

GUNKUL ENGINEERING

THAILAND / UTILITIES - RENEWABLES

GUNKUL TB

BUY

UNCHANGED

On the hemp growth radar

- We believe that starting in 2022 onward, GUNKUL will see its net profit structure undergo a period of S-curve growth.
- As one of the first movers, GUNKUL has successfully grown and extracted CBD for commercial purposes.
- Maintain BUY but lower our SoTP-based TP to THB6.6.

| | |
|-----------------|---------|
| TARGET PRICE | THB6.60 |
| CLOSE | THB5.50 |
| UP/DOWNSIDE | +20.0% |
| PRIOR TP | THB8.10 |
| CHANGE IN TP | -18.5% |
| TP vs CONSENSUS | -0.5% |

KEY STOCK DATA

| YE Dec (THB m) | 2021 | 2022E | 2023E | 2024E |
|----------------------|-------|--------|--------|--------|
| Revenue | 9,318 | 10,482 | 12,555 | 12,882 |
| Net profit | 2,229 | 2,273 | 3,622 | 3,938 |
| EPS (THB) | 0.25 | 0.26 | 0.41 | 0.44 |
| vs Consensus (%) | - | (28.2) | 2.5 | (18.5) |
| EBITDA | 3,995 | 4,225 | 5,817 | 6,135 |
| Core net profit | 1,909 | 2,273 | 3,622 | 3,938 |
| Core EPS (THB) | 0.21 | 0.26 | 0.41 | 0.44 |
| Chg. In EPS est. (%) | 0.0 | (41.1) | (10.9) | (33.3) |
| EPS growth (%) | 49.5 | 19.1 | 59.3 | 8.7 |
| Core P/E (x) | 25.6 | 21.5 | 13.5 | 12.4 |
| Dividend yield (%) | 3.3 | 4.4 | 4.4 | 4.4 |
| EV/EBITDA (x) | 18.0 | 16.8 | 11.9 | 10.9 |
| Price/book (x) | 3.7 | 3.5 | 3.2 | 2.9 |
| Net debt/Equity (%) | 173.3 | 154.6 | 127.8 | 100.1 |
| ROE (%) | 15.0 | 16.9 | 24.9 | 24.3 |

Second transformation into a hemp-related business

Since GUNKUL's transformation from a low-margin, highly volatile EPC and trading company to a more sustainable power-driven organisation with significant earnings growth from renewable energy, we believe that starting in 2022 onward, GUNKUL will see its net profit structure undergo a period of S-curve growth. In our view, the main driver will be the hemp and cannabis business value chain that covers upstream farming, mid-stream extraction, and downstream F&B and pharmaceutical products using the CBD extracted from hemp and cannabis.

Hemp is coming to town

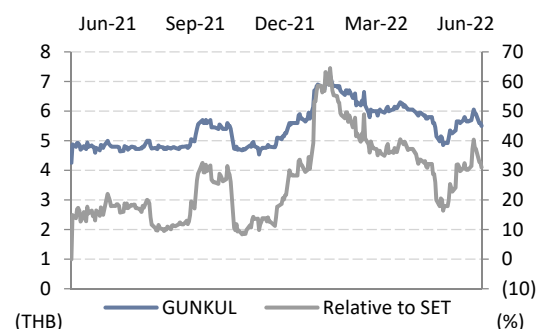
Starting in 2H22 onward, we project the proportion of GUNKUL's net profit from hemp to grow to 27% in 2022, 45% in 2023, and 59% in 2024, driven by the sale of upstream hemp flowers and mid-stream CBD isolate and full spectrum extracts, given the success of its first semi-indoor hemp farm with a production volume of 0.5t of hemp flowers in May-22. The hemp venture should lift GUNKUL's annual net profit from an average of THB2b in 2017-21 to THB3.5b in 2023 onwards. GUNKUL has already established its presence in the hemp industry and is now expanding into new markets overseas, while securing demand for CBD and hemp products in the domestic market.

Lower demand risks on secured domestic market and exports

As one of the first movers to enter the hemp business in Thailand, GUNKUL has been successfully growing and extracting CBD for commercial purposes in both the domestic and export markets. To reduce the initial demand risk, GUNKUL has locked in long-term demand for CBD extracts and HC flowers via a long-term contract to provide soluble CBD, CBD extracts, and hemp leaves to CPF and Black Canyon, one of Thailand's leading coffee and food chains.

Still one of Thailand's best plays on the booming hemp market

We maintain BUY and lower our SoTP-based TP from THB8.2 to THB6.6 to reflect our EPS forecast cuts for 2022-24 by 63%/3.9%/16% to reflect our assumption of a lower production level of hemp flowers and related derivative products due to the longer-than-expected delay in the legalisation of its use and consumption. We think GUNKUL's net profit growth will be driven and transformed by its hemp venture in 2022-24, which we project to grow from THB0.6b in 2022 to THB2.3b in 2024.



| Share price performance | 1 Month | 3 Month | 12 Month |
|--------------------------------|------------------------|---------|----------|
| Absolute (%) | 11.8 | (6.0) | 29.7 |
| Relative to country (%) | 11.1 | (1.6) | 32.3 |
| Mkt cap (USD m) | 1,395 | | |
| 3m avg. daily turnover (USD m) | 12.3 | | |
| Free float (%) | 44 | | |
| Major shareholder | GUNKUL Group Plc (50%) | | |
| 12m high/low (THB) | 7.20/4.08 | | |
| Issued shares (m) | 7,418.62 | | |

Sources: Bloomberg consensus; FSSIA estimates



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Investment thesis

GUNKUL is well positioned to capture Thailand's renewable energy (solar and wind power) growth, both as an operator and through engineering, procurement and construction (EPC), in our view. Its core power equipment trading business could further benefit from the LED boom, while its strong ties with the Myanmar government (20-year relationship) could enhance its earnings growth from power plants.

We expect contributions from its cannabis business to rise to 27% of its total net profit in 2022. GUNKUL is poised to register strong earnings growth, in our view, driven by potential net profit growth from its renewable power projects in Vietnam and higher net profits from its EPC backlog of THB11b from large-scale bidding for power substations and transmission lines. GUNKUL is likely to also see net profit growth from its new cannabis venture in 2022 onward.

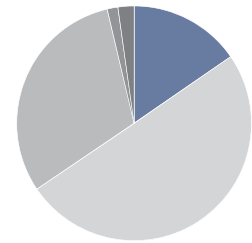
Company profile

GUNKUL is one of the largest renewable plays in Thailand with capacities for solar, wind, and gas engine power plants in Thailand and Myanmar.

www.gunkul.com

Principal activities (revenue, 2021)

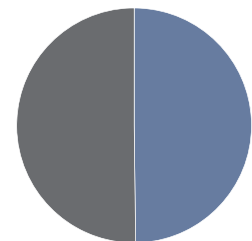
- Manufacturing and selling of equipment for electrical systems - 16.1 %
- Generating and selling electricity - 52.5 %
- Construction service - 32.2 %



Source: Gunkul Engineering

Major shareholders

- GUNKUL Group Plc - 49.8 %
- Others - 50.2 %



Source: Gunkul Engineering

Catalysts

Higher utilisation rates of power plants and rising demand for electricity in Thailand and Japan are key potential growth drivers.

Risks to our call

The downside risks to our SoTP-based TP on GUNKUL include 1) lower-than-expected demand for electricity in Thailand, 2) declining EPC backlogs, and 3) lower-than-expected utilisation rates for solar and wind farms.

Event calendar

| Date | Event |
|----------|---------------------------|
| Aug 2022 | 2Q22 results announcement |

Key assumptions

| | 2022E | 2023E | 2024E |
|-----------------------------------|--------|--------|--------|
| EPC revenue (THB m) | 1,000 | 1,200 | 1,000 |
| Trading revenue (THB m) | 1,483 | 1,483 | 1,483 |
| Cannabis flower production (kg) | 11,604 | 29,011 | 58,022 |
| Cannabis spectrum production (kg) | 2,089 | 5,222 | 10,444 |
| Cannabis CBD production (kg) | 1,083 | 2,708 | 5,415 |
| Cannabis net profit (THB m) | 619 | 1,612 | 2,321 |

Source: FSSIA estimates

Earnings sensitivity

- For every 1% increase in the gas price, we estimate 2022 earnings would rise by 1.1%, and vice versa, all else being equal.
- For every 1% increase in interest rate, we estimate 2022 earnings would fall by 1.3%, and vice versa, all else being equal.
- For every 1% increase in power utilisation rate, we estimate 2022 earnings would rise by 1.3%, and vice versa, all else being equal.

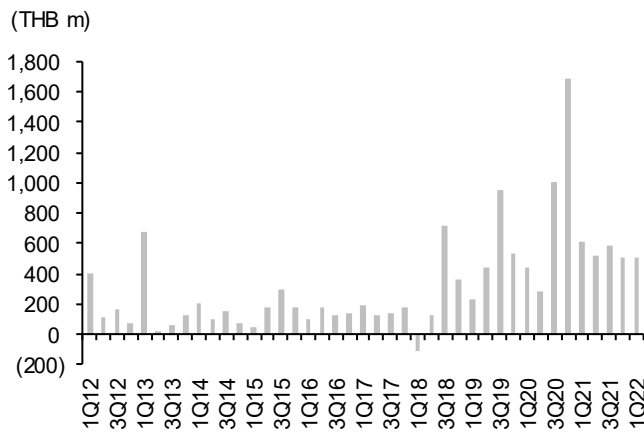
Source: FSSIA estimates

On the hemp growth radar

Since 2017, GUNKUL has successfully transformed itself from a low-margin, highly volatile engineering, procurement, and contractor (EPC) and trading company to a more sustainable, power-driven organisation with significant earnings growth from renewable energy, mainly from its 180MW wind farm projects.

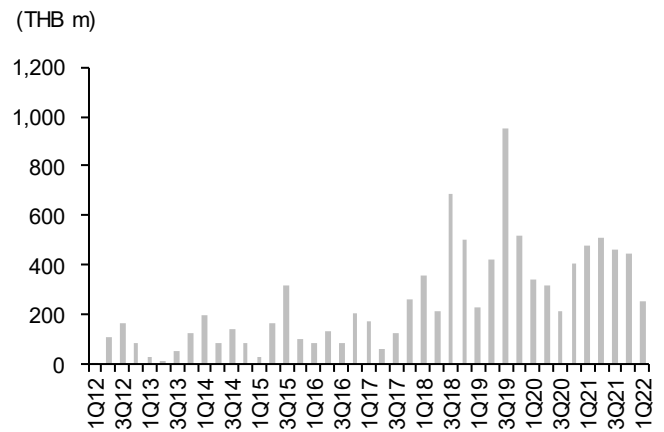
In 4Q20, GUNKUL restructured its asset portfolio, monetising its solar farm assets in Japan via divestments to raise capital to fund its next new S-curve growth project, which will focus on the hemp and cannabis business value chain that covers upstream farming, mid-stream extraction, and downstream food & beverages (F&B) and pharmaceutical products using the cannabidiol (CBD) extracted from hemp and cannabis.

