Incentivized ESG-aligned Investment: Board of Investment Thailand (BOI)'s Policy and Strategic Direction

Thailand, Board of Investment

November, 2025

Agenda

01 Global Biotechnology Landscape

02 Biotechnology Development in Thailand

03 BOI Investment Incentives

04 Supporting Services

The Application of Biotechnology Across Sector

Biotechnology now encompasses a wide range of fields. Every year, new technologies and products are developed in fields such as **medical, agriculture, and industrial biotechnology.**

Medical

- Genomic Analytic Techniques: detecting and diagnosing the disease caused by anomaly genetic or infection
- Healthcare Infrastructure: increasing in number of laboratories, more modern, more facilitative

Agriculture

- Increase productivity with long-term solution
- Develop new crop features and germplasm by breeding and gene sequencing

Supporting Factors Driving Biotechnology Development

- Technological Advancement
- Government Support Policy
- Investment & Infrastructure

Source: Precedence Research

Top Biotechnology Industry Trends (1)

Artificial Intelligence

26%

Automating a wide range of processes, helping them scale up their operations.

Big Data

19%

Utilizing big data and analytics solutions, integrating data from sensors and IoT devices.

Gene Editing

12%

Broadening gene therapy, treating genetic disorders and other conditions by adding, replacing, or silencing specific genes.

Furthermore, targeted gene modification facilitates the creation of superior transgenic plants and animals.

Precision Medicine

10%

Physicians can determine effective treatment and prevention strategies for specific groups.

Gene Sequencing

9%

Physicians can determine effective treatment and prevention strategies for specific groups.

** Percentage represents proportion of global startups and scaleups investing in these emerging technologies (from 4,351 startups and scaleups surveyed by StartUs insights)*

Source: StartUs insights

Top Biotechnology Industry Trends (2)

Biomanufacturing

7%

Utilizing biological systems for production and specialty chemicals.

Synthetic Biology

5%

Synthetic biology ensures standardization and reproducibility, manipulating organisms at the gene network level.

Bioprinting

5%

Working with bio-inks derived from bio-based materials or biomaterials, are utilized.

Microfluidics

4%

These miniaturized labs enable affordable, swift testing of infectious diseases, paving the way for point-of-care diagnostics.

Tissue Engineering

3%

Enables the creation of autologous tissue grafts for treating burns and organ transplantation and for regenerative medicine.

** Percentage represents proportion of global startups and scaleups investing in these emerging technologies (from 4,351 startups and scaleups surveyed by StartUs insights)*

Source: StartUs insights

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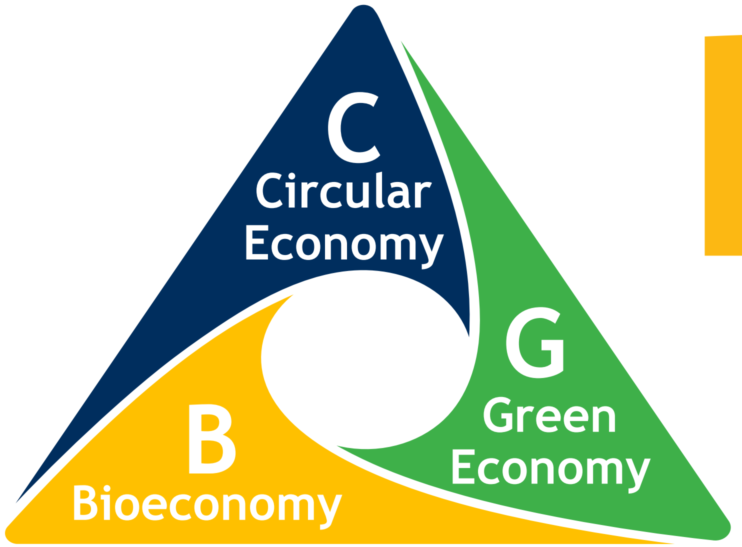
Biotechnology as Part of BCG Economy

BCG Economy Model



To employ Science, technology and innovation to create economic value from the country bio-diversification (B), utilize a good balance of natural resources (C), reduce environmental impact (G).

B

- The agriculture, forestry and fisheries industries' products are raw materials for bio-manufacturing.
- The bioeconomy is the largest component of the BCG economy.

C

Aiming to
- reduce fossil fuel consumption
- improve energy efficiency
- decrease the amount of waste

G

Aiming to
- Create economic, social and environmental sustainability
- Reduce the use of Natural Resources and Environment Impact

