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Price (\$)	2.7
Shares in issue (m)	264
Mkt Cap (\$m)	786
Net debt (\$m)	-1
EV (\$m)	785
BVPS (\$)	14.0

**Share price performance**

1m	-16.0%
3m	-20.4%
12m	-72.5%
12 m high/low	11.7/2.2
Ave daily vol (30D)	1,101,706

**Shareholders**

Tencent Holdings	27.0%
Atomico	14.0%
Daniel Wiegand	9.0%
Sebastian Born	6.0%
Matthias Meiner	6.0%
LGT	6.0%
Baillie Gifford	6.0%
Patrick Nathen	4.0%
Total for top 8	78.0%
Free float	33.4%

**Next news** Q1's Q3

**Business description**

eVTOL developer and regional air mobility operator



**TRANSITION ACHIEVED**

The Lilium Jet continues to make progress, achieving main wing transition on the full-size demonstrator. We also see development with the battery as positive and wider developments suggest that a silicon anode cell can be available on the company's commercialisation timeline.

**Phoenix 2 achieves main wing transition**

Lilium has announced that its full-size eVTOL demonstrator, Phoenix 2, has achieved main wing transition from lift provided by the motors in hover, to lift provided by the wing in cruise flight. This validates Lilium's proprietary Flight Dynamics model in creating a design that gets this complex change of dynamics to work smoothly, safely and with effective control. Historically the experience of the Harrier jump jet showed that the transition was the trickiest part of VTOL operations. Today's announcement confirms that the Lilium design is more than effective for this key operation.

**Silicon anode battery externally tested**

Lilium has also updated on its battery following the filing of key patents. The company will use a Zenlabs cell in a pouch design giving an optimal form factor for integration into the Lilium Jet's sides. The pouch design can be manufactured on standard roll to roll facilities with Lilium partner, Customcells. This allows quality of output and for high volumes at a sustainable price. The Zenlabs cell is a high silicon anode and high nickel cathode design. The silicon anode is especially important in delivering both fast charging and high average specific power, with the latter being targeted at 2500W/kg. Zenlabs has recently released test data from Energy Assurance, a third-party ANAB accredited laboratory, showing that the cells can maintain a high specific power of 2500W/kg even down to a 20% state of charge.

**Silicon anode technology gaining ground**

There has been some scepticism in the market about whether the silicon anode cell will be available in time for the planned commercialisation of the Lilium Jet eVTOL aircraft. We see some comfort here from the announcement last week that the next generation all-electric Mercedes G-Wagon will use a battery with silicon anode chemistry. Mercedes has announced a supply agreement with Sila Nanotechnologies Inc for a vehicle to be on the road in 2025. To have committed in this way suggests that this version of the chemistry, at least, will be commercially available on a timescale that fits with Lilium. We have already written about progress being made by Group14 Technologies who have also tested a silicon anode cell with externally verified results.

\$m, Dec	2020pf	2021a	2022e	2023e	2024e	2025e
Sales	0	0	0	0	0	280
EBITDA	-354	-238	-232	-247	-307	-297
PBT	-414	-256	-250	-276	-346	-368
EPS	-1.5	-1.2	-0.9	-1.0	-0.6	-0.6
CFPS	-1.3	-1.8	-0.7	-0.7	-0.4	-0.9
DPS	0.0	0.0	0.0	0.0	0.0	0.0
Net Debt (Cash)	-616	-379	-175	19	-2,241	-1,733
Debt/EBITDA	1.7	1.6	0.8	-0.1	7.3	5.8
P/E	-1.8	-2.3	-3.0	-2.8	-4.6	-4.3
EV/EBITDA	-0.5	-1.7	-2.6	-3.3	4.7	3.2
EV/sales	na	na	na	na	na	0.6
FCF yield	-46.4%	-67.7%	-26.8%	-25.3%	-15.0%	-32.2%
Div yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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## FINANCIAL MODEL