Exhibit 1: Quarterly net profit



Source: GUNKUL

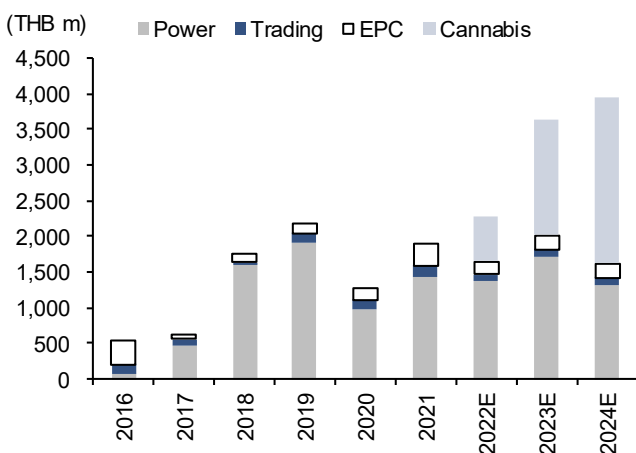
Exhibit 2: Quarterly core net profit



Source: GUNKUL

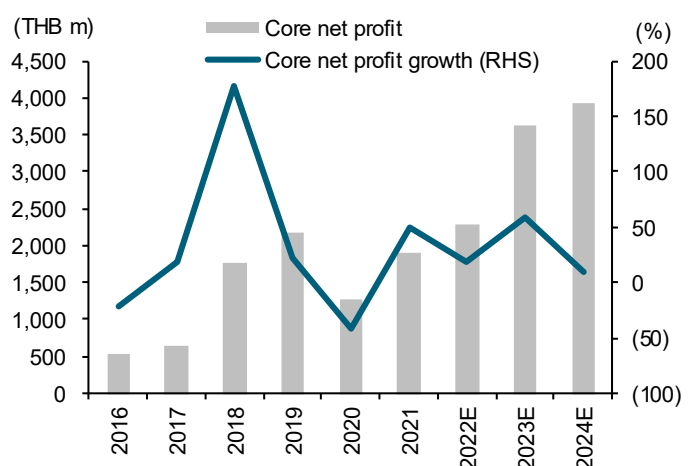
Hemp growth to kick start in 2H22. Starting in 2H22 onward, we project that GUNKUL will begin to see rising net profits generated from its hemp venture, given the success of its first semi-indoor hemp farm with a total production volume of 0.5 tonnes of hemp flowers in May-22.

Exhibit 3: Net profit breakdown by segment



Sources: GUNKUL; FSSIA estimates

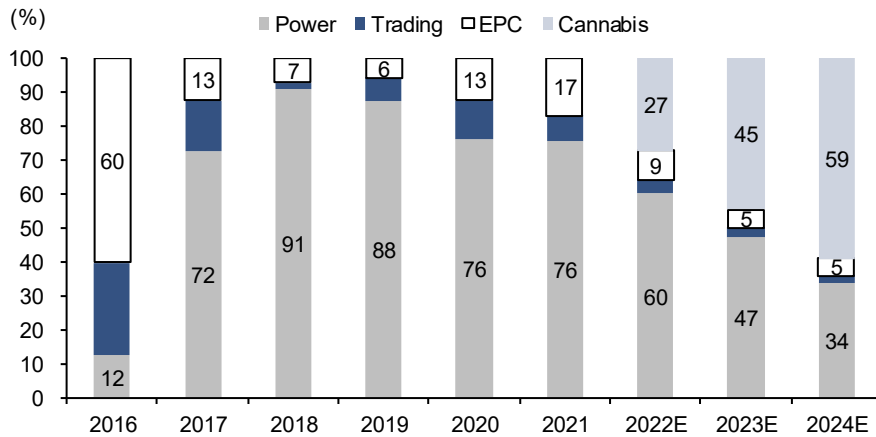
Exhibit 4: Core net profit and core net profit growth



Sources: GUNKUL; FSSIA estimates

The advent of the earnings from the hemp venture is likely to lift GUNKUL's earnings band from an average of THB2b annually in 2017-21 to THB3.5b in 2023 onwards, driven mainly by the earnings generated from the sale of upstream hemp and cannabis flowers for the export market, according to management. In 2022, we expect the earnings from hemp to remain small as GUNKUL is expanding into new markets overseas and securing demand for CBD and hemp products in the domestic market.

Exhibit 5: Net profit breakdown by segment (%)



Sources: GUNKUL; FSSIA estimates

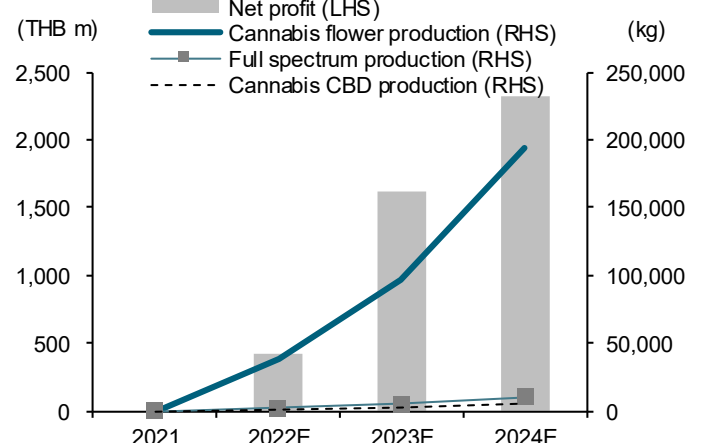
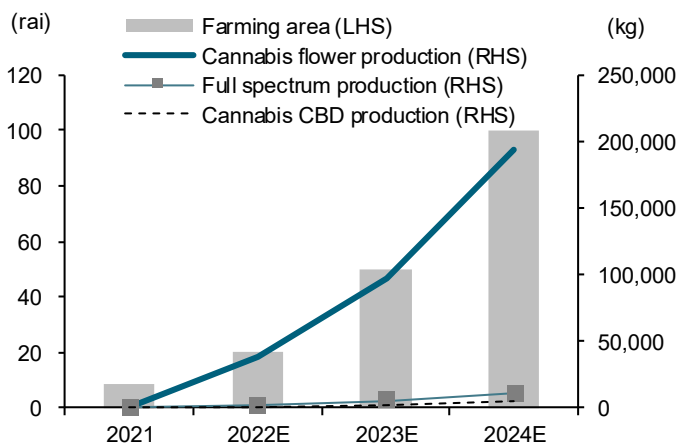
We project the net profit proportion from cannabis and hemp to grow from zero in 2021 to 27% in 2022, 45% in 2023, and 59% in 2024, derived from the sale of upstream hemp & cannabis (HC) flowers for both the domestic and export markets and mid-stream CBD isolate and full spectrum extracts.

According to management, GUNKUL is now seeking new markets for its HC flowers, which are projected to rise from 38.7k in 2022 to 193.4k in 2024, based on a projected farming area of 100 rai for the 100 semi-indoor greenhouses at 20 rai in 2022, rising to 50 rai in 2023 and 100 rai in 2024.

Our assumptions include the sale of HC flowers (35% of production yield), full spectrum (30%), CBD extract (30%), and HC leaves, trees, and roots (5%). We project that GUNKUL will generate earnings from its hemp and cannabis venture of THB0.6b in 2022, THB1.6b in 2023, and THB2.3b in 2024, driven by higher sales volumes, mainly for the export of hemp flowers, and rising revenues from the CBD and hemp-related products.

Exhibit 6: Forecasts of hemp farming area vs production of hemp and cannabis flowers, full spectrum, and CBD extract

Exhibit 7: Net profit projections vs production of hemp and cannabis flowers, full spectrum, and CBD extract



Sources: GUNKUL; FSSIA estimates

Sources: GUNKUL; FSSIA estimates

Exhibit 8: Key assumptions for our financial analysis of GUNKUL's hemp and cannabis venture

| Cannabis | 2021 | 2022E | 2023E | 2024E | Unit |
|----------------------------|------|--------|--------|---------|-------------|
| Farming area | 9 | 20 | 50 | 100 | rai |
| Cannabis flower production | 0 | 38,681 | 96,703 | 193,406 | kg per year |
| Full spectrum production | 0 | 2,089 | 5,222 | 10,444 | kg per year |
| Cannabis CBD production | 0 | 1,083 | 2,708 | 5,415 | kg per year |
| Net profit | 0 | 619 | 1,612 | 2,321 | THB m |

| Assumptions | 2022E | |
|-------------------------------|--------|--------------------|
| Greenhouse per rai | 1.0 | greenhouse per rai |
| Cannabis trunk per greenhouse | 1,776 | trunk |
| Flower per trunk | 0.3 | kg |
| Crop per year | 3.3 | crop |
| Flower production | 38,681 | kg per annum |

| Conversion | | |
|--------------------------------|---------|-------------------------|
| Flower | 1,000 | kg of flowers |
| Flower-to-full spectrum liquid | 180 | kg of full spectrum |
| Flower-to-CBD | 80 | kg of CBD (12%) |
| Dried cannabis flowers | 45,000 | THB/kg of flower |
| Full spectrum | 100,000 | THB/kg of full spectrum |
| Isolated distilled CBD | 150,000 | THB/kg of CBD |

| Investment cost | | |
|---------------------------|-------|---------|
| Investment | 5,000 | THB/sqm |
| Sqm-to-rai ratio | 1,600 | sqm/rai |
| Investment per greenhouse | 400 | THB m |
| Extraction plant | 300 | THB m |
| Total investment | 700 | THB m |

Sources: GUNKUL; FSSIA estimates

Exhibit 9: Financial analysis of GUNKUL's hemp and cannabis venture

| Assumptions | | | | | Unit |
|-------------------|--|-----|--|--|------------|
| Operating expense | | 100 | | | THB m/year |
| Depreciation | | 140 | | | THB m/year |
| Greenhouse | | 80 | | | THB m/year |
| Extraction plant | | 60 | | | THB m/year |

| 2022E | Mixed (base case) | Dried flower | Full spectrum cannabis extract | CBD isolate | Unit |
|---------------|-------------------|--------------|--------------------------------|-------------|--------|
| Selling price | 4,487 | 45,000 | 100,000 | 150,000 | THB/kg |

| Sales mix | | | | | |
|--------------------------------|----|-----|-----|-----|---|
| CBD isolate | 35 | | | 100 | % |
| Full spectrum cannabis extract | 30 | | 100 | | % |
| Dried flower | 30 | 100 | | | % |

| Sales volume | | | | | |
|--------------------------------|--------|--------|-------|-------|----|
| CBD isolate | 1,083 | | | 3,095 | kg |
| Full spectrum cannabis extract | 2,089 | | 6,963 | | kg |
| Dried flower | 11,604 | 38,681 | | | kg |

| Financial forecasts | Mixed (base case) | Dried flower | Full spectrum cannabis extract | CBD isolate | Unit |
|---------------------|-------------------|--------------|--------------------------------|-------------|-------|
| Revenue | 894 | 1,741 | 696 | 464 | THB m |
| Gross profit | 794 | 1,501 | 456 | 224 | THB m |
| Interest expense | (20) | (20) | (20) | (20) | THB m |
| EBT | 774 | 1,481 | 437 | 205 | THB m |
| Tax expense | (155) | (296) | (87) | (41) | THB m |
| Net profit | 619 | 1,185 | 349 | 164 | THB m |
| Payback period | 0.9 | 0.5 | 1.4 | 2.3 | years |

Sources: GUNKUL; FSSIA estimates

Thailand’s hemp product selling price structure

After the Thai government legalised the use of hemp and cannabis for public use, which includes own-use and commercial farming, CBD and full spectrum extractions, and as ingredients for F&B, pharmaceutical, and cosmetic products, GUNKUL, as one of the first movers to enter the HC industry, has been successfully growing and extracting CBD for commercial purposes in both the domestic and export markets.

To reduce the initial demand risk, GUNKUL has locked in long-term demand for CBD extracts and HC flowers via a long-term contract to provide soluble CBD, CBD extracts, and hemp leaves to Charoen Pokphand Foods (CPF TB, HOLD, TP THB28) and Black Canyon, one of Thailand’s leading coffee and food chains.

