EQUITY RESEARCH - INITIATION REPORT

21 JUNE 2021

THAILAND / AIRPORT SERVICES

BANGKOK AVIATION FUEL SERVICES BAFS TB

BUY

TARGET PRICE	THB40.00
CLOSE	THB28.50
UP/DOWNSIDE	+40.4%
TP vs CONSENSUS	+16.9%

การโต้กลับของธุรกิจเติมเชื้อเพลิงอากาศยาน

3 เสาค้ำยันพอร์ตธุรกิจพลังงานที่สร้างกระแสเงินสด

จดทะเบียนในตลาดหลักทรัพย์ฯ ในปี 2002 Bangkok Aviation Fuel Services (BAFS) เป็นบริษัทผู้ให้บริการพลังงานที่มีความเป็นเอกลักษณ์มากที่สุดของไทยด้วย 3 ธุรกิจหลักที่มีรายได้ส่วนมากจากค่าบริการและผลักดันด้วยปริมาณประกอบด้วย ธุรกิจเติมเชื้อเพลิงอากาศยาน ธุรกิจขนส่งทางท่อ และธุรกิจโรงไฟฟ้าพลังแสงอาทิตย์ที่บริษัทฯ พึ่งเพิ่มเข้ามาเมื่อไม่เร็ว ๆ นี้ ระบบเก็บและเติมเชื้อเพลิงอากาศหลักของบริษัทฯ ใน 5 สนามบินสำคัญซึ่งรวมถึงสุวรรณภูมิและดอนเมืองเป็นธุรกิจทำเงินแถวหน้ามาอย่างยาวนานจนกระทั่งได้รับผลกระทบจากการแพร่ระบาด Covid-19 ในปี 2020 จากการถือหุ้นใน FPT บริษัทฯ เป็นเจ้าของและประกอบกิจการขนส่งทางท่อ 2 ระบบครอบคลุมภาคกลาง ภาคตะวันออก และภาคเหนือของไทย ในท้ายที่สุด BAFS พึ่งจะเข้าดำเนินธุรกิจโรงไฟฟ้าพลังแสงอาทิตย์เพื่อกระจายความเสี่ยงออกจากธุรกิจขนส่งภาคพื้นดินและอากาศยาน

คาดกำไรจากธุรกิจเติมเชื้อเพลิงจะเพิ่มในระดับสูงนับตั้งแต่ 2H21 เป็นต้นไป

แม้ว่าบริษัทฯ จะได้รับผลกระทบจากความต้องการเชื้อเพลิงอากาศยานที่หดหายไปจากปัญหาการแพร่ระบาด Covid ในปี 2020 ธุรกิจขนส่งน้ำมันและเติมเชื้อเพลิงอากาศยานของ BAFS น่าจะรายงานกำไรฟื้นตัวอย่างมีนัยสำคัญนับตั้งแต่ 2H21 เป็นต้นไปจาก 1) การฟื้นตัวของความต้องการสำหรับเชื้อเพลิงอากาศยาน (จากการเติม) และผลิตภัณฑ์น้ำมันที่กลั่นแล้ว (ผ่านระบบขนส่งทางท่อ) หลังประเทศไทยกลับมาเปิดอุตสาหกรรมท่องเที่ยวและกิจกรรมทางเศรษฐกิจ; และ 2) ต้นทุนคงที่ของธุรกิจเติมเชื้อเพลิงที่ 60-70% ของต้นทุนรวมทำให้ต้องเติมเชื้อเพลิงเพียง 2.0พันล้านลิตรก็จะเท่าทุน ซึ่งต่ำกว่าระดับ 5.6พันล้านลิตรในช่วงก่อน Covid ในปี 2017-19 เราคาดว่าปริมาณการเติมเชื้อเพลิงของ BAFS จะค่อย ๆ ปรับตัวขึ้นจากจุดคุ้มทุนใน 4Q21 สู่ระดับก่อน Covid ภายใน 2Q22 ซึ่งจะผลักดันให้กำไรสุทธิกลับสู่ระดับ 1.1-1.6พัน ลบ. ในปี 2022-23

รีดเงินจาก 2 กิจการประกอบด้วยธุรกิจขนส่งทางท่อและโรงไฟฟ้าพลัง

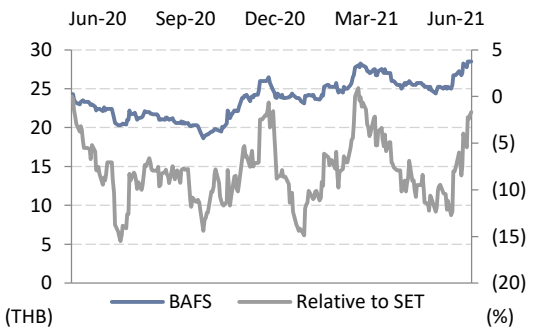
เราคาดว่าระบบขนส่งทางท่อทั้ง 2 ระบบของ BAFS ในภาคกลางและภาคเหนือของไทยจะกลายเป็นธุรกิจที่สร้างกำไรสุทธิที่ยั่งยืนให้แก่บริษัทฯ นับตั้งแต่ปี 2021 เป็นต้นไปหลังระบบท่อในภาคเหนือเริ่มดำเนินงานเชิงพาณิชย์ นอกจากนี้เราคาดว่าการกระจายความเสี่ยงของ BAFS ไปสู่ธุรกิจพลังงานหมุนเวียนผ่าน 7 โรงไฟฟ้าพลังแสงอาทิตย์ที่บริษัทฯ พึ่งซื้อมาอาจสร้างรายได้กว่า 0.3พัน ลบ. และเพิ่มกำไรสุทธิของบริษัทฯ อีก 5.7% ในปี 2021 และ 2.9% ในปี 2022

เริ่มต้นคำแนะนำซื้อที่ราคาเป้าหมาย 40 บาท

เราเริ่มรายงาน BAFS ด้วยคำแนะนำซื้อที่ราคาเป้าหมาย 40 บาท (SOTP) ประกอบด้วย 1) 19.1 บาทจากธุรกิจเติมเชื้อเพลิงอากาศยาน (24x ของค่า 2022E P/E ซึ่งใกล้กับค่าเฉลี่ยในอดีต); 2) 5 บาทจากธุรกิจโรงไฟฟ้าพลังแสงอาทิตย์ (DCF, WACC 7.06%); และ 3) 25 บาทจาก ธุรกิจขนส่งทางท่อกล่าวคือ FPT (DCF, WACC 5.22%)

KEY STOCK DATA

YE Dec (THB m)	2020	2021E	2022E	2023E
Revenue	1,804	1,651	4,338	5,884
Net profit	(372)	(107)	1,103	1,580
EPS (THB)	(0.58)	(0.17)	1.73	2.48
vs Consensus (%)	-	nm	686.4	106.7
EBITDA	481	664	2,363	2,881
Core net profit	(374)	(107)	1,103	1,580
Core EPS (THB)	(0.59)	(0.17)	1.73	2.48
Chg. In EPS est. (%)	nm	nm	nm	nm
EPS growth (%)	nm	nm	nm	43.2
Core P/E (x)	(48.5)	(169.6)	16.5	11.5
Dividend yield (%)	4.2	-	2.4	3.5
EV/EBITDA (x)	59.2	41.0	10.7	8.2
Price/book (x)	3.3	3.7	3.0	2.5
Net debt/Equity (%)	133.2	125.1	79.2	48.7
ROE (%)	(6.2)	(2.1)	20.0	23.5



Share price performance	1 Month	3 Month	12 Month
Absolute (%)	14.9	5.6	14.0
Relative to country (%)	11.6	2.7	(3.0)

Mkt cap (USD m)	578
3m avg. daily turnover (USD m)	0.4
Free float (%)	45
Major shareholder	RATCH Group PCL (16%)
12m high/low (THB)	29.75/18.60
Issued shares (m)	637.50

Sources: Bloomberg consensus; FSSIA estimates

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บทวิเคราะห์ฉบับนี้แปลมาจากบทวิเคราะห์ของ FSSIA ฉบับวันที่ 21 มิถุนายน 2021

Investment thesis

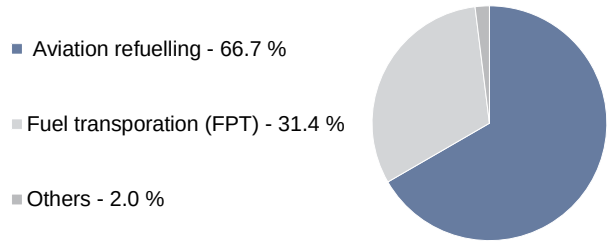
We project BAFS' revenue to increase from THB1,804m in 2020 to THB4,338m in 2022, with a CAGR of 50%. Our projection is based on the assumption that tourism activities and flights will resume after the vaccination rollout, which could potentially increase BAFS' refuelling volume from 2,123m in 2020 to 5,488m litres in 2021. Additionally, the company should see additional revenue from its solar power plants of around THB300m yearly.

Company profile

BAFS provides aviation fuel storage and refuelling system services at five airports. Its main subsidiary is a pipeline transportation company and it has recently ventured into the renewable energy sector by acquiring solar power plants.

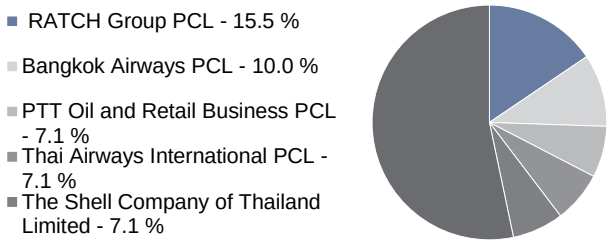
www.bafsthai.com

Principal activities (revenue, 2020)



Source: Bangkok Aviation Fuel Services

Major shareholders



Source: Bangkok Aviation Fuel Services

Catalysts

1) A recovery of the tourism industry and jet fuel demand;

2) The finishing of NFPT phase 2, which will cover a wider area and capture more market share;

3) A substantial amount of revenue from its solar power plants.

Risks to our call

Downside risks to our SOTP-based target price include a slower than expected vaccination rate, which would lead to slower demand in tourism activities, plus uncertainties over the fuel volume demand in the North, which could lead to volatilities in Fuel Pipeline Transportation Limited (FPT)'s income.

Event calendar

Date	Event
Aug 2021	2Q21 result announcement

Key assumptions

	2021E	2022E	2023E
	(m litres)	(m litres)	(m litres)
Aviation refuelling volume	1,153	5,488	8,021
BKK refuelling volume	486	4,093	6,228
DMK refuelling volume	667	1,395	1,793
FPT volume	2,872	2,901	2,930
NFPT volume	297	371	445

Source: FSSIA estimates

Earnings sensitivity

- For every 10% increase in refuelling volume for both airports, we project 2022 earnings to rise by 5.6%, and vice versa, all else being equal.
- For every 10% increase in FPT and NFPT's volume, we project 2022 earnings to rise by 2.85%, and vice versa, all else being equal.

Source: FSSIA estimates

Background

Founded in 1983 in response to a cabinet resolution to facilitate aircraft refuelling services for airports, BAFS provides aircraft refuelling services for five airports, including Thailand's two largest airports, Suvarnabhumi (BKK) and Don Muang (DMK), as well as Sukhothai, Samui, and Trat.

Fuel Pipeline Transportation Limited (FPT) was established in 1991 and became a subsidiary of BAFS in 2012. Its business is to provide efficient fuel transportation systems, and has become one of the major revenue contributors to BAFS.

In 1996, Thai Aviation Refueling Co., Ltd. was established as a joint venture with BAFS, New Bangkok International Airport Company Limited and the Industrial Finance Corporation of Thailand, to operate a hydrant pipeline system at Suvarnabhumi Airport.

Most recently, BAFS Clean Energy Corporation Company Limited was founded in 2020 – acquiring seven solar power plants in 2021 – with the aim to diversify BAFS' business portfolio from the jet fuel and refined oil businesses. BAFS plans to acquire more renewable assets to strengthen its recurring earnings from non-oil ventures.

Exhibit 1: Key milestones

Year	Major events
1983	Establishment of BAFS
1984	Constructed Don Mueang Aviation Fuel Airport and Hydrant Fuelling System
1995	Became a public company with registered capital of 340 million baht
1996	Signed the Joint Investment Agreement to establish Thai Aviation Refueling Company Limited
2000	Became a service provider for aircraft refuelling at Sukhothai Airport
2001	TARCO, together with Ch. Karnchang Company Limited, signed a contract for the construction of an aviation hydrant refuelling system at Suvarnabhumi Airport.
2002	Started to provide services at Samui Airport
2006	Signed an Aviation Fuel Services Agreement with nine oil companies and one airline for refuelling services at Suvarnabhumi Airport
2013	Established a new executive committee – M.R. Supadis Diskul was elected as executive chairman
2014	Mr. Prakobkiat Ninnad was appointed managing director. Won Thailand's Corporate Brand Rising Star 2014
2016	Established BAFS Innovation Development Company Limited, a subsidiary in which BAFS holds a 100% share
2017	Received a Thailand Sustainability Investment Award
2019	Established BAFS Intech in which BAFS holds a 90% share.
2020	Established BAFS Clean Energy Corporation Company Limited
2021	Acquired seven solar power plants from Padaeng Industry (PDI TB) under BAFS Clean

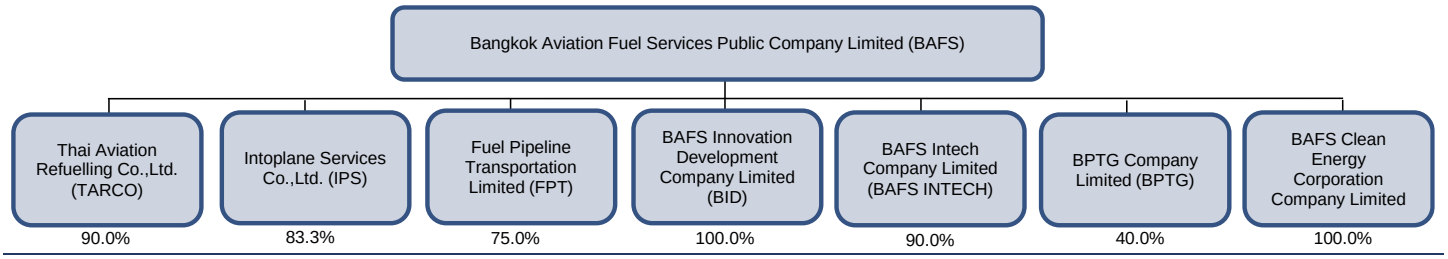
Source: BAFS

BAFS group and its scope of business

BAFS group consists of many sub-companies established for different purposes of business as follows:

1. Thai Aviation Refueling Company Limited (TARCO, 90% stake): Aviation fuel services through a hydrant system at Suvarnabhumi Airport.
2. Intoplane Services Company Limited (IPS, 83.33% stake): Labour contracting services.
3. Fuel Pipeline Transportation Limited (FPT, 75% stake): Fuel storage and multi-product pipeline transportation services.
4. BAFS Innovation Development Company Limited (BID, 100% stake): Research and development of innovative technology services.
5. BAFS Intech Company Limited (BAFS INTECH, 90% stake): Design and manufacturing services for refuelling trucks.
6. BPTG Company Limited (BPTG, 40% stake): Supplies and provides petroleum products in the Pichit depot, Lampang depot, and Kamphaeng Petch booster pump station of FPT.
7. BAFS Clean Energy Corporation Company Limited (BAFS CLEAN, 100% stake): Renewable and environmental business.

Exhibit 2: BAFS and its subsidiaries



Source: BAFS

Major shareholders

Ratch Group Public Company Limited (RATCH TB, BUY, TP THB76) is the main shareholder of BAFS after it acquired a 15.53% stake in BAFS from Thai Airways International Public Company Limited (THAI TB, HOLD, TP THB3.4) in 2020. Bangkok Airways Public Company Limited (BA TB, BUY, TP THB10) ranks second with a 10% stake, followed by THAI, PTT Oil and Retail Business (OR TB, BUY, TP THB41), Shell, and Esso (Thailand) (ESSO TB, BUY, TP THB14.3), each owning 7% in BAFS. Four other companies own stakes ranging from 2-5%, with the remaining 35% stake owned by institutional and retail investors.

