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Impacts of climate litigation on firm value¹

Misato Sato² Glen Gostlow[†] Catherine Higham[†] Joana Setzer[†] Frank Venmans[†]

Summary

Communities and individuals are increasingly turning to courts to hold governments and high emitting corporations to account for the adverse consequences of climate change and are starting to find success. For defending corporations, rising climate litigation risk may exacerbate well-known physical and transition risks associated with climate change. Yet, little is known about the impacts of climate litigation against corporations. Here we provide the first robust evidence. We construct a comprehensive database of filings and decisions relating to 108 climate change lawsuits worldwide against US and European-listed corporations between 2005–2021. Our causal analysis estimates that a filing or an unfavourable court decision in a climate case reduced firm value by -0.41% on average, relative to expected values. The largest stock market responses were found for cases filed against Carbon Majors, reducing firm value by -0.57% following case filings and by -1.50% following unfavourable judgements. Larger market reactions are observed in “novel” cases involving a new form of legal argument or in a new jurisdiction. No statistically significant effect on firm value was found in filings against non-Carbon Majors. We conclude that lenders, financial regulators, and governments should consider climate litigation risk as a relevant financial risk in a warmer future.

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Main

Climate change related litigation have grown rapidly in recent years, in line with the increased awareness of the impacts of climate change and the urgency of taking action to contain it. Over the last two decades, annual climate litigation cases have grown from below 10 to over 200 by 2021.¹ Of these, just under 10% are filed against corporations, and the remainder against government bodies or other entities in 2021. Claims are expected to grow further following successful cases that generate yet more momentum.² At the same time, financial markets are beginning to consider climate change by integrating climate-related risks and opportunities into investment decision-making processes,³⁴ particularly transition and physical risks.⁵ Descriptive evidence suggests that investors' awareness of climate litigation as a form of transition risk is rising.⁶ However, causal analysis is necessary to determine if markets are systematically taking these risks into account.

Despite the seemingly unstoppable rise in climate litigation cases and several recent successes, the evidence quantifying their impacts is still limited.⁷⁸ For defending companies, these lawsuits may have multiple repercussions. Direct or tangible costs include legal fees, fines or penalties, higher insurance costs and changes to credit ratings which could increase capital costs and decrease their financial leverage.⁹¹⁰ Also damaging may be the adverse impacts on public reputation and staff morale.¹¹¹² While costs of corporation litigation in general are increasing in recent years,¹³ many of the effects of climate-related litigation are difficult to measure because they will only materialise far in the future. Therefore, a wide range of stakeholders including central banks, financial regulators, corporations, insurance companies, NGOs and investors seek to assess companies' climate-related risk more accurately.¹⁴¹⁵ One approach is to assess whether climate litigation systematically causes defendant corporation's stock prices to fall and to what degree.¹⁶ Such a decline in firm value, if observed, could reflect investors' perceived estimate of the various implied costs of climate litigation.

This study attempts to quantify the financial market response to climate litigation. To do this, we compile a new dataset that represents a near universe of corporate litigation cases against major publicly listed corporations listed in US or Europe stock exchanges during the period 2005-2021. The thorough coverage enables us to estimate an aggregate market-wide effect that can be interpreted in a general context to inform the societal impact of climate litigation on firm value, despite the highly heterogeneous nature of climate lawsuits.

Diverse profile

Climate litigation in general has a diverse profile in terms of subject matter, covering a broad range of actions that arise from climate related issues.¹⁷¹⁸¹⁹ Claimants include individuals, environmental organizations, local and state governments, businesses, young people, and future generations.^{20 21} Defendants include governments, corporations, financial institutions, industry groups, and individuals. Objectives and legal avenues vary considerably also. The earlier corporate cases against oil, gas and electric companies in North American, much like in previous major controversies like tobacco and asbestos, were centred around damages and adaptation costs and sued for compensation based on claims that the actions of Carbon Majors exacerbated damages they suffered as a result of extreme weather events.²² The trend in more recent years is more diverse, with climate litigation brought strategically to advance effective action on climate change worldwide, using varied legal avenues including public law, environmental law, tort law, human rights and constitutional law, criminal law, securities law and international law.²³

Cases are diversifying and evolving rapidly, ranging from cases seeking to penalise illegal activities such as deforestation, greenwashing, fraud, and failure of fiduciary duties. An example of the latter is a case in 2018 whereby Enea was sued by Client Earth claiming directors are not acting in the best interest of investors because a planned new coal plant would ultimately become a stranded asset. Several cases have been brought forward against Carbon Majors for failing to properly inform the public of the risks of climate change at a time when they were aware of them. For example, in *Commonwealth v. Exxon*, the Massachusetts Attorney General accused the firm of failing to disclose climate change risks, failing to disclose its products' impacts on climate change, and greenwashing. The heterogeneous nature of climate litigation suggests that effects of the financial market response to any one event in isolation cannot be generalized.

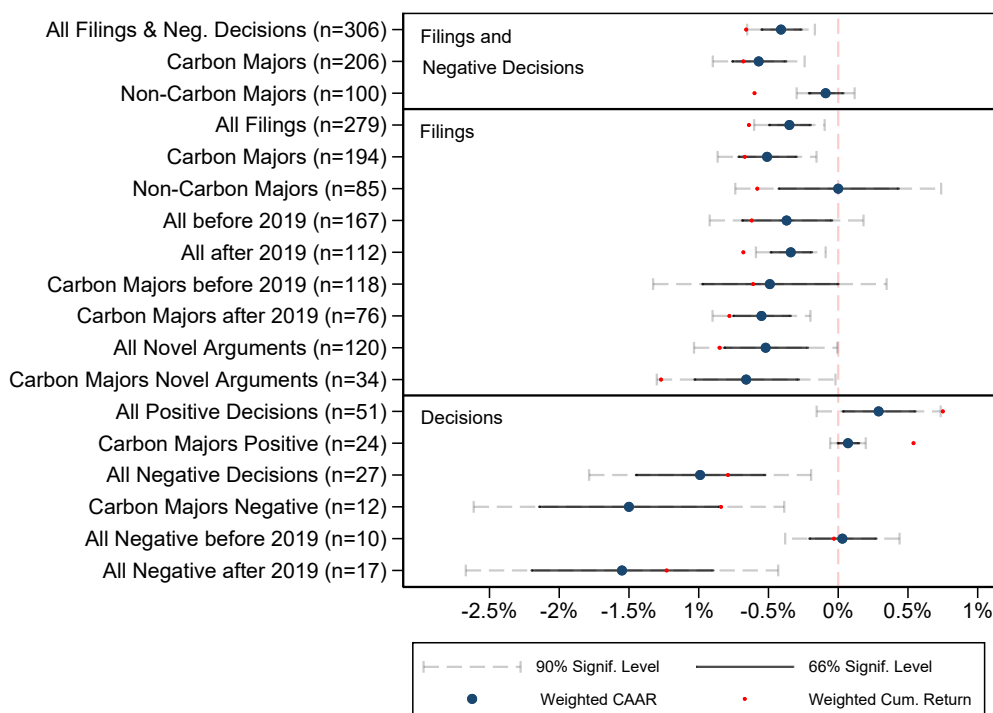


Figure 1. The effect of climate litigation announcements on the market value of defendant companies. Note: Red dots indicate the weighted cumulative return during a 3 day window around the filing and decision dates in %. Blue dots, bars and whiskers indicate the mean, p66 and p90 of the cumulative average abnormal return (CAAR), measured with the Capital Asset Pricing Model. Returns are weighted using the log of market value and are winsorized at the 0.5% level. N indicates the number of company-events. Standard errors with weighted Patell correction.

Value-weighted multiple-event study

To estimate an average effect of climate litigation, we compiled a comprehensive dataset recording 108 climate related lawsuits filed against 98 major publicly listed corporations listed in US or Europe stock exchanges during the period 2005-2021. Often cases target more than one firm, giving 369 firm-event observations in total. We combine this data with financial data and run event study regressions widely used in financial research to test whether returns around litigation event days are significantly different from what would be expected absent the event (see Methods). The abnormal returns for individual company-events are reported in SI6, but our focus is on the aggregate market-wide impact of climate litigation. Thus, we estimate the average effect over multiple events using *value-weighted* cumulative average abnormal returns (CAARs), avoiding over-representing small stocks which tend to be volatile.²⁴

We find evidence that climate litigation leads to negative market reactions. On average, case filings lead to an abnormal decrease in share prices by -0.35% over the 3 day window from the

day before, of and after the filing (see Figure 1 and SI3 for significance levels). Negative court decisions had a larger effect of -0.99%, with the combined cumulative average abnormal return (CAAR) for filings and negative decisions being -0.41%. The effect is modest, yet statistically significant at the 95% level.

Carbon Majors

Unsurprisingly, the bulk of corporate climate litigation have been filed against the largest emitters operating in Energy, Utilities, and Materials – the so-called Carbon Majors – and are often intended to drive changes in their behaviour and business models.²⁵ More recently, climate litigation targets corporations in other sectors including Industrials, Consumer Discretionary (including Automobile) and Financial sectors. We observe that climate litigation filings impact Carbon Majors' firm value (-0.51%) but for non-Carbon Majors the effect is small and statistically insignificant. This result gives us confidence that markets are responding where most expected – the cases against the largest polluters where more is at stake, for example, in terms of stranded assets and reputational damage. The effect of negative decisions is also larger for Carbon Majors (-1.50%). Note, however, that climate litigation is a relatively new class of action. Many cases are either still subject to early-stage procedural challenges and often no final judgement has yet been delivered.²⁶ This suggests that stock market impacts may have taken time to materialise.

