

Dirty Big Secret

Financial performance of fossil fuel companies

Fossil fuels were the worst performing sector in the ASX 300 over the last decade. \$100 invested in the fossil fuel dominated S&P ASX 300 Energy index in 2010 was worth just \$104 by January 2020, dropping to \$51 with COVID. \$100 in the wider market peaked at \$237, falling to \$169 with COVID. Excluding fossil fuels from a portfolio of the ASX 300 would have increased returns by 8.6% over the decade.

Discussion paper

Tom Swann

July 2020

ABOUT THE AUSTRALIA INSTITUTE

The Australia Institute is an independent public policy think tank based in Canberra. It is funded by donations from philanthropic trusts and individuals and commissioned research. We barrack for ideas, not political parties or candidates. Since its launch in 1994, the Institute has carried out highly influential research on a broad range of economic, social and environmental issues.

OUR PHILOSOPHY

As we begin the 21st century, new dilemmas confront our society and our planet. Unprecedented levels of consumption co-exist with extreme poverty. Through new technology we are more connected than we have ever been, yet civic engagement is declining. Environmental neglect continues despite heightened ecological awareness. A better balance is urgently needed.

The Australia Institute's directors, staff and supporters represent a broad range of views and priorities. What unites us is a belief that through a combination of research and creativity we can promote new solutions and ways of thinking.

OUR PURPOSE - 'RESEARCH THAT MATTERS'

The Institute publishes research that contributes to a more just, sustainable and peaceful society. Our goal is to gather, interpret and communicate evidence in order to both diagnose the problems we face and propose new solutions to tackle them.

The Institute is wholly independent and not affiliated with any other organisation. Donations to its Research Fund are tax deductible for the donor. Anyone wishing to donate can do so via the website at <https://www.tai.org.au> or by calling the Institute on 02 6130 0530. Our secure and user-friendly website allows donors to make either one-off or regular monthly donations and we encourage everyone who can to donate in this way as it assists our research in the most significant manner.

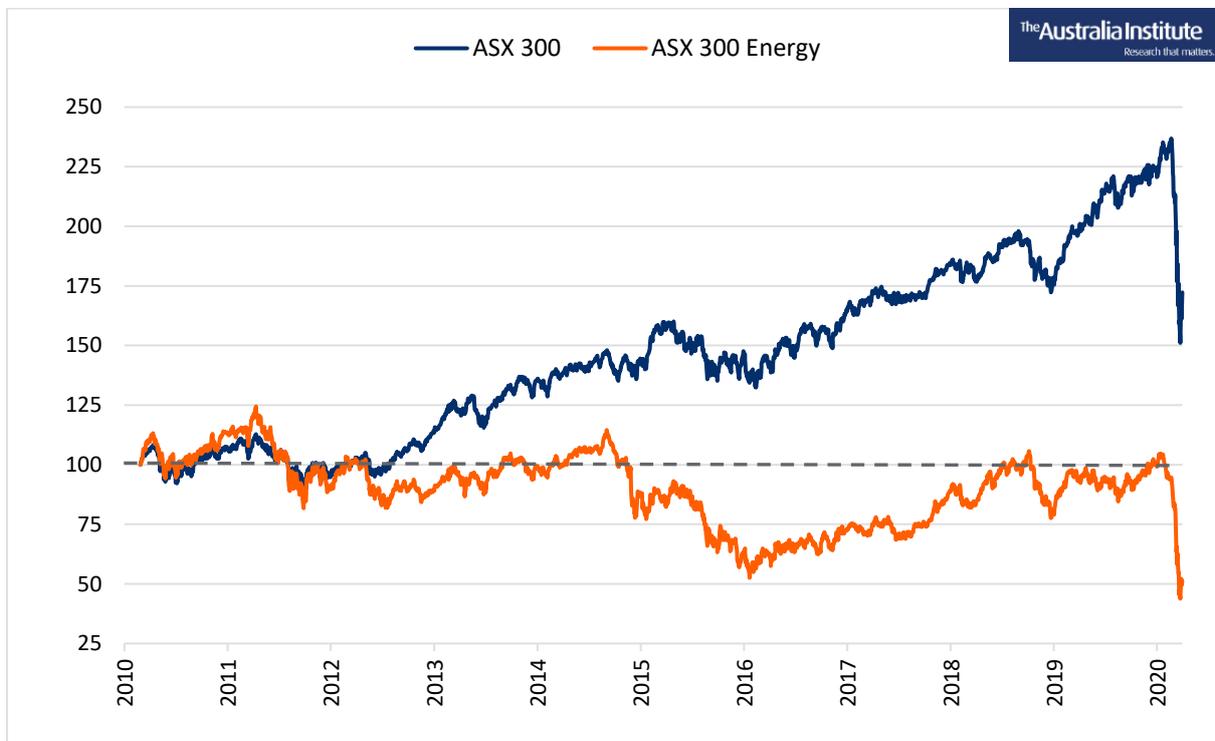
Level 1, Endeavour House, 1 Franklin St
Canberra, ACT 2601
Tel: (02) 61300530
Email: mail@tai.org.au
Website: www.tai.org.au
ISSN: 1836-9014

Summary

Amid the stockmarket turmoil of 2020, fossil fuel companies have performed worse than the wider market. The S&P ASX 300 Energy index is down 48% the first quarter of 2020 compared to 23% for the ASX 300. Contributing factors include COVID19 and surging supply from the oil price war between Russia and Saudi Arabia.

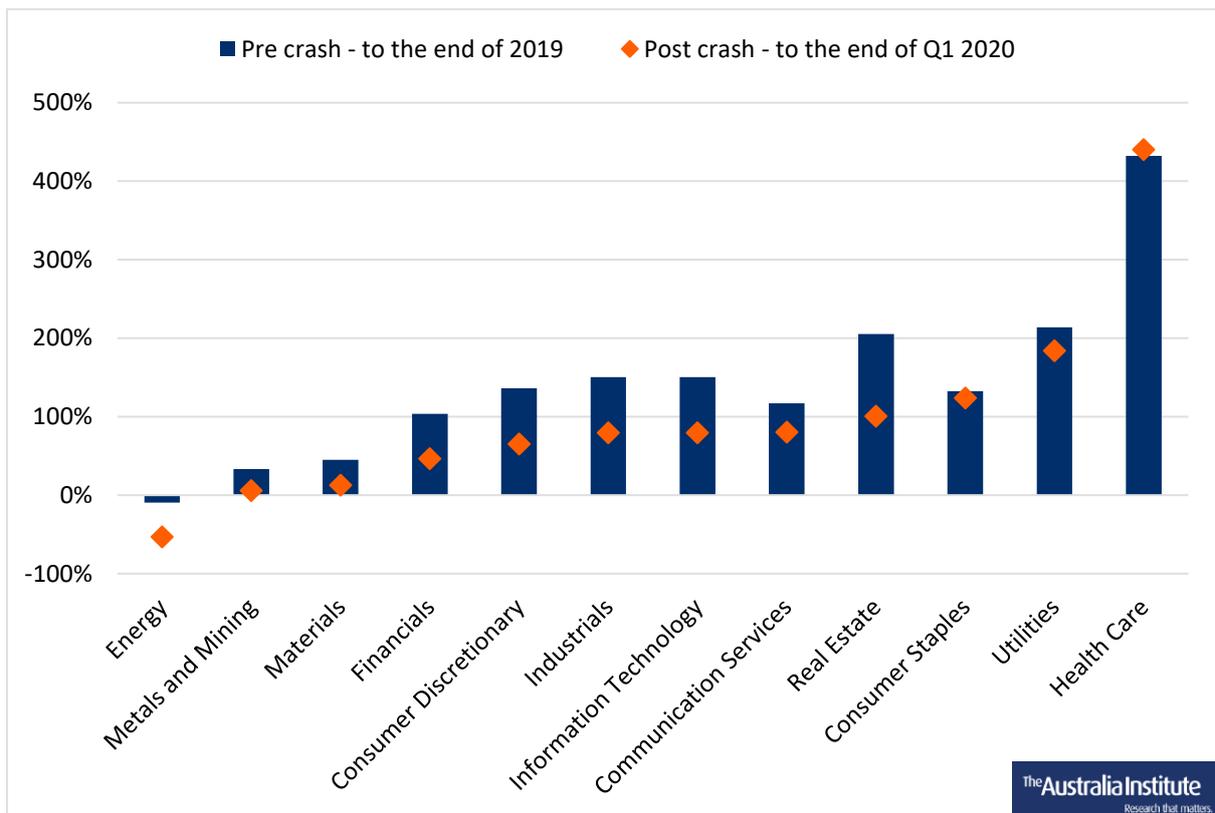
However, the underperformance of fossil fuel companies is not limited to early this year. Fossil fuel companies have performed worse than the wider market over the entire last decade.

