DRAX GROUP
(DRX LN)

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Price (p)	**34.50**
Shares in issue (m)	116
Mkt Cap (£m)	40
Net debt (£m)	-26
EV (£m)	14
BVPS (p)	71.5

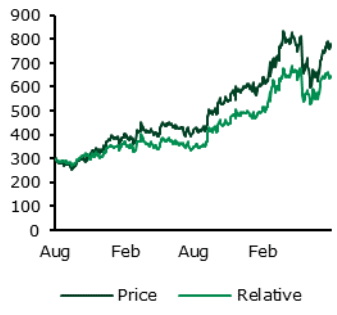
Share price performance	
1m	-25.0%
3m	-56.9%
12m	-72.6%
12 m high/low	134/34
Ave daily vol (30D)	238,061

Shareholders	
Invesco Ltd	13%
Schroders Plc	10%
Jupiter	7%
Blackrock	6%
Artemis Investment	5%
Orbis Holdings	5%
Total for top 6	46%
Free float	99.8%

Next news Finals Q1

Business description

Integrated biomass, hydro and storage IPP



CfD OPTION PLAYS TO DRAX'S STRENGTHS

The UK Government has published its consultation on supporting bioenergy carbon capture and storage (BECCS) in the UK. In doing so the Business Secretary Kwasi Kwarteng has reaffirmed that "The government is fully behind biomass energy to provide more power in Britain, for Britain". Additionally, the government is "minded to" bring in contract for difference (CfD) based support which we think plays to Drax's strengths.

UK Government favours CfD support for BECCS

The UK government plans to deploy Greenhouse Gas Removal (GGR) technologies for the removal of to 5Mt CO_2/year by 2030; 23 Mt CO_2/year by 2035 and between 75 and 81 Mt CO_2/year by 2050. Power BECCS is seen as the leading GGR option with a technological readiness level (TRL) of 7 against DACCS at 6 and others including BECCS hydrogen at 5. As a result, Power BECCS is the target technology for the 2030 benchmark. The consultation aims to consolidate support based on a "minded-to" government position that the power BECCS business model should consist of a CfD for electricity combined with a CfD for carbon (CfDe + CfDc) with CfDc based on the UK ETS carbon price or similar. The option of a negative emissions payment based on a carbon price determined by auction has been ruled out.

CfDs are well established

CfDs now have a long history as a method of supporting clean energy technologies and Drax is already experienced in these, having a CfD on one of its biomass units. CfDs are private law contracts which does give some protection against policy change. By fixing a reference price they confer broad immunity against output price fluctuations creating revenue stability for the project over a long period. In the case of biomass, feedstock pricing could remain a risk although the consultation is considering the possibility of solutions such as indexation or rebalancing.

Drax is an experienced operator under a CfD regime

We think the CfD option potentially works well for Drax. It is vertically integrated so can manage feedstock price risk whether indexed or not. It has scale which others do not. It has more experience with biomass CfDs than other players. And it is well located for both T&S and part of the Zero Carbon Humber cluster. We see Drax as essential to delivering GGR technology in the UK and therefore to the UK reaching its climate mitigation ambitions. As a result, we expect support to be available despite the sometimes cosmetic nature of the politics around it.

£,m Dec	2020a	2021a	2022e	2023e	2024e	2025e
Sales	4,235	5,174	4,519	4,799	5,004	5,171
EBITDA	379	370	666	796	796	763
PBT	119	101	348	497	500	482
EPS	24.3	22.3	81.1	102.8	95.9	92.5
CFPS	48.8	34.7	83.9	124.6	133.8	126.1
DPS	17.1	18.8	21.0	23.1	25.4	27.9
Net Debt (Cash)	806	1,170	982	639	264	-91
Debt/EBITDA	2.1	3.2	1.5	0.8	0.3	-0.1
P/E	28.6	31.1	8.6	6.8	7.2	7.5
EV/EBITDA	9.5	10.7	5.7	4.3	3.8	3.5
EV/sales	0.8	0.7	0.8	0.7	0.7	0.7
FCF yield	7.0%	5.0%	12.1%	17.9%	19.3%	18.2%
Div yield	2.5%	2.7%	3.0%	3.3%	3.7%	4.0%

