Divestment – Pension Funds

**2022 August: Washington State’s employees and retirees – and other concerned people – will once again be urging the Washington State Investment Board (which manages our pensions) to divest from fossil fuels:** A planning meeting will occur on August 23, 2022. If you want to find out what happened, contact me at **glenanderson@integra.ne**t or by phone at (360) 491-9093, and I can share the progress with you. We’ll likely be organizing a loose network that will provide information and coordination that will help various individuals and groups to take smart, effective actions to urge WSIB to divest.

**2022:** [**https://www.divestoregon.org/**](https://www.divestoregon.org/) **is a statewide grassroots coalition of individuals and organizations** representing unions with PERS members, racial and climate justice groups, youth leaders, and faith communities with the goal of calling the Oregon State Treasury to account for its funding of climate devastation rather than prudent investing in a sustainable future. They are part of a national movement; a member of the Climate Safe Pensions Network and the Stop the Money Pipeline coalition. 350PDX was the founding member of Divest Oregon in mid-2021 and the campaign formally launched in September 2021. They produced a report explaining that fossil fuel investments are risky: [**https://www.divestoregon.org/report**](https://www.divestoregon.org/report) They also produced a report alerting the Oregon State Treasury to the risks: [**https://www.divestoregon.org/climaterisk**](https://www.divestoregon.org/climaterisk)

**2022:** [**https://www.stand.earth/**](https://www.stand.earth/) **is an advocacy organization that brings people together to demand that corporations and governments put people and the environment first.** They work on various aspects of the issues, including urging divestment from fossil fuels.

**2021 November: The movement to divest from fossil fuels is continuing to build momentum.** Let’s keep pushing to make ALL pension funds divest from fossil fuels. I keep receiving news of progress from many kinds of public jurisdictions, universities, national religious bodies, and other entities that are divesting. I sent this message to my state legislators: “For a number of years a good number of your constituents have attended monthly meetings of the Washington State Investment Board (WSIB), which is responsible for public employees' pension funds. WE HAVE BEEN URGING THEM TO DIVEST FROM FOSSIL FUELS, but although the WSIB members have listened politely, they HAVE PERSISTENTLY REFUSED TO DIVEST. We have explained the urgency to stop funding the climate crisis, and we have explained why fossil fuels have become very risky investments.” I asked my state legislators to take whatever actions they can to FULLY DIVEST our state's pension funds from fossil fuels.

**2021 June: I sent this message to some Washington State officials:** [I edited it slightly here.] Several years ago, a good number of Washingtonians – especially in the 22nd Legislative District – attended many monthly meetings of the Washington State Investment Board (WSIB). We provided solid reasons why they should divest from fossil fuel companies. The WSIB listened politely but TOTALLY IGNORED our message. Fossil fuels are KILLING THE CLIMATE. Fossil fuel companies are GOING BANKRUPT. The WSIB has a LEGAL and MORAL FIDUCIARY RESPONSIBILITY, but they are FAILING! They refused to sell a coal company's stock and simply rode its price all the way down to ZERO. We told these kinds of messages to the WSIB many times over several years, but they ignored us.

**2021 April: NY State pension fund to ditch tar sands because they are risky investments and hurt the climate:** I remember when oil company stocks were considered “blue chip.” Now they are extremely risky investments! Climate supporters have made progress in achieving divestment in many parts of the world, and we must push harder. We must continue organizing to get all kinds of entities (pension funds, universities, religious denominations, investment and insurance companies, etc.) to DIVEST from fossil fuel investments! See this news from New York State: [**https://www.nationofchange.org/2021/04/13/only-the-beginning-citing-climate-and-investment-risks-ny-state-pension-fund-to-ditch-tar-sands/**](https://www.nationofchange.org/2021/04/13/only-the-beginning-citing-climate-and-investment-risks-ny-state-pension-fund-to-ditch-tar-sands/)

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**2021 March: We have been urging the WA State Investment Board to divest from Exxon, etc., but they refuse.** Below I’m summarizing two recent articles and sent them to some people who care about the climate and have been working for divestment:

**Article #1. ExxonMobil admitted its assets are less than it had previously claimed.** A few weeks ago ExxonMobil announced a $19.3 billion write-down, which reduces the value of assets ExxonMobil claims to have.  A whistleblower from the company – and a team of advisors – said the company had been overvaluing its assets for years.  The whistleblower, Franklin Bennett, described ExxonMobil’s previous inaccurate behavior as “fraudulent and defiant behavior” in a whistleblower complaint he filed with the U.S. Securities and Exchange Commission (SEC). The article I’m linking below says, “Bennett and his team said the company has been overvaluing its U.S. oil and gas assets by as much as $56 billion, as of year-end 2019.”  The world energy market is changing rapidly.  “Big Oil” companies are negligently trapped in old thinking and “sunk costs.” **Read the article at this link:** [**https://www.desmogblog.com/2021/02/02/whistleblower-sec-complaint-alleges-exxon-fraud-overvalue-fracking-assets?utm\_source=DeSmog%20Weekly%20Newsletter**](https://www.desmogblog.com/2021/02/02/whistleblower-sec-complaint-alleges-exxon-fraud-overvalue-fracking-assets?utm_source=DeSmog%20Weekly%20Newsletter)

**Article #2. Transitioning away from fossil fuel has endangered $1 TRILLION in pipeline investments.** This report says more than 131,000 miles of pipelines (oil pipelines like the Dakota Access pipeline and — to an even higher degree — new natural gas pipelines) are being rendered obsolete. This is another compelling reason to DIVEST from fossil fuels. **Read about it here:** [**https://www.desmogblog.com/2021/02/04/trillion-oil-gas-pipelines-dakota-access-stranded-assets?utm\_source=DeSmog%20Weekly%20Newsletter**](https://www.desmogblog.com/2021/02/04/trillion-oil-gas-pipelines-dakota-access-stranded-assets?utm_source=DeSmog%20Weekly%20Newsletter)

**2021 February: NYC Pension Funds Are Divesting Four Billion From Fossil Fuels:** Since smart money is getting out of fossil fuel investments, whoever fails to divest will lose. That includes Washington State’s pension fund for public employees, Washington State Investment Board. [**https://www.ecowatch.com/fossil-fuels-nyc-pension-2650142167.html?mc\_cid=7a26731d9f&mc\_eid=58bffd4d51**](https://www.ecowatch.com/fossil-fuels-nyc-pension-2650142167.html?mc_cid=7a26731d9f&mc_eid=58bffd4d51)

**2021 January: The fossil fuel divestment movement achieved another big win, adding to its long list of successes of 2020:**  Trump’s attempted Arctic oil sale was both a “bust” and a “joke.” This article lists a number of our victories in 2020, including divestments by pension funds: [**https://heated.world/p/a-climate-win-amid-the-chaos**](https://heated.world/p/a-climate-win-amid-the-chaos)

**2020 December: New York state’s pension fund will divest from fossil fuel:** This is being hailed as “the most aggressive divestment target set by any U.S. pension fund by a decade.” [**https://www.nationofchange.org/2020/12/11/new-york-states-pension-fund-will-divest-from-fossil-fuel/**](https://www.nationofchange.org/2020/12/11/new-york-states-pension-fund-will-divest-from-fossil-fuel/)

**2020 December: NY State pension funds will divest from fossil fuel investments:** [**www.350.org**](http://www.350.org) reported that in 2018 the NY City pension fund announced its decision to divest from fossil fuel investments within 5 years. Now in December 2020 NY State’s pension fund announced its decision to divest from fossil fuel investments. This is the biggest pension fund anywhere in the world to divest! New York State’s $226 billion pension fund moves to divest from the riskiest oil and gas companies.

**2020: Washington State's Investment Board is refusing to divest from fossil fuels. Also, many banks keep refusing to divest from fossil fuels.** [**https://www.ft.com/content/710cc474-15f7-4db0-8d54-a50f161f76bb?fbclid=IwAR3rONDsn2a3P\_lqc\_3fmuo40P-3m2KubtBUm6BCtpMwQTz15sFxLeqaz4Y**](https://www.ft.com/content/710cc474-15f7-4db0-8d54-a50f161f76bb?fbclid=IwAR3rONDsn2a3P_lqc_3fmuo40P-3m2KubtBUm6BCtpMwQTz15sFxLeqaz4Y)

**2020 March: Washington State Investment Board says it does recognize “fiduciary responsibility” and it does invest wisely.** When a local concerned person wrote to our state legislators, State Senator Sam Hunt (D-22) sent this reply:

Thank you for sharing your concerns. Retirement and other funds are invested by the Washington State Investment Board (SIB). I would encourage you to attend a board meeting or reach out to the SIB at **recep@sib.wa.gov** with your comments. Pasted below is an excerpt from the [**SIB website**](http://www.sib.wa.gov/oversight/re.asp) regarding responsible investment practices, which I think you will find of interest:



Our overriding fiduciary responsibility is to manage investments with the highest standard of professional conduct to maximize investment return at a prudent level of risk for the exclusive benefit of fund participants and beneficiaries.