ASX 300 vs fossil fuel dominated ASX 300 Energy



In fact, the fossil fuel dominated ASX 300 Energy sector performed worse than *all* other sectors over the last decade.

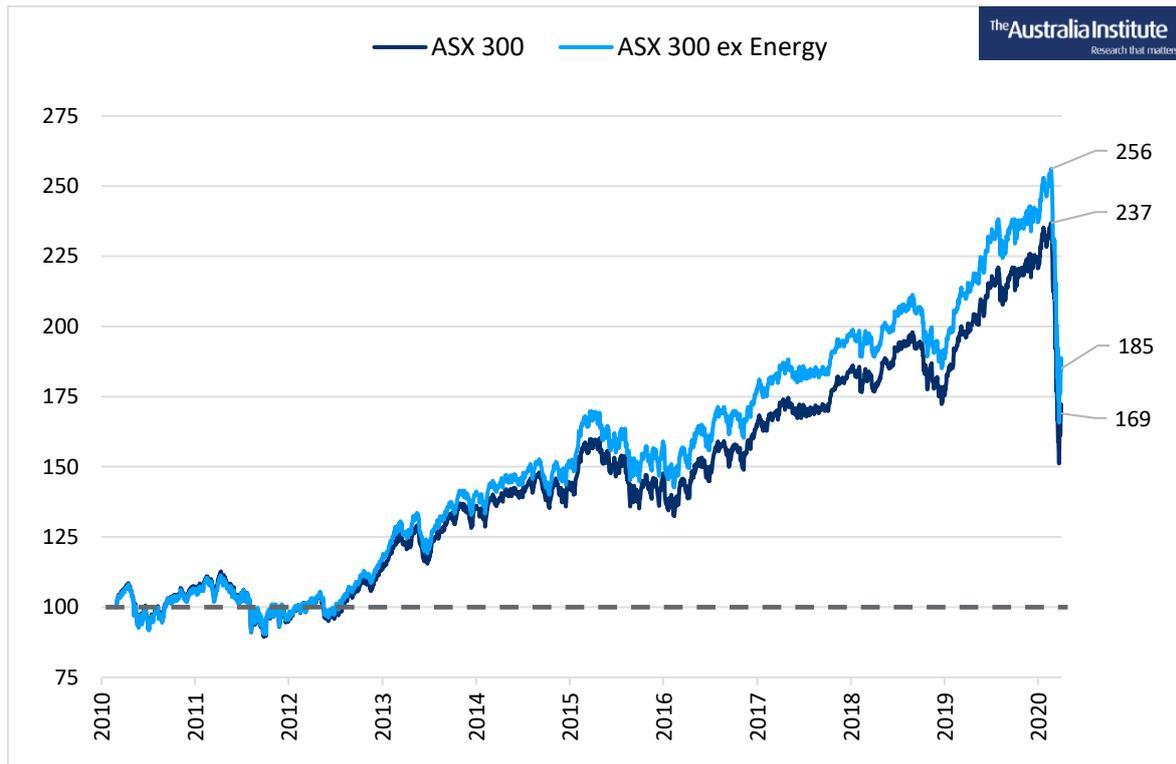
ASX 300 returns by sector over the decade from 2010



The poor performance of fossil fuel companies is probably surprising to most Australians, who are routinely told by industry and political leaders that coal is the “bedrock” of Australia’s prosperity, or that gas will “fire” the recovery from COVID19.

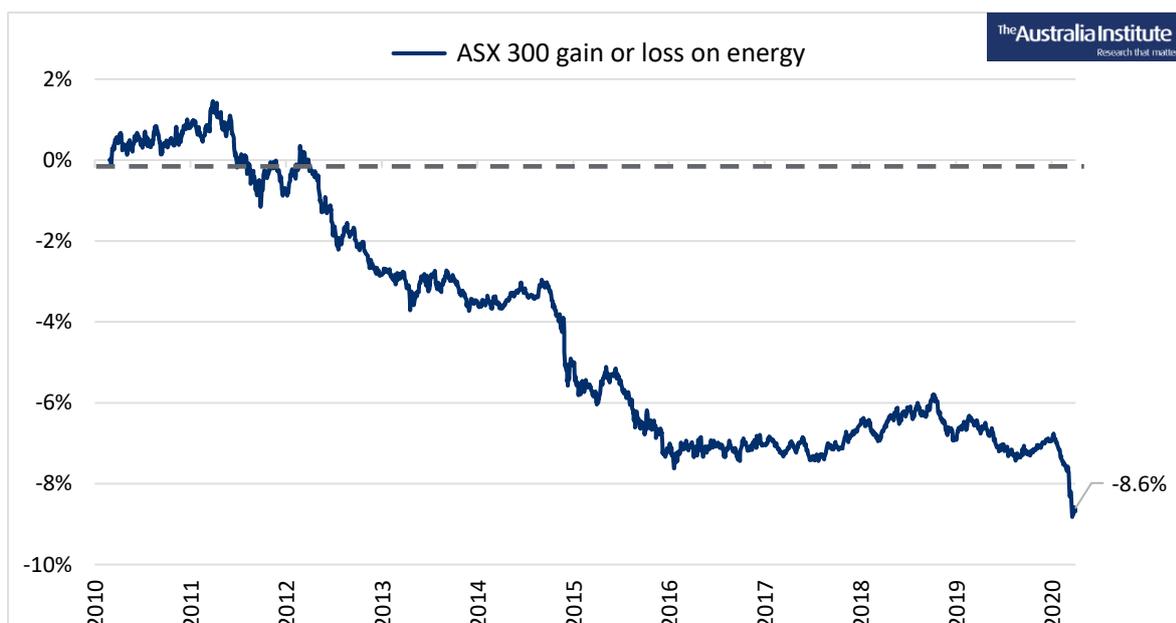
In fact, comparison of the fossil fuel-dominated ASX 300 Energy Index to the whole ASX 300 Index understates the underperformance of fossil fuel companies. As fossil fuel companies are in the ASX 300, they drag down its growth with their index’s losses. This paper derives an ex-Energy index, to allow comparison between ASX 300 indices with and without fossil fuels. In February 2020, the ASX 300exEnergy was 19 points higher than the ASX 300 including energy. At the end of the first quarter the loss was 17 points.

