

# ESG Strategist

## Carbon data suggest that profit margins could be under pressure

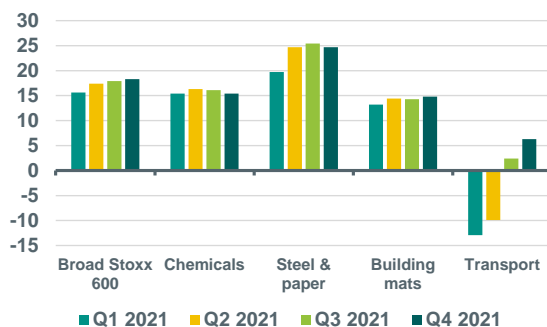
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- ▶ **Rising energy prices will be more difficult for corporates to pass through going forward as consumers are feeling the pinch as well**
- ▶ **The advent of ESG disclosures makes it possible to quickly derive energy use at corporates**
- ▶ **This allows us to calculate the theoretical impact on corporate profit margins and leverage on the back of the recent surge in energy prices, assuming that pass through of costs does not take place**
- ▶ **Not surprising that the basic material space, including chemicals, metals and building materials are impacted the most and high yield suffers more than investment grade**
- ▶ **The EUR IG corporate bond index leverage rises from 2.4x to 2.6x on this exercise, which seems moderate**
- ▶ **We suggest easy switches to less affected basic industry names, but we like the energy space even more, despite sticky ESG issues**

The Russia/Ukraine conflict has posed corporates with many challenges, such as a shortage of certain speciality metals & agricultural products, but the obvious channel by which all corporates are being affected is a higher price for energy. For example, the price of 1y ahead Dutch natural gas TTF had risen by 23% since the start of this year at time of writing (after falling from a peak rise of 66% in early March). TTF price stands at 60.9 EUR/MWh currently but could easily rise again to a range of EUR 80-100 EUR/MWh as per our base economic scenario, despite the assumption that Russian gas supply to Europe will not be completely cut off. Also the above price range is set to last well into next year. We note that Q4 2021 profit margins in Europe held-up well despite energy prices already rising since the second half of 2021, as seen in the chart below. Hence, corporates, so far, faced no difficulty in passing through higher input costs to consumers.

### European corporate profit margins not suffering yet

EBITDA margin (per share)

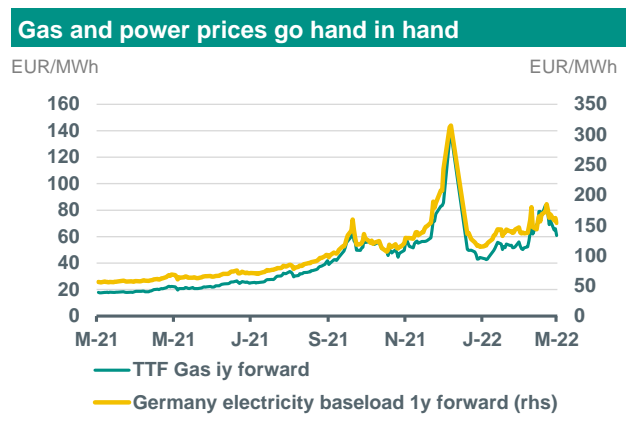


Source: Bloomberg, ABN AMRO Group Economics

However, economic growth in Europe will be much slower than previously expected. Real wage growth is sharply negative so households are seeing a large hit to their spending power, while financial conditions have tightened and uncertainty is high. As consumers are starting to feel the pinch from higher utility and fuel bills themselves, passing through costs by corporates without compromising on volumes sold will become challenging this year. In this piece we attempt to map how corporate profitability and indebtedness could shape up, based on how energy prices have developed recently and with the big assumption that corporates will have to absorb the rising prices of energy themselves. Our focal point is large companies and specifically the EUR investment grade corporate debt universe. Obviously the exercise is highly theoretical, but we are already hearing about strong margin compression in the base chemicals space and that factories need to shut down due to excessive price levels.

**Watch out for the high carbon intensity names**

Corporates have become implicitly more open about energy consumption because of ESG disclosures. We use the reported carbon intensities of corporates as provided by Sustainalytics and ‘energy-to-carbon emission’ conversion factors to reverse engineer their fossil fuel energy usage. We leave out the energy and utility sector from our exercise, since they either are the beneficiary of high energy prices or given the existing supply shortage of electricity installations should have no difficulties in passing through higher fuel costs in power rates, as shown in the chart below.

