
Company and Investment Highlights

# TEPP – a pioneer in sustainable agriculture

**Do not waste** natural resources

**Empower** small farmers through ESG education

**Enhance** credibility and reputation through proactive measures

**Protect** the forests of the world

**Transform** the palm oil industry into sustainable agriculture

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Thai Eastern Pulp and Paper

# A brief history of TEPP


**First idea conceived**

The initial concept of TEPP took shape, marking the beginning of an innovative idea to transform the industry

**Joining forces**

TEPP formed as a strategic partnership between TEGH and alphapulp, leveraging combined expertise and resources

**Official foundation**

TEPP was formally established as an organization, marking a significant milestone in its journey

**Pilot production line**

TEPP successfully launched its first pilot production line, showcasing the potential of its groundbreaking technology

**Process development**

TEPP completed the comprehensive development process, refining its technology for large-scale implementation

**Full-size factory**

TEPP proudly inaugurated its full-size factory, commencing large-scale production and establishing a commercial presence

# The founding team behind TEPP

51%

TEGH[1]

via TEGA Holding[2]

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49%

alpha pulp

**Sineenuch Kokanutaporn**

Managing Director TEPP

CSO TEGH

**Chalerm Kokanutaporn**

CEO TEGH

**Markus Count Matuschka de Greiffenclau**

Member of the TEPP Board of Directors & Investor

Serial entrepreneur

MyMicrobiome Lysando® skype King

1: TEGH operates in rubber, palm oil, renewable energy, organic waste management, and logistics in Thailand and globally. The company went public in Bangkok in December 2022 (TEGH:TB)
2: TEGA Holding Co., Ltd. is part of the Kokanutaporn family holding

# Cutting-edge technology driving sustainability

How the media looks at our disruptive revolution:

> *The idea [to produce pulp from EFB] not only conveys a good feeling, but an idea for a different future. […] The company uses what other producers dispose of as waste. […] The raw material for a future that has already begun.*

(May 2022) Süddeutsche Zeitung

> *It took him 12 years to set up an economically and ecologically sustainable production chain. […] And it's a win-win situation: The oil palm waste gets recycled, and the farms can even earn money from it.*

(October 2022) plan b ZDF

> *This company not only relieves the forests, but also competes with the traditional paper producers.*

Frankfurter Allgemeine

> *Discover how a German entrepreneur in Thailand transforms waste from palm oil production into a valuable raw material. […] Until now, millions of tons of empty fruit bunch were discarded after harvesting. Now, they are being processed into a material known as paper pulp [and] supplied to paper companies.*

(June 2022) deutschland.de

# The situation in the paper industry today

Nearly

**~6 billion trees**

are being cut down every year in order to supply the pulp & paper industry

This equals

**3,750,000 hectares**

of forest being destroyed – including the lungs of our planet: the rainforests

As an estimate, around

**22,550,000 tons of $CO_2$**

could be prevented by abandoning this barbaric practice and utilizing a different resource

# Alternative raw materials for pulp production

When having a close look at alternative non-wood pulp sources, it becomes obvious that virtually all of them come with significant disadvantages – except for EFB:

## Kenaf

- Growing kenaf exploits the soil and requires large farming areas
- Prices are highly variable due to competition with farmland

## Straw & bagasse

- Significant energy needs to be invested in order to prevent rotting of the raw material
- Pulp production is therefore very expensive

## Bamboo

- Due to its fast growth, bamboo was promoted as eco-friendly alternative
- In the meantime, bamboo is facing significant environmental issues

## EFB

- No energy required for the preservation of the material due to the continuous supply of fresh raw material
- EFB contains hollow fibers with advanta-geous features for several technical applications and tissue paper production
- Relatively low lignin content saves energy in the de-lignification process

# EFB is a by-product of palm oil production

**Fresh fruit bunch**

**Palm oil milling**

**Primary end products:**

- 20% crude palm oil
- 6% palm kernel

**Solid palm oil biomass**

- 15% fibers
- 6% kernel shells
- 25% empty fruit bunch

*These by-products would normally be burned or parts of EFB used as meager fertilizer in the plantations*

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# TEPP invented a process to produce highest quality pulp from EFB

## Empty fruit bunch

- Empty fruit bunch (EFB) is a residual by-product of palm oil production, abundantly available year-round
- EFB serves as a valuable raw material for the innovative TEPP pulping process

## Long fiber

- In a first step, the material undergoes preparation and cleaning to facilitate the subsequent pulping process
- Compared to traditional wood pulp, the TEPP process requires significantly fewer chemicals and less energy

## Wet pulp

- The resulting product is referred to as “wet pulp”, it has a residual moisture content of ≤75%
- The quality can be tailored to suit the intended applications (i.e., specific fiber length, lignin content, and freeness)

