

# ÅAC Microtec

## Eutelsat order enhances growth prospects

Major new order and estimate revisions

Aerospace & defence

16 October 2019

**Price** **SEK4.55**

**Market cap** **SEK438m**

SEK12.47/£1

Net cash (SEKm) at 30 June 2019 72.9

Shares in issue 96.2m

Free float 89%

Code AAC

Primary exchange Nasdaq FN Premier

Secondary exchange N/A

ÅAC reported a weaker H119 than expected. However, we still anticipate some growth for the full year despite slower than hoped for recruitment of technicians and engineers but note the deferral of revenues to H219 from some delayed projects and the progress made in orders. The order backlog grew to SEK126m at H119 and has been enhanced by the recent addition of Eutelsat as a customer, with an initial two-satellite order worth over SEK24m with a potential to increase to SEK53.5m. However, the growth path appears to have been deferred by a couple of quarters. The revised expectations leave our DCF derived fair value at SEK8.4 per share and is contingent on securing the right skill sets to ramp up production.

Year end	Revenue (SEKm)	PBT* (SEKm)	EPS* (SEK)	DPS (SEK)	P/E (x)	Yield (%)
12/17	13.3	(27.3)	(0.75)	0.0	N/A	0.0
12/18	77.9	(38.4)	(0.50)	0.0	N/A	0.0
12/19e	87.2	(20.2)	(0.22)	0.0	N/A	0.0
12/20e	129.8	(3.9)	(0.04)	0.0	N/A	0.0

Note: \*PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

## Project delays defer growth

The company is proposing to change its official name to AAC Clyde Space to align it with the commercial proposition in the 'new space' market. H119 did not see the progression we had expected, thanks to project delays and limited resources due to slow recruitment. As a result, we have deferred our growth expectations, reducing our FY19 and FY20 revenue estimates by 28% and 35% respectively, deferring profitability until FY21. However, the order backlog grew substantially in H119 to SEK126m (FY18 SEK68m). The Orbcomm 'space as a service' (SaaS) project was primarily responsible for the growth. Growing subsystems deliveries and project work are expected to accelerate sales in H219 despite similar platform deliveries.

## Road map for growth

The new CEO has experience in growing a small-satellite space business from his previous employment and has set out a roadmap for growth for the group. Increasing standardisation of platforms for payload integration should facilitate volume ramp up as constellations start to be deployed. In the meantime, the company envisages delivering around 20 development and verification platforms as a base. For 2019 and 2020 we now expect deliveries of six and 11 platforms respectively. The recent order is initially worth over SEK24m (potentially rising to SEK53.5m) from Eutelsat for two 6U nanosatellites to be deployed in Q121 improves the quality of the backlog and enhances AAC Clyde's credentials.

## Valuation: Growth deferral reduces cash valuation

Our forecasts remain contingent on ÅAC winning at least one initial constellation order with deliveries commencing next year. As we do not now expect AAC Clyde Space to be profitable until FY21, we look at our capped DCF as the primary estimation of fair value and this stands at SEK8.4 per share (SEK11.2 previously).

## Share price performance



% 1m 3m 12m

Abs 19.3 10.0 9.0

Rel (local) 18.9 8.7 (2.3)

52-week high/low SEK6.02 SEK2.62

## Business description

Based in Sweden, ÅAC Microtec is a world leader in nanosatellite end-to-end solutions, subsystems and platforms after merging with Clyde Space in Scotland. The merged company also supplies a range of technology components to other small satellite manufacturers globally.

## Next events

Q319 results 21 November 2019

## Analyst

Andy Chambers +44 (0)20 3681 2525

[industrials@edisongroup.com](mailto:industrials@edisongroup.com)

[Edison profile page](#)

**ÅAC Microtec is a research client of Edison Investment Research Limited**

## H119 results

The H119 results did not show the progression we had anticipated as AAC experienced project delays, both in terms of ongoing programmes and the deferral of the start up of some projects. The main reason appears to have been a slower recruitment of engineers and technicians by Clyde Space in Glasgow than management expected. There were also some increased costs on specific project that adversely affected profitability. It should be noted that due to its relatively small size, an individual project can make a significant difference to financial performance.