Exhibit 3: Shareholding structure

	No. of shares owned	% owned
	(share)	(%)
Ratch Group Public Company Limited (RATCH)	98,983,125.00	16
Bangkok Airways Public Company Limited (BA)	63,737,000.00	10
PTT Oil and Retail Business Public Company Limited (OR)	45,000,000.00	7
Thai Airways International Public Company Limited (THAI)	45,000,000.00	7
The Shell Company of Thailand Limited	45,000,000.00	7
Esso (Thailand) Public Company Limited (ESSO)	45,000,000.00	7
Airports of Thailand Public Company Limited (AOT)	31,500,000.00	5
Chevron (Thailand) Company Limited	16,000,000.00	3
SUSCO Dealers Company Limited (SUSCO)	12,750,000.00	2
Singapore Petroleum (Thailand) Company Limited	12,750,000.00	2
Institutional and retail investors	221,776,028.00	35
Total	**637,496,153.00**	**100**

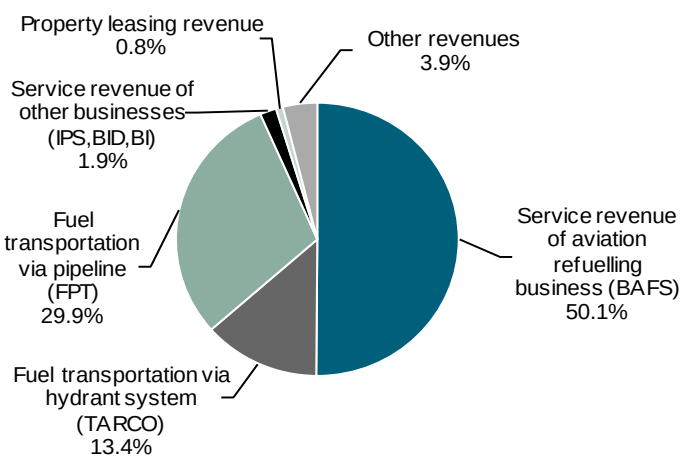
Source: BAFS

Revenue structure and growth

In 2020, prior to the acquisition of its solar farms, BAFS generated its revenue mostly from its three core businesses: 50.1% from aviation refuelling (BAFS), followed by 29.9% from oil pipeline transportation (FPT) and 13.4% from fuel transportation via hydrant system (TARCO). Before the Covid-19 pandemic, BAFS had seen consistent growth rates for its three core businesses.

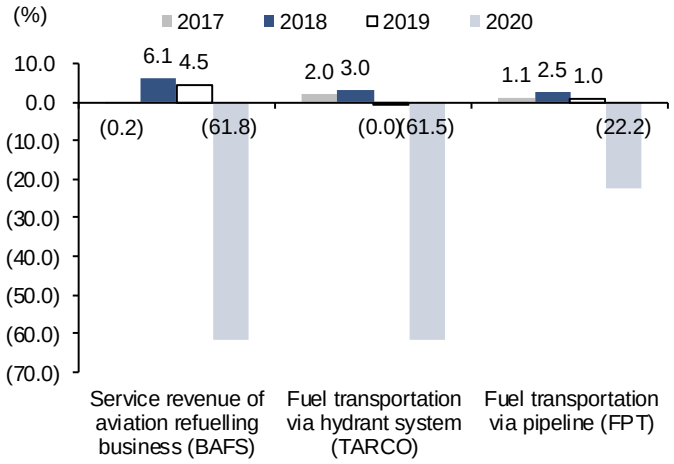
However, the revenue growth of BAFS' three core businesses related to air and ground transportation sharply plummeted in 2020 due to the effect of the Covid-19 outbreak. Refuelling revenue plunged by 61.8% y-y, fuel transportation via hydrant pipeline dropped by 61.5% y-y, and the fuel transportation of multi-pipeline products decreased by 22.2% y-y. This eventually triggered BAFS' management to start diversifying into renewable energy via the acquisition of solar farms.

Exhibit 4: Revenue breakdown by business (2020)



Source: BAFS

Exhibit 5: Revenue growth by key business segment (2017-20)



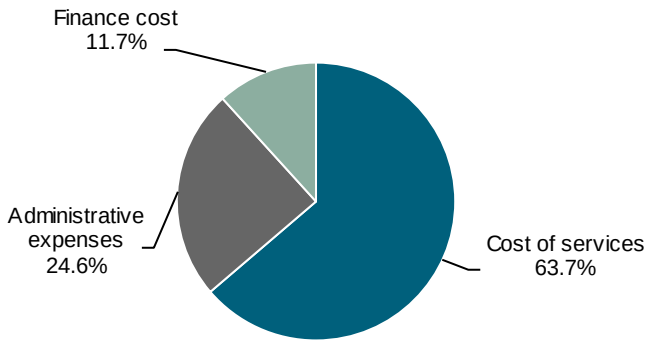
Source: BAFS

Cost structure

BAFS' cost structure mainly consists of service costs (63.7% of total cost), administrative expenses (24.6%), and finance costs (11.7%). In 2020, when the Covid-19 pandemic led to the demand collapse for jet fuel and refined oil products, BAFS attempted to cut its costs as much as possible. Its service costs decreased by only 16.4% y-y from the reduction of salaries, employee benefits, airport concession fees and other operating expenses.

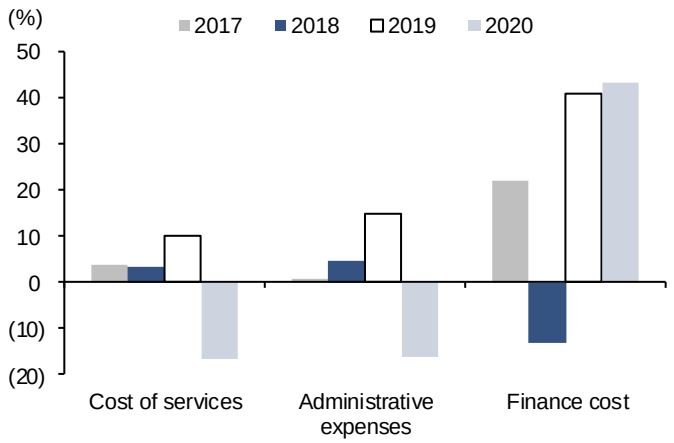
Administrative expenses were lowered by 16.0% y-y, mainly on lower real estate taxes, while finance costs jumped by 43.2% y-y due to the recognition of interest expenses for the Northern FPT pipeline system phase 1 (NFPT-Phase 1) and the construction of the Bang Pa-in-Pichit depot.

Exhibit 6: Cost breakdown (2020)



Source: BAFS

Exhibit 7: Total cost (2017-20)



Source: BAFS

Aviation fuelling business

Fuel trading companies are the main customers for BAFS' aviation fuelling business. BAFS procures, stores and delivers aviation fuel to contracted airlines according to each fuel trader. There are two main types of fuel products: aviation turbine fuel (Jet A-1) and Avgas.

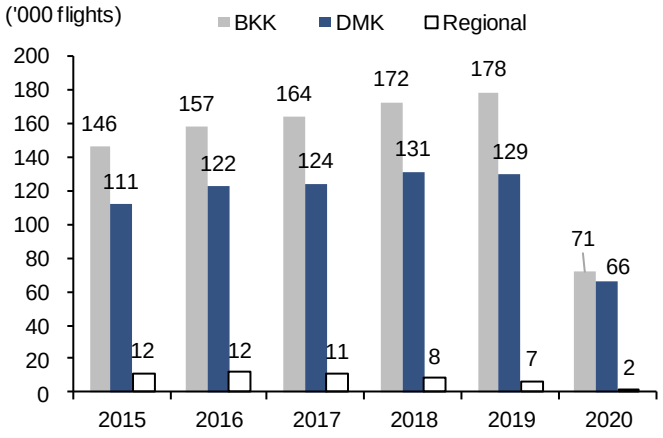
Aviation service #1: Into-plane fuelling services. Into-plane refuelling is a business that requires a high investment and safety standard, and it is the major business of the BAFS group. BAFS operates into-plane refuelling at an international level of quality, and is currently operating in five airports: Don Mueang, Suvarnabhumi, Samui, Sukhothai and Trat.

Suvarnabhumi Airport. BAFS was granted a 20-year concession to provide into-plane refuelling services at Suvarnabhumi Airport. Currently, there are nine fuel suppliers with Jet A-1 as their only type of fuel product. Both the number of flights and the refuelling volume since 2014 had increased at a satisfactory rate until 2020. The annual growth in the number of flights was 3.36% and -59.63% in 2019-20, and the fuel volume growth was 0.4% and -62.16% in 2019-20, respectively.

Don Mueang Airport. Similar to Suvarnabhumi Airport, there are nine fuel suppliers at Don Mueang Airport, but apart from Jet A-1 refuelling, BAFS also provides Avgas refuelling services that can only be operated at this airport. The annual growth in the number of flights was -1.62% and -48.58% in 2019-20, and fuel volume growth was 10.97% and -62.61% in 2019-20, respectively.

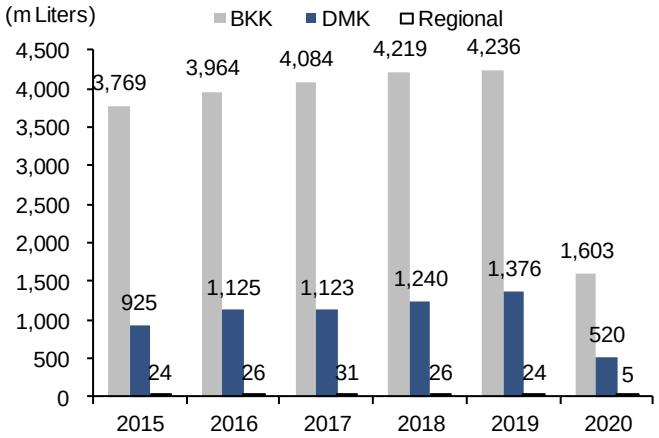
Regional airports. BAFS is the only service provider for Samui, Sukhothai, and Trat airports. The annual growth in the number of flights in 2019 and 2020 was -20.27% and -72.74%, and fuel volume growth was -8.88% and -79.25% in 2019 and 2020, respectively.

Exhibit 8: Number of aircraft



Source: BAFS

Exhibit 9: Refuelling volume



Source: BAFS

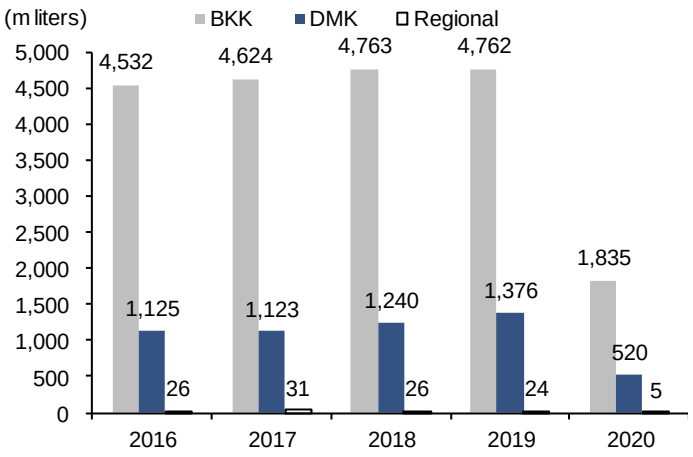
Aviation service #2: Hydrant system service. Both Suvarnabhumi and Don Mueang airports use hydrant pipelines to operate into-plane fuelling services. TARCO, in which BAFS holds a 90% share, is responsible for the hydrant system at Suvarnabhumi. Recently, TARCO was granted a concession to construct a hydrant pipeline system for the phase 2 development project that will increase the airport's capacity by up to 60 million passengers per year. As for Don Mueang, BAFS is the sole operator.

Aviation service #3: Fuel storage service.
Suvarnabhumi Airport. The depot is located outside the area of the airport, so operations can continue without concern for concessions. Currently, there are five storage tanks with a 15m-litre capacity for each tank and three more intermediate tanks with a 10m-litre capacity each for FPT's fuel transportation. The yearly distribution volume of fuel since 2015 has been around 4,500m litres. The volume plummeted considerably to 1,835m litres in 2020; a reduction of 61.5% y-y due to the impact of Covid-19.

Don Mueang Airport. At Don Mueang, there are two storage tanks with a total capacity of 31m litres. The yearly distribution volume of fuel since 2015 has been around 1,200m litres. It dropped to around 1.4m litres per day in 2020 (total of 519.7 million litres for the whole year).

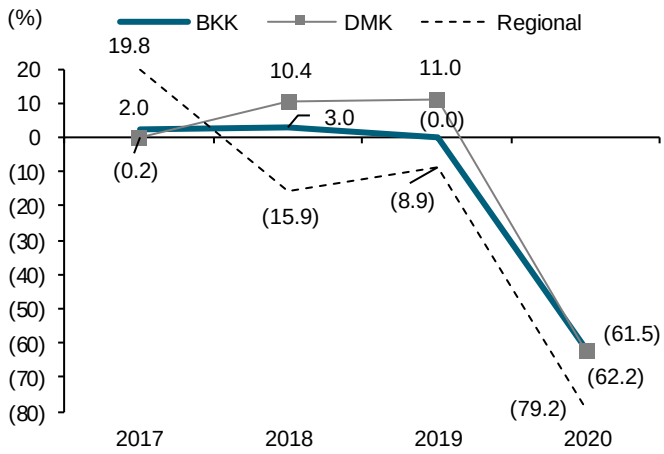
Regional airports. At Sukhothai and Trat, there is only one storage tank each, both with a 25,000-litre capacity due to the lower demand for oil. At Samui Airport, there are three tanks with a total capacity of 1.05m litres to maintain sufficient reserves in case of disruptions.

Exhibit 10: Fuel storage (distribution volume, 2016-20)



Source: BAFS

Exhibit 11: Fuel storage volume growth, 2016-20



Source: BAFS

Demand recovery for businesses post economic reopening

Aviation refuelling: BAFS' crown jewel. Among all of BAFS' businesses, aviation refuelling is the most prominent business that has generated the highest revenue proportion. The trend of this business has mostly been steady and is highly dependent upon the volume of tourism activities.

However, in 2020-21, the lower revenue from refuelling due to the Covid-19 outbreak resulted in a lower proportion of aviation refuelling revenue, but was partly offset by the revenues from FPT and the solar power plants. We think BAFS' refuelling business will return to take its place as BAFS' core revenue leader starting in 2022 after a global economic reopening.

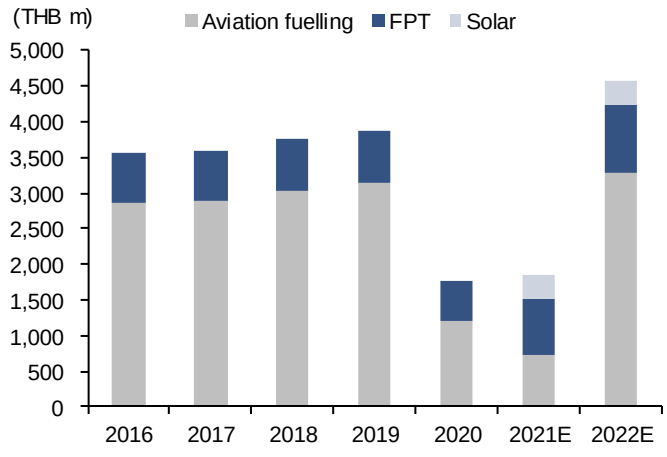
We believe that refuelling revenue growth will be significant in 2022, with over 300% y-y revenue growth, as we project that the volume of BAFS' aviation refuelling will return to its pre-Covid level. In 2023 onward, we expect the demand growth to normalise, slowing down to a sustainable growth rate of 2-4% p.a. in 2024-25.

Pipeline volume growth could emerge to be BAFS' core cash cow in 2022 onward. We believe BAFS' revenue from its two-pipeline network under FPT will be its key growth driver in 2022 onward. Besides BAFS' long-operating oil pipeline network connecting eastern refinery plants to the two major airports of Suvarnabhumi and Don Mueang, BAFS has invested in the oil pipeline project, the Northern Fuel Pipeline (NFP) phase 1 & 2, that is scheduled to be completed and start operating in 2021.

While initially the new NFP will not likely generate much revenue, as oil demand growth typically requires a few years to gain market share and oil volume, we think that by 2024, NFP could emerge to be BAFS' long-term net profit growth engine. This is thanks to its low variability and high fixed cost structure that should allow NFPT to reach net profit breakeven by 2023 and start to be profitable by 2024, based on our estimate.

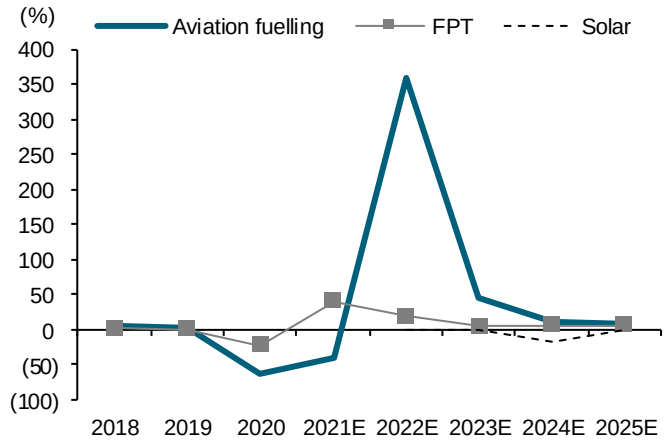
Cash cow solar farms for diversification. While BAFS' solar power business has no remarkable growth potential, as the electricity tariff and capacity are fixed, we think BAFS' entry into renewables should enhance its asset portfolio, effectively improving its earnings sustainability on top of its refuelling and oil pipeline businesses.