WHY BECCS IS ESSENTIAL

The most recent report from the UN Intergovernmental Panel on Climate Change (IPCC); the Working Group III (WG3) part of its sixth assessment report (AR6) was published in April. This is a major analysis of emission pathways to mitigate climate change and is based on over 3,000 different pathways. The 2,913 page report screens these down to 1,202 scenarios divided into eight climate categories and seven illustrative pathways. These include pathways based on current government policies and show that these put us in line for global warming of 3°C which has bad outcomes as outlined in earlier IPCC reports. Even just going over 1.5°C is bad enough.

"Global warming, reaching 1.5°C in the near-term, would cause unavoidable increases in multiple climate hazards and present multiple risks to ecosystems and humans."

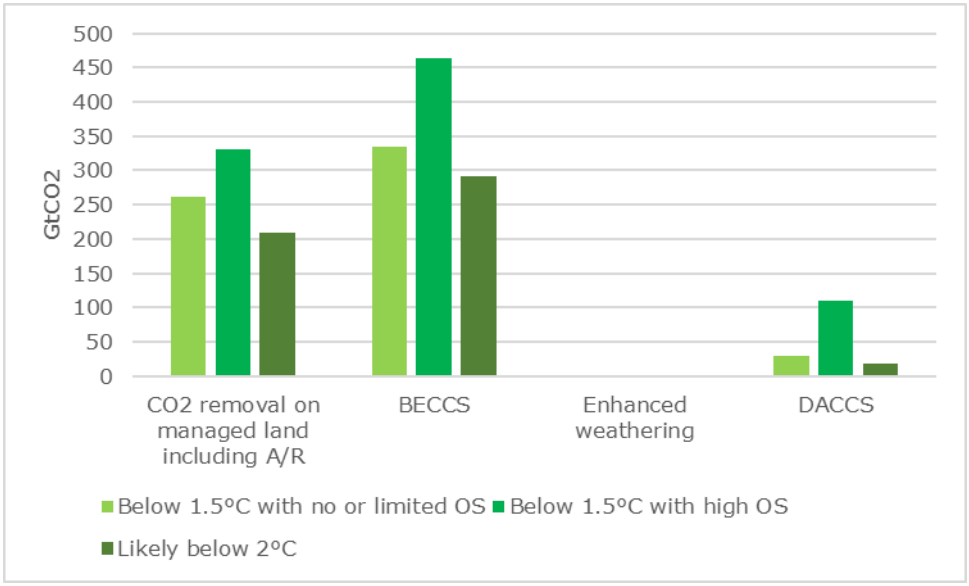
Nearly all scenarios that limit warming to below 2C (C1-C4) show some form of carbon dioxide removal (CDR) or to use the UK term GGR. This ranges from 30 GtCO2 of CO2 removal to 360 GtCO2.

"The deployment of CDR to counterbalance hard-to-abate residual emissions is unavoidable if net zero CO2 or GHG emissions are to be achieved."

Note that CDR *"cannot serve as a substitute for deep emissions reductions"* so is not a mere antidote to the continued burning of fossil fuels.

It remains clear that the most likely CDR solution is Bioenergy with Carbon Capture and Storage (BECCS).

Breakdown of contributions to global net CO2 emissions



Source: IPCC, Longspur Research

While reforestation and other nature-based solutions are helpful in the short term, nature-based solutions "do not continue to sequester carbon indefinitely", and a warming world is expected to put increased stress on ecosystems through things such as wildfires and expanded habitat for pests, putting "accumulated carbon…at risk of future loss due to disturbances". It is helpful then that many of the companies we see involved in CDR are focusing on forestry waste including the removal of brash and other combustibles from the forest floor.

