



# 2025 BUSINESS PROFILE



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A company that creates a better tomorrow



**THIEN KIM BIO ENERGY**

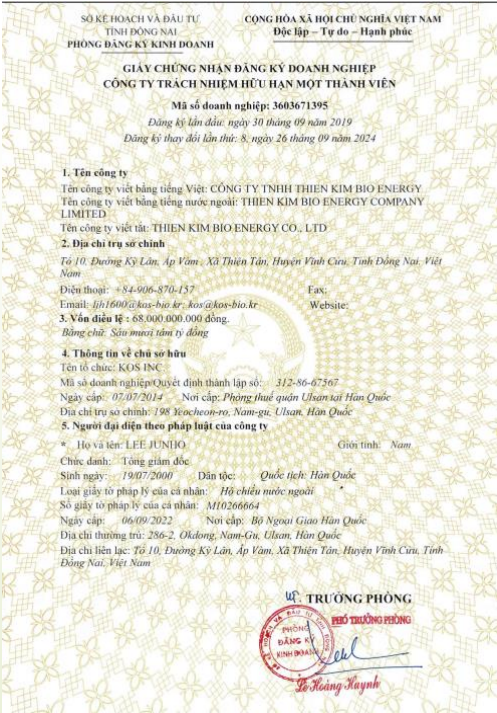
based on continuous challenges and innovation

# I. Company Overview and Competitive Advantage

THIEN KIM BIO ENERGY Information

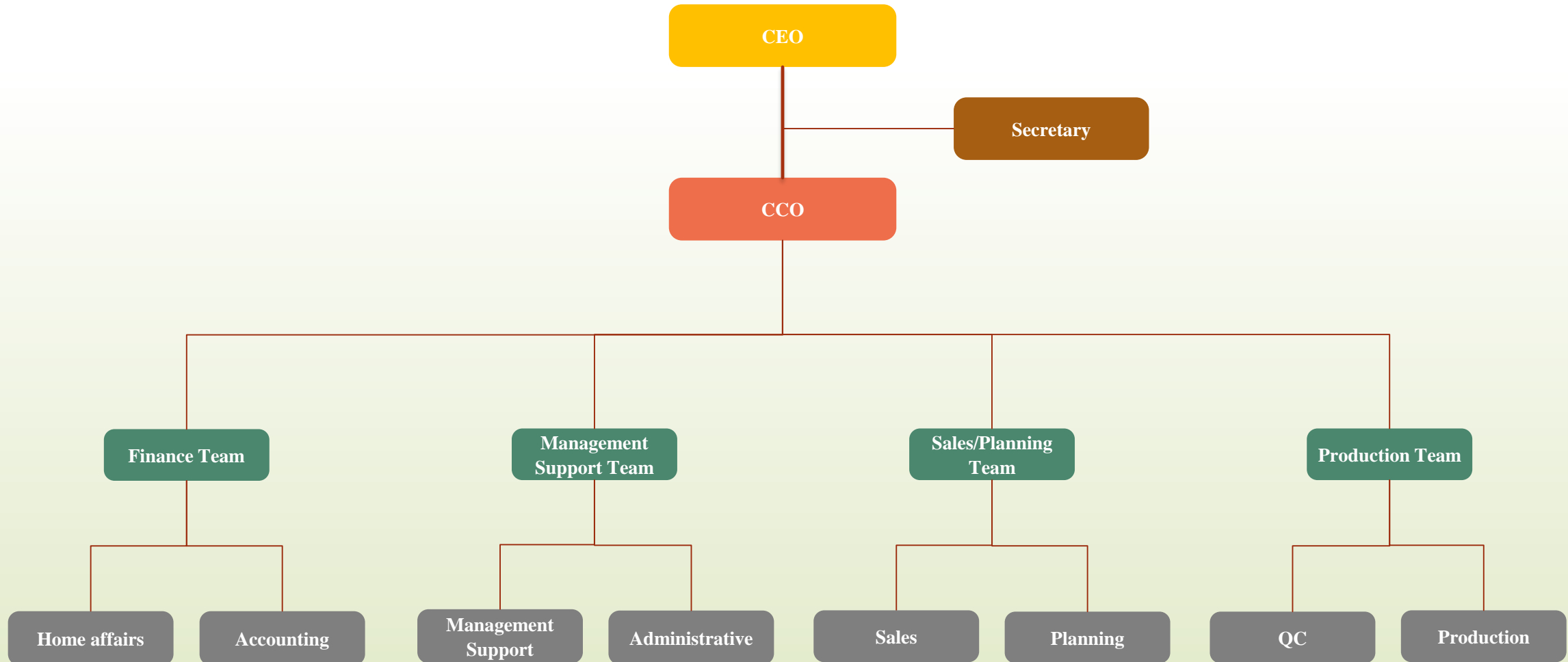
Corporate Name	THIEN KIM BIO ENERGY LIMITED COMPANY
A Legal Representative	LEE JUN HO
Website	<a href="https://thienkimbioenergy.com/">https://thienkimbioenergy.com/</a>
Business Registration	3603671395
Capital Stock	68,000,000,000 VNĐ
Industry	Production and Purchase
Product	Cashew Nut Shell Liquid (CNSL)
Productivity	60,000 ton/year
Purchase	Bio-Heavy Oil, Cardanol, SAF, Bunker Oil
Purchasing Capacity	30,000 ton/year
Vietnamese Factory	Group 10 – Ky Lan Street, Vam Hamlet, Thien Tan Commune, Vinh Cuu District, Dong Nai Province, Vietnam
Vietnamese Branch Office	6-8, 16 Street, Linh Trung Apartment, Linh Trung Ward, Thu Duc, Ho Chi Minh City, Vietnam