In addition to the Washington State Investment Board's fiduciary obligations, it has a financial responsibility to expect that corporations in which the state's monies are invested meet a high standard of conduct in their operations, especially where this helps preserve long-term shareholder value.



[**WSIB ESG Report 2018**](http://www.sib.wa.gov/oversight/pdfs/esg_2018.pdf)

WSIB invests retirement and other funds in well diversified global portfolios designed to manage risk across different markets and conditions including economic, geopolitical concerns, and other pertinent issues that could negatively or positively impact investment performance over the long term.

As a global investment organization, questions about risks associated with governance, climate change, other environmental issues, and social concerns have become more prominent and serious considerations for the WSIB. While the WSIB recognizes that many risks and benefits associated with responsible investing are difficult to quantify, it believes all risks in WSIB's investment process should be given thoughtful consideration, including evolving global challenges which impact a long-term investment horizon.

Most of the WSIB's investments are externally and passively managed, consequently divestment would be a difficult and costly exercise. Additionally, we believe the best course of action is to exercise our voice through company and fund manager engagement, teaming up with other investment and corporate governance organizations, and working with peers to influence constructive and meaningful change.

So why engage with companies whose operations are at the center of issues like climate change? We know that fossil fuels will be the main energy source for the global economy for years to come. Having a voice in the oversight of these businesses makes it possible to influence their practices and their role in public policy.

Below are links to information about these organizations and what they are doing to assist the WSIB in responsibly identifying, addressing, and managing the risks associated with these important issues.



[**CDP**](https://www.cdp.net/en)

[**Climate Action 100+**](http://www.climateaction100.org/)

[**Ceres**](http://www.ceres.org/)

[**Council of Institutional Investors (CII)**](http://www.cii.org/)

[**International Corporate Governance Network (ICGN)**](https://icgn.org/)

[**Investor Stewardship Group (ISG)**](https://isgframework.org/)

[**Society for Corporate Governance (the Society)**](http://www.societycorpgov.org/home)

[**Thirty Percent Coalition**](http://www.30percentcoalition.org/)

[**We're Still In**](https://www.wearestillin.com/)

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**2019 November: California and Colorado pension funds LOST $19 BILLION by investing in fossil fuel companies:** [**https://www.desmogblog.com/2019/11/05/fossil-fuel-investments-cost-california-and-colorado-pension-funds-over-19-billion-report-finds?utm\_source=desmog%20weekly%20newsletter**](https://www.desmogblog.com/2019/11/05/fossil-fuel-investments-cost-california-and-colorado-pension-funds-over-19-billion-report-finds?utm_source=desmog%20weekly%20newsletter)

**2019 October: New York state pension lost 22 million by not divesting 10 years ago:** [**http://www.altenergystocks.com/archives/2019/10/new-york-state-pension-22-billion-poorer-by-not-divesting-10-years-ago/**](http://www.altenergystocks.com/archives/2019/10/new-york-state-pension-22-billion-poorer-by-not-divesting-10-years-ago/)

**2018 December: 1000 divestment commitments.**[**https://gofossilfree.org/major-milestone-1000-divestment-commitments/?fbclid=IwAR3J72WMN-Sl\_UeMzl7PG0TdV\_Q9RjBY95jAgftO7ptkdQDjc\_OsnaDTZsI**](https://gofossilfree.org/major-milestone-1000-divestment-commitments/?fbclid=IwAR3J72WMN-Sl_UeMzl7PG0TdV_Q9RjBY95jAgftO7ptkdQDjc_OsnaDTZsI)