According to the [Thai Industry Hemp Trade Association \(TiHTA\)](#), there are lists of suggested prices for hemp products, including flowers grown via different approaches, leaves, roots, fibre, stalks, and seeds. While the suggested selling prices are not mandatory, they provide guidelines and the price benchmark for companies in the hemp value chain, which are more or less comparable or cheaper than the selling prices in other overseas markets, based on our estimate.

Exhibit 10: Suggested selling prices of hemp flowers by TiHTA

| Greenhouse | | Price (THB/kg) | |
|------------|--------|----------------|--|
| CBD level | Min | Max | |
| Over 12% | 22,000 | 22,000 | |
| 10-11.9% | 15,000 | 18,000 | |
| 8-9.9% | 10,000 | 13,000 | |
| 6.0-7.9% | 7,000 | 9,000 | |

| Indoor | | Price (THB/kg) | |
|-----------|--------|----------------|--|
| CBD level | Min | Max | |
| Over 14% | 45,000 | 50,000 | |
| 12-13.9% | 40,000 | 42,000 | |
| 10-11.9% | 35,000 | 38,000 | |
| 8-9.9% | 30,000 | 33,000 | |

| Dried hemp leaves | | Price (THB/kg) | |
|-------------------|-------|----------------|--|
| Plantation form | Min | Max | |
| Indoor | 3,000 | 15,000 | |
| Green House | 1,000 | 10,000 | |
| Outdoor | 300 | 2,000 | |

Source: [Thai Industrial Hemp Trade Association](#)

Exhibit 12: Hemp flowers



Source: [Thai Industrial Hemp Trade Association](#)

Exhibit 11: Suggested selling prices of hemp trees, fibre, stalks, roots, and seeds, by TiHTA

| Dried hemp (outdoor) | | Price (THB/kg) | |
|----------------------|-------|----------------|--|
| | Min | Max | |
| Fresh hemp tree | 20 | 20 | |
| Dry hemp tree | 80 | 100 | |
| Fibre | 1,000 | 1,000 | |
| Stalk | 300 | 300 | |

| Hemp root | | Price (THB/kg) | |
|-----------|-------------|----------------|--|
| | Organic | Non-organic | |
| Fresh | 700-1,200 | 250-500 | |
| Dry | 2,500-4,000 | 1,000-2,000 | |

| Hemp seeds | | Price (THB/kg) | |
|----------------------------|-------|----------------|--|
| | Min | Max | |
| Outdoor | 800 | 1,500 | |
| Grade A (clean and washed) | 1,500 | 1,500 | |
| Grade B | 700 | 800 | |

Source: [Thai Industrial Hemp Trade Association](#)

Exhibit 13: Hemp leaves



Source: [Thai Industrial Hemp Trade Association](#)

Exhibit 14: Hemp trees, fibre, and stalks



Source: [Thai Industrial Hemp Trade Association](#)

Exhibit 15: Hemp root



Source: [Thai Industrial Hemp Trade Association](#)

Exhibit 16: Hemp seeds



Source: [Thai Industrial Hemp Trade Association](#)

Exhibit 17: Hemp processing

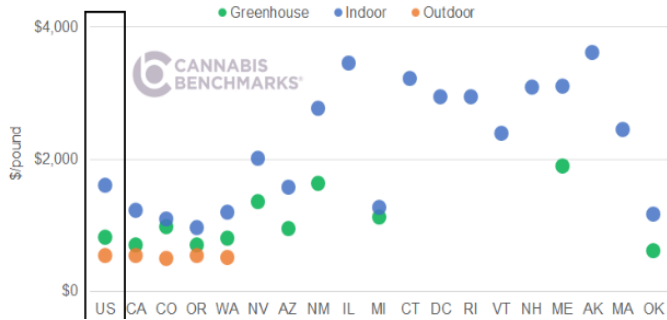


Source: [Thai Industrial Hemp Trade Association](#)

Global selling price structure for hemp products

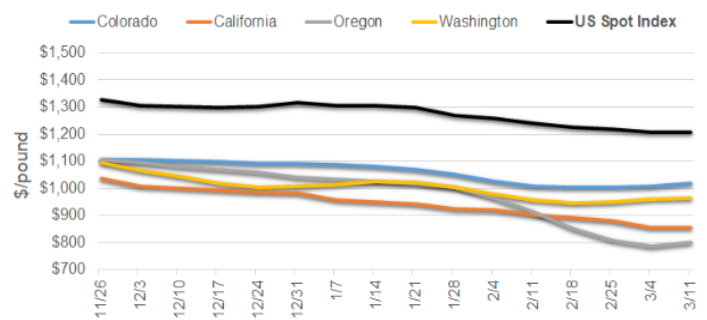
In 1Q22, according to [Green Growth CPAs](#), the aggregate national price of wholesale flowers for 18 states differing by grow type in the US market has continued its downtrend, standing at USD1,237 per pound (lb) in 1Q22, down 9% q-q and 18% y-y. The main reasons for the price fall include weak demand, as consumers are feeling the pinch of higher inflation, and the rising supply in the US market.

Exhibit 18: Hemp benchmark wholesale price by grow type as of 1Q22



Source: [GreenGrowthCPAs.com](#)

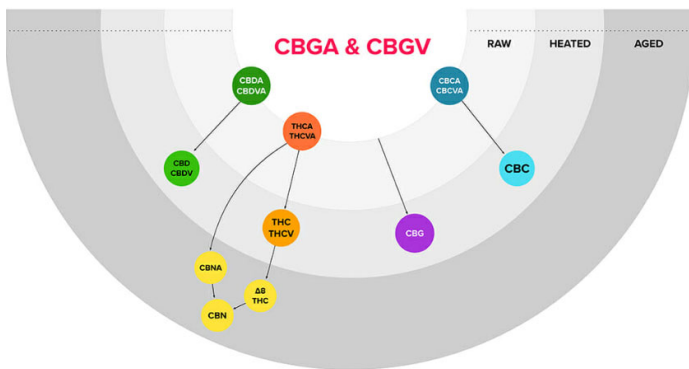
Exhibit 19: State level spot pricing (trailing 4-week average) for wholesale hemp flowers



Source: [GreenGrowthCPAs.com](#)

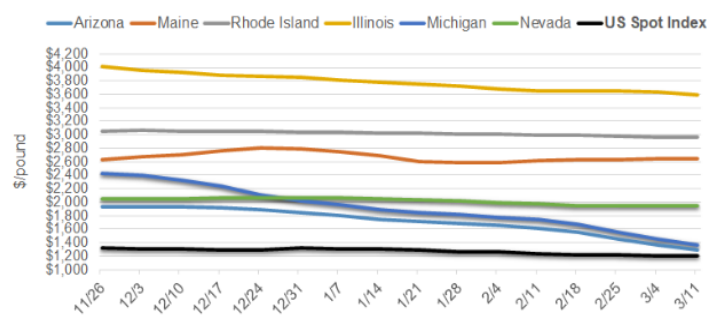
CBD price in the US market. While the wholesale prices in the major American hemp markets have continued to decline, the prices remain high above USD800/lb, with the highest price in Illinois at over USD3,600/lb down to USD800/lb in Oregon state. Since the enactment of the Agriculture Improvement Act by the US federal government to remove the low-tetrahydrocannabinol (THC) cannabis and cannabis-derived products from the marijuana stipulation by the Controlled Substances Act, the now-legal cannabinoid-derived products for consumer purchase and sale throughout the US have driven the demand for cannabis-derived products, growing significantly to become the world’s largest CBD market in 2021.

Exhibit 20: Hemp cannabinoid guide



Source: Green Unicorn Farms

Exhibit 21: State level spot pricing for wholesale hemp flowers



Sources: [GreenGrowthCPAs.com](#)

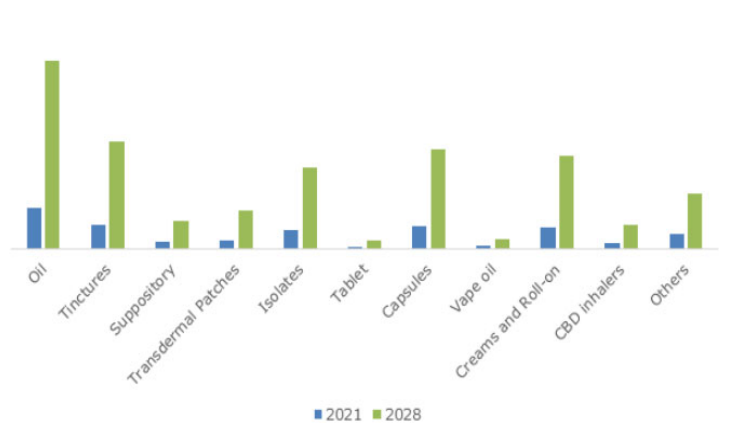
Global CBD market size. According to Global Market Insight, the global cannabidiol market size accounted for USD12.8b in 2021 and is estimated to grow at a 21.7% CAGR between 2022 and 2028 to reach USD56.3b in 2028. Rising awareness of the health benefits of CBD and its effectiveness in pain management & various other treatments is propelling the CBD industry's growth.

CBD is a chemical compound obtained from marijuana and hemp plants and is commonly used for medical purposes, including treating pain, anxiety, muscle disorders (dystonia), Crohn's disease, Parkinson's disease and many other medical conditions. Hence, CBD is gaining widespread popularity across different regions.

North America was the largest market in the past, on account of the legalisation of CBD for medical and research purposes on the continent, which led to rapidly increasing sales. The status of the product as a natural phytocompound, its strong promotion by companies as a lifestyle and wellness product, the launch of CBD-based pharmaceuticals, such as Sativex and Epidiolex, and the wide availability of various products containing this compound are further expected to propel the sale of CBD in the region in the coming years.

Exhibit 22: Global CBD market breakdown by region, 2021

Exhibit 23: CBD market by product (2021 vs 2028E) in USD m



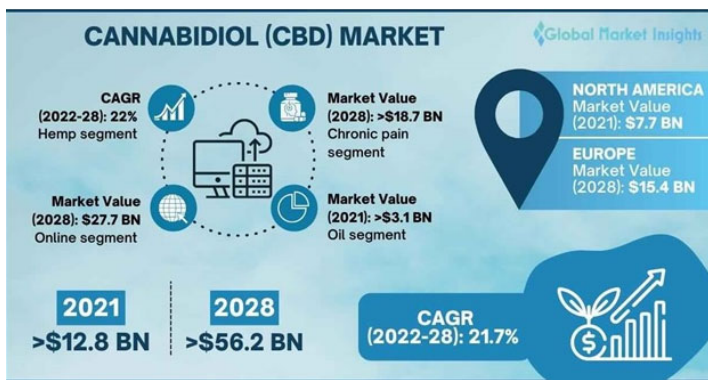
Source: [Global Market Insight](#)

Source: [Global Market Insight](#)

CBD market by product. According to Global Market Insight, by product, the CBD market is segmented into oils, tinctures, suppositories, transdermal patches, isolates, tablets, capsules, vape oils, creams and roll-ons, CBD inhalers and others. The oil segment accounted for over USD3.1b in revenue in 2021. CBD oil is made by extracting CBD from the cannabis plant and is commonly used in pain-related disorders owing to its extensive benefits.