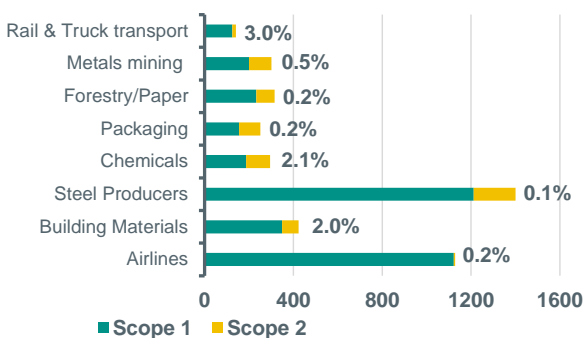


Source: Bloomberg, ABN AMRO Group Economics

Our approach implies that corporates with a high carbon intensity will be most affected. The charts below show the carbon intensity scope 1 & 2 per industry. For the large emitters we also show the weight of the sector in the EUR IG corporate bond index, which demonstrates that the heavy users of energy have only a 8% weight in the total index, and that emission is largely scope 1 driven. On the chart on the right, which represents roughly 36% of the EUR IG debt index, we note that emissions tend to be considerably lower and scope 2 emissions clearly contribute most to the total.

**Carbon intensity per sector (1)**

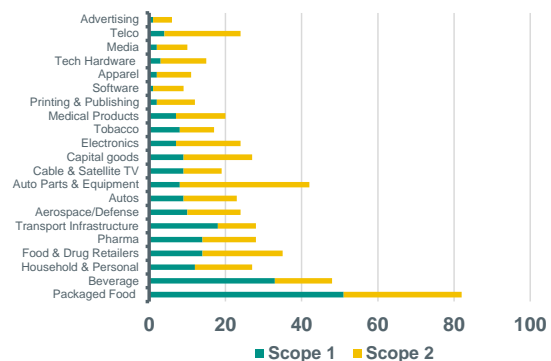
Scope 1 / 2 tonne CO2 per USD 1mn of revenues



Source: Sustainalytics, Bloomberg, ABN AMRO Group Economics, labels represent weight of sector in EUR IG debt index

**Carbon intensity per sector (2)**

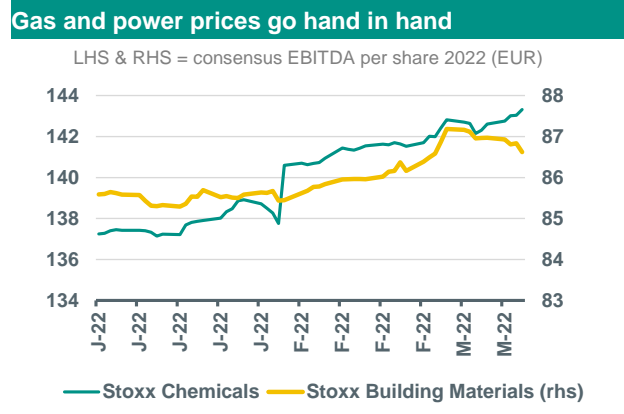
Scope 1 / 2 tonne CO2 per USD 1mn of revenues



Source: Sustainalytics, Bloomberg, ABN AMRO Group Economics

### From carbon emissions to leverage impact

From the carbon emission intensity data shown above one might already conclude that it is best to avoid the industries in the left hand chart on the previous page. The goal of this piece however is to quantify this into a financial impact, i.e. by how much will profit margins suffer or how much will indebtedness change due to the sharp rise in energy prices. Looking at earnings forecasts issued by equity analysts, we are hardly seeing any downward revision in earnings yet. Actually, the forecasted 2022 EBITDA for the Stoxx chemicals and building materials indices were recently upgraded, which sounds counter intuitive to us, especially considering that these forecasts are partly based on profit margin expansion.



Source: Bloomberg, ABN AMRO Group Economics

Against this background, we look at the financial downside in this note. Before we start with the approach we would like to note that we apply a highly standardized method across all sectors and do not take into consideration an issuers actual fuel or electricity mix, mainly because this would require very detailed knowledge on an issuer level. With all fuel and other energy source prices rising across the board and specialized fuels being derived from the main source being oil or gas, we are comfortable to use the main sources as proxy for fuel. Also, we take the average of gas and electricity prices between Western Europe and the United States as input for the change in energy prices, given that most issuers tend to have big presence in these regions. As mentioned before, we exclude oil & gas and utility issuers from the analysis.

