finance, businesses cannot invest, and without standards, products cannot access global markets.

Notably, the plan outlines the development of "H2 hubs" in regions with strong renewable energy potential and favorable seaport systems such as Central Vietnam, Ho Chi Minh City, and the Central Highlands. Each hydrogen hub will operate as an integrated ecosystem connecting wind and solar power sources, electrolysis plants, green ammonia production, and export ports. Hydrogen will also be integrated into Power Development Plan VIII to ensure a balanced national power supply and avoid conflicts with domestic energy demand. Hydrogen blending in gas turbines, green ammonia logistics, and exports are identified as concrete steps in the 2025-2030 roadmap.

For implementation, the plan encourages public-private

partnership (PPP) models, applies regulatory sandbox mechanisms for new technologies, and introduces preferential tax policies, including exemptions for imported electrolysis equipment. Funding will come from green credit, green bonds, climate funds, the Just Energy Transition Partnership (JETP), and official development assistance (ODA), providing a financial foundation for businesses to invest confidently. A key feature is the establishment of certification and traceability mechanisms for green hydrogen, ensuring that Vietnamese products meet the stringent standards of markets such as the European Union, Japan, and South Korea.

However, the plan also identifies major challenges: high hydrogen production costs, large capital requirements for renewable energy and infrastructure, and the need for water resources, environmental safeguards, and highly skilled labor. Therefore, the strategy is divided into three clear phases: pilot (2025-2027), expansion (2028-2030), and commercialization after 2030. Each phase represents a step forward in transforming hydrogen from a strategic vision into a practical driver of Vietnam's green industry and sustainable growth.

Turning Vietnam's hydrogen strategy into reality

If the national H2 strategy serves as a "roadmap," then businesses are the ones steering Vietnam into the hydrogen economy.

State-owned enterprises, particularly major energy corporations such as Vietnam Electricity (EVN), Vietnam National Industry - Energy Group (Petrovietnam), Petrovietnam Gas Joint Stock Corporation (PV GAS), and Vietnam National Chemical Group (VINACHEM), play a leading role in building infrastructure and shaping the market. These corporations possess strong financial capacity, extensive port and storage systems, pipeline networks, and deep experience in operating large-scale industrial chains. Among them, PV GAS is emerging as a key player, developing a pilot project to produce green hydrogen from renewable electricity for industrial and transportation use in southern Vietnam. This project not only serves as a technical trial but also explores ways to integrate hydrogen into the existing gas-power-industrial ecosystem. With its LNG terminals and gas distribution network, PV GAS is one of the few Vietnamese enterprises capable of establishing the country's first hydrogen hub that connects production, storage, transport, and consumption.

Domestic private companies in renewable energy, logistics, and technology serve as agile innovators. Many wind and solar power producers are exploring hydrogen production from surplus electricity or joining supply chains for electrolyzers, fuel cells, and storage and transport services.

Meanwhile, foreign enterprises and FDI investors help close the technology gap. Leading energy and equipment corporations from Japan, South Korea, and Germany are showing strong interest in hydrogen and green ammonia projects in Ho Chi Minh City, Dak Lak, and Khanh Hoa. Partnerships between Vietnamese companies and FDI investors not only share investment risks but also position Vietnam's hydrogen industry within global export value chains.

From PV GAS, representing the state-owned sector, to renewable energy companies and international investors, Vietnam's hydrogen landscape is gradually taking shape through three interconnected layers: leadership, diffusion, and integration. When all three groups operate within a unified policy framework, hydrogen can become a real driver of green growth rather than only a symbol of a clean energy future.

Removing bottlenecks

After nearly two years of implementing the national H2 development plan, Vietnam's progress shows many positive signs but also reveals significant challenges.

The cost of producing hydrogen from renewable electricity remains high, making it difficult for the product to compete with traditional fuels without price support or a clear carbon pricing mechanism. The system of standards, certification, and market mechanisms is still incomplete, particularly regarding safety regulations, "green hydrogen" labeling, and carbon credit trading rules. Infrastructure for storage, transportation, and export, including ammonia and hydrogen terminals, remains mostly conceptual, while investment demands and technical risks are significant. Moreover, the shortage of skilled technical personnel remains a major limitation.

To address these limitations, Vietnam needs to complete its legal framework, including safety standards and a carbon credit mechanism. The country should adopt flexible financial tools such as tax incentives, credit guarantees, and green bond issuance, while piloting public-private partnership models at key hydrogen hubs to gain practical experience. Strong investment in workforce training and R&D for electrolysis and fuel cell technologies is also essential. Hydrogen planning must be integrated into national power and water planning to ensure sustainable development.■

A wind and solar power complex in Central Vietnam

GH2 AGRI-INDUSTRIAL AND GREEN ENERGY CIRCULAR ECONOMY COMPLEX IN HAI PHONG CITY

FOUNDATION OF GH2 STRATEGY OF NORTHEAST REGION

Vietnam's Hydrogen Energy Development Strategy (Decision 165/QD-TTg dated February 7, 2024 issued by the Prime Minister) is moving from vision to action as businesses take the lead with concrete projects and innovative solutions. Among the pioneers, THDV Green Development Investment Consulting Joint Stock Company has proposed several initiatives that align with the nation's green transition goals. One standout project is the "GH2 Agri-Industrial and Green Energy Circular Economy Complex" in Hai Phong City, developed under the technical advisory of Dr. Mai Huy Tan, Chairman of THDV Green Development Investment Consulting Joint Stock Company.

I. INTRODUCTION

The Resolution of the 13th National Congress of the Communist Party of Vietnam mentioned circular economy, green economy, sustainable development and environmental protection, and combating climate change.

The circular economy model has the following characteristics and criteria:

4 criteria on economics and investment efficiency:

- Saving production costs
- Rationalizing the input–output processes of the components
- Optimizing logistics and transportation processes
- Enhancing business and production efficiency

1 social-human criterion: improving labor productivity and income of workers

3 criteria on environment and climate change mitigation

- Minimizing waste during production and maximizing the utilization of waste to convert it into useful products
- Producing and efficiently using renewable energy forms in production
- Reducing emissions and contributing to climate change mitigation and environmental protection

The dynamic circular economy model is also supplemented with another important feature, which is the high after-tax profit margin to serve as a foundation for reinvesting profits for expanding the scale and revenue of the model, creating a driving force for rapid double-digit growth to contribute to the growth of local GRDP, thereby increasing the double-digit GDP growth of the economy.

II. GH2 AGRICULTURAL - INDUSTRIAL AND GREEN ENERGY CIRCULAR ECONOMY COMPLEX PROJECT

The proposed GH2 project will fully demonstrate the above 9 characteristics of a dynamic circular economy model. Based on practical surveys in Hai Phong city, especially in Cam Giang commune, this project includes 3 parts:

PART 1: has an area of 100 ha described in the investment items in Sub-area (A)

PART 2: 150 ha including investment items in 3 Sub-areas (B), (C), (D)

PART 3: 14,750 ha including 12,750 ha of elephant grass and 2,000 ha of biomass corn. This is the organic agricultural production area of farmers to provide biomass materials for the above-mentioned sub-areas of the project.

III. SOCIO-ECONOMIC AND ENVIRONMENTAL TARGETS

1. Investment capital (first 2 years): about US$1.5 billion

Total investment for the complex: US$3 billion

2. Expected revenue: around US$5 billion per year per complex

3. Main product groups

3.1. Renewable electricity: 5 billion kWh per year

3.2. GH2: 60,000 tons per year; GO2: 480,000 tons per year

3.3. Sustainable aviation fuel (SAF): 150 million liters per year

3.4. Angus beef cattle (Australian breed): 20,000 head per year

3.5. Eel: 24,000 tons of fresh eel and 10,000 tons of smoked eel per year

3.6. Smoked fish: 5,000 tons per year

3.7. Edible mushrooms: 4,000 tons per year

3.8. Microbiological organic fertilizer: 2.5 million tons per year

3.9. Containers: 1,000 containers and 100 special tanks per year for storing and transporting liquefied LGH2

3.10. Liquid GO2 storage tanks and GO2 gas spraying machines

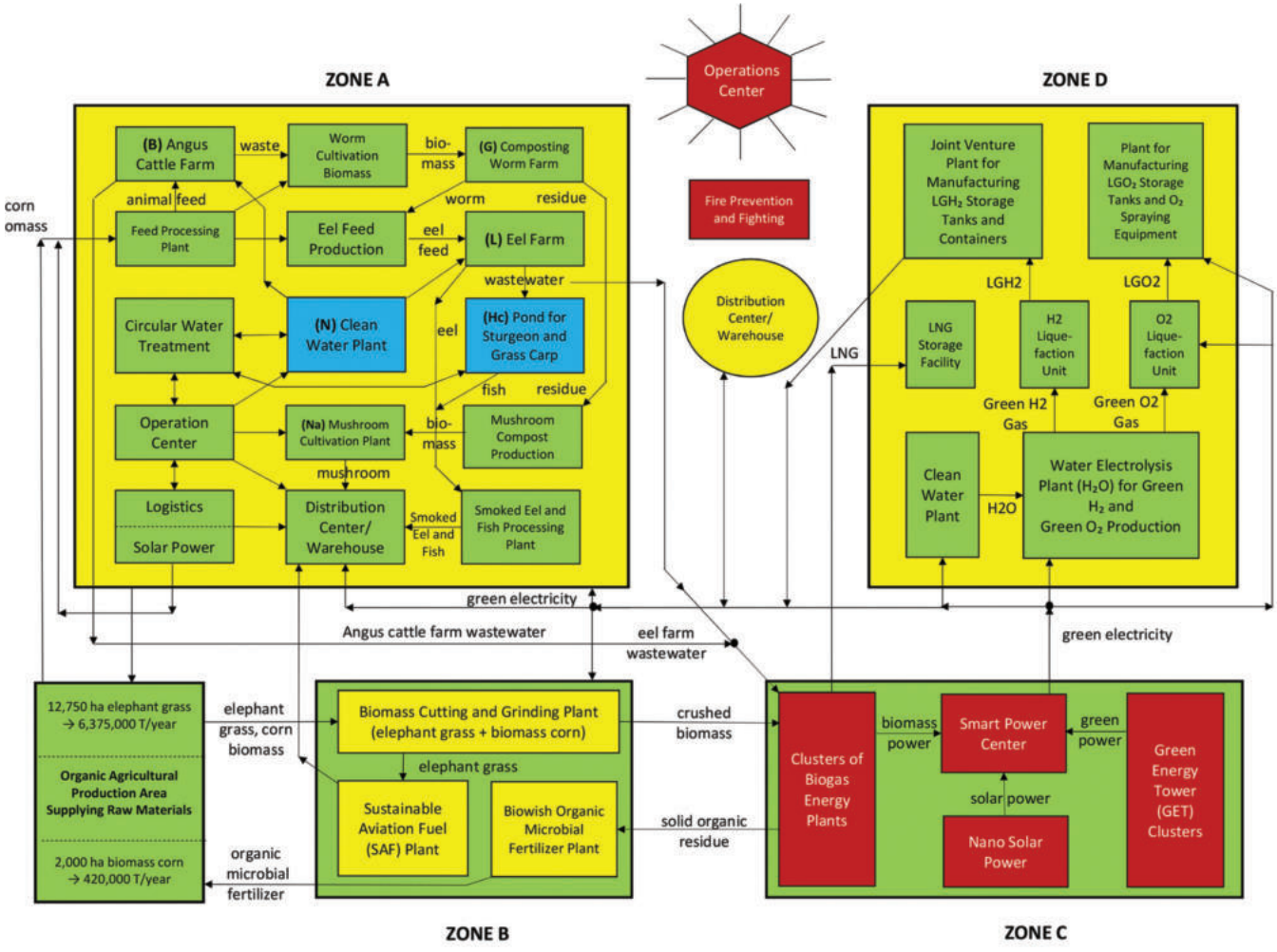
4. High technology and modern equipment originating from Germany and other EU countries, Russia, Japan, Australia, USA, China

5. Investment efficiency, economic - social - environmental significance

5.1 Very high profit margin, contributing greatly to Hai Phong city budget through corporate income tax from US$150 million to US$300 million/year/complex

5.2 A complex will create jobs for 3,000 local workers,

NEW GENERAL BLOCK DIAGRAM OF THE GH2 AGRI-INDUSTRIAL AND GREEN ENERGY CIRCULAR ECONOMY COMPLEX



improving the lives of 15,000 farming families producing agricultural raw materials in Cam Giang.