Exhibit 24: CBD market size

Exhibit 25: Global CBD oil market in 2019



Source: [Global Market Insight](#)

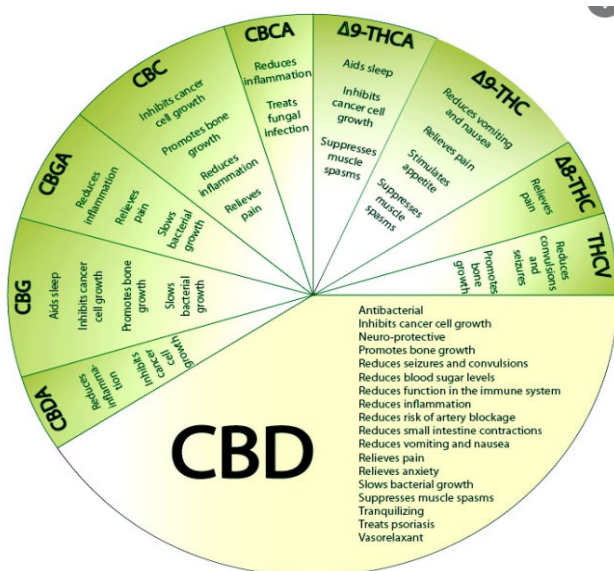
Source: [Prescient & Strategic Intelligence](#)

As an increasing number of people have adopted a sedentary lifestyle involving limited muscular movement, it has led to an increasing prevalence of chronic pain among adults. The significant disease burden of chronic pain is identified on a global level, and it is estimated that nearly 1 in 10 adults suffer from chronic pain, according to Global Market Insight. Hence, with such concerning statistics and regulatory authorities addressing the consumption of CBD, the market is anticipated to witness a significant surge in the coming years.

In the coming years, the fastest growth in the CBD oil market should be experienced by the tincture category, under segmentation by product. This is primarily credited to the growing demand for medical-use CBD by patients suffering from depression, anxiety, movement disorders, and pain.

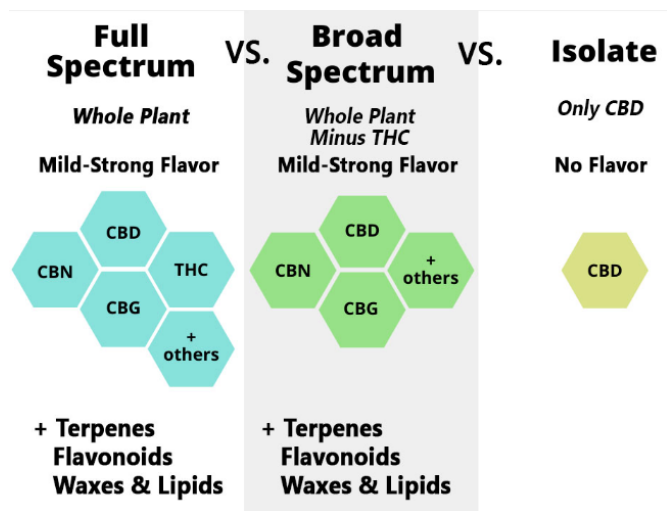
Moreover, Global Market Insight notes that the popularity of CBD tinctures is also rising among recreational users, whose number is expected to burgeon in the coming years. Other reasons behind the high demand for tinctures are that they are easily available via numerous distribution channels, including pharmacies, e-commerce websites, and retail and specialty stores, and have less-potent effects than other forms of the cannabinoid. Similarly, its administration route, i.e. sublingual, which involves placing the tincture under the tongue, is favoured over inhalation.

Exhibit 26: Extracted compounds from the cannabis plant



Source: [CBDAssist](#)

Exhibit 27: Full spectrum vs Broad spectrum vs Isolate



Source: [CBDAssist](#)

Three types of CBD. According to CBDAssist, For CBD oil products, there are three main classifications: Full Spectrum CBD, Broad Spectrum CBD, and CBD Isolate, each with great importance and varying roles. The three may equally be vital when it comes to providing therapeutic effects and relief, but each classification is prepared with a specific purpose in mind.

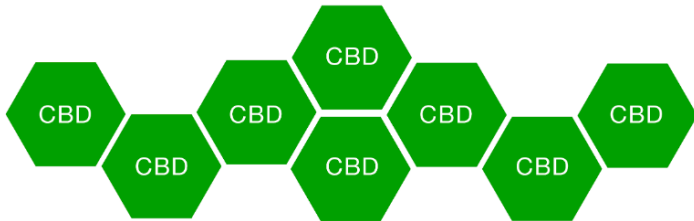
In general, cannabinoids enter the human body and directly interact with the body's own receptors called the Endocannabinoid System. Each type of cannabinoid has a distinct effect on humans and they also come with their own unique effect varying from case to case.

From the Cannabis plant, cannabinoids are extracted through different methods but the most widely used extraction method is known as CO2 extraction, where CBD is harvested along with other compounds which are also naturally present. Numerous other naturally occurring compounds in plants such as terpenes, flavonoids, essential oils, and even other plant parts can be extracted from the Cannabis plant, especially when using a highly organic and natural extracting method such as CO2 extraction.

Depending on the end product or the specific amount of CBD that is particularly needed, medical companies and laboratories can curate the cannabinoid profile and composition that is targeted. They can opt for pure CBD, CBD mixed with THC, or even have CBD with all its other natural compounds retained.

With the process and the CBD content in mind, the three classifications differ in what actually composes the CBD profile and which compounds are retained and which ones are removed. Hence, the question of whether to choose CBD isolate, full spectrum, or broad spectrum should be considered.

Exhibit 28: CBD isolate



Source: [CBDAssist](#)

CBD isolate: Known as the purest form possible of the cannabinoid compound, CBD isolate only contains CBD itself, with all other compounds removed during the extraction process. Typically, hemp is used to extract this specific type of CBD as hemp is known to have very low and close to non-existent levels of THC.

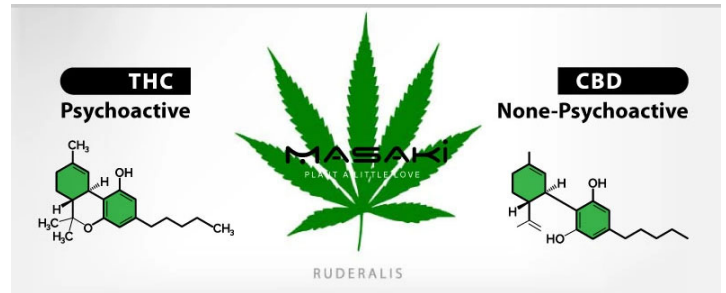
Without THC and minus all other natural compounds like flavonoids, essential oils, and terpenes, CBD isolate is generally considered to be safe for use, especially for those who are new to CBD and are just trying out its medicinal value. It is tasteless and odourless, purely containing only CBD in its purest form. With the absence of THC, individuals can benefit from its therapeutic qualities without any psychoactive side effects and without the risk of testing positive on drug tests, according to CBDAssist.

However, CBD isolate only has the one cannabinoid, Cannabidiol, and therefore its effects are not as fully potent as the other two types (full spectrum and broad spectrum). For prolonged use or for severe conditions, CBD isolate will not be able to produce highly effective therapeutic results as the full spectrum and broad spectrum CBD could deliver on a case to case basis.

CBDAssist notes that CBD isolate is ideally recommended to be used by:

- First-time users of CBD and those sensitive to strong odours and flavours;
- Users who need specifically high doses of CBD only;
- Users who regularly take drug screening tests and who might live in states with strict THC regulations and Cannabis laws;
- Users who are highly sensitive to THC and its unwanted side effects.

Exhibit 29: Cannabis molecular structure



Source: [Masaki](#)

Full spectrum: Full spectrum CBD contains all compounds in the Cannabis plant, which are all naturally occurring in its rawest form. Along with Cannabidiol, other cannabinoids and compounds are extracted from the plant such as terpenes, flavonoids, essential oils, and even tiny plant parts which can all work together to produce potent therapeutic benefits for the patient. With each compound taken alongside the other naturally occurring compounds present in the cannabis plant, full spectrum CBD has an “entourage effect”, wherein the body’s receptors can maximise absorption of the cannabinoids as well as the other natural compounds. With each dynamic component complimenting the others, full spectrum CBD can be highly effective in providing relief since the natural profile is almost preserved even after extraction, according to CBDAssist.

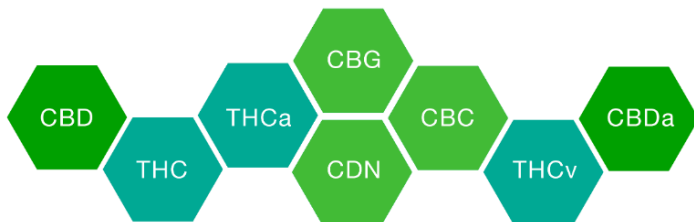
One of the main drawbacks of full spectrum CBD is the presence of THC as it is the compound known for its psychoactive effects and other unwanted Cannabis plant side effects. THC may show up in a drug test, which in turn could have legal implications.

Also, since full spectrum CBD retains most of its natural compounds and profiles, it has a strong distinct odour and potent natural flavour. It might be too much to handle for people with sensitivity to odours, easily nauseated patients, or even for those who are new to CBD products.

CBDAssist notes that full spectrum CBD products are ideal to be used by:

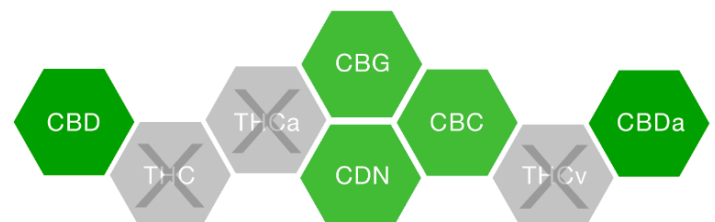
- Those who need a more potent CBD to experience maximum therapeutic effects, especially if using the two other CBD types aren’t enough to provide relief;
- Those who have used THC before (e.g. marijuana smokers) and are accustomed to its effects;
- Those with a specially prescribed or recommended THC to CBD ratio for high effectivity.

Exhibit 30: Full spectrum CBD



Sources: [CBDAssist](#)

Exhibit 31: Broad spectrum CBD



Sources: [CBDAssist](#)

Broad spectrum: Like a mix of full spectrum CBD and CBD isolate, broad spectrum CBD offers the best of both types when it comes to its special composition. Similar to full spectrum, broad spectrum has retained all naturally occurring compounds to achieve the enhanced “entourage effect” of cannabinoids when taken with other compounds. However, like CBD isolate, broad spectrum has THC completely removed to get rid of the unwanted psychoactive side effects and to also be risk-free when dealing with regular drug screenings. Basically, broad spectrum is full spectrum without THC.

Using broad spectrum CBD means getting to benefit from the two other types without the risks involved when dealing with THC. Broad spectrum CBD, however, has just recently been introduced which translates to having fewer scientific studies done to prove its effectivity vs the two other more established types. Availability is also a drawback as it isn’t as easily accessible as CBD isolate and full spectrum CBD, according to CBDAssist.

Because of its unique blend and great therapeutic qualities, broad spectrum CBD is ideal for:

- Those with conditions that are not responsive to CBD isolate alone;
- Those who are first-time users of CBD and are hesitant to try THC;
- Those who live in areas with THC restrictions and who regularly undergo drug test screenings for THC.

Though each type has its own unique composition, its own distinct profile, and its own specific effects on the human body, all three are equally useful depending on the user. Choosing which one is to be used may be an objective decision based on the individual's personal preference, condition, and therapeutic needs.