### Price assumptions for energy (per emissions scope)

Carbon Source	Fuel	Price before	Price assumed
Scope 1	Natural gas	0.1883 per M3	0.635 per M3
Scope 1	Coking Coal	311 per MT	427 per MT
Scope 1	Diesel	1.35 per ltr	1.79 per litre
Scope 1	Jet Fuel	0.51 per ltr	0.84 per litre
Scope 2	Electricity	66.25 per MWh	97.81 per MWh

Source: Bloomberg, IATA, EC, EIA, ENTSO, ABN AMRO Group Economics

By using the standard emission conversion factors as provided by publicly available websites (we used the Dutch one which can be found [here](#)), we convert the usage of carbon mainly into a unit of energy such as a cubic metre of natural gas (from the scope 1 emissions) or into a MWh of electricity (from scope 2 emissions). There are a few sectors where we convert the scope 1 emissions into a litre of diesel (such as road & rail transportation) or thermal coal (such as steelmaking). The graphic below shows how we transform the scope 1 emissions into financial impact.

## How do we get from carbon data to financial impact from higher energy prices– an example

### Inputs

- 1kg CO<sub>2</sub> per \$1 Revenue
- 50% EBITDA margin
- 4x ND/EBITDA (ie \$2 net debt per \$1 revenue)

1 cubic metre (cm)  
gas = 1.788 kg CO<sub>2</sub>

### Energy usage

0.55 cubic metre (cm)  
natural gas per \$1 revenue

Price goes up from \$0.3 to \$0.7  
per cubic metre of natural gas

### Impact per \$1 revenue

equals usage \* price rise =  
0.55\*(\$0.7-0.29) = \$0.23 per \$1  
revenue

Recalculate other  
metrics

### Impact on margin and leverage

EBITDA drops from \$0.5 to \$0.27 (ie \$0.5 -/- \$0.23)  
EBITDA margin drops from 50% to 27%  
Leverage (ND/EBITDA) rises from 4x to \$2/\$0.27 = 7.4x

First we have conducted the above assessment on industry level. To get to industry aggregates, we took the average of latest available EBITDA margin and leverage on investment grade Western European and North American issuers for each of the below industries, from the Moody's financial metrics database. For the scope 1 & 2 emission intensity, we took the trim-mean or median (whichever was highest) from the issuers in the same respective industries from the Sustainalytics database\*. The table below shows the result, **assuming that corporates did not manage to pass through the higher cost of energy** since H2 2021 and absorbed this impact entirely themselves. This is a big assumption, through passing costs to consumers will become increasingly difficult, while we think it provides a good basis for analysing the size of the impact. In addition, the industries below make up nearly 35% of the EUR IG debt index, suggesting that relevance of this analysis is high as well (despite leaving out unaffected sectors such as energy and utilities). We highlighted the pro-forma EBITDA margins as red where the drop is in excess of 5 points.