The shifting tide

While the first corporate climate litigation case recorded dates to 1995,²⁷ it is only in recent years that climate litigation is used and has been recognised as a tool capable of affecting “the outcome and ambition of climate governance”.²⁸ From the 2000s, a small set of lawsuits against oil, gas and electric companies was tested in North American courts. Examples include *Comer vs Murphy Oil* (2005) where residents and property owners from the Mississippi Gulf Coast sought damages related to Hurricane Katrina and *Kivalina v Exxon* (2008) where coastal Alaskan residents facing the threat of a rising sea level filed a case seeking financial damages for the potential relocation. These early cases were ground-breaking and drew some attention but were ultimately unsuccessful.²⁹³⁰ Corporate climate litigation activity died down following the unsuccessful outcomes of these earlier high-profile cases (Fig 2), until momentum picked up again coinciding with several events. Litigation targeting corporates became easier following the publication of an academic article by Heede in 2014³¹ identifying 90 so-called Carbon Majors most responsible for global carbon and methane emissions between 1751 and

2010. Further, the Paris Agreement was agreed in December 2015, sending signals of strengthened international will on climate action. Around the same time, advances in attribution science were made, that better equipped plaintiffs with powerful evidence that they can bring to the courts.³²³³³⁴

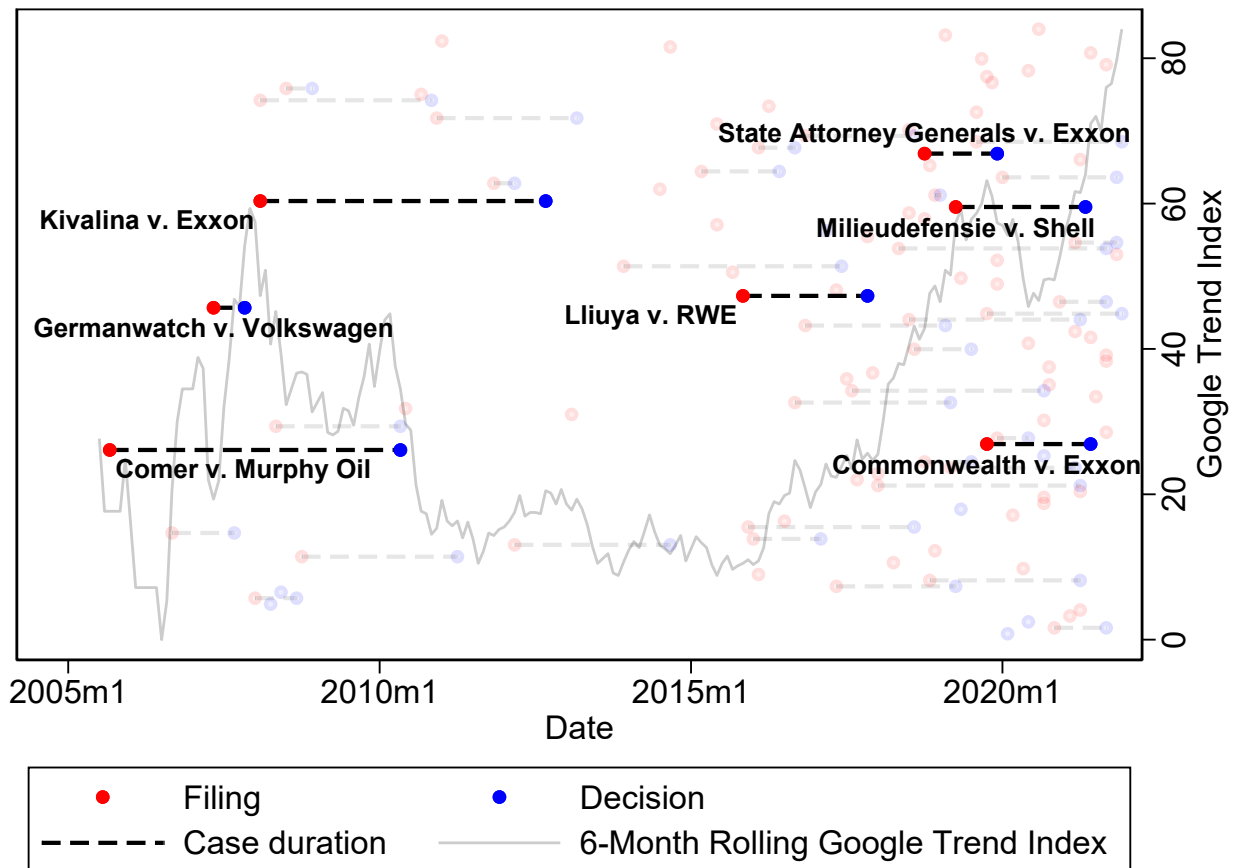


Figure 2. climate litigation filings and decisions against US and European corporations.

Note: The Google Trend Index is calculated as the worldwide 6-month rolling average of the term “climate litigation” using Google Trends. This captures the popularity of specific terms searched in the Google search engine, where the peak term value is set to 100 and all other values set relative to that peak.

Indeed, we observe an increase in climate litigation risk over time. We find no significant effect for filings or decision before January of 2019, even for filings against Carbon Majors, and negative decisions (Figure 1). The tide started to shift for the climate litigation movement as it started to find success. We observe a clear increase in decisions and especially in substantive or procedural decisions that can be understood as negative for the firm in recent years (Figure 3). For example in 2017, *Lliuya v RWE* a German appeals court deemed as admissible a Peruvian farmer’s claim that higher water levels near his farm were caused by carbon emissions

from RWE.³⁵ Public interest in climate litigation rose rapidly from 2021 following a groundbreaking judgement in *Milieudefensie v Royal Dutch Shell*, the District Court of the Hague ruled that Royal Dutch Shell has to reduce its carbon emissions in 2030 by 45% because of a violation of the duty of care under Dutch law (see SI3) (Fig 2). We find consistently larger and statistically significant effects after 2019, of all filings (-0.34%), filings against Carbon Majors (-0.55%) and negative decisions (-1.55%), suggesting capital markets are increasingly responding to climate litigation.

Court decisions, which may include final judgements, significant interim judgements or procedural matters, or settlement decisions, are of course not always negative for the companies. We classify each decision as either positive or negative for the targeted corporation. Positive decisions are often decisions where the case is dismissed. Our results show that positive decisions increase abnormal returns modestly (0.29%). This effect is statistically insignificant. However, the contrast with negative decisions is large, as expected (Figure 1).

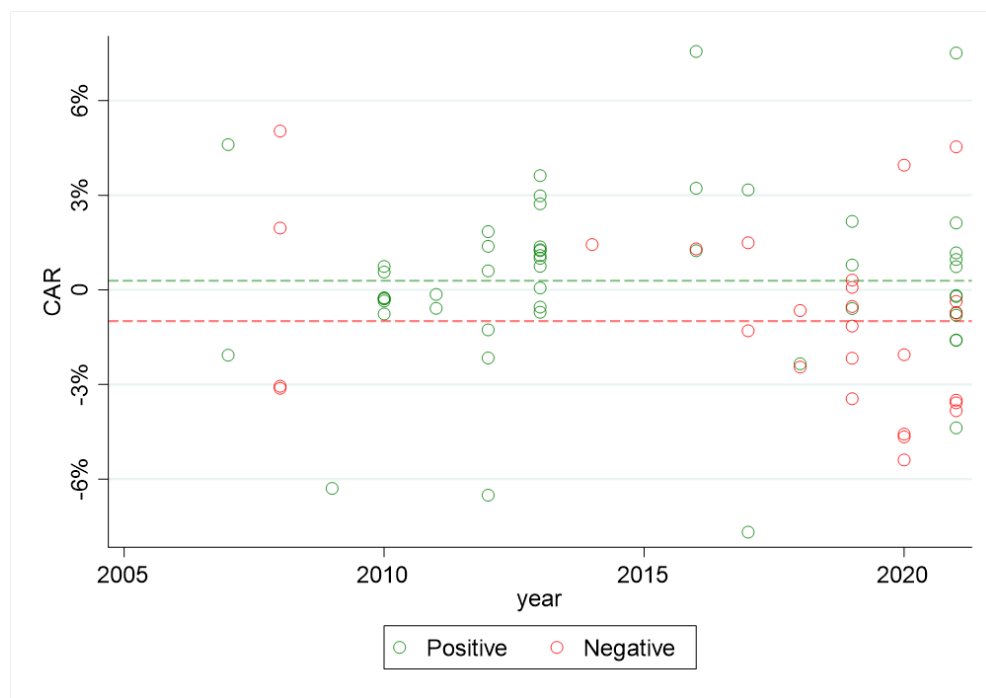


Figure 3. Individual cumulative abnormal returns for positive (green) and negative (red) decisions during a 3-day window around the decision dates. Horizontal lines indicate the mean, weighted by the log of market value.

Further heterogeneity

As climate litigation continues to expand and diversify,³⁶ capital market responses may be heterogeneous across various case characteristics. To test heterogeneous effects, for each case

we collect information on a set of key case characteristics: whether the case was filed in a court of law; whether the plaintiff was a government; whether there were likely spill-over effects; whether the case made a claim for damages; and whether a case is “novel” (i.e. using a novel form of legal argument or the first case in a given jurisdiction) (see Methods).

The effects for all subgroups were lower than average and not statistically significant (SI3), except for novel cases where the abnormal return is of a larger magnitude than average, -0.52% for all companies and -0.66% for the subgroup of Carbon Majors (Figure 1). A possible explanation for this may be that cases with novelty attracts more interest or has a greater element of surprise that investors have not already factored into stock prices.

Total costs

Our findings suggest small changes in valuation result from climate litigation. Yet back-of-the-envelope calculations suggest that the average economic benefit of a positive decision is \$197 million, and the average economic cost of a negative decision is \$360 million (see Methods). These total costs should be interpreted with caution because they are highly influenced by the largest companies and sensitive to outliers. Nonetheless, these economic costs far exceed the average cost of defending a major litigation case (\$3 million³⁷), suggesting that investors pricing in expectations of lower future cash flows and reputational risk.

The total effect of climate litigation is likely to be larger than the effect we are able to attribute to filings and important decisions for three reasons. First, when we expand our event window to include the preceding week before the filings and decisions, we find modest anticipation effects, which increase the average filing and negative decisions effect from -0.41% to -0.44%. Second, the concrete timelines of important cases (SI2) shows that information is released gradually across many events including those other than filings and decisions dates, for example subpoenas, motions or court orders. Third, corporations might also experience the indirect impacts of cases brought against governments, financiers, pension funds, and university endowments which are brought as part of a broader strategy by social movements or organisations to increase the social and financial costs experienced by major corporate emitters.³⁸

Litigation is on the rise and is here to stay. Future cases will deliver additional data, making it possible to estimate climate litigation impacts more precisely and understand ways in which

companies can mitigate litigation risk, for example by making credible decarbonization roadmaps. Given the effects on stock prices observed already today, lenders, financial regulators and governments should consider climate litigation risk as a relevant financial risk in a warmer future.