**2018 November: One person said this to the Washington State Investment Board (WSIB):**

The recent IPCC report and other studies warn of dire physical and economic consequences of exceeding 1.5 to 2 degrees C of global warming. By investing in fossil fuels such as coal, oil and natural gas, WSIB is complicit in causing harm to WSIB beneficiaries and the residents of the State of Washington. State and municipal employees, public school teachers, public safety officers and firefighters will experience significant economic impacts due to climate change during their retirement, especially young people now in their 20’s and 30’s, who will retire after the middle of the century. About 80% of proven fossil fuel reserves must stay in the ground to give us a good chance of staying below 2 degrees C of global warming. A review of 2017 WSIB holdings shows that of the 100 publicly-owned companies with the largest proven coal reserves, WSIB is invested in 38. Of the 100 publicly-owned companies with the largest proven oil and natural gas reserves, WSIB is invested in 87(for details, see the Carbon Underground 200). WSIB is invested in companies that contributed over $20M to the No on I-1631 campaign. Please also remember that air pollution kills as many as 7 million people annually (World Health Organization, 2014, divested). I am unaware of any other WSIB investment category which kills that many people each year. This alone is reason to divest immediately. Companies like Exxon and Chevron...are deceiving shareholders, and are even lying in shareholder reports, claiming alignment with the Paris agreement while their business plans call for extraction of all of their proven reserves, and continued exploration to find more. The Attorney General of New York is suing Exxon Mobile for shareholder fraud, saying it engaged in a “longstanding fraudulent scheme” to deceive investors, analysts and underwriter “concerning the company’s management of the risks posed to its business by climate change regulation.” (New York Times, Oct. 24, 2018) Fossil fuel investments have substantially underperformed stock market averages over the past 10 years. Please reconsider the city of Olympia’s request that WSIB analyze risks of fossil fuel investments, and to halt further investments in fossil fuels until that analysis is complete.

**2018 September: More and more cities say they want to protect the climate. If so, they should DIVEST their pension funds from fossil fuels.** New York’s mayor issued the urgent call mentioned below. The Olympia City Council took action. I asked Lacey, Tumwater, Thurston County, and other public jurisdictions to promptly take strong actions for the climate too. (In the 4 years since this first message, I know some jurisdictions have taken some actions. We always need more – and stronger – actions at local, state, national, and global levels.) New York Mayor Bill DeBlasio attended the September 2018 Global Climate Action Summit in San Francisco, where he urged thousands of advocates and leaders that “**we must leverage our investments away from fossil fuels and towards renewable energy.** We must act. All of us. Together. Now.” Earlier in 2018, New York became the first U.S. city to commit to divesting our pension funds from fossil fuels. In September he pledged to go further by investing $4 billion of NYC’s pension funds in climate solutions: renewable energy to power the planet and ensure our collective survival. He urged people to contact local governments: [**Call on your Mayor in your city or town to step up and commit to bold climate measures today.**](http://act.350.org/go/59460?t=6&utm_medium=email&utm_source=actionkit&akid=51742%2E50582%2EWLJ-3r)Mayor de Blasio said, “If the 50 largest pension funds in the U.S. joined us by investing 2% of their assets in climate solutions, it would finance enough new solar energy to power half the homes in America.**Just imagine the energy revolution such an investment could spur.”** [**Speak up and speak loudly — send the message to Mayors across the country calling on them to divest from fossil fuels and invest in climate solutions.**](http://act.350.org/go/59460?t=7&utm_medium=email&utm_source=actionkit&akid=51742%2E50582%2EWLJ-3r)

**2018 April: A guest editorial in The Olympian urged WSIB to divest from fossil fuels. The headline said, “**Fossil fuels are a losing bet. Let’s divest and turn toward solutions.” Here is the article by Don Steinke and Dennis Braddock: [**http://www.theolympian.com/opinion/article209379074.html**](http://www.theolympian.com/opinion/article209379074.html) **The April 19, 2018 article said this:**

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As members of the Public Employees Retirement System, we urge the Washington State Investment Board to phase out investments in the fossil fuel industry as soon as possible. State employees should not have their retirement savings tied to the “success” of an industry that can only profit by making the climate crisis worse.

State employees began petitioning the State Investment Board to divest from fossil fuels four years ago. Since then, fossil fuel investments have drained hundreds of millions of dollars from the pension fund. These industries are declining in value — and that’s a goodthing, because it means we are finally turning the corner toward a clean energy future.

The climate crisis makes this clean energy transition an urgent priority. And the spectacular decline in the cost of clean energy technology makes it practical and affordable. 2015 was the first year in which clean energy investment outpaced fossil fuel investment globally, and the trend keeps accelerating. We can and must align our public and private investments toward a fair, rapid transition that provides affordable clean energy and economic opportunity for all.