## Theoretical EBITDA margin pull down from higher energy prices, in some cases extremely

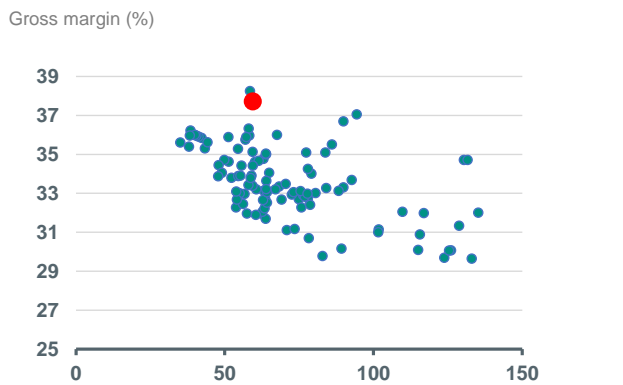
Sector	Share of sector in EUR IG Index	Scope 1	Scope 2	total scope 1&2 margin hit per USD 1 revs	EBITDA margin now (%)	EBITDA margin after higher energy price impact (%)	Change
Airlines	0.19%	1122	6	\$ 0.11747	15.7	4.0	11.7
Building Materials	2.03%	349	74	\$ 0.12355	22.0	10.0	12.0
Steel Producers	0.12%	1212	188	\$ 0.11240	26.3	15.5	10.8
Chemicals	2.15%	187	108	\$ 0.08716	20.4	11.2	9.2
Packaging	0.20%	155	96	\$ 0.07423	16.4	7.6	8.8
Forestry/Paper	0.22%	233	82	\$ 0.09248	22.4	13.2	9.2
Metals mining	0.52%	200	101	\$ 0.08877	42.0	33.4	8.6
Rail & Truck transport	3.01%	125	16	\$ 0.02177	10.7	8.6	2.1
Packaged Food	1.61%	51	31	\$ 0.02425	17.4	15.0	2.4
Beverage	2.95%	33	15	\$ 0.01414	26.8	25.4	1.4
Household & Personal	0.90%	12	15	\$ 0.00807	20.7	20.0	0.7
Food & Drug Retailers	0.77%	14	21	\$ 0.01049	7.7	6.7	1.0
Pharma	3.00%	14	14	\$ 0.00834	38.3	37.5	0.8
Transport Infrastructure	3.20%	18	10	\$ 0.00549	52.2	51.7	0.5
Aerospace/Defense	0.83%	10	14	\$ 0.00718	12.9	12.2	0.7
Autos	6.48%	9	14	\$ 0.00689	13.1	12.4	0.7
Auto Parts & Equipment	0.62%	8	34	\$ 0.01274	12.2	11.0	1.2
Cable & Satellite TV	0.18%	9	10	\$ 0.00567	22.1	21.5	0.6
Capital goods	3.05%	9	18	\$ 0.00812	18.3	17.5	0.8
Electronics	0.53%	7	17	\$ 0.00724	38.5	37.8	0.7
Tobacco	0.70%	8	9	\$ 0.00507	43.8	43.2	0.6
Medical Products	0.93%	7	13	\$ 0.00601	28.0	27.4	0.6

Source: Sustainalytics, Moody's, ABN AMRO Group Economics

\*The Sustainalytics scope 2 data seems to be a mix of location based and market based data. Market based emissions could have off-sets applied, which suggest that energy usage from scope 2 and the adverse impact on margins could be higher

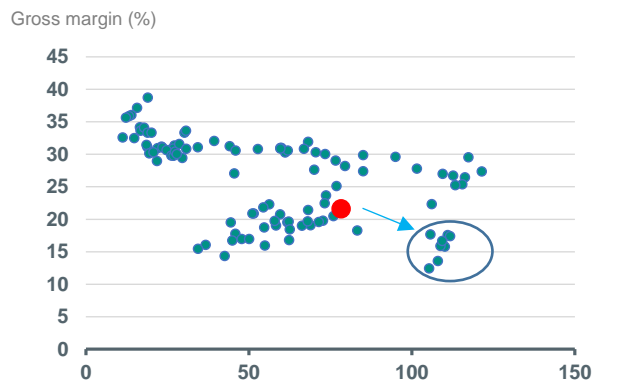
As can be seen from the table, a number of industries sees significant margin compression in case cost pass-through becomes difficult. In particular, the sharp estimated drop in the basic industry space (including chemicals, metals/steel and building materials) explains why we are already hearing about factory shut-downs more frequently. Indeed, an econometric paper done by Ganapati, Shapiro and Walker (see [here](#)) suggest that input price shocks are less than fully passed-through resulting in lower mark-ups. Also, a couple of week’s ago we showed in our weekly Credit Crisp (see [here](#)) that historically extreme prices for commodities have coincided with strong drops in gross profit margins on the aggregate of MSCI Europe constituents, as shown below. The red dots represent (close to) commodity price levels and gross margin levels. For the basic industry space we circled cloud of dots gives better representation as the upper cloud represents the situation when the underlying companies faced less competition from emerging markets which is no longer the case obviously.