<b>Exhibit 1: AAC Microtec H119 results summary</b>			
<b>SEKm</b>	<b>H118**</b>	<b>H119</b>	<b>% change</b>
AAC	14.414	13.779	(4%)
Clyde	24.077	17.884	(26%)
<b>Net sales</b>	<b>38.491</b>	<b>31.663</b>	<b>(18%)</b>
Satellite platforms	12.733	7.861	(38%)
Subsystems	23.384	23.688	1%
Licence income	2.374	0.114	(95%)
<b>Net sales</b>	<b>38.491</b>	<b>31.663</b>	<b>(18%)</b>
Other operating income	3.083	5.354	74%
Development work capitalised	1.327	1.481	12%
<b>Group income</b>	<b>42.901</b>	<b>38.498</b>	<b>(10%)</b>
Raw materials & subcontractors	(13.9)	(14.2)	2%
Personnel costs	(27.1)	(24.9)	(8%)
Other external expenses	(11.2)	(11.2)	0%
<b>EBITDA adjusted</b>	<b>(9.4)</b>	<b>(11.9)</b>	<b>27%</b>
Other operating expenses (foreign exchange losses)	0.0	(2.3)	
Acquisition expenses	(8.8)	0.0	
<b>EBITDA reported</b>	<b>(18.1)</b>	<b>(14.2)</b>	<b>(22%)</b>
Depreciation and Amortisation	(7.5)	(6.6)	(13%)
<b>EBIT</b>	<b>(25.6)</b>	<b>(20.8)</b>	<b>(19%)</b>
<b>PBT</b>	<b>(25.7)</b>	<b>(21.3)</b>	<b>(17%)</b>
Net income	(25.3)	(21.1)	(17%)
<b>EPS (SEK)</b>	<b>(0.40)</b>	<b>(0.29)</b>	<b>(28%)</b>
<b>Net cash at period end</b>	<b>37.11</b>	<b>72.90</b>	<b>96%</b>
Lease liabilities*	-	-12.658	
Total financial liabilities*	-	60.24	

Source: Company reports. Note: \*IFRS 16 adopted from 1 January 2019; \*\*restated to IFRS accounting standards

The key financial highlights of H119 were as follows:

- Group net sales fell 18% to SEK31.7m (H118 SEK38.5m) reflecting the project delays as well as lower licence income.
- Total group income including capitalised development work and other operating income fell 10% to SEK38.5m (H118 SEK42.9m).
- Adjusted EBITDA loss (excluding exchange losses and H118 acquisition costs) increased by 27% to SEK11.9m, as total operating expenses fell 4% to SEK50.4m (SEK52.3m).
- The reported loss before tax was reduced by 17% to SEK21.3m (H118 SEK25.7m). Before exchange losses and acquisition costs the loss before tax increased by 12% to SEK19.0m (H118 SEK17.0m).
- The reported net loss also fell 17%, but the higher share count resulting from the rights issue meant the loss per share fell by 28% to SEK0.29. (H118 loss per share SEK0.4).
- Net cash (excluding lease liabilities) at H119 of SEK72.9m almost doubled compared to the prior year due to the successful rights issue, which added SEK73.4m net of issue costs of SEK9.1m and compares to SEK10.1m at the end of Q119.

It is apparent that although the subsystems revenues increased, the platforms activity contracted. The satellite platform revenues are entirely attributable to Clyde Space and these saw the main impact of the labour constraints with a decline of 38%. Of this we estimate adverse translation from GBP into SEK was around 4%. Two satellites were delivered in Q219 including the first 6U Cubesat, NSLSat-1, in May that was launched in early July.

However, Clyde's subsystems revenues also reflected the delays, falling by 10% to SEK10.0m (H118 SEK11.3m). By contrast, subsystem revenues at ÅAC Microtec's operations in Sweden increased by 14% to SEK13.7m (H118 SEK12.0m).

Overall revenues for ÅAC's Swedish activity fell 4% as the prior year period had included SEK2.4m of income from a licence agreement. There were no new major licence agreements signed in H119.

The successful rights issue raised SEK82.5m of gross proceeds (SEK73.4m net of issue costs) during Q219, which together with a lower operating cash outflow leaves the company well positioned to pursue its growth strategy. Working capital benefited from customer prepayments as well as invoice payments and an R&D tax credit of £566k (c SEK6.8m), which more than offset a build up in inventory. Net working capital declined by SEK6.1m in H119, and the operating cash outflow was SEK8.6m (H118 outflow SEK27.7m including acquisition costs of SEK8.8m).