5.3 Reduce greenhouse gas emissions by 4 million tons CO2/year/complex, with 15 complexes → reduce 60 million T CO2/year

5.4 The dynamic nature of the project is demonstrated by the high profit margin that allows after paying corporate income tax to the Hai Phong City budget, the after-tax profit will be used to reinvest in expanding the scale, the number of complexes invested in the period 2031-2035 will be up to 15 complexes. From there, this strategy will generate total revenue of about US$75 billion per year, based on 15 complexes each earning approximately US$5 billion annually. Thus, the revenue growth rate in the 10 years is expected to average 30%/year, contributing to the double-digit GRDP growth of Hai Phong city.

IV. GROWTH STRATEGY TO EXPAND AND SPREAD GH2 PROJECT IN THE NORTHEAST PROVINCES OF VIETNAM

The rural area of Hai Phong City (including 5 old districts of Hai Phong City and 17 old districts of the old Hai Duong City) can be planned with enough 150,000 ha for 10 GH2 complexes, about 46.4% of the natural land area of Hai Phong City.

Only 3 old districts of Bac Giang province (currently Bac Ninh) namely Luc Nam, Luc Ngan and Son Dong have enough area of 150,000 ha to spread the next 10 complexes. Quang Ninh province with an area of 617,820 ha has enough land potential of 300,000 ha, or 48.5% of the province's area for 20 GH2 complexes.

The next province in the Northeast region of Vietnam is Lang Son with an area of 831,010 ha, also has the potential to plan 390,000 ha, equivalent to 46.9% of the natural land area for 26 GH2 complexes.

Thus, in summary, the 4 cities and provinces of the Northeast region including Hai Phong, Bac Ninh, Quang Ninh, Lang Son have enough land potential of 990,000 ha to plan 66 GH2 complexes for the rapid growth period with 66 complexes until 2045 with an average revenue growth rate of 30%/year, achieving the target of total revenue of US$330 billion/year from 2045 onwards , making an important contribution to the double-digit economic growth of the Northeast region and of the entire GDP of the Vietnamese economy, making Vietnam a country with a modern, high-income economy. In particular, the Northeast region of Vietnam will become a center of renewable energy, production and export of liquefied green fuels such as Green hydrogen and sustainable aviation fuel SAF.■

PV GAS

Pioneering Vietnam's Hydrogen Future

In Vietnam's green energy landscape, PetroVietnam Gas Joint Stock Corporation (PV GAS), a member of the Vietnam National Industry – Energy Group (Petrovietnam), is emerging as a forerunner in developing the hydrogen (H_2) economy, a sector seen as a new pillar in the global energy transition. From research and pilot testing to policy proposals and international cooperation, PV GAS is steadily laying the foundation for a national H_2 value chain, contributing to Vietnam's goal of achieving net-zero emissions by 2050.

PV GAS Deputy General Director Hoang Trong Dung shares the company's goals and orientation in the green hydrogen sector

NGO KHUYEN

The core of Vietnam's hydrogen strategy

Under the National Hydrogen Energy Development Strategy approved by Decision 165/QD-TTg on February 7, 2024, PV GAS was assigned by Petrovietnam to lead hydrogen research and strategy proposals and to participate in developing the national energy policy framework through 2030, with a vision to 2050. This responsibility positions PV GAS at the center of Vietnam's hydrogen value chain, from production, storage, and transportation to industrial, transportation, and power-generation applications.

At the Dinh Co Industrial Park in Ho Chi Minh City, PV GAS is developing a 1 MW green hydrogen production project, the first pilot model in Vietnam that combines renewable energy sources such as wind and solar with water electrolysis to produce pure hydrogen. The project is scheduled to begin operation in the first quarter of 2026 and will provide the first domestic source of clean fuel for public transport, processing industries, and energy centers in the Southeast region.

In mid-2025, PV GAS successfully conducted a hydrogen-blending trial by injecting hydrogen into diesel engines at Vung Ang, Ha Tinh. The results showed significantly lower fuel consumption and CO_2 emissions while maintaining engine performance, opening the way for applying hydrogen blending in industrial transport and power generation. This effort demonstrates PV GAS's sustainable approach to leveraging existing gas infrastructure to gradually transition toward clean energy and reduce dependence on fossil fuels.

Beyond production and pilot testing, PV GAS is expanding into practical hydrogen applications in urban life. The company has proposed that the Ho Chi Minh City People's Committee approve a pilot project to develop hydrogen supply infrastructure and refueling stations for public buses during 2026-2028. If approved, it will be the first public transportation project in Vietnam powered by hydrogen, marking a milestone in the green transition of major cities. The project aims to create a modern hydrogen refueling network along key transport routes, supply clean fuel, cut CO_2 and NO_x emissions, and standardize operational data for future expansion to other cities.

Experts noted that hydrogen-powered buses offer clear advantages over electric ones in driving range, refueling time, smooth operation, and environmental performance, as their only emission is water vapor. Once implemented, the project will not only deliver environmental benefits but also help create a new economic value chain covering production, storage, operation, maintenance, and industrial safety.

Aligning national goals with a regional vision

PV GAS considers hydrogen not just a new type of fuel but a complete economic ecosystem that includes production, storage, distribution, and multi-sector applications. With extensive experience in managing Vietnam's national gas infrastructure, including pipelines, storage facilities, compressor stations, and the transportation of LNG and LPG, PV GAS is turning these advantages into a strong technical foundation for the country's future hydrogen system.

The company is also strengthening international

PV GAS Deputy General Director Hoang Trong Dung and Greentek Vietnam representatives at the signing of an MoU on green hydrogen supply

cooperation through forums and joint research programs, such as the "Vietnam - Australia H_2 Workshop: H_2 Mobility & Decentralized System," which fosters collaboration in decentralized storage, transport, and distribution technologies. At the same time, PV GAS is actively promoting public-private partnership (PPP) models for clean energy development, aiming to build a domestic H_2 value chain that connects producers, transporters, and consumers, laying the groundwork for Vietnam's hydrogen market in the coming decade.

According to the Global Hydrogen Report 2025, Southeast Asia is becoming one of the most dynamic regions for hydrogen energy development, as countries such as Japan, South Korea, Singapore, Malaysia, and Indonesia are accelerating their national hydrogen strategies. In this context, Vietnam, with its favorable geopolitical position, abundant renewable energy potential, and well-developed gas infrastructure, has the opportunity to become a new hydrogen hub in the region. As a pioneer, PV GAS serves as a key driving force in turning this vision into reality.

Beyond its role as an investor and technology developer, PV GAS also acts as a consultant, policy advisor, and strategic partner for leading global energy corporations in cross-border hydrogen projects. Through its early initiatives, including the Dinh Co green hydrogen project, the Vung Ang pilot, and the proposed hydrogen bus project in Ho Chi Minh City, PV GAS has demonstrated its capability to achieve concrete results, gradually turning the concept of a hydrogen economy from vision into reality in Vietnam.

The hydrogen journey of PV GAS is not only a story of technological advancement but also a reflection of Vietnam's aspiration for energy transformation. In this vision, PV GAS stands as a trailblazer leading the nation into the green hydrogen era, where clean energy drives sustainable development, circular economy growth, and progress toward a net-zero future.

In Vietnam's energy transition, hydrogen is regarded as the final piece needed to achieve the Net Zero 2050 target. With strategic vision, solid technical capacity, and a pioneering mindset, PV GAS is shaping the nation's energy future, where natural gas, LNG, and green hydrogen advance together toward a low-carbon, sustainable, and globally connected economy. The future of green energy is no longer distant. It begins today with PV GAS.■

An expert demonstrates how the hydrogen injection system operates in diesel engines

PV GAS's five core values include safety, professionalism, innovation, cooperation, and efficiency

Milestones in 35 Years of Development of PV GAS

In its 35 years of development, Petrovietnam Gas Joint Stock Corporation (PV GAS) has built a proud legacy. From its early days as a young enterprise, PV GAS has grown into a key member of the Vietnam National Industry - Energy Group (Petrovietnam), leading the growth of Vietnam's gas industry and making significant contributions to energy security, food security, and the country's socio-economic development.

On the occasion of its 35th anniversary (September 20, 1990 to September 20, 2025), PV GAS looks back on the milestones of its inspiring journey, moving steadily toward a more sustainable and promising future.

1990-2000: Laying the foundation for Vietnam's gas industry

September 1990: Establishment of the Gas Company, the predecessor of PV GAS

On September 20, 1990, PV GAS was established based on the Vung Tau Oil and Gas Construction Management Board under the initial name "Gas Company." Its main functions were to collect, import, transport, store, process, distribute, and trade gas and gas products. This was a significant milestone that reflected the strategic vision of the Party and the State to systematically and comprehensively exploit national gas resources, laying the groundwork for a modern gas industry in Vietnam.

April 1995: The first gas flow from the Cuu Long Basin delivered onshore to consumers in the Southeast region

The first major achievement of PV GAS came on April 26, 1995, when the Ba Ria Power Plant began generating electricity using the first associated gas flow from the Bach Ho oil field, which was then connected to the national power grid. This was a breakthrough that opened a new era for the gas industry. The historic milestone marked a major transformation in Vietnam's energy sector, ushering in the use of natural gas as a raw material and fuel for production and daily life, diversifying the national energy structure, and enhancing energy security.

1999: The first domestic production of LPG and condensate in Vietnam

The completion and commissioning of the Dinh Co Gas Processing Plant and the PV GAS storage and export terminal for liquid products in late 1998 was a milestone of great technical, economic, and social significance. For the first time, LPG and condensate were produced in Vietnam. From May 1999, PV GAS began meeting most domestic LPG demand with high quality and competitive prices, replacing imported products that had previously dominated the market. This achievement demonstrated Vietnam's capability to effectively utilize and optimize national gas resources, enhancing gas value by recovering high-value products such as liquefied petroleum gas (LPG) and condensate. It marked the first step for PV GAS to expand its product chain and introduce LPG and condensate to the domestic market. This was not only a technological achievement that completed the gas industry's value chain from extraction to processing but also generated significant economic and social benefits.

2001-2010: Expanding supply and elevating position

December 2002: The first gas flow from the Nam Con Son Basin delivered onshore to consumers in the Southeast region

This was a strategic milestone that significantly expanded Vietnam's natural gas supply. The abundant gas resources from the Nam Con Son Basin not only promoted the establishment and growth of large-scale power generation centers but also fueled the development of downstream industries such as petrochemicals and fertilizer production in the Southeast region. This achievement made an important contribution to economic growth, created new jobs, and improved the quality of modern living in southern Vietnam.

November 2003: Completion of the first low-pressure gas distribution network

This project brought natural gas closer to residential and industrial consumers, marking an important step forward for Vietnam's gas industry and further expanding PV GAS's diverse range of products and services.

May 2007: The first gas flow from Block PM3 & 46 - Cai Nuoc delivered onshore to consumers in the Southwest region

This was a historic milestone for Vietnam's energy sector. The event ensured a stable natural gas supply for power and fertilizer plants in Ca Mau province, contributing to food security, energy security, and socio-economic development, while creating employment across the Southwest region. It also affirmed Vietnam's self-reliance and technical capacity in designing and constructing large-scale oil and gas projects both domestically and regionally.

July 2007: PV GAS became PetroVietnam Gas Corporation, operating under the parent-subsidiary model

This transformation marked a major step forward, enabling PV GAS to strengthen and demonstrate its management capacity, expand operational scale, and elevate its position in the national gas industry. It laid a solid foundation for PV GAS to continue growing as a core enterprise contributing significantly to national energy security.