Certificate



# I. Company Overview and Competitive Advantage

## ➤ Organization Chart

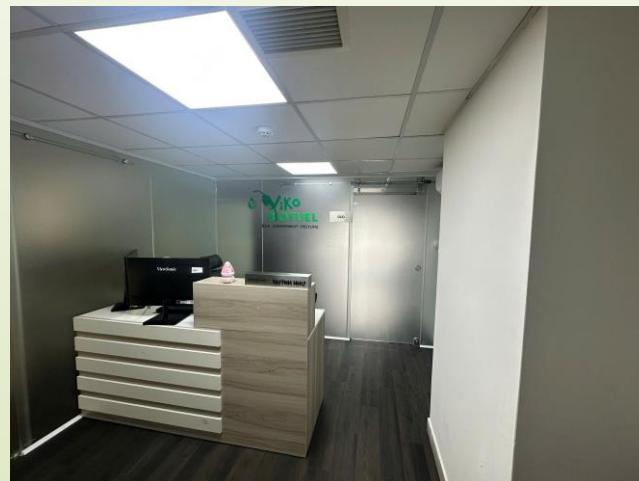
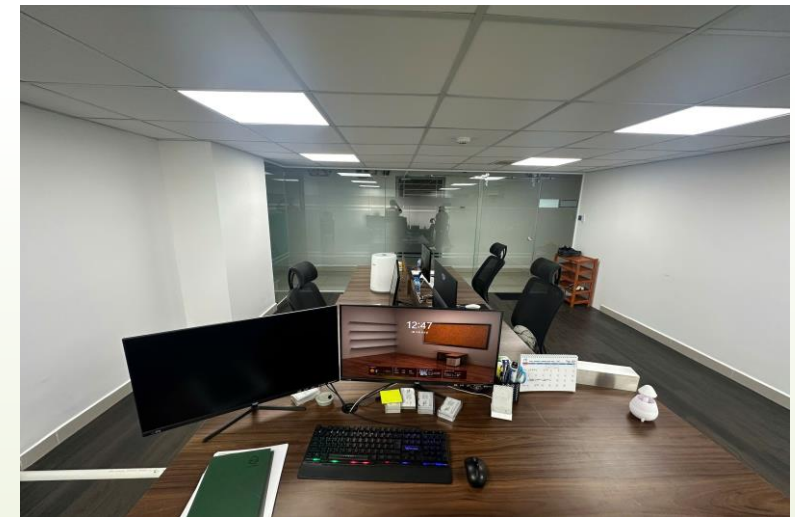