### **Accounting standards adoption and restatements**

Having adopted IFRS accounting from Q318, the H118 results have been restated to reflect the changes that primarily relate to the treatment of goodwill and other intangible assets as well as reclassifying acquisition costs relating to the acquisition of Clyde Space in January 2018. The reclassification had no impact on cashflow but reduced the group net loss to SEK25.3m (H118 loss SEK31.3m as reported under previous accounting policies). Net assets at 30 June 2018 were revised up by SEK4.2m to SEK442.9m.

In addition, the company has implemented the IFRS16 accounting standard for leases from 1 January 2019 but has not restated prior years as allowed under transition rules. The implementation has added a right of use asset of SEK16.8m to the balance sheet, matched by the addition of lease liabilities of SEK16.4m and a reduction in other receivables (prepayments) of SEK0.4m. Again, there is no change to cash flows. There is a minimal impact on both EBIT and PBT resulting from the replacement of rent expenses by a combination of depreciation and notional interest charge. The EBITDA loss was improved by SEK1.9m due to the change. At 30 June 2019 the right of use asset stood at SEK15.5m and the lease liability was SEK12.7m.

### **Outlook: A clear roadmap for growth**

---

Due to the project delays and given the incoming CEO's new roadmap for growth, we have deferred the growth path by about six months. The lumpy nature and low number of platform projects in the relatively early stage of the production ramp up phase means that the company's financials are susceptible to volatility if there are delivery delays when revenue is recognised. Against our previous expectation, 3 satellite deliveries have been deferred until 2020 with assumed knock on effect. This is reflected in substantially lower near-term revenues, earnings and cash flows as reflected in Exhibit 2. We now expect ÅAC to be close to break even in FY20, moving into profitability in FY21.

The strategy remains unaltered. ÅAC intends to grow its share of the rapidly expanding small satellites market, becoming the clear leader in commercial markets. Its already strong market position and financial capability to fund its plan should help to achieve this goal.

The roadmap for growth is intended to deliver a strategy that increases the proportion of SaaS (design, build, operate, support and potentially own) and platform revenues while still increasing subsystems sales. In the longer term the company envisages SaaS revenues as being the largest revenue stream from the current minimal amount. The NSLComm satellites and the SEK54m ORBCOMM order are the main SaaS contracts the company has announced so far, Platforms and Mission sales are also expected to grow to be the second-largest stream as constellation deployments and replenishments gather pace over the next five years. In part that should drive growth in Subsystems and Components revenues as will increasing sales and licence fees from third-party satellite manufacturers such as existing customers Loft Orbital, York Space Systems and Japanese manufacturers.

Under the new CEO's roadmap for the company there is an expectation that the company will have a base load of around 20 satellites delivered each year, with the ability to flex up manufacturing rates to around 100 a year as facilitated by repetition of standardised platforms for individual constellation products. The five-year expected service life of LEO nanosatellites should lead to a growing replenishment volume in the longer term as constellations are refreshed with potential technology upgrades.

In addition to growth, an improved operational performance should be delivered by increasing available resources such as facilities and personnel, streamlining production and through partnerships with other manufacturers and space operators. These measures should help management to consolidate AAC's position in terms of improved financials, meeting delivery schedules on time and achieving sales targets.