Exhibit 12: Service revenue by type of business



Sources: BAFS; FSSIA estimates

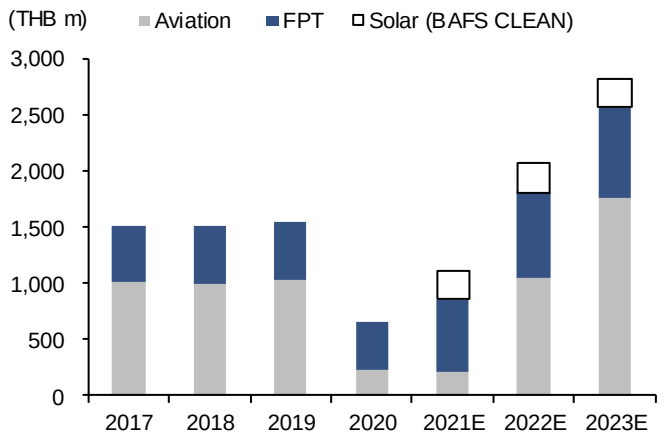
Exhibit 13: Revenue growth by type of business



Sources: BAFS; FSSIA estimates

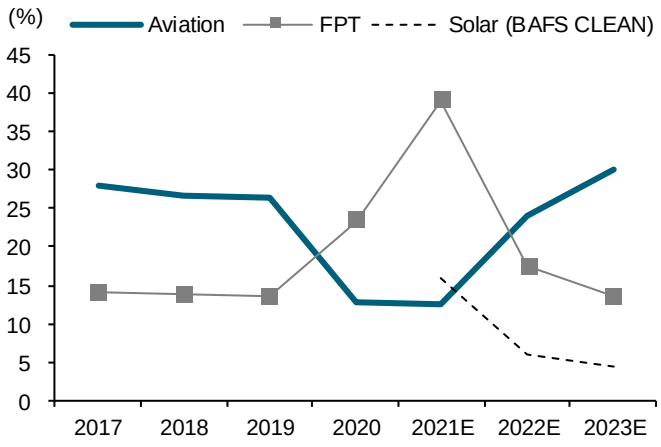
Large proportion of EBITDA from refuelling (aviation). It is undeniable that BAFS' EBITDA from its aviation refuelling business had been consistently growing in the pre-Covid period in 2017-19, despite its high fixed cost, thanks to the sustainable jet refuelling volume growth. However, the sharp drops in the refuelling volume in 2020 and 2021 revealed BAFS' business structure weakness – its overdependence on the aviation business – resulting in BAFS' strategic diversification into a new oil pipeline (NFP) and solar power plants to reduce its earnings volatility.

Exhibit 14: EBITDA for each type of business



Sources: BAFS; FSSIA estimates

Exhibit 15: EBITDA margin for each type of business



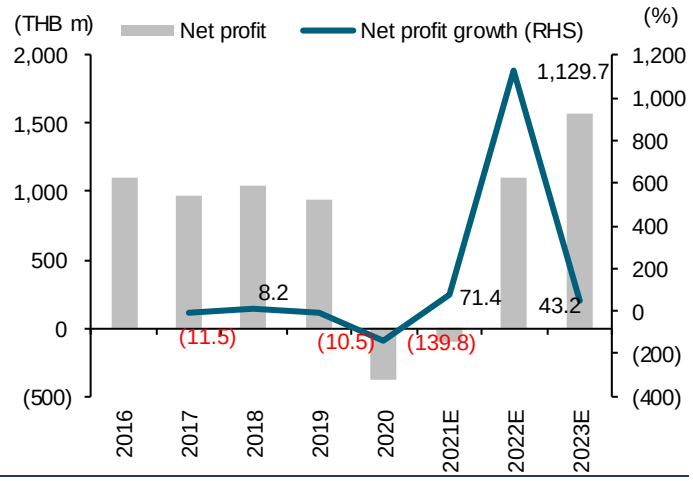
Sources: BAFS; FSSIA estimates

Three growth drivers to return BAFS back to a cash cow growth engine

We expect BAFS to be one of the listed companies to benefit from the global and domestic economic and tourism reopening, which we think will begin with the Phuket Sandbox on 1 July 2021, followed by tourism permits to Samui island and other tourist destinations in Thailand.

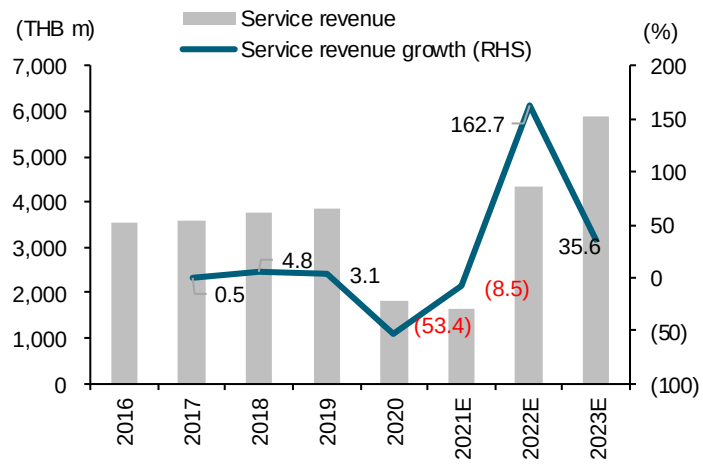
We project BAFS' net profit to grow from a net loss of THB107m in 2021 to a net profit of THB1.1b in 2022 and THB1.6b in 2023, driven by three key factors – a demand recovery for jet refuelling, rising oil sales volumes for its two oil pipeline networks, and the continued sustainable net profit contributions from its solar farms.

Exhibit 12: Net profit and net profit growth



Sources: BAFS; FSSIA estimates

Exhibit 17: Service revenue and service revenue growth

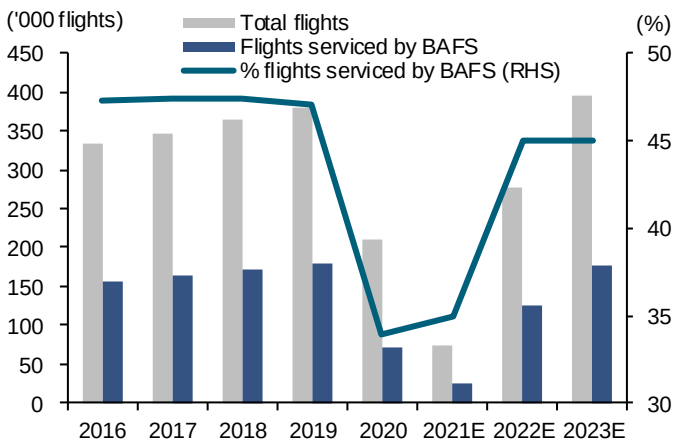


Sources: BAFS; FSSIA estimates

Driver #1: Demand recovery for aviation refuelling

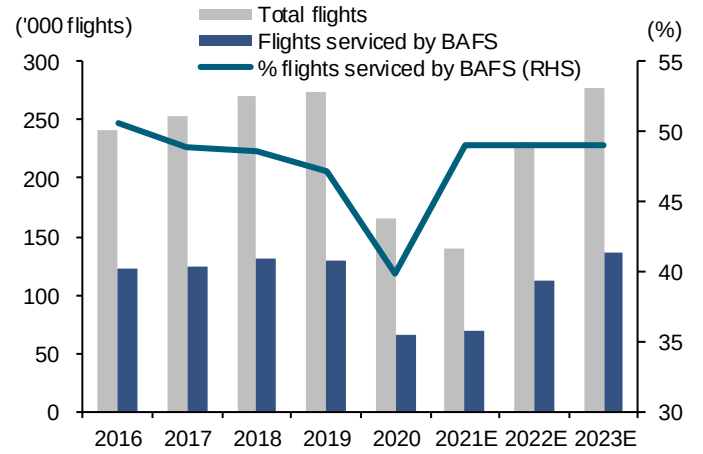
We believe BAFS' aviation refuelling volume will significantly rebound to the pre-Covid level in 2022 after suffering demand collapses in 2020-21 due to the Covid-19 outbreak. In pre-Covid 2019, out of the total number of 378,886 flights serviced at BKK, BAFS serviced 178,234 flights, accounting for 47% of all flights serviced. At DMK, the proportion of total flights and BAFS' serviced flights was around 40-50%, based on our estimate. As a market leader for jet refuelling at both and BKK and DMK, we believe that once tourism returns to Thailand, set to resume in 2H21, BAFS could be one of the greatest beneficiaries for the demand recovery to drive its net profit growth in 2022-23.

Exhibit 13: Suvarnabhumi total flights vs BAFS serviced flights



Sources: BAFS; AOT

Exhibit 14: Don Mueang total flights vs BAFS serviced flights



Sources: BAFS; AOT

The service fees on refuelling services and fuel storage are different, according to BAFS' management. The fees for DMK are slightly higher than for BKK, given that BAFS has a monopoly on the refuelling services at DMK. The refuelling fee at BKK depends on the competitive pricing and other rival airports in the area, while the service fee at DMK is based on the operation cost of the hydrant systems, fuel storage, and refuelling services.

Exhibit 15: Estimated service fees based on each aviation business (2021)

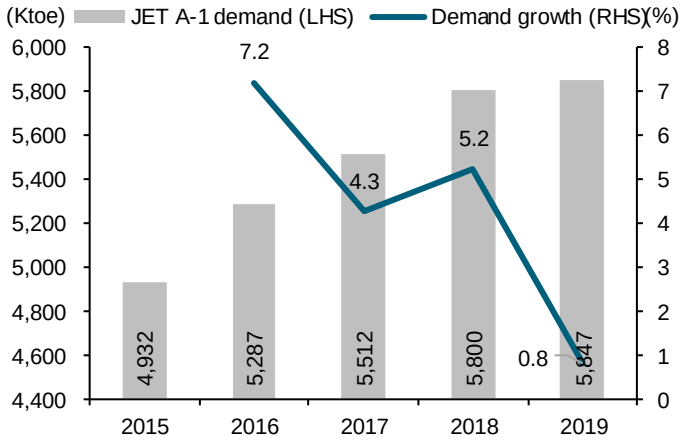
Service fee	BKK	DMK
	(Baht/Litre)	(Baht/Litre)
Refuelling service	0.4-0.5	0.5-0.6
Fuel storage	0.25	0.30

Sources: BAFS; FSSIA estimates

Apart from having a high proportion of serviced flights in both airports, we believe BAFS could be a big winner for Thailand's aviation fuel demand growth post Covid-19, which we project to grow at a Nike-swoosh shaped rate, thanks to Thailand being one of the top ten most attractive countries for foreigners to visit, based on management's guidance.

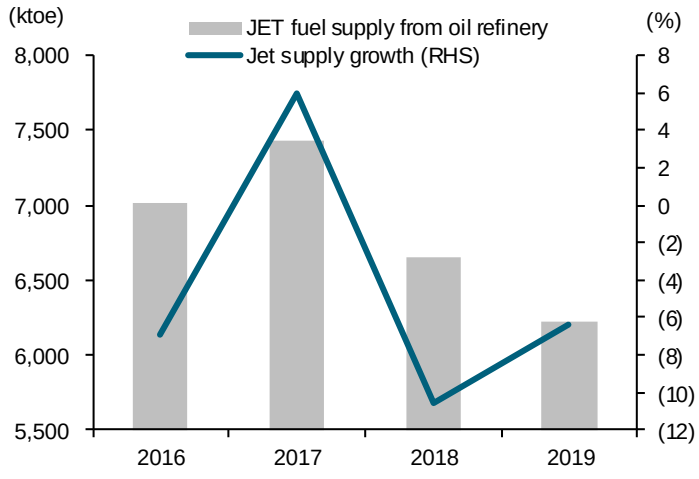
Although international travel might take a longer time to recover than we first expected, we think Thailand's jet fuel consumption alone could show a promising trend similar to what had occurred in 2015-19, with a CAGR of 4.35% p.a., according to the Department of Alternative Energy Development and Efficiency (DEDE). We believe the jet fuel demand could soar in 4Q21 and return to its full momentum in 2022 to drive BAFS' net profit growth from its refuelling business.

Exhibit 16: Final energy consumption of Jet A-1 for the transportation sector, 2015-19



Source: DEDE

Exhibit 17: Jet fuel supply from oil refineries 2016-19

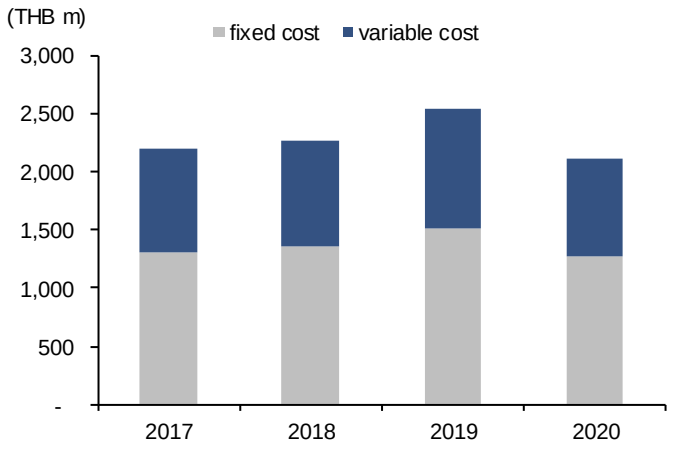


Source: DEDE

Higher fixed cost benefits and trade-offs

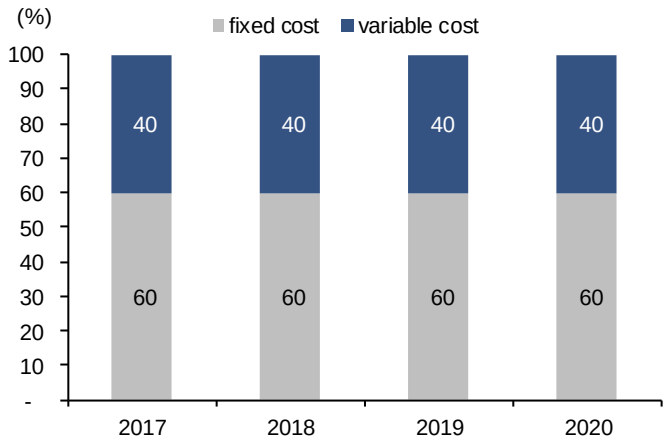
The aviation refuelling business is itself, by nature, a high fixed cost sector. All of the refuelling equipment – trucks, dispensers, etc. – are costly and need a large initial investment, resulting in a large fixed depreciation expense. In addition, the into-plane business requires an intensive human workforce, plus the maintenance costs of equipment and storage tanks, creating a huge fixed cost burden for the firm. As BAFS is operating with the advantage of economies of scale, all these costs should be minimised, as the refuelling volume normally far surpasses the breakeven volume, and net profits continue to rise as the volume increases.

Exhibit 18: Cost structure of aviation refuelling business



Source: BAFS

Exhibit 19: Cost structure of aviation refuelling business (%)

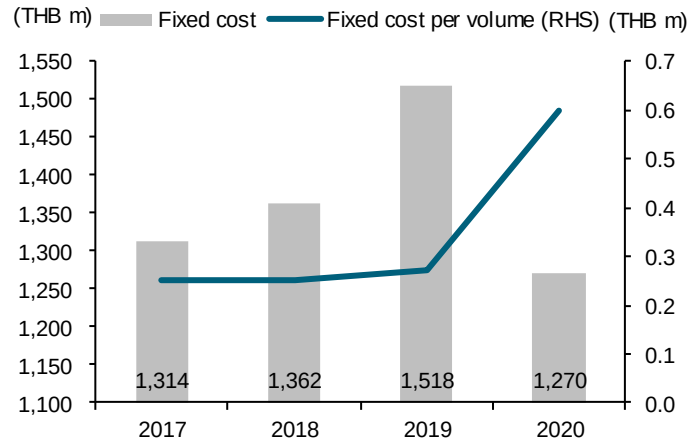


Source: BAFS

For the operating years before 2020, we estimate that the fixed cost for BAFS was around THB0.25m per one million litres of refuelling volume. However, in 2020 when the refuelling volume plunged sharply due to the Covid-19 outbreak, the fixed cost per unit jumped from THB0.25m to THB0.6m per one million litres of refuelling volume.

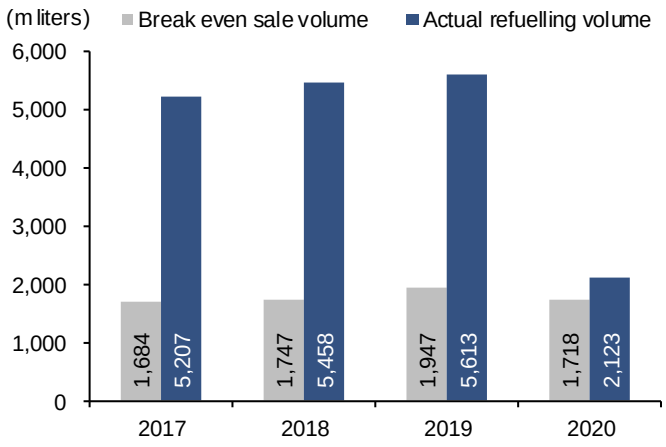
As we project the refuelling volume to rise back to its pre-Covid level by end-2022, we expect that BAFS' fixed cost per unit of refuelling volume will begin to drop in 2021, based on BAFS' cost reduction and a rising refuelling volume in 2022, gradually driving BAFS' net profit back to its pre-Covid level of over THB1b annually.