Methods

Climate lawsuit sample selection and data collection

We have collected to the extent possible all climate litigation lawsuits -- involving climate as a material issue -- anywhere in the world against US and European companies. Our main source of data is the climate litigation databases maintained by the Sabin Center for Climate Change Law. Data was taken in March 2022. The Sabin Center maintains two separate databases, one for US litigation and one for “global” litigation, i.e all cases outside the US. Together these databases contain more than 2000 cases before judicial and quasi-judicial bodies that involve material issues of climate change science, policy, or law. Cases where climate change is only incidental to main issues are excluded from the Sabin databases. Using the databases as a starting point, we identified cases filed against corporations are identified by relying on a) original classification by the authors and colleagues at the LSE and b) previous classification of cases in the US filed until 2016 by Mc Cormick et al.³⁹ From the McCormick dataset we identify 76 “pro-climate” cases against corporations. From the global database we identify 87 cases against corporations. From the US database we then review 783 cases filed between 2016 and March 2022 in the US from the US Climate CaseChart, of which 88 involved corporate entities as defendants. This dataset was compared with the McCormick dataset and duplicate cases from the overlapping period of 2016 were eliminated.

From this universe of cases involving corporate actors, we identify cases involving publicly listed companies in the US and Europe. Non-trade companies are therefore excluded. Cases filed in countries where risk factors are unavailable were dropped. Further cases were excluded due to lack of key information such as financial data or because relevant dates or other cases information couldn't be identified from the databases. For example, a company may delist from a stock exchange or be involved in a merger or acquisition. As a result, we identify 108 cases where we can precisely define a filing date and 59 cases where we can precisely define a significant decision being handed down. We define a significant decision as a merits decision or a significant decision on admissibility.

In many cases, there is more than one defendant company. Our final sample of filings includes 279 corporation-event observations between 2005 and 2021 in the US (199), UK (47), and wider Europe (33). In terms of judgements, our data set records 59 cases with decisions that translates to 78 corporation-event observations between 2005 to 2021, with 51 being a positive judgement for the corporation and 27 being negative. We review the details of each company named in the complaint of each case. Where one or more of the companies are listed by Heede,⁴⁰ we classify the case as a Carbon Major case. Table 1 shows the sectoral distribution of Carbon Majors and non-Carbon Majors company-events.

Table 1. Sectoral distribution of company-events. Carbon Majors are defined as cases where one of the 90 largest historical emitters is involved.

Sector	Carbon Major	non-Carbon Major	Total
Energy	245	33	278
Utilities	3	32	35
Consumer Staples	0	20	20
Industrials	0	12	12
Consumer Discretion	0	12	12
Materials	3	4	7
Financials	0	5	5
Total	251	118	369

Climate lawsuit characteristics

For filings, we determined the following information for each case:

- Did the case involve a novel form of claim and/or a claim in a novel jurisdiction? (N=120)
- Was the case filed before a court of law or an administrative tribunal rather than a quasi-judicial body? (N=235)
- Is the case part of a larger group of similar cases? (N=135)
- Was the plaintiff a government rather than an NGO or individuals? (N=170)
- Did the case involve damages rather than civil penalties? (N=210)

For assessing the novelty of claims, we investigate three factors. First, whether a novel legal argument is made: we classify the legal arguments as novel in cases such as *Milieudefensie v. Shell*, in which claimants relied on business and human-rights standards to argue that a corporation has an obligation to reduce carbon emissions from its global operations, and also

in cases such as *County of San Matteo v. Chevron*, one of the earliest cases in which the Carbon Majors research by Heede was used by US subnational governments to sue one or more of the Carbon Majors. Second, we consider whether a novel argument (i.e., applied in only one or two cases globally) was applied in a new jurisdiction for the first time. Third, we consider whether a novel argument (i.e., applied in only one or two cases globally) was applied against a new industry, as in the case of *Deutsche Umwelthilfe (DUH) v. BMW* and *Deutsche Umwelthilfe (DUH) v. Mercedes-Benz AG*.

The assessment of whether cases were “similar” was made by the authors, with reference to previous work categorising climate litigation cases by type and theme for a range of audiences.⁴¹ This category was included on the hypothesis that cases that formed part of such a group might attract greater attention from the media and by extension the markets.

For court decisions, we classify them simply based on whether they had a positive or negative outcome for the targeted corporation(s).

Empirical approach

SI1 describes our financial data sources. We estimate abnormal stock returns for defendant corporations following the event study methodology widely used in financial research⁴² taking the difference between actual and expected stock returns. To calculate the latter, we use the CAPM market model specific to each region (North America and Europe) as is standard in event studies.⁴³ For each company-event, we run the following OLS regression on the 2 years preceding the event

$$\underbrace{R_{jt} - R_{ft}}_{\text{Excess Return}} = \underbrace{\hat{\alpha}_j + \hat{\beta}_j \text{MKT}_t}_{\text{Expected Return}} + \underbrace{\epsilon_{jt}}_{\text{Abnormal Return}}$$

where R_{jt} is the realised return for corporation j at time t , R_f is the risk-free return on 1-month government bonds, α is the intercept, MKT_t is the return of each region’s market portfolio minus the risk free return, and ϵ_{jt} is the error term with expectation zero. The model splits the observed return into an expected return, driven by economy-wide new information and an abnormal return, driven by company- or sector-specific information. The abnormal return is on average zero, because it represents diversifiable risk, irrelevant for diversified investors. However, abnormal returns provide evidence of investors incorporating new company-specific information into the price of a stock.

SI3 also shows results for a 3-factor model⁴⁴, but the three supplementary factors have a limited explanatory power i.e. the variance of the error term is merely reduced. This is a generally the

case for stock prices.⁴⁵ Results of a 4-factor model, including the oil price as a risk factor for carbon majors are available upon demand.

The parameters $\hat{\alpha}$ and $\hat{\beta}$ in Eq. 1 are estimated via time-series OLS regressions of excess returns on the market model over a 3-year *estimation window*, i.e. trading day -770 to -20 relative to the filing or decision date, with a minimum of 125 days. Because the estimation window ends 20 days prior to the event day, our parameters $\hat{\alpha}$ and $\hat{\beta}$ are unlikely to be affected by anticipation effects.

We assess abnormal returns over multiple days – known as the *event window*. We calculate these abnormal returns using Eq. 1, predicting expected returns with our parameters $\hat{\alpha}$ and $\hat{\beta}$ from the estimation window. We define the cumulative abnormal return between the beginning (τ_1) and end (τ_2) of the event window as

$$CAR_j(\tau_1, \tau_2) = \sum_{t=\tau_1}^{\tau_2} \hat{\epsilon}_{jt}.$$

The abnormal returns in the event window are then assessed for statistical significance relative to the distribution of abnormal returns in the estimation window.

When jointly assessing the reaction to multiple events for multiple corporations of different sizes, one question is how to aggregate over cumulative abnormal returns. Putting equal-weights on CARs would place too much weight on small stocks, which detracts from our motivation of understanding the aggregate market-wide impact of climate litigation. Instead, we weight abnormal returns by the log of each stock’s market capitalisation (common shares outstanding in thousands multiplied by annual closing price), such that the *value weighted-average* cumulative abnormal return is calculated as:

$$\overline{CAR}(\tau_1, \tau_2) = \sum_{j=1}^N w \cdot CAR_j(\tau_1, \tau_2)$$

where $CAR(\tau_1, \tau_2)$ is the weighted-average cumulative abnormal return between day τ_1 and τ_2 for stocks with the weight denoted by w . In terms of implementation, estimating *weighted* cumulative average abnormal returns (CARs) is not possible with standard event study packages within statistical software, which thus requires us to write our own code.

Our main specification reports the Patell test.⁴⁶ This test is, in essence, a t-test with unequal variances combined with an out-of-sample forecast error correction. Unequal variances means that the test considers the variance of each stock's own returns and therefore gives lower weight to very volatile stocks. For example, the returns to coal stocks such as *Arch Resources* have much larger volatility compared to larger corporations such as *ExxonMobil*. As a robustness check, we also examine a t-test with equal variance (SI3).

We also report a single-stage regression-based approach, where we regress Eq. 1 for the entire database at once as a panel, adding interaction dummies to each event to obtain company-event specific α_i and β_i and a dummy variable which is one during all the event windows. This has the advantage that errors in the estimation of abnormal returns are included when estimating the significance of our abnormal returns. The regression uses robust standard errors clustered both at the company-event level to account for serial correlation and at the company-day level to take into account that we have duplicated observations for corporations with events with overlapping estimation periods.

Our main results report a three-day CAR with window (-1,1), to capture the immediate market response to filings or decisions while minimizing potential confounding effects of other events. However, part of the information about litigation is also available on earlier days, so we investigate results for a 7-day window (-5, 1), which includes the week before the announcement. This allows us to include anticipation effects. The effects for all filings remain the same, at -0.35%. Indeed, many filings are not announced beforehand and come as a surprise. For example, most cases filed in the US by cities, counties and states against Carbon Majors fall into this category. And even when filings are announced, there is still an element of surprise, because sometimes NGOs threaten with filings, but never carry through. Also, some filings receive very little media attention until the day of the filing. Therefore, we expect anticipation effects to be nonzero, but limited for filings.

Regarding decisions, the effect of all decisions is amplified from -0.99% in the standard case, to -1.36% when we include anticipation effects from the week before. This makes sense because most decision dates are known in advance.

Note that by expanding the event window, we reduce the power of our test, as more noise from other news is included. Therefore, only our aggregate results for all filings and negative decisions remain significant at the 95% level with a slightly increased effect from -0.41% to -0.44%. Overall, our results are indicative of limited anticipation effects.

Note that for each case, we investigate the effect of important decisions, but there are often several minor decisions too. Our results should not be interpreted as the total effect of litigation, which would include the effect all elements of information which become gradually available over time. To situate the impact of filings and decisions in the entire chain of events, SI2 provides a timeline for 3 important cases.

