# ADVENT TECHNOLOGIES (ADN US)



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Price (\$)	10.2
Shares in issue (m)	46
Mkt Cap (\$m)	472
Net debt (\$m)	-1
EV (\$m)	472
BVPS (c)	-1.8

#### Share price performance

1m	-16.5%
3m	-25.2%
12m	-0.6%
12 m high/low	19.2/8.7
Ave daily vol (30D)	387,051

#### **Shareholders**

11.9% 8.0%
5.2%
4.6%
4.0%
3.9%
3.4%
2.8%
2.4%
2.2%
48.3%
67.9%

## Next news Ints Q3

#### **Business description**

Membranes and MEAs for fuel cells, electrolysers, flow batteries and sensors.

## FLOW BATTERY OPPORTUNITY GROWS

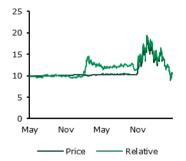
Advent has issued some further details on its Q1 performance showing a fivefold increase in bookings and shipments of materials for redox flow batteries. We think this highlights the diversity of opportunity available to Advent in several sectors of the energy transition.

## Fivefold increase in Q1 bookings to flow batteries

Advent Technologies has announced a fivefold increase in bookings and shipments of materials for redox flow batteries in Q1. The company's formal Q1 announcement last week identified flow batteries as a source of increased demand in the first quarter and today the company has given more detail, pointing to significant growth. Obviously, the company is at an early stage and as it gains traction can be expected to see significant growth from small sales levels. But we but we think it is important that the flow battery segment has seen this leap as it highlights the diverse opportunity set the company has. While hydrogen fuel cells and electrolysers remain the area of largest overall potential it is clearly positive to see opportunity in other areas of the energy transition.

## Growing demand for long duration storage

We see long duration storage solutions such as flow batteries as being critical to system reliability as power systems move to intermittent renewable energy as their prime source of energy. While lithium ion batteries are already gaining ground for short duration storage, their linear cost profile makes them uneconomic beyond about four hours. Advent produces both membranes and electrodes for flow battery chemistries including those using the widely used vanadium electrolyte but also for more cost effective iron flow batteries.



\$,000 Dec	2019a	2020pf	2021e	2022e	2023e	2024e
Sales	1,222	1,089	14,709	27,077	60,000	122,800
EBITDA	-159	-4,139	-17,158	-16,265	-3,500	21,800
PBT	-270	-4,193	-17,410	-17,403	-5,518	17,700
EPS	-0.8	-9.1	-37.8	-37.7	-12.0	28.0
CFPS	-0.6	-5.7	-79.0	-64.6	-42.0	-48.0
DPS	0.0	0.0	0.0	0.0	0.0	0.0
Net Debt (Cash)	-699	-134,310	-98,385	-68,963	-49,852	-27,915
Debt/EBITDA	4.4	32.5	5.7	4.2	14.2	-1.3
P/E	-13.2	-1.1	-0.3	-0.3	-0.9	0.4
EV/EBITDA	-2969.2	-81.7	-19.7	-20.8	-96.6	15.5
EV/sales	385.9	310.3	23.0	12.5	5.6	2.8
FCF yield	-5.7%	-55.5%	-771.6%	-631.0%	-410.3%	-468.6%
Div yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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## **FINANCIAL MODEL**

## **Profit and Loss Account**

\$ '000, DEC	2019a	2020pf	2021e	2022e	2023e	2024e
Turnover						
MEAs	620	883	8,886	21,204	41,364	99,833
Grants	602	207	5,823	5,873	18,636	22,967
AMCI	0	0	0	0	0	0
Adjustments	0	0	0	0	0	0
Total	1,222	1,089	14,709	27,077	60,000	122,800
Operating profit						
MEAs	-174	-3,074	-17,913	-17,772	-5,776	17,514
Grants	-2	-16	0	0	0	0
AMCI	0	-1,631	0	0	0	0
Adjustments	0	560	0	0	0	0
Operating profit	-176	-4,161	-17,913	-17,772	-5,776	17,514
P&L Account	2019a	2020pf	2021e	2022e	2023e	2024e
Turnover	1,222	1,089	14,709	27,077	60,000	122,800
Operating Profit	-176	-4,161	-17,913	-17,772	-5,776	17,514
Investment income	0	0	0	0	0	0
Net Interest	-95	-32	503	369	258	187
Pre Tax Profit (UKSIP)	-270	-4,193	-17,410	-17,403	-5,518	17,700
Goodwill amortisation	0	0	0	0	0	0
Exceptional Items	0	0	0	0	0	0
Pre Tax Profit (FRS3)	-270	-4,193	-17,410	-17,403	-5,518	17,700
Tax	-88	0	0	0	0	-4,779
Post tax exceptionals	0	0	0	0	0	0
Minorities	0	0	0	0	0	0
Net Profit	-358	-4,193	-17,410	-17,403	-5,518	12,921
Dividend	0	0	0	0	0	0
Retained	-358	-4,193	-17,410	-17,403	-5,518	12,921
EBITDA	-159	-4,139	-17,158	-16,265	-3,500	21,800
EPS (c) (UKSIP)	-0.78	-9.09	-37.76	-37.75	-11.97	28.03
EPS (c) (FRS3)	-0.78	-9.09	-37.76	-37.75	-11.97	28.03
FCFPS (c)	-0.58	-5.68	-79.01	-64.61	-42.01	-47.98
Dividend (c) Source: Company data Lor	0.00	0.00	0.00	0.00	0.00	0.00