## Paper

- EFB pulp is excellent for a range of downstream process, incl.:
  - Paper & packaging
  - Biodegradable tableware
  - Tissue paper
  - Fiber cement

# Customers from various downstream industries confirm the high quality

| Industry | Quality requirements (kappa number) | Customer | Demand/month, in MT |
|---|---|---|---|
| Fiber cement | ≤ 35 | Shera PCL | 500 |
| | | TPI Polene Co., Ltd. | 600 |
| | | Diamond Co., Ltd. | 300 |
| Food packaging | < 15 | Biodegradable Packaging For Environment PCL | 400 |
| Tissue paper | ≤ 45 | RiverPro Pulp and Paper Co., Ltd. | 400 |
| | | Berli Jucker Cellox Co., Ltd. | 500 |
| Paper & Packaging | Not specified | Japan Pulp and Paper Co., Ltd. | 100 |
| | | Siam Pulp Mold Packing Co., Ltd. | 50 |
| | | Crown Package | 100 |
| **Total** | | | **2,950** |

Source: TEPP order book

## Investment opportunity

We are looking to raise

**USD 120 mn**

to build up a network of 8+ decentralized EFB pulp factories

Each individual plant will have a production capacity of

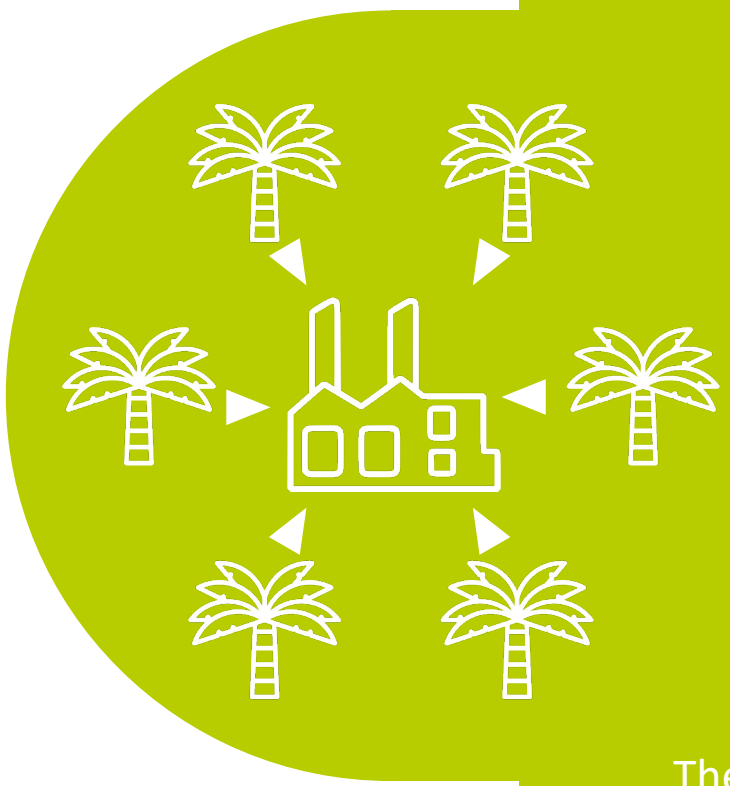
**100 MT / day**

The business is expected to be highly profitable with an

**EBIT margin of ~70%**

in a steady state

## Impact



Each 100 MT factory will save

**832,000 trees**

per year

The equivalent of

**520 hectares**

of healthy forest

These trees can absorb around

**3,120 tons of $CO_2$**

which would have remained free in the atmosphere

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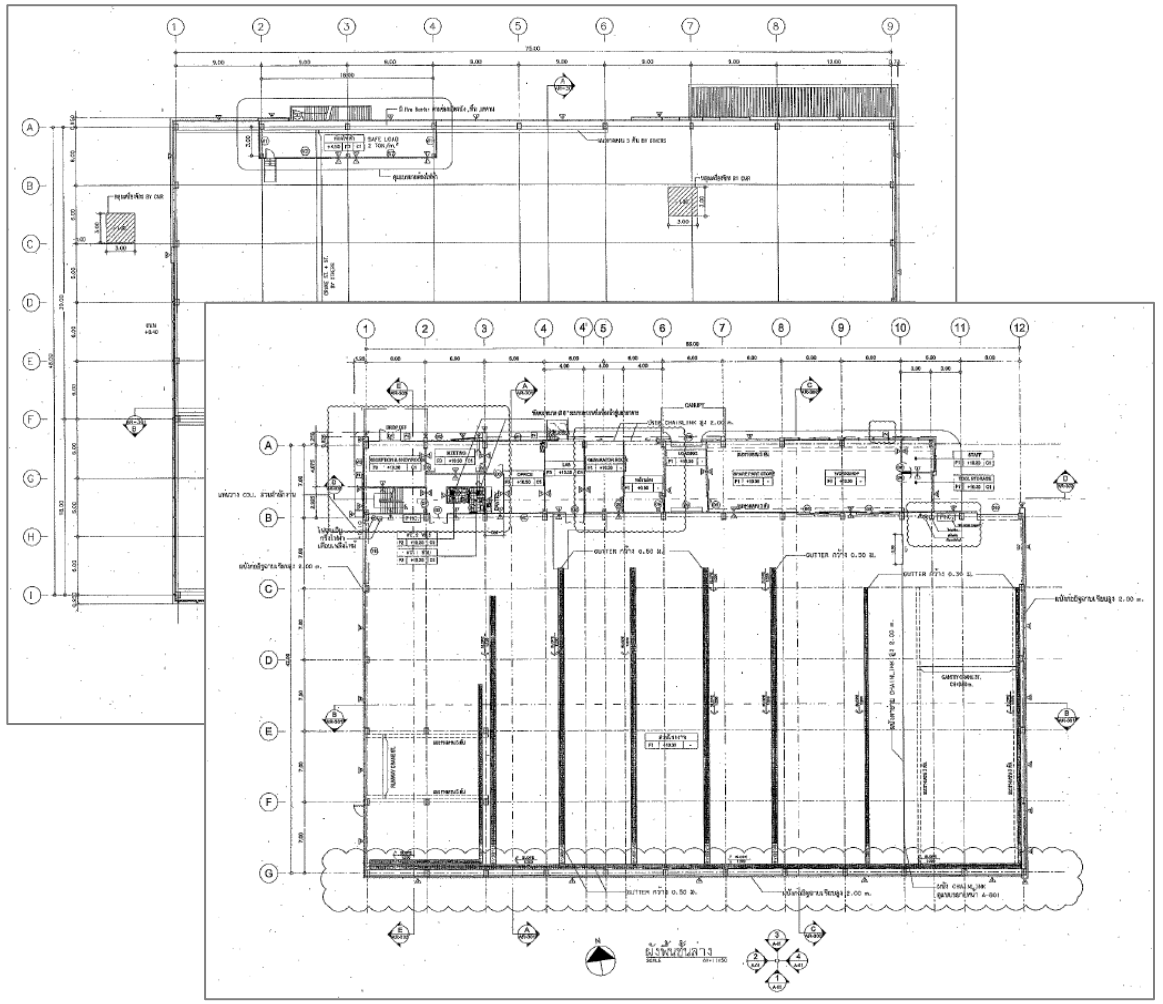
# In order to satisfy local demand, the Chonburi plant will be expanded to 100 MT/day

| | Today | Target |
|---|---|---|