2011-2016: Equitization and strengthening capacity

May 2011: Transitioned into a joint stock company with charter capital of VND18,950 billion

An imported LNG carrier docks at the PV GAS Vung Tau Terminal

A view of the Ham Rong-Thai Binh gas facility

This important turning point enabled PV GAS to enhance its capital mobilization capacity and strengthen its financial position for continued investment in gas infrastructure development. It marked a major milestone and a successful initial public offering (IPO) for the Corporation.

May 2012: PV GAS shares officially listed and traded on the Ho Chi Minh City Stock Exchange (HOSE)

A total of 1.895 billion PV GAS shares, trading under the ticker symbol GAS, officially began trading on the HOSE. This was a significant event in the development of Vietnam's oil and gas industry in general and the equitization process of PV GAS in particular. The listing marked an important step toward greater transparency and efficiency, reinforcing PV GAS's position as a leading enterprise in Vietnam's gas industry. The achievement also underscored its major contribution to the national economy and its growing reputation in the regional and global markets.

August 2015: The first gas flow from the Song Hong Basin delivered onshore to consumers in the North

PV GAS received the first commercial gas flow from the Ham Rong-Thai Binh gas field, Blocks 102-106, supplying industrial customers in northern Vietnam. This event was significant for expanding and ensuring energy security in the northern region, creating new employment opportunities for local workers, and promoting regional economic growth.

The event also marked the delivery of the first finished gas from the Dai Hung field onshore through the Nam Con Son 2 Pipeline - Phase 1 and the Bach Ho-Dinh Co pipeline. This milestone represented another major advancement for Vietnam's gas industry and continued the series of successful projects jointly executed by Petrovietnam, PV GAS, Vietsovpetro, and other units in the sector.

LPG storage tanks at Ca Mau Gas Processing Plant (GPP Ca Mau)

2016: PV GAS increased its charter capital to VND19,139 billion

This capital increase further strengthened the Corporation's financial capacity and prepared it for long-term strategic development. It established a solid foundation for PV GAS to continue implementing its business, investment, and development plans in the years ahead, reaffirming its pivotal role in ensuring national energy security.

2018-Present: Expanding gas processing and diversifying supply sources

May 2018: Ca Mau Gas Processing Plant officially commissioned, enhancing gas value from the PM3-CAA field

The Ca Mau Gas Processing Plant (GPP Ca Mau), with a processing capacity of 6.2 million cubic meters of gas per day from the PM3-CAA gas field, was inaugurated at the Khanh An Industrial Park with 100% investment from PV GAS. The facility includes storage tanks with capacities of 8,000 tons of LPG and 3,000 cubic meters of condensate, along with a product export terminal.

The official operation of GPP Ca Mau has significantly increased the added value of natural gas from the PM3 cluster, supplying the market with around 200,000 tons of LPG and 12,000 tons of condensate annually. It has made a substantial contribution to the local budget and created momentum for related industries involving dry gas, LPG, and condensate in Ca Mau. The plant is considered the final piece completing the Ca Mau Gas-Power-Fertilizer Industrial Complex, contributing to socio-economic development in the Mekong Delta.

October 2019: Construction of the Thi Vai LNG Terminal commenced

The Thi Vai LNG Terminal project, invested and developed by PV GAS, has a designed capacity of 1 million tons of LNG per year in Phase 1 and can receive LNG carriers of up to 85,000 tons. The main components include a 180,000-cubic-meter LNG storage tank and advanced technology systems designed in compliance with the latest Vietnamese and international standards.

The Thi Vai LNG Terminal plays an important role in ensuring gas and power supply for the key economic region of Southeast Vietnam. For the first time in the country's history, a power plant will operate on imported LNG, and PV GAS is proud to be the designated LNG supplier for the Nhon Trach 3 and Nhon Trach 4 power plants, marking the debut of this new energy source in Vietnam.

November 2020: The Nam Con Son 2 (NCS2) project chain officially came into operation

The chain included the Nam Con Son 2 Adjusted Gas Pipeline - Phase 2, the Sao Vang - Dai Nguyet Gas Pipeline, and the modification of the Dinh Co Gas Processing Plant to receive gas from the NCS2 Adjusted - Phase 2 project. These developments significantly supplemented the declining gas supply in the Southeast region, helping stabilize production and the regional economy.

July 2021: Commissioning of the refrigerated LPG floating storage facility in Thai Binh

This achievement reflected PV GAS's outstanding efforts in diversifying supply sources and reaffirmed its leading role in Vietnam's LPG business. The project contributed to stable economic growth and ensured consistent gas supply for industrial production in the northern region.

2023: Completion, inauguration, and commissioning of the Thi Vai LNG Terminal (1 MMTPA), Vietnam's first LNG terminal, along with the receipt of the country's first imported LNG cargo

This was a strategic milestone in diversifying the national energy supply, ensuring energy security, and marking the beginning of a new era for Vietnam's LNG sector. The event placed PV GAS on the global LNG business map. In the same year, PV GAS increased its charter capital to VND22,967 billion, strengthening its financial capacity and establishing a solid foundation for future growth projects.

2024: Commencement of regasified LNG supply for power generation and nationwide LNG distribution by tank trucks and rail

By completing an integrated business model that delivers a comprehensive energy supply chain, PV GAS demonstrated flexibility and diversification in meeting the rising energy demand amid declining domestic gas output. In 2024, the corporation also increased its charter capital to VND23,427 billion and achieved a record consolidated revenue of nearly VND130 trillion, the highest since its establishment. This result reflected the efficiency of PV GAS's operations and the soundness of its growth strategy. With such strong and dynamic progress, PV GAS reaffirmed its position as one of the leading contributors to Petrovietnam's overall revenue and profit.

2025: Celebrating the 35th anniversary and entering a new stage of development

The year 2025 marks the 35th anniversary of PV GAS and the successful organization of its 11th Party Congress for the 2025-2030 term. Guided by the strategic vision to become one of Vietnam's key industrial sectors, gradually expanding into international markets, ranking among the top gas companies in ASEAN, and joining the list of Asia's leading gas brands, PV GAS is confidently stepping into the future as a dynamic and capable representative of Vietnam's gas industry.

These golden milestones not only mark each stage of PV GAS's growth but also reflect the strategic vision and leadership of successive generations who have seized opportunities, adapted flexibly to market changes, and steadily built a solid foundation for future development. They also embody the unity, responsibility, and humanistic spirit of PV GAS's employees, engineers, and staff, who continue to work tirelessly to uphold the Corporation's pioneering role in Vietnam's energy industry. PV GAS has turned the nation's energy aspirations into reality, helping to ignite the homeland's flame and build a sustainable future for the country.■

INDEFOL GROUP

Pioneering Green Hydrogen Ecosystem

The Vietnamese government is committed, together with the business community, to building a hydrogen ecosystem to achieve net-zero emissions by 2050. In this effort, pioneering companies with technological expertise and a global vision play a critical role, with Indefol Group emerging as a leading example.

Indelfol's technology production line

Frontline role in the hydrogen sector

Founded in 2008, Indefol Group has secured a strong position in the renewable energy sector, particularly in solar power, with over 60 projects totaling more than 800 MWp across Germany, Australia, Indonesia, and Cambodia. In Vietnam, the company has deployed large-scale rooftop solar systems for industrial zones and factories, reducing hundreds of thousands of tons of CO_2 annually. Notable projects include the Vietnam-Singapore Industrial Park in Binh Duong (30 MWp) and a 50 MWp solar cluster in Tay Ninh.

From 2017 to 2019, Indefol Group established a strong reputation as a renewable energy provider for global sports corporations in Germany and Australia, delivering rooftop solar projects for Adidas factories in Germany and a logistics center in Sydney, Australia. These projects were certified under RE100, highlighting the company's credibility, technological expertise, and capacity to meet international ESG standards. Building on this foundation, Indefol Group is now advancing into green hydrogen, reinforcing the pioneering vision of a Vietnamese enterprise on the global renewable energy stage.

In 2025, Indefol Group further strengthened its position by launching an Alkaline Electrolyzer Manufacturing Plant in Tay Ninh. This is the first and most substantial hydrogen equipment production facility in Vietnam, with a design capacity of 144 units per year. This milestone marks a turning point for Vietnam's energy sector, shifting from research and testing to production and commercialization of hydrogen equipment. The plant not only serves the domestic market but also aims to participate deeply in the global hydrogen value chain, especially in Southeast Asia and Europe.

Complete energy ecosystem

In its green hydrogen development strategy, Indefol Solar and Indefol GmbH serve as complementary pillars, forming a closed-loop green energy ecosystem that spans clean power generation, hydrogen production, and industrial derivatives.

Indefol Solar focuses on large-scale clean energy investments, including solar, wind, and Battery Energy Storage Systems (BESS). This provides stable, low-cost, zero-emission electricity for water electrolysis. Currently, Indefol Solar operates solar clusters in Tay Ninh, Khanh Hoa, and Ho Chi Minh City totaling over 800 MWp, while exploring offshore wind expansion to support large-scale hydrogen production.

Indefol GmbH is responsible for R&D and manufacturing of Alkaline water electrolysis equipment, energy storage and conversion systems, and Power-to-X infrastructure. Its technology allows direct use of renewable electricity from Indefol Solar to produce green hydrogen and convert it into green ammonia, green methanol, or synthetic fuels (e-fuel), serving heavy industry, chemicals, transportation, and export markets in Europe, Japan, and South Korea.

Together, these units form a closed-loop "From Solar to H2" value chain, where Indefol Solar supplies electricity and Indefol GmbH converts it into high-value energy products. This structure reduces hydrogen production costs, enhances international competitiveness, and opens a path for autonomous clean energy industrial development in Vietnam.

This dual strategy lays the foundation for Indefol Group to evolve from an energy investor into a comprehensive green technology group, helping Vietnam integrate more deeply into the global hydrogen supply chain.

Alongside domestic investment, Indefol Group actively expands international cooperation with strategic partners from Germany, Australia, and Japan. These collaborations focus on advanced electrolysis technology transfer, materials research, energy storage solutions, and attracting green investment and high-quality human resources for Vietnam's hydrogen industry.■

CHEMICAL INDUSTRY ENGINEERING JSC

Leading Consultant in Green Hydrogen and Sustainable Chemical Industry Development

Established in 1967, CECO has nearly 60 years of experience in investment and construction consulting, environmental impact assessment, engineering design, and Engineering, Procurement, and Construction (EPC), Engineering, Procurement, and Construction management (EPCm), and Project Management Consultancy (PMC) contracting.

The company operates across a wide range of industries, including chemicals, industrial gases, fertilizers, petrochemicals, petroleum, power and utilities, environmental management and waste treatment, food processing, pharmaceuticals, consumer industries, mineral extraction and processing, renewable energy, and rubber products, among others.

The Chemical Industry Engineering Joint Stock Company (CECO) is one of the few Vietnamese firms capable of providing consulting and implementation services for chemical industry projects powered by renewable energy, along with related areas such as hydrogen (H_2) and energy storage within the chemical industry value chain. Vietnam Business Forum interviewed Mrs. Nguyen Thi Van Anh, CEO of CECO, about the company's strategic direction and new initiatives in its green transformation journey and integration into the global energy value chain.

As a designer and general contractor for caustic soda and chlorine projects, where H_2 is a by-product, what solutions has CECO applied to recover and utilize hydrogen while minimizing production risks?

Caustic soda (sodium hydroxide, NaOH) is a basic chemical essential for many industries. It is widely used in paper production, textiles, detergents, water treatment, food processing, leather, silicate manufacturing, and bauxite processing.

As a consultant, engineering design, or EPC general contractor, CECO has supported investors in basic chemical projects, contributing to over 80% of Vietnam's total caustic soda output supplied to the domestic market.