BIOMASS SUSTAINABILITY

Biomass and BECCS continue to attract criticism in the press, much of it emotive. Indeed a lot of the criticism echoes the late James Lovelock's description of *"some global over-anxious mother figure who is so concerned about small risks that she ignores the real dangers"*. It is worth reiterating the key messages of recent academic work in this area.

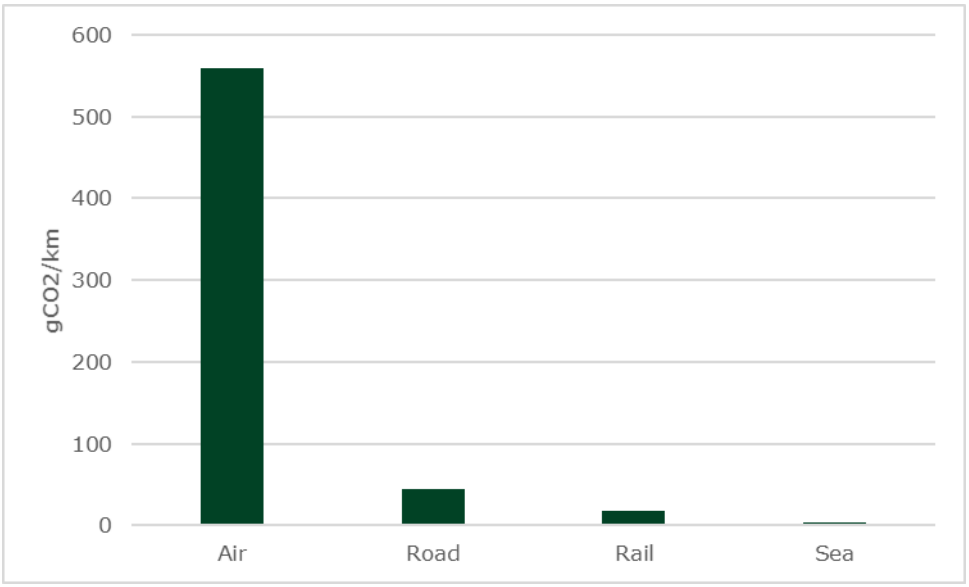
Most people understand that if you grow a tree that removes one tonne of CO2 from the atmosphere and then burn it to release that tonne the net carbon impact is zero. Most people also understand that there will always be potentially significant issues of timing and emission losses in this system so that it can at best only ever be low carbon as opposed to zero carbon. This is also true of most decarbonisation solutions to a greater or lesser degree.

But if the tonne of CO2 can be captured when the tree is burnt and permanently sequestered away then the solution can become carbon negative provided the losses and timing impacts are less than the carbon captured. If fact the timing issue becomes largely irrelevant if all or most of the CO2 is captured. This is how BECCS can provide a negative emissions solution. The real arguments are around whether the losses and timing differences outweigh the benefits.

Losses in shipping

A lot of comment talks about the emissions in shipping biomass pellets. While total marine emissions are significant at 3% of global emissions, the efficiency of dry bulk shipping means that it is the lowest emission transport option and as a result only accounts for 25% of typical embedded emissions in biomass pellets. The fact that our tonne of CO2 is captured and emitted in different parts of the world is irrelevant when considering global warming which as the name implies is a global problem.