Area of Biotechnology Application in BCG Economy Model

Biochemical

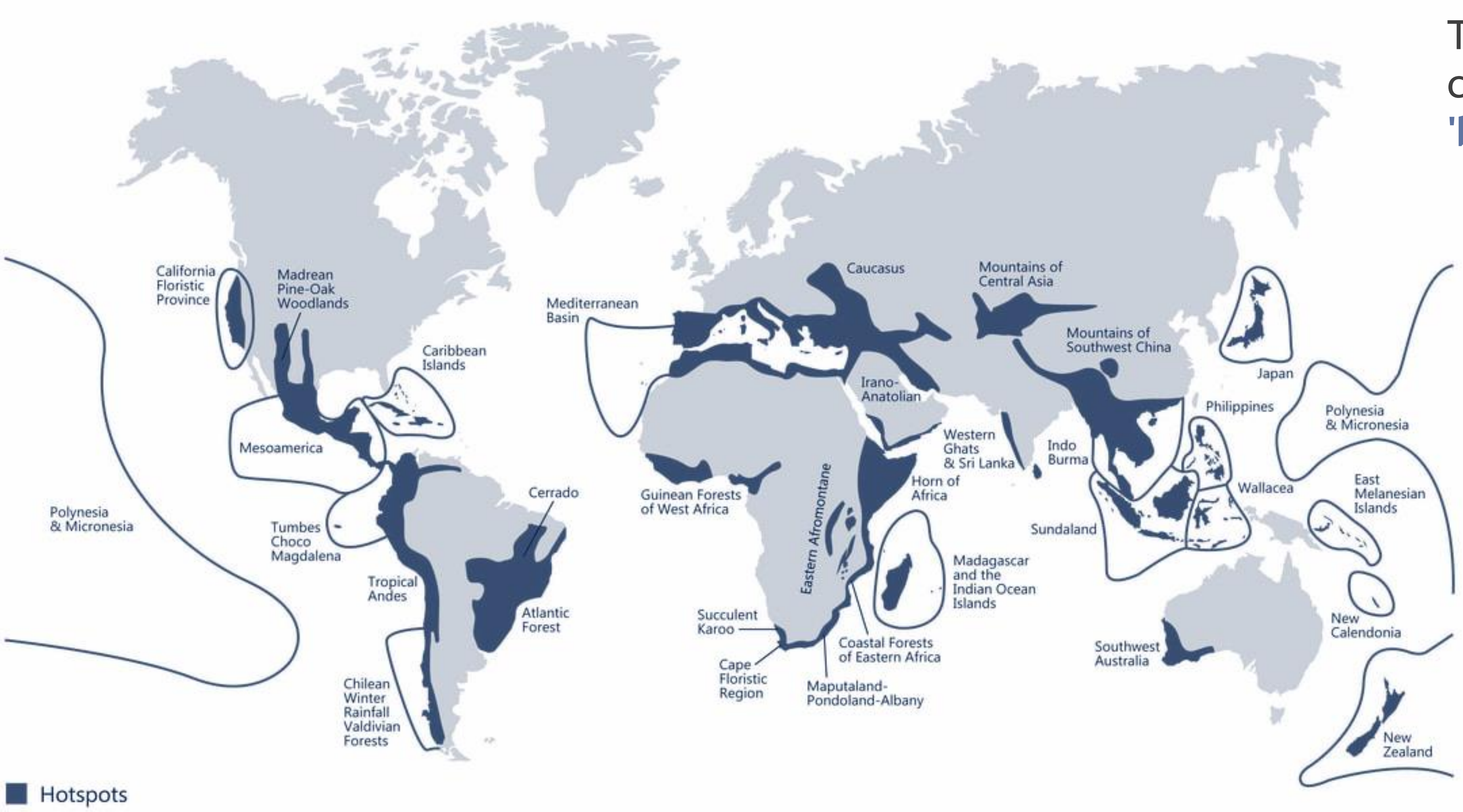
Biofuel

Bioplastic

Biopharma

Source: Japan Research Institute

Thailand's Assets to Strengthen BCG Economy: Richness in Biological Diversity



Thailand is part of what is called the Indo-Burma **'biodiversity hotspot'.**

Home to
- 15,000 plant species, around 8% of the global total
- over 11,900 marine invertebrate species and account for 10 % of the estimated total fish species worldwide.
- 302 mammal species; over 980 bird species; 320 reptile species; and 120 amphibians.

ranked as **8th** most bio-diverse region in the world. and **3rd** in Southeast Asia for the diversity of the ecology.

Source: Tropical Conservation Fund and The Biodiversity Finance Initiative

Biotechnology is applied throughout the supply chain of the BCG Economy

Raw Material

Use biomass from agriculture (product & wasted) as raw materials in bio-industry

Output

- Palm oil
- Palm bunches
- Sugarcane
- Sugarcane leaf
- Cassava

Primary Industry

Utilize simple technology, machinery and production processes, then products' price is not high

Output

- Sugar
- Cassava starch
- Soap wax
- Crude palm oil

eg. Palm oil mill, Sugar mill, Biomass power plant, Fertilizer factory

Secondary Industry

Add chemical processes in production, then the products' price is higher

Biorefinery

Output for consumption

- Margarine
- Citric acid
- Butter

Output for industry

- Biodiesel
- Ethanol
- Lactic acid

Tertiary Industry

Need high investment and a number of specialist, then the products' price is high

Output

- Bioplastics
- Purified Glycerine
- Epichlorohydrin

eg. Bioplastic pellet production industry

Source: UN Global Compact

Examples of Biotechnology Application in Thai's Industry

Biotechnologies Used in Production	Product
Biopharma and Bioceutical Production Technology	Biopharmaceutical and Bioceutical
Pharmaceutical Processing and Formula Development Technology	Cosmetic
Recombination DNA processing, Vaccine production system, and formylation system	Human vaccine
Plant Advance Breeding, Antimicrobial, DNA Marker for Plant Develop	Packaging-design, Printing
Organic Product Manufacturing Technology for Plant and Animal	Organic product, Fertilizer
Carbohydrates Fermentation Technology, Purification Techniques	Lactic Acid, lactates
Fermentation Technologies, Extractions, Characterization, Purification Technology	Ethyl Alcohol (Bioethanol)
Bioorganic Technology	Bio-cleansing

Source: The Office of Industrial Economics

Sector of Opportunities

Biochemical

Biofuel

Bioplastics

Biopharmaceuticals

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BOI's Role: To Drive the Investment to the New Economy

About BOI

Promoter

Drives & Promotes Investment in Private Sector in Alignment with the Country's Development Strategy & The Changing World Context

Integrator

Integrates Government Support Tools such as Tax, Finance, & Non-tax Incentives in a Whole Package

Facilitator

Coordinates with Agencies to Develop The Ecosystem & Facilitate Ease Of Investment & Eliminates Problems/ Obstacles

Connector

Links Large-scale with Small-scale Enterprises, Thais with Foreigners, across Industries & Locations to Expand Business Opportunities

Oversea Office

BOI's Investment Promotion Measures

- Land ownership
- Work permit & visa facilitation
- 100% foreign ownership
- No export requirements
- No restrictions on foreign currencies

- Corporate income tax exemption up to 13 years
- 50% Corporate income tax reduction for 5 years
- Exemption of import duties on machinery
- Exemption of import duties on raw or essential materials imported for exports
- Exemption of import duties on goods imported for R&D
- Double deduction for the cost of transportation, electricity and water
- 25% deduction for the cost of installation or construction of facilities

5-Year Investment Promotion Strategy (2023-2027)