# I. Company Overview and Competitive Advantage

➤ Vietnam – Company Head Office in Ho Chi Minh City





# I. Company Overview and Competitive Advantage

- ✓ **THIEN KIM BIO ENERGY** is a 100% Korean-owned company.
- ✓ **THIEN KIM BIO ENERGY** is striving for eco-friendly green growth by contributing to reducing social costs and the national environment. To this end, it is playing a leading role in converting food waste, waste cooking oil, biofuels, and waste rehabilitation oil into eco-friendly **BIO FUEL** energy.
- ✓ Factory operated by Korean engineers - Ensuring stable quality through process design based on Korean technology – Industry leading production efficiency to reduce costs and maximize productivity.
- ✓ Large scale production capacity - Capable of producing over 5,000 tons per month, ensuring stable supply even for large orders - Fast production and on-time delivery to secure importer trust.
- ✓ Superior quality control and supply capability - Operating a stricter quality control system compared to competitors - Maintaining consistent quality even in mass production, maximizing customer satisfaction.



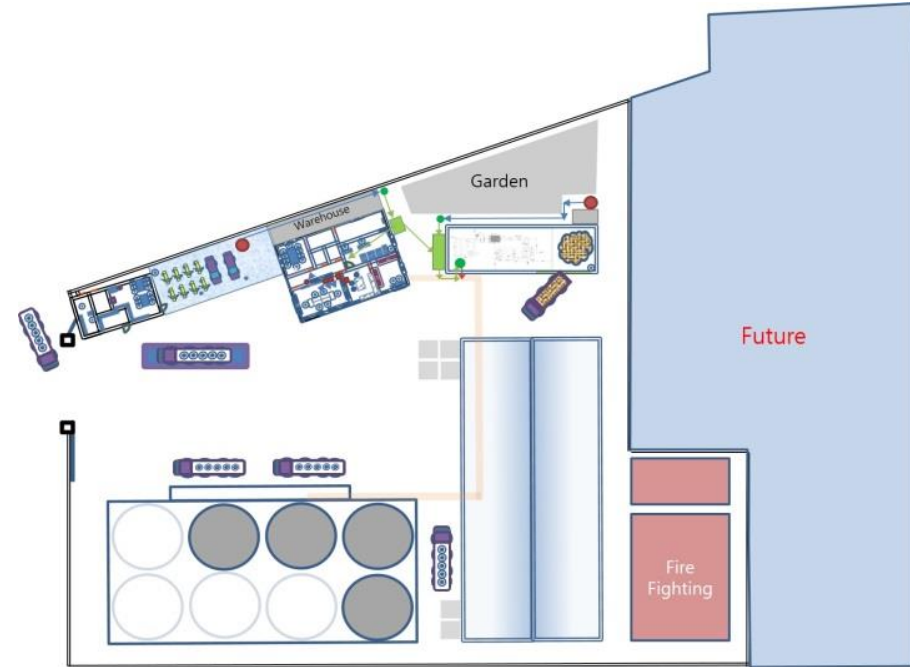
- Stable Raw Material Supply – there are many cashew nut oil processors in Dongnai and nearby areas.
- Rich Human Resources – Dongnai is the province with the largest number of industrial parks in Vietnam, with 32 currently operating industrial parks.
- Stable Product Demand – The world is increasingly prioritizing the development of sustainable, environmentally friendly raw materials.





# I. Company Overview and Competitive Advantage

## ➤ Vietnam – Factory Exhibition at Dongnai Branch



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# II. Market Opportunities and Growth Prospects

## ➤ CNSL Market Outlook and Industry Trends

### CNSL Market Size and Growth Outlook

- **Market Size:** Expected to grow from \$3.2 billion in 2024 to \$5.1 billion by 2032.
- **Compound Annual Growth Rate (CAGR):** Estimated at 6.68% from 2024 to 2032.