<b>Exhibit 2: AAC Microtec earnings revisions</b>						
Year to Dec (SEKm)	2019e			2020e		
	Prior	New	% change	Prior	New	% change
<b>By business</b>						
AAC	41.4	34.1	(17.6%)	55.3	45.8	(17.1%)
Clyde	79.4	53.1	(33.2%)	145.1	84.0	(42.1%)
Total group revenue	120.8	87.2	(27.8%)	200.4	129.8	(35.2%)
<b>By activity</b>						
Satellite platforms	34.9	17.4	(50.0%)	87.2	30.5	(65.0%)
Subsystems	82.9	66.7	(19.5%)	105.2	91.3	(13.2%)
Licence & royalties income	3.0	3.0		8.0	8.0	
<b>Total group revenue</b>	<b>120.8</b>	<b>87.2</b>	<b>(27.8%)</b>	<b>200.4</b>	<b>129.8</b>	<b>(35.2%)</b>
Own work capitalised	3.0	7.0		2.0	2.0	
Other operating income	2.2	2.0		3.2	2.1	
<b>Total group income</b>	<b>126.0</b>	<b>96.2</b>	<b>(23.7%)</b>	<b>205.7</b>	<b>133.9</b>	<b>(34.9%)</b>
Raw materials & subcontractors	(42.3)	(30.5)	(27.8%)	(68.1)	(44.1)	(35.2%)
Personnel costs	(56.8)	(56.8)	0.0%	(61.9)	(65.1)	5.3%
Other external expenses	(26.0)	(18.7)	(27.8%)	(42.1)	(23.4)	(44.5%)
Other operating expenses	0.0	(3.7)		0.0	0.0	
<b>EBITDA (company reported)</b>	<b>0.9</b>	<b>(13.6)</b>	<b>n.m.</b>	<b>33.6</b>	<b>1.3</b>	<b>(96%)</b>
<b>EBIT (Pre PPA amortisation)</b>	<b>(8.5)</b>	<b>(20.2)</b>	<b>138.6%</b>	<b>27.5</b>	<b>(4.0)</b>	<b>n.m.</b>
<b>Underlying PBT</b>	<b>(8.4)</b>	<b>(20.2)</b>	<b>140.4%</b>	<b>27.7</b>	<b>(3.9)</b>	<b>n.m.</b>
<b>EPS - underlying continuing (SEK)</b>	<b>(0.09)</b>	<b>(0.22)</b>	<b>140.4%</b>	<b>0.26</b>	<b>(0.04)</b>	<b>n.m.</b>
DPS (SEK)	0.0	0.0		0.0	0.0	
Net cash/(debt)	87.6	67.4	(23.0%)	106.7	60.0	(43.8%)
Source: Edison Investment Research estimates						

The roadmap constructed by Luis Gomes reflects his years of driving substantial growth in his previous role at Surrey Satellite Technologies (SSTL, now an Airbus subsidiary). It anticipates development of a universal controls system for satellites independent of size, called the Platform

Functional Unit. Largely software based to provide flexibility, the system should reduce manufacturing costs and improve scheduling by providing a standard platform for a variety of missions. In addition, AAC is seeking to better service customers through improving operational capability and extending the services offered, reflecting the evolving nature of the new LEO constellations. The development of advanced Software Defined Radios remains at the core of the advanced payloads being manufactured for customers.

We now assume just six satellite deliveries from Clyde in the current year and 11 in 2020. The 2020 expectation is contingent on winning at least one initial order for a constellation deployment.

Some of the employment constraints on delivering growth should already have eased as 11 new employees should have joined the company in Q319. The employee numbers are expected to continue to swell as growth continues and this is reflected in employment costs. It should be noted that the UK economy remains close to structural full employment, and the shortages of skilled engineers, scientists and other relevant disciplines are not a company-specific problem, which means a competitive recruitment market.

We have included exchange losses in the current year income statement. These relate to a £4.5m loan at Clyde, which is adjusted for fluctuations in the SEK/GBP exchange rate on consolidation. At the half year the non-cash loss was some SEK2.3m and assuming the rate of around SEK2.14/£1 pertains at the year end, we estimate this would increase to SEK3.7m.

Our underlying EBIT and PBT estimates include these FX losses, which are zero in future years as we maintain our exchange-rate expectations. As is our normal practice, we exclude PPA created intangible asset amortisation charges.

## **Improving quality and quantity of order backlog**

The expectation for growth is supported by a burgeoning order backlog. The order backlog at 30 June 2019 had grown to SEK126m from SEK67m at the start of the year and compared to SEK88m a year earlier. In large part this was due to the addition of the SaaS contract for ORBCOMM Inc signed in May, worth SEK54m over the next five years. The announcement of a contract for two satellites in September has further strengthened the backlog.

The introduction of both ORBCOMM and Eutelsat as customers this year significantly increases the quality of the customer base and extends it. Both have the financial capacity to readily pursue their ambitions in the LEO market, which differentiates them from many start ups in the 'New Space' market that have yet to fund their strategies.

Eutelsat's order awarded to Clyde for two 6U nanosatellites to be launched in 2021 to form part of its proposed ELO constellation of 25 satellites targeting the Internet of Things. It expects the whole deployment to cost less than €25m to complete by 2022. Putting this in context Eutelsat, a global satellite services provider has an annual capex budget measured in hundreds of millions of euros. For Clyde the initial contract is worth SEK24m for the two satellites to be launched in Q121, but the value could expand to over SEK53.5m depending on options and services is Eutelsat. Eutelsat also contracted Loft Orbital to provide two satellite systems at the same time for deployment next year as part of ELO, so it is not clear if there will be follow on orders for Clyde.