Selecting the appropriate process technology is one of a key determinant of project success. The right technology not only ensures product quality but also delivers significant advantages—such as energy efficiency, optimized Operating Expenditure (OPEX), reduced operational risks, and compliance with safety and environmental standards.

To maintain balance between caustic soda and chlorine production, CECO evaluates various technology options, conducts material balance analyses, selects the most efficient solutions, and diversifies the product portfolio according to project scale, design capacity, and total investment. The diversified products include hydrochloric acid (HCl), chlorine gas (Cl_2), sodium hypochlorite (NaClO), polyaluminum chloride (PAC), ferric chloride ($FeCl_3$), chloramine B, trichloroisocyanuric acid (TCCA), sulfuric acid (H_2SO_4), and phosphoric acid (H_3PO_4). These solutions enhance

CECO leaders and Vietnamese enterprises learn about technology and visit GH2 production facilities in Germany, September 2025

operational efficiency and strengthen investors' competitiveness in the chemical market.

In the NH_3-Urea production chain, what contributions has CECO made in design, excess hydrogen treatment, CO_2 integration, and energy-saving solutions?

In the context of global sustainable development, Vietnam's chemical industry is actively implementing comprehensive restructuring strategies. The main objectives are to expand product chains toward higher value and environmentally friendly goods. The sector is also applying technology to recover and refine industrial emissions, reduce energy losses, and optimize resource efficiency. These solutions not only lower production costs but also play a key role in sustainable economic growth. Technical improvements and restructuring represent a practical contribution by the chemical industry to Vietnam's Net Zero 2050 commitment.

A major strategy involves balancing excess hydrogen from ammonia production plants to create high-value products such as hydrogen peroxide (H_2O_2). H_2O_2 is an essential bleaching and disinfecting chemical widely used in paper, textiles, water treatment, and medical applications. However, domestic supply remains insufficient. Currently, Hung Phat Ha Bac Chemical Joint Stock Company operates an H_2O_2 production line with a capacity of 10,000 tons per year, using hydrogen from Ha Bac Fertilizer Plant. As a result, domestic H_2O_2 supply relies heavily on imports from Thailand, South Korea, Indonesia, Bangladesh, Taiwan, and China. Integrating H_2O_2 production lines into other fertilizer plants would provide stable supply, reduce imports, and enhance domestic self-sufficiency while meeting market demand.

Carbon dioxide (CO_2), one of the greenhouse gases with large emission volumes in Vietnam's industrial structure. Technical solutions are being implemented to recover CO_2 from emissions of urea, ethanol, sugar, and beer production, as well as natural gas extraction and fuel oil combustion. Urea plants account for more than 50% of total recovered CO_2. The technical process for CO_2 recovery and purification involves separating gas mixtures to obtain pure CO_2, drying it, and compressing it to required pressures for storage. Applying these technologies systematically is crucial to reducing emissions and improving resource efficiency in Vietnam.

CECO emphasizes that investment efficiency in integrated systems for high-value products such as H_2O_2 production and CO_2 recovery depends on careful technical and economic analysis. Factors include existing infrastructure, planned production capacity, recovery technologies, and equipment selection.

To ensure stable production in line with technical specifications and maximize investor returns, CECO optimizes equipment design by classifying critical components that must be sourced from licensed technology suppliers, while auxiliary items such as columns, vessels, and tanks are locally fabricated. This strategy not only reduces overall investment costs but also strengthens Vietnam's supply chain and mechanical engineering industry.

Leveraging extensive experience in designing fertilizer plants, CECO has an advantage in material and energy balance calculations, allowing efficient integration of raw materials, intermediates, excess heat, and emissions. This approach saves energy, reduces emissions, and supports a circular economy model for the entire project.

With more than 1,600 chemical and fertilizer projects completed, CECO is committed to providing high-quality investment consulting services, helping investors realize business strategies and maximize profits through sustainable solutions.

CECO has participated in international training programs on green hydrogen (GH_2) and Power-to-X organized by GIZ and the PTX Hub to stay updated with the latest global standards. What advantages does this bring to CECO in implementing GH_2 projects?

In recent years, CECO has worked closely with GIZ and the PTX Hub through international training programs and seminars on policy and legal frameworks for energy transition. These programs

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CECO representatives visit a renewable energy-based GH_2 production site in Duisburg

have provided CECO with advanced knowledge of electrolysis technologies, helping the company select the most efficient technologies, equipment, and production process designs to ensure high performance, low operating costs, and safety for GH_2 projects.

Through GIZ and PTX Hub initiatives, CECO has also visited facilities and worked directly with technology suppliers and applied research centers in Germany, such as Archigas (developer of advanced hydrogen analysis and monitoring systems ensuring safe and efficient operations); Carbon2Chem - Thyssenkrupp (which converts steel mill emissions into chemical feedstocks); the Julich Research Center (developer of integrated hydrogen technologies covering production, storage, transport, and application); and AWG Wuppertal (operator of a waste-to-energy plant that integrates renewable-powered electrolysis for hydrogen production and utilization).

Direct exposure to these advanced models in Germany has enabled CECO and other Vietnamese enterprises to narrow the technological gap, gain practical insights, and develop a comprehensive understanding of the market. This experience supports their progress toward realizing Vietnam's green transition goals for 2025-2030 and its vision for 2050.

Based on practical experience, what recommendations does CECO have for the Government, regulatory agencies, and the business community regarding support mechanisms, investment incentives, and standards and certification for GH_2?

Based on practical experience in the hydrogen industry and current challenges in Vietnam, CECO has made several recommendations to the Government, regulatory agencies, and the business community regarding support mechanisms, investment incentives, standards, and certification for GH_2. These proposals aim to reduce initial investment costs, enhance competitiveness, encourage GH_2 technology investment, and minimize regulatory overlaps and legal gaps:

1. Establish a Green Development Investment Fund mobilizing capital from state, private, and international sources to finance pilot GH_2 projects, with flexible, rapid, and risk-tolerant funding mechanisms.

2. Develop a price support mechanisms for early-stage GH_2 projects to offset high production costs and reduce investor risk.

3. Include green hydrogen (GH2) projects — covering production, storage, transportation, and utilization — in the category of specially incentivized investments, eligible for corporate income tax reductions, import duty exemptions on equipment, and access to preferential credit financing.

4. Develop specific regulations for international trading of greenhouse gas reduction outcomes and carbon credits generated by GH_2 projects.

5. Issue national technical regulations (QCVN) and standards (TCVN) on quality and safety for GH_2 production, storage, transport, and use as soon as possible.

6. Incorporate explicit provisions on GH_2 into legal frameworks such as the Law on Investment, Law on Construction, Law on Chemicals, and Law on Renewable Energy to ensure long-term legal stability and transparency for investors.

7. Promote international trade connections to lay the foundation for Vietnam's GH_2 and related product exports, forming a new global value chain.

8. Intensify research and development (R&D) to localize critical equipment and core technologies in the green hydrogen (GH2) value chain. This approach not only drives GH2 growth but also strengthens Vietnam's technological independence.

What message does CECO wish to convey at COP30, and how does the company hope to be recognized through VCCI's communication channels?

At COP30, CECO aims to deliver the message: "Vietnam - A Trusted Partner and Potential Destination for Green Hydrogen Investment."

This message highlights Vietnam's strong commitment to its Net Zero target and its potential to participate in the global clean energy supply chain through the active role of domestic enterprises. CECO is one of the Vietnamese companies committed to investing resources and accompanying the nation's green transition.

CECO hopes to be recognized as one of Vietnam's pioneering consulting enterprises, leading in international cooperation, technology adoption, and the application of global standards in the design and implementation of GH_2 projects, as well as in the broader chemical industry.

Thank you very much!

OBAYASHI CORPORATION

Advancing Hydrogen Infrastructure and Regional Collaboration in Asia

In an exclusive interview with Vietnam Business Forum, Rinko Aki - Senior General Manager of the Green Energy Division at Obayashi Corporation - shared insights into the company's pioneering hydrogen projects in Japan and New Zealand, as well as its perspective on Vietnam's potential in developing a hydrogen economy.

From your projects in Fukushima and Tokyo, what are the main lessons in aligning policy, technology, and market growth to advance hydrogen infrastructure?

We believe that the key takeaways from our Fukushima hydrogen transportation project and Tokyo refueling station initiatives are the importance of integrating our decarbonization policy, advanced technology, and demand development into a unified project framework, as well as understanding the need for close collaboration among government offices, the private sector, and local communities. To be more specific, leveraging government grants, meeting strict safety regulations and certification requirements, and diversifying hydrogen applications into mobility and industrial use for a business model for commercialization.

With projects in New Zealand and hydrogen transport to Fiji, what are the main logistics and safety challenges in cross-border hydrogen shipping?

Challenges in cross-border transport, such as shipping hydrogen from New Zealand to Fiji, involve arranging experienced operators for domestic and marine transportation, harmonizing safety standards across multiple countries, obtaining certificates in each country, and establishing a mutual recognition scheme. Cost efficiency, being a critical element in hydrogen export, requires local partnerships, an optimal hydrogen carrier (compressed/liquefied hydrogen, MCH, hydride alloys, etc.), and proactive intergovernmental talks.

Your company recently received the 2025 Government Award in New Zealand for its green energy contribution. What key factors led to this recognition, and could this model work in Vietnam?

The New Zealand government award was granted in recognition of our contribution to large-scale CO2 reduction by utilization of geothermal-derived green hydrogen, our project management with transparency through the demonstration phase to commercialization, and close collaboration with Maori communities and local industries. In order to apply this success model in Vietnam, promoting surplus renewable energy for local use, consensus-building for government roadmaps, and compliance with global standards will be pivotal.

Vietnam aims for Net Zero by 2050 and is developing hydrogen infrastructure. How do you view the opportunities and roadmap for its hydrogen market?

We recognize that Vietnam has set ambitious goals of achieving carbon neutrality by 2050 and expanding renewable energy development. Although it is highly appreciated that the country has started promoting electrification in industrial parks and advancing hydrogen-related demonstration projects for local production for local use, a concrete roadmap for achieving these goals does not seem to have been formulated as of yet. Our approach to Vietnam's decarbonization goals is underpinned by utilizing NEDO programs and collaborative partnerships with local governments and industrial parks. We ensure reliability and obtain certification to international standards by building robust EPC and partnership structures.

From a trade perspective, what are your expectations for a hydrogen export corridor from Vietnam to Singapore and other ASEAN countries?

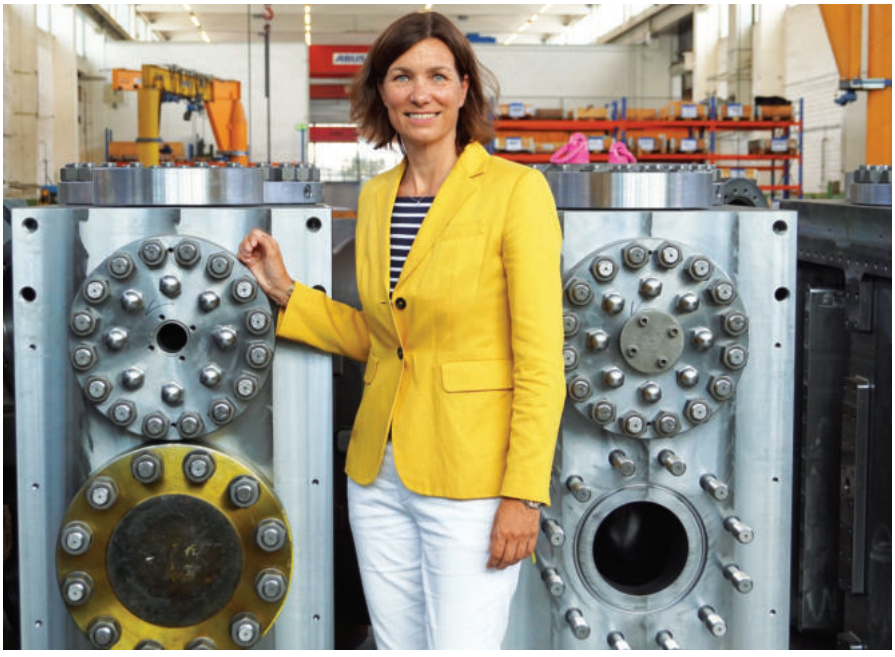
Establishing a hydrogen export corridor from Vietnam to Singapore and other ASEAN countries will require new ports, synchronized standards across multiple nations, optimized logistics, and proactive cross-border supply-demand management. Securing stable partnerships among the nations and reliable safety management, we aim to contribute to Asia-wide decarbonization.