### Trends in the Biofuel Industry

- **IMO 2020 Regulations:** The International Maritime Organization's low-sulfur fuel regulations are driving demand for eco-friendly fuels.
- **Carbon Neutral Policies:** Global efforts toward carbon neutrality are increasing interest in sustainable fuels.
- **ISCC & CORSIA Certifications:** International certifications for Sustainable Aviation Fuel (SAF) are expanding the potential applications of CNSL.

❖ Source:

- International Sustainability & Carbon Certification (ISCC). (n.d.). ISCC CORSIA Training. Retrieved March 21, 2025, from <https://www.iscc-system.org/academy/iscc-trainings/iscc-corsia-training/>
- Business Research Insights. (n.d.). Nut Shell Liquid (CNSL) Market Report. Retrieved March 21, 2025, from <https://www.businessresearchinsights.com/ko/market-reports/nut-shell-liquid-cnsl-market-118367>





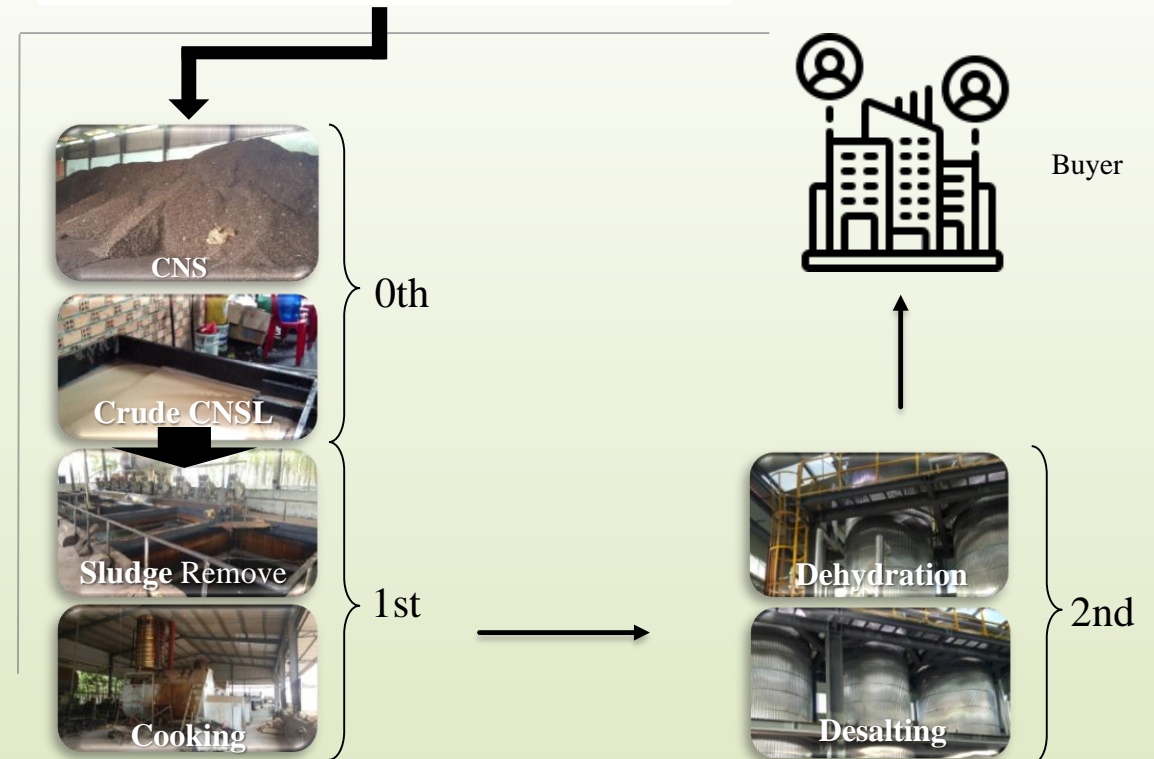
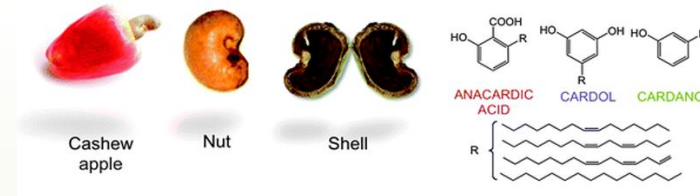
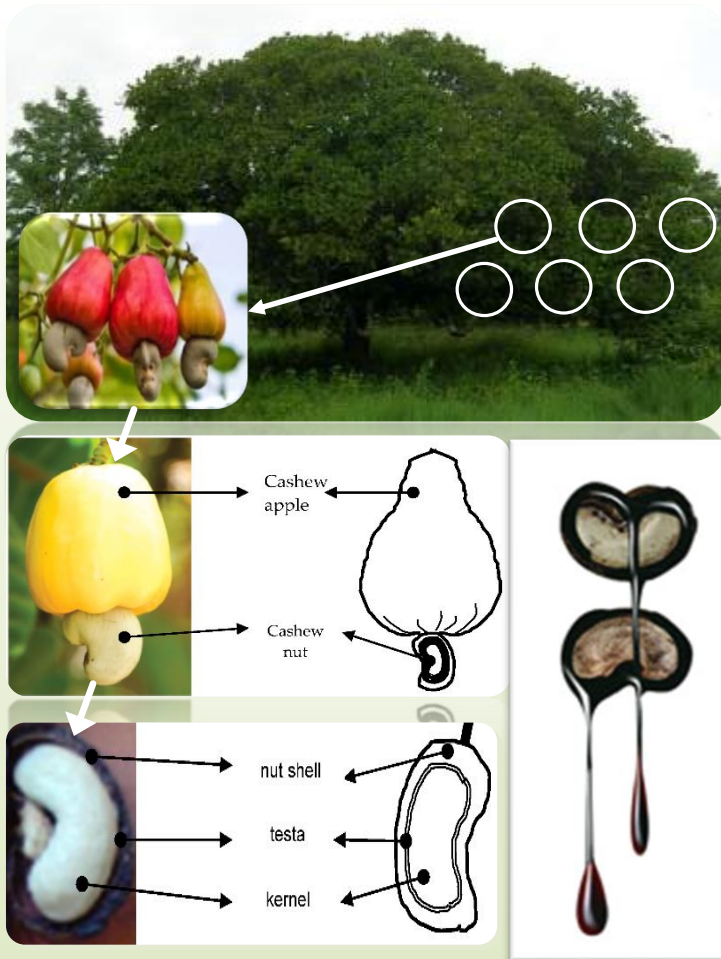
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### III. Key Products and Services

