Sustainable Share Fund research and investment conclusions on Fossil Fuels

Alphinity Sustainable Share Fund (SSF) will not invest in fossil fuel producers or facilitators unless we are convinced that the company has clearly demonstrated commitment and traction to reduce its scope 1, scope 2 and scope 3 greenhouse gas emissions on a trajectory aligned with the Paris Agreement (such as Science-Based Targets). This includes thermal coal, oil and natural gas.

We take this position for the following reasons:

- Climate change poses an existential challenge. The Paris Agreement aims to keep the increase in global average temperature to below 2°C above pre-industrial levels, and to pursue efforts to limit the increase to 1.5°C, which is believed to be a critical threshold beyond which the risk of self-reinforcing climate feedback loops rises significantly. The trajectory required to achieve this goal involves large absolute emissions declines in the 2020s, and net zero global emissions from mid-century onwards.
- SSF strives not to invest in companies whose activities are inconsistent with the achievement of the UN Sustainable Development Goals (SDGs). Climate action is one of the SDGs and climate risk hampers the achievement of most, if not all, of the SDGs. Therefore unabated fossil fuel production beyond the carbon budget implied by the Paris Agreement is incompatible with the achievement of SDGs and with the SSF Charter.
- Our approach is aligned with global best practices of sustainable investing. EU Sustainable Finance Taxonomy has criticised investing in fossil fuels, including natural gas, as being at best "less brown" rather than green, and has issued specific guidelines to this effect.
- Reducing greenhouse gas emissions of activities using fossil fuels to the point of carbon neutrality is affordable for humanity when the significant external costs of using fossil fuels, including climate risks, are taken into account. This can be achieved through substitution by low- and zero-carbon technologies such as solar and wind energy, electric vehicles and hydrogen, and deploying carbon capture and storage. As our analysis indicates, even where carbon-free solutions are more expensive than unabated fossil fuel-based ones, abating major sources of greenhouse gas emissions from fossil fuels should increase the costs of final products only modestly, even though there might be a significant increase to the cost of some inputs, and is unlikely to make end products unaffordable or hinder achievement of any SDGs, including those of ending poverty and hunger.

Fossil fuel alternatives and exclusion rationale: summary table

Fuel	Cleaner alternatives and exclusion rationale
Natural gas (~40% power, ~40% industrial, ~20% residential use in Australia; similar breakdown globally)	In each of the key applications of natural gas we believe reaching compliance with Paris targets would be affordable for society. • For power generation, cleaner affordable alternatives are already proven at scale and should be able to replace most natural gas usage economically in the next ~5-10 years through a mix of hydro and renewables + battery storage. For any residual required gas peaker capacity, carbon capture and storage would increase overall consumer electricity prices by less than 2%. • For industrial usage, even the largest and most essential uses such as ammonia production are affordable to decarbonise: capturing and storing all CO_2 emitted in ammonia manufacturing would have a significant impact on fertiliser prices but should only increase end food cost by 0.2%. Longer term, green hydrogen is likely to also become a cost competitive alternative. • For residential use (cooking, heating) electricity is already cost competitive with gas on full cycle basis. We recognise the requirement for gas during the transition to renewables, but also that society already can and should be able to afford to decarbonise all gas usage in line with Paris goals, either through replacing gas with zero carbon fuels/technologies or by deploying full carbon capture and storage. We will therefore only invest in natural gas if we believe the company is on track to reduce scope 1, 2 and 3 carbon emissions to net zero by 2050 on a trajectory aligned with science-based targets.
Oil (key global uses: ~40% road transport, ~12% petrochemicals [primarily plastics], ~7-9% marine, ~5-9% aviation)	In each key application of oil, we believe reaching compliance with Paris targets should be affordable for society. • For road transport, electric vehicles are already cheaper to consumers on full cycle basis in some countries. Full cycle cost parity is expected to be reached in the next ~5 years in more countries. Factoring in externalities, electric vehicles are already economic. • Decarbonising ethylene production with carbon capture and storage would increase ethylene cost by <20%. Given plastics are a small share of most end use product costs (consumer packaged goods, construction), the average increase in end product costs is unlikely to be more than low single digit %, and for uses with higher recycling returns end costs can decrease further. • For air travel, decarbonising through a mix of biofuels and carbon offsets can be as little as 0.2% of air travel cost. • For marine bunkering, decarbonising shipping through a mix of hydrogen, ammonia and electrification would increase the end cost of traded goods by only ~1%. As such we recognise the ongoing temporary requirement for oil, but also that society already can and should be able to afford to