Thank you very much!

NEUMAN & ESSER

Supporting Sustainable Hydrogen Economy in Vietnnam

With nearly one century of experience in hydrogen compression, NEUMAN & ESSER (NEA Group) is applying its global hydrogen expertise to promote technology transfer, strengthen local partnerships, and support policy dialogue. In an interview with Vietnam Business Forum, Stefanie Peters, Managing Partner and CEO of NEA Group, reaffirmed the company's strong commitment to supporting Vietnam's clean energy transition.



What is NEUMAN & ESSER (NEA Group)'s global mission in the sustainable energy transition, and how does it stand out from other international energy companies?

NEUMAN & ESSER's mission is to be the industry's reliable partner, who is propelling the energy transition and the circular economy through integrated solutions for the energy infrastructure of tomorrow. We distinguish ourselves from other international energy groups through a combination of deep-rooted engineering expertise, holistic system integration, and a commitment to sustainability and innovation. Ahead with our compressor solutions with in-house sealing technology, our product portfolio includes hydrogen production systems such as PEM electrolyzers and steam reformers. With these key technologies for future demands of clean energy, we can drive the energy transition. In large-scale green hydrogen projects, such as the 320 MW PEM electrolyzer in Emden, Germany, we contribute to national and European hydrogen strategies.

With a company history spanning nearly 200 years and more than 100 years of experience in hydrogen compression, we support our customers with integrated solutions across the entire hydrogen value chain. When it comes to bringing challenging projects to life, we serve as the trusted advisor. We offer comprehensive support throughout the entire project lifecycle, starting from the assessment of potential sites and the feasibility as well as financing. Our expertise extends through engineering, construction, and commissioning to the trading of the gases produced.

As reliability and availability are fundamental pillars in establishing and maintaining long-term relationships, we offer our digitally supported 360° service throughout the operation.

What is the importance of your 5MW hydrogen project in Brazil, and what key messages will the company highlight at COP30?

We are currently in the manufacturing and delivery phase for the commissioning of the first 5MW PEM electrolysis plant supplied by NEUMAN & ESSER in Brazil. This plant will be the largest operational PEM electrolysis system in the country.

This 5MW project holds strategic significance in terms of hydrogen application: the green hydrogen produced will serve as the primary vector for decarbonizing a major player in the steel industry. We are eager to demonstrate to the Brazilian market the full potential of green hydrogen in driving impactful decarbonization results - even in traditionally hard-to-abate sectors such as steelmaking.

Brazil is positioning itself as a key global player in the production of low-carbon hydrogen, driven by its predominantly renewable (>85%) and low-cost electricity matrix. This competitive advantage enables the large-scale production of green hydrogen via electrolysis, a technology the country has developed domestically.

Moreover, Brazil's National Hydrogen Program (PNH2), issued by the Ministry of Mines and Energy and

the National Energy Policy Council (CNPE), outlines key strategic pillars for market development. It includes regulatory frameworks, international cooperation, technological innovation, and workforce development. Neuman & Esser is directly involved in these efforts, representing the industrial sector in discussions with government bodies and actively fostering connections between Brazilian and German hydrogen initiatives and partners. These priorities are fully aligned with our ongoing growth strategy, including the development of our newly expanded manufacturing facility, which will play a pivotal role in supporting the growth of Brazil's emerging hydrogen economy.

NEUMAN & ESSER is also contributing to hydrogen projects in other strategic Latin American markets, such as the ENAP project in Chile, further strengthening our regional presence and technical leadership. The ENAP project is another strong example of hydrogen's potential in decarbonizing hard-to-abate industries. The primary use of the green hydrogen produced in this initiative is its injection into natural gas furnaces - a process that has the potential to significantly reduce greenhouse gas emissions with relatively small amounts of hydrogen.

What are Vietnam's advantages and challenges in developing its hydrogen value chain, and what cooperation opportunities does NEUMAN & ESSER see with local partners and policymakers?

Based on global the experience of NEUMAN & ESSER in hydrogen technologies and energy system integration, Vietnam offers a highly promising environment for the development of a green hydrogen economy. The country's abundant renewable energy resources opportunities, especially solar and offshore wind, provide a strong foundation for large-scale green hydrogen production. In addition, Vietnam's growing industrial base and export-oriented economy create demand-side opportunities for hydrogen in sectors such as steel, chemicals, and transport.

However, Vietnam also faces several challenges along the hydrogen value chain. These include limited infrastructure for hydrogen transport and storage, a lack of technical standards and certification systems, and the need for skilled labor and institutional capacity. Furthermore, financing mechanisms for large-scale hydrogen projects are still underdeveloped, which can slow down implementation.

To address these challenges and unlock Vietnam's full potential, we see strategic cooperation opportunities in different areas. Technology partnerships are one option. NEUMAN & ESSER can work with Vietnamese companies on delivering hydrogen compression systems, electrolyzer integration, and plant engineering solutions tailored to regional needs. With joint pilot projects these partnerships can be determined. Demonstration plants in industrial zones or renewable energy clusters can showcase the feasibility of green hydrogen applications and build confidence among stakeholders.

Policy dialogue and advisory is another high potential area. We are ready to support Vietnamese policymakers in developing technical standards, safety regulations, and certification frameworks based on international best practices. Through partnerships with universities and vocational institutions, we can contribute to workforce development and knowledge transfer in hydrogen system design, operation, and maintenance.

What are NEUMAN & ESSER's priorities and goals for its partnership and development in Vietnam over the next 5–10 years, and what key projects or programs are planned?

NEUMAN & ESSER is setting a clear and ambitious development agenda for Vietnam over the next five to ten years, with a strong focus on hydrogen technology, energy infrastructure, and strategic partnerships. There are different priorities, objectives, and programs NEUMAN & ESSER is pursuing in Vietnam.

Our long-standing presence in Vietnam - spanning 18 years - has evolved from serving the refinery and chemical sectors to entering the LNG terminal business and now expanding into hydrogen generation and compression. We will open a new office in Ho Chi Minh City which marks a significant milestone in deepening local engagement this year. The establishing of a hydrogen ecosystem is one of our key priorities. In this regard we signed an MoU with the Vietnam Institute for Development Strategies (IDS) to develop the hydrogen industry. It includes the research on legal frameworks and market mechanisms, the investment in manufacturing plants and the technology transfer to Vietnamese partners.

We also plan to invest in production facilities in southern Vietnam, leveraging proximity to renewable energy sources to support local production and infrastructure development. Focus areas of these developments are PEM electrolyzers, hydrogen compressors and integrated hydrogen systems for industrial use. Partnerships with key Vietnamese entities are important enabler of these objectives. We are actively engaging with Petrovietnam (PVN), Vietnam Electricity (EVN) and Vietnam National Chemical Corporation (VINACHEM) to support the hydrogen integration into the oil & gas, power, and chemical sectors. Moreover, we are collaborating with GIZ and AHK in the Vietnam-Germany Hydrogen Workshop. The main objectives of these partnerships are the building of a hydrogen infrastructure, the promotion of cross-border cooperation and the support of Vietnam's National Hydrogen Plan and PDP VIII goals. And we also initiated partnerships with companies in Vung Tau, a strategic location for energy and LNG infrastructure. These partnerships are expected to evolve into hydrogen pilot projects and technology deployments.

In addition to this, we are working in other programs and focus areas. NEUMAN & ESSER is a contributor to the Green Hydrogen Hub initiative led by GIZ and AHK, based at the Vietnamese-German University. This hub will serve as a platform for knowledge sharing, capacity building and business cooperation. We participated in the German Training Week on Green Hydrogen 2025, presenting our technologies and engaging in project ideation with Vietnamese stakeholders. We also showcased our compressor and hydrogen system integration capabilities during workshops and webinars.

Thank you very much!

Wisdom Motor Ready to Co-Design Hydrogen Pilots in Vietnam

As Vietnam advances toward its Net Zero 2050 goal, hydrogen mobility can decarbonize the nation's hardest-to-electrify fleets: buses, long-haul logistics, and industrial transport. At COP30, Wisdom Motor shares a practical path to scale: proven vehicles, integrated infrastructure, and partnerships that de-risk adoption.

From Asia to the world: A practical roadmap for H_2 fleets

Wisdom Motor develops hydrogen fuel-cell commercial vehicles across multiple platforms, including city and intercity buses, rigid trucks, and tractor units, all engineered for high-duty cycles. The company's design philosophy is simple: pair a modular chassis with fuel-cell and storage systems sized to duty needs, then integrate software, telematics, and safety systems so fleets can operate reliably day in and day out.

Across international deployments and trials in Australia, Europe, and the Middle East, Wisdom Motor has learned three key lessons that matter for emerging hydrogen markets. First, start with fit-for-purpose routes, as high-mileage corridors such as urban bus BRT lines, port drayage, and steel or cement clusters unlock hydrogen's refuel-and-run advantage. Second, plan vehicles and stations together, since fleet utilization determines station sizing while station availability stabilizes total cost of ownership; both should be treated as one integrated project. Third, standardize early by adopting common interfaces for refueling pressure, telemetry, and diagnostics to simplify maintenance and ensure predictable supply chains.

Integrating vehicles and infrastructure

Hydrogen works best when OEMs, energy providers, and operators move in lockstep. At Wisdom Motor, tri-party collaboration models are formed to integrate all key aspects of deployment. For Vehicle and After-sales, the company focuses on fleet specification, homologation, training, diagnostics, and spare-parts planning. For Hydrogen Supply and Stations, partners handle production (green or low-carbon), compression, storage, and 350–700 bar dispensing tailored to fleet profiles. For Fleet Operations and Finance, operators coordinate scheduling, depot layouts, and driver training, while financiers design leasing structures and total cost of ownership–aligned terms to ensure long-term project viability.

For Vietnam, this translates into a practical playbook: define a pilot corridor, size the fleet and station around duty cycles, lock standards early, and scale with data.

"Hydrogen mobility is a system, not a single product. When vehicles, stations, and operations are planned together, reliability and economics follow," said Ivan Lim, Senior Vice President, Wisdom Motor Group Pte Ltd.

Wisdom Motor - a next-generation manufacturer of hydrogen, electric, and hybrid commercial vehicles

Wisdom Motor is a next-generation commercial vehicle manufacturer specializing in hydrogen fuel-cell, pure electric, and hybrid-powered mobility solutions. With advanced R&D and production bases in Fujian, China, and a regional global headquarters in Singapore, the company integrates innovation across powertrain systems, lightweight modular chassis, and intelligent vehicle software to deliver reliable, zero- and low-emission transport solutions worldwide.

Beyond vehicle engineering, Wisdom Motor provides a complete ecosystem approach, including fleet data analytics, charging and refueling integration, after-sales support, and technical training, to help operators and governments transition efficiently toward sustainable mobility.

Through its diverse portfolio of hydrogen, electric, and hybrid buses, coaches, and trucks, Wisdom Motor supports a wide range of applications from urban transit and intercity passenger services to logistics and industrial transport. Working closely with global partners, the company is accelerating Asia's path toward a cleaner, smarter, and commercially viable mobility future.

Where Vietnam can lead first

Vietnam's public transport, port logistics, and industrial park fleets represent ideal early adopters of hydrogen mobility. Urban and intercity buses benefit from depot-based refueling, which simplifies station rollout while predictable routes and schedules help de-risk pilot projects. Port and free-trade-zone logistics operations, such as those in Hai Phong and Cai Mep-Thi Vai, offer high

utilization rates and fixed hubs that maximize station throughput. Meanwhile, industrial clusters in sectors like steel, cement, and manufacturing can co-develop captive hydrogen supplies to serve multiple fleets efficiently, creating shared value across the ecosystem.