#### ➤ Product Description – Cashew Nut Shell Liquid(CNSL)

CNSL is subjected to extraction (0th) – COOKING (1st) – Desalting and Dehydration (2nd) Process





## **III. Key Products and Services**

### **► Product Characteristics**

#### **CNSL Competitiveness**

##### **High Calorific Value**

- Generates over **9,000 kcal/kg** of energy
- Higher energy efficiency compared to **UCO, Fish Oil, Palm Oil, and FW Oil**
- Ideal for **fuel blending in refineries** due to its high combustion heat

##### **Cost-Effective and Sustainable Fuel**

- One of the **most affordable biofuels**, reducing costs
- Extracted from **cashew nut shells**, making it a **renewable resource**

##### **Eco-Friendly Characteristics**

- **Low carbon emissions** and reduced harmful substances during combustion
- Supports waste utilization and contributes to the circular economy
- A bio-based fuel that aligns with **Net Zero carbon policies**

#### **CNSL (Cashew Nut Shell Liquid) Product Line**

- Fuel for Industrial Cogeneration
- Power Plants Bio Heavy
- Oil for Marine Use Eco-Friendly
- Aviation Fuel (SAF – Sustainable Aviation Fuel)
- Cardanol Raw Material (Used in Epoxy Production)

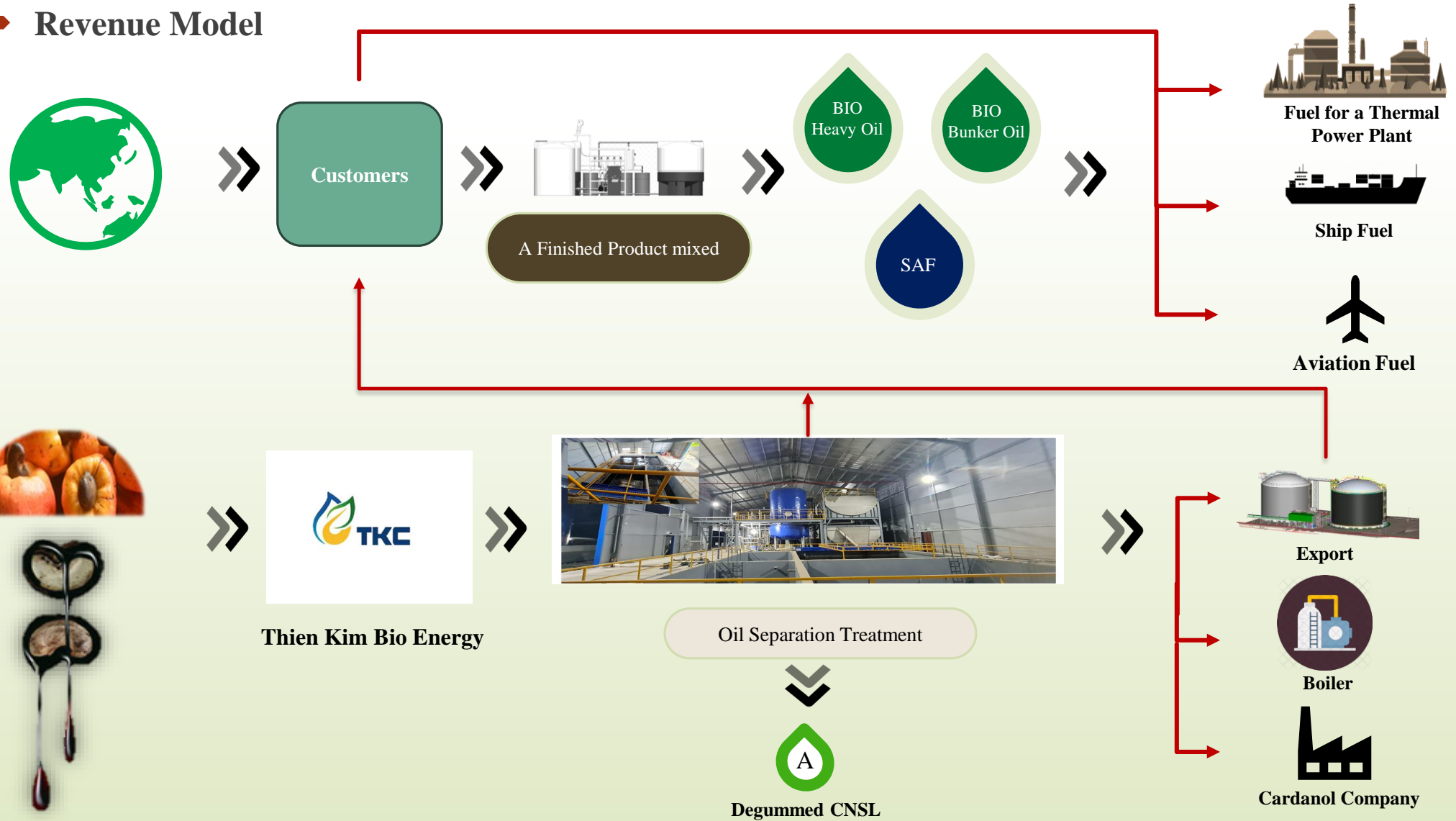


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### III. Key Products and Services

#### ➤ Revenue Model



**TKC****2025 BUSINESS PROFILE****III. Key Products and Services**

- With the implementation of 'IMO 2020', the International Maritime Organization's sulfur oxide regulation for marine fuels, demand for bio heavy oil is expected to increase in the global shipping market.
- Bio heavy oil does not emit sulfur oxides, which are the cause of acid rain, and emits only 82% of fine dust, 69% of nitrogen oxides, and 68% of nitrogen monoxide compared to bunker C oil, but its price is 907 per liter compared to low-sulfur bunker C oil. KRW and bio heavy oil is KRW 700 per Liter.
- The bio heavy oil market is active overseas, with Maersk, the world's largest shipping company, using bio heavy oil for 20% of its total marine fuel, and French shipping company CMA CGM, in collaboration with oil company Shell, carrying out a project to use bio heavy oil as ship fuel.