CO2 emissions per km



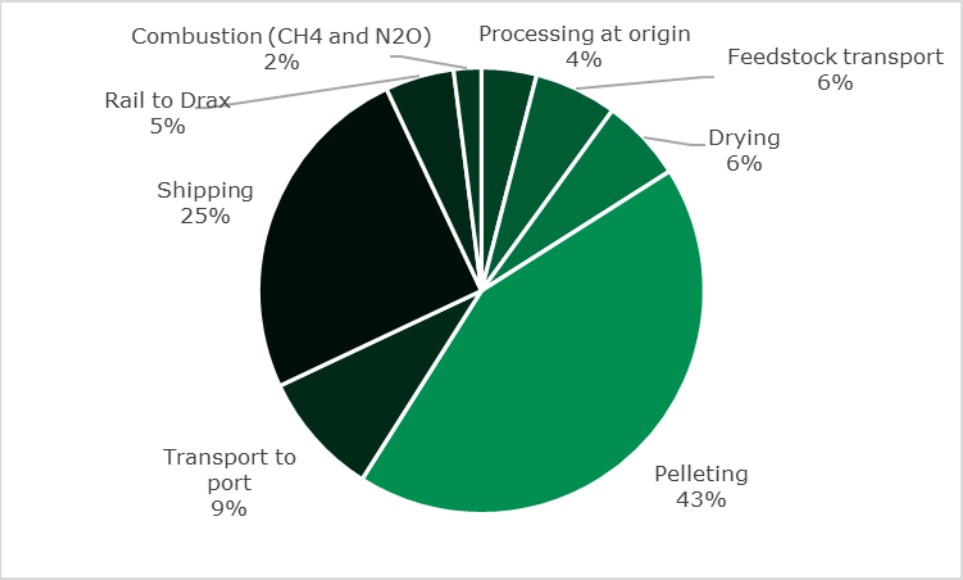
Source: CMS

We are seeing major developments in the shipping industry such as the recent moves by both Maersk and Stenna Lines to develop methanol fuelling, paving the way for low carbon e-methanol solutions. As with other areas of the economy shipping will eventually deal with its emissions problem.

Other losses

This point is also true of the other main sources of emissions in the pelletisation process.

Biomass pellet supply chain GHG emissions (2020)



Source: Company Data

The biggest single source of emissions here is the energy required for drying and pelletisation accounting for 49% of emissions. For Drax these emissions come from the electricity used in its projects in Louisiana where generation is dominated by gas-fired CCGTs. If Louisiana moves to renewable energy as it must to meet the USA's net zero target, then most of these emissions disappear. Add to that the decarbonisation of trucking and shipping and these emission losses become minimal.

Arguments against biomass based on these emissions are like the arguments which say that German electric vehicles are coal-fired because there are still coal power stations supplying the German grid. In a net zero world these emissions disappear.

Timing issues

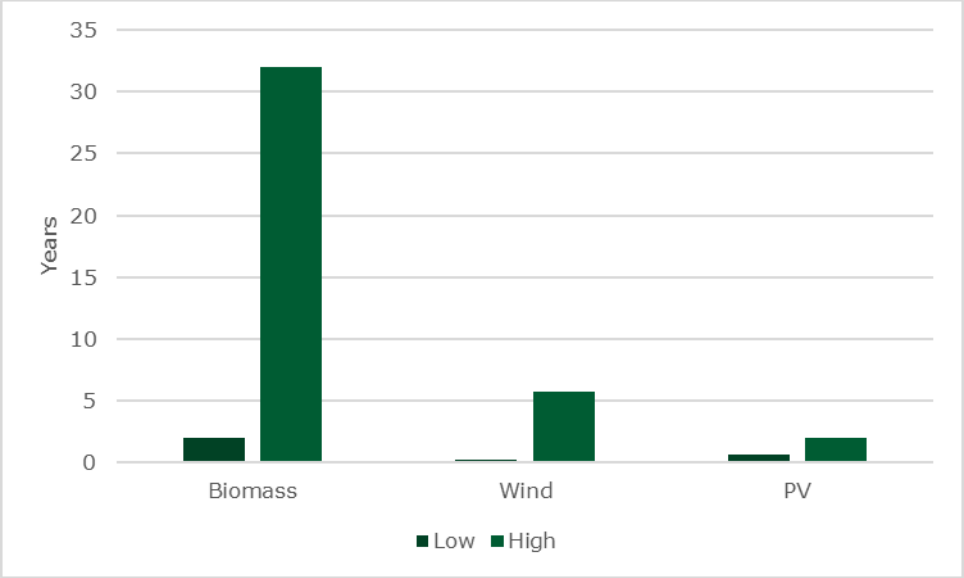
There is a very valid concern about biomass that it takes time to recapture the emissions from burning the tree in new forest growth. This results in a carbon debt, and there is a lot of opposition to biomass based on this concern. Much of this is derived from studies taking the perspective of a single tree or stand of trees. However, forested ecosystems are a system with continual cycles of planting, growing and harvesting.