However, other potential constellation order prospects remain in place for customers such as NSLComm and Kepler.

On the components and subsystems segment the success of the Sirius range of avionics systems continues. On 16 October 2019 it was announced by the company that a major European satellite manufacturer has placed a SEK11.3m order for systems to be delivered in the next six months for two satellites. AAC Clyde Space will supply Sirius command and data handling subsystems, power control systems and other components.

## Name change to align proposition

The company is proposing to change its name from ÅAC Microtec to AAC Clyde Space assuming approval by shareholders at an EGM on 23 October 2019. This will align the corporate identity with the commercial proposition of the Anglo Swedish group. The acquisition of Clyde Space by ÅAC Microtec in January 2018 was always seen by management as a merger in commercial terms and the group has been presenting itself as AAC Clyde Space in the 'New Space' market since then.

The company is also proposing to treble the limits on the share capital to between SEK3.6m and SEK14.4m and the number of shares in issue to between 90m and 360m.

## Valuation

As the deferral of profitability to FY21 eliminates most of the comparative earnings metrics, we revert to our capped DCF valuation to assess potential fair value. We use a six-year forecast period and then assume zero growth in the terminal cash flow value, thus assuming a perpetuity with capex and depreciation normalised and working capital movements neutralised. The cash flows are discounted at a WACC of 12% reflecting our assumed cost of equity which is higher than normal due to the risk attached to the early-stage model. The currently returned value of our DCF valuation is SEK8.4 per share.

The sensitivity of the DCF calculation to WACC and various terminal growth rates is shown in Exhibit 3 below.

<b>Exhibit 3: ÅAC Microtec capped DCF value per share (SEK)</b>									
<b>8.4</b>	<b>7%</b>	<b>8.00%</b>	<b>9.00%</b>	<b>10.00%</b>	<b>11.00%</b>	<b>12.00%</b>	<b>13.00%</b>	<b>14.00%</b>	<b>15.00%</b>
0%	15.7	13.5	11.7	10.4	9.3	<b>8.4</b>	7.6	6.9	6.4
1%	15.8	13.6	11.8	10.5	9.3	8.4	7.6	7.0	6.4
2%	15.9	13.7	11.9	10.5	9.4	8.5	7.7	7.0	6.5
3%	16.1	13.8	12.0	10.6	9.5	8.5	7.7	7.1	6.5