Exhibit 20: Refuelling volume vs fixed cost



Sources: BAFS; FSSIA estimates

Exhibit 21: Breakeven refuelling volume



Sources: BAFS; FSSIA estimates

Based on our breakeven sales volume analysis, BAFS needed to refuel around 1.7b-2.0b litres annually in order to cover costs in 2017-19. In 2020, BAFS saw its fixed cost per 1m litres of refuelling volume rise by 2.2x to THB0.6m, despite the sharp drop in refuelling volume by 2.6x from 5.6b litres in 2019 down to only 2.1b litres in 2020, thanks to BAFS' cost reduction campaign. However, if we include other variable expenses related to the refuelling business, we estimate that BAFS' breakeven refuelling volume would be 2.354m litres, which was not met in 2020, resulting in a net loss of THB374m.

The statistics in the past show that BAFS excelled in covering its fixed costs and breakeven volume until 2020-21, when the Covid-19 pandemic hit the global economy. BAFS' profitable streak might have stumble in 2020-21, but we think its profitability could return in 2022, based on 1) BAFS' monopoly position at DMK and near-monopoly position at BKK; 2) jet fuel demand growth recovery; and 3) BAFS' high operating leverage with its high fixed cost structure to greatly benefit from a rising refuelling volume.

Driver #2: Sustainable earnings stream from solar power plants

According to management, in 2017-19, prior to the Covid-19 outbreak, BAFS started to feel the pinch from the tourism disruption caused by the concern over PM2.5 emissions. In early 2020, it was impacted by the flight disruptions caused by Covid-19.

As a result, management set out a new strategic goal to diversify its earnings from tourism and transportation-related businesses by 1) implementing a cost reduction campaign; and 2) entering into a renewable business. Management remains sanguine on its new non-core business section and aims for it to achieve up to 50% of BAFS' earnings by 2035.

Exhibit 22: BAFS' solar power plants

Project	Location	Installed capacity/PPA	COD	Years left (As of 1/1/2021)	Schemes		Solar panel types	Performance ratio (2018)
		(MW)				(Baht/kWh)		(%)
ATCE1	Prachinburi	8.0/8.0	Dec-15	20 yrs	FiT	5.66	Conergy PE 310 (310 W)	78.3
ATCE2								77.6
ATCE3			Apr-16	20 yrs 4 months				77.6
ATCE4	Samutsakorn	6.0/6.0	Dec-15	20 yrs			First solar PS4110 (110 MW)	85.2
ATCE5		4.0/4.0						85.7
PDIMR	Tak	6.3/5.25	Dec-13	18 yrs	Adder	6.5 for 10 yrs	JA Solar (JAP60-250W)	72.7
PPS	Khon Khaen	1.102/0.98	Jul-13	17 yrs 6 months	Adder	8 for 10 yrs	First solar FS Series 3 (85W)	74.7

Source: BAFS

BAFS' recent acquisition of seven solar power plants from Padaeng Industry (PDI TB, not rated) is its first step in the diversification strategy to move into the renewable energy sector. All of the solar plants acquired have already started their commercial operation dates (COD), and revenues will be realised in 2021. We estimate that BAFS' acquired seven solar farms will generate a net profit of THB150m annually.

Exhibit 23: Past performance ratio of each solar power plant

Performance ratio	2017	2018	2019
	(%)	(%)	(%)
ATCE 1,2	82.91/85.59	80.62/79.74	78.3/77.68
ATCE 3	81.68	78.78	77.60
ATCE 4,5	86.05/86.93	84.61/85.83	85.27/85.77
PDIMR	n/a	71.33	72.78
PPS	n/a	76.74	74.70

Source: BAFS

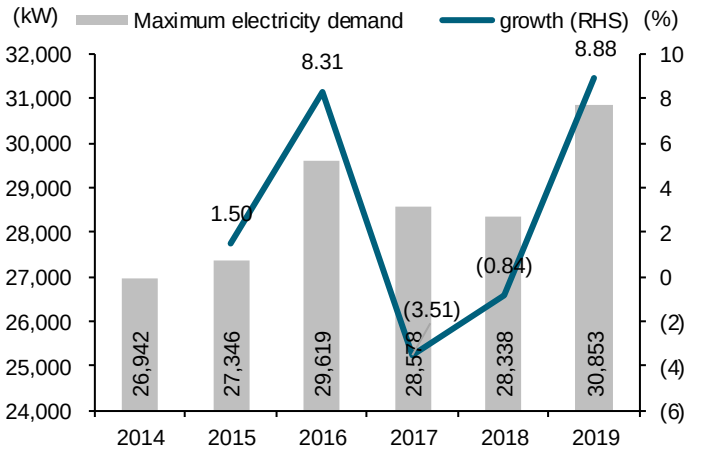
Exhibit 24: Capacity factor of each solar power plant

Capacity factor	2019	2020	2021E
	(%)	(%)	(%)
ATCE 1	17.7	17.4	17.0
ATCE 2	17.6	17.2	17.0
ATCE 3	16.7	16.6	17.0
ATCE 4	18.9	18.8	18.0
ATCE 5	19.0	18.9	18.0
PDIMR	14.6	14.6	15.0
PPS	16.9	16.8	16.0

Sources: BAFS; FSSIA estimates

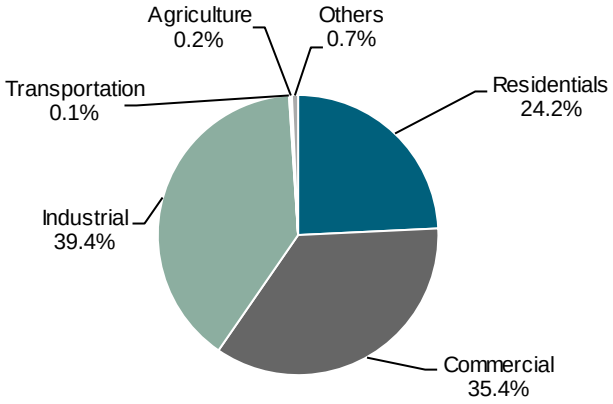
In 2019, Thailand's peak electricity demand reached 30,853MW, up 8.88% y-y, higher than the CAGR of 2.75% in 2014-18. The Thai government is highly committed to increasing the renewable energy capacity to reduce carbon emissions and to answer the country's continued growing electricity demand, along with the projected demand growth of the commercial and industrial sectors, which accounted for almost 80% of the total electricity consumption in 2020. Given this, we think BAFS' entry into renewable energy should position it well to ride Thailand's renewable capacity growth under the Power Development Plan 2018 Revision 1 (PDP2018Rev1).

Exhibit 25: Maximum electricity demand of Thailand, 2014-19



Source: EGAT

Exhibit 26: Electric consumption by economic sector (2020)



Source: DEDE

Since the production of electricity from fossil-based sources, including coal, gas, and high sulphur fuel oil (HSFO), create a large amount of carbon dioxide (CO2) emissions, which accounted for almost 50% of the total CO2 emissions in Thailand during 2015-19, according to DEDE, we think renewable energy will remain a key source of power generation in Thailand in the next 20 years.

As a result, electricity production using coal as the burning factor is not desirable in Thailand anymore. In acknowledgement of this problem, the government has been urging the adoption of renewable energy, including solar, wind, water, biofuel, etc. The energy conservation plan for the period of 2015-36 aims to reduce emission intensity by 30% with respect to the base year, 2010. The latest number in 2019 showed that the emission intensity level was already down by 8% since 2010.

Exhibit 27: Estimated CO_2 emissions from energy consumption

(Unit: tonne per annum)	2015	2016	2017	2018	2019
Transportation	67,862	72,267	78,447	79,605	81,673
Power	91,048	97,091	96,814	91,594	92,907
Manufacturing	42,462	49,162	45,155	50,730	51,562
Res. & Com.	6,515	3,568	6,696	6,739	6,615
Others	12,509	3,721	8,676	9,358	9,658
Total	**220,396**	**225,809**	**235,788**	**238,026**	**242,415**

Source: DEDE

According to DEDE, the total amount of energy resulting from using renewable energy sources in 2019 was 14,136k tonnes equivalent of crude oil. Compared to 2016 with only 11,051k tonnes equivalent, the CAGR growth of renewable sources in 2016-19 was high at 8.55% p.a. In terms of electricity generation from renewable energy, the numbers grew significantly by 3,085k tonnes equivalent; a CAGR of 15.14% during 2015-19.

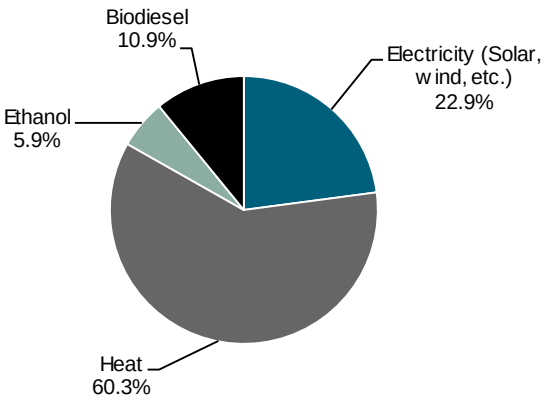
Exhibit 28: Alternative energy consumption

	Quantity (k tonnes equivalent of crude oil)				
	2015	2016	2017	2018	2019
Electricity (solar, wind, etc.)	1,556	2,122	2,473	2,960	3,239
Heat	6,579	7,182	7,322	7,919	8,525
Ethanol	879	684	733	781	829
Biodiesel	1,063	1,063	1,203	1,336	1,543
Total	**10,077**	**11,051**	**11,731**	**12,996**	**14,136**

Source: DEDE

Considering all relevant factors, BAFS' move into the solar power plant business is in line with Thailand's governmental policy direction and the global trend of an increasing awareness of the environmental impact from CO2 emissions. This should place BAFS well as a new player in the renewable energy sector that has high growth potential and continual support from the government.

Exhibit 29: Share of alternative energy consumption



Source: DEDE

Another major advantage of this acquisition is the revenue that will be recognised instantaneously. The CODs have already begun for all seven solar farms and their revenues will become part of BAFS' total revenue in 2021, of which we estimate a contribution of THB0.3b in revenue and THB150m in net profit annually to BAFS.

Exhibit 30: Sales revenue of 7 solar power plants, 2017-19

	2017		2018		2019	
	(THB m)	(%)	(THB m)	(%)	(THB m)	(%)
	Value	Percentage	Value	Percentage	Value	Percentage
Sales revenue	274	80	269	81	275	81
Additional revenue from adder	67	19	62	19	65	19
Other revenues	2	1	2	1	1	0
Total	**343**	**100**	**332**	**100**	**342**	**100**

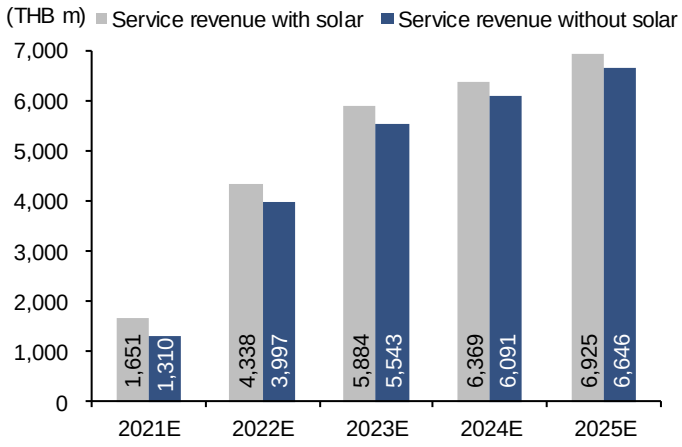
Source: BAFS

With the addition of its cash cow solar farms, we expect BAFS' overall net profit and revenue to improve, with its net profit margin rising by 5.1 ppts in 2021, considering the sluggish revenue expected from BAFS' refuelling and oil pipeline core businesses. After the net profits from aviation refuelling and its oil pipeline business return to their pre-Covid levels, potentially by end-2022, we estimate that the net margin improvement from the solar farms will decline to 2 ppts in 2023 onward.

The bottom line is that BAFS' acquisition of seven solar farms should improve its earnings and cash flow sustainability, effectively reducing BAFS' overdependence on

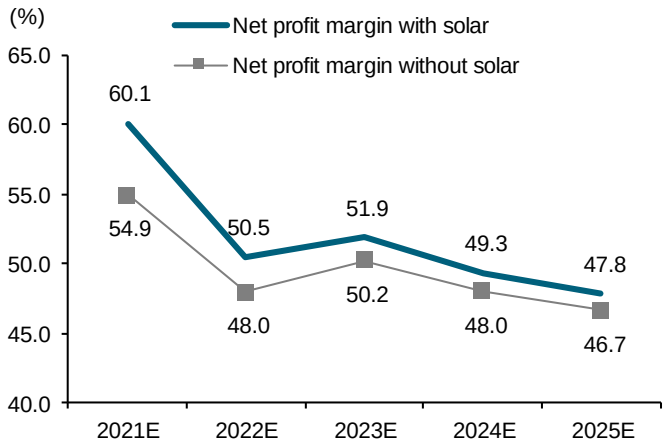
its transportation and aviation-related core businesses to become more adaptable in today's fast-changing industry environment.

Exhibit 31: Revenue comparison with and without solar farms



Source: FSSIA estimates

Exhibit 32: Net profit margin with and without solar farms



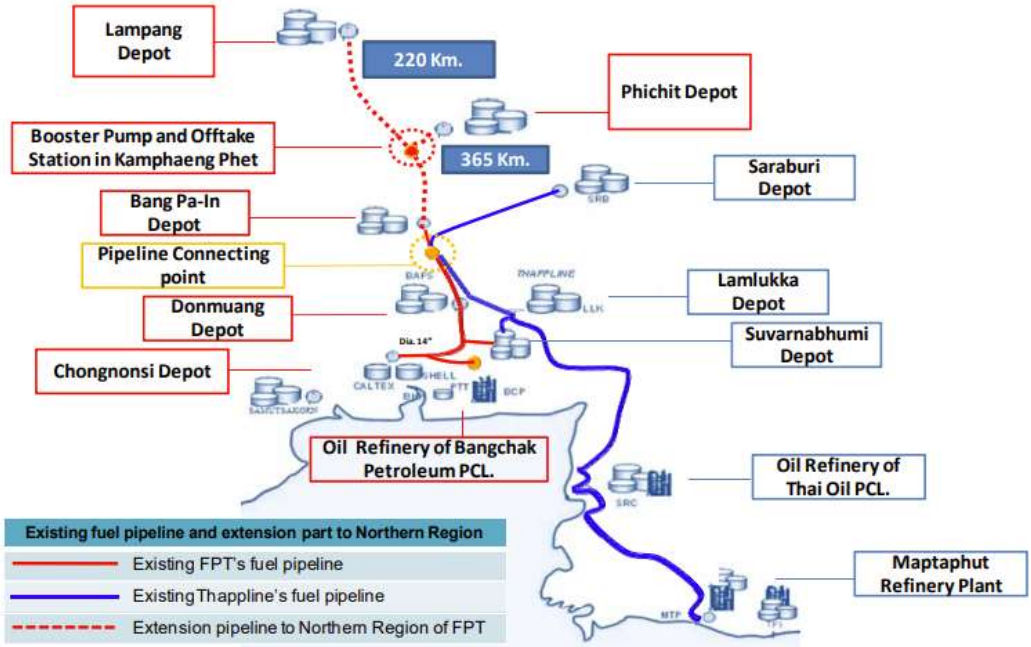
Source: FSSIA estimates

Driver #3: Long-term growth engines in the fuel pipeline project

FPT completed phase 1 of its Northern Fuel Pipeline project (NFP) and started operating in 2019, connecting the Saraburi and Pichit depots. The NFP project was initiated to promote fuel transportation efficiency and growth in the northern area.

The indirect benefits are that free trade can be promoted, and basic infrastructure in the provincial areas will be enhanced, according to management. Phase 2 of the NFP project, which extends the route up to the Lampang depot, is currently under construction, and is expected to be completed and start operations in 3Q21. The total distance of the pipeline is 585km.