New Economy

Promoting investment
to advance toward a new economy
and create a better future for the next generation

Innovative ← Competitive → Inclusive

7 Pillars

1. Restructure industries and strengthening supply chains
2. Accelerate industrial transition toward Smart & Sustainable Industry
3. Positioning Thailand as an international business hub and regional trade gateway
4. Strengthen SMEs & Startup and Connect to Global market
5. Promote investment based on regional potential to create inclusive growth
6. Promote investment for community & society
7. Promote Outbound Investment to expand business opportunities

x

3 Tools

01 Whole Package Incentive (Tax + Non-tax + Financial Incentives)

02 Comprehensive services, both pre- and post-investment

03 Ecosystem & Ease of Investment

Investment Promotion measures for Targeted Industries

BOI

Investment Incentive Scheme

Basic Incentives

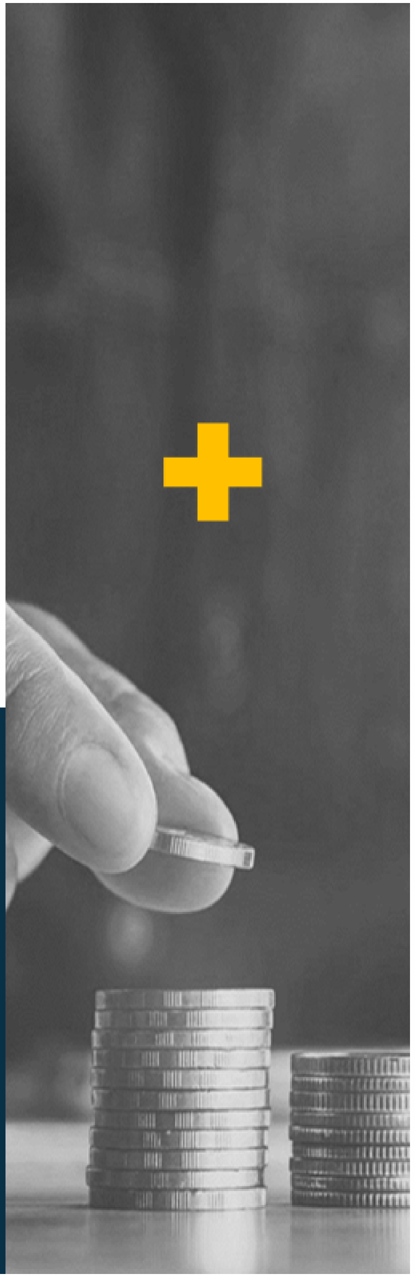
Activity-Based

- Agriculture, Food & Biotechnology
- Medical
- Machinery and Vehicles
- Electrical and Electronics
- Metal and Materials
- Chemicals and Petrochemicals
- Public Utilities
- Digital Industries
- Creative Industries
- High-Value Services

Incentive

≤13 years CIT exemption

Note: Board of Investment Announcement No. 9/2565



Additional Incentives

Competitiveness Enhancement

- Research & Development (R&D)
- Support academic/ research institutes, or technology and human resource development fund
- IP licensing fee
- Advanced technology training
- Development of local suppliers
- Product and packaging design

Area-Based

- EEC 3 provinces
- SEZ 10 provinces
- 4 Special Economic Corridors
- Southern border provinces
- 20 provinces with lowest income
- Industrial Estates/Zones
- Science and Technology Parks (TSP, Food Innopolis, Space Krenovation Park)
- Yothee Medical Innovation District

Agenda-based

- Investment Stimulation Measure for Economic Recovery
- Smart and Sustainable Industry Measure
- Social and Local Development Measure
- Comprehensive Relocation Measure
- Retention and Expansion Measure
- Measure to Support the Establishment of Highly-skilled Professional Development Institutes

Investment Promotion Approach

Upgrading Outstanding Existing Industries, Creating New Industries with Potential
Stimulating Large-scale Investments, Building Robust Supply Chains through Investment Acceleration Measures

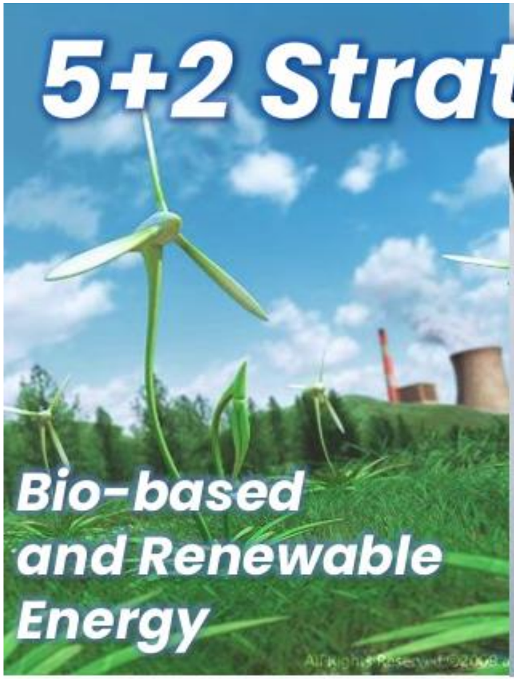
Accelerating Transition to Smart & Sustainable Industries, Enhancing Competitiveness and Sustainability Target Industry Groups include Agro-biotechnology, Food, Medical, Advanced Electronics, and Modern Automotive

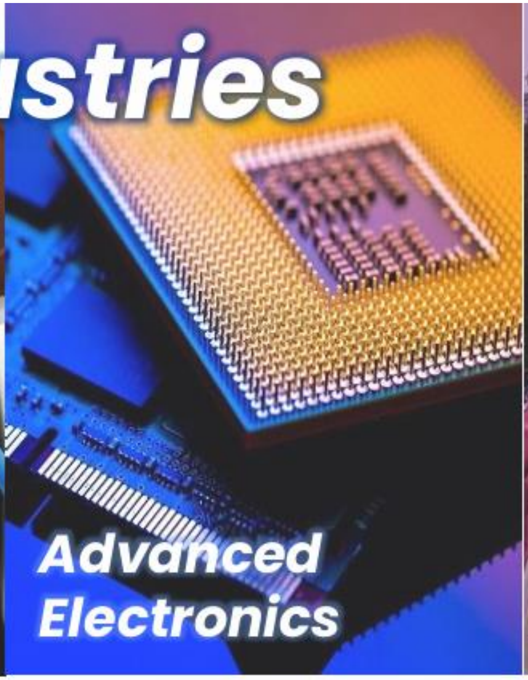
Promoting SMEs and Startups to Strengthen and Connect to Global Markets
Adopting New Technologies, Accessing Capital Markets, Connecting with Large Enterprises through Support Funds