Economic magnitude of financial market response

We define the economic magnitude of the financial market's response to climate litigation as the cumulative abnormal return in the window (-1,1) multiplied by the targeted corporation's market capitalisation in the same year. This captures the economic value that investors are attributing to the climate litigation filings and decision when valuing the price of a share at the point of time new information becomes available. Assuming informationally efficient financial markets, prices should incorporate all forward-looking effects from climate litigation court decisions on future profits. This allows us to capture difficult indirect costs such as the probability of future litigation cases and any reputational damage that investors price into the stock that may impact future cashflows or the corporation's discount rate.

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Supplementary Information

SI1. Financial data

We obtain the daily closing price P_{jt} , stock-split adjustment factor AF_{jt} , and daily total return factor (including cash equivalent distributions, reinvestment of dividends, and the compounding effect of dividends paid on reinvested dividends) TRF_{jt} for each common stock in North America and Europe that has had a climate litigation case filed against them over our sample period between 1st January 2005 and 31st December 2021 from Compustat North America and Compustat Global. For stocks with multiple listings, we identify the primary listing and the exchange where most volume is traded for the common stock, and further cross-reference the returns with The Center for Research in Security Prices (CRSP) for North American stocks and Yahoo! Finance for all stocks in the sample. We collect daily exchange rates from IBES and convert all prices to US dollars. We then calculate the adjusted daily closing price as:

$$AP_{jt} = \left(\frac{P_{jt}}{AF_{jt}} \right) \times TRF_{jt}$$

Daily stock returns are then $R_{jt} = (AP_{jt} - AP_{jt-1}) / AP_{jt-1}$. Due to volatile small-cap stocks in our sample, we winsorize returns at the 0.5% level.

We obtain daily regional returns for the risk-free rate, market, size, and value risk factors from Ken French's Data Library for North America and Europe. We also obtain the daily closing price for a barrel of crude oil (specifically, WTI spot Cushing in US dollars) from Refinitiv Datastream and calculate simple returns similar to our measure of daily stock returns.

SI2. Anticipation of filings and decisions

To define the event window in event studies, it is important to understand when markets may acquire information about climate lawsuits. In general, filings and decision dates are unanticipated. It is common that on the filing day, plaintiffs hold a press conference and/or issue a press release announcing the filing and this is typically the first time information on the claim becomes publicly available. In cases where prior information is available, for example with an on-going investigation or prior announcement, the exact date of filing is usually kept unknown. For court judgements, the date of the decision is typically unanticipated. If a date is announced, the content of the decision is always unknown until the moment that the decision is handed. We describe examples of cases where there was anticipation of the filings and decisions to illustrate differences in anticipation.

State Attorney Generals vs Exxon

The securities lawsuits filed by the New York and the Massachusetts Attorney Generals Offices against Exxon Mobil Corp in the US were filed following public investigations, initiated on November 4, 2015 and reported in an article published on the New York Times on the following day.¹ Over the years Exxon tried to halt such investigations in state and federal courts, all without success. On October 24, 2018¹, the New York Attorney General finally filed “the long-anticipated lawsuit”² alleging that Exxon misled investors and regulators by publicly claiming that climate change is not a severe problem, while its own scientists advised otherwise. Hence while there was anticipation about a potential case, the filing date was unknown. The case went to trial in October 2019. After a 12-day trial, on October 12, 2019 the court found that the New York Office of the Attorney General failed to demonstrate that Exxon Mobil misled investors about its practices or procedures for accounting for climate risk.

While the New York trial was underway, on October 24, 2019, the Attorney General of Massachusetts brought another security lawsuit against Exxon. The suit also followed an investigation, which had been initiated by Attorney General Maura Healey on April 19, 2016. The lawsuit claims that Exxon committed deceptive practices against Massachusetts investors and consumers by failing to disclose climate change risks, misrepresenting its business practices related to use of proxy costs of carbon, misleadingly advertising its products, failing to disclose its products’ impacts on climate change, and engaging in greenwashing campaigns.² Exxon’s attempt to remove the case from state to federal court was rejected by the federal district court in Boston. Unlike the case brought in New York, this suit is still pending in state court.

Milieudéfensie et al. v. Royal Dutch Shell plc.

An unusual case was *Milieudéfensie et al v Shell* where information about the timeline was pre-announced. In April 2018, one year before the actual filing, Milieudéfensie (Friends of the Earth Netherlands) sent a letter to Mr Van Beurden, CEO of Royal Dutch Shell plc. The letter, also published online, explained why Milieudéfensie was of the position that Shell was

¹ *People of the State of New York v. Exxon Mobil Corporation*, complaint available at: http://climatecasechart.com/wp-content/uploads/sites/16/case-documents/2018/20181024_docket-4520442018_complaint.pdf

² Gerrard, M. B. (2021). "Chapter 2 Climate Change Litigation in the United States: High Volume of Cases, Mostly About Statutes". In *Climate Change Litigation: Global Perspectives*. Leiden, The Netherlands: Brill | Nijhoff. doi: https://doi.org/10.1163/9789004447615_003

breaching its legal duty of care and therefore that Shell should remedy this unlawful situation by aligning its corporate activities and investment decisions with the global climate targets.³

Following the letter, Milieudedefensie initiated a campaign asking Dutch citizens to sign a petition and become co-plaintiffs. By May 2018, 10,000 people in the Netherlands had signed the letter.⁴ In February 2019, six organizations (ActionAid Netherlands, Both ENDS, Fossilvrij NL, Greenpeace Netherlands, Wadden Sea Forum and Youth Environment Active) joined Milieudedefensie and together sent a second letter to Shell, informing that if Shell failed to meet their requests, they would hand over a court summons on April 5th. By the end of March, more than 17,000 co-plaintiffs had expressed their willingness to join a lawsuit as co-plaintiffs. The lawsuit was filed on April 5th as planned, before the District Court of the Hague. Following the filing of the lawsuit, Shell was given 3 months to respond. In December 2020 the parties were requested to attend four hearing days in court. The District Court also announced that it would hand down a decision on May 26th 2021.³ On that day, the session of the court was delivered and livestreamed. The decision immediately received extremely high coverage by the media. On July 20th Shell confirmed its intention to appeal the District Court ruling; the appeal was filed on August 23. There is an expectation that it will take between 2-3 years for the appeal to be decided.⁵

SI3. Sensitivity analysis

Table SI1 shows results for a set of different specifications. The results using a single panel regression, rather than our standard 2-stage tests on abnormal returns gives almost identical results (see SI4 for details). The t-stats of these panel regression are slightly smaller than our 2-step procedure, because the errors from the first step (calculating abnormal returns) are included in the uncertainty assessment. However, results remain significant with p-values below 10% and below 5% in the case of filings & negative decisions for Carbon Majors. By contrast, when we equal variances for all error terms, t-statistics increase, and most results become significant at the 95% level. This indicates that more volatile stocks tend to react stronger to litigation.

Adding two extra risk factors to the risk model, has a very modest effect on abnormal returns, rarely affecting results by more than 0.1%. The main results (all filings, all negative decisions,

³ <https://www.bloomberg.com/news/articles/2021-05-25/court-decision-to-test-shell-s-responsibility-for-climate-change#xj4y7vzkg>

filings for Carbon Majors, negative decisions for Carbon Majors) increase in magnitude, yet the t-stats become slightly larger. This may indicate a problem of overfitting.⁶ Indeed, the out-of-sample errors of the risk model are merely affected (standard error of the residual is .0208 for CAPM and .0193 for the 3 factor model). We also have results including the oil price as a risk factor on demand.

Next, we test anticipation effects by expanding the event window to -5,1, including the week before the announcement (numbers refer to trading days). We do not find anticipation effects for filings (for all filings the effect is -0.35 in both cases), nor for positive decisions. However, for negative decisions, anticipation effects add more or less 0.3% extra negative returns. However, since these periods also include a lot of other information (noise in a statistical sense) we these results are not significant.

There could also be delayed effects, materializing more than 2 days after the event (we always include the first day after the announcement). Therefore, we also report abnormal returns over the window of 3 days before and after the event. Results are difficult to interpret. The cumulative average raw returns, become larger (-1.31% instead of -0.66% for all filings and negative decisions), yet the abnormal returns become smaller (-0.19% instead of -0.66%). Standard errors are too high to draw clear conclusions.

Figure SI3 shows results for different legal characteristics. Novel cases clearly have a larger effect. However, other attributes seem to give lower than average abnormal returns. This is rather counterintuitive. However, when considering subsamples, the lower number of observations mechanically increases standard errors. Future research based on more filings will be needed to investigate this further.

¹ <https://www.nytimes.com/2015/11/06/science/exxon-mobil-under-investigation-in-new-york-over-climate-statements.html>

² <https://www.mass.gov/lists/attorney-generals-office-exxon-investigation>

³ https://www.foei.org/wp-content/uploads/2018/06/Milieudedefensie_legal_letter_Shell_4-April-2018.pdf

⁴ <https://en.milieudedefensie.nl/climate-case-shell/timeline>

⁵ https://www.shell.nl/media/persberichten/media-releases-2021/reactie-shell-op-uitspraak-klimaatzaak/_jcr_content/par/textimage_1644315100.stream/1636585777360/cb8acdf075488a8148a3b514c9594feed6d6d3/dutch-district-legal-case-faqs-2021-v1.pdf

⁶ (Campbell et al. 2012, p154-156)

Table S13. Sensitivity analysis. Window -x,y indicates the estimation window from x days before the event until y days after the event. The 3 factor model is the Fama & French 3 factor model (1993), the other models use the CAPM model. Returns are weighted by log of the market value (in millions). Cum return is the cumulative average return over the event window (in %). CAAR is the cumulative abnormal average return (in %). T-values indicate significant results at the 5% when absolute values exceed 2. T-Patell is calculated using the Patell correction, taking into account weights (SI5), t-eq var is a simple t-test with equal variances. CAAR regr uses the single stage panel regression described in SI4 and t-regr is the associated t-value with standard errors clustered both at the company-event level and company-date level.