| ▪ Layout | Single production line for preparation and pulping | Addition of a second line to double capacity |
| ▪ Capacity | 50 MT / day | 100 MT / day |
| ▪ Process design | Combination of batch and continuous processes | Continuous process “end-to-end” |



# Business forecast

| | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Eco Plants,** in # | | | 1 | 3 | 5 | 8 | 8 | 8 | 8 | 8 | 8 |
| **Annual production,** in 1,000 MT pulp | | | 25.6 | 82.6 | 145.5 | 233.9 | 251.6 | 251.6 | 251.6 | 251.6 | 251.6 |
| **Key financials,** in USD mn | | | | | | | | | | | |
| ▪ **Total investment** | 16.0 | 52.6 | 73.3 | 91.6 | 55.0 | | | | | | |
| ▪ **Sales** | | | **17.9** | **57.8** | **101.8** | **163.7** | **176.1** | **176.1** | **176.1** | **176.1** | **176.1** |
| ▪ **License income** | | | **0.0** | **1.0** | **2.2** | **4.4** | **5.8** | **6.1** | **6.1** | **6.1** | **6.1** |
| ▪ **COGS** | | | 4.8 | 15.1 | 26.1 | 41.9 | 43.9 | 43.9 | 43.9 | 43.9 | 43.9 |
| ▪ **SG&A** | | | 0.1 | 0.4 | 0.7 | 1.1 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| ▪ **EBITDA** | | | **12.9** | **43.2** | **77.2** | **125.1** | **136.8** | **137.1** | **137.1** | **137.1** | **137.1** |
| ▪ **Depreciation** | | | 1.1 | 3.6 | 6.2 | 9.9 | 9.9 | 9.9 | 9.9 | 9.9 | 9.9 |
| ▪ **Finance costs** | | | 0.5 | 1.5 | 2.4 | 3.7 | 3.1 | 2.5 | 1.9 | 1.3 | 0.8 |
| ▪ **EBIT** | | | **11.4** | **38.1** | **68.7** | **111.5** | **123.8** | **124.7** | **125.3** | **125.8** | **126.4** |
| *as % of revenue* | | | *63%* | *66%* | *67%* | *68%* | *70%* | *71%* | *71%* | *71%* | *72%* |

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