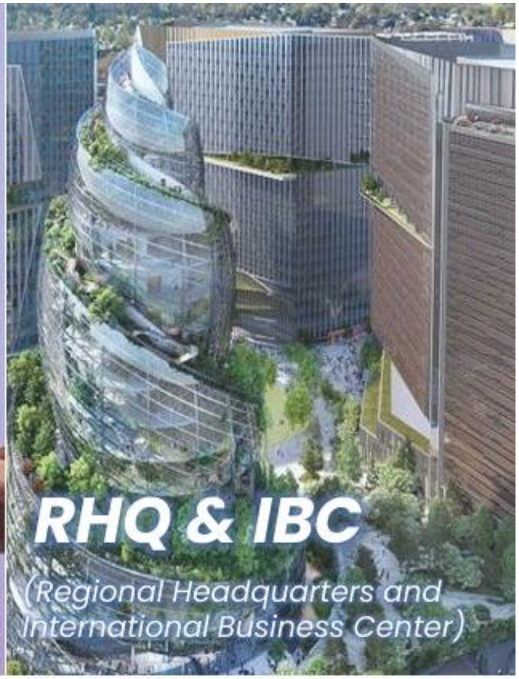
Promoting Activities for Community and Social Development through Investment Promotion Measures for Community and Social Development, Creating Participation from all Sectors, Fostering Sustainable Community Empowerment

Human Resource Development
Supporting companies that invest in HR development and establish STEM institutes to support target industries such as Semiconductor, Electronics, Digital, and Data Centers

5+2 Strategic Industries







Upstream Industries

Battery and Energy Storage

Semiconductor

Other Targeted Industries

Healthcare and Medical

Automation and Robotics

Aviation and Aerospace

Advanced Materials

High Value-added Services

Investing in BCB economy will be incentivized

B

- Efficient Resource Utilization
- Increase Production
- Create Added Value
- Reduce CO2 and Waste

C

- Utilize products with its entire lifecycle
- Recycle and Reuse
- Minimize Waste

G

- Efficient Resource Utilization
- Create Sustainability
- Reduce Greenhouse Gas Emissions

Investment Incentives for BCG Activities

- Tax Exemption/ Reduction
- Non-tax Incentives

CIT Exemption for BCG Activities

B

- Economic forest plantation and Energy crops plantation (8 Years)
- Animal propagation or animal husbandry (5 Years)
- Natural Rubber Products (8 Years)
- Future Food (8 Years)
- Natural Extracts (5-8 Years)
- Plant or animal breeding (5 Years)
- Plant Factory (5 Years)
- Biological fertilizers (5 Years)
- Fuel or pharmaceutical grade alcohol from agricultural products (8 Years)
- Bioplastic (8 Years)
- Biochemicals (8 Years)
- Biotechnology (8 Years)
- Biotechnology development (10 Years)

C

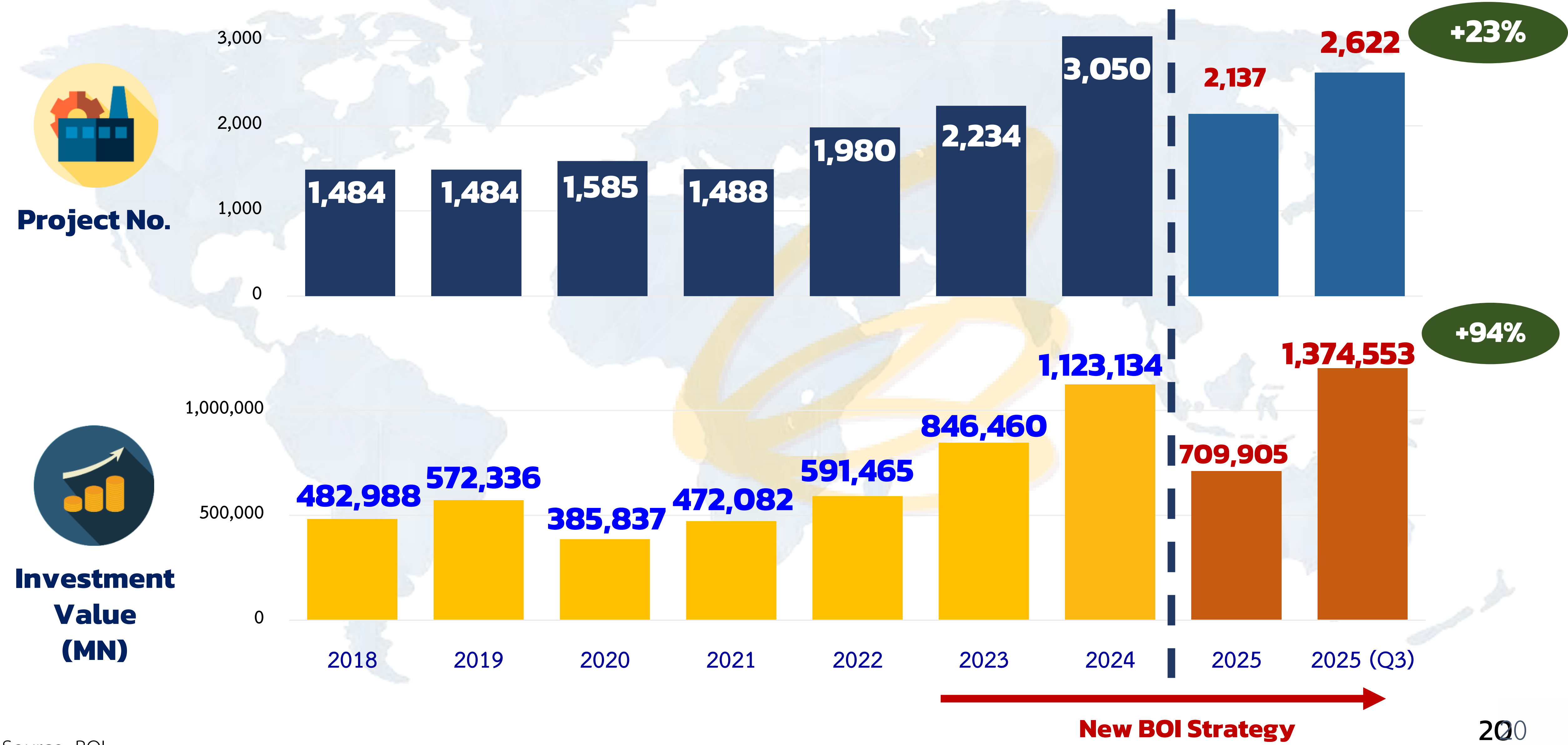
- Electric energy or renewable energy (8 years)
- Hydrogen from water using hydrokinetic energy (8 years)
- Recycling/recovery activities (8 years)
- Fiber recycling (3 years)
- Recycled plastic pellets (3-8 years)
- Recycled paper tissue (3-5 years)
- Fuel from agricultural waste (8 years)
- Fuel from RDF (Refuse Derived Fuel) (8 years)
- Compressed biomass fuel (5 years)