If bio heavy oil is used for ships, the global market size is expected to increase by more than 20 trillion won.

※ Source: Eco-friendly marine fuel, technology is the best  
Hurt by regulations, Chosun Biz, 21.01. 2020



- **Sustainable Aviation Fuel (SAF)** is an eco-friendly alternative to traditional jet fuel, made from renewable sources like used cooking oil, agricultural waste, and algae. SAF significantly reduces greenhouse gas emissions, making air travel more sustainable.
- **ISCC CORSIA (International Sustainability & Carbon Certification for the Carbon Offsetting and Reduction Scheme for International Aviation)** is a global certification system ensuring that SAF meets strict sustainability and emissions reduction criteria set by the International Civil Aviation Organization (ICAO). This helps airlines comply with carbon reduction targets while promoting greener aviation. ISCC CORSIA certification helps businesses enter global markets by proving they meet CORSIA's sustainability requirements. It also ensures that the entire supply chain can track and verify the use of alternative fuels and materials.

SAF from CNSL has strong growth potential due to the global demand for sustainable fuel. Achieving ISCC CORSIA certification under ICAO standards helps expand markets and boost export sales.

※ Source:

ISCC System. *ISCC CORSIA certification*. Retrieved from <https://www.iscc-system.org/certification/iscc-certification-schemes/iscc-corsia/>

BP. *What is sustainable aviation fuel (SAF) and why is it important?* Retrieved from <https://www.bp.com/en/global/air-bp/news-and-views/views/what-is-sustainable-aviation-fuel-saf-and-why-is-it-important.html>



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# IV. Sales and Distribution Strategy

### Key Customer Segments

#### Korean Bio Heavy Oil Manufacturers

- Supplying **power plants** as end users
- Increasing CNSL adoption with the growing demand for eco-friendly fuels

#### Cardanol Manufacturers

- Using CNSL as a raw material for **phenolic resins, epoxy, and friction materials**

#### Large Industrial Facilities (Using CNSL for Boilers)

- **Considering** CNSL as **boiler fuel** for industrial use
- Reducing fuel costs and ensuring sustainability

#### European Refineries Producing SAF (Sustainable Aviation Fuel)

- **Needing ISCC-certified eco-friendly raw materials**
- Blending CNSL to reduce SAF costs and lower carbon emissions

### Sales Strategy

#### Utilizing Direct Sales & B2B Networks

- Conducting direct sales with domestic and international biofuel and chemical companies
- Expanding market reach by **leveraging partner networks**

#### Pursuing Global Exclusive Contracts

- **Negotiating exclusive CNSL supply agreements with global groups**
- **Ensuring a stable sales network** through long-term contracts

#### Targeting the European Market

- **Developing a sales strategy through B2B transactions in Europe**
- Collaborating with SAF producers to enter the eco-friendly fuel market

#### Expanding the Korean Market

- **Actively marketing to domestic bio heavy oil manufacturers**
- Strengthening cooperation with power plants and industrial fuel companies

#### Earning Carbon Credits

- Generating additional revenue through carbon credit trading



## **V. Production and Operations Plan**

### **► Factory Expansion and Development Plan**

#### **Factory Expansion Plan (Target: 2025)**

##### **Expanding CNSL Oil Production**

- Annual production target: **60,000 tons**
- Meeting global market demand and ensuring a stable supply

##### **Establishing a Second Factory in Dong Nai**

- Site area: 11,000 m<sup>2</sup>
- **Implementing automated equipment** and optimizing production
- Enhancing mass production capacity and reducing costs



#### **Research & Development and New Product Plans**

##### **Collaboration with a Korean Research Institute in 2025**

- **Developing a new eco-friendly oil** derived from cashew nut shells
- **Expanding the green energy market** with sustainable fuel solutions