Figure 4: ASX 300 vs ASX300ExEnergy



Expressing the difference between these two indices as a proportion of the ASX300, we see that that an investor who had invested in the ASX 300 would have achieved 8.6% lower returns than an investor who had excluded ASX 300 Energy fossil fuel companies from their portfolio.

Underperformance as a result of exposure to energy sector



Australia’s experience is not unique. USA and global indices show similar trends.

DISCLAIMER

This report is for information purposes. The author and the publisher of this report are not in the business of providing financial product advice. The report is not an offer to buy, sell or in any way deal in any financial product. It is not meant to be a general guide to investment, nor any source of specific investment recommendation. It is generally available to the Australian public.

Please be aware this document is not intended to be provided to investors subject to US securities law. Should it inadvertently come into the possession of such an investor please be aware of the following. The information contained in the document was carefully compiled from sources we believe to be reliable, but we cannot guarantee accuracy. We provide this information with the understanding that we are not engaged in rendering legal, accounting, or tax services. In particular, none of the examples should be considered advice tailored to the needs of any specific investor. We recommend that all investors seek out the services of competent professionals in any of the aforementioned areas. With respect to the description of any investment strategies, simulations, or investment recommendations, we cannot provide any assurances that they will perform as expected and as described herein. Past performance is not indicative of future results. Every investment program has the potential for loss as well as gain.

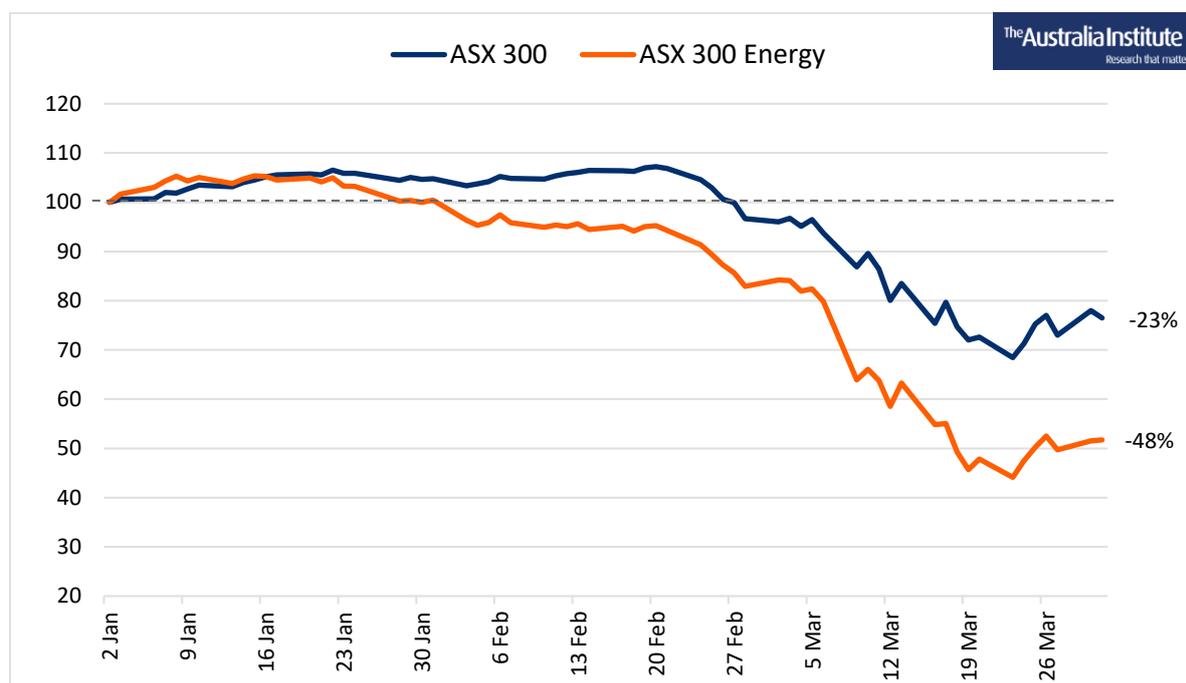
Contents

Summary	3
Disclaimer.....	6
Introduction	8
ASX 300	10
‘Energy sector’ or Fossil Fuels	10
ASX 300 vs ASX 300 Energy.....	11
An ASX ex-Energy Index	14
International Comparisons	17
S&P 500 in USA	17
ExxonMobil	18
MSCI Global Index.....	19
Conclusion.....	20
Appendix: key Australian companies.....	21

Introduction

The collapse of the Australian stock market in response to COVID19, and government policies to control it, shows how vulnerable economic activity, and stock market valuations, are to both global crises and domestic policy responses. But while most stocks have taken a hit, some were hit harder than others. The ASX 300 Energy index, mainly fossil fuel companies, significantly underperformed the wider ASX 300, as shown in Figure 1:

Figure 1: Fossil fuel shares collapsed twice as far as the market over Q1 2020



Source: total returns 2 Jan to 31 March 2020, indexed to 2 Jan.

S&P (2020) S&P/ASX 300 (AUD), <https://au.spindices.com/indices/equity/sp-asx-300>,

S&P (2020) S&P/ASX 300 Energy (AUD), <https://au.spindices.com/indices/equity/sp-asx-300-energy-sector>

As shown in Figure 1, fossil fuel companies lost twice as much value as the broader market over the first quarter of 2020. In addition to the COVID19-induced hit to fuel demand, oil and gas supplies increased as Saudi Arabia and Russia engaged in a tit-for-tat price war.

However, the underperformance of fossil fuel stocks is a long-term phenomenon, not just a response to COVID19. The causes are well known. As Russia and Saudi Arabia demonstrate, coordination to reduce supply is rare, either for profit via agreement like OPEC, or for the avoidance of climate change as Pacific island nations have called for. With climate change exacerbating events like Australia's catastrophic 2019-20 bushfires, policies to reduce fossil fuel use are beginning to take effect. Renewable energy is providing stiff, clean competition.

The trends shown in this report may be well-known to people in the finance sector, but they are probably unknown to most Australians, who are routinely told by industry and political leaders that coal is the “bedrock” of Australia’s prosperity, or that gas will “fire” the recovery from COVID19.¹

A significant number of Australian superannuation account holders, as well as major investors have expressed their desire to divest their portfolio of fossil fuel companies. Some pursue this for ethical reasons, while others doubt the long run profitability of industries whose profitability relies on commodities that governments, companies and individuals are attempting to phase out.

This paper examines broad sharemarket returns by comparison with returns to the fossil fuel sector, showing how investors who invested broadly in all sectors, including fossil fuels, were likely to achieve lower returns over the last decade than those who invested the same way but simply avoided fossil fuels.

¹ See for example Wright (2020) *Gas to fire economic recovery and capitalize on cheap oil prices*, <https://www.smh.com.au/politics/federal/gas-to-fire-economic-recovery-and-capitalise-on-cheap-oil-prices-20200421-p54lw8.html>

ASX 300

This paper is focused on the *ASX 300* index,² which measures the change in aggregate value to a shareholder holding the largest 300 widely traded companies on the Australian Stock Exchange (ASX) over time. Each company contributes to the index in proportion to its market capitalisation (total share value).