Recent research (P. Dwivedi, M. Khanna, M. Fuller, Is wood pellet-based electricity less carbon-intensive than coal-based electricity?, Environmental Research Letters, 2019; 14), shows that for a forest fully harvested for biomass using loblolly pine, the carbon payback ranges from 2 to 32 years depending on management approach, with the research concluding that convergent management perspectives with wood pellets relative to a no-harvest baseline show a break-even period of about three years.

However, even this low break-even period is based on the assumption that the forest is harvested for biomass. In the case of Drax this is never the case as only residual material from timber extracted for other industries are used.

When we look at the range of payback periods for other low carbon technologies, biomass can be shown to be as beneficial to a low carbon environment as any. Obviously, payback periods will vary from project to project. The values below are believed to be typical and are from a range of academic sources. While badly managed biomass has a long payback period, well managed biomass lies between the range of paybacks for other renewables.

Carbon payback periods



Source: Environmental Research Letters, Longspur Research

Put simply, well managed biomass project can have a lower carbon payback than a badly designed windfarm sited on an upland peat bog. Of course, management is critical.

"Studies that assume there is little to no management response, or consider only use of the extensive margin, predict that bioenergy demand will increase carbon emissions (16, 17). Studies that allow efficient investments in forestry management find that bioenergy policies lead to a net increase in forest sequestration (18–22)."

(A. Favero, A. Daigneault, B. Sohngen, Forests: Carbon sequestration, biomass energy, or both? Science Advances, 2020; 6).

We see Drax's approach and locations as creating a competitive advantage by focusing on locations where forestry is well regulated and managed. And again, by taking only residual material there is no marginal impact on harvesting or carbon debt.

Timing issues and BECCS

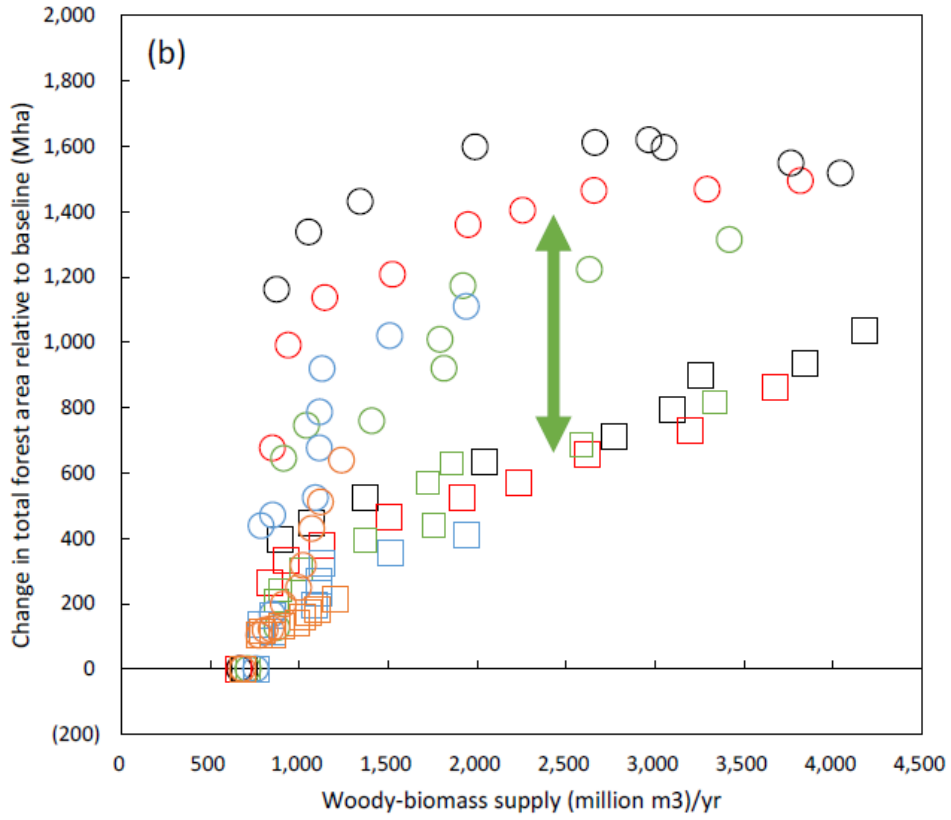
The problem with the timing difference between capturing the CO_2 when the tree grows and then releasing that CO_2 in the power station disappears with carbon capture and storage. The only emissions are those associated with the losses in production and transportation of the pellets. We might add to that any inefficiency in the carbon capture process although this is expected to capture over 85% of the CO_2 on combustion.