		#obs	Window -1,1 Cum return	CAA R	t- patell	t-eq var	CAA R regr	t-regr	CAA R 3facto r	t- patell 3facto r	Window -5,1 Cum return	CAA R	t- patell	Window -3,3 Cum return	CAA R	t- patell
Panel A: Filings and negative decisions																
All		306	-0.66	-0.41	-2.77	-2.38	-0.41	-1.92	-0.43	-2.48	-0.54	-0.44	-2.1	-1.31	-0.19	-0.82
Carbon Majors		206	-0.68	-0.57	-2.84	-2.76	-0.55	-2.23	-0.60	-2.63	-0.46	-0.44	-1.46	-1.44	-0.41	-0.99
Non-Carbon Majors		100	-0.60	-0.09	-0.71	-0.28	-0.09	-0.22	-0.07	-0.51	-0.71	-0.44	-1.61	-1.03	0.25	0.01
Panel B: Filings																
All		279	-0.64	-0.35	-2.27	-1.94	-0.35	-1.5	-0.37	-1.98	-0.46	-0.35	-1.63	-1.19	-0.04	-0.14
Carbon Majors		194	-0.67	-0.51	-2.36	-2.39	-0.49	-1.85	-0.57	-2.25	-0.36	-0.36	-1.04	-1.38	-0.29	-0.46
Non-Carbon Majors		85	-0.58	0.00	-0.49	0	0.00	0.01	0.09	-0.14	-0.7	-0.34	-1.42	-0.77	0.54	0.47
All	Before 2019	167	-0.62	-0.37	-1.10	-1.68	-0.36	-1.37	-0.50	-1.77	-0.63	-0.46	-0.7	-0.92	-0.21	0.16
All	After 2019	112	-0.68	-0.34	-2.23	-0.96	-0.21	-0.49	-0.18	-0.97	-0.23	-0.2	-1.73	-1.6	0.2	-0.42
C-Maj	Before 2019	118	-0.61	-0.49	-0.96	-1.97	-0.48	-1.49	-0.65	-1.57	-0.52	-0.4	0.04	-1.09	-0.41	0.05
C-Maj	After 2019	76	-0.78	-0.55	-2.57	-1.25	-0.35	-0.75	-0.44	-1.63	-0.12	-0.29	-1.7	-1.81	-0.11	-0.78
All	Novel arguments	120	-0.85	-0.52	-1.66	-1.91	-0.52	-1.63	-0.74	-2.73	-1.04	-0.77	-1.5	-1.47	-0.26	-0.45

C-Maj	Novel arguments	34	-1.27	-0.66	-1.69	-1.07	-0.70	-1.05	-0.75	-1.98	-1.65	-1.33	-2.11	-0.91	0.22	0
Panel C: Decisions																
All:	Positive	51	0.75	0.29	1.07	0.71	0.30	0.81	0.05	0.43	1.4	0.72	0.79	1.21	0.78	0.88
C-Maj	Positive	24	0.54	0.07	0.9	0.12	0.07	0.12	-0.34	0.3	1.06	0.04	-0.3	0.36	-0.19	-0.39
All:	Negative	27	-0.79	-0.99	-2.04	-1.92	-1.02	-1.81	-1.04	-1.99	-1.35	-1.36	-1.85	-2.51	-1.79	-2.33
C-Maj	Negative	12	-0.84	-1.50	-2.21	-2.05	-1.45	-1.53	-1.15	-1.81	-2.08	-1.78	-1.82	-2.49	-2.29	-2.18
All	Neg Before 2019	10	-0.03	0.03	-0.12	0.03	-0.01	-0.01	-0.49	-0.54	-0.2	-0.35	-0.43	-2.78	-1.73	-0.90
All	Neg After 2019	17	-1.23	-1.55	-2.27	-2.05	-1.49	-1.92	-1.32	-1.91	-2.04	-1.86	-1.79	-2.51	-1.77	-2.11

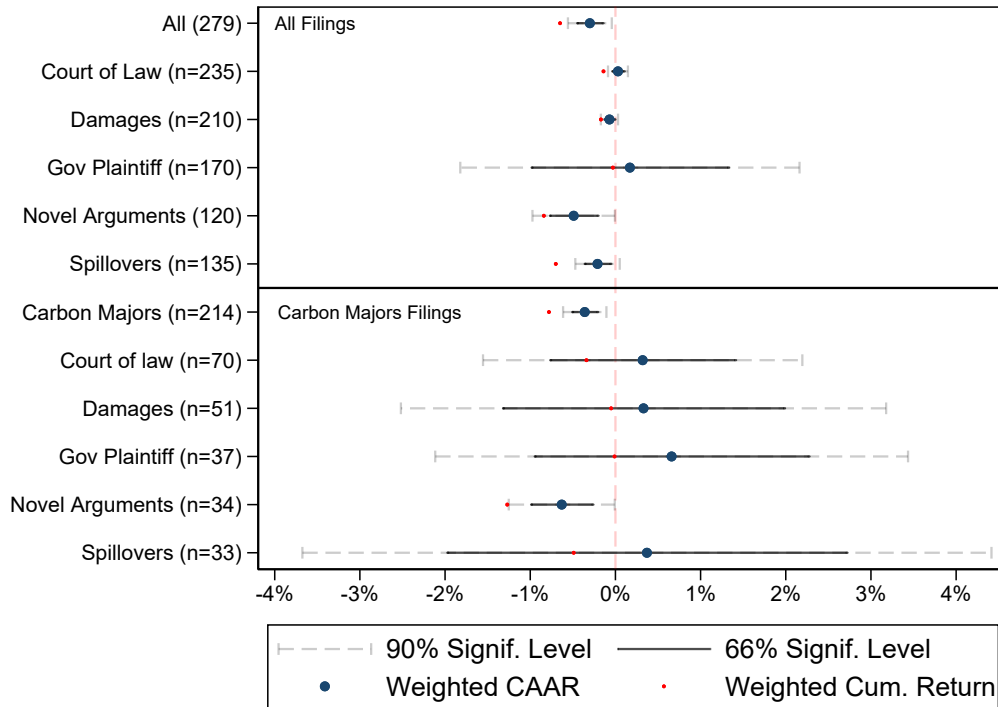


Figure SI3. Legal characteristics. Red dots indicate the weighted cumulative return during a 3 day window around the filing and decision dates in %. Blue dots, bars and whiskers indicate the mean, p66 and p90 of the cumulative average abnormal return (CAAR), measured with the Capital Asset Pricing Model. Returns are weighted using the log of market value and are winsorized at the 0.5% level. N indicates the number of company-events. Standard errors with weighted Patell correction.

SI4. Single regression approach

We run the following regression:

$$r_{it} - rf_t = \alpha_i + \beta_{1i}(Mkt_t - rf_t) + \beta_{2i}SMB + \beta_{3i}HML + \beta_{4i}WTI + \delta D_{event} + e_{it}$$

Where the dependent variable is the excess return (the difference between the raw return and the riskless return) on day t for company i. Each loading on our factors is company-specific to take into account different levels of risk for different companies. α_i is the company-specific alpha measuring the extent to which companies beat the market and is also the company-fixed effect of our panel regression. e_{it} is the abnormal return on each day. D_{event} is a dummy variable which is one during the event window and delta is our variable of interest, i.e. the mean abnormal return during the event window (we multiply delta by the number of days in the event). We restrict the observations to the estimation window and

the event window. By doing so we make sure that risk sensitivity (beta's) are measured on the last 540 days so we have the appropriate risk sensitivity in case company's risk profile would slowly change over time. For companies with multiple events, we duplicate the data, to have a set of risk factors that are specific to each company-event. Errors are 2-way clustered both by company-event and by company-period. The latter corrects the standard errors for duplication. The panel approach has the advantage that the standard errors on delta takes into account the interactions with the other regressors.

In our main analysis, we follow a 2 stage approach. We run the above equation separately for each company-event, only during the estimation window. Next, abnormal returns are calculated as the forecasted errors. This avoids that the event affects the risk factors (betas). It also allows to develop t-tests that have different standard variations for each company (taking into account lower predictability of volatile companies).

SI5. The weighted Patell test

Call L the length of the event window M the estimation window length and N the number of company-events, indexed by i. The standard t-test with different variances per company-event is calculated as follows:

$$t = \sqrt{NL} \overline{SAR}_{it} = \sqrt{NL} \sum_N \sum_L \frac{1}{NL} \frac{\overline{SAR}_{it}}{SAR_i}$$

Where SAR_{it} is the standardized abnormal return, standardized by the standard deviation of each estimation window $SAR_i = \sqrt{\frac{1}{M-4} \sum_M (AR_{it} - \sum_M AR_{it})^2}$. Company-specific standard deviations correct for the fact that abnormal returns of volatile stocks are measured with less precision. In the case of a weighted t-test, we use the weighted mean, replacing $\frac{1}{NL}$ by $\frac{w_i}{\sum_N \sum_L w_i}$. Since we use constant weights per company event, the standard deviation is unaffected by weights.

In the case of the Patell test, we correct the SAR by a forecast error dividing each abnormal return in

the event window by a factor $\sqrt{\frac{M-2}{M-4} \left(1 + \frac{1}{M} + \frac{(R_{mt} - \overline{R}_m)^2}{\sum_M (R_{mt} - \overline{R}_m)^2} \right)}$ where \overline{R}_m is the mean market return

during the estimation window. This factor attributes lower importance to days with large swings in market prices. The total formula is therefore

$$t_{patell} = \sqrt{NL} \frac{1}{\sum_N \sum_L w_i} \sum_N \sum_L \frac{\overbrace{w_i AR_{it}}^{SAR_{it}}}{SAR_{it} \sqrt{\frac{M-2}{M-4}} \sqrt{1 + \frac{1}{M} + \frac{(R_{m_t} - \bar{R}_m)^2}{\sum_M (R_{m_t} - \bar{R}_m)^2}}}$$

SI6. List of climate cases and their individual effect

Table SI6. Individual financial market response to climate litigation filings and decisions. We first list all filings, then decisions. Cum Ret is the cumulative return over the event window of (-1,1). CAR is the Cumulative Abnormal Return over the event window, measured with the CAPM model, excess returns winsorized at the 0.5% level, and an estimation window of (-770, -20). The Patell t-statistic indicates significance at the 95% level when it exceeds ± 1.96 . Note that tests on single events have low statistical power due to the small number of observations.