Source: Company data, Longspur Research estimates

## **KEY POINTS**

- FY 21 sees growth in sales from order book start to ramp up
- Investment in production allows significant expansion in FY 23 and FY 24
- FY 24 sees a move into profitability

## **Balance Sheet**

\$ '000, DEC	2019a	2020pf	2021e	2022e	2023e	2024e
Fixed Asset Cost	232	369	12,369	24,669	37,276	70,199
Fixed Asset Depreciation	-147	-170	-925	-2,431	-4,707	-8,994
Net Fixed Assets	85	199	11,444	22,237	32,569	61,205
Goodwill	0	0	0	0	0	0
Other intangibles	0	0	0	0	0	0
Investments	0	0	6,000	6,000	6,000	6,000
Stock	32	108	1,457	2,683	5,944	12,166
Trade Debtors	316	421	3,627	6,677	14,795	30,279
Other Debtors	274	1,208	1,208	1,208	1,208	1,208
Trade Creditors	-308	-341	-3,627	-6,677	-14,795	-30,279
Other Creditors <1yr	-1,723	-2,339	-2,339	-2,339	-2,339	-2,339
Creditors >1yr	-209	-259	-259	-259	-259	-259
Provisions	0	0	0	0	0	0
Pension	0	0	0	0	0	0
Capital Employed	-1,533	-1,003	17,511	29,530	43,123	77,982
Cash etc	1,199	134,310	98,391	68,969	49,858	27,921
Borrowing <1yr	500	0	6	6	6	6
Borrowing >1yr	0	0	0	0	0	0
Net Borrowing	-699	-134,310	-98,385	-68,963	-49,852	-27,915
Share Capital	3	5	5	5	5	5
Share Premium	8,812	151,774	151,774	151,774	151,774	151,774
Retained Earnings	-9,649	-18,473	-35,883	-53,286	-58,803	-45,882
Other	0	0	0	0	0	0
Minority interest	0	0	0	0	0	0
Capital Employed	-1,533	-1,003	17,511	29,530	43,123	77,982
Net Assets	-834	133,306	115,896	98,493	92,976	105,897
Total Equity	-834	133,306	115,896	98,493	92,976	105,897

Source: Company data, Longspur Research estimates

## **KEY POINTS**

- Strong cash position following listing in FY 20
- Cash runs down to FY 24 but remains comfortable
- Cash should grow further out as company moves into profitability
- Fixed assets grow strongly with investment in production
- Working capital rises with sales based on historic ratios

## **Cashflow**

\$ '000, DEC	2019a	2020pf	2021e	2022e	2023e	2024e
Operating profit	-176	-4,161	-17,913	-17,772	-5,776	17,514
Depreciation	17	23	755	1,506	2,276	4,286
Provisions	0	0	0	0	0	0
Other	-179	840	0	0	0	0
Working capital	17	794	-1,270	-1,225	-3,262	-8,611
Operating cash flow	-321	-2,505	-18,428	-17,491	-6,762	13,189
Tax paid	89	8	0	0	0	-2,390
Capex (less disposals)	-35	-123	-12,000	-12,300	-12,608	-32,923
Investments	0	0	-6,000	0	0	0
Net interest	-95	-32	503	369	258	187
Net dividends	0	0	0	0	0	0
Residual cash flow	-362	-2,651	-35,924	-29,422	-19,111	-21,937
Equity issued	1,351	139,401	0	0	0	0
. ,	-3,981	,	•	29,422	10 111	21 027
Change in net borrowing	,	-133,611	35,924	29,422	19,111	21,937
Adjustments	2,991	-3,140	0	20.422	0	21.027
Total financing	361	2,651	35,924	29,422	19,111	21,937

Source: Company data, Longspur Research estimates

## **KEY POINTS**

- Working capital remains negative as company experiences continued growth across forecast period
- Capex remains high as company continues to invest
- Pick up in capex on production assumed in FY 24 to support higher sales
- Working capital outflow across period
- Estimated \$6m investment in FY 21 represents UltraCell acquisition

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