The ASX 300 covers around 85% of the ASX by market capitalisation. While the ASX 200 is more widely discussed, the ASX 300 includes up to 100 additional smaller companies which makes the analysis less sensitive to the performance of particular companies and makes analysis of sectors such as energy more comprehensive. While the ASX 300 includes a lot more companies than the ASX 200, the ASX 200 accounts for around 95% of ASX 300.³

This analysis uses the ASX 300 ‘total returns’ (also known as the accumulation index) which tracks market capitalisation dividends and buybacks, which are assumed to be reinvested into the index. This makes the index a proxy for average market returns. It reflects returns to an investor who follows the index and reinvests all dividends in the index. It is also a reasonable proxy for broad market or ‘passive’ investment strategies followed by many large investors, including many Australian superannuation funds.

The ASX 300 index is compiled by Standard and Poor’s (S&P), who include and exclude companies based on multiple criteria including liquidity thresholds (how much is bought and sold). Due to these criteria the companies in the index change over time and do not always number exactly 300.

S&P provides public data over the past decade for the market indexes as well as for specific sectors within them, including the energy sector. For example, *ASX 300 Energy* includes all and only the Energy companies in the ASX 300.⁴

‘ENERGY SECTOR’ OR FOSSIL FUELS

ASX 300 uses the Global Industry Classification Standard (GICS). This defines Energy as

companies whose businesses are dominated by either of the following activities: the construction or provision of oil rigs, drilling equipment and other energy related service and equipment, including seismic data collection; or, companies engaged in

² S&P (2020) *S&P/ASX 300 (AUD)*, <https://au.spindices.com/indices/equity/sp-asx-300>

³ As per Market Index (2020) *ASX 200*, <https://www.marketindex.com.au/asx200>

⁴ S&P (2020) *S&P/ASX 300, Energy (AUD)*, <https://au.spindices.com/indices/equity/sp-asx-300-energy-sector>

the exploration, production, marketing, refining and/or transportation of oil and gas products, coal and other consumable fuels.⁵

In other words, GICS and so the ASX 300 effectively define Energy as companies involved in the supply of fossil fuels. As of March 2020, the *ASX 300 Energy* index included the following companies:

- Caltex Australia
- Carnarvon Petroleum
- Cooper Energy Limited
- FAR Limited
- Karoon Energy Limited
- New Hope Corporation
- Origin Energy
- Oil Search Limited
- Paladin Energy Limited
- Soul Pattinson (W.H)
- Santos Limited
- SENEX Energy Limited
- Viva Energy Group
- Whitehaven Coal
- Worley Limited
- Woodside Petroleum

Nearly all of these companies mine fossil fuels. Worley is a service provider to oil and gas extraction, while Viva and Caltex refine and sell fuel, but do not own or mine fossil fuel reserves. Paladin is a uranium company.

It should be noted that some companies outside of the Energy sector also own fossil fuel assets. BHP, for example, is classed under the 'Materials' sector. It owns major fossil fuel operations, which are a significant minority of its diversified operation. Similarly, Rio Tinto and Wesfarmers were until recently owners of among the largest coal reserves in the world, while being dominated by other activities. Both have recently divested from coal mining. Rio Tinto still owns and operates a coal fired power station in Queensland.

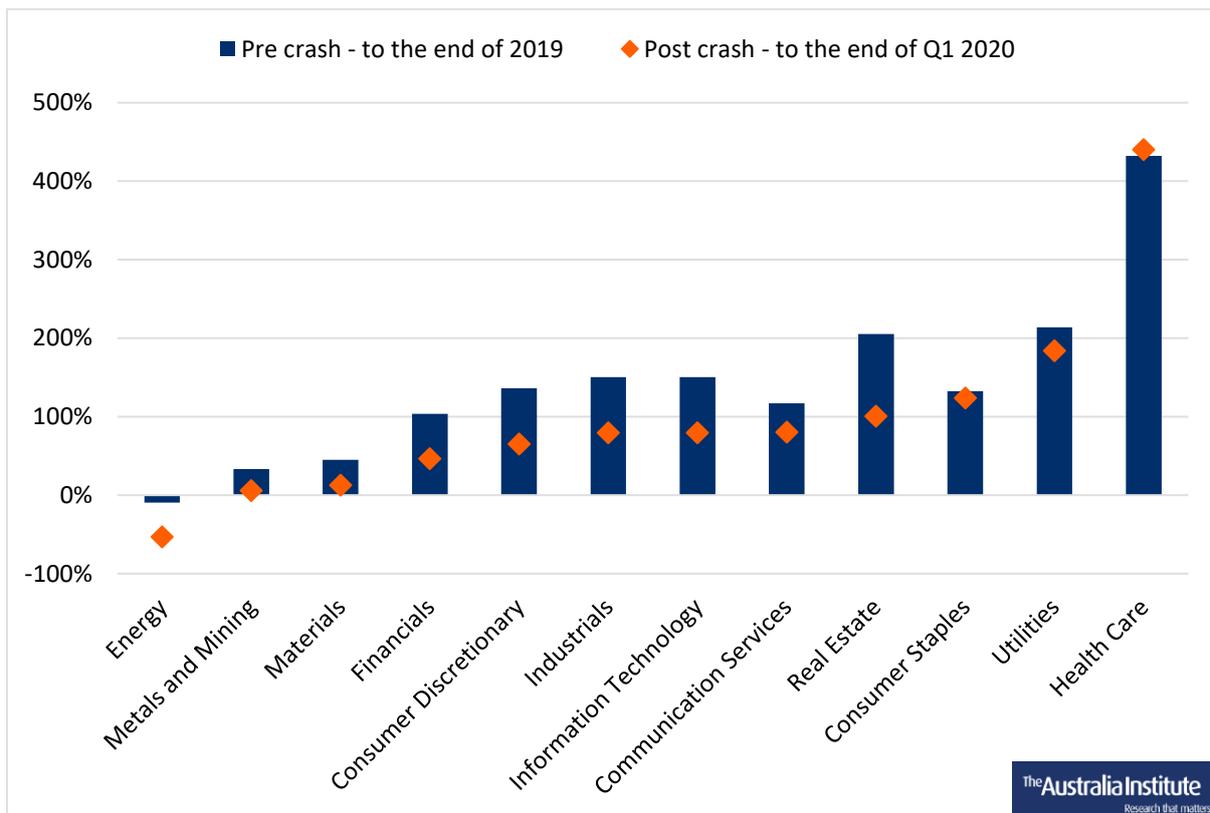
Companies focused on operating power generators, like AGL, are typically classified as 'Utilities', whether the source of their energy generation is fossil fuel based or renewable. Compared with fossil fuel assets, renewable energy generation assets have often been built by companies not publicly traded on share markets.

ASX 300 VS ASX 300 ENERGY

Figure 2 shows the performance of the energy sector relative to other sectors in the ASX300. Over the decade, the fossil fuel-focused energy sector was the *worst* performing of *all* sectors on the ASX (by GSIC).