**Consumer staples margin vs agri commodity price**



Source: Bloomberg, ABN AMRO Group Economics, x-axis = 90day rolling average price on Bloomberg Agri commodity index (USD)

**Basic industry margin vs Brent Oil prices**



Source: Bloomberg, ABN AMRO Group Economics, x-axis = 90 day rolling average Brent Oil price per barrel (USD) ,arrows represent outcomes under different timespans (grey pre-GFC, blue post GFC)

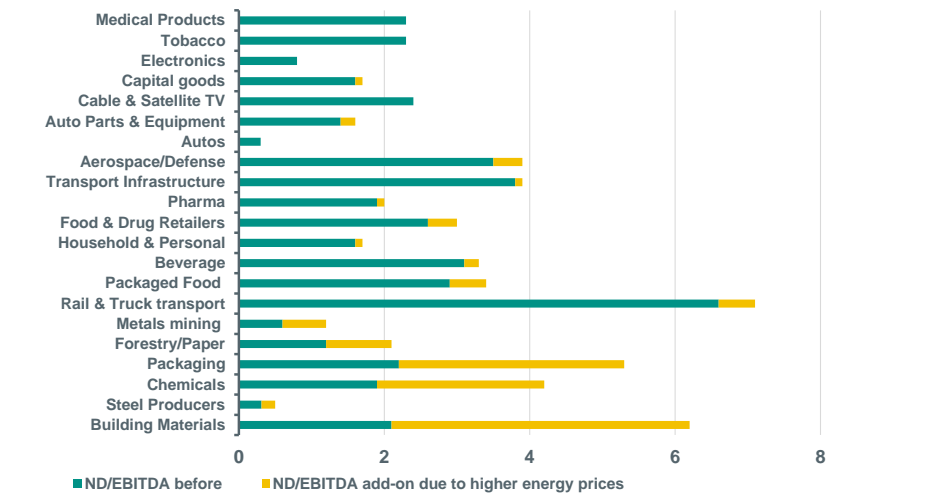
Furthermore, our analysis is limited to energy usage only and does not consider higher cost / scarcity of other raw materials such as agricultural goods for the consumer staple space or microchips for the machinery, electronics, aerospace and automotive space. Hence, there is a case for reality to quickly catch-up to the above theory or even become uglier. The strange thing is that these potential outcomes have not yet been priced into debt markets, which suggests that markets are expecting a 100% cost pass through to continue. For example the credit spreads on the basic industry index continue to trade very close to the broad market, like they have over the course of many years. But with basic industry being clearly the most affected by higher energy prices, we fail to see how risks premiums to the broad market have remained stable.

**Leverage impact milder across investment grade vs high yield**

So with profit margins going down debt service capacity is obviously compromised as well. The chart on the next page shows how higher energy prices and lack of pass through would affect industry leverage. Although in some extreme cases we see a doubling of leverage taking place under a no pass through assumption, but the good news is that across the wide range of industries the top-up in leverage seems very modest from current levels

### Higher energy costs drive up leverage, yet at some more than others

ND/EBITDA (sector average) if energy passthrough is not available



Source: Sustainalytics, Moody's, ABN AMRO Group Economics

The outcome is less favourable in the high yield (HY) space. This is obvious since a higher leverage and or a lower profit margin starting point works as an accelerator, and the results shown in the table below clearly show the stark difference between the impact on HY and IG across a range of industries, which are large contributors to the EUR corporate HY index (excluding utilities and energies of course).

### Theoretical EBITDA margin pull down from higher energy prices – HY sectors

	EBITDA margin now (%)	EBITDA margin after higher energy price impact (%)	Difference	ND/EBITDA before	ND/EBITDA after	Rise in ND/EBITDA HY space	Rise in ND/EBITDA IG space
Chemicals	21.1	12.5	8.6	2.7	6.3	3.6	2
Packaging	17.6	8.9	8.7	3.7	8	4.3	3
Packaged Food	14.9	12.8	2.1	4.2	5	0.8	0.4
Personal Care	12.8	12	0.8	4	4.3	0.3	0.1
Automotive Components	9.8	8.4	1.4	3.7	4.5	0.8	0.2

Source: Sustainalytics, Moody's, ABN AMRO Group Economics

### Broad IG index leverage rises moderately from 2.4x to 2.6x

We try to further test this broad market view by switching the same analysis to issuer level and conducting the same analysis on the largest issuers in the EUR IG bond space, ie. issuers with more than 5 bonds included in the index. We can calculate the weighted EBITDA ('as is' and after accounting for higher energy costs) and the 'as is' Net Debt per issuer based on their level of bond debt outstanding, allowing us for an index proxy. Again, we see huge impact in the basic industry space, with extreme cases being Holcim, Linde, CRH and Air Liquide where profits would essentially be wiped out if there's no pass through in energy costs. But the chart below also shows that besides the extremes the average impact seems less worrisome at only a 1.6% contraction across the range of well-known issuers. This is obviously being supported by the large weight of utilities where we assumed zero impact from energy costs.