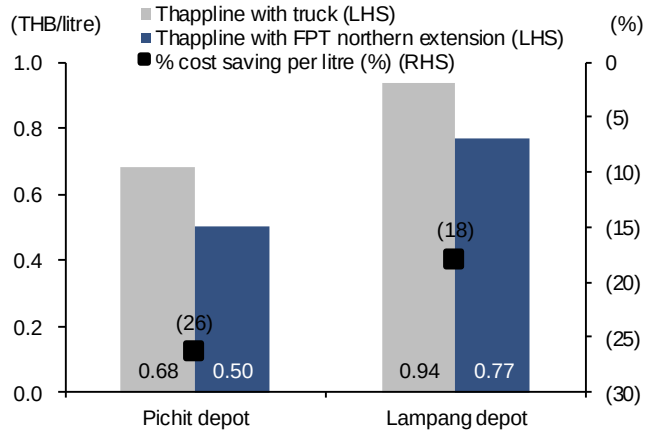
Exhibit 33: FPT's fuel transportation system with northern extension



Source: BAFS

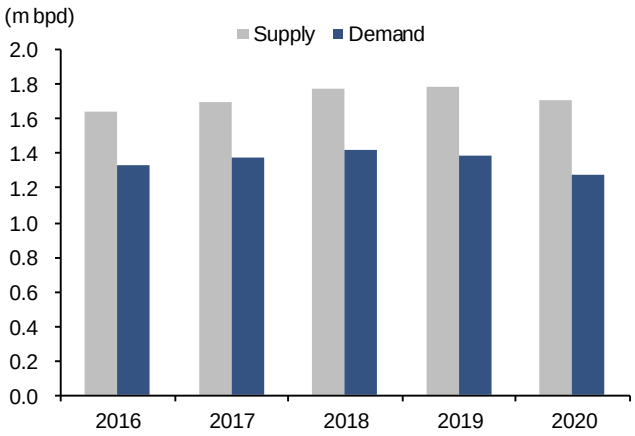
Competitive fees for FPT's northern pipeline vs trucks. According to management, NFP's phase 1 should begin to gain sufficient market share to reach breakeven and become profitable within the next three years, thanks to the manifest advantage of using a pipeline vs trucks for oil transportation.

Exhibit 34: Oil transportation fees (FPT's NFP vs trucks)



Source: BAFS

Exhibit 35: Supply and demand of crude oil and oil products (2016-20)



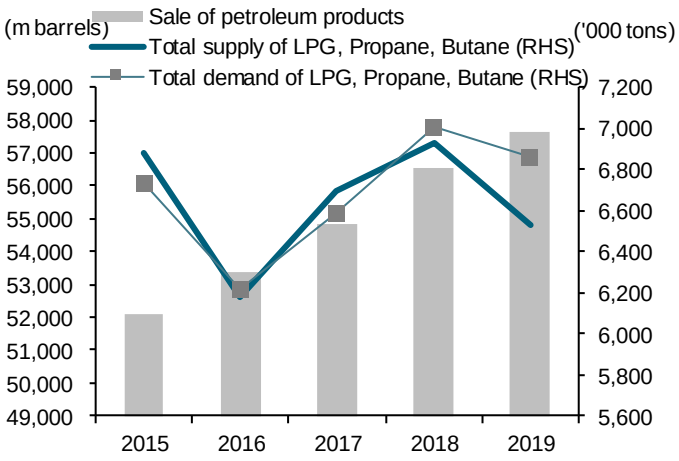
Source: Energy Policy Planning Office (EPPO)

As FPT's northern extension (NFPT) links the route of FPT's existing pipeline in central Thailand and Thai Petroleum Pipeline (Thappline, not listed)'s pipeline system at Chiangrak Noi, FPT's customers will be the oil companies and customers of Thappline.

According management, the service fees of the NFPT pipeline are lower than the fees of using trucks, with a discount rate of around 18-26%, based on a Dubai crude oil price of USD60-65/bbl. However, at the current Dubai crude oil price of over USD70/bbl, we estimate that the fee discount for NFPT over truck transportation for refined oil products will rise to as much as 30-35%.

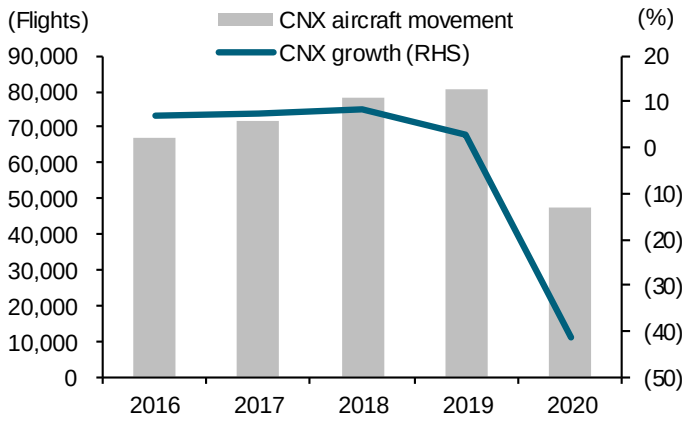
With NFPT's competitive fees compared to trucks, we believe BAFS should see NFPT increasingly gain more market share over time as it continues its operations. By having customers shift their transportation means to the underground pipeline network that can ensure greater safety and convenience, we think the supply and demand trend for crude oil and its refined products should allow BAFS to increase its customer base and the demand for fuel pipeline transportation. Management expects the market share of NFPT's phase 1 project to be 9% of the total demand in the northern region of 3,200m litres in 2021.

Exhibit 36: Sale of petroleum, supply and demand of LPG, propane, butane



Source: EPPO

Exhibit 37: CNX total aircraft movement



Source: AOT

The sale of petroleum products, along with the total supply and demand of LPG, propane, and butane are also in an increasing trend, confirming that FPT should see rising demand and gain market share in the future. It is also likely that the northern pipeline can extend its service to airports in the northern region.

Additionally, we expect that the oil demand will increase at a higher rate as tourist numbers rise in the northern provinces. The main catalyst is the expansion plan of Airports of Thailand (AOT TB, BUY, TP THB82) to build a second airport in Chiang Mai province, which would enhance air transportation efficiency and promote economic growth in the region. Pipeline transportation is also more beneficial in the aspect of reducing CO2 emissions, which is environmentally advantageous for the northern region.

TPN's Northeast vs BAFS' North pipeline returns. Our analysis indicates that Thai Pipeline Network (TPN, not listed)'s IRR for its 342.8km oil pipeline from central Saraburi province to upper northeast Konkaen province should yield a higher IRR than that of the oil pipeline from central Saraburi to Lampang province in northern Thailand, owned by BAFS (TPN's 13.2% vs 8.3% for BAFS). The key reason is the much higher investment cost of THB11b than the original projected investment cost and the lower oil demand for BAFS' northern pipeline route.

As of 1Q21, BAFS has already commenced the COD of its first phase pipeline from Saraburi to Nakorn Sawan, thus resulting in a net loss. By 2022, BAFS plans to fully operate its 585km oil pipeline from Saraburi to Lampang, and is likely to reach breakeven by 2025 onward, based on management's guidance.

Unlike BAFS, we think TPN's oil pipeline should see its oil sales volume rise from 2.7k litres in 2022, solely from Thailand, to 3.6k litres by 2026, adding volume growth from Thailand and Laos, as TPN's oil pipeline could be extended with minimal cost to connect with the oil pipeline in Laos. Hence, we think TPN could reach its payback period faster than BAFS (11 years for TPN vs 19 years for BAFS).

Exhibit 38: TPN's oil pipeline project, based on our forecasts

Project area	Northeast (TPN)	North (BAFS)	Unit
2022E demand		3,000	M litres per year
Original estimated investment cost	12,000	7,500	THB m
Final investment cost	9,800	11,000	THB m
Cost change	(28)	29	%
Pipeline cost per km	29	19	THB m/km
COD	4Q21E	3Q18-4Q19	
Construction method	Open cut	Horizontal directional drill	
Storage capacity	140	250	m litres
Pipeline			
Pipeline distance	343	585	km
Sararaburi - Kon Kaen (16 inches)	343		km
Bangpa-in - Phichit (14 inches)		365	km
Kamphaengphetch - Lampang (12 inches)		220	km
Capacity			
Sararaburi - Kon Kaen (16 inches)	5,700		m litre per year
Bangpa-in - Phichit (14 inches)		9,000	m litre per year
Kamphaengphetch - Lampang (12 inches)		5,000	m litre per year
Demand (2019E)	**3,992**	**3,250**	**m litre per year**
Northeast	2,792		m litre per year
North		3,000	m litre per year
Laos	1,200		m litre per year
Myanmar - Maesod		250	m litre per year
Financial			
Estimated NPV	13,107	1,492	THB m
IRR			
Original	12.2	9.5	%
Current	13.2	8.3	%
Payback period			
Original	13	14	years
Current	11	19	years

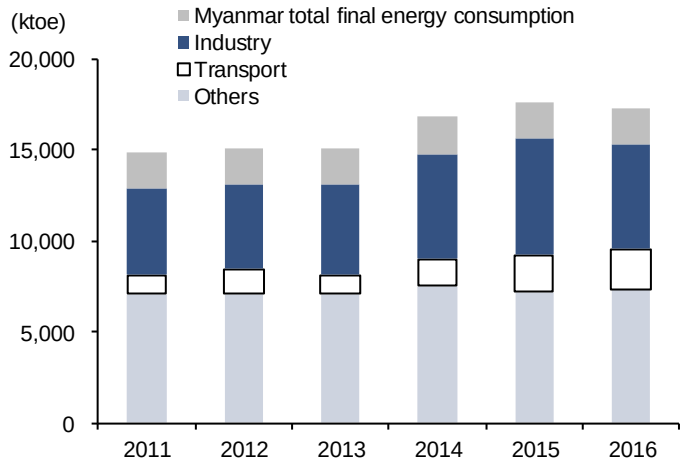
Sources: Power Solution Technologies (PSTC TB); FSSIA estimates

New investment route for FPT to Myanmar

Apart from phase 1 and 2 of the NFPT pipeline project, FPT also plans to explore further investment opportunities with Myanmar. According to management, there is a consideration that it will start phase 3 of the project to link the Lampang depot to the Mae Sai district in Chiang Rai, covering over 300km by building a depot in Mae Sai that can transport fuel to Tachileik province in Myanmar.

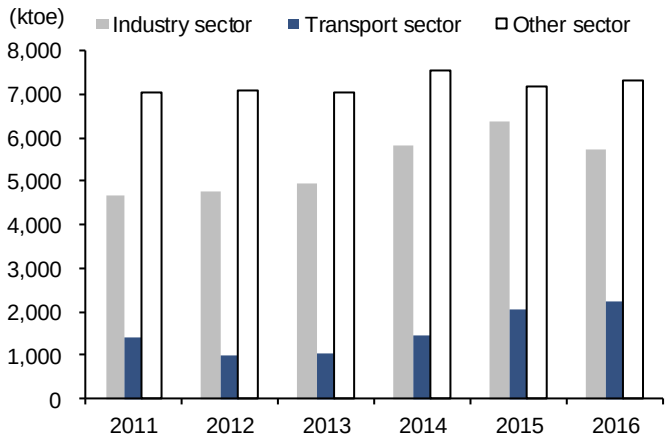
We think that this prospective investment of expanding to Myanmar is justified, as the economic expansion in the country is surging, with lots of foreign direct investment and industry conglomerates. Myanmar's total final energy consumption was growing constantly even before 2011, and it saw a CAGR of 3.48% from 2011-16. Most of the consumption comes from industrial and other sectors such as the residential and commercial sectors. Therefore, NFPT's phase 3 can provide an alternative source of income from Myanmar and signify future long-term growth for FPT.

Exhibit 39: Myanmar's total final energy consumption by type



Source: Economic Research Institute for ASEAN and East Asia (ERIA)

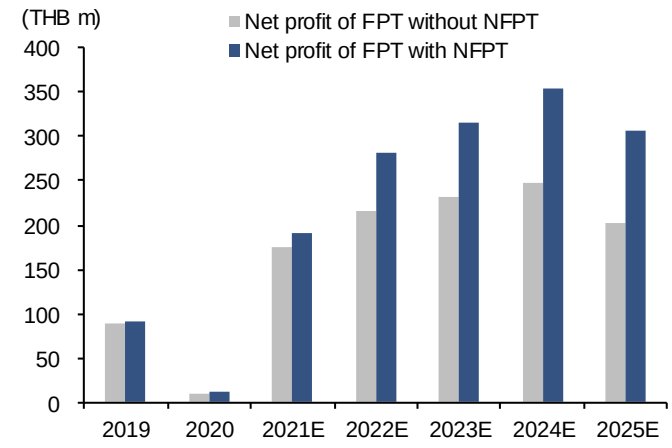
Exhibit 40: Myanmar energy consumption by sector



Source: Economic Research Institute for ASEAN and East Asia (ERIA)

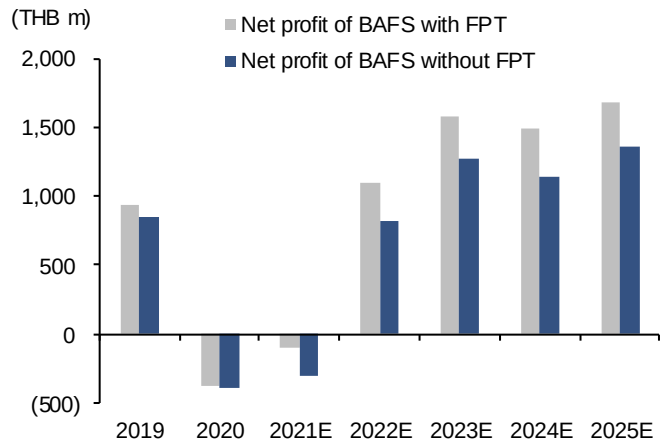
While NFPT's northern pipeline should initially generate a small net loss in 2021, we think its revenue will start to grow slowly after the economy is back to its normal state, likely in 2022, and gain fuel transportation market share in the northern area. The sustainable nature of its earnings and cash flow streams and the cost competitiveness of NFPT should ensure that BAFS' net profit and cash flow will improve over time from NFPT.

Exhibit 41: Net profit of FPT with/without the NFPT project



Sources: BAFS; FSSIA estimates

Exhibit 42: Net profit of BAFS with/without FPT



Sources: BAFS; FSSIA estimates

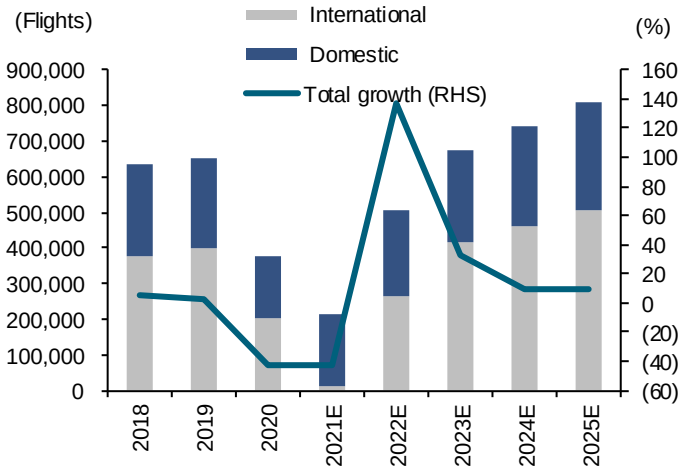
Industry outlook

Given that BAFS' core revenue stream is from the aviation refuelling business, the industry we will be focusing on is the aviation-based sector. As BAFS is not an oil trader, the price of oil does not affect its revenue stream as much as flight activities. Prior to 2020, BAFS benefited from the consistent growth rate of the tourism industry and international flights in Thailand. Nevertheless, as the Covid-19 pandemic struck in 2020-21, its earnings turned into net losses for the first time in its operational history. However, without a strong business foundation and financial resources, we think BAFS would not be able to sustain its operations and withstand the volatility in the market.

Tourism is the lifeblood of BAFS' refuelling business. The travel bans and restrictions in many countries have made it difficult for BAFS to operate and make a profit during the Covid pandemic period in 2020-21. Thailand, as a top global tourism destination, with an announced ban on foreign travellers and strict quarantine periods, had witnessed a great economic shock, as the country depends heavily on tourism. The total flight numbers for BKK and DMK plunged by 42% y-y in 2020, and the outlook remains poor, even in the beginning of 2021, as there has been a new outbreak in 2Q21 in Thailand.

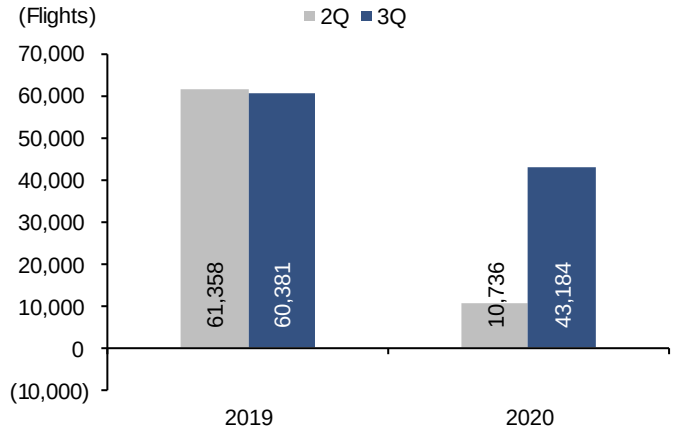
The revival of the industry depends almost solely upon the vaccination rate, along with the stimulus packages to boost spending. There was a satisfying result from the Thai government's packages, such as the Rao Tiew Duay Gun (We Travel Together) and Tiew Pan Suk (Encouraging) campaigns, as the domestic flight drop y-y in 3Q20 was much lower than in 2Q20. If Thailand is able to open its borders once the outbreak is over, which we expect will occur in 2H21, we believe that the tourism industry will be the fastest growing sector and generate a massive income for BAFS.