Date	Filing /decision	Carbon Major	Novel	Pos/Neg decision	Case	Company Name	Cum Ret	CAR	z_patell
20-Sep-06	Filing	0	1		California v. GM Corp.	General Motors Co	-1.7%	-1.3%	-0.29
07-May-07	Filing	0	1		Germanwatch vs. Volkswagen Australian Competition & Consumer Commission v. GM	Volkswagen	-2.9%	-3.5%	-1.34
16-Jan-08	Filing	0	1		Sierra Club v. Duke Energy Indiana	General Motors Co	-3.4%	4.1%	1.00
12-Feb-08	Filing	0	0		Native Village of Kivalina v. ExxonMobil Corp.	Duke Energy	1.4%	-0.8%	-0.52
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	BP	3.6%	-0.4%	-0.23
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	Chevron	3.3%	0.5%	0.27
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	ExxonMobil	2.5%	-0.4%	-0.23
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	Peabody	-1.4%	-6.0%	-1.44
26-Feb-08	Filing	1	1		Native Village of Kivalina v. ExxonMobil Corp.	Royal Dutch Shell American Electric Power	2.8%	-1.1%	-0.67
09-May-08	Filing	0	0		Connecticut v. Am. Elec. Power Southern Alliance for Clean Energy v. Duke Energy	Power	0.8%	-0.1%	-0.06
16-Jul-08	Filing	0	0		Burton v. Dominion Nuclear Connecticut, Inc. Conservation Law Foundation v. Dominion Energy New	Duke Energy	-0.1%	-1.7%	-1.00
23-Oct-08	Filing	0	0		Burton v. Dominion Nuclear Connecticut, Inc. Conservation Law Foundation v. Dominion Energy New	Dominion Energy	-2.2%	4.0%	2.36
24-Jun-10	Filing	0	0		Sierra Club v. Wisconsin Power & Light Co. Sao Paulo Public Prosecutor's Office v. United Air	Dominion Energy	-1.7%	-0.8%	-0.38
09-Sep-10	Filing	0	0		Sierra Club v. Wisconsin Power & Light Co. Sao Paulo Public Prosecutor's Office v. United Air	Alliant Energy	0.4%	-0.7%	-0.31
27-Dec-10	Filing	0	1		Sao Paulo Public Prosecutor's Office v. United Air	Delta Air Lines United Airlines Holdings Inc	0.4%	0.3%	0.04
27-Dec-10	Filing	0	1		Sao Paulo Public Prosecutor's Office v. United Air	United Airlines Holdings Inc	-4.7%	-5.1%	-0.64
28-Jan-11	Filing	0	0		United States v. DTE Energy	DTE Energy	-0.6%	-0.1%	-0.05
27-May-11	Filing	1	1		Comer v. Murphy Oil USA, Inc.	Chevron	1.6%	-0.4%	-0.20
27-May-11	Filing	1	1		Comer v. Murphy Oil USA, Inc.	ExxonMobil Honeywell International	1.8%	0.1%	0.05
27-May-11	Filing	0	1		Comer v. Murphy Oil USA, Inc.	International	1.2%	-1.0%	-0.43
27-May-11	Filing	1	1		Comer v. Murphy Oil USA, Inc.	Murphy Oil Corp	1.0%	-1.4%	-0.44
27-May-11	Filing	1	1		Comer v. Murphy Oil USA, Inc.	Royal Dutch Shell	2.0%	0.0%	-0.01
28-Nov-11	Filing	1	1		Norwegian Climate Network et al vs Statoil California Health Communities Network v. City of P	Equinor	5.4%	-0.1%	-0.05
09-Mar-12	Filing	0	0		Conservation Law Foundation v. Dominion Energy Bra	Walmart Inc	2.0%	1.5%	0.96
22-Feb-13	Filing	0	0		Conservation Law Foundation v. Dominion Energy Bra	Dominion Energy	-0.3%	0.4%	0.33
30-Dec-13	Filing	0	1		In re Vienna-Schwechat Airport Expansion Northwest Environmental Defense Center v. Cascade	Flughafen Wien	0.8%	-0.5%	-0.22
02-Jul-14	Filing	0	0		Cascade	Global Partners	0.9%	-0.1%	-0.02
03-Sep-14	Filing	0	0		United States v. Costco Wholesale Corp. No. 3:14-	Costco Wholesale Corp	3.4%	3.4%	2.30
25-Mar-15	Filing	0	0		Nucor Steel-Arkansas v. Big River Steel, LLC, No.	US Steel	2.7%	6.6%	1.62
09-Jun-15	Filing	1	0		Roe v. Arch Coal, Inc.	Arch Resources	-8.0%	-7.9%	-1.25
11-Jun-15	Filing	1	0		Lynn v. Peabody Energy Corp.	Arch Resources	21.7%	21.8%	-3.47
22-Sep-15	Filing	0	1		In re Greenpeace Southeast Asia et al., 2015-___ (C	APA Corp	-6.1%	-4.2%	-1.66

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22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Anadarko	-3.5%	-1.5%	-0.63
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Anglo America	10.5%	-5.6%	-1.77
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Arch Resources	15.4%	12.8%	-1.81
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	BP	-3.0%	0.1%	0.06
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	CNX Resources	16.2%	14.1%	-4.03
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Chevron	-2.1%	-0.5%	-0.36
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Conocophillips	-1.0%	0.6%	0.35
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Devon Energy Corp	-4.1%	-2.1%	-0.85
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Eni Spa	-1.5%	3.5%	2.12
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	ExxonMobil	-0.5%	0.9%	0.71
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Glencore	13.0%	-8.3%	-2.93
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Heidelberg Cement	-4.3%	0.3%	0.16
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Hess Corp	-4.6%	-2.7%	-1.18
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Husky Energy	-4.8%	-3.5%	-1.38
22-Sep-15	Filing	0	1	In re Greenpeace Southeast Asia et al., 2015- (C	Marathon Oil	-3.4%	-1.1%	-0.48
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Murphy Oil Corp	-7.2%	-5.4%	-2.26
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Occidental	-3.0%	-1.5%	-0.80
22-Sep-15	Filing	0	1	In re Greenpeace Southeast Asia et al., 2015- (C	Ovintiv Inc	-8.6%	-6.6%	-2.03
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Peabody	17.0%	14.1%	-2.62
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	RWE	-8.9%	-4.3%	-1.72
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Repsol SA	-8.3%	-3.4%	-2.07
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Royal Dutch Shell	-3.1%	0.0%	0.01
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Suncor Energy	-1.1%	0.6%	0.25
22-Sep-15	Filing	1	1	In re Greenpeace Southeast Asia et al., 2015- (C	Total Energies SE	-1.3%	3.2%	2.01
23-Nov-15	Filing	1	1	Lliuya v. RWE	RWE	-9.2%	-6.0%	-2.04
07-Dec-15	Filing	0	0	California v. Southern California Gas Co. California ex rel. South Coast Air Quality Managem	Sempra Energy	-3.0%	-3.2%	-2.10
26-Jan-16	Filing	0	0	People v. Southern California Gas Co. Benton v. Global Companies, LLC, No. 1:16- cv-00125	Sempra Energy	-2.4%	-1.6%	-1.07
02-Feb-16	Filing	0	0	People v. Southern California Gas Co. Benton v. Global Companies, LLC, No. 1:16- cv-00125	Global Partners	0.8%	1.6%	0.38
19-Apr-16	Filing	0	1	Shupak v. Reed California v. Southern California Gas Co., No. BC6	Sempra Energy	-2.1%	-3.0%	-1.82
25-Jul-16	Filing	0	0	Conservation Law Foundation v. ExxonMobil Corp.	Sempra Energy	-0.6%	-0.9%	-0.55
29-Sep-16	Filing	1	1	Conservation Law Foundation v. ExxonMobil Corp.	ExxonMobil	4.8%	4.3%	2.77
07-Nov-16	Filing	1	1	Ramirez v. Exxon Mobil Corp.	ExxonMobil	2.9%	0.6%	0.36
23-Nov-16	Filing	1	1	Fentress v. Exxon Mobil Corp.	ExxonMobil	0.7%	0.1%	0.04
08-May-17	Filing	0	1	BankTrack, et al. vs. ING Bank In re Amended and Restated Preliminary Prospectus	ING Group	-0.6%	-1.0%	-0.48
18-May-17	Filing	0	1	BankTrack, et al. vs. ING Bank In re Amended and Restated Preliminary Prospectus	Kinder Morgan Inc	-1.4%	-0.1%	-0.02
17-Jul-17	Filing	0	1	County of San Mateo v. Chevron Corp.	APA Corp	-1.0%	-1.5%	-0.40
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Anadarko	-1.5%	-1.9%	-0.54
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	BP	0.5%	-0.3%	-0.15
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Chevron	-0.4%	-0.8%	-0.43