As it is getting recognition and acceptance worldwide, cannabinoid studies are getting more and more popular since it has been proven to hold so much potential in terms of its therapeutic qualities. With the existing studies coupled with more advanced research and on-going experiments, CBD products may be able to achieve their full potential as an essential game-changer in the field of medicine and in the lives of countless people.

Exhibit 32: SNNP's snack mixed with cannabis leaf



Source: SNNP

Exhibit 33: CBD application forms and labels



Source: [Label Value](#)

CBD applications: CBD has multiple uses in many forms, which have to be properly labelled to ensure that consumers fully understand and accurately use the CBD-contained products for their purposes. In general, there are six forms of CBD-contained products – tinctures, baked goods, gummies, beverages, supplements, and balms & lotions.

Food or supplement? CBD products need to be clearly determined for their qualities as food or supplement. If the product qualifies as a food or drink, it will be subject to the stipulations and regulations outlined by the Food and Drug Administration (FDA) – the FDA in Thailand is under the Ministry of Public Health.

In 2022 onward, we believe a host of CBD-contained products will be on the market for consumers to choose following the FDA's legalisation of the use of CBD and cannabis for F&B, pharmaceutical, and cosmetic purposes since 9 Jun-22.

In Thailand, there are a number of cannabis-related products already being marketed to consumers. One of the first-mover products that has been highly successful is the snack mixed with cannabis leaf produced by Srinanaporn Marketing (SNNP TB, BUY, TP THB20), one of Thailand's leading snack producers.

Cannabis and CBD have been used for medical purposes in Thailand for a few years now. In 2019, Thailand's first full-time clinics dispensing cannabis oil for medical treatment were opened. A cannabis flagship clinic under the management of Public Health Management handed over free cannabis oil to over 1,000 patients in a suburb of Bangkok since it opened its doors in 2019.

The government clearly intended to promote the licensed use of marijuana products to relieve the symptoms of a range of ailments even before the official legalisation of cannabis and hemp-related products for the public.

While the application of marijuana and CBD produced from hemp and cannabis remains regulated, the government is now promoting its use under certain conditions, allowing patients to seek medical treatment via marijuana, cannabis, and hemp.

CBD benefits. Cannabis has been used to treat pain for quite some time, and more recently various studies have stated that certain components of cannabis, including CBD, are responsible for pain-relieving effects. For instance, according to a study from Michigan University in 2021, out of 878 patients with fibromyalgia, 72% were reportedly using CBD to manage their pain. CBD helped to decrease their pain compared to other drug therapies which were less effective. Thus, the widespread use of CBD products along with changing consumer opinion has increased the adoption rate of CBD products, thereby propelling market statistics.

Legalisation of CBD to power hemp and cannabis market in Thailand

The major force taking the market toward a potential boom is the legalisation of the compound in numerous countries. Since the receipt of legal approval of CBD in Canada and the US, several countries have followed suit and many more are doing the same. Currently, a number of nations in Latin America, Asia-Pacific, and Europe have allowed the partial or complete sale of CBD-containing products. These include Norway, the UK, Japan, Spain, Thailand, South Korea, Brazil, Mexico, and South Africa.

Though regulations vary, the cultivation of cannabis and downstream production is rising across nations, which should create interest among prospective customers. This is helping governments to create additional jobs and gain revenue from the sale and licensing of CBD-containing products.

Additionally, with countries giving the regulatory approval to hemp and marijuana, investing in mass production and commercialisation, and bettering their supply and logistics chain, the demand for the compound and related products should be bolstered in the near future.

Thailand's development in the CBD industry. On 9 Jun-22, according to [Vice.com](https://www.vice.com), the Thai government legalised cannabis growing for the public, transforming Thailand into the region's most progressive country on the drug as the government attempts to spark a green rush and capitalise on the industry. Thai people are now free to grow unlimited amounts of cannabis, as a law ratified in Feb came into effect on 9 Jun-22. The plant has officially been removed from the country's narcotics list, although smoking marijuana in public is still an offense.

Crucially, cannabis extracts containing more than 0.2% THC – the main psychoactive element in cannabis that elicits the "high" – remain outlawed. So, while anyone is free to own and cultivate as many cannabis plants as they like – and are encouraged to register their crops on the FDA's Plookganja app – consuming what they produce remains technically illegal. Lawmakers are still in the midst of deliberating a bill regulating the sale and consumption of cannabis, though it's unclear under what circumstances this will permit people to consume the cannabis they produce.

GUNKUL as one of the first movers in Thailand's cannabis market. According to Prescient & Strategic Intelligence, the key trend being witnessed in the CBD oil market is the increasing investment volume across the value chain of the product. With the deregulation of hemp and CBD in several countries, companies are looking at it as a lucrative business area. Organisations are stepping up efforts to license the production of marijuana and hemp, set up downstream distribution channels, invest in research and development, develop the supply chain, enter new geographies, and increase the output of different products containing this cannabinoid.

All these steps are aimed at ensuring brand equity in the early-stage market, garnering a loyal customer base, and securing consistent revenue streams. Since 2018, major players in the global CBD oil market, Aurora Cannabis Inc., Canopy Growth Corporation, and Aphria Inc. have implemented a number of strategies to raise the sale of cannabidiol and increase their revenue. These include launching new products, acquiring licenses, and entering into collaborations with omni-channel marketing organisations, dispensaries, pharmacies, and specialty retailers. Similarly, market players are investing in enhancing their supply chain, to meet the demand for cannabidiol-related products.

Exhibit 34: Gun-Chaya clinics owned by THCG and GUNKUL **Exhibit 35: Interior of Gun-Chaya clinic**



Source: GUNKUL



Source: GUNKUL

Medical diseases for which marijuana and cannabis use is approved by the Thai government. According to [Cannabis for Thailand](#), the list of approved diseases for which marijuana and cannabis can be used for relief include – addiction withdrawal symptoms, allergies, Alzheimer's, anorexia, bedsores, bone fractures, bronchitis, cancer, cerebral palsy (children), chemotherapy, cirrhosis of liver, concussion, Crohn's disease, demyelinating disease, diabetes, epilepsy, glaucoma, hemorrhoids, HIV/AIDS, hydrocephalus, hypertension (high blood pressure), inflammation, lupus, lymphoma, migraine, menstrual cramps, obesity, ODC/ADHD, opiate addiction, pain, paralysis, Parkinson's disease, PTSD (Post-Traumatic Stress Disorder), reaction stress, rheumatism, schizophrenia, stroke, and Tourette's syndrome.

GUNKUL has invested THB250m to acquire a 50% stake in THCG group, one of the operators in the hemp and cannabis business with a full value chain of cultivation, extraction, and production of hemp and CBD-related products in the F&B and medical industries.

"Gun-Chaya" clinic, owned by THCG, is a clinic licensed to dispense the hemp, cannabis, and CBD products, including herbs, oils, medicines, aroma therapy, and treatment for insomnia, office syndrome, and migraines. GUNKUL plans to leverage THCG's assets to open up and grow its hemp and cannabis venture in 2022 onward, according to management.

EPS and target price revisions

We revise down our EPS forecasts for 2022-24 due to our assumption of a lower production level of hemp flowers and related derivative products due to the longer-than-expected delay in the legalisation of the use and consumption of hemp-related products for the public and our more conservative view on the initial sales volumes and margins for the hemp business. In essence, we cut our net profit forecasts for the hemp venture by 63%/3.9%/16% for 2022-24 to reflect our assumption of lower hemp flower production.

We lower our SoTP-based TP from THB8.2 to THB6.8 to reflect our lower EPS assumptions. We think GUNKUL's net profit growth will be driven and transformed by its hemp venture in 2022-24, which we project to grow from THB0.6b in 2022 to THB2.3b in 2024.

Exhibit 36: Key changes in assumptions

| | Current | | | Previous | | | Change | | |
|-----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------|--------------|--------------|
| | 2022E (THB m) | 2023E (THB m) | 2024E (THB m) | 2022E (THB m) | 2023E (THB m) | 2024E (THB m) | 2022E (%) | 2023E (%) | 2024E (%) |
| Revenue | 10,482 | 12,555 | 12,882 | 12,315 | 13,048 | 15,118 | (14.9) | (3.8) | (14.8) |
| Gross profit | 5,423 | 7,258 | 7,573 | 7,257 | 7,751 | 9,809 | (25.3) | (6.4) | (22.8) |
| Operating profit | 3,060 | 4,632 | 4,931 | 4,710 | 5,076 | 6,943 | (35.0) | (8.7) | (29.0) |
| Net profit | 2,273 | 3,622 | 3,938 | 3,860 | 4,067 | 5,906 | (41.1) | (10.9) | (33.3) |
| EPS (THB/share) | 0.26 | 0.41 | 0.44 | 0.43 | 0.46 | 0.66 | (41.1) | (10.9) | (33.3) |
| Key assumptions | | | | | | | | | |
| EPC revenue (THB m) | 1,000 | 1,200 | 1,000 | 1,000 | 1,200 | 1,000 | 0.0 | 0.0 | 0.0 |
| Trading revenue (THB m) | 1,483 | 1,483 | 1,483 | 1,483 | 1,483 | 1,483 | 0.0 | 0.0 | 0.0 |
| Cannabis flower production (kg) | 11,604 | 29,011 | 58,022 | 58,022 | 58,022 | 116,044 | (80.0) | (50.0) | (50.0) |
| Cannabis spectrum production (kg) | 2,089 | 5,222 | 10,444 | 10,444 | 10,444 | 20,888 | (80.0) | (50.0) | (50.0) |
| Cannabis CBD production (kg) | 1,083 | 2,708 | 5,415 | 5,415 | 5,415 | 10,831 | (80.0) | (50.0) | (50.0) |
| Cannabis net profit (THB m) | 619 | 1,612 | 2,321 | 1,677 | 1,679 | 2,762 | (63.1) | (3.9) | (16.0) |

Sources: GUNKUL; FSSIA estimates

Exhibit 37: SoTP-based valuation

| Cost of equity assumptions | | (%) | Cost of debt assumptions | | (%) |
|---------------------------------|--|---------------|--------------------------|--|------|
| Risk free rate | | 2.3 | Pretax cost of debt | | 3.5 |
| Market risk premium | | 8.5 | Marginal tax rate | | 20.0 |
| Stock beta | | 0.80 | | | |
| Cost of equity, Ke | | 9.1 | Net cost of debt, Kd | | 2.7 |
| Weight applied | | 20.0 | Weight applied | | 80.0 |
| WACC (%) | | 4.0 | | | |
| Sum-of-part valuation estimate | | (THB m) | (THB/share) | Comments | |
| EPC | | 3,900 | 0.4 | 20x FY21E P/E, discount to industry average of 22x | |
| Trading | | 1,898 | 0.2 | 20x FY21E P/E, discount to industry average of 22x | |
| Solar power | | 18,022 | 2.0 | DCF WACC 4% | |
| Wind power | | 20,936 | 2.4 | DCF WACC 4% | |
| Gas engine power | | 535 | 0.1 | DCF WACC 4% | |
| Cannabis | | 35,474 | 4.0 | 22x FY24E P/E | |
| Net cash | | (21,740) | (2.4) | Net cash on hand at end 2022E | |
| Residual ordinary equity | | 59,025 | 6.6 | | |