G

- Energy management services (8 years)
- Machinery, equipment, and modern agricultural systems (3-8 years)
- Electric vehicles, solar energy, fuel, and equipment for fuel cell systems (8 years)
- Environmentally friendly packaging (5 years)
- Petrochemical/gas separation plants using environmentally friendly technologies such as CCUS (8 years)

Note: "Years" refers to the number of years of tax exemption for investing in eligible activities.

Application for Investment Promotion for the Year 2018 – 2025 (Q3)



Source: BOI

Application for Investment Promotion for the Year 2018 – 2025 (Q3)

2,622 Projects with Investment Value of 1,374,553 Million Baht (Jan – Sep 25)

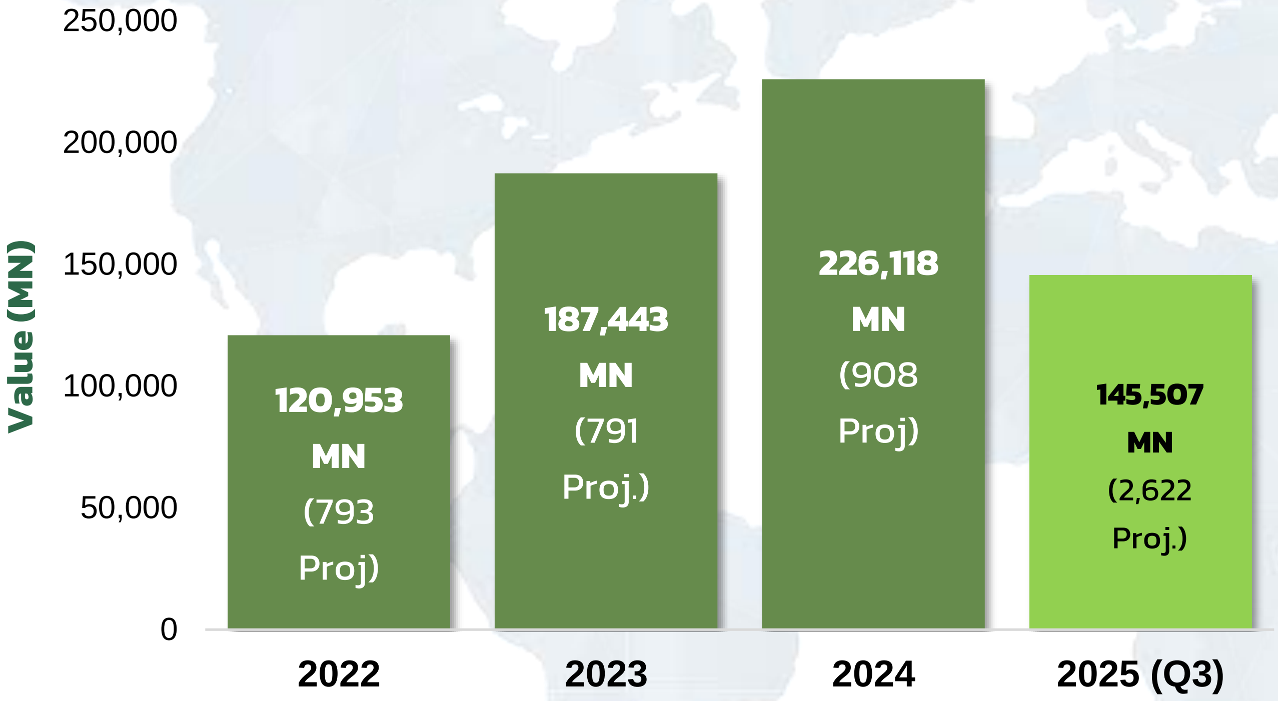
Digital	119 Proj.	612,768 MN
Electrical and Electronic	382 Proj.	184,078 MN
Automotive	229 Proj.	70,985 MN
Agriculture	228 Proj.	47,200 MN
Petrochemical	230 Proj.	36,766 MN
Medical Device	89 Proj.	25,086 MN
Tourism	21 Proj.	15,902 MN
Biotech	28 Proj.	8,130 MN
Automation & Robotics	30 Proj.	7,753 MN
Aviation	8 Proj.	5,091 MN

- Production of Electricity and Steam from Renewable Energy 74,212 MN
- Rail Transportation (Orange Line) 109,216 MN
- Other e.g. Industrial Estate Dev, Transportation & Logistic 177,362 MN