⁵ ASX (2020) *Sector Indices*, <https://www.asx.com.au/products/sector-indices.htm>

Figure 2: ASX 300 returns by sector over the decade from 2010

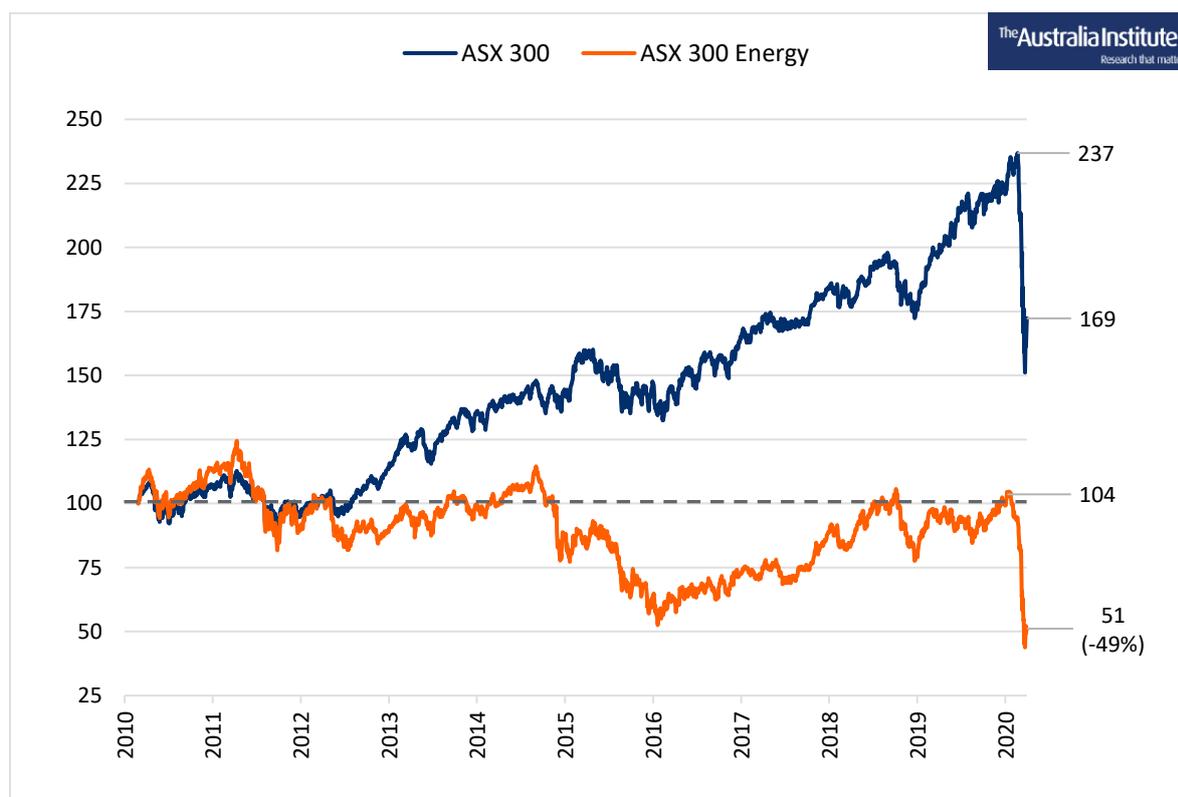


Source: AUD, from 31 March 2010, to 31 Dec 2019, and to 31 March 2020, S&P (2020) ASX 300 indexes, various, <https://au.spindices.com/search/?query=asx+300&Search=Go&Search=Go>

As shown in Figure 2, the fossil fuel-focused Energy sector was the only sector to record no growth over the decade, performing worse even than the rest of the mining sector. Even after the crash, to the end of the first quarter of 2020, fossil fuels were the *only* sector to have lost value over the decade.

The losses over the decade by the Energy sector stand in stark contrast to the overall ASX 300, as shown in Figure 3 below:

Figure 3: Relative performance of Energy sector and ASX 300 over decade to 2020



Source: AUD, from 26 Feb 2010 to 31 March 2020, total returns

S&P (2020) S&P/ASX 300 (AUD), <https://au.spindices.com/indices/equity/sp-asx-300>. S&P (2020)

S&P/ASX 300 Energy (AUD), <https://au.spindices.com/indices/equity/sp-asx-300-energy-sector>

Figure 3 above shows the sustained underperformance of fossil fuels over most of the decade. Even with the dramatic falls in 2020, an investment in the wider index was still well ahead over the decade. An investment of \$100,000 in the ASX 300 over the last decade would have been worth \$237,000 at the peak in February 2020, falling by 31 March to \$169,000.

By contrast, fossil fuel companies lost value in absolute terms over that period and at most points over the period. Returns peaked in 2011, but modest gains were soon lost. Returns were negative over most of the decade and for almost all of the last five years.

Despite the stark comparison in Figure 3, it understates the underperformance of the fossil fuel companies as their inclusion in the ASX 300 drags down the performance of the broader index.

While S&P provide public data for *S&P 500 ex Energy for the US* and MSCI provides *ACWI ex Fossil Fuels for global equities*, S&P does not provide an 'ASX 300 ex Energy' index for Australia. Nonetheless, they do provide sufficient data to create such an index.

An ASX ex-Energy Index

S&P reports Energy made up 4.6% of the ASX 300 on 28 February 2020.⁶

The ASX 300 and ASX 300 Energy (the Energy component of the ASX 300) total returns indices were reindexed to equal 1.00 at 28 February.

The Energy component was then removed as a component from the ASX 300 for 28 February 2020. This produces ASX 300 Energy and ASX 300 ex Energy for 28 February.

Consider an investment that tracked the ASX 300 index and was worth \$100 on 28 February 2020. The Energy component was worth \$4.60 on that day while the rest of the index was worth \$95.40. Put differently, ASX 300 Energy is reindexed to \$4.60 and ASX 300 ex Energy becomes \$95.40 at 28 February.

The Energy component is projected forward and backwards in proportion to changes in ASX 300 Energy as indexed to 28 February.

Then for each date, Energy is subtracted from the ASX 300. This produces ASX 300exEnergy for each date.