Source: Edison Investment Research estimates

**Exhibit 4: Financial summary**

	SEKm	2017	2018	2019e	2020e
Year end December		IFRS	IFRS	IFRS	IFRS
<b>PROFIT &amp; LOSS</b>					
Net sales		13.3	77.9	87.2	129.8
Own work capitalised and other operating income		4.2	11.3	9.0	4.1
Group income		17.5	89.2	96.2	133.9
EBITDA		(21.4)	(28.5)	(13.6)	1.3
Operating Profit (before amort. and except.)		(21.7)	(30.8)	(15.8)	(1.0)
Intangible Amortisation		(5.6)	(7.2)	(4.4)	(3.0)
Exceptionals		0.0	(5.2)	(4.8)	(1.0)
Other		0.0	0.0	0.0	0.0
Operating Profit		(27.3)	(43.3)	(24.9)	(5.0)
Net Interest		(0.0)	(0.3)	0.0	0.1
Profit Before Tax (norm)		(27.3)	(38.4)	(20.2)	(3.9)
Profit Before Tax (FRS 3)		(27.3)	(43.6)	(24.9)	(4.9)
Tax		(0.0)	0.9	1.2	0.5
Profit After Tax (norm)		(27.3)	(37.6)	(19.2)	(3.5)
Profit After Tax (FRS 3)		(27.3)	(42.7)	(23.7)	(4.4)
Average Number of Shares Outstanding (m)		36.4	75.4	85.5	96.2
EPS - fully diluted (SEK)		(0.75)	(0.50)	(0.22)	(0.04)
EPS - normalised (SEK)		(0.75)	(0.50)	(0.22)	(0.04)
EPS - (IFRS) (SEK)		(0.75)	(0.57)	(0.28)	(0.05)
Dividend per share (SEK)		0.0	0.0	0.0	0.0
EBITDA Margin (%)		-161.1	-36.6	-15.6	1.0
Operating Margin (before GW and except.) (%)		-163.3	-39.6	-18.1	-0.7
<b>BALANCE SHEET</b>					
Fixed Assets		16.3	396.8	403.6	399.5
Intangible Assets		15.9	392.6	385.0	383.1
Tangible Assets		0.4	4.2	4.0	3.8
Right of use asset				14.5	12.6
Investments		0.0	0.0	0.0	0.0
Current Assets		46.0	46.4	107.7	116.2
Stocks		1.9	6.5	7.2	10.5
Debtors		3.6	10.1	12.7	19.5
Cash		37.2	12.2	68.6	60.2
Other		3.3	17.5	19.2	26.0
Current Liabilities		(16.4)	(25.8)	(29.6)	(41.4)
Creditors		(14.4)	(25.7)	(29.6)	(41.4)
Short term borrowings		(2.0)	(0.2)	0.0	0.0
Long Term Liabilities		(1.0)	(2.5)	(16.9)	(14.0)
Long term borrowings		0.0	(1.2)	(1.2)	(0.2)
Lease liabilities				(14.5)	(12.6)
Other long term liabilities		(1.0)	(1.3)	(1.2)	(1.2)
Net Assets		44.9	414.9	464.7	460.3
<b>CASH FLOW</b>					
Operating Cash Flow		(24.9)	(49.1)	(16.3)	(5.7)
Net Interest		(0.0)	(0.3)	0.0	0.1
Tax		(0.0)	0.8	1.0	0.4
Capex		(4.0)	(2.3)	(1.7)	(2.2)
Acquisitions/disposals		(9.5)	(377.4)	0.0	0.0
Financing		0.1	404.6	73.5	0.0
Dividends		0.0	0.0	0.0	0.0
Net Cash Flow		(38.4)	(23.6)	56.6	(7.4)
Opening net debt/(cash) excluding lease liabilities		(73.5)	(35.2)	(10.9)	(67.4)
HP finance leases initiated		0.0	0.0	0.0	0.0
Other		0.1	(0.7)	0.0	0.0
Closing net debt/(cash) excluding lease liabilities		(35.2)	(10.9)	(67.4)	(60.0)
Net financial liabilities including lease liabilities				(52.9)	(47.4)

Source: Company reports, Edison Investment Research estimates

---

## General disclaimer and copyright

This report has been commissioned by AAC Microtec and prepared and issued by Edison, in consideration of a fee payable by AAC Microtec. Edison Investment Research standard fees are £49,500 pa for the production and broad dissemination of a detailed note (Outlook) following by regular (typically quarterly) update notes. Fees are paid upfront in cash without recourse. Edison may seek additional fees for the provision of roadshows and related IR services for the client but does not get remunerated for any investment banking services. We never take payment in stock, options or warrants for any of our services.

Accuracy of content: All information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable, however we do not guarantee the accuracy or completeness of this report and have not sought for this information to be independently verified. Opinions contained in this report represent those of the research department of Edison at the time of publication. Forward-looking information or statements in this report contain information that is based on assumptions, forecasts of future results, estimates of amounts not yet determinable, and therefore involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of their subject matter to be materially different from current expectations.

Exclusion of Liability: To the fullest extent allowed by law, Edison shall not be liable for any direct, indirect or consequential losses, loss of profits, damages, costs or expenses incurred or suffered by you arising out of or in connection with the access to, use of or reliance on any information contained on this note.

No personalised advice: The information that we provide should not be construed in any manner whatsoever as, personalised advice. Also, the information provided by us should not be construed by any subscriber or prospective subscriber as Edison's solicitation to effect, or attempt to effect, any transaction in a security. The securities described in the report may not be eligible for sale in all jurisdictions or to certain categories of investors.

Investment in securities mentioned: Edison has a restrictive policy relating to personal dealing and conflicts of interest. Edison Group does not conduct any investment business and, accordingly, does not itself hold any positions in the securities mentioned in this report. However, the respective directors, officers, employees and contractors of Edison may have a position in any or related securities mentioned in this report, subject to Edison's policies on personal dealing and conflicts of interest.