Promoted Project under BCG

2022 – 2025 (Q3)

BCG Applications Totaled 638 Projects, with a Combined Investment of 145,507 MN



EXAMPLES OF APPROVED PROJECTS / CURRENTLY IN OPERATION

NOTABLE PROJECTS IN RECENT YEARS

Manufacture of biofuels, including SAF Reducing carbon emissions in the aviation industry from renewable feedstocks

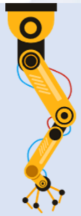
Manufacture of Cellulosic Enzyme Converting cellulose from natural feedstocks into glucose for bioplastics production through a biological process

Manufacture of Bioplastics Using agricultural products as feedstocks to produce bioplastics pellets

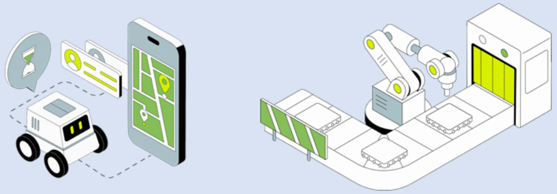
Source: BOI

Smart and Sustainability Measure

SMART



1. Automation and Robotics
2. Digital Technology
3. Industry 4.0



SUSTAINABLE

4. Energy Conservation, Alternative Energy, Environmental Impact Reduction

5. International Standards of Sustainability such as GAP, FSC, PEFCs, ISO 22000

A 3-YEAR CIT EXEMPTION ON EITHER 50% OR 100% of the investment value, subject to qualifying criteria

SUPPORTING ENTREPRENEURS IN INVESTING TO ENHANCE
PRODUCTION & SERVICE EFFICIENCY TOWARD SMART & SUSTAINABILITY

RECENT BOI ANNOUNCEMENT

- The discontinuation of solar system electricity production installations
- Max. investment (for tax exemption) to support BESS (Battery Energy Storage Systems) and inverter-related investments is now capped at ~319,000 EUR per 1 MW of electricity generation capacity.

Note: Projects submitted from the date of the announcement until June 30, 2025, will not be granted an extension for accepting the promotion approval and submitting the supporting documents for the promotion certificate.

Source: BOI

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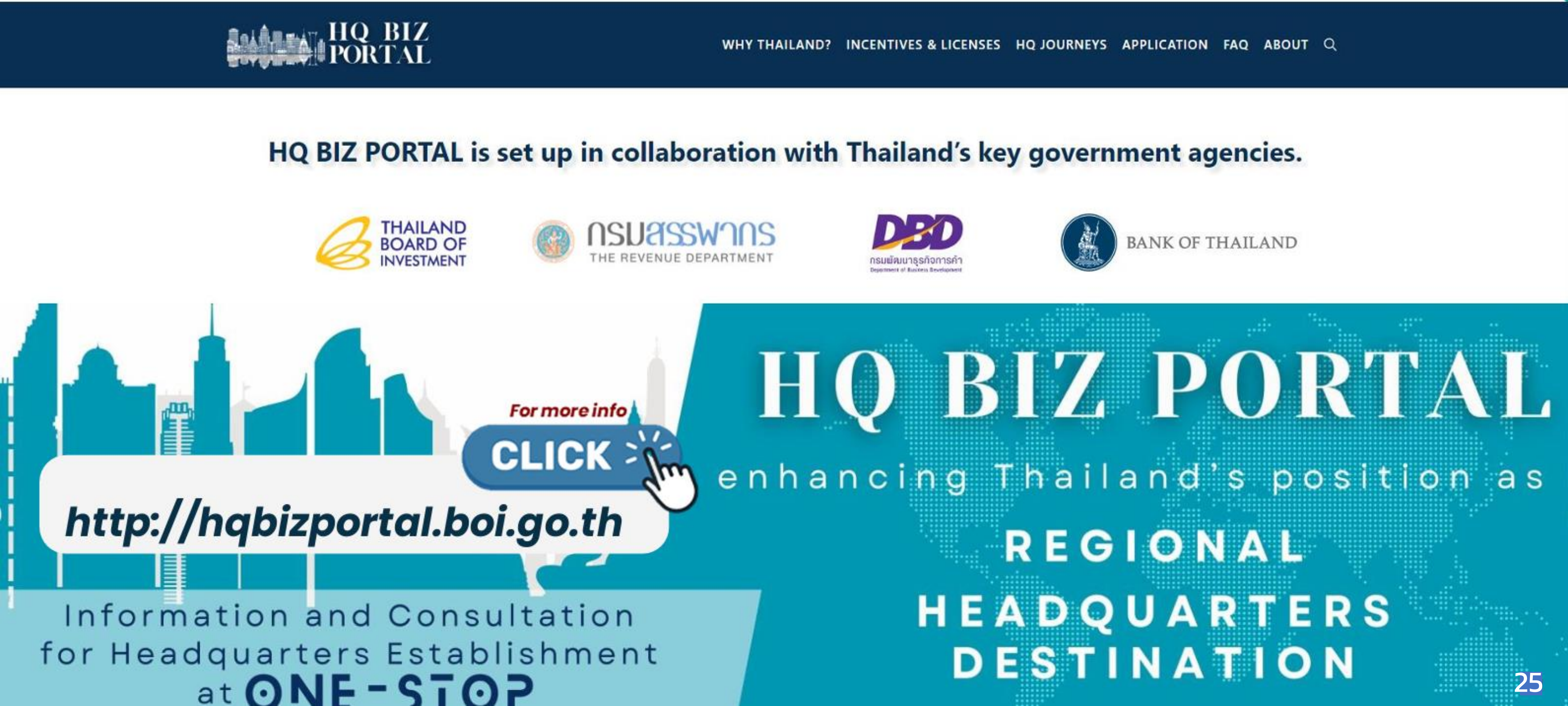
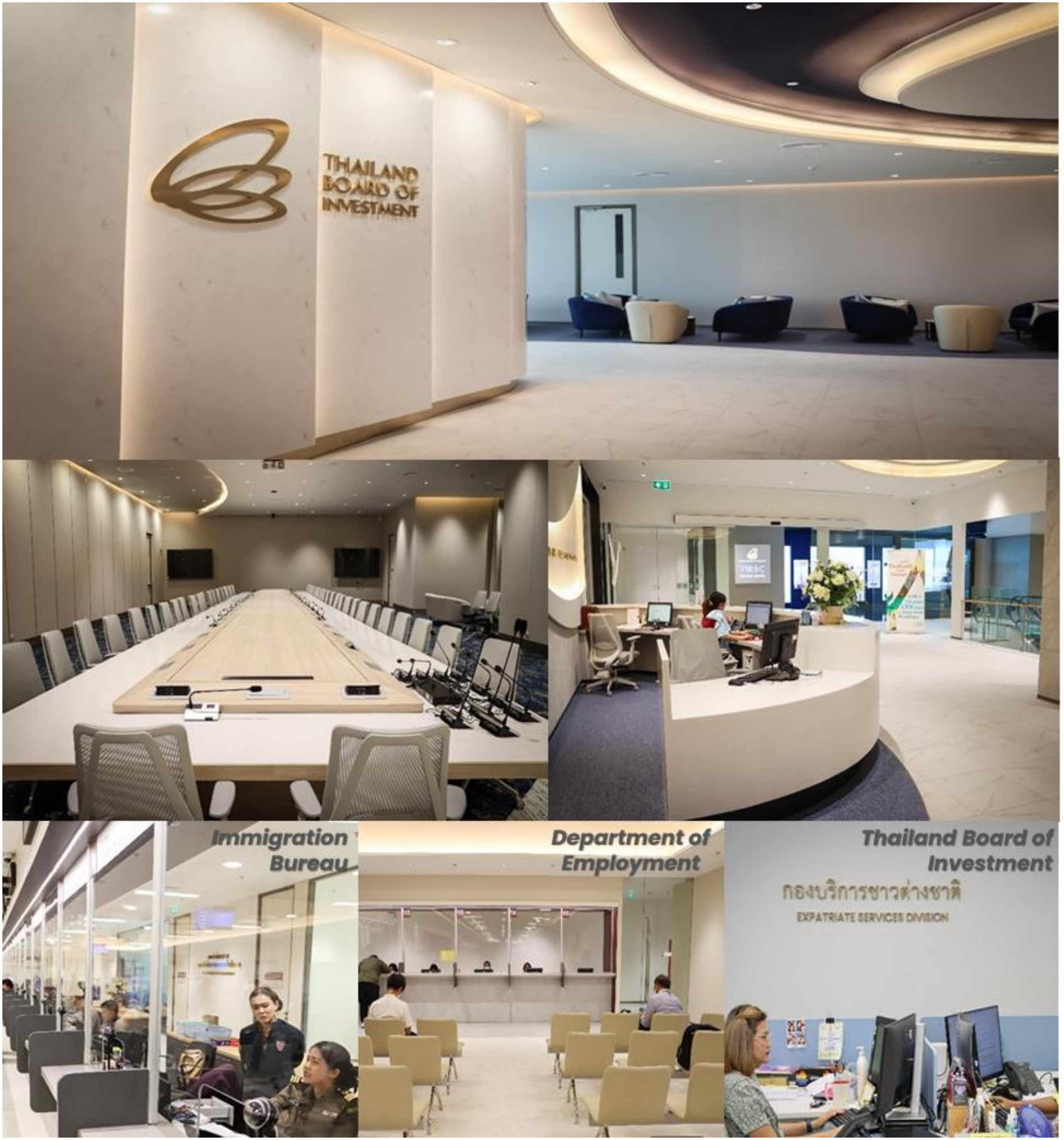
HQ Biz Portal Service