### Some extreme case of theoretical EBITDA decline – but broadly speaking index EBITDA drops by 1.9% due to high energy price

Big EUR IG corporate issuers - decline in EBITDA from rise in energy prices since H2 2021



Source: Moody's, Sustainalytics, ICE BofAML, Bloomberg, ABN AMRO Group Economics

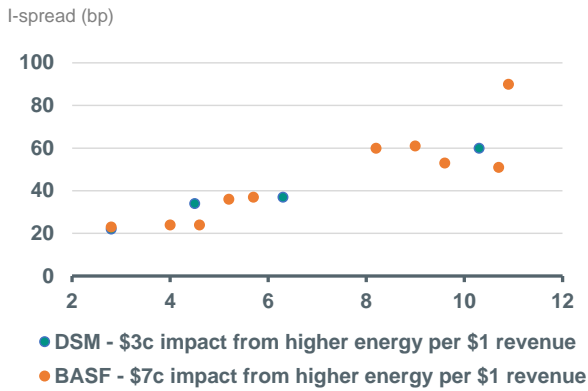
We note that **the EUR IG index leverage (ND/EBITDA) based on the large issuer proxy does rise moderately from 2.4x to 2.6x**, which albeit a rise is not spectacular enough to sound alarm bells yet. We would also like to point out that the above assessment was done on the back of our base case economic scenario where Europe manages to avoid a recession due to fiscal support being applied to soften the blow to consumers from high energy prices. However, in a recession scenario, which is still possible, supply disruptions become severe as both Russian oil & gas are cut-off and this cannot be fully replaced from other sources. Like in any other recession business top-line will incur a blow as consumers become even more cautious, driving up corporate leverage considerably.

#### Easy switches still possible

While the effect on the broad corporate debt market on the back of our base case seems manageable, investors still need to watch out for energy hungry sectors and issuers. However, there's time to make quick changes, even between similar ratings and sectors. As an example we take chemicals issuers **BASF** and **DSM**. Since scope 1&2 emissions at A3 rated Dutch issuer DSM are significantly below also A3 rated BASF, the potential impact from higher energy prices on DSM is also less significant. Combined with the fact that DSM operates at roughly net debt free levels (102.5% FFO/ND vs 41.7% FFO/ND for BASF; all Moody's adjusted) and the debtholder is more insulated from weak performance, the DSM bonds look attractive as they still remain closely priced to the BASF bonds (as shown in the chart on the next page).

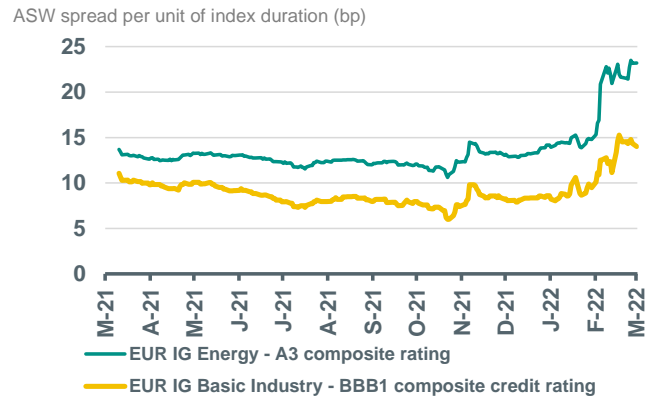
However, the most obvious switch which looks highly attractive to us, is out of the basic industry into the energy space. We would have preferred the utility space as an alternative, yet spreads in the utility space sit at much lower levels than in the basic industry space. Energy, whilst being loathed by ESG focussed investors, will benefit from the high price environment for oil & gas to the extent that some of the big oil majors, such as Shell, might be able to bring down debt to approximately to 1 time their EBITDA (from nearly 3 times EBITDA at the height of the pandemic). Presumably the pick-up shown on the right hand chart is exclusively driven by lower ESG appetite on oil & gas, but all negative information on this matter should now have been incorporated by investors so we fail to see why this should widen in the near term. Like we said above oil & gas companies are becoming darlings on the credit metrics side and will have financial capacity to make the transition to cleaner energy providers.

### Easy switches into safer chemical names



Source: Bloomberg, ABN AMRO Group Economics, X-axis = years to workout

### From energy users to energy providers is the most obvious switch



Source: Sustainalytics, Bloomberg, ABN AMRO Group Economics

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