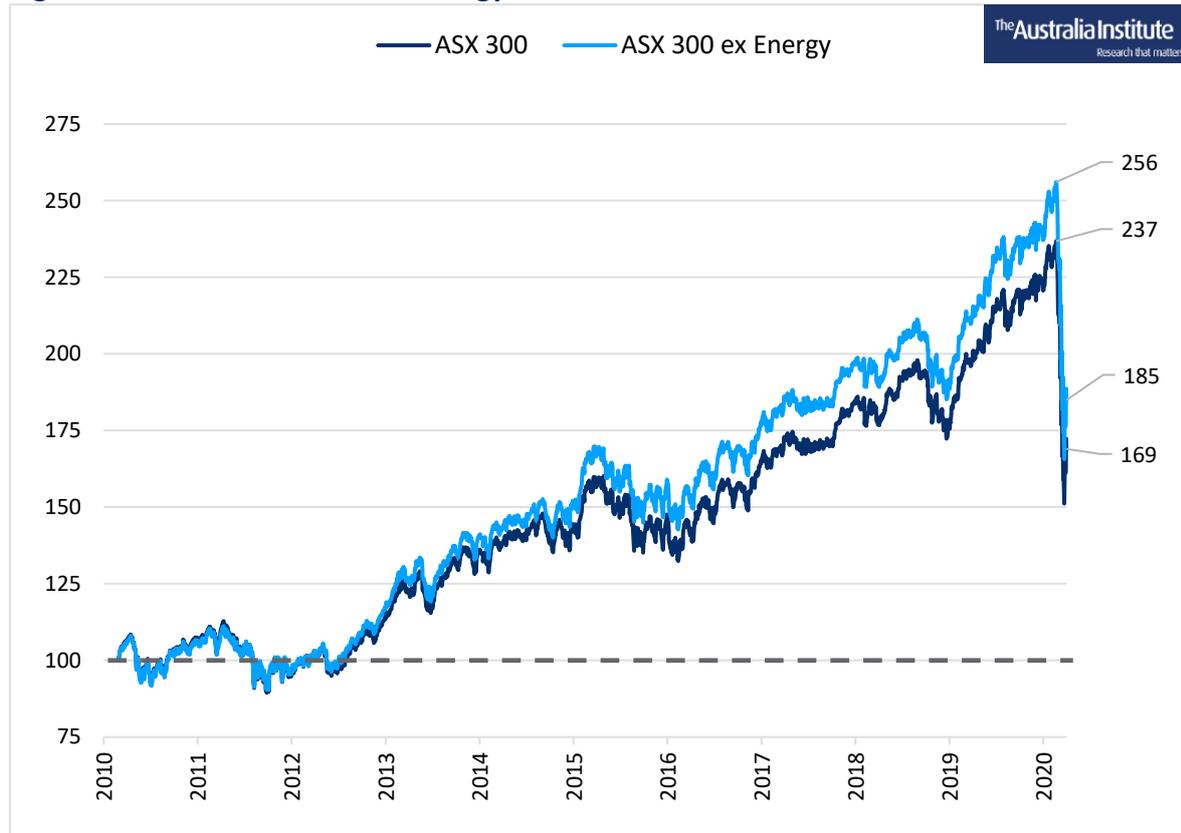
Finally, the entire series is then re-indexed to start at 1 at the beginning of the decade.⁷ This allows comparison with ASX 300 which is also indexed to 1 on that day.

Figure 4 shows that when the energy sector is removed from ASX 300 to create the ASX ex-Energy Index, the new index significantly outperforms the broader index as it removes the worst performing sector.

⁶ Accessed mid March 2020, S&P (2020) ASX 300 Energy, <https://au.spindices.com/indices/equity/sp-asx-300-energy-sector>

⁷ 26 February 2010.

Figure 4: ASX 300 vs ASX300ExEnergy

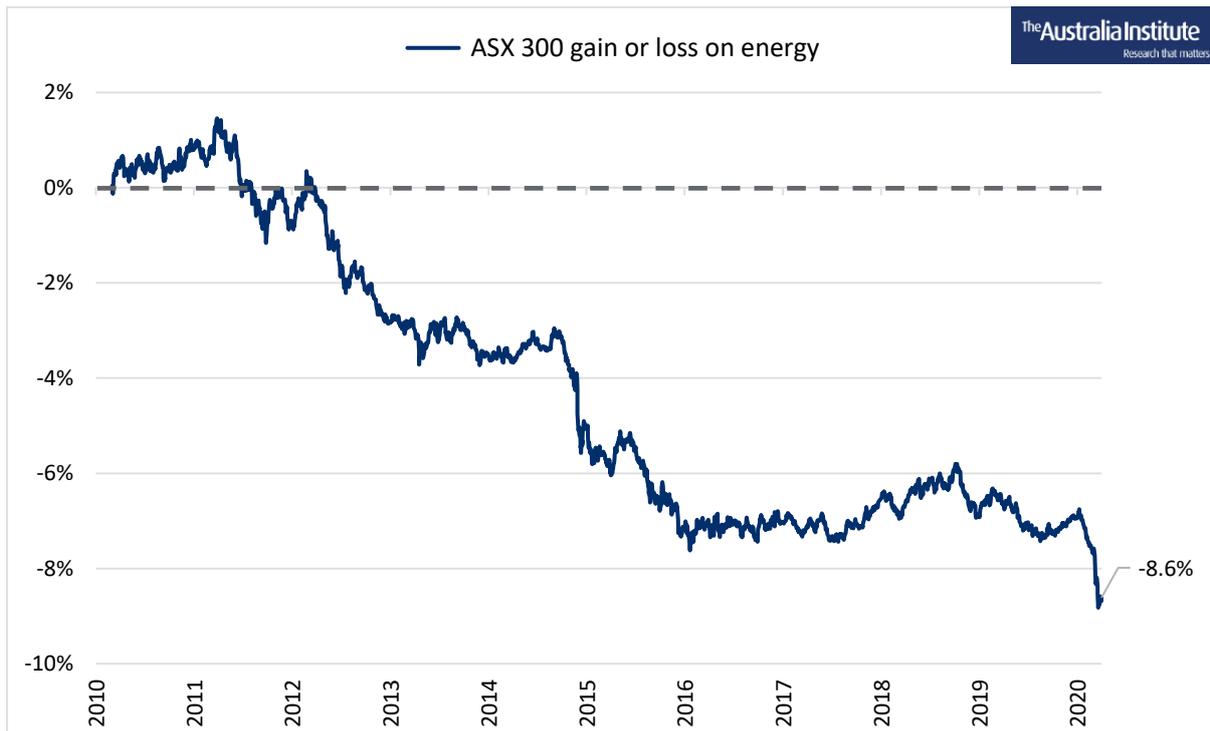


Source: derived from S&P (2020) S&P/ASX 300 (AUD), S&P (2020) S&P/ASX 300 Energy (AUD)

As Figure 4 above shows, at its peak in February 2020, the ASX 300 ex-Energy was 19 points higher than the ASX 300 including energy. At the end of the quarter the loss was 17 points.

Figure 5 below shows the difference between these two indexes (ASX 300 and ASX 300 ex-Energy). It reflects how much higher the total returns would have been if fossil fuels were excluded. It shows the difference between the two indexes as a proportion of the ASX 300.

Figure 5: Underperformance as a result of exposure to energy sector



Source: difference between ASX 300 and ASX 300 ex-Energy, as a percentage of ASX 300.

Expressed another way, Figure 5 shows that an investor who had invested in the ASX 300 ex-Energy companies instead of the ASX300 companies would have achieved 8.6% higher returns.