There’s no time left to waste. Because we began this transition so late — decades after scientists confirmed the dangers of climate disruption — we need to accelerate it now. Devastating climate impacts have already begun, here and around the world. This past year has seen unprecedented damage from intense storms and fires. The pall of smoke that hung over Washington last summer caused widespread health impacts, and declining forest health signals more smoke on the horizon. The Quinault Nation is literally moving to higher ground as sea-level rise and storms inundate their village. The oceans are turning acidic, threatening shellfish, salmon, orcas, and the economies and cultures that depend on them. Scientists have clearly documented how carbon pollution from fossil fuels makes these catastrophes more frequent and destructive.

In 2015, the countries of the world agreed to climate goals in the Paris Agreement that would give us a fighting chance of addressing the crisis before it spins out of control. EVERY nation is now party to this agreement, though President Trump has threatened to withdraw. The science underlying the agreement is non-negotiable: to confront the climate crisis successfully, we need to leave at least three quarters of existing, proven fossil fuel reserves unburned.

For the companies that own this coal, oil, and gas, their stock value is pegged to their reserves. Their business model relies on the commercial value of fuels that cannot be burned. So, only one of these things can be true: either fossil fuel companies grow in value, or we successfully address the climate crisis before it’s too late. It’s literally them or us.

Based on recent performance and growing global commitment to climate action, we think it’s very likely that fossil fuel investments will continue to tank. Industry analysts warn of a “dangerous bubble in the fossil fuel economy.” Mark Carney, the head of the Bank of England, has compared the financial risks to the sub-prime mortgage crisis that pounded the global economy in 2007. New York state and New York City, centers of global finance, recently announced divestment plans, pushing the global total of divestment commitments over $6 trillion.

The only scenario in which fossil fuels might earn strong returns is a dismal future of unmanageable climate crisis and human suffering. In no circumstance should we be financing that future. Our state is a proud leader of the We Are Still In coalition — states, cities, and businesses committed to the Paris Agreement even if President Trump walks. Investing state pension funds in fossil fuels violates that commitment. It’s betting our retirements on the failure of the Paris Agreement and sacrificing our kids’ future on the crumbling altar of fossil fuel profits.

We are not financial experts. We are family and community members — a retired science teacher and a public health professional. We believe that ending investment in fossil fuels will help us achieve a more financially secure retirement. But we know for certain it’s the right thing to do.

Investing in fossil fuels is betting against our kids. That’s always a losing bet.

Don Steinke is a retired science and math teacher. Dennis Braddock served as Director of the Washington Department of Social and Health Services and as Representative in the Legislature. Advocacy group Climate Solutions drafted this column in consultation with the co-authors.

**2018 February: On February 15, 2018, a number of climate supporters spoke powerfully to the Washington State Investment Board (WSIB) yet again – as we have done a number of times since 2014 – to urge them to sell their investments in fossil fuels.** We explained that the WSIB must divest not only for the sake of the climate, but also because these have become risky investments. A crash is coming, just like every other bubble crashes. Energy economics have already bankrupted coal companies, and oil companies will be next. **Here is what I said to the WSIB:**

I am a lifelong Washingtonian who retired after a career working for the State of Washington. My pension is absolutely necessary to pay for my living expenses. I am counting on the Washington State Investment Board to manage our assets skillfully to protect my pension.

The fossil fuel economy is actually much shakier than most people think, so fossil fuel investments are much riskier than people think. Several times in the past four years I have spoken to the WSIB and urged you to promptly sell your fossil fuel investments. I am disappointed with your lack of progress since I first spoke to you about this in 2014.

The world has been significantly shifting away from coal and oil. **A rapidly growing number of significant entities have been selling their fossil fuel investments** not only because they’re concerned about the rapidly worsening climate crisis, but much more **because fossil fuel stocks have become risky.** This board must divest too, before it is too late.

This shift away from fossil fuels will escalate rapidly, so **the fossil fuel industry is financially vulnerable now and will crash soon**.

Fossil fuel companies used to be considered safe, high quality “blue chip” investments, but now they are doomed to crashing – and crashing sooner rather than later.

An economic bubble always seems positive and safe while the bubble is expanding. But **when the bubble bursts, the crash occurs rapidly**.