### Profit and Loss Account

\$m, Dec	2020pf	2021a	2022e	2023e	2024e	2025e
<b>Turnover</b>						
eVTOL	0	0	0	0	0	279
CO2	0	0	0	0	0	1
Other	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	0	0	0	0	0	280
<b>Operating profit</b>						
eVTOL	-354	-245	-250	-275	-345	-372
CO2	0	0	0	0	0	1
Other	0	0	0	0	0	0
Other	0	0	0	0	0	0
Operating profit	-354	-245	-250	-275	-345	-371
<b>P&amp;L Account</b>						
Turnover	0	0	0	0	0	280
Operating Profit	-354	-245	-250	-275	-345	-371
Investment income	0	-1	0	0	0	0
Net Interest	-60	-11	0	-1	-2	4
Pre Tax Profit (UKSIP)	-414	-256	-250	-276	-346	-368
Goodwill amortisation	0	0	0	0	0	0
Exceptional Items	0	-131	0	0	0	0
Pre Tax Profit (FRS3)	-414	-388	-250	-276	-346	-368
Tax	0	-1	0	0	0	0
Post tax exceptionals	0	0	0	0	0	0
Minorities	0	0	0	0	0	0
Net Profit	-414	-389	-250	-276	-346	-368
Dividend	0	0	0	0	0	0
Retained	-414	-389	-250	-276	-346	-368
EBITDA	-354	-238	-232	-247	-307	-297
EPS (c) (UKSIP)	-1.48	-1.20	-0.89	-0.99	-0.59	-0.63
EPS (c) (FRS3)	-1.48	-1.81	-0.89	-0.99	-0.59	-0.63
FCFPS (c)	-1.26	-1.84	-0.73	-0.69	-0.41	-0.88
Dividend (c)	0.00	0.00	0.00	0.00	0.00	0.00

Source: Company data, Longspur Research estimates

### KEY POINTS

- Company pre-revenue while it develops until 2025 when we assume first revenue begins
- C\$200m cost outflow rising ahead of launch in 2025

## Balance Sheet

\$m, Dec	2020pf	2021a	2022e	2023e	2024e	2025e
Fixed Asset Cost	35	49	116	181	242	477
Fixed Asset Depreciation	-7	-13	-31	-59	-97	-171
Net Fixed Assets	27	36	85	122	145	306
Goodwill	0	0	0	0	0	0
Other intangibles	2	2	2	2	2	2
Investments	0	18	18	18	18	18
Stock	0	0	0	0	0	92
Trade Debtors	0	0	0	0	0	46
Other Debtors	8	37	37	37	37	37
Trade Creditors	-10	-42	-73	-128	-192	-284
Other Creditors <1yr	-6	-17	-17	-17	-17	-17
Creditors >1yr	0	-3	-3	-3	-3	-3
Provisions	-1	-3	-6	-9	-12	-15
Pension	0	0	0	0	0	0
Capital Employed	20	27	41	20	-23	181
Cash etc	750	418	214	20	2,279	1,878
Borrowing <1yr	122	28	28	28	28	28
Borrowing >1yr	12	12	12	12	10	117
Net Borrowing	-616	-379	-175	19	-2,241	-1,733
Share Capital	46	47	47	47	62	62
Share Premium	1,012	922	922	922	3,407	3,407
Retained Earnings	-556	-848	-1,098	-1,374	-1,720	-2,088
Other	133	284	345	406	469	533
Minority interest	0	0	0	0	0	0
Capital Employed	20	27	41	20	-23	181
Net Assets	636	405	216	1	2,218	1,914
Total Equity	636	405	216	1	2,218	1,914

Source: Company data, Longspur Research estimates

## KEY POINTS

- Fixed assets grow with capex accelerating from 2024 with assumed network capex
- Cash is adequate but tight in 2023
- Equity raise assumed in 2024 to fund network capex

## Cashflow

\$m, Dec	2020pf	2021a	2022e	2023e	2024e	2025e
Operating profit	-354	-245	-250	-275	-345	-371
Depreciation	0	8	18	28	38	74
Provisions	0	3	3	3	3	3
Other	0	73	61	61	63	64
Working capital	0	5	32	55	64	-46
Operating cash flow	-354	-157	-136	-128	-177	-276
Tax paid	0	0	-1	0	0	0
Capex (less disposals)	0	-20	-67	-65	-61	-235
Investments	0	-219	0	0	0	0
Net interest	0	-2	0	-1	-2	4
Net dividends	0	0	0	0	0	0
Residual cash flow	-354	-398	-204	-194	-240	-508
Equity issued	0	0	0	0	2,500	0
Change in net borrowing	0	238	204	194	-2,260	508
Adjustments	0	-43	0	0	0	0
Total financing	0	195	204	194	240	508

Source: Company data, Longspur Research estimates

## KEY POINTS

- Operating cash outflow and capex dominate ahead of launch
- Capex for network from 2025 assumed in our forecasts but could be external
- Working capital impact with first revenue in 2025

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