Beyond supplying vehicles, Wisdom Motor provides route and duty analysis, driver and technician training, station sizing input, and TCO modeling, forming the "soft infrastructure" that makes pilot projects succeed.

Technology and cost trajectory (next 5-10 years)

Hydrogen competitiveness will be driven by several key factors. Fuel-cell efficiency and durability will improve with next-generation stacks designed for longer service intervals and higher performance. Lightweighting and modularity through advanced materials and platform standardization will reduce curb weight and increase payload capacity. Integrated controls and telematics will enable real-time stack management, predictive maintenance, and energy-aware routing to enhance asset uptime. Finally, safety and standards, including alignment with UNECE and ISO hydrogen safety frameworks, comprehensive training, and a strong incident-prevention culture, will be essential to ensuring sustainable growth and public trust in hydrogen technologies.

These innovations will compound over time, driving down total cost of ownership as hydrogen production scales and station utilization increases.

What COP30 means for Vietnam and for Wisdom Motor

COP30 is a reminder that deployment is the new R&D. Vietnam's policy momentum and industrial capability can deliver early wins that are bankable and repeatable. Wisdom Motor stands ready to co-design pilot projects in Vietnam, covering bus lines, port logistics, and industrial shuttles, with clear KPIs on availability, cost per kilometer, and emissions reduction. The company is also committed to supporting workforce readiness through driver and technician training, along with safety certification programs.

In addition, Wisdom Motor facilitates financing discussions by providing standardized specifications, maintenance plans, and utilization data to lenders and lessors. The company's message to policymakers and business leaders is clear: set pilot frameworks, promote open standards, and prioritize high-utilization corridors. These actions will accelerate learning, improve economics, and shorten the path from pilot to full-scale deployment.■

UNITED HYDROGEN

Linking China's Hydrogen Ecosystem to Vietnam

In an exclusive interview with Vietnam Business Forum, Chairwoman and CEO Ma Xia and Chief APAC & MENA Representative of United Hydrogen Ianton Tan shared insights on replicating China's hydrogen ecosystem in Vietnam, pioneering in ASEAN while managing risk, and building partnerships that link production, storage, transport, and refueling.

Chairwoman and CEO Ma Xia, United Hydrogen

How feasible is it to develop hydrogen ecosystem in Vietnam?

Ma Xia: United Hydrogen delivers end-to-end hydrogen solutions—from production, storage, and transport to refueling and applications—and Vietnam's strong solar and wind resources plus a national hydrogen strategy create a solid foundation to localize this model. That said, infrastructure remains nascent and clean hydrogen currently costs about 1.3–2.1 times grey hydrogen, so replication is feasible with phased deployment and Vietnam-specific optimization as scale and technology drive costs down.

How can United Hydrogen pioneer in ASEAN while mitigating risk?

Ma Xia: A prudent path is to start with small pilot projects in suitable scenarios—such as compact production and refueling assets—to validate technology and demand using China's mature supply chain, before scaling investment. Execution should prioritize co-development with Vietnamese partners across energy and logistics while engaging regulators on standards and safety frameworks to de-risk adoption and align with policy roadmaps.

What role can United Hydrogen play in Vietnam's Net Zero transition by 2050?

Ma Xia: United Hydrogen aims to be a connector between China's ☞

hydrogen ecosystem and Vietnam—accelerating supply network build out, technology transfer, and standards alignment to catalyze an investable, safe, and scalable industry. The objective is to help government and enterprises co-create a complete hydrogen value chain that underpins decarbonization in heavy transport, industry, and distributed energy.

What are your priorities for partnerships in Vietnam?

Ma Xia: Partnership is essential, with three immediate priorities: co-develop wind/solar-to-hydrogen projects with local renewable players; collaborate with port operators on zero carbon port logistics; and support public agencies in planning and deploying a hydrogen refueling network. These partnerships align infrastructure with real demand centers and accelerate ecosystem readiness while sharing expertise and risk.

What is the ASEAN outlook over the next decade?

Ianton Tan: Malaysia has named hydrogen a key lever in its National Energy Transition Roadmap and issued a Hydrogen Economy & Technology Roadmap, with financing advancing large green hydrogen projects and early public transport pilots already underway in Sarawak, setting a regional reference for export, jobs, and emissions reduction by 2030. Indonesia is progressing major green hydrogen plans in Sumatra, expanding pilot plants and first refueling assets since 2023, with targets ramping toward 2060 and strong potential in mining linked industrial use, while Vietnam is poised to attract growing investment and launch targeted pilots in logistics hubs, ports, and distributed energy.

What lessons from operating 30+ stations in China are relevant to Vietnam?

Ianton Tan: Data driven station operations matter: United Hydrogen's intelligent control platform tracks 12 critical parameters in real time to maximize safety and uptime—illustrated by the East Hydrogen Port in Jiaxing, Zhejiang achieving zero incidents since going live on July 1, 2024, serving 20,000+ heavy-duty vehicles and buses with single day peaks above 2,000 kg. Site strategy should target industrial clusters, logistics hubs, and dense urban corridors for fuel cell buses; cost control comes from localization and optimized equipment utilization; and a structured training pipeline for operators, maintenance, and managers is essential to sustain safe, efficient scaling.

Chief APAC & MENA Representative of United Hydrogen Ianton Tan

How can hydrogen storage and transport work with limited infrastructure in Southeast Asia?

Ianton Tan: Pilot a diversified approach: advance solid state storage demonstrations for high-density, low pressure, ambient temperature logistics with research partners, while validating liquid organic hydrogen carriers (LoHC) to leverage elements of existing oil logistics for "hydrogen as liquid" transport in suitable corridors. These pathways can be trialed on select routes with local partners to prove technical and economic performance before broader replication.

How do you balance a global strategy with country-specific realities?

Ianton Tan: Plan locally from day one: align designs with Vietnamese regulatory requirements, select cost effective technologies for price sensitive markets, and deploy modular or mobile refueling for initial fleets while co planning permanent stations with local partners as demand scales. This approach de risks capex, accelerates approvals, and matches infrastructure tempo to real market maturity.

Speakers at a forum on hydrogen and fuel cell technology

What enabling policies can attract international hydrogen investors?

Ianton Tan: High impact levers include time bound corporate tax relief and import duty reductions on key equipment, a dedicated hydrogen industry fund to unlock early-stage financing, priority land access at preferential rates, and robust IP protection to enable safe technology transfer. Together, these measures raise returns, lower risk, and signal long term policy certainty to global investors.

Thank you very much!

Phu Tho Province Accelerates for 10.3% Growth Target in 2025

With strong political determination, Phu Tho is mobilizing its entire system to turn the current period of administrative restructuring into an opportunity for accelerated development, aiming for double-digit growth in 2025.

HUONG HAU

Immediately after stabilizing its organizational structure following the merger, the Provincial Party Committee, People's Council, and People's Committee of Phu Tho launched the emulation campaign "Accelerate for the 10.3% Growth Target." Decision 554/QD-UBND dated August 7, 2025, clearly assigns responsibilities to each department, using growth results as the benchmark for governance. The province's target exceeds the government-assigned goal under Resolution 226/NQ-CP of 10%, reflecting a proactive and confident approach to entering a new phase of development.

Phu Tho is implementing four strategic resolutions of the Politburo in a coordinated manner: Resolution 57 on breakthroughs in science, technology, and digital transformation; Resolution 59 on international integration; Resolution 68 on private sector development; and Resolution 66 on reforming the formulation and implementation of laws. These "four pillars" are laying the foundation for an effective two-tier government model and a solid institutional framework for sustainable growth.

Industrial production surges as investment and consumption gain momentum

Phu Tho's economic picture for the first ten months of 2025 shows strong momentum. The Industrial Production Index (IIP) increased 26.94% year-on-year, an impressive rise amid ongoing global economic uncertainties. Key sectors recorded significant growth: laptops up 80.53%, iron and steel up 40.65%, cement up 34.19%, and electronic components up 28.88%.

Alongside production, domestic markets and investment have continued to perform strongly. Total retail sales of goods and consumer service revenue reached VND161.7 trillion, up 14.38%. Tourism revenue is estimated at VND12.8 trillion, achieving 86.7% of the annual target.

Investor confidence has been reinforced. Total foreign direct investment (FDI) reached US$1.219 billion, an 84% increase compared with the same period last year, exceeding the annual plan by 15%. Domestic investment (DDI) reached VND61.3 trillion, triple the figure for the same period in 2024. More than 4,000 new enterprises were registered, up 58.2%, signaling that Phu Tho is becoming a new destination for investment and innovative startups.

Budget revenue exceeded VND47.5 trillion, reaching 117.6% of the central government's allocation, with domestic revenue surpassing the plan by 21.5%, creating fiscal space for infrastructure and social welfare investment. Credit growth remained stable, with total outstanding loans reaching VND340.4 trillion (up 15.21%), while non-performing loans fell to 0.46%, reflecting effective risk management and business confidence in the local financial system.

Phu Tho's economy is progressing with many bright spots in industrial production

Accelerating disbursement and activating new drivers

Alongside economic growth, Phu Tho's social welfare efforts have been aggressively implemented. The province has completed 100% of its plan to eliminate temporary and dilapidated housing, assisting 10,801 households. Full payments were made to over 143,000 social welfare beneficiaries, totaling nearly VND517 billion.

Cultural, educational, and healthcare sectors also achieved positive results. Education focused on training high-tech talent to meet the needs of emerging industries such as artificial intelligence and semiconductor design. Healthcare implemented over 5,300 new medical techniques, and electronic medical records were introduced in 28 facilities, providing practical benefits to the population. Administrative reform continues to lead, reducing procedure processing times by at least 30%, with 100% of procedures now conducted digitally and independent of administrative boundaries.

Despite positive outcomes, the province still faces challenges: the disbursement rate of new public investment capital reached only 56% of the plan, and agriculture was affected by weather and African swine fever, reducing the total pig population by 12.6%.

Recognizing these "bottlenecks," the People's Committee has identified five key solutions for the final stretch: accelerate public investment disbursement, prioritize key projects and regional linkages; complete institutional frameworks and speed up the provincial planning process for 2021-2030, with a 2050 vision; stimulate consumption, promote trade, and market tourism digitally; develop high-quality human resources, leveraging opportunities from digital transformation and Industry 4.0; and maintain national defense and security to ensure a stable development environment.

With decisive action and an ambitious vision, Phu Tho is demonstrating its capacity to achieve a breakthrough post-restructuring, targeting double-digit growth and laying a solid foundation for development from 2026 to 2030.■

Phu Tho Prepares Energy Infrastructure to Attract Investors

Phu Tho Province is coordinating closely with the National Power Transmission Corporation under Vietnam Electricity (EVNNPT) to quickly execute a series of major power transmission projects, developing energy infrastructure to accommodate electricity imports from Laos. This effort is a vital measure to ensure a stable supply for economic growth and investment attraction.

Working session between the Phu Tho Provincial People's Committee and EVNNPT

THANH NAM

Three key projects strengthening energy security

Currently, Phu Tho's transmission grid includes nine 220 kV and 500 kV substations with a total capacity of more than 6,000 MVA, connecting multiple 220-500 kV transmission lines in the region. While the system operates reliably, it is often at full load and sometimes overloaded, highlighting the urgent need for new projects to ensure safety and improve the reliability of electricity supply for the coming years.

Based on this, EVNNPT is implementing several projects in Phu Tho, with three identified as urgent and strategically important for capacity relief and electricity imports from Laos. These include the Hoa Binh 2 500 kV switching station and connecting lines, the Hoa Binh 2-Western Ha Noi 500 kV transmission line, and the Vung Ang-Hoa Binh 2 500 kV transmission line.