Sources: GUNKUL; FSSIA estimates

Financial Statements

Gunkul Engineering

| Profit and Loss (THB m) Year Ending Dec | 2020 | 2021 | 2022E | 2023E | 2024E |
|---|--------------|--------------|--------------|--------------|--------------|
| Revenue | 8,649 | 9,318 | 10,482 | 12,555 | 12,882 |
| Cost of goods sold | (4,167) | (4,352) | (5,059) | (5,298) | (5,308) |
| Gross profit | 4,482 | 4,967 | 5,423 | 7,258 | 7,573 |
| Other operating income | - | - | - | - | - |
| Operating costs | (955) | (972) | (1,198) | (1,441) | (1,438) |
| Operating EBITDA | 3,527 | 3,995 | 4,225 | 5,817 | 6,135 |
| Depreciation | (1,353) | (1,542) | (1,165) | (1,185) | (1,205) |
| Goodwill amortisation | 0 | 0 | 0 | 0 | 0 |
| Operating EBIT | 2,174 | 2,453 | 3,060 | 4,632 | 4,931 |
| Net financing costs | (915) | (860) | (842) | (854) | (796) |
| Associates | 73 | 218 | 208 | 97 | 97 |
| Recurring non-operating income | 150 | 527 | 301 | 236 | 236 |
| Non-recurring items | (88) | 320 | 0 | 0 | 0 |
| Profit before tax | 1,321 | 2,439 | 2,519 | 4,014 | 4,371 |
| Tax | (119) | (188) | (139) | (275) | (315) |
| Profit after tax | 1,202 | 2,252 | 2,380 | 3,739 | 4,056 |
| Minority interests | (13) | (22) | (107) | (117) | (118) |
| Preferred dividends | 0 | 0 | 0 | 0 | 0 |
| Other items | - | - | - | - | - |
| Reported net profit | 1,189 | 2,229 | 2,273 | 3,622 | 3,938 |
| Non-recurring items & goodwill (net) | 88 | (320) | 0 | 0 | 0 |
| Recurring net profit | 1,277 | 1,909 | 2,273 | 3,622 | 3,938 |
| Per share (THB) | | | | | |
| Recurring EPS * | 0.14 | 0.21 | 0.26 | 0.41 | 0.44 |
| Reported EPS | 0.13 | 0.25 | 0.26 | 0.41 | 0.44 |
| DPS | 0.14 | 0.18 | 0.24 | 0.24 | 0.24 |
| Diluted shares (used to calculate per share data) | 8,883 | 8,883 | 8,883 | 8,883 | 8,883 |
| Growth | | | | | |
| Revenue (%) | 21.8 | 7.7 | 12.5 | 19.8 | 2.6 |
| Operating EBITDA (%) | (10.6) | 13.2 | 5.8 | 37.7 | 5.5 |
| Operating EBIT (%) | (22.6) | 12.8 | 24.8 | 51.4 | 6.4 |
| Recurring EPS (%) | (50.8) | 49.5 | 19.1 | 59.3 | 8.7 |
| Reported EPS (%) | (53.8) | 87.5 | 2.0 | 59.3 | 8.7 |
| Operating performance | | | | | |
| Gross margin inc. depreciation (%) | 36.2 | 36.8 | 40.6 | 48.4 | 49.4 |
| Gross margin of key business (%) | 35.2 | 40.2 | 40.6 | 48.4 | 49.4 |
| Operating EBITDA margin (%) | 40.8 | 42.9 | 40.3 | 46.3 | 47.6 |
| Operating EBIT margin (%) | 25.1 | 26.3 | 29.2 | 36.9 | 38.3 |
| Net margin (%) | 14.8 | 20.5 | 21.7 | 28.8 | 30.6 |
| Effective tax rate (%) | 3.4 | 8.5 | 6.0 | 7.0 | 7.4 |
| Dividend payout on recurring profit (%) | 94.6 | 83.7 | 93.8 | 58.9 | 54.1 |
| Interest cover (X) | 2.5 | 3.5 | 4.0 | 5.7 | 6.5 |
| Inventory days | 56.5 | 60.7 | 65.8 | 71.6 | 73.2 |
| Debtor days | 82.9 | 84.8 | 52.9 | 47.5 | 49.9 |
| Creditor days | 137.1 | 171.3 | 136.8 | 148.8 | 152.1 |
| Operating ROIC (%) | 6.7 | (1.7) | (2.1) | (3.2) | (3.4) |
| ROIC (%) | 5.6 | (1.6) | (1.8) | (2.6) | (2.8) |
| ROE (%) | 11.1 | 15.0 | 16.9 | 24.9 | 24.3 |
| ROA (%) | 4.8 | 4.0 | 5.3 | 8.3 | 8.6 |
| * Pre-exceptional, pre-goodwill and fully diluted | | | | | |
| Revenue by Division (THB m) | | | | | |
| Manufacturing and selling of equipment for electrical systems | 1,188 | 1,500 | 1,000 | 1,200 | 1,000 |
| Generating and selling electricity | 5,031 | 4,888 | 6,158 | 6,691 | 6,234 |
| Construction service | 2,500 | 3,000 | 2,500 | 2,500 | 2,500 |
| Maintenance service | 145 | 145 | 145 | 145 | 145 |

Sources: Gunkul Engineering; FSSIA estimates

Financial Statements

Gunkul Engineering

| Cash Flow (THB m) Year Ending Dec | 2020 | 2021 | 2022E | 2023E | 2024E |
|-----------------------------------|----------------|----------------|----------------|--------------|----------------|
| Recurring net profit | 1,277 | 1,909 | 2,273 | 3,622 | 3,938 |
| Depreciation | 1,353 | 1,542 | 1,165 | 1,185 | 1,205 |
| Associates & minorities | 73 | 218 | 208 | 97 | 97 |
| Other non-cash items | - | - | - | - | - |
| Change in working capital | (4,192) | (516) | (170) | (587) | (207) |
| Cash flow from operations | (1,489) | 3,153 | 3,475 | 4,317 | 5,032 |
| Capex - maintenance | (1,353) | (1,542) | (456) | (481) | (506) |
| Capex - new investment | (2,376) | (407) | (44) | (19) | (6) |
| Net acquisitions & disposals | 165 | (267) | 0 | 0 | 0 |
| Other investments (net) | (707) | (2,996) | 208 | 97 | 97 |
| Cash flow from investing | (4,271) | (5,213) | (292) | (403) | (415) |
| Dividends paid | 0 | 0 | (1,599) | (2,132) | (2,132) |
| Equity finance | 0 | 426 | 0 | 0 | 0 |
| Debt finance | 4,449 | (2,024) | (2,968) | 1,821 | (1,179) |
| Other financing cash flows | 1,486 | 994 | (309) | (77) | (64) |
| Cash flow from financing | 5,935 | (604) | (4,876) | (388) | (3,375) |
| Non-recurring cash flows | - | - | - | - | - |
| Other adjustments | 0 | 0 | 0 | 0 | 0 |
| Net other adjustments | 0 | 0 | 0 | 0 | 0 |
| Movement in cash | 174 | (2,663) | (1,693) | 3,525 | 1,242 |
| Free cash flow to firm (FCFF) | (4,848.97) | (1,088.95) | 4,059.39 | 4,768.19 | 5,484.63 |
| Free cash flow to equity (FCFE) | 173.91 | (3,089.56) | (93.92) | 5,656.87 | 3,374.07 |

| Per share (THB) | 2020 | 2021 | 2022E | 2023E | 2024E |
|-------------------------------|--------|--------|--------|-------|-------|
| FCFF per share | (0.65) | (0.15) | 0.55 | 0.64 | 0.74 |
| FCFE per share | 0.02 | (0.42) | (0.01) | 0.76 | 0.45 |
| Recurring cash flow per share | 0.30 | 0.41 | 0.41 | 0.55 | 0.59 |

| Balance Sheet (THB m) Year Ending Dec | 2020 | 2021 | 2022E | 2023E | 2024E |
|---|---------------|---------------|---------------|---------------|---------------|
| Tangible fixed assets (gross) | 30,754 | 31,688 | 32,188 | 32,688 | 33,188 |
| Less: Accumulated depreciation | (3,811) | (5,152) | (6,317) | (7,502) | (8,706) |
| Tangible fixed assets (net) | 26,943 | 26,536 | 25,871 | 25,186 | 24,482 |
| Intangible fixed assets (net) | 3,578 | 3,463 | 3,463 | 3,463 | 3,463 |
| Long-term financial assets | - | - | - | - | - |
| Invest. in associates & subsidiaries | 1,566 | 1,833 | 1,833 | 1,833 | 1,833 |
| Cash & equivalents | 4,392 | 1,729 | 36 | 3,562 | 4,804 |
| A/C receivable | 2,864 | 1,466 | 1,570 | 1,696 | 1,825 |
| Inventories | 637 | 809 | 1,015 | 1,063 | 1,065 |
| Other current assets | 3,889 | 3,563 | 4,008 | 4,801 | 4,926 |
| Current assets | 11,782 | 7,567 | 6,630 | 11,122 | 12,620 |
| Other assets | 2,163 | 3,087 | 3,087 | 3,087 | 3,087 |
| Total assets | 46,032 | 42,485 | 40,884 | 44,691 | 45,485 |
| Common equity | 12,350 | 13,122 | 13,796 | 15,286 | 17,092 |
| Minorities etc. | 125 | 162 | 268 | 385 | 503 |
| Total shareholders' equity | 12,475 | 13,283 | 14,064 | 15,671 | 17,595 |
| Long term debt | 18,793 | 18,630 | 15,662 | 17,483 | 16,303 |
| Other long-term liabilities | 1,781 | 1,518 | 1,518 | 1,518 | 1,518 |
| Long-term liabilities | 20,574 | 20,149 | 17,181 | 19,001 | 17,822 |
| A/C payable | 2,404 | 1,681 | 2,110 | 2,209 | 2,214 |
| Short term debt | 7,975 | 6,114 | 6,114 | 6,114 | 6,114 |
| Other current liabilities | 2,604 | 1,258 | 1,415 | 1,695 | 1,739 |
| Current liabilities | 12,983 | 9,054 | 9,639 | 10,019 | 10,067 |
| Total liabilities and shareholders' equity | 46,032 | 42,485 | 40,884 | 44,691 | 45,485 |
| Net working capital | 2,383 | 2,898 | 3,069 | 3,656 | 3,863 |
| Invested capital | 36,632 | 37,817 | 37,323 | 37,225 | 36,728 |

* Includes convertibles and preferred stock which is being treated as debt

| Per share (THB) | 2020 | 2021 | 2022E | 2023E | 2024E |
|-------------------------------|------|------|-------|-------|-------|
| Book value per share | 1.39 | 1.48 | 1.55 | 1.72 | 1.92 |
| Tangible book value per share | 0.99 | 1.09 | 1.16 | 1.33 | 1.53 |

| Financial strength | 2020 | 2021 | 2022E | 2023E | 2024E |
|---------------------------|-------|-------|-------|-------|-------|
| Net debt/equity (%) | 179.4 | 173.3 | 154.6 | 127.8 | 100.1 |
| Net debt/total assets (%) | 48.6 | 54.2 | 53.2 | 44.8 | 38.7 |
| Current ratio (x) | 0.9 | 0.8 | 0.7 | 1.1 | 1.3 |
| CF interest cover (x) | 3.8 | (2.1) | 0.9 | 7.6 | 5.2 |

| Valuation | 2020 | 2021 | 2022E | 2023E | 2024E |
|---|-------------|-------------|-------------|-------------|-------------|
| Recurring P/E (x) * | 38.3 | 25.6 | 21.5 | 13.5 | 12.4 |
| Recurring P/E @ target price (x) * | 45.9 | 30.7 | 25.8 | 16.2 | 14.9 |
| Reported P/E (x) | 41.1 | 21.9 | 21.5 | 13.5 | 12.4 |
| Dividend yield (%) | 2.5 | 3.3 | 4.4 | 4.4 | 4.4 |
| Price/book (x) | 4.0 | 3.7 | 3.5 | 3.2 | 2.9 |
| Price/tangible book (x) | 5.6 | 5.1 | 4.7 | 4.1 | 3.6 |
| EV/EBITDA (x) ** | 20.2 | 18.0 | 16.8 | 11.9 | 10.9 |
| EV/EBITDA @ target price (x) ** | 23.0 | 20.5 | 19.1 | 13.6 | 12.5 |
| EV/invested capital (x) | 1.9 | 1.9 | 1.9 | 1.9 | 1.8 |