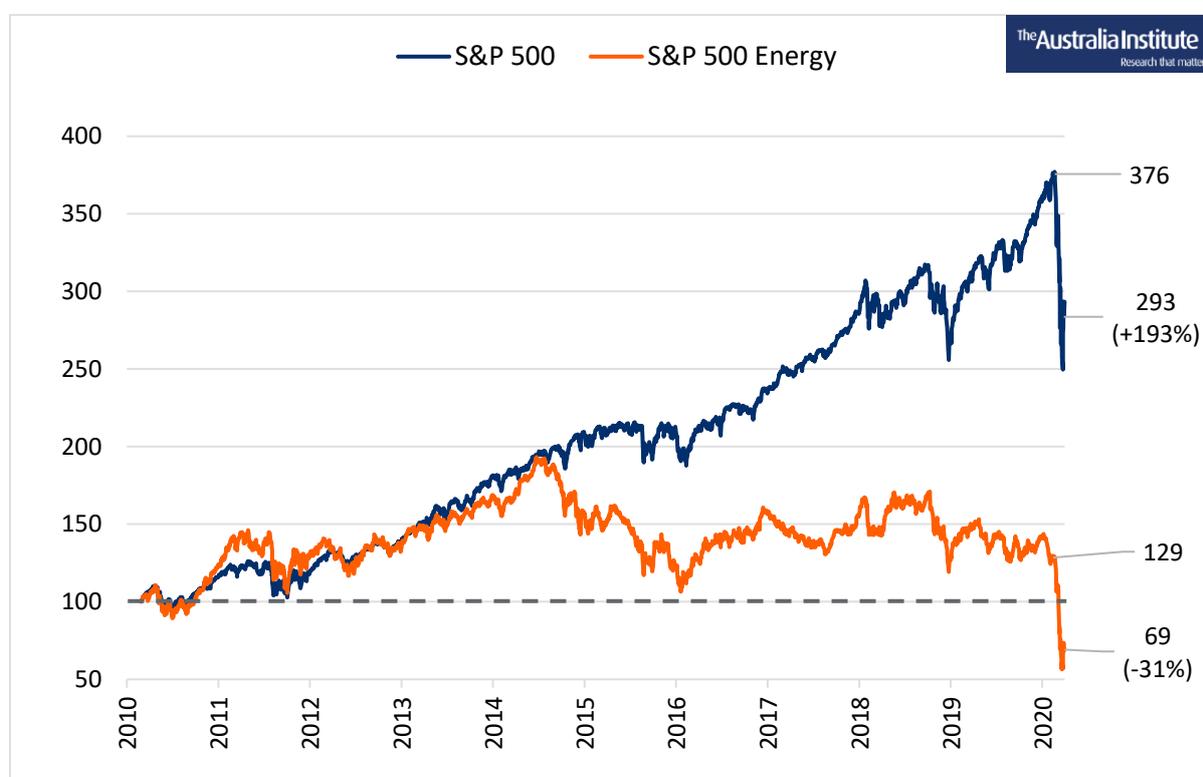
International Comparisons

The trends described above are not unique to Australia. On the contrary, very similar patterns have been observed in sharemarkets around the world.

S&P 500 IN USA

Figure 6 shows total returns for the S&P 500, the main US broad-based index, vs the S&P 500 Energy index.

Figure 6: Fossil fuels underperformed the US market by even more than in Aus



Source: in USD, from 26 Feb 2010 to 31 March 2020, total returns

S&P (2020) S&P 500 <https://au.spindices.com/indices/equity/sp-500>

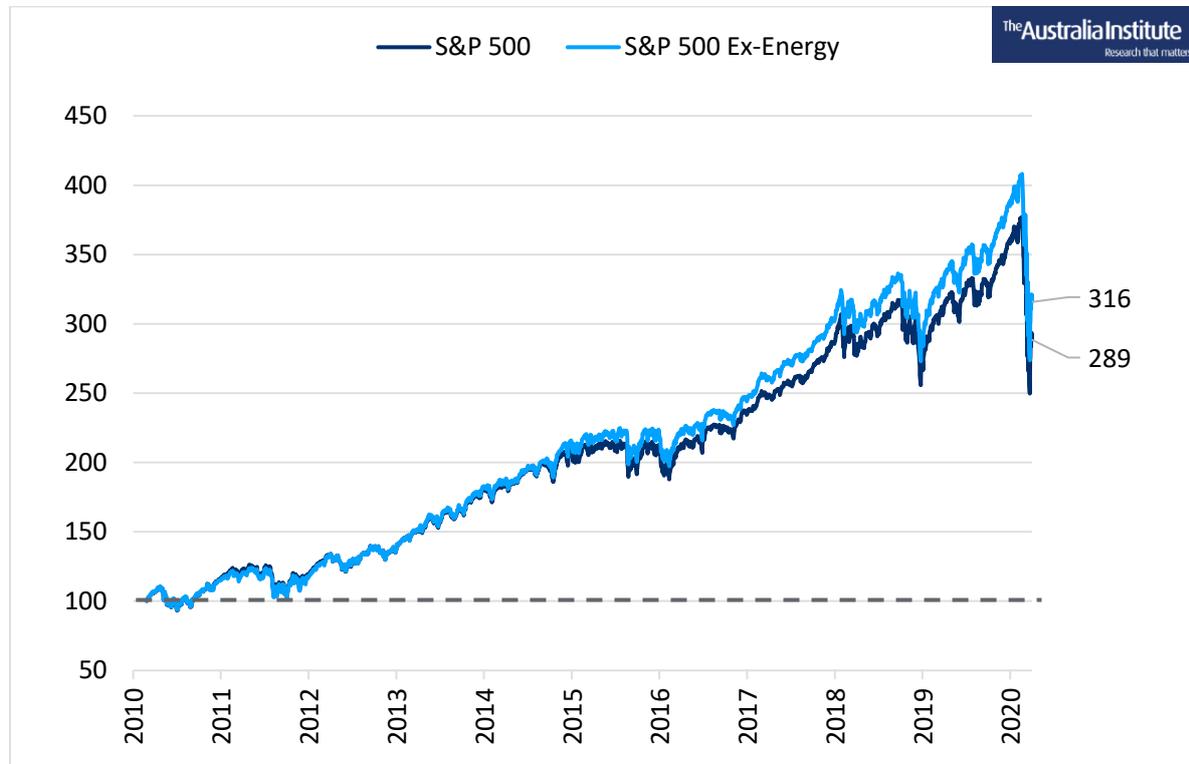
S&P (2020) S&P 500 Energy, <https://au.spindices.com/indices/equity/sp-500-energy-sector>

Figure 6 shows that prior to the 2020 crash, the Energy sector in the US was far below its 2014 peak. As of 31 March 2020, the S&P 500 Energy was a third below its starting point a decade earlier in absolute terms.

Prior to the recent crash, over the decade to the start of 2020, the broader US share market index nearly quadrupled while fossil fuel companies gained less than a third.

Figure 7 shows the S&P 500 compared to an 'ex-Energy' index, without fossil fuel companies, as provided by S&P. A similar pattern emerges to that observed in Australia.

Figure 7: S&P 500 investors lost money on fossil fuels over the decade



Source: Source: in USD, from 26 Feb 2010 to 31 March 2020, total returns
 S&P (2020) S&P 500 <https://au.spindices.com/indices/equity/sp-500>
 S&P (2020) S&P 500 ex Energy, <https://au.spindices.com/indices/equity/sp-500-ex-energy>

ExxonMobil

A striking illustration from the US is the value in global oil major ExxonMobil, long one of the largest US companies.

At the beginning of January 2010, ExxonMobil's share price reached US\$70. Despite gains over the decade, these gains were lost and by January 2020, the price was back at US\$70. At the end of March 2020, ExxonMobil's share price was US\$38.⁸ In September 2019 ExxonMobil fell out of the top 10 on the S&P 500 for the first time ever, making up only 1% of the broader index, down from around 5% in 2009.⁹