The Hoa Binh 2 500 kV switching station and its connecting lines will be constructed in Lac Luong, Yen Thuy, and Dai Dong communes in Phu Tho, featuring eight 500 kV feeder bays and associated transmission lines. Construction is scheduled to start in 2025, with operation expected in 2027. EVNNPT and the Central Vietnam Power Projects Management Board (CPMB) are currently finalizing site approvals, route alignment, and investment authorization procedures.

The Hoa Binh 2–Western Hanoi 500 kV transmission line will stretch approximately 80 kilometers, with over 47 kilometers in Phu Tho and the remainder in Hanoi. The project features two circuits and is scheduled to begin construction in 2026, with operations expected in 2027. EVNNPT and NPTPMB are actively completing all investment preparation work.

Meanwhile, the Vung Ang-Hoa Binh 2 500 kV transmission line stretches approximately 363 kilometers, passing through Ha Tinh, Nghe An, Thanh Hoa, and Phu Tho. In Phu Tho, the route crosses Dai Dong, Yen Thuy, and Lac Luong communes, covering about 11 kilometers. Construction is also scheduled to start in 2026, with completion in 2027.

Once completed, these projects will enhance national energy security, strengthen the connection between the North Central and Northwest regional grids, increase transmission capacity, reduce power losses, and lay the foundation for electricity imports from Laos under the bilateral agreement between the governments of Vietnam and Laos.

Local authorities take initiative to prepare energy infrastructure for investors

In a recent meeting with EVNNPT, Chairman of the Board Nguyen Tuan Tung urged Phu Tho Province to provide maximum support to quickly implement urgent power projects, particularly the Hoa Binh 2 500 kV switching station and connecting lines, with the goal of starting construction in December 2025.

EVNNPT also requested that the province direct relevant departments to assist in reviewing and providing feedback on project documents and to streamline investment approval procedures. Additionally, EVNNPT emphasized the need for early access to relevant planning information for project areas.

Coordinated cooperation among all parties is considered essential to ensure timely construction and power commissioning.

Phu Tho authorities recognize the critical role of transmission projects in local socio-economic development. Vice Chairwoman of the Provincial People's Committee Phung Thi Kim Nga emphasized that electricity infrastructure is a top priority for attracting investment. "In meetings with investors, the first issue they ask about is electricity infrastructure. When power supply is stable, Phu Tho will have a major advantage in attracting industrial and manufacturing projects," she said.

With the goal of double-digit economic growth, electricity demand in the province is expected to rise sharply in the coming years. Therefore, the province has designated these power projects as strategic, ensuring a stable supply for industrial and service sector development while contributing to national energy security.

The Provincial People's Committee has assigned the Department of Industry and Trade as the central unit to consolidate progress, monitor weekly updates, and report to provincial leaders for timely guidance. Each relevant department and locality is required to set specific milestones and resolve obstacles promptly during the investment preparation process. The Department of Finance is tasked with coordinating with EVNNPT to review documents and advise the Provincial People's Committee on issuing investment approval as quickly as possible.

Phu Tho has also instructed relevant units to work closely with EVNNPT to determine precise routes, avoiding adjustments during construction. Land area reviews are assigned to the communes for coordination, with the approval of the land acquisition list expected by October 2025 to ensure readiness for year-end construction.

The proactive approach of local authorities demonstrates a clear commitment to advancing energy infrastructure ahead of demand, laying the foundation for industrial and service sector development. Once the transmission projects are completed, Phu Tho will not only secure a stable power supply for production but also expand capacity to attract new investment, particularly in high-tech, energy-intensive industries.

Electricity infrastructure as the key to attracting sustainable investment

Aligned with its socio-economic development strategy, Phu Tho is rapidly shifting its economic structure toward industrialization and modernization. Completing the province's transmission infrastructure early not only addresses local demand but also enhances its attractiveness to domestic and foreign investors.

The 500 kV projects being implemented by EVNNPT in the province are considered a critical link in the chain of electricity imports from Laos, supplying clean and stable energy to the northern region. At the same time, these projects lay the strategic groundwork for Phu Tho to become an energy hub for the midland and Northwest regions.

With strong coordination between EVNNPT and local authorities, and a determined effort to resolve challenges during the preparation phase, the transmission projects in Phu Tho are expected to begin construction on schedule. They will ensure a safe and stable power supply to support the province's and the nation's sustainable growth goals.■

Vice Chairwoman of the Phu Tho Provincial People's Committee Phung Thi Kim Nga urges relevant authorities to accelerate energy infrastructure

Phu Tho focuses on training workers to meet enterprises' demand for a skilled workforce

HUMAN RESOURCES

Golden Key for Phu Tho to Accommodate New Investment

With a population of over 4 million and a workforce of nearly 1.9 million, Phu Tho is prioritizing the development of high-quality human resources as a pillar to drive breakthroughs, attract major corporations, and adapt to emerging industrial trends.

LE HIEN

Abundant workforce but limited high-level skills

Following the administrative merger, Phu Tho now covers more than 9,361 square kilometers with a population exceeding 4 million, ranking 11th nationwide. This scale provides a competitive advantage in human resources within the midland and northern mountainous regions. The province's workforce currently totals nearly 1.9 million, accounting for 47% of the population, forming the foundation for industrial, service, and digital transformation sectors in the coming period.

Currently, the employment rate for people aged 15 and older in Phu Tho exceeds 50%, corresponding to 574,703 workers employed across 23,258 enterprises. Among them, the foreign-invested and private enterprise sectors dominate with over 559,000 workers, while the public sector accounts for only about 9,000 employees.

The proportion of trained workers reaches 73.3%, yet only 34.6% hold formal degrees or certificates. This indicates that workforce quality has not yet met market demands, particularly as the province aims to develop high-tech industries. Average labor productivity reaches VND212.2 million per worker per year, increasing 5.8% annually, reflecting progress but leaving substantial room for improvement.

The workforce structure has shifted positively, with agriculture, forestry, and fisheries now accounting for only 13.2%, industry 53%, and services 33.8%. However, in practice, enterprises in the province require approximately 40,000 workers annually, of whom 30,400 lack formal training. The shortage of skilled and intermediate-level workers forces many FDI companies to hire unskilled labor for simple production tasks, particularly in textiles, footwear, electronics, and construction materials.

Notably, emerging sectors such as semiconductors, artificial intelligence, logistics, and green energy, which are central to Phu Tho's investment strategy, still do not have dedicated training programs. Incentives for enterprises to engage in vocational education remain limited, causing a

mismatch between labor supply and demand and putting pressure on the local labor market.

High-quality human resource development strategy

In response to these challenges, the Executive Committee of the Phu Tho Party Committee has issued a specialized resolution on developing high-quality human resources for 2025-2030 with a vision toward 2045, identifying it as a "strategic lever" to make Phu Tho a modern industrial and service hub in the region.

Under the resolution, by 2030, at least 70% of vocational and university programs will be standardized according to national and international criteria, and 50,000 high-quality workers will be trained in key sectors such as processing and manufacturing, digital technology, healthcare, tourism, and green energy.

The province also aims to train and upskill 5,000 engineers and technicians in artificial intelligence, equip 80% of the workforce with basic digital skills, and ensure that 50% of university graduates meet international language standards. By 2030, 75% of the workforce will hold formal degrees or certificates, urban unemployment will fall below 2.5%, and approximately 250,000 new jobs will be created, more than half of which will require specialized skills.

To achieve these goals, Phu Tho is improving its human resource data infrastructure and developing a digital job exchange platform using artificial intelligence, projected to handle over 100,000 transactions per year. Starting in 2026, periodic labor supply and demand forecasts will be conducted to guide policy planning and align training programs with enterprise needs.

The province is also investing comprehensively in higher education and vocational training. Phu Tho currently has five universities (two provincial, three under central ministries) and 43 vocational training institutions, including 20 colleges, 12 intermediate-level schools, and 11 vocational education centers. Annually, these institutions train about 100,000 students and trainees, including 77,000 new vocational students and over 12,000 university students in 2024 alone.

Phu Tho encourages the expansion of dual-training models that link educational institutions with businesses, combining study and work to ensure students gain practical skills and immediate employment opportunities after graduation. This approach is seen as a foundational solution to rapidly improve workforce quality while gradually building a sustainable human resource ecosystem.

Enterprises and government acting together

Alongside its strategic direction, Phu Tho province is implementing concrete measures to connect businesses with the labor market, particularly foreign-invested enterprises, which are a key driver of growth.

At the labor supply cooperation conference with the Korea Chamber of Commerce & Industry (KORCHAM) held on August 28, 2025, provincial leaders reported that year-end recruitment demand is expected to exceed 40,000 workers. Among them, 26 Korean companies operating in Phu Tho require 4,930 workers, primarily in traditional manufacturing sectors.

The province closely coordinates with businesses to enforce labor regulations and ensure harmonious working environments

However, many companies reported challenges with workforce stability and high turnover, as compensation policies and workplace conditions vary across businesses. Employment service centers and labor supply units remain fragmented and lack coordination in sourcing and recruitment.

In response, Vice Chairman of the Provincial People's Committee Nguyen Khac Hieu affirmed that the province will strengthen government-business connections and establish long-term, sustainable cooperation mechanisms with foreign investor associations. The Department of Home Affairs has been tasked with advising on human resource strategies and supporting recruitment, while the Industrial Parks Management Board and the Investment Promotion Center will closely coordinate with businesses to enforce labor regulations and ensure harmonious working environments.

This approach is seen as a crucial step for Phu Tho to proactively meet investors' labor needs, address immediate challenges, and build trust for long-term business commitment to the province. As Vietnam enters a phase of growth driven by innovation and technology, Phu Tho's strategy of placing people at the center of development is considered a forward-looking approach. It also sends a clear message to investors: Phu Tho offers not only strategic location and ready infrastructure but also a commitment to providing high-quality human resources, a decisive factor for long-term success.■

Bringing Essence of Son Dong Craft Village to the World

Son Dong village in Son Dong commune, Hanoi, is Vietnam's largest center for producing wood-carved statues and Buddhist ritual objects. The village once held a national record for the quantity and quality of its wooden statues and the number of skilled artisans. More than a traditional craft village, Son Dong has become a cultural symbol, an appealing destination for domestic and international visitors, and a distinctive part of the capital's cultural heritage.

Son Dong village - Vietnam's largest center for producing wood-carved statues and Buddhist ritual objects

MINH NGOC

In 2007, the Vietnam Record Book recognized Son Dong as "The Largest Village Producing Carved Statues and Buddhist Ritual Objects in Vietnam." Today, Son Dong's fine art and handicraft products not only serve the country's spiritual and cultural needs but are also exported to international markets such as Japan, Korea, and Russia.

The village's fine art and handicraft products not only meet the country's cultural and spiritual needs but are also exported to international markets

To ensure sustainable development and help the village's craftsmanship integrate into global markets, both local authorities and artisans are seeking to have Son Dong admitted as a member of the World Crafts Council, which would open up greater export opportunities for its products.

Currently, Son Dong's sculpture and fine arts industry includes nearly 700 households and 10 companies engaged in handicraft production, creating jobs for thousands of workers. The village's products account for around 50% of Vietnam's market share in lacquered and gilded statues and ritual items, helping to preserve the nation's spiritual culture while also being exported to countries such as Russia, Ukraine, France, the United States, Thailand, Laos, and Cambodia. The average annual income for local workers is approximately VND140 million per person.

Following Government Decree 54/2018/ND-CP dated April 12, 2018, on rural craft development, and under the guidance of the Hanoi People's Committee and the Hanoi Department of Agriculture and Environment, Son Dong Commune has completed all necessary criteria to apply for recognition by the World Crafts Council as a member of the World Network of Creative Craft Cities.

To promote the village's image, Son Dong commune has launched its official website (https://langnghesondong.info), featuring photos and videos introducing the history and development of the craft village. The commune has also set up a 40-square-meter classroom for theoretical training and a 50-square-meter practice room fully equipped with tools. Currently, more than 20 young local students are receiving

training in theory and calligraphy.