	decarbonise all oil usage in line with Paris goals, either through replacing oil with zero carbon fuels and technologies, or by deploying full carbon capture and storage on remaining oil processes. We will therefore only invest in oil if we believe the company is on track to reduce scope 1, 2 and 3 carbon emissions to net zero by 2050 on a trajectory aligned with science-based targets.
Thermal coal (power and heat generation)	Thermal coal can be readily replaced by cleaner and affordable alternatives such as firmed renewable energy and has higher cost and carbon footprint than even other fossil fuels such as natural gas. Therefore we do not support companies which produce or facilitate thermal coal.

Detailed table: natural gas

Application	**Cleaner alternatives and exclusion rationale**
Power generation (~40% of Australian demand)	For ⅔ of gas power generation, cleaner affordable alternatives are already proven at scale and affordable (gas without carbon capture and storage at A$60-115/MWh vs A$100-160/MWh for solar + battery). For the residual ⅓, required gas peaker capacity carbon capture and storage is affordable and would have a low single digit % impact on consumer electricity prices. Carbon capture and storage in gas powered generation is potentially affordable: gas is A$60-115/MWh without carbon capture and storage vs. A$110-205/MWh with carbon capture and storage). Considering that wholesale costs are only a portion of retail costs and that gas is only ~10% of the generation mix, the impact on the consumer electricity bill from decarbonising gas power use could be below 2%.
Heating & cooking (~20% of Australian demand)	For most residential and commercial uses electrification is already competitive with gas on full cycle total cost of ownership basis. Electrification would reduce natural gas use by ~75-90% at the current power mix. ~10% of electricity in Australia comes from gas and this can potentially be reduced to zero with a lower-carbon grid. Gas is therefore not the cleanest cost-competitive option.
Industrial (~40% of Australian demand)	More than ¾ of non-electricity industrial natural gas use is in manufacturing, mostly for chemicals and non-ferrous metals; the remainder is used in mining. Carbon capture and storage in industrial natural gas use is potentially affordable. For example, for one of the largest and most important industrial uses of natural gas – ammonia manufacturing for fertilisers – full carbon capture would only increase food costs by ~0.2%.

Detailed table: oil

Application	Cleaner alternatives and exclusion rationale
Road transport	Oil for use in internal combustion engines is not the cleanest affordable alternative. Electric vehicles are already approaching affordability, being close to the total cost of ownership parity even without considering externalities. A Nissan Leaf costs around $A53,000: while higher than a comparable internal combustion engine vehicle it however does have much lower running costs. Cost parity is expected to be reached in 2023-2025 according to Bloomberg research. Should a carbon price be imposed, electric vehicles powered by electricity from renewables may already be cheaper.
Aviation	A combination of biofuel substitution and purchasing carbon offsets is not cost prohibitive, raising cost of air travel by only ~0.2%. US airline Delta has committed to carbon neutrality by 2050.
Petrochemicals (primarily used for plastics for packaging, manufactured products, construction etc.)	Decarbonising ethylene production with carbon capture and storage would increase ethylene cost by <20%. Given plastics make up only a small proportion of most end use product costs (consumer packaged goods, construction), the average increase in end product costs is unlikely to be more than a low single digit %, and for uses with higher recycling returns end costs increase could be even lower. This is likely to be representative of most petrochemicals.
Marine transport	According to the OECD, decarbonising shipping through a mixture of hydrogen, ammonia and electrification would likely increase the cost of traded goods by only ~1%.