##### **Expansion Beyond CNSL into Eco-Friendly Fuels**

- **Conducting research and development on sustainable aviation fuel (SAF) and bio-heavy oil.**
- Launching new product lines to **support carbon neutrality policies**

##### **Additional Goals**

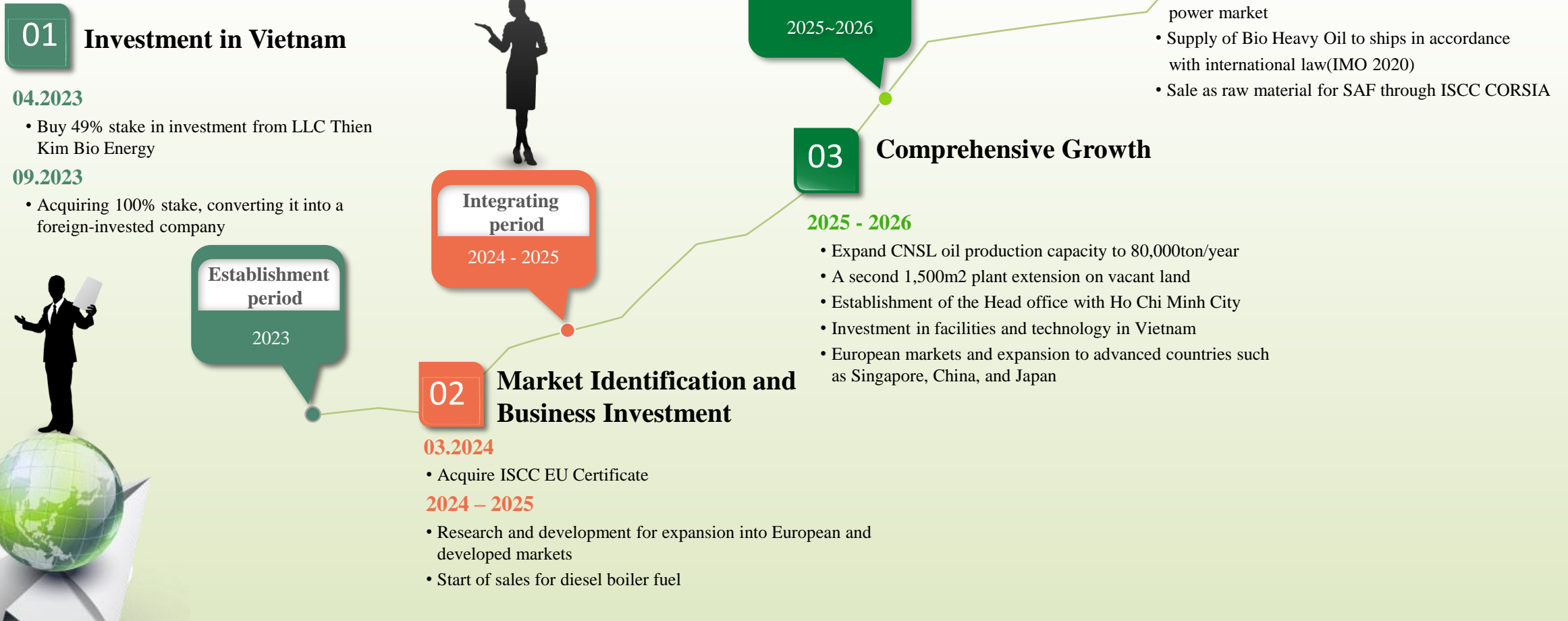
- Getting recognized by scientific organizations and running factories smoothly outside industrial zones
- Enhancing brand value
- Collaborating and conducting research with global corporations

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# VI. Execution Roadmap

### History and Future Timeline







# THIEN KIM BIO ENERGY LIMITED COMPANY

FACTORY: Vinh Cuu District, Dong Nai Province, Vietnam

HEAD OFFICE : Linh Trung Ward, Thu Duc, Ho Chi Minh City, Vietnam