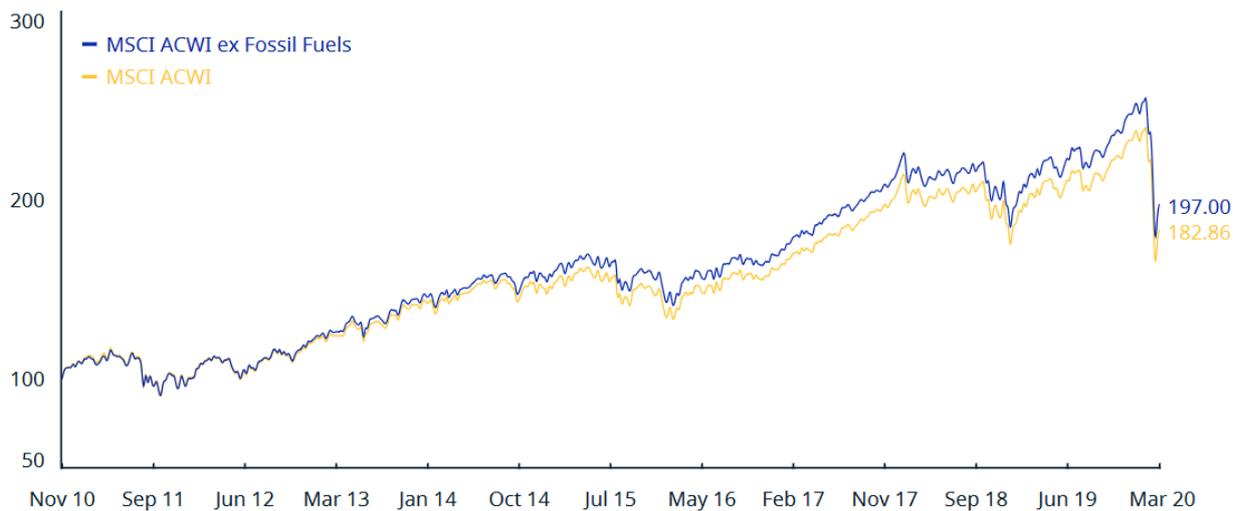
⁸ ExxonMobil (2020) *Investors - Historical Price Lookup*, <https://ir.exxonmobil.com/historical-price-lookup>

⁹ Paraskova (2019) *Exxon Drops Out Of Top 10 In S&P 500*, <https://oilprice.com/Energy/General/Exxon-Drops-Out-Of-Top-10-In-SP-500.html>

MSCI GLOBAL INDEX

The underperformance of fossil fuels compared with the rest of the market is a global phenomenon. This is clear from MSCI's widely used 'All Country World Index' (ACWI) which is dominated by US stocks but includes markets in 48 other countries. Figure shows returns from November 2010 to March 2020.

Figure 8: MSCI: fossil fuel underperformance is a global phenomenon



Source: USD, November 2010 to March 2020. MSCI (2020) *MSCI ACWI ex Fossil Fuels Index*
<https://www.msci.com/documents/10199/c75b5c93-1f22-4393-aa56-5722891c6445>

While MSCI describes the index as “a benchmark for investors who aim to eliminate fossil fuel reserves exposure from their investments due to concerns about the contribution of these reserves to climate change”,¹⁰ the index has also performed significantly better than the market index.

¹⁰ MSCI (2020) *MSCI ACWI ex Fossil Fuels Index*, <https://www.msci.com/documents/10199/c75b5c93-1f22-4393-aa56-5722891c6445>

Conclusion

Over the past 10 years fossil fuel producing companies have significantly underperformed against the rest of the companies listed on the Australian stock exchange and other markets around the world.

While the information to compare the relative performance of fossil fuel companies and the broader stock market is publicly available, the results shown in this paper do not appear to be widely known.

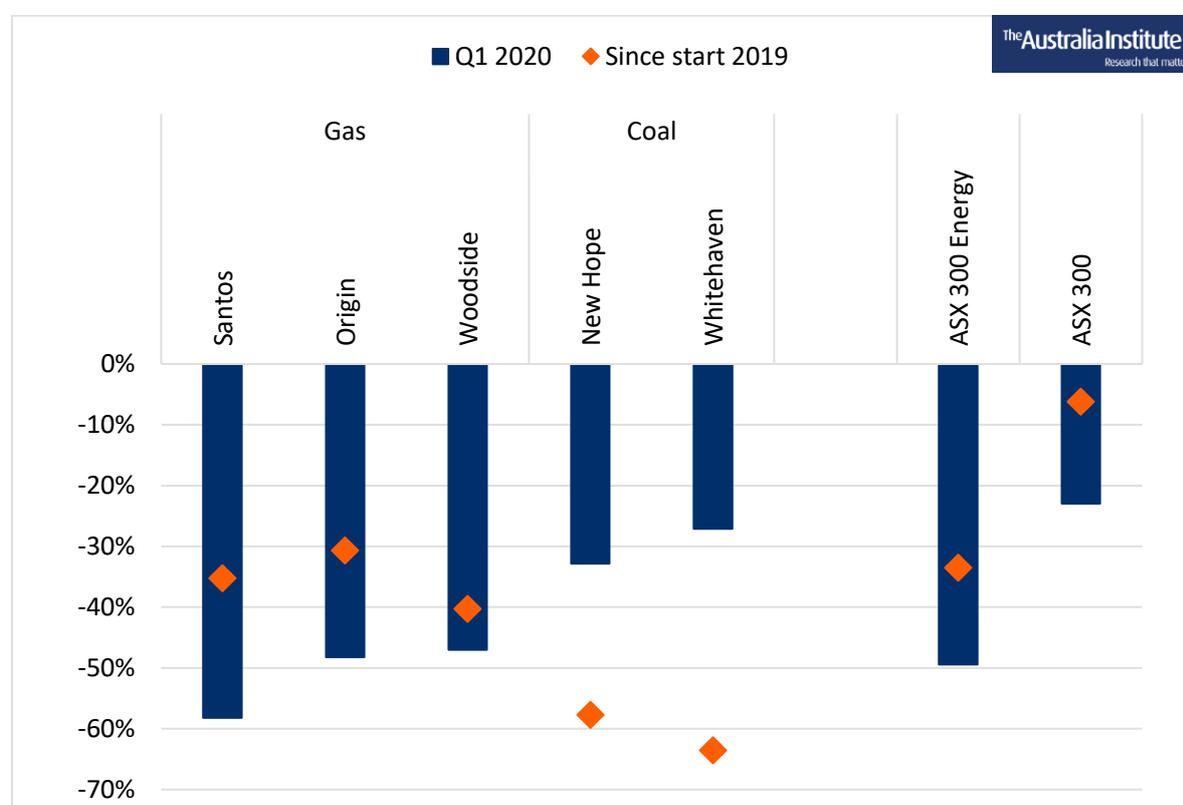
Specifically, this paper has shown 3 things:

- 1) Investment performance of fossil fuel stocks in Australia has been very weak when compared to the broader market and this trend is consistent with international experience.
- 2) Investors who have excluded fossil fuel companies from an otherwise diverse portfolio over the past 10 years have likely achieved significantly greater returns than those who have not.
- 3) Institutional investors who choose to actively screen out fossil fuel companies from their Australian investors can deliver greater returns to their members than those who do not.

Appendix: Key Australian Companies

The crash in the ASX Energy sector has been driven by the collapse in gas company values. Oil prices are down and while Australia is not a globally significant oil producer, gas export contracts in the Asia-Pacific are typically linked to oil prices, resulting in very large impacts on gas companies based or operating in Australia. Gas company share price gains over 2019 were more than wiped out in a matter of days. Coal companies have also seen large falls, on top of dramatic falls in 2019. Price changes for selected larger companies are shown in Figure 9, compared with index changes (note, here excluding dividends).

Figure 9: Selected company share price changes - to 31 March 2020



Source: Share price and capital index changes 2 Jan 2019 to 31 March 2020 and 2 Jan 2020 to 31 March 2020, from ASX (2020) *Prices and Research, Charting*, <https://www.asx.com.au/prices/charting/>