This board has been failing to protect my pension from that catastrophe.

We understand that you hire staff, consultants and other advisors. But **we are here to say this Board is responsible.** You have the fiduciary responsibility. They Board cannot duck your legal responsibility and defer the decision-making power to its staff, consultants, or other persons. **President Truman had a sign on his desk that said, “The buck stops here.”** The Board is legally responsible, and the public must hold the Board responsible.

**I implore you to sell your fossil fuel stocks now.**  Do not ride the price down and screw my pension and the pensions of many thousands of other Washingtonians.

Thank you.

**I also provided the WSIB a printed document explaining the hard numbers that should motivate the WSIB to divest now:**

The world’s most expert climate scientists share a consensus that the earth is almost certain to exceed the CO2 limit and cause global catastrophe. The additional amounts of CO2 that are expected for our atmosphere are **more than five times the amount that our atmosphere can accommodate** without extremely serious damage to the climate and human beings.

When the world’s people and governments recognize the hard scientific realities they will be forced to **sharply limit the extraction and burning** of the underground reserves of coal, oil and natural gas. The world will be forced to **PROHIBIT** fossil fuel companies from extracting and selling about **80% of their underground reserves** of coal, oil and natural gas. This means that **about $20 TRILLION worth of underground assets** that **will suddenly have ZERO value.** REPEAT: **About $20 TRILLION worth of underground assets that will suddenly have ZERO value.**

**When this happens, their stock prices will plummet and investors –YOU and your pension fund and your other investments – will suffer huge losses.**

**We must recognize the train wreck coming our way, and divest promptly from the increasingly risky investments related to fossil fuels! Sell off before the bubble bursts!**

**Despite the propaganda that oil and coal companies tell the public, oil and coal companies really do recognize this crisis.** Savvy financial analysts are recognizing that drilling and extracting oil are costing oil companies very much more money, but they are getting less oil from these increasingly expensive efforts. Oil is becoming even more capital-intensive. About 4 years ago Chevron’s CEO called the oil industry **“a growing capital black hole.”**

Several years ago many estimates of shale oil reserves were sharply written off. The Energy Information Agency stated that California’s Monterrey Shale has only 4% of previous estimates. They wrote off 96% of what had been previously claimed.

Several years ago another analyst wrote: “All new oil is going to be less plentiful and more expensive. It is going to take increasing amounts of money both to find and bring to the surface. The once mighty oil companies that strode across the global landscape like giants are going to increasingly shrink in stature and power.”

**The seven paragraphs above on this page I had researched and written 3 ½ years ago in 2014. I gave you this information already, but you still hold risky investments.**

Smart investors have already been selling off for a number of years! Will **you** leave **our pension fund** left holding an empty bag?

**The “Carbon Bubble” has already burst for coal. It is also beginning to burst for oil.**  Wind and solar are rapidly increasing as sources for our electricity needs. They are replacing oil for buildings, industry, and transportation.

**“$5.6 Trillion has been withdrawn from investments in fossil fuels worldwide in just 5 years.”** (For details see [**www.gofossilfree.org**](http://www.gofossilfree.org)**.**)

Electric vehicles are quickly replacing petroleum vehicles and disrupting our traditional oil-based economy. Over time, the combined capital and operating costs of electric vehicles will drop far below the variable operating costs of petrol vehicles. Change will come quickly when that happens.

**This powerful, insightful article takes only about 5 minutes to read**:

[**https://perspicacity.xyz/2017/05/24/this-is-how-big-oil-will-die/**](https://perspicacity.xyz/2017/05/24/this-is-how-big-oil-will-die/)

**2018 January: NY City's pension funds DIVEST. NY City sues Big Oil for damage caused. This was reported by** [**www.350.org**](http://www.350.org)

**2017 September: Urge WSIB to divest. This article explains how Big Oil will die.** It is an outstanding explanation of how technological disruption will result in electric vehicles (EVs) quickly replacing petroleum vehicles. Over time, the combined capital and operating costs of autonomous EVs will drop below the variable operating costs of petrol vehicles. Change will come quickly when that happens. It's about a 5-minute read. [**https://perspicacity.xyz/2017/05/24/this-is-how-big-oil-will-die/**](https://perspicacity.xyz/2017/05/24/this-is-how-big-oil-will-die/)