It is worth emphasising the point; BECCS largely removes the timing argument against biomass.

MORE BIOMASS MEANS MORE CARBON STOCKS

Recent work has shown that increasing woody biomass supply can lead to an increase in forestland area globally with the amount of increase depending on policy support. (A. Favero, A. Daigneault, B. Sohngen, Forests: Carbon sequestration, biomass energy, or both? Science Advances, 2020; 6). The range of outcomes is from a slight decrease of carbon stocks of 33TgCO2/yr to a large increase of 2,300TgCO2/yr with some policy outcomes resulting in a 75% increase in land in forests.

Carbon sequestration and storage for managed loblolly pine



Source: A Favero, A Daigneault, B, Sohngen, 2020

FINANCIAL MODEL

Profit and Loss Account

£m, DEC	2020a	2021a	2022e	2023e	2024e	2025e
Turnover						
Power Generation	3,646	4,682	3,761	3,823	3,818	3,788
B2B Energy Supply	2,119	2,360	2,607	2,791	2,989	3,201
Pellet production	231	450	528	620	694	741
Central, int gp and depn	-1,761	-2,318	-2,376	-2,435	-2,496	-2,558
Total	4,235	5,174	4,519	4,799	5,004	5,171
Operating profit						
Power Generation	400	352	563	642	584	501
B2B Energy Supply	-39	6	24	13	15	17
Pellet production	52	86	159	223	282	331
Central, int gp and depn	-224	-273	-321	-307	-312	-316
Operating profit	189	170	425	571	569	533
P&L Account	**2020a**	**2021a**	**2022e**	**2023e**	**2024e**	**2025e**
Turnover	4,235	5,174	4,519	4,799	5,004	5,171
Operating Profit	189	170	425	571	569	533
Investment income	0	0	0	0	0	0
Net Interest	-69	-70	-77	-74	-70	-51
Pre Tax Profit (UKSIP)	119	101	348	497	500	482
Goodwill amortisation	0	0	0	0	0	0
Exceptional Items	-354	21	-25	0	0	0
Pre Tax Profit (IFRS)	-235	122	323	497	500	482
Tax	40	-12	-24	-86	-117	-112
Post tax exceptionals	37	-30	0	0	0	0
Minorities	0	1	0	0	0	0
Net Profit	-158	80	299	410	383	369
Dividend	-65	-71	-80	-89	-98	-107
Retained	-223	9	219	322	285	262
EBITDA	379	370	666	796	796	763
EPS (p) (UKSIP)	24.29	22.31	81.11	102.81	95.86	92.48
EPS (p) (IFRS)	-39.79	20.01	74.85	102.81	95.86	92.48
FCFPS (p)	48.84	34.66	83.90	124.64	133.77	126.11
Dividend (p)	17.10	18.80	21.00	23.10	25.40	27.90