Exhibit 43: International and domestic flights



Sources: AOT, FSSIA estimates

Exhibit 44: Total domestic flights in 2Q-3Q, 2019-20



Source: AOT

Airlines and into-plane service industry. The airline industry has also been severely impacted by Covid-19. The drop in fuel demand, which has led to a drop in operating costs for airlines, has not been able to help airlines and the companies with revenue related to airlines, including BAFS, as the number of passengers has decreased at a much greater magnitude. BAFS is not directly affected by the decrease in passengers, but the decrease in flights and refuelling volume that has followed is its main problem.

Another factor that has greatly affected the refuelling volume is the size and marketing positioning strategy of the airports. In Thailand, only a number of major airports offer plane refuelling services. BAFS is the market leader in Thailand, so there is not much concern over domestic competition.

However, BAFS relies on the fierce competition of airports in terms of acquiring airline routes and flights. Therefore, the growth of airports in nearby countries is the main concern for BAFS' growth.

During the past decade, many international airports improved their efficiency and capabilities by opening new passenger terminals and extending their airport areas and facilities. Those that are in competition within the region are Singapore, Hong Kong, South Korea, Malaysia, Indonesia, Vietnam, and Myanmar.

Within this group, Changi Airport of Singapore, Hong Kong International Airport (HKIA), and Incheon International Airport in South Korea have started improvement projects with the goal of a much higher passenger handling capacity. This means that these countries will gain market share in terms of using the airports as connecting points to other countries in the region, with a higher number of long-haul flights that require higher refuelling volumes.

Exhibit 45: Major airport competition in the region

Airports	Number of terminals	Passenger accommodation	Comments
	(terminals)	(Million persons)	
Changi (Singapore)	4	68	World's best airport by Skytrax Terminal 5 is expected to be completed in 2022
Inchoen (South Korea)	2	71	Plan to construct 4th and 5th terminal with satellite concourse within 2030
Hong Kong International Airport	2	69	Plan to construct a 4th runway within 2024
Suvarnabhumi (Thailand)	3	45	Phase 2 construction will increase the capacity to 60 million persons

Source: BAFS

Risks

Dependence on core business and related businesses. Even though BAFS has many sub-companies under its control, the majority of them are exposed to the same business risk disruptions. TARCO, FPT, IPS, and BAFS INTECH all depend on their major revenue flows from the aviation and tourism industries. Therefore, the Covid-19 pandemic that started in 2020 has severely affected the group. Although BAFS tried to diversify its revenue inflow by having FPT as the firm that can accommodate other kinds of transportation fuels, and also establishing BAFS Clean to operate in the renewable energy sector, we think it would take some time until these minor revenue inflows become truly effective.

Financial risks. BAFS' business expansion involves a huge monetary cost, and requires BAFS to apply for loans, affecting its credit rating. Moreover, periodic loan payments are something BAFS has to take seriously, as the interruption of its revenue flows could lead to serious concerns about the company's financial liquidity.

Alternative technology, technological disruptions, and related risks. Most of BAFS' systems of operation are computer based. Cyber-based systems are prone to malfunctioning and cyber threats. Another factor that has become even more and more crucial these days is the application of digital technology. Machine learning, cloud and big data, or even artificial intelligence. BAFS needs to adapt to the fast-paced technology that can aid their operations or be left behind the competition.

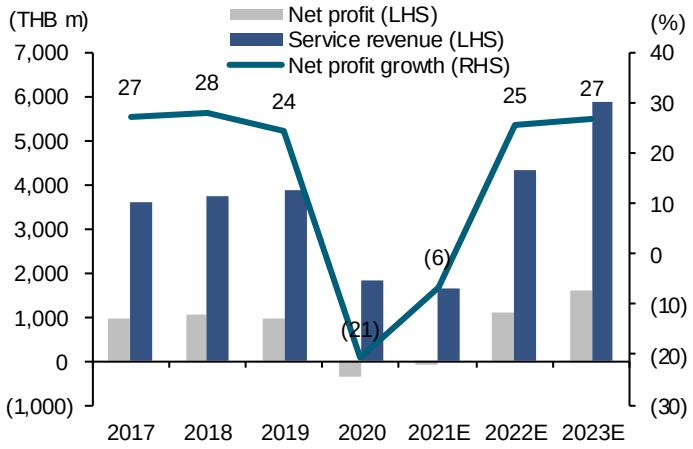
Recently, environmental issues and gas emissions have been raising concerns among numerous countries. The intention to reduce greenhouse gasses and carbon dioxide emissions means that BAFS will need to alter its aviation refuelling methods to become more environmentally friendly to comply with new policies.

Risk of not paying a dividend. Normally, the group pays a dividend periodically according to its performance. However, due to the recent outbreak of Covid-19, BAFS experienced a loss for the first year since that start of its operations, and was not able to pay a dividend for the period. However, as the tourism industry regains its normal momentum, plus the pent-up travel demand, we think BAFS will be able to provide a dividend to shareholders as usual in the future.

Financial outlook

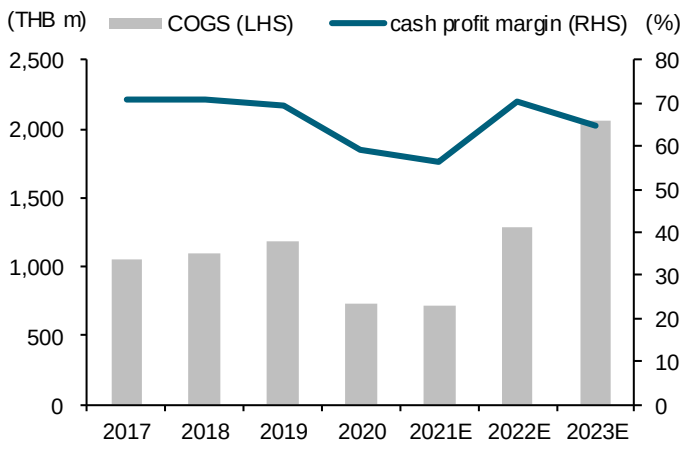
BAFS' net profit and service revenue were rosy and in a steady uptrend before the Covid-19 outbreak, as its core performance is highly dependent on tourism. While we expect BAFS to post another net loss in 2021 due to the slow recovery rate and vaccination rollout rate, we think BAFS will turn around and post a net profit, reaching its pre-Covid level, by 2022. We project BAFS' net profit to grow at a CAGR of 4.66% from 2019-23, which would mainly be driven by 1) a rise in core service revenue from the aviation business; 2) a stable revenue inflow from its solar power plants; and 3) an improving market share and margin for the NFPT project.

Exhibit 46: Net profit, net profit growth, service revenue



Sources: BAFS; FSSIA estimates

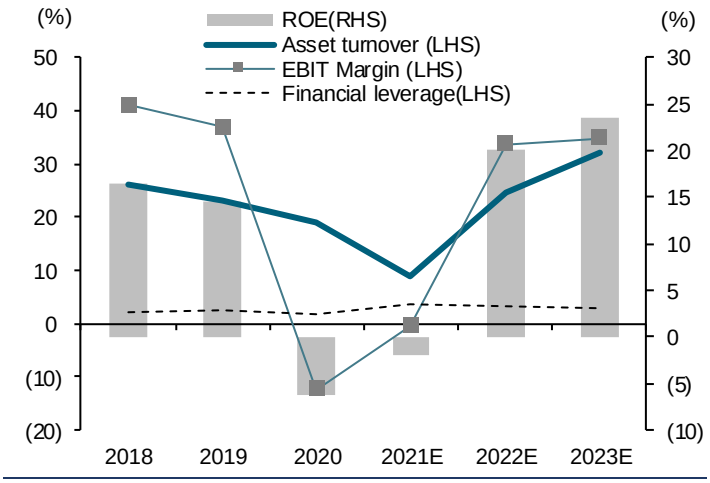
Exhibit 47: COGS, cash profit margin



Sources: BAFS; FSSIA estimates

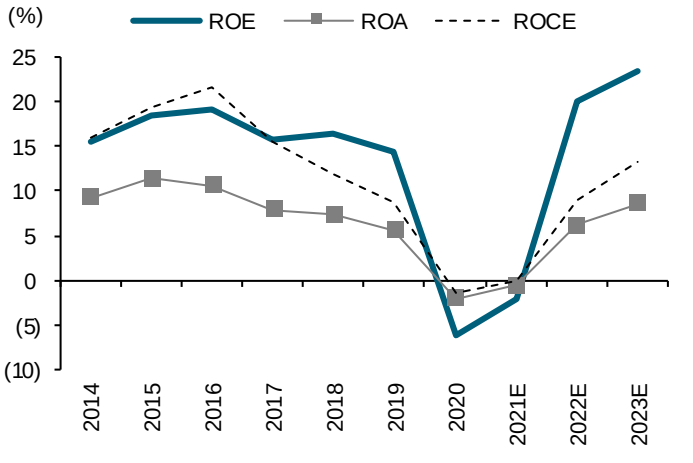
We expect BAFS' earnings to exceed its pre-Covid level in 2022 with a net profit of THB1,103m. The net profit margin is likely to surpass its pre-Covid level in 2022, as we think BAFS' cost reduction measures implemented in 2020 should help boost its net margin in 2022 onward.

Exhibit 48: ROE, asset turnover, EBIT margin, financial leverage



Sources: BAFS; FSSIA estimates

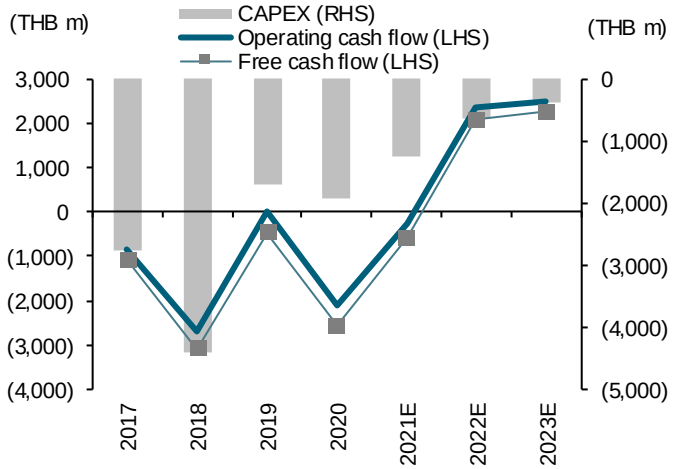
Exhibit 49: ROE, ROA, ROCE



Sources: BAFS; FSSIA estimates

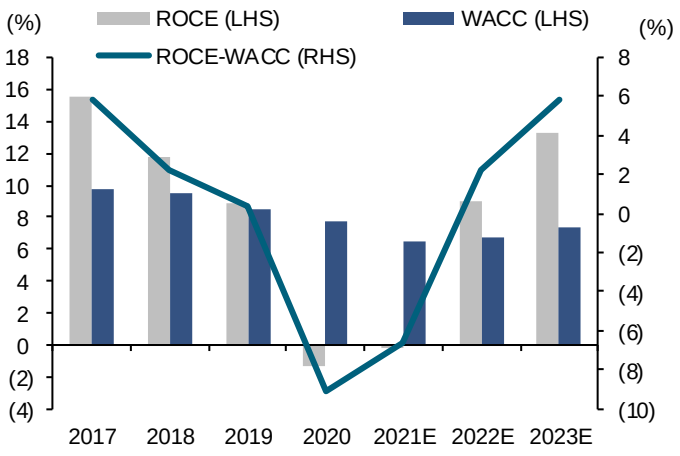
Dupont analysis. Our analysis indicates that BAFS' ROE should return to positive in 2022 onward, surging to around 20% in 2022-23. The main driver would be an improvement in the EBIT margin due to the economies of scales. The increase in asset turnover, which is the result of higher sales generated compared to the average assets employed, is another factor to drive up its ROE. The financial leverage is quite constant, with a slight increase from 2020 onward due to new investment projects.

Exhibit 50: CAPEX, OpFCF, FCF



Sources: BAFS; FSSIA estimates

Exhibit 51: ROCE, WACC, ROCE-WACC



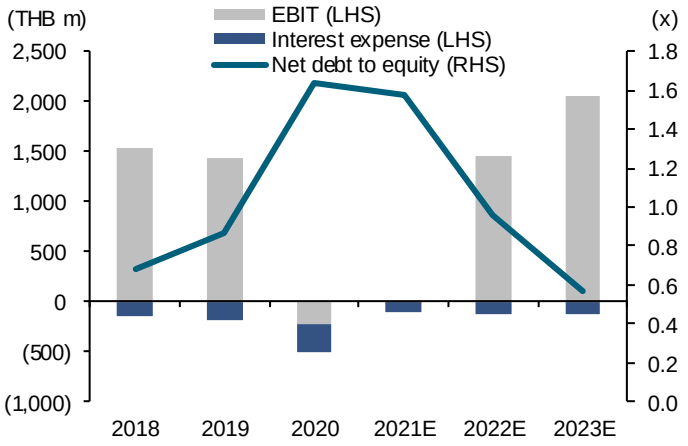
Sources: BAFS; FSSIA estimates

We expect BAFS' capital expenditure to decrease in at least in the next 2-3 years as it tries to cut costs on acquiring assets and focus only on already invested capital and core operations. Therefore, its operating cash flow and free cash flow show rebound to the positive level again in 2022-23.

The ROCE should increase as well, as sales and EBIT are likely to rise after the lifting of the tourism ban. We project the ROCE to leap from -1.4% in 2021 to 8.9% in 2022. The gap between ROCE and WACC should be wider as well, due to the faster growth of ROCE compared to the increase in average cost of capital.

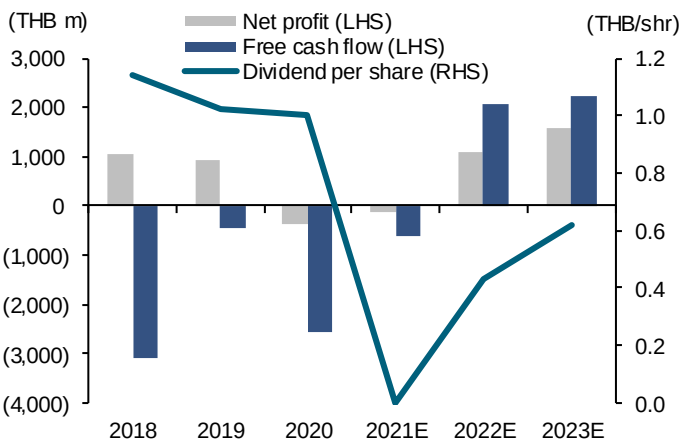
The net debt to equity ratio should decrease gradually, as BAFS follows through its debt repayment scheme, from which we expect the ratio to return to its pre-Covid level in 2023. The interest expense would also decrease correspondently with the lower debt.

Exhibit 52: EBIT, interest expense, net debt to equity



Sources: BAFS; FSSIA estimates

Exhibit 53: FCF, net profit, dividend per share



Sources: BAFS; FSSIA estimates

Valuation

We initiate coverage on BAFS with an SOTP-based TP of THB40. We derive our THB40 TP using:

1) A THB19.1 value for BAFS' aviation refuelling business based on 24x 2022E P/E – still a discount to its 5-year average of 25.2x, as we think the operating year in 2021 remains in transition from a pre- to post-Covid environment;

2) A THB5 value for its solar farms using a DCF valuation, based on a risk-free rate of 2.3%, a risk premium of 8.5%, a beta of 0.8, and 36% equity funding, resulting in a WACC of 7.06%;

3) A THB25 value for BAFS' stake in FPT's two pipeline networks using a DCF valuation method based on a risk-free rate of 2.3%, a risk premium of 8.5%, a beta of 0.8, and 40% equity funding, resulting in a WACC of 5.22%.