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17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Conocophillips	-0.4%	-0.8%	-0.27
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Devon Energy Corp	0.5%	0.1%	0.02
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Eni Spa	0.8%	-0.1%	-0.05
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	ExxonMobil	-0.5%	-0.8%	-0.49
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Hess Corp	0.1%	-0.3%	-0.08
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Marathon Petroleum	1.8%	1.1%	0.34
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Occidental	1.2%	0.9%	0.41
17-Jul-17	Filing	0	1	County of San Mateo v. Chevron Corp.	Ovintiv Inc	2.8%	2.4%	0.45
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Repsol SA	0.4%	-0.6%	-0.23
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Royal Dutch Shell	0.6%	-0.1%	-0.07
17-Jul-17	Filing	1	1	County of San Mateo v. Chevron Corp.	Total Energies SE	0.9%	0.0%	0.00
28-Aug-17	Filing	1	1	Conservation Law Foundation, Inc. v. Shell Oil Pro	Royal Dutch Shell	0.6%	0.7%	0.33
19-Sep-17	Filing	1	1	City of Oakland v. BP p.l.c.	BP	1.7%	1.9%	0.81
20-Sep-17	Filing	1	1	City of Oakland v. BP p.l.c.	Chevron	1.1%	1.2%	0.61
21-Sep-17	Filing	1	1	City of Oakland v. BP p.l.c.	ExxonMobil	-0.4%	-0.3%	-0.16
22-Sep-17	Filing	1	1	City of Oakland v. BP p.l.c.	Conocophillips	3.4%	4.2%	1.36
16-Nov-17	Filing	0	0	Harris County v. Arkema, Inc.	Arkema	-0.2%	-0.2%	-0.14
20-Dec-17	Filing	0	1	County of Santa Cruz v. Chevron Corp.	APA Corp	8.3%	8.5%	2.21
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Anadarko	6.9%	7.2%	2.04
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	BP	2.0%	1.6%	0.70
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Chevron	4.2%	4.2%	2.19
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Conocophillips	6.8%	6.9%	2.25
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Devon Energy Corp	7.3%	7.6%	1.83
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Eni Spa	0.5%	0.1%	0.05
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	ExxonMobil	1.1%	1.2%	0.74
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Hess Corp	6.2%	6.5%	1.82
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Occidental	2.3%	2.3%	1.07
20-Dec-17	Filing	0	1	County of Santa Cruz v. Chevron Corp.	Ovintiv Inc	11.6%	11.7%	2.17
20-Dec-17	Filing	0	1	County of Santa Cruz v. Chevron Corp.	Phillips 66	0.1%	0.0%	0.02
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Repsol SA	1.0%	0.6%	0.25
20-Dec-17	Filing	1	1	County of Santa Cruz v. Chevron Corp.	Royal Dutch Shell	1.4%	1.0%	0.48
09-Jan-18	Filing	1	0	City of New York v. BP p.l.c.	BP	-0.3%	0.0%	0.00
09-Jan-18	Filing	1	0	City of New York v. BP p.l.c.	Chevron	0.6%	0.4%	0.23
09-Jan-18	Filing	1	0	City of New York v. BP p.l.c.	Conocophillips	1.4%	1.3%	0.43
09-Jan-18	Filing	1	0	City of New York v. BP p.l.c.	ExxonMobil	-0.8%	-0.8%	-0.53
09-Jan-18	Filing	1	0	City of New York v. BP p.l.c.	Royal Dutch Shell	0.6%	0.9%	0.42
22-Jan-18	Filing	1	0	City of Richmond v Chevron	Hess Corp	-0.4%	-2.5%	-0.70
23-Jan-18	Filing	0	0	City of Richmond v Chevron	APA Corp	4.5%	3.2%	0.85
24-Jan-18	Filing	1	0	City of Richmond v Chevron	BP	1.3%	1.1%	0.52
25-Jan-18	Filing	1	0	City of Richmond v Chevron	Chevron	0.1%	-0.9%	-0.49
26-Jan-18	Filing	1	0	City of Richmond v Chevron	ExxonMobil	-0.6%	-0.9%	-0.55
29-Jan-18	Filing	0	0	City of Richmond v Chevron	Ovintiv Inc	-5.8%	-4.5%	-0.84
30-Jan-18	Filing	1	0	City of Richmond v Chevron	Anadarko	-2.9%	0.3%	0.09
31-Jan-18	Filing	1	0	City of Richmond v Chevron	Royal Dutch Shell	-3.3%	-2.9%	-1.37
01-Feb-18	Filing	1	0	City of Richmond v Chevron	Devon Energy Corp	-3.5%	0.9%	0.21
02-Feb-18	Filing	1	0	City of Richmond v Chevron	Repsol SA	-2.6%	3.1%	1.28
05-Feb-18	Filing	0	0	City of Richmond v Chevron	Phillips 66	-3.9%	1.4%	0.75
06-Feb-18	Filing	1	0	City of Richmond v Chevron	Marathon Petroleum	-3.4%	0.8%	0.27

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17-Apr-18	Filing	1	0	Board of County Commissioners of Boulder County v.	ExxonMobil	1.8%	0.0%	0.02
17-Apr-18	Filing	1	0	Board of County Commissioners of Boulder County v.	Suncor Energy	1.7%	-0.6%	-0.23
09-May-18	Filing	1	0	King County v. BP p.l.c.	BP	2.2%	1.2%	0.58
10-May-18	Filing	1	0	King County v. BP p.l.c.	Chevron	2.6%	0.4%	0.21
11-May-18	Filing	1	0	King County v. BP p.l.c.	ExxonMobil	3.4%	2.4%	1.55
02-Jul-18	Filing	1	0	Rhode Island v. Chevron Corp.	BP	0.7%	-1.0%	-0.48
02-Jul-18	Filing	1	0	Rhode Island v. Chevron Corp.	Chevron	-0.7%	-0.8%	-0.43
02-Jul-18	Filing	1	0	Rhode Island v. Chevron Corp.	Conocophillips	1.7%	1.7%	0.54
02-Jul-18	Filing	1	0	Rhode Island v. Chevron Corp.	ExxonMobil	0.3%	0.3%	0.21
02-Jul-18	Filing	1	0	Rhode Island v. Chevron Corp.	Hess Corp	0.7%	0.7%	0.19
02-Jul-18	Filing	1	0	Rhode Island v. Chevron Corp.	Marathon Petroleum	1.9%	1.7%	0.56
02-Jul-18	Filing	0	0	Rhode Island v. Chevron Corp.	Phillips 66	-1.1%	-1.3%	-0.72
02-Jul-18	Filing	1	0	Rhode Island v. Chevron Corp.	Royal Dutch Shell	-0.5%	-2.2%	-1.07
05-Jul-18	Filing	1	0	Friends of the Earth et al. v. Prefect of of Bouch	Total Energies SE	1.9%	-0.3%	-0.26
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c.	BP	1.1%	1.2%	0.57
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c.	CNX Resources	1.3%	1.9%	0.33
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c.	Chevron	-0.2%	0.2%	0.08
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c.	Conocophillips	-0.1%	0.4%	0.12
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c.	Consol Energy	-1.4%	-2.2%	-0.32
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c.	ExxonMobil	-1.0%	-0.6%	-0.40
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c.	Hess Corp	0.2%	0.8%	0.23
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c.	Marathon Petroleum	0.6%	1.0%	0.34
20-Jul-18	Filing	0	0	Mayor & City Council of Baltimore v. BP p.l.c.	Phillips 66	-0.4%	-0.1%	-0.07
20-Jul-18	Filing	1	0	Mayor & City Council of Baltimore v. BP p.l.c. Development YES – Open-Pit Mines NO v. Group PZU	Royal Dutch Shell Powszechny Zakład Ubezpieczeń	1.4%	1.5%	0.74
06-Aug-18	Filing	0	1		Ubezpieczeń	1.0%	0.1%	0.05
24-Oct-18	Filing	0	1	ClientEarth v Enea	Enea SA	-3.3%	-1.0%	-0.28
24-Oct-18	Filing	1	1	People of the State of New York v. Exxon Mobil Cor	ExxonMobil	-3.5%	-1.7%	-1.05
31-Oct-18	Filing	1	0	Mapuche Confederation of Neuquén v. YPF et al.	ExxonMobil	4.6%	1.2%	0.74
31-Oct-18	Filing	1	0	Mapuche Confederation of Neuquén v. YPF et al.	Total Energies SE	-0.3%	-3.5%	-2.26
14-Nov-18	Filing	0	1	Pacific Coast Federation of Fishermen's Associatio	APA Corp	2.7%	2.3%	0.60
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Anadarko	-1.3%	-1.6%	-0.45
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	BP	-0.8%	-0.9%	-0.42
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Chevron	0.6%	0.3%	0.14
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Conocophillips	0.1%	-0.3%	-0.09
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Devon Energy Corp	-3.0%	-3.3%	-0.78
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Eni Spa	-2.4%	-2.4%	-1.39
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	ExxonMobil	-2.0%	-2.2%	-1.40
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Hess Corp	-0.4%	-0.8%	-0.21
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Occidental	0.6%	0.4%	0.19
14-Nov-18	Filing	0	1	Pacific Coast Federation of Fishermen's Associatio	Ovintiv Inc	-7.8%	-8.3%	-1.61
14-Nov-18	Filing	0	1	Pacific Coast Federation of Fishermen's Associatio	Phillips 66	-1.4%	-1.8%	-0.99
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Repsol SA	0.3%	0.2%	0.07