Source: Company data, Longspur Research estimates

KEY POINTS

- Flattish EBITDA in FY 21 reflects loss of income from gas assets now sold
- Strong recovery in FY 22 as new pellet income contributes for a full year
- FY22 also benefits from stronger generation market and coal fee
- COVID 19 impact on customers' business in FY 20 but recovery in FY 21 and FY 22
- Overall recovery sustained in FY 23
- Net interest balanced between cashflow and capex
- Dividend remains covered throughout

Balance Sheet

£m, DEC	2020a	2021a	2022e	2023e	2024e	2025e
Fixed Asset Cost	3,484	4,166	4,409	4,616	4,755	4,895
Fixed Asset Depreciation	-1,543	-1,855	-2,096	-2,320	-2,547	-2,777
Net Fixed Assets	1,941	2,311	2,313	2,296	2,208	2,118
Goodwill	248	416	416	416	416	416
Other intangibles	182	189	189	189	189	189
Investments	292	125	145	145	145	145
Stock	348	501	437	464	484	500
Trade Debtors	525	642	561	595	621	642
Other Debtors	367	1,324	1,324	1,324	1,324	1,324
Trade Creditors	-907	-1,211	-1,058	-1,123	-1,171	-1,210
Other Creditors <1yr	-394	-966	-966	-966	-966	-966
Creditors >1yr	-364	-767	-767	-767	-767	-767
Provisions	-91	-86	-86	-86	-86	-86
Pension	-1	0	0	0	0	0
Capital Employed	2,146	2,476	2,508	2,486	2,396	2,303
Cash etc	290	317	530	869	1,250	1,109
Borrowing <1yr	7	56	56	56	56	56
Borrowing >1yr	1,089	1,431	1,456	1,452	1,458	962
Net Borrowing	806	1,170	982	639	264	-91
Share Capital	48	48	48	48	48	48
Share Premium	430	432	432	432	432	432
Retained Earnings	153	198	417	739	1,024	1,285
Other	709	607	607	607	607	607
Minority interest	0	22	22	22	22	22
Capital Employed	2,146	2,476	2,508	2,486	2,396	2,303
Net Assets	1,339	1,307	1,525	1,847	2,132	2,394
Total Equity	1,339	1,307	1,525	1,847	2,132	2,394

Source: Company data, Longspur Research estimates

KEY POINTS

- Working capital remains comfortable across period
- Goodwill increases in FY 21 with pellet acquisition
- Net debt rises with acquisition and then drops with cashflow

Cashflow

£m, DEC	2020a	2021a	2022e	2023e	2024e	2025e
Operating profit	189	170	425	571	569	533
Depreciation	190	199	241	224	227	230
Provisions	20	0	0	0	0	0
Other	-23	-42	-25	0	0	0
Working capital	37	27	-30	-67	-37	-3
Operating cash flow	413	355	611	729	760	760
Tax paid	-48	12	-12	-24	-86	-117
Capex (less disposals)	-171	-209	-244	-207	-139	-139
Investments	0	-20	-20	0	0	0
Net interest	-59	-60	-77	-74	-70	-51
Net dividends	-65	-71	-71	-80	-89	-98
Residual cash flow	70	7	187	343	375	354
Equity issued	1	2	0	0	0	0
Change in net borrowing	-67	363	-187	-343	-375	-354
Adjustments	-3	-359	0	0	0	0
Total financing	-70	7	-187	-343	-375	-354

Source: Company data, Longspur Research estimates

KEY POINTS

- Working capital modestly negative assuming no change in payment timings
- Capex slightly down in FY 20 as signalled by company
- Net investment outflow in FY21 as gas asset sales offset by pellet acquisition
- Cash positive from FY 22
- Further capex on pellet business expansion

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