Exhibit 54: Valuation of BAFS' core aviation business (refuelling and storage)

Aviation refuelling business	Low	Mid	High
Selected P/E multiple (x)	22	24	26
	(THB m)	(THB m)	(THB m)
Net income	508	508	508
Equity value	11,181	12,198	13,124
Shares outstanding	637.5	637.5	637.5
Implied value range	**17.5**	**19.1**	**20.7**

Sources: BAFS; FSSIA Estimates

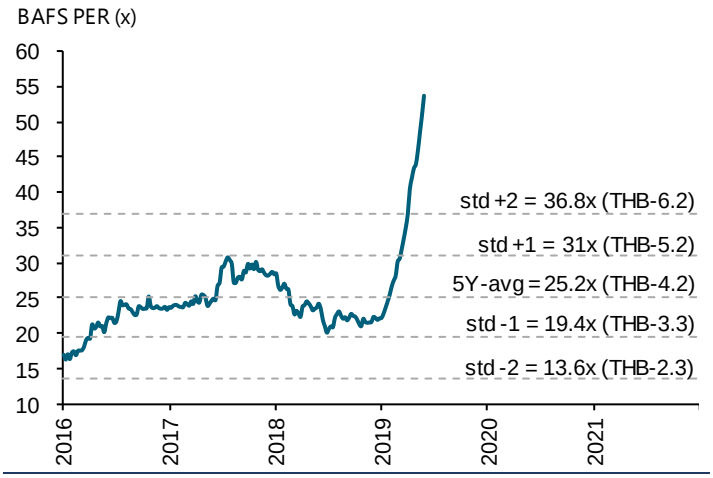
Exhibit 55: SOTP valuation

	Solar	FPT	Comments
Risk-free rate (%)	2.3	2.3	
Market risk premium (%)	8.5	8.5	
Stock beta	0.8	0.8	
Cost of equity, Ke (%)	13	8	
Weight applied (Equity) (%)	36	40	
Pretax cost of debt (%)	5	4	Higher interest rate for solar due to funding cost for acquisition
Marginal tax rate (%)	20	20	
Net cost of debt, Kd (%)	4	3	
Weight applied (Debt) (%)	64	60	
WACC (%)	7.06	5.22	
SOTP valuation	**THB m**	**THB/share**	**Comments**
Aviation business	12,198	19.1	Using average P/E ratio of the aviation refuelling industry
Solar power plant	3,199	5.0	Risk-free rate 2.3%; Risk premium 8.5%; WACC 7.06%
FPT	15,906	25.0	Risk-free rate 2.3%; Risk premium 8.5%; WACC 5.22%
Net debt	(5,829)	(9.1)	At end-2022E
Total	**25,473**	**40.0**	
Number of shares (m shares)	637.5		At end-2022E

Sources: BAFS; FSSIA estimates

We believe BAFS is one of Thailand's most attractive plays on the upcoming economic and tourism reopening, given its near-monopoly position as the leading service provider of jet refuelling, oil storage, and refined oil pipeline transportation among Thailand's key large airports.

Exhibit 56: Historical P/E band



Sources: Bloomberg; FSSIA estimates

Exhibit 57: Prospective P/BV band

Sources: Bloomberg; FSSIA estimates

Exhibit 58: Peer comparisons

Company	BBG code	Rec	Share Price	Target price	Upside	Market Cap	3Y EPS CAGR	----- PE -----		------ ROE -----		------- PBV -----		EV / EBITDA	
								21E	22E	21E	22E	21E	22E	21E	22E
			(LCY)	(LCY)	(%)	(USD m)	(%)	(x)	(x)	(%)	(%)	(x)	(x)	(x)	(x)
THAILAND															
Ptt Pcl	PTT TB	BUY	40	60	*50*	36,336	38.1	9.4	8.8	13.0	12.9	1.2	1.1	4.9	4.1
Ptt Explor & Prod	PTTEP TB	BUY	118	136	*15*	14,899	12.8	17.8	14.8	7.3	8.5	1.3	1.2	6.5	6.6
Thai Oil Pcl	TOP TB	BUY	55.5	74	*33*	3,601	NA	8.3	7.1	11.4	12.5	0.9	0.9	7.2	6.8
Bangkok Aviation Fuel	BAFS TB	BUY	28.5	40	*40*	578	NA	-	16.5	-	20.0	3.7	3.0	41.0	10.7
Star Petroleum Refin	SPRC TB	BUY	10.3	12	*17*	1,420	49.1	8.7	6.7	18.4	21.4	1.5	1.4	5.1	3.9
Bangchak Corp Pcl	BCP TB	BUY	26.5	38	*43*	1,144	NA	13.9	6.4	5.6	11.5	0.8	0.7	9.4	7.3
Esso Thailand Pcl	ESSO TB	BUY	8.35	14.3	*71*	919	59.2	6.6	6.4	26.3	22.2	1.5	1.3	5.0	4.4
Ptt Global Chemical	PTTGC TB	BUY	58.75	86	*46*	8,383	NA	13.7	10.6	6.9	9.0	0.9	1.0	9.2	8.0
Irpc Pcl	IRPC TB	BUY	3.9	5.3	*36*	2,535	NA	15.1	7.1	6.9	13.6	1.0	0.9	7.5	4.9
Tipco Asphalt	TASCO TB	BUY	19.9	22.5	*13*	999	(5.7)	14.1	10.3	14.8	19.1	2.1	1.9	10.8	7.7
Thailand avg						**70,814**	**24.7**	**11.8**	**10.1**	**10.9**	**11.9**	**1.2**	**1.1**	**6.4**	**5.4**
PAKISTAN															
Oil & Gas Develop	OGDC PA	NA	99.26	NA	*NA*	2,715	2.0	4.6	4.3	13.0	12.4	0.6	0.5	1.8	1.7
Pakistan Petroleum	PPL PA	NA	90.32	NA	*NA*	1,563	NA	4.9	4.6	13.8	13.2	NA	NA	NA	NA
Pakistan avg						**4,278**	**2.0**	**4.7**	**4.4**	**13.3**	**12.7**	**0.4**	**0.3**	**1.2**	**1.1**
HONG KONG															
Cnooc	883 HK	NA	8.66	NA	*NA*	49,627	37.3	5.3	5.0	12.8	13.0	0.7	0.6	2.4	2.2
China Petro&Chem	386 HK	NA	3.97	NA	*NA*	76,540	NA	6.4	6.3	8.1	7.7	0.5	0.5	3.9	3.7
Petrochina	857 HK	NA	3.58	NA	*NA*	137,686	25.2	7.6	8.4	5.6	4.9	0.4	0.4	3.9	4.0
China Oilfield Services	2883 HK	NA	6.79	NA	*NA*	8,209	11.2	8.4	6.6	7.4	9.4	0.7	0.6	8.7	7.8
Hongkong avg						**272,063**	**30.3**	**6.9**	**7.1**	**7.7**	**7.3**	**0.5**	**0.5**	**3.8**	**3.7**
INDONESIA															
Medco Energi Inter	MEDC IJ	NA	670.00	NA	*NA*	1,138	NA	4.5	2.7	8.2	12.5	0.4	0.7	5.4	5.1
Energi Mega Persada	ENRG IJ	NA	103.00	NA	*NA*	72	NA								
Indonesia avg						**1,210**	**NA**	**4.5**	**2.7**	**8.2**	**12.5**	**0.4**	**0.7**	**5.4**	**5.1**
INDIA															
Reliance Industries	RIL IN	NA	2,225.7	NA	*NA*	194,899	20.4	31.8	24.6	8.5	7.7	2.4	2.0	20.0	14.7
Oil & Natural Gas	ONGC IN	NA	120.3	NA	*NA*	20,392	78.0	11.7	6.7	6.4	10.0	0.7	0.6	5.4	4.1
Oil India	OINL IN	NA	148.5	NA	*NA*	2,183	(11.1)	7.9	6.3	7.3	8.3	0.5	0.5	12.5	5.4
Indian Oil	IOCL IN	NA	112.3	NA	*NA*	14,162	NA	6.9	6.8	14.6	13.1	1.0	0.9	6.3	6.2
Bharat Petroleum	BPCL IN	NA	472.4	NA	*NA*	13,846	36.1	10.1	11.5	24.7	17.6	2.2	1.9	8.0	8.8
Hindustan Petroleum	HPCL IN	NA	295.8	NA	*NA*	5,725	34.8	5.6	6.8	24.1	16.8	1.3	1.1	5.7	7.1
Gail India	GAIL IN	NA	155.1	NA	*NA*	9,182	(5.8)	13.6	9.0	10.7	13.9	1.4	1.2	10.8	7.0
Petronet Lng	PLNG IN	NA	225.9	NA	*NA*	4,549	9.2	12.5	10.2	23.9	27.1	2.9	2.7	7.3	6.4
India avg						**264,939**	**20.9**	**26.1**	**20.2**	**10.2**	**9.4**	**2.1**	**1.8**	**16.6**	**12.4**
JAPAN															
Inpex Corp	1605 JP	NA	816.00	NA	*NA*	10,695	73.2	8.0	7.3	5.3	5.7	0.4	0.4	3.9	3.5
Japan avg						**10,695**	**73.2**	**8.0**	**7.3**	**5.3**	**5.7**	**0.4**	**0.4**	**3.9**	**3.5**
TAIWAN															
Formosa Petrochem	6505 TT	NA	104.50	NA	*NA*	34,950	81.3	22.2	22.3	12.1	12.1	2.9	2.8	13.8	14.0
Taiwan avg						**34,950**	**81.3**	**22.2**	**22.3**	**12.1**	**12.1**	**2.9**	**2.8**	**13.8**	**14.0**
SOUTH KOREA															
S-Oil Corp	010950 KS	NA	100,000	NA	*NA*	9,896	NA	10.8	11.3	17.5	15.0	1.8	1.6	7.0	7.4
South Korea avg						**9,896**	**NA**	**10.8**	**11.3**	**17.5**	**15.0**	**1.8**	**1.6**	**7.0**	**7.4**
AUSTRALIA															
Woodside Petroleum	WPL AU	NA	23.20	NA	*NA*	16,460	NA	11.9	12.2	9.3	9.0	1.3	1.2	5.6	5.5
Santos	STO AU	NA	7.34	NA	*NA*	11,333	41.5	13.8	12.5	10.6	10.2	1.4	1.3	5.9	5.5
Oil Search	OSH AU	NA	4.03	NA	*NA*	6,007	NA	21.1	13.7	5.3	6.6	1.0	1.0	8.7	7.4
Australia avg						**33,800**	**41.5**	**14.2**	**12.6**	**9.0**	**9.0**	**1.3**	**1.2**	**6.3**	**5.8**
Oil & Gas under coverage						**70,814**	**24.7**	**11.8**	**10.1**	**10.9**	**11.9**	**1.2**	**1.1**	**6.4**	**5.4**
Average (all)						**702,644**	**23.6**	**15.7**	**13.4**	**9.4**	**9.1**	**1.3**	**1.2**	**9.5**	**7.8**

Share prices as of 18 Jun 2021
Sources: Bloomberg, FSSIA estimates

Corporate Governance - BAFS

Board structure

Number of Independent Directors (ID)	5/14
Percentage of IDs on the board	36% (vs SEC guideline of at least 1/3)
ID participation/attendance at board meetings	100%
ID participation in audit/remuneration committees	3/3 in audit committee, and 2/4 in remuneration committees
ID terms (years of service, re-election/replacement procedures)	The number of years of independent directors' term of office and the number of consecutive terms for directors are not defined due to a limited number of persons who have knowledge and experience related to BAFS' business

Source: BAFS

Additional comments: None

Audit Practices

Auditor	EY Office Limited
Length of service	NA
Reporting incidents	None
Fee track record	3,842,608.25 Baht in 2019 and 65,000 Baht for the preparation of the summary report on fuel volume for aircraft refuelling service at Don Mueang International Airport
Policy on change of audit firm	None

Source: BAFS

Additional comments: None

Compensation and remuneration

Directors' remuneration vs earnings/ROE/share performance	THB24m vs 2019's NP of THB940m
Changes/stability in senior management	None
Incidents of termination of senior management	None
Track record on insider sales	None

Source: BAFS

Additional comments: None

Shareholders' rights

Communication - shareholder participation in AGMs/EGMs	Once a year within 4 months from the last day of the Company's fiscal year
Related party transactions	In accordance with SEC regulations
Voting issues - policies, incidents of rejected proposals	None

Source: BAFS

Additional comments: None

Financial Statements

Bangkok Aviation Fuel Services

Profit and Loss (THB m) Year Ending Dec	2019	2020	2021E	2022E	2023E
Revenue	3,872	1,804	1,651	4,338	5,884
Cost of goods sold	(1,185)	(735)	(723)	(1,281)	(2,061)
Gross profit	**2,688**	**1,070**	**928**	**3,057**	**3,823**
Other operating income	-	-	-	-	-
Operating costs	(701)	(589)	(264)	(694)	(941)
Operating EBITDA	**1,986**	**481**	**664**	**2,363**	**2,881**
Depreciation	(645)	(794)	(750)	(980)	(909)
Goodwill amortisation	0	0	0	0	0
Operating EBIT	**1,342**	**(313)**	**(86)**	**1,383**	**1,972**
Net financing costs	(196)	(281)	(97)	(123)	(135)
Associates	(1)	(2)	(4)	(4)	(4)
Recurring non-operating income	83	88	76	76	76
Non-recurring items	1	2	0	0	0
Profit before tax	**1,229**	**(505)**	**(107)**	**1,336**	**1,913**
Tax	(261)	88	0	(233)	(333)
Profit after tax	**968**	**(417)**	**(107)**	**1,103**	**1,580**
Minority interests	(27)	45	0	0	0
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
Reported net profit	**941**	**(372)**	**(107)**	**1,103**	**1,580**
Non-recurring items & goodwill (net)	**(1)**	**(2)**	**0**	**0**	**0**
Recurring net profit	**940**	**(374)**	**(107)**	**1,103**	**1,580**
Per share (THB)					
Recurring EPS *	1.47	(0.59)	(0.17)	1.73	2.48
Reported EPS	1.48	(0.58)	(0.17)	1.73	2.48
DPS	1.25	1.20	0.00	0.69	0.99
Diluted shares (used to calculate per share data)	637	637	637	637	637
Growth					
Revenue (%)	3.1	(53.4)	(8.5)	162.7	35.6
Operating EBITDA (%)	(2.8)	(75.8)	38.1	256.0	21.9
Operating EBIT (%)	(9.6)	nm	nm	nm	42.6
Recurring EPS (%)	(10.5)	nm	nm	nm	43.2
Reported EPS (%)	(10.4)	nm	nm	nm	43.2
Operating performance					
Gross margin inc. depreciation (%)	52.8	15.3	10.8	47.9	49.5
Gross margin of key business (%)	-	-	-	-	-
Operating EBITDA margin (%)	51.3	26.6	40.2	54.5	49.0
Operating EBIT margin (%)	34.7	(17.4)	(5.2)	31.9	33.5
Net margin (%)	24.3	(20.7)	(6.5)	25.4	26.9
Effective tax rate (%)	21.2	17.4	17.4	17.4	17.4
Dividend payout on recurring profit (%)	84.8	(204.4)	-	40.0	40.0
Interest cover (X)	7.3	(0.8)	(0.1)	11.8	15.2
Inventory days	13.9	23.2	20.9	13.1	10.2
Debtor days	36.2	55.3	37.0	16.6	15.4
Creditor days	108.2	113.8	86.0	85.4	102.3
Operating ROIC (%)	8.9	(1.8)	(0.5)	7.9	11.8
ROIC (%)	8.0	(1.1)	0.0	7.2	10.5
ROE (%)	14.5	(6.2)	(2.1)	20.0	23.5
ROA (%)	6.7	(1.1)	(0.2)	6.8	9.2

* Pre-exceptional, pre-goodwill and fully diluted

Revenue by Division (THB m)	2019	2020	2021E	2022E	2023E
Aviation refuelling	3,140	1,203	716	3,286	4,793
Fuel transporation (FPT)	728	566	594	711	750
Others	5	35	0	0	0
Solar powerplants	0	0	341	341	341

Sources: Bangkok Aviation Fuel Services; FSSIA estimates

Financial Statements

Bangkok Aviation Fuel Services

Cash Flow (THB m) Year Ending Dec	2019	2020	2021E	2022E	2023E
Recurring net profit	940	(374)	(107)	1,103	1,580
Depreciation	645	794	750	980	909
Associates & minorities	(2)	(4)	(4)	(4)	0
Other non-cash items	-	-	-	-	-
Change in working capital	(95)	(796)	254	787	258
Cash flow from operations	**1,488**	**(380)**	**893**	**2,866**	**2,747**
Capex - maintenance	(408)	(516)	(500)	(467)	(433)
Capex - new investment	-	-	-	-	-
Net acquisitions & disposals	(29)	(44)	1,008	(151)	(309)
Other investments (net)	0	0	0	0	0
Cash flow from investing	**(437)**	**(560)**	**508**	**(617)**	**(742)**
Dividends paid	(873)	(778)	(637)	(166)	(513)
Equity finance	0	0	0	0	0
Debt finance	1,088	2,111	(1,396)	(1,022)	(1,000)
Other financing cash flows	(1,406)	(1,627)	466	(130)	133
Cash flow from financing	**(1,192)**	**(293)**	**(1,568)**	**(1,317)**	**(1,380)**
Non-recurring cash flows	-	-	-	-	-
Other adjustments	0	0	0	0	0
Net other adjustments	**0**	**0**	**0**	**0**	**0**
Movement in cash	**(141)**	**(1,233)**	**(166)**	**932**	**625**
Free cash flow to firm (FCFF)	1,247.27	(659.34)	1,498.30	2,372.48	2,140.17
Free cash flow to equity (FCFE)	732.80	(455.75)	471.22	1,097.27	1,138.04
Per share (THB)					
FCFF per share	1.96	(1.03)	2.35	3.72	3.36
FCFE per share	1.15	(0.71)	0.74	1.72	1.79
Recurring cash flow per share	2.48	0.65	1.00	3.26	3.90