* Pre-exceptional, pre-goodwill and fully diluted ** EBITDA includes associate income and recurring non-operating income

Sources: Gunkul Engineering; FSSIA estimates

Corporate Governance report of Thai listed companies 2021

| EXCELLENT LEVEL – Score range 90-100 | | | | | | | | | | |
|--------------------------------------|--------|--------|--------|--------|--------|--------|---------|--------|-------|--------|
| AAV | BCPG | CPALL | GCAP | K | MSC | PLANET | SAMART | SPI | THRE | TVD |
| ADVANC | BDMS | CPF | GFPT | KBANK | MST | PLAT | SAMTEL | SPRC | THREL | TVI |
| AF | BEM | CPI | GGC | KCE | MTC | PORT | SAT | SPVI | TIPCO | TVO |
| AH | BGC | CPN | GLAND | KKP | MVP | PPS | SC | SSSC | TISCO | TWPC |
| AIRA | BGRIM | CRC | GLOBAL | KSL | NCL | PR9 | SCB | SST | TK | U |
| AKP | BIZ | CSS | GPI | KTB | NEP | PREB | SCC | STA | TKT | UAC |
| AKR | BKI | DDD | GPSC | KTC | NER | PRG | SCCC | STEC | TMT | UBIS |
| ALT | BOL | DELTA | GRAMMY | LALIN | NKI | PRM | SCG | STI | TNDT | UV |
| AMA | BPP | DEMCO | GULF | LANNA | NOBLE | PROUD | SCGP | SUN | TNITY | VGI |
| AMATA | BRR | DRT | GUNKUL | LH | NSI | DRSH | SCM | SUSCO | TOA | VIH |
| AMATAV | BTS | DTAC | HANA | LHFG | NVD | PSL | SDC | SUTHA | TOP | WACOAL |
| ANAN | BTW | DUSIT | HARN | LIT | NWR | PTG | SEAFECO | SVI | TPBI | WAVE |
| AOT | BWG | EA | HMPRO | LPN | NYT | PTT | SEAOIL | SYMC | TQM | WHA |
| AP | CENTEL | EASTW | ICC | MACO | OISHI | PTTEP | SE-ED | SYNTEC | TRC | WHAUP |
| ARIP | CFRESH | ECF | ICHI | MAJOR | OR | PTTGC | SELIC | TACC | TRU | WICE |
| ARROW | CHEWA | ECL | III | MAKRO | ORI | PYLON | SENA | TASCO | TRUE | WINNER |
| ASP | CHO | EE | ILINK | MALEE | OSP | Q-CON | SHR | TCAP | TSC | ZEN |
| AUCT | CIMBT | EGCO | ILM | MBK | OTO | QH | SIRI | TEAMG | TSR | |
| AWC | CK | EPG | INTUCH | MC | PAP | QTC | SIS | TFMAMA | TSTE | |
| AYUD | CKP | ETC | IP | MCOT | PCSGH | RATCH | SITHAI | TGH | TSTH | |
| BAFS | CM | FPI | IRPC | METCO | PDG | RS | SMK | THANA | TTA | |
| BANPU | CNT | FPT | ITEL | MFEC | PDJ | S | SMPC | THANI | TTB | |
| BAY | COM7 | FSMART | IVL | MINT | PG | S & J | SNC | THCOM | TTCL | |
| BBL | COMAN | GBX | JSP | MONO | PHOL | SAAM | SONIC | THG | TTW | |
| BCP | COTTO | GC | JWD | MOONG | PLANB | SABINA | SPALI | THIP | TU | |
| VERY GOOD LEVEL – Score range 80-89 | | | | | | | | | | |
| 2S | ASIMAR | CHOW | FLOYD | IT | LOXLEY | OCC | RPC | SKY | TCC | TVT |
| 7UP | ASK | CI | FN | ITD | LRH | OGC | RT | SLP | TCMC | TWP |
| ABICO | ASN | CIG | FNS | J | LST | PATO | RWI | SMIT | TEAM | UEC |
| ABM | ATP30 | CMC | FORTH | JAS | M | PB | S11 | SMT | TFG | UMI |
| ACE | B | COLOR | FSS | JCK | MATCH | PICO | SA | SNP | TFI | UOBKH |
| ACG | BA | CPL | FTE | JCKH | MBAX | PIMO | SAK | SO | TIGER | UP |
| ADB | BAM | CPW | FVC | JMART | MEGA | PJW | SALEE | SORKON | TITLE | UPF |
| AEONTS | BC | CRD | GEL | JMT | META | PL | SAMCO | SPA | TKN | UPOIC |
| AGE | BCH | CSC | GENCO | KBS | MFC | PM | SANKO | SPC | TKS | UTP |
| AHC | BEC | CSP | GJS | KCAR | MGT | PMTA | SAPPE | SPCG | TM | VCOM |
| AIT | BEYOND | CWT | GYT | KEX | MICRO | PPP | SAWAD | SR | TMC | VL |
| ALL | BFIT | DCC | HEMP | KGI | MILL | PPPM | SCI | SRICHA | TMD | VPO |
| ALLA | BJC | DCON | HPT | KIAT | MTSIB | PRIME | SCN | SSC | TMI | VRANDA |
| ALUCON | BJCHI | DHOUSE | HTC | KISS | MK | PRIN | SCP | SSF | TMILL | WGE |
| AMANAH | BLA | DOD | HYDRO | KOOL | MODERN | PRINC | SE | STANLY | TNL | WIK |
| AMARIN | BR | DOHOME | ICN | KTIS | MTI | PSG | SFLEX | STGT | TNP | WP |
| APCO | BROOK | DV8 | IFS | KUMWEL | NBC | PSTC | SFP | STOWER | TOG | XO |
| APCS | CBG | EASON | IMH | KUN | NCAP | PT | SFT | STPI | TPA | XPG |
| APURE | CEN | EFORL | IND | KWC | NCH | QLT | SGF | SUC | TPAC | YUASA |
| AQUA | CGH | ERW | INET | KWM | NETBAY | RBF | SIAM | SWC | TPCS | |
| ASAP | CHARAN | ESSO | INSET | L&E | NEX | RCL | SINGER | SYNEX | TPS | |
| ASEFA | CHAYO | ESTAR | INSURE | LDC | NINE | RICHY | SKE | TAE | TRITN | |
| ASIA | CHG | ETE | IRC | LEO | NRF | RML | SKN | TAKUNI | TRT | |
| ASIAN | CHOTI | FE | IRCP | LHK | NTV | ROJNA | SKR | TBSP | TSE | |
| GOOD LEVEL – Score range 70-79 | | | | | | | | | | |
| A | BGT | CITY | GIFT | JTS | MDX | PK | SGP | SUPER | TQR | YGG |
| AI | BH | CMAN | GLOCON | JUBILE | MJD | PLE | SICT | SVOA | TTI | ZIGA |
| AIE | BIG | CMO | GREEN | KASET | MORE | PPM | SIMAT | TC | TYCN | |
| AJ | BLAND | CMR | GSC | KCM | MUD | PRAKIT | SISB | TCCC | UKEM | |
| ALPHAX | BM | CPT | GTB | KK | NC | PRAPAT | SK | THMUI | UMS | |
| AMC | BROCK | CRANE | HTECH | KKC | NDR | PRECHA | SMART | TNH | UNIQ | |
| APP | BSBM | CSR | HUMAN | KWI | NFC | PTL | SOLAR | TNR | UPA | |
| AQ | BSM | D | IHL | KYE | NNCL | RJH | SPACK | TOPP | UREKA | |
| ARIN | BTNC | EKH | IIG | LEE | NOVA | RP | SPG | TPCH | VIBHA | |
| AS | BYD | EMC | INGRS | LPH | NPK | RPH | SQ | TPIPL | W | |
| AU | CAZ | EP | INOX | MATI | NUSA | RSP | SSP | TIPIP | WIN | |
| B52 | CCP | F&D | JAK | M-CHAI | PAF | SABUY | STARK | TPLAS | WORK | |
| BEAUTY | CGD | FMT | JR | MCS | PF | SF | STC | TPOLY | WPH | |

Disclaimer:

The disclosure of the survey results of the Thai Institute of Directors Association ("IOD") regarding corporate governance is made pursuant to the policy of the Office of the Securities and Exchange Commission. The survey of the IOD is based on the information of a company listed on the Stock Exchange of Thailand and the Market for Alternative Investment disclosed to the public and able to be accessed by a general public investor. The result, therefore, is from the perspective of a third party. It is not an evaluation of operation and is not based on inside information.

The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey results may be changed after that date. FSS International Investment Advisory Company Limited does not confirm nor certify the accuracy of such survey results.

* CGR scoring should be considered with news regarding wrong doing of the company or director or executive of the company such unfair practice on securities trading, fraud, and corruption SEC imposed a civil sanction against insider trading of director and executive

Sources: Thai Institute of Directors Association (IOD); FSSIA's compilation; data as of 26 October 2021