Copyright: Copyright 2019 Edison Investment Research Limited (Edison). All rights reserved FTSE International Limited ('FTSE') © FTSE 2019. 'FTSE®' is a trade mark of the London Stock Exchange Group companies and is used by FTSE International Limited under license. All rights in the FTSE indices and/or FTSE ratings vest in FTSE and/or its licensors. Neither FTSE nor its licensors accept any liability for any errors or omissions in the FTSE indices and/or FTSE ratings or underlying data. No further distribution of FTSE Data is permitted without FTSE's express written consent.

---

## Australia

Edison Investment Research Pty Ltd (Edison AU) is the Australian subsidiary of Edison. Edison AU is a Corporate Authorised Representative (1252501) of Crown Wealth Group Pty Ltd who holds an Australian Financial Services Licence (Number: 494274). This research is issued in Australia by Edison AU and any access to it, is intended only for 'wholesale clients' within the meaning of the Corporations Act 2001 of Australia. Any advice given by Edison AU is general advice only and does not take into account your personal circumstances, needs or objectives. You should, before acting on this advice, consider the appropriateness of the advice, having regard to your objectives, financial situation and needs. If our advice relates to the acquisition, or possible acquisition, of a particular financial product you should read any relevant Product Disclosure Statement or like instrument.

---

## New Zealand

The research in this document is intended for New Zealand resident professional financial advisers or brokers (for use in their roles as financial advisers or brokers) and habitual investors who are 'wholesale clients' for the purpose of the Financial Advisers Act 2008 (FAA) (as described in sections 5(c) (1)(a), (b) and (c) of the FAA). This is not a solicitation or inducement to buy, sell, subscribe, or underwrite any securities mentioned or in the topic of this document. For the purpose of the FAA, the content of this report is of a general nature, is intended as a source of general information only and is not intended to constitute a recommendation or opinion in relation to acquiring or disposing (including refraining from acquiring or disposing) of securities. The distribution of this document is not a 'personalised service' and, to the extent that it contains any financial advice, is intended only as a 'class service' provided by Edison within the meaning of the FAA (i.e. without taking into account the particular financial situation or goals of any person). As such, it should not be relied upon in making an investment decision.

---

## United Kingdom

This document is prepared and provided by Edison for information purposes only and should not be construed as an offer or solicitation for investment in any securities mentioned or in the topic of this document. A marketing communication under FCA Rules, this document has not been prepared in accordance with the legal requirements designed to promote the independence of investment research and is not subject to any prohibition on dealing ahead of the dissemination of investment research.

This Communication is being distributed in the United Kingdom and is directed only at (i) persons having professional experience in matters relating to investments, i.e. investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the 'FPO') (ii) high net-worth companies, unincorporated associations or other bodies within the meaning of Article 49 of the FPO and (iii) persons to whom it is otherwise lawful to distribute it. The investment or investment activity to which this document relates is available only to such persons. It is not intended that this document be distributed or passed on, directly or indirectly, to any other class of persons and in any event and under no circumstances should persons of any other description rely on or act upon the contents of this document.

This Communication is being supplied to you solely for your information and may not be reproduced by, further distributed to or published in whole or in part by, any other person.

---

## United States

The Investment Research is a publication distributed in the United States by Edison Investment Research, Inc. Edison Investment Research, Inc. is registered as an investment adviser with the Securities and Exchange Commission. Edison relies upon the 'publishers' exclusion' from the definition of investment adviser under Section 202(a)(1) of the Investment Advisers Act of 1940 and corresponding state securities laws. This report is a bona fide publication of general and regular circulation offering impersonal investment-related advice, not tailored to a specific investment portfolio or the needs of current and/or prospective subscribers. As such, Edison does not offer or provide personal advice and the research provided is for informational purposes only. No mention of a particular security in this report constitutes a recommendation to buy, sell or hold that or any security, or that any particular security, portfolio of securities, transaction or investment strategy is suitable for any specific person.

Frankfurt +49 (0)69 78 8076 960  
Schumannstrasse 34b  
60325 Frankfurt  
Germany

London +44 (0)20 3077 5700  
280 High Holborn  
London, WC1V 7EE  
United Kingdom

New York +1 646 653 7026  
1,185 Avenue of the Americas  
3rd Floor, New York, NY 10036  
United States of America

Sydney +61 (0)2 8249 8342  
Level 4, Office 1205  
95 Pitt Street, Sydney  
NSW 2000, Australia