NEW

https://hqbizportal.boi.go.th





Thailand Investment and Expat Services Center

The One start One Stop Investment Center (OSOS)
and One Stop Service Center for Visa and Work Permit (OSS)

- **Comprehensive information and advice on establishing operation in Thailand**
- **Coordination Services between Investors and government agencies**
- **1-Stop for visas & work permits in 3 hours**

• More Convenience I More Efficiency I Less Time •

Contact us:

One Bangkok
Parade Zone, 6th – 7th Floor
Rama IV Road, Lumphini,
Pathumwan, Bangkok

0 2209 1100

osos@boi.go.th

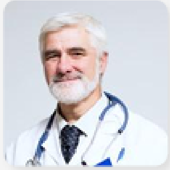
LTR visa
for Long-Term Residents

4 Types of LTR Visa

Wealthy Global Citizens
Wealthy individuals holding at least ***USD 1 million*** *in assets*

Wealthy Pensioners
Retirees ***aged over 50 years*** *who have an annual pension or stable income*

Work-from-Thailand Professionals
Remote workers *working for well-established overseas companies*



Highly Skilled Professionals
Professionals in targeted industries working for
- *business entities or higher education institutes*
- *research centers or specialized training institutions*
- *Thai government agencies*

+

Dependents
Spouse, children under 20 years old, ***parents and legal dependents*** *of LTR visa holders* new

Targeted industries for the **High-Skilled professional*** category are as follows :

Existing Targeted Industries
- **Automotive Industry**
- **Electronics Industry**
- **Affluent Tourism Industry**
- **Agricultural, Food and Biotechnology Industry**
- **Transportation and Logistics Industry**
- **Automation and Robotics Industry**
- **Aviation, Aerospace and Space Industry**
- **Biofuels and Biochemicals Industry**
- **Petrochemical and Chemical Industry**
- **Digital Industry**
- **Medical Industry**
- **National Defense Industry**
- **Circular Economy**
- **International Business Center (IBC)**

- **Highly-skilled professionals with specialized skills** new
  - e.g. Digital, AI Finance, Marketing Advisor, **University professors, Researchers and Educators in vocational sectors**