The commune has also collected and displayed certificates honoring artisans, artifacts from various periods of the village's development, photo albums of traditional products, and portraits of master craftsmen. At the Creative Design Center, hundreds of drawings and carved patterns are preserved and displayed, creating a vibrant traditional atmosphere. The center also maintains a collection of sample materials for production and showcases valuable documents on traditional lacquer, carving, architecture, and decorative motifs.

According to Hoang Thi Hoa, Head of the Rural Development Department under the Hanoi Department of Agriculture and Environment, craft villages are one of Hanoi's five pillars of cultural industry development. Promoting global integration for these villages will open new directions for growth and export. With their unique craftsmanship, Son Dong's artisans remain dedicated to passing down their heritage so that the village's cultural essence continues to thrive in modern life.

Nguyen Tri Dung, 57, an artisan from Son Dong Craft Village, said that the hardest part of making Buddha statues and ritual objects is giving each sculpture a soul, so it appears both spiritual and lifelike.

He explained that every artisan must work with sincerity and use all the refined skills accumulated over years of practice. "There are products in my workshop," he said, "that I cannot let less experienced workers make. Without enough talent and experience, the result would be lifeless, lacking the spiritual depth that defines our craft. Such products would diminish the distinctive value and harm the long-standing reputation that generations of artisans in the village have built."

According to Dung, each artisan must deeply understand the origin and spiritual meaning of every piece. For Buddha statues, it is important to know the nature and sacred qualities of each deity. The time to complete a sculpture varies depending on its complexity, size, and the customer's request, especially when the client requires it to be entirely handmade.

Pham Gia Loc, Chairman of the Son Dong Commune People's Committee, said that to complete all necessary criteria, the commune has requested continued attention and guidance from the Hanoi People's Committee and the Hanoi Department of Agriculture and Environment so that Son Dong Craft Village may soon be recognized as a member of the World Network of Creative Craft Cities in 2025. He emphasized that this recognition would help Son Dong's products reach global markets, contributing to local socio-economic development, creating more jobs, and increasing income for artisans.■

CHUYEN MY INLAY CRAFT VILLAGE

Adapting for Global Integration

The mother-of-pearl inlay craft village in Chuyen My commune, Hanoi, is expected to become a highlight of the city's global outreach, as it has been proposed for membership in the World Crafts Council's Creative Craft Cities Network. This represents both an opportunity to affirm the value of traditional craftsmanship and a test of the village's sustainable development strategy in the digital era.

BAO DAN

The inlay and lacquer-ware craft in Chuyen My has a long history involving hundreds of households and dozens of artisan masters recognized at the city and national level. The proposal to join the global Creative Craft Cities Network offers local cultural heritage recognition and the chance to advance economic growth, tourism, and international promotion of village-craft products.

A 1,000-year-old craft village

Artisan Nguyen Dac Luyen shared that, according to ancient records, the mother-of-pearl inlay craft of Chuyen My dates back to the 11th century. Over generations, it has become a source of local pride, honoring skilled craftsmanship and reflecting intelligence, patience, and the Vietnamese spirit. Throughout history, countless artisans in Chuyen My have carefully sawed, polished, and inlaid each piece of shell or mother-of-pearl to create artistic works of great value, from altar boards, couplets, and cabinets to decorative items and inlaid paintings that embody the national soul. One notable figure was Nguyen Van Phu of Chuon Ngo village, who was summoned to the royal court in Hue and granted the ninth-rank official title.

From the 1970s onward, artisans such as Nguyen Van To, Tran Ba Chuyen, and Tran Ba Dinh carried on the tradition, creating many acclaimed inlay works. Among them, the group led by Nguyen Van To crafted more than 100 badges of President Ho Chi Minh for an important national political event. These artisans also portrayed President Ho Chi Minh, General Vo Nguyen Giap, Cuban leader Fidel Castro, and many world figures in shimmering mother-of-pearl and shell.

Many people think inlay work is simple, just carving, shaping, grinding, and assembling according to a pattern, but it is in fact a demanding art form that requires precision, patience, and exceptional skill. One of the most crucial stages in mother-of-pearl inlay is shell setting, which includes three steps: filing, chiseling, and trimming. These steps must be perfectly coordinated; if any one is poorly done, the artwork cannot be completed. During the process, artisans must manually grind the shell, soak it in liquor, heat-treat it, split the edges, choose the right chiseling craftsman, and ☞

Chuyen My commune's products are increasingly diverse in design and style, meeting domestic demand and expanding into international markets

carefully select full shell pieces for each panel. After the inlay is set, the wooden panels are refined, polished, and detailed to their final form. Thanks to the lifelike lines and expressive detailing, Chuyen My's mother-of-pearl inlay has been admired for centuries. For generations, the craft has been passed from father to son, and thousands of artisans in Chuyen My have produced countless inlay artworks. Today, continuing their ancestors' legacy, many skilled craftsmen still dedicate themselves wholeheartedly to this traditional art.

In the past, Chuyen My artisans mainly produced altar-boards and couplets for communal houses or temples, decorated panels on chests and cabinets, or created wall-hangings based on folk tales. Today those artisans also produce large-scale inlay artworks or portraits of national figures, military leaders, spiritual animals, flowers, plants and landscapes. As a result, the product range of Chuyen My village has grown increasingly diverse in design and style, meeting domestic demand and expanding into international markets across Europe and Asia.

Creativity for global integration

According to Nguyen Thi Thuy Huong, Vice Chairwoman of the Chuyen My Commune People's Committee, the mother-of-pearl inlay and lacquer craft village has fulfilled nine criteria required to join the World Crafts Council's Creative Craft Cities Network.

"We have met eight criteria and are now concentrating on completing the ninth, which involves creating new and innovative product designs. This is the key requirement for Chuyen My to be officially recognized. The application has been submitted to the World Crafts Council, and the evaluation is expected to take place in mid-November 2025," Huong said.

To meet this requirement, Chuyen My artisans and inlay craftsmen are collaborating to create compact and distinctive products suitable as gifts and souvenirs for visitors. More than 100 new product designs have been completed, including inlaid pen boxes, ballpoint pens, vases, trays, photo frames, and mini mother-of-pearl paintings that preserve traditional features while appealing to modern markets.

Nguyen Dinh Hoa, Deputy Director of the Hanoi Department of Agriculture and Environment, emphasized that Chuyen My's candidacy for the World Crafts Council's Creative Craft Cities Network is not only a local honor but also part of Hanoi's long-term strategy to preserve and promote traditional craft values.

"Chuyen My brings together all essential elements including heritage, people, technique, creativity, and integration. It has strong potential to develop craft-based experiential tourism and local culture. However, the locality needs to focus on completing the craft ecosystem, supporting young artisans, improving production conditions, and enhancing global brand promotion," he said.

The story of Chuyen My is not only about one craft village but also reflects the vitality of Vietnamese culture, where tradition and modernity blend, and where artisans' hands preserve the national soul while reaching out to the world.

From the shimmering light of seashells and mother-of-pearl emerges a lasting faith: the millennia-old essence of Chuyen My's inlay and lacquer craft is being renewed each day through the creativity and aspiration for global integration of its gifted artisans.■

Successful Cooperative Model of Quang Phu Cau Incense Village

The incense-making craft in Quang Phu Cau village has existed for nearly a century and is closely linked to the legend of the three female generals Chieu Nuong from the time of the Trung Sisters. From a traditional craft serving domestic needs, the village has now expanded production for export and experiential tourism, bringing its handmade products closer to international markets.

The incense production involves meticulous handmade processes

DINH BAO

Visitors entering the village are immediately greeted by the distinctive fragrance of resin, spreading through the air. Under the sunlight, the colorful bundles of incense sticks create a signature scene that has made the centuries-old craft village famous.

Agriculture was once the main livelihood of residents in Ung Thien commune, Hanoi. However, as urbanization has reduced agricultural land, the traditional incense-making craft has found new opportunities to thrive. It has significantly contributed to job creation and income growth for local people, helping improve living standards. Alongside incense making, residents of Ung Thien have also engaged in side jobs such as scrap trading and construction work. Yet since around 2010, incense production has revived and developed rapidly in all hamlets. As production expanded and new markets were explored, the need for cooperation naturally led to the formation of collective business models, especially traditional incense-making cooperatives, which have since thrived.

Ensuring the incense sticks are fully sun-dried

One notable example is the Xa Cau Incense Production Cooperative, located in Xa Cau hamlet, Ung Thien commune. The cooperative is well-known for its scale, management model, and economic efficiency in producing traditional black incense. According to Director of Xa Cau Incense Production Cooperative Nguyen Tien Thi, a native of the village, his deep understanding of the craft's heritage inspired him to establish and develop the cooperative model.

"Many stages of incense making still require manual work and cannot be replaced by machines," Thi explained. "For example, dyeing the incense sticks must be done by hand, as machines cannot tell which areas need deeper color or when to stop. Even after the sticks are polished by machine, they must still be handled carefully by hand to keep them straight and even; otherwise, they bend and break easily."

While machinery has helped increase productivity, many distinctive steps of the incense-making process remain entirely manual. Drying incense, for instance, depends heavily on the weather. On days with sudden rain or prolonged humidity, workers must stay alert to move, cover, and adjust drying racks in time. "Every day brings different weather," Thi said. "You have to calculate and adapt constantly. That's something machines can't do."

Starting with 12 members, all skilled artisans and experienced incense makers, the Xa Cau Incense Production Cooperative has produced traditional incense that maintains the craft's authenticity in both scent and design. At the same time, to meet modern demands, the cooperative has invested heavily in technology, helping increase output and ensure product consistency while creating new export opportunities.

The craft village model, supported by well managed cooperatives such as the Xa Cau Incense Production Cooperative led by Nguyen Tien Thi, is entering a new phase: traditional incense production combined with tourism services. The decision by the Hanoi People's Committee to recognize "Quang Phu Cau Incense Stick Craft Village Tourist Site, Ung Thien Commune, Hanoi" marks an important milestone. It affirms the village's tourism potential and cultural value, creating momentum for local economic development.

The brightly colored drying yards have become popular check in spots that attract photographers and tourists. Artisans arrange bundles of incense sticks into shapes such as the map of Vietnam, the red flag with a yellow star, flowers, and decorative motifs. Even the Vietnam map is recreated in various styles with different color arrangements. One common design leaves an empty space in the center, with incense bundles forming the border and background so that visitors can stand in the middle of a "forest of incense" for photos. This creativity, combined with strong promotion on social media platforms, has helped transform Quang Phu Cau into a unique destination for both domestic and international travelers.

However, as with any craft village, environmental concerns have emerged. Alongside investments in modern machinery, both city and commune authorities need to support comprehensive planning, land allocation for workshops, communication efforts, and guidance for cooperative members to ensure sustainable production practices that protect the living environment. This is essential for maintaining a welcoming space that encourages tourists to visit and return.

The colorful bundles of incense sticks create a signature scene that has made the centuries-old craft village famous

Beyond preserving a century-old heritage, Quang Phu Cau incense village is gradually establishing its presence in international markets. Incense sticks made from bamboo and neohouzeaua, traditional materials of the Red River Delta, are now available in countries such as the United States, Myanmar, Thailand, Malaysia, Nepal, Pakistan, and several markets in the Middle East.

Yet the journey to global markets is not simple. Each country and culture uses incense differently, and each imposes strict standards on quality and raw materials. Vietnamese incense sticks have strong potential to expand further and become not only consumer goods but also cultural ambassadors of the nation.■

VIETNAM BUSINESS FORUM

Published by VCCI

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License 58/GP-BTTTT dated February 18, 2020. License 208/GP-BTTTT issued on July 30, 2024 amending and supplementing License 58/GP-BTTTT, and Document 3117/BTTTT-CBC issued on July 30, 2024 pertaining to changes in manchette and leadership

Printed by the Trade Union Printing Company
PRICE: VND25,000

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