Anti-corruption Progress Indicator

| CERTIFIED | | | | | | | | | | |
|-----------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| 2S | BCH | CPALL | GC | K | MFC | PE | QLT | SNP | THCOM | TU |
| 7UP | BCP | CPF | GCAP | KASET | MFEC | PG | QTC | SORKON | THIP | TVD |
| ADVANC | BCPG | CPI | GEL | KBANK | MILL | PHOL | RATCH | SPACK | THRE | TVI |
| AF | BE8 | CPN | GFPT | KBS | MINT | PK | RML | SPALI | THREL | TVO |
| AI | BEYOND | CSC | GGC | KCAR | MONO | PL | RWI | SPC | TIDLOR | TWPC |
| AIE | BGC | DCC | GJS | KCE | MOONG | PLANB | S & J | SPI | TIPCO | U |
| AIRA | BGRIM | DELTA | GPI | KGI | MSC | PLANET | SAAM | SPRC | TISCO | UBE |
| AKP | BJCHI | DEMCO | GPSC | KKP | MST | PLAT | SABINA | SRICHA | TKS | UBIS |
| ALPHAX | BKI | DIMET | GSTEEL | KSL | MTC | PM | SAPPE | SSF | TKT | UEC |
| AMA | BLA | DRT | GUNKUL | KTB | MTI | PPP | SAT | SSP | TMD | UKEM |
| AMANAHA | BPP | DTAC | HANA | KTC | NBC | PPPM | SC | SSSC | TMILL | UOBKH |
| AMATA | BROOK | DUSIT | HARN | KWC | NEP | PPS | SCB | SST | TMT | UPF |
| AMATAV | BRR | EA | HEMP | KWI | NINE | PR9 | SCC | STA | TNITY | UV |
| AP | BSBM | EASTW | HENG | L&E | NKI | PREB | SCCC | STOWER | TNL | VGI |
| APCS | BTS | ECL | HMPRO | LANNA | NMG | PRG | SCG | SUSCO | TNP | VIH |
| AQUA | BWG | EGCO | HTC | LH | NNCL | PRINC | SCN | SVI | TNR | WACOAL |
| ARROW | CEN | EP | ICC | LHFG | NOBLE | PRM | SEAOIL | SYMC | TOG | WHA |
| AS | CENTEL | EPG | ICHI | LHK | NOK | PROS | SE-ED | SYNTEC | TOP | WHAUP |
| ASIAN | CFRESH | ERW | IFEC | LPN | NSI | PSH | SELIC | TAE | TOPP | WICE |
| ASK | CGH | ESTAR | IFS | LRH | NWR | PSL | SENA | TAKUNI | TPA | WIJK |
| ASP | CHEWA | ETE | ILINK | M | OCC | PSTC | SGP | TASCO | TPP | XO |
| AWC | CHOTI | FE | INET | MAKRO | OGC | PT | SINGER | TBSP | TRU | ZEN |
| AYUD | CHOW | FNS | INSURE | MALEE | ORI | PTG | SIRI | TCAP | TRUE | |
| B | CIG | FPI | INTUCH | MATCH | PAP | PTT | SITHAI | TCMC | TSC | |
| BAFS | CIMBT | FPT | IRC | MBAX | PATO | PTTEP | SKR | TFG | TSTE | |
| BAM | CM | FSMART | IRPC | MBK | PB | PTTGC | SMIT | TFI | TSTH | |
| BANPU | CMC | FSS | ITEL | MC | PCSGH | PYLON | SMK | TFMAMA | TTA | |
| BAY | COM7 | FTE | IVL | MCOT | PDG | Q-CON | SMPC | TGH | TTB | |
| BBL | COTTO | GBX | JKN | META | PDJ | QH | SNC | THANI | TTCL | |
| DECLARED | | | | | | | | | | |
| AJ | CHG | DDD | ETC | JR | MAJOR | NUSA | RS | SSS | TQM | YUASA |
| ALT | CPL | DHOUSE | FLOYD | JTS | NCAP | NYT | SAK | STECH | TSI | ZIGA |
| APCO | CPR | DOHOME | GULF | KEX | NCL | OR | SCGP | STGT | VARO | |
| B52 | CPW | ECF | III | KUMWEL | NOVA | PIMO | SCM | TKN | VCOM | |
| BEC | CRC | EKH | INOX | LDC | NRF | PLE | SIS | TMI | VIBHA | |

| Level | |
|-----------|---|
| Certified | This level indicates practical participation with thoroughly examination in relation to the recommended procedures from the audit committee or the SEC's certified auditor, being a certified member of Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) or already passed examination to ensure independence from external parties. |
| Declared | This level indicates determination to participate in the Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) |

Disclaimer:

The disclosure of the Anti-Corruption Progress Indicators of a listed company on the Stock Exchange of Thailand, which is assessed by Thaipat Institute, is made in order to comply with the policy and sustainable development plan for the listed companies of the Office of the Securities and Exchange Commission. Thaipat Institute made this assessment based on the information received from the listed company, as stipulated in the form for the assessment of Anti-corruption which refers to the Annual Registration Statement (Form 56-1), Annual Report (Form 56-2), or other relevant documents or reports of such listed company. The assessment result is therefore made from the perspective of Thaipat Institute that is a third party. It is not an assessment of operation and is not based on any inside information. Since this assessment is only the assessment result as of the date appearing in the assessment result, it may be changed after that date or when there is any change to the relevant information. Nevertheless, FSS International Investment Advisory Company Limited does not confirm, verify, or certify the accuracy and completeness of the assessment results.

Note: Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of 26 October 2021) are categorised into: 1) companies that have declared their intention to join CAC, and; 2) companies certified by CAC.

Sources: The Securities and Exchange Commission, Thailand; * FSSIA's compilation

GENERAL DISCLAIMER

ANALYST(S) CERTIFICATION

Suwat Sinsadok, CFA, FRM, ERP FSS International Investment Advisory Securities Co., Ltd

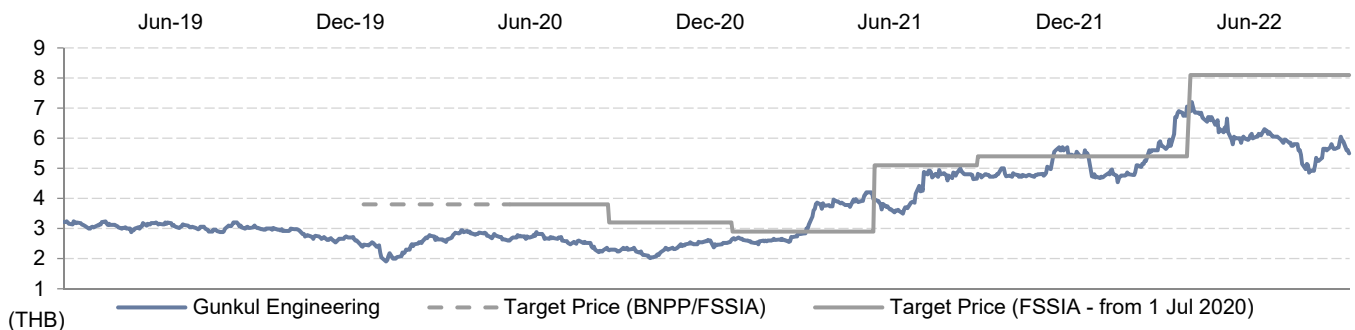
The individual(s) identified above certify(ies) that (i) all views expressed in this report accurately reflect the personal view of the analyst(s) with regard to any and all of the subject securities, companies or issuers mentioned in this report; and (ii) no part of the compensation of the analyst(s) was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed herein.

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History of change in investment rating and/or target price

Gunkul Engineering (GUNKUL TB)



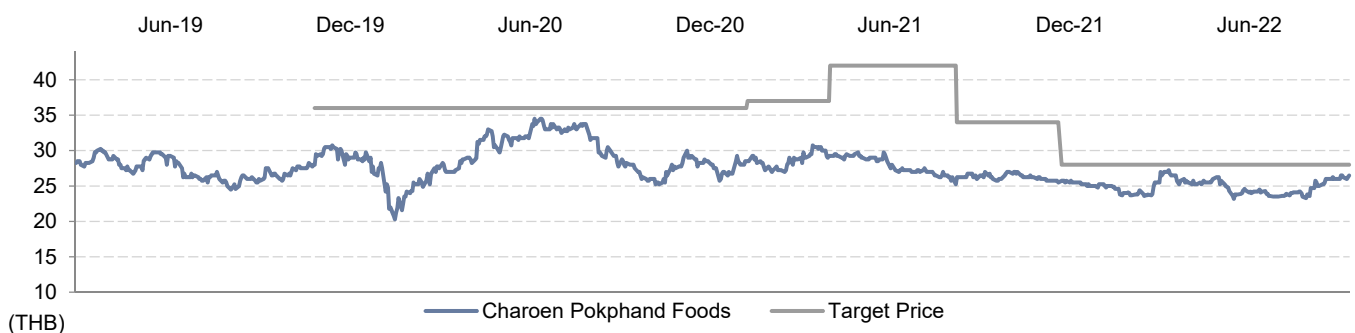
| Date | Rating | Target price | Date | Rating | Target price | Date | Rating | Target price |
|-------------|--------|--------------|-------------|--------|--------------|-------------|--------|--------------|
| 27-Feb-2020 | BUY | 3.80 | 05-Jan-2021 | BUY | 2.90 | 02-Aug-2021 | BUY | 5.40 |
| 22-Sep-2020 | BUY | 3.20 | 06-May-2021 | BUY | 5.10 | 28-Jan-2022 | BUY | 8.10 |

Suwat Sinsadok, CFA, FRM, ERP started covering this stock from 14-May-2020

Price and TP are in local currency

Source: FSSIA estimates

Charoen Pokphand Foods (CPF TB)



| Date | Rating | Target price | Date | Rating | Target price | Date | Rating | Target price |
|-------------|--------|--------------|-------------|--------|--------------|-------------|--------|--------------|
| 08-Jan-2020 | BUY | 36.00 | 25-Mar-2021 | BUY | 42.00 | 08-Oct-2021 | HOLD | 28.00 |
| 13-Jan-2021 | BUY | 37.00 | 12-Jul-2021 | BUY | 34.00 | | | |

Suwat Sinsadok, CFA, FRM, ERP started covering this stock from 29-Apr-2022

Price and TP are in local currency

Source: FSSIA estimates

Srinanaporn Marketing (SNNP TB)



| Date | Rating | Target price | Date | Rating | Target price | Date | Rating | Target price |
|-------------|--------|--------------|-------------|--------|--------------|------|--------|--------------|
| 30-Jul-2021 | BUY | 15.00 | 20-Jan-2022 | BUY | 20.00 | - | - | - |

Suwat Sinsadok, CFA, FRM, ERP started covering this stock from 29-Apr-2022

Price and TP are in local currency

Source: FSSIA estimates

| Company | Ticker | Price | Rating | Valuation & Risks |
|------------------------|-----------|-----------|--------|---|
| Gunkul Engineering | GUNKUL TB | THB 5.50 | BUY | The downside risks to our SoTP-based TP on GUNKUL include 1) lower-than-expected demand for electricity in Thailand, 2) declining EPC backlogs, and 3) lower-than-expected utilisation rates for solar and wind farms |
| Charoen Pokphand Foods | CPF TB | THB 26.50 | HOLD | The key downside risks to our SoTP-based target price are the volatile pork prices in both Thailand and Vietnam which could hurt revenues and the company's gross margin. Key upside risk is faster-than-expected recovery of livestock price in region and lower feed stock cost. |
| Srinanaporn Marketing | SNNP TB | THB 15.30 | BUY | The key downside risks to our DCF-based TP are 1) slower-than-expected demand growth and market penetration overseas, especially in Cambodia and Vietnam; 2) a lower-than-expected profit margin due to high raw material and transportation costs; and 3) higher-than-expected SG&A expenses from overseas operations. |

Source: FSSIA estimates

Additional Disclosures

Target price history, stock price charts, valuation and risk details, and equity rating histories applicable to each company rated in this report is available in our most recently published reports. You can contact the analyst named on the front of this note or your representative at Finasia Syrus Securities Public Company Limited

FSSIA may incorporate the recommendations and target prices of companies currently covered by FSS Research into equity research reports, denoted by an 'FSS' before the recommendation. FSS Research is part of Finasia Syrus Securities Public Company Limited, which is the parent company of FSSIA.

All share prices are as at market close on 15-Jun-2022 unless otherwise stated.

RECOMMENDATION STRUCTURE

Stock ratings

Stock ratings are based on absolute upside or downside, which we define as $(\text{target price}^* - \text{current price}) / \text{current price}$.

BUY (B). The upside is 10% or more.

HOLD (H). The upside or downside is less than 10%.

REDUCE (R). The downside is 10% or more.

Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on market price and the formal recommendation.

* In most cases, the target price will equal the analyst's assessment of the current fair value of the stock. However, if the analyst doesn't think the market will reassess the stock over the specified time horizon due to a lack of events or catalysts, then the target price may differ from fair value. In most cases, therefore, our recommendation is an assessment of the mismatch between current market price and our assessment of current fair value.

Industry Recommendations

Overweight. The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.

Neutral. The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.

Underweight. The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

Country (Strategy) Recommendations

Overweight (O). Over the next 12 months, the analyst expects the market to score positively on two or more of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Neutral (N). Over the next 12 months, the analyst expects the market to score positively on one of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Underweight (U). Over the next 12 months, the analyst does not expect the market to score positively on any of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.