LTR Visa Privileges
- *10-year visa & Permission to work in Thailand*
- *Fast Track Service at International Airport*
- *90-day report extended to 1-year report and exemption of re-entry permit*
- Permission to Work in Thailand (Digital Work Permit)
- 17% Personal income tax rate for Highly-Skilled professionals and tax exemption from oversea income
- Facilitation Services at One Stop Service Center for Visa and Work Permit
- *Exemption from 4 Thais : 1 foreigner employment requirement ratio*

Remarks: *The LTR visa will be granted for 5 years at a time and can be renewed every 5 years if qualifications are still met.*

BOI Industrial Linkage Services

BUILD Supports

- **Customized Business Matching**
  - **JV Partner**
  - **Talent Sourcing- Job Matching**
- **Free Sourcing Services**
- **Local Sourcing Events**
  - Venders Meet Customers Sourcing Events
  - Sourcing Market Place Center
  - Knowledge Enhancement for Local Vendors through Competitiveness
  - Development Seminar
- **International Sourcing:** Exhibit Thai Vendors Potential at International Exhibitions
- **Online Database/Website BUILD Platform**

Sample of Companies joining BOI Linkage Services

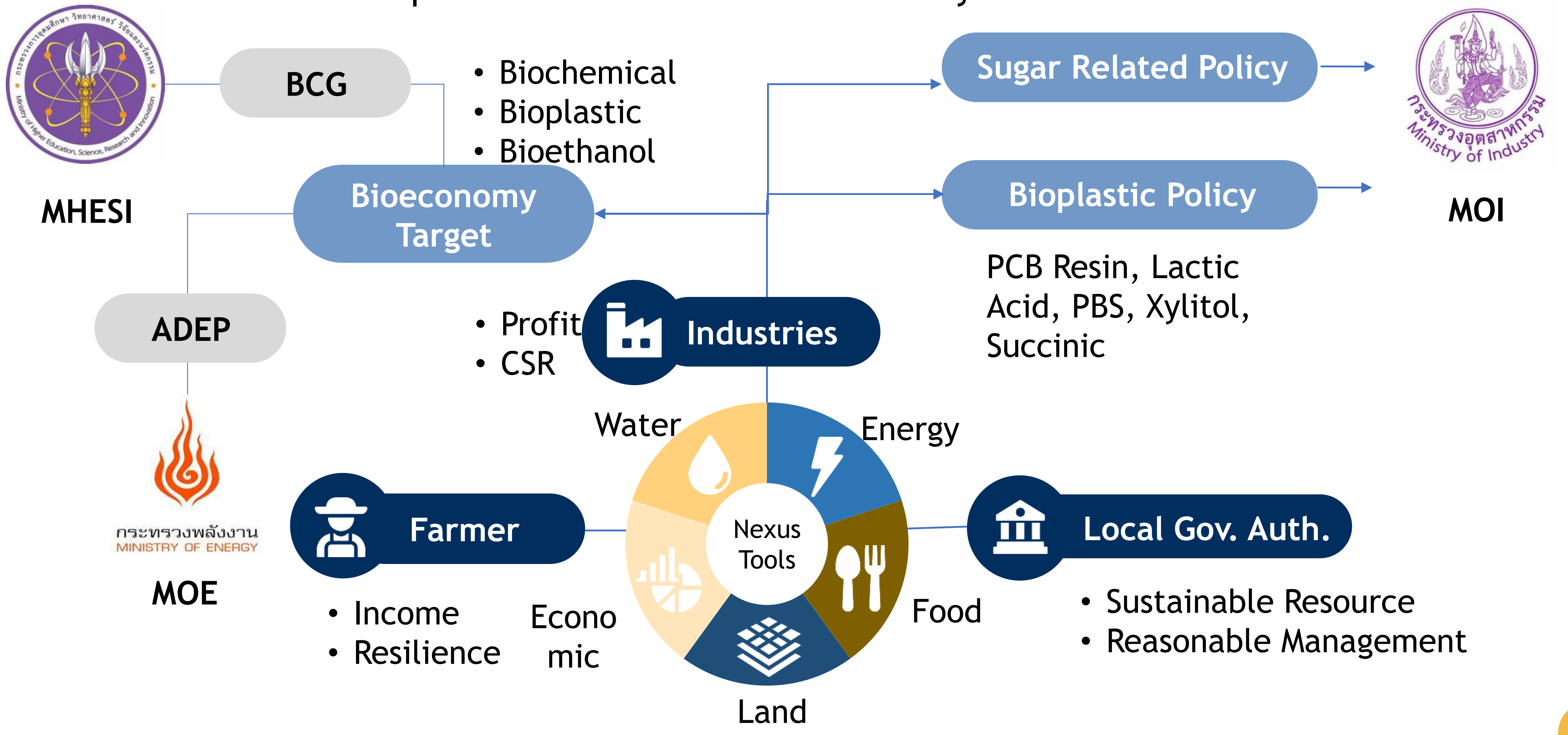
BYD, ROYAL ENFIELD, DUCATI, BMW, BOSCH Invented for life, AAM, CAT, KNORR-BREMSE, SAMSUNG ELECTRONICS, beko, DELTA

Business Matching	Total Visitors	Expected Industrial Linkage Value
9,975 Pairs	46,259 Visitors	667 Million USD

THAILAND BOARD OF INVESTMENT

BCG Policy Network Integration

Various government agencies contribute to the development and implementation of the BCG economy in Thailand



Source: Chiang Mai University and National Science and Technology Development Agency

NSTDA's Role in Biotechnology Development

NSTDA's role are categorized into 2 main roles which are:

1 Technology Transfer

Software Park Thailand

Eastern Economic Corridor of Innovation

Thailand Science Park

Food Innopolis

2 Developing and Strengthening Research Capabilities

Funding

Knowledge

Source: National Science and Technology Development Agency

BIOTEC is another organization that supports the enhancement of biotechnology capabilities

Research:
To enhance competitiveness of the biotech sector

Consulting and Technical Services:
To support biotechnology entrepreneurs

Business Development:
To provide services to researchers or agencies

Technology Transfer:
To improve industrial processes and developing new industries or products

Licenses:
To encourage the commercialization of R&D results

Source: BIOTEC

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