Balance Sheet (THB m) Year Ending Dec	2019	2020	2021E	2022E	2023E
Tangible fixed assets (gross)	19,809	21,718	22,509	23,300	24,091
Less: Accumulated depreciation	(7,112)	(7,651)	(8,701)	(9,521)	(10,412)
Tangible fixed assets (net)	**12,697**	**14,066**	**13,808**	**13,779**	**13,679**
Intangible fixed assets (net)	**61**	**1,334**	**73**	**73**	**73**
Long-term financial assets	-	-	-	-	-
Invest. in associates & subsidiaries	89	133	133	133	133
Cash & equivalents	2,038	805	638	1,571	2,196
A/C receivable	388	159	175	219	278
Inventories	50	43	40	53	62
Other current assets	116	893	635	150	204
Current assets	**2,593**	**1,900**	**1,489**	**1,992**	**2,739**
Other assets	1,906	2,033	2,033	2,033	2,033
Total assets	**17,346**	**19,466**	**17,535**	**18,009**	**18,656**
Common equity	6,518	5,493	4,948	6,086	7,354
Minorities etc.	1,346	1,274	1,274	1,274	1,274
Total shareholders' equity	**7,864**	**6,767**	**6,223**	**7,361**	**8,628**
Long term debt	7,180	9,396	8,000	7,000	6,000
Other long-term liabilities	1,280	2,640	2,640	2,640	2,640
Long-term liabilities	**8,460**	**12,036**	**10,640**	**9,640**	**8,640**
A/C payable	296	162	178	421	734
Short term debt	526	422	422	400	400
Other current liabilities	200	78	71	187	254
Current liabilities	**1,022**	**662**	**672**	**1,008**	**1,388**
Total liabilities and shareholders' equity	**17,346**	**19,466**	**17,534**	**18,009**	**18,656**
Net working capital	59	855	601	(187)	(445)
Invested capital	14,812	18,421	16,647	15,830	15,472
* Includes convertibles and preferred stock which is being treated as debt					
Per share (THB)					
Book value per share	10.22	8.62	7.76	9.55	11.54
Tangible book value per share	10.13	6.52	7.65	9.43	11.42
Financial strength					
Net debt/equity (%)	72.1	133.2	125.1	79.2	48.7
Net debt/total assets (%)	32.7	46.3	44.4	32.4	22.5
Current ratio (x)	2.5	2.9	2.2	2.0	2.0
CF interest cover (x)	4.7	(0.6)	5.9	9.9	9.4

Valuation	2019	2020	2021E	2022E	2023E
Recurring P/E (x) *	**19.3**	**(48.5)**	**(169.6)**	**16.5**	**11.5**
Recurring P/E @ target price (x) *	**27.1**	**(68.1)**	**(238.0)**	**23.1**	**16.1**
Reported P/E (x)	19.3	(48.8)	(169.6)	16.5	11.5
Dividend yield (%)	4.4	4.2	-	2.4	3.5
Price/book (x)	2.8	3.3	3.7	3.0	2.5
Price/tangible book (x)	2.8	4.4	3.7	3.0	2.5
EV/EBITDA (x) **	12.7	59.2	41.0	10.7	8.2
EV/EBITDA @ target price (x) **	16.4	74.4	52.1	13.8	10.8
EV/invested capital (x)	1.7	1.5	1.6	1.6	1.5

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

Sources: Bangkok Aviation Fuel Services; FSSIA estimates

Corporate Governance report of Thai listed companies 2020

EXCELLENT LEVEL

AAV	ADVANC	AF	AIRA	AKP	AKR	ALT	AMA	AMATA	AMATAV	ANAN
AOT	AP	ARIP	ARROW	ASP	BAFS	BANPU	BAY	BCP	BCPG	BDMS
BEC	BEM	BGRIM	BIZ	BKI	BLA	BOL	BPP	BRR	BTS	BWG
CENTEL	CFRESH	CHEWA	CHO	CIMBT	CK	CKP	CM	CNT	COL	COMAN
COTTO	CPALL	CPF	CPI	CPN	CSS	DELTA	DEMCO	DRT	DTAC	DTC
DV8	EA	EASTW	ECF	ECL	EGCO	EPG	ETE	FNS	FPI	FPT
FSMART	GBX	GC	GCAP	GEL	GFPT	GGC	GPSC	GRAMMY	GUNKUL	HANA
HARN	HMPRO	ICC	ICHI	III	ILINK	INTUCH	IRPC	IVL	JKN	JSP
JWD	K	KBANK	KCE	KKP	KSL	KTB	KTC	LANNA	LH	LHFG
LIT	LPN	MAKRO	MALEE	MBK	MBKET	MC	MCOT	METCO	MFEC	MINT
MONO	MOONG	MSC	MTC	NCH	NCL	NEP	NKI	NOBLE	NSI	NVD
NYT	OISHI	ORI	OTO	PAP	PCSGH	PDJ	PG	PHOL	PLANB	PLANET
PLAT	PORT	PPS	PR9	PREB	PRG	PRM	PSH	PSL	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QTC	RATCH	RS	S	S & J	SAAM
SABINA	SAMART	SAMTEL	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SDC
SEAFCO	SEAOIL	SE-ED	SELIC	SENA	SIRI	SIS	SITHAI	SMK	SMPC	SNC
SONIC	SORKON	SPALI	SPI	SPRC	SPVI	SSSC	SST	STA	SUSCO	SUTHA
SVI	SYMC	SYNTEC	TACC	TASCO	TCAP	TFMAMA	THANA	THANI	THCOM	THG
THIP	THRE	THREL	TIP	TIPCO	TISCO	TK	TKT	TMB	TMILL	TNDT
TNL	TOA	TOP	TPBI	TQM	TRC	TSC	TSR	TSTE	TSTH	TTA
TTCL	TTW	TU	TVD	TVI	TVO	TWPC	U	UAC	UBIS	UV
VGI	VIH	WACOAL	WAVE	WHA	WHAUP	WICE	WINNER	TRUE		

VERY GOOD LEVEL

2S	ABM	ACE	ACG	ADB	AEC	AEONTS	AGE	AH	AHC	AIT
ALLA	AMANAH	AMARIN	APCO	APCS	APURE	AQUA	ASAP	ASEFA	ASIA	ASIAN
ASIMAR	ASK	ASN	ATP30	AUCT	AWC	AYUD	B	BA	BAM	BBL
BFIT	BGC	BJC	BJCHI	BROOK	BTW	CBG	CEN	CGH	CHARAN	CHAYO
CHG	CHOTI	CHOW	CI	CIG	CMC	COLOR	COM7	CPL	CRC	CRD
CSC	CSP	CWT	DCC	DCON	DDD	DOD	DOHOME	EASON	EE	ERW
ESTAR	FE	FLOYD	FN	FORTH	FSS	FTE	FVC	GENCO	GJS	GL
GLAND	GLOBAL	GLOCON	GPI	GULF	GYT	HPT	HTC	ICN	IFS	ILM
IMH	INET	INSURE	IRC	IRCP	IT	ITD	ITEL	J	JAS	JCK
JCKH	JMART	JMT	KBS	KCAR	KGI	KIAT	KOOL	KTIS	KWC	KWM
L&E	LALIN	LDC	LHK	LOXLEY	LPH	LRH	LST	M	MACO	MAJOR
MBAX	MEGA	META	MFC	MGT	MILL	MITSIB	MK	MODERN	MTI	MVP
NETBAY	NEX	NINE	NTV	NWR	OCC	OGC	OSP	PATO	PB	PDG
PDI	PICO	PIMO	PJW	PL	PM	PPP	PRIN	PRINC	PSTC	PT
QLT	RCL	RICHY	RML	RPC	RWI	S11	SALEE	SAMCO	SANKO	SAPPE
SAWAD	SCI	SCP	SE	SEG	SFP	SGF	SHR	SIAM	SINGER	SKE
SKR	SKY	SMIT	SMT	SNP	SPA	SPC	SPCG	SR	SRICHA	SSC
SSF	STANLY	STI	STPI	SUC	SUN	SYNEX	T	TAE	TAKUNI	TBSP
TCC	TCMC	TEAM	TEAMG	TFG	TIGER	TITLE	TKN	TKS	TM	TMC
TMD	TMI	TMT	TNITY	TNP	TNR	TOG	TPA	TPAC	TPCORP	TPOLY
TPS	TRITN	TRT	TRU	TSE	TVT	TWP	UEC	UMI	UOBKH	UP
UPF	UPOIC	UT	UTP	UWC	VL	VNT	VPO	WIIK	WP	XO
YUASA	ZEN	ZIGA	ZMICO							

GOOD LEVEL

7UP	A	ABICO	AJ	ALL	ALUCON	AMC	APP	ARIN	AS	AU
B52	BC	BCH	BEAUTY	BGT	BH	BIG	BKD	BLAND	BM	BR
BROCK	BSBM	BSM	BTNC	CAZ	CCP	CGD	CITY	CMAN	CMO	CMR
CPT	CPW	CRANE	CSR	D	EKH	EP	ESSO	FMT	GIFT	GREEN
GSC	GTB	HTECH	HUMAN	IHL	INOX	INSET	IP	JTS	JUBILE	KASET
KCM	KKC	KUMWEL	KUN	KWG	KYE	LEE	MATCH	MATI	M-CHAI	MCS
MDX	MJD	MM	MORE	NC	NDR	NER	NFC	NNCL	NPK	NUSA
OCEAN	PAF	PF	PK	PLE	PMTA	POST	PPM	PRAKIT	PRECHA	PRIME
PROUD	PTL	RBF	RCI	RJH	ROJNA	RP	RPH	RSP	SF	SFLEX
SGP	SISB	SKN	SLP	SMART	SOLAR	SPG	SQ	SSP	STARK	STC
SUPER	SVOA	TC	TCCC	THMUI	TIW	TNH	TOPP	TPCH	TPIPP	TPLAS
TTI	TYCN	UKEM	UMS	VCOM	VRANDA	WIN	WORK	WPH		

Description	Score Range
Excellent	90-100
Very Good	80-89
Good	70-79

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; ** delisted

Source: Thai Institute of Directors Association (IOD); FSSIA's compilation

Anti-corruption Progress Indicator 2020

CERTIFIED										
2S	ADVANC	AI	AIE	AIRA	AKP	AMA	AMANAH	AP	AQUA	ARROW
ASK	ASP	AYUD	B	BAFS	BANPU	BAY	BBL	BCH	BCP	BCPG
BGC	BGRIM	BJCHI	BKI	BLA	BPP	BROOK	BRR	BSBM	BTS	BWG
CEN	CENTEL	CFRESH	CGH	CHEWA	CHOTI	CHOW	CIG	CIMBT	CM	CMC
COL	COM7	CPALL	CPF	CPI	CPN	CSC	DCC	DELTA	DEMCO	DIMET
DRT	DTAC	DTC	EASTW	ECL	EGCO	FE	FNS	FPI	FPT	FSS
FTE	GBX	GC	GCAP	GEL	GFPT	GGC	GJS	GPSC	GSTEEL	GUNKUL
HANA	HARN	HMPRO	HTC	ICC	ICHI	IFS	INET	INSURE	INTUCH	IRPC
ITEL	IVL	K	KASET	KBANK	KBS	KCAR	KCE	KGI	KKP	KSL
KTB	KTC	KWC	L&E	LANNA	LHFG	LHK	LPN	LRH	M	MAKRO
MALEE	MBAX	MBK	MBKET	MC	MCOT	MFC	MFEC	MINT	MONO	MOONG
MPG	MSC	MTC	MTI	NBC	NEP	NINE	NKI	NMG	NNCL	NSI
NWR	OCC	OCEAN	OGC	ORI	PAP	PATO	PB	PCSGH	PDG	PDI
PDJ	PE	PG	PHOL	PL	PLANB	PLANET	PLAT	PM	PPP	PPPM
PPS	PREB	PRG	PRINC	PRM	PSH	PSL	PSTC	PT	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QLT	QTC	RATCH	RML	RWI	S & J
SABINA	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SEAOIL	SE-ED	SELIC
SENA	SGP	SIRI	SITHAI	SMIT	SMK	SMPC	SNC	SNP	SORKON	SPACK
SPC	SPI	SPRC	SRICHA	SSF	SSSC	SST	STA	SUSCO	SVI	SYNTEC
TAE	TAKUNI	TASCO	TBSP	TCAP	TCMC	TFG	TFI	TFMAMA	THANI	THCOM
THIP	THRE	THREL	TIP	TIPCO	TISCO	TKT	TMB	TMD	TMILL	TMT
TNITY	TNL	TNP	TNR	TOG	TOP	TPA	TPCORP	TPP	TRU	TSC
TSTH	TTCL	TU	TVD	TVI	TVO	TWPC	U	UBIS	UEC	UKEM
UOBKH	UWC	VGI	VIH	VNT	WACOAL	WHA	WHAUP	WICE	WIIK	XO
ZEN	TRUE									
DECLARED										
7UP	ABICO	AF	ALT	AMARIN	AMATA	AMATAV	ANAN	APURE	B52	BKD
BM	BROCK	BUI	CHO	CI	COTTO	DDD	EA	EFORL	EP	ERW
ESTAR	ETE	EVER	FSMART	GPI	ILINK	IRC	J	JKN	JMART	JMT
JSP	JTS	KWG	LDC	MAJOR	META	NCL	NOBLE	NOK	PK	PLE
ROJNA	SAAM	SAPPE	SCI	SE	SHANG	SINGER	SKR	SPALI	SSP	STANLY
SUPER	SYNEX	THAI	TKS	TOPP	TRITN	TTA	UPF	UV	WIN	ZIGA

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 th e 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 June 24, 2019) are categorised into: 1) companies that have declared their intention to join CAC, and; 2) companies certified by CAC.

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

GENERAL DISCLAIMER

ANALYST(S) CERTIFICATION

Suwat Sinsadok 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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Company	Ticker	Price	Rating	Valuation & Risks
Bangkok Aviation Fuel Services	BAFS TB	THB 28.50	BUY	Downside risks to our SOTP-based target price include a slower than expected vaccination rate, which would lead to slower demand in tourism activities, plus uncertainties over the fuel volume demand in the North, which could lead to volatilities in Fuel Pipeline Transportation Limited (FPT)'s income.
Ratch Group	RATCH TB	THB 52.75	BUY	The downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand; 2) lower crude price; and 3) delays in starting new projects.
PTT PCL	PTT TB	THB 40.00	BUY	Risks to our SoTP-based valuation are the oil price and potential earnings downside from government intervention.
PTT Explor & Prod	PTTEP TB	THB 118.00	BUY	Risks our TP, which is based on EV/EBITDA, are a sharp decline in oil price and a potential earnings downside from government intervention.
Thai Oil	TOP TB	THB 55.50	BUY	Downside risks to our EV/EBITDA-based TP are a sharp rise in oil price and weak demand for refined oil products.
Star Petroleum Refining	SPRC TB	THB 10.30	BUY	TP is based on EV/EBITDA. Downside risks are a sharp rise in oil price and weak demand for refined oil products.
Bangchak Corp	BCP TB	THB 26.50	BUY	The downside risks to our SoTP-based TP include: 1) lower-than-expected demand for petroleum products; 2) higher crude premiums; and 3) unplanned shutdowns of the company's refinery plants.
Esso Thailand	ESSO TB	THB 8.35	BUY	The downside risks to our SoTP-based TP on ESSO include 1) lower-than-expected demand for petroleum products, 2) a higher crude premium, and 3) unplanned shutdowns of its refinery and petrochemical plants.
PTT Global Chemical	PTTGC TB	THB 58.75	BUY	The key downside risks to our EV/EBITDA-based TP are the weaker-than-expected HDPE price and HDPE-naphtha margin
IRPC PCL	IRPC TB	THB 3.90	BUY	Key risks to our positive view and EV/EBITDA-based target price are weaker-than-expected oil product demand growth and lower-than-expected PP-naphtha and SM-benzene margins.
Tipco Asphalt	TASCO TB	THB 19.90	BUY	Downside risks to our EV/EBITDA multiple based TP include 1) a lower asphalt margin due to a oversupply in Asia on the back of faster recovery of utilisation rate for global refiners; and 2) a lower-than-expected supply of alternative crudes and asphalt.
Bangkok Airways	BA TB	THB 10.20	BUY	Downside risks to our target price include 1) extraordinary events such as political turmoil and natural disasters; 2) higher-than-expected fuel expenses following an increase in oil prices; and 3) the slower-than-expected recovery of international tourist numbers.
Thai Airways	THAI TB	THB 3.32	HOLD	Downside risks to our DCF-based target price include 1) extraordinary events such as political turmoil and natural disasters; 2) higher-than-expected fuel expenses following an increase in oil prices; and 3) the slower-than-expected recovery of international tourist numbers. The upside risk is the availability of a COVID-19 vaccine.
Airports of Thailand	AOT TB	THB 66.00	BUY	Downside risks to our DCF-based target price include 1) a slowdown in the recovery of international passengers; 2) delays in the Suvarnabhumi Airport expansions (satellite terminal and northern expansion); and 3) the termination of the duty-free concession contracts from King Power.

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 Finansia 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 Finansia Syrus Securities Public Company Limited, which is the parent company of FSSIA.

All share prices are as at market close on 18-Jun-2021 unless otherwise stated.

RECOMMENDATION STRUCTURE

Stock ratings

Stock ratings are based on absolute upside or downside, which we define as (target price* - current price) / 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.