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14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Royal Dutch Shell	-0.3%	-0.4%	-0.20
14-Nov-18	Filing	1	1	Pacific Coast Federation of Fishermen's Associatio	Total Energies SE	0.8%	0.7%	0.44
16-Nov-18	Filing	0	1	Barnes v. Edison International	Edison International	-0.3%	-0.2%	-0.11
06-Dec-18	Filing	0	1	New York City Employees' Retirement System v. Tr	TransDigm Group	-8.0%	-2.2%	-0.96
10-Dec-18	Filing	0	1	California Fueling, LLC v. Best Energy Solutions &	Innospec	-1.2%	1.3%	0.52
08-Feb-19	Filing	0	1	Von Oeyen v. Southern California Edison Co. City of Torrance v. Southern California Edison Co.	Edison International	5.0%	5.1%	2.19
22-Mar-19	Filing	0	0		Edison International	1.6%	1.9%	0.80
05-Apr-19	Filing	1	1	Milieudedefensie et al. v. Royal Dutch Shell plc. In re Exxon Mobil Corp. Derivative Litigation	Royal Dutch Shell	2.2%	1.9%	1.12
02-May-19	Filing	1	1	Tex	ExxonMobil	-3.5%	-3.5%	-2.44
06-Aug-19	Filing	1	0	Saratoga Advantage Trust Energy & Basic Materials	ExxonMobil	-1.7%	-0.2%	-0.16
29-Aug-19	Filing	0	0	Public Watchdogs v. Southern California Edison Co.	Edison International	-1.4%	-2.3%	-0.92
05-Sep-19	Filing	1	0	Stourbridge Investments v Avery	ExxonMobil	3.4%	1.5%	0.99
09-Oct-19	Filing	0	0	Spoon v. Bayou Bridge Pipeline LLC	Energy Transfers	-2.3%	-2.0%	-0.73
24-Oct-19	Filing	1	1	Commonwealth v. Exxon Mobil Corp.	ExxonMobil	0.2%	-0.4%	-0.31
29-Oct-19	Filing	1	0	Friends of the Earth et al. v. Total	Total Energies SE	0.6%	-0.4%	-0.30
12-Nov-19	Filing	0	1	Specific instance under the OECD Guidelines for Mu	Ascent Resources	-7.6%	-6.5%	-0.77
02-Dec-19	Filing	1	1	In re Exxon Mobil Corp. Derivative Litigation N.J	ExxonMobil	-1.2%	1.0%	1.02
03-Dec-19	Filing	1	0	Complaint against BP in respect of violations of t	BP	-0.3%	0.0%	0.01
20-Dec-19	Filing	1	0	Italian Competition Authority Ruling Eni's Diesel+	Eni Spa	1.2%	0.6%	0.40
28-Jan-20	Filing	1	1	Notre Affaire a Tous and Others v. Total	Total Energies SE	-2.7%	-1.4%	-1.02
09-Mar-20	Filing	1	0	City & County of Honolulu v. Sunoco LP	BP	12.1%	-1.4%	-0.70
09-Mar-20	Filing	1	0	City & County of Honolulu v. Sunoco LP	Chevron	-5.7%	-1.0%	-0.52
09-Mar-20	Filing	1	0	City & County of Honolulu v. Sunoco LP	Conocophillips	11.7%	-6.0%	-2.35
09-Mar-20	Filing	0	0	City & County of Honolulu v. Sunoco LP	Energy Transfers	14.7%	-8.6%	-3.24
09-Mar-20	Filing	1	0	City & County of Honolulu v. Sunoco LP	ExxonMobil	10.3%	-5.5%	-3.49
09-Mar-20	Filing	0	0	City & County of Honolulu v. Sunoco LP	Marathon Oil	-8.4%	0.0%	-0.06
09-Mar-20	Filing	0	0	City & County of Honolulu v. Sunoco LP	Phillips 66	10.8%	-5.6%	-2.85
09-Mar-20	Filing	1	0	City & County of Honolulu v. Sunoco LP	Royal Dutch Shell	12.0%	-1.8%	-1.07
15-May-20	Filing	1	1	Beyond Pesticides v. Exxon Mobil Corp. State of Minnesota v. American Petroleum Institute	ExxonMobil	8.1%	3.9%	2.08
24-Jun-20	Filing	1	1		ExxonMobil	-2.6%	-1.4%	-0.67
25-Jun-20	Filing	1	0	District of Columbia v. Exxon Mobil Corp.	BP	-6.7%	-3.3%	-1.47
25-Jun-20	Filing	1	0	District of Columbia v. Exxon Mobil Corp.	Chevron	-5.4%	-1.6%	-0.74
25-Jun-20	Filing	1	0	District of Columbia v. Exxon Mobil Corp.	ExxonMobil	-6.6%	-2.7%	-1.36
25-Jun-20	Filing	1	0	District of Columbia v. Exxon Mobil Corp.	Royal Dutch Shell	-6.5%	-3.1%	-1.37
18-Aug-20	Filing	1	0	Walkover v Woods	ExxonMobil	-2.9%	-2.9%	-1.36
02-Sep-20	Filing	1	0	City of Hoboken v. Exxon Mobil Corp.	BP	-2.3%	-1.2%	-0.51
02-Sep-20	Filing	1	0	City of Hoboken v. Exxon Mobil Corp.	Chevron	-2.0%	-0.4%	-0.20
02-Sep-20	Filing	1	0	City of Hoboken v. Exxon Mobil Corp.	Conocophillips	-5.1%	-3.5%	-1.13
02-Sep-20	Filing	1	0	City of Hoboken v. Exxon Mobil Corp.	ExxonMobil	-2.1%	-0.4%	-0.19
02-Sep-20	Filing	0	0	City of Hoboken v. Exxon Mobil Corp.	Phillips 66	2.1%	3.8%	1.29
02-Sep-20	Filing	1	0	City of Hoboken v. Exxon Mobil Corp.	Royal Dutch Shell	-3.0%	-1.8%	-0.76
09-Sep-20	Filing	1	0	City of Charleston v. Brabham Oil Co.	BP	-4.3%	-4.1%	-1.69
09-Sep-20	Filing	1	0	City of Charleston v. Brabham Oil Co.	Chevron	-4.6%	-2.1%	-0.94

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09-Sep-20	Filing	1	0	City of Charleston v. Brabham Oil Co.	Conocophillips	-8.3%	-5.7%	-1.84
09-Sep-20	Filing	1	0	City of Charleston v. Brabham Oil Co.	ExxonMobil	-5.4%	-2.8%	-1.28
09-Sep-20	Filing	1	0	City of Charleston v. Brabham Oil Co.	Hess Corp	-7.6%	-4.9%	-1.25
09-Sep-20	Filing	0	0	City of Charleston v. Brabham Oil Co.	Marathon Oil	11.8%	-8.9%	-1.94
09-Sep-20	Filing	1	0	City of Charleston v. Brabham Oil Co.	Murphy Oil Corp	17.3%	14.6%	-3.11
09-Sep-20	Filing	0	0	City of Charleston v. Brabham Oil Co.	Phillips 66	-6.2%	-3.5%	-1.21
09-Sep-20	Filing	1	0	City of Charleston v. Brabham Oil Co.	Royal Dutch Shell	-3.6%	-3.3%	-1.37
14-Sep-20	Filing	1	0	Connecticut v. Exxon Mobil Corp.	ExxonMobil	-2.0%	-3.8%	-1.71
09-Oct-20	Filing	0	0	Delaware v. BP America Inc.	APA Corp	-2.4%	-5.7%	-1.13
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	CNX Resources	4.9%	2.8%	0.51
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Chevron	1.0%	-2.1%	-0.93
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Conocophillips	3.7%	0.4%	0.12
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Consol Energy	5.8%	3.5%	0.57
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Devon Energy Corp	0.1%	-3.6%	-0.79
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	ExxonMobil	3.5%	0.7%	0.29
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Hess Corp	2.6%	-1.4%	-0.34
09-Oct-20	Filing	0	0	Delaware v. BP America Inc.	Marathon Oil	4.0%	0.6%	0.13
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Marathon Petroleum	4.6%	0.8%	0.22
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Murphy Oil Corp	1.0%	-2.6%	-0.54
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Occidental	5.4%	2.5%	0.62
09-Oct-20	Filing	0	0	Delaware v. BP America Inc.	Ovintiv Inc	6.1%	2.7%	0.47
09-Oct-20	Filing	0	0	Delaware v. BP America Inc.	Phillips 66	3.0%	-0.3%	-0.11
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Royal Dutch Shell	3.4%	0.8%	0.34
09-Oct-20	Filing	1	0	Delaware v. BP America Inc.	Total Energies SE	2.2%	-0.4%	-0.20
12-Oct-20	Filing	1	0	County of Maui v. Sunoco LP	BP	-3.5%	-3.9%	-1.58
12-Oct-20	Filing	1	0	County of Maui v. Sunoco LP	Chevron	-2.4%	-4.2%	-1.84
12-Oct-20	Filing	1	0	County of Maui v. Sunoco LP	Conocophillips	-1.8%	-3.7%	-1.17
12-Oct-20	Filing	1	0	County of Maui v. Sunoco LP	ExxonMobil	-3.0%	-4.5%	-1.99
12-Oct-20	Filing	1	0	County of Maui v. Sunoco LP	Marathon Petroleum	-5.6%	-7.8%	-2.15
12-Oct-20	Filing	0	0	County of Maui v. Sunoco LP	Phillips 66	-4.4%	-6.3%	-2.11
12-Oct-20	Filing	1	0	County of Maui v. Sunoco LP	Royal Dutch Shell	-1.2%	-1.6%	-0.65
11-Nov-20	Filing	0	1	Adorers of the Blood of Christ v. Transcontinental	Williams Companies	0.1%	0.4%	0.14
16-Dec-20	Filing	0	1	Greenpeace, Inc. v. Walmart Inc.	Walmart Inc	0.3%	-1.0%	-0.42
22-Feb-21	Filing	1	0	Annapolis v API	BP	6.2%	6.2%	2.22
22-Feb-21	Filing	1	0	Annapolis v API	CNX Resources	-6.1%	-5.5%	-0.95
22-Feb-21	Filing	1	0	Annapolis v API	Chevron	4.8%	5.7%	2.22
22-Feb-21	Filing	1	0	Annapolis v API	Conocophillips	9.0%	10.0%	2.81
22-Feb-21	Filing	1	0	Annapolis v API	Consol Energy	5.3%	6.7%	1.06
22-Feb-21	Filing	1	0	Annapolis v API	ExxonMobil	5.7%	6.8%	2.52
22-Feb-21	Filing	1	0	Annapolis v API	Hess Corp	11.9%	12.9%	3.05
22-Feb-21	Filing	0	0	Annapolis v API	Marathon Oil	21.0%	22.2%	4.42
22-Feb-21	Filing	0	0	Annapolis v API	Phillips 66	7.8%	8.9%	2.61
22-Feb-21	Filing	1	0	Annapolis v API	Royal Dutch Shell	4.1%	4.1%	1.50
02-Mar-21	Filing	0	1	Envol Vert et al. v. Casino	Groupe Casino	-2.6%	-3.8%	-1.00
04-Mar-21	Filing	0	0	Last Beach Cleanup v. TerraCycle, Inc.	Campbell Soup Company	2.1%	2.4%	0.78
04-Mar-21	Filing	0	0	Last Beach Cleanup v. TerraCycle, Inc.	Colgate-Palmolive Co	0.9%	1.6%	0.78
04-Mar-21	Filing	0	0	Last Beach Cleanup v. TerraCycle, Inc.	Nestle	-0.9%	0.0%	-0.03

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04-Mar-21	Filing	0	0	Last Beach Cleanup v. TerraCycle, Inc.	Proctor & Gamble	1.7%	2.3%	1.12
04-Mar-21	Filing	0	0	Last Beach Cleanup v. TerraCycle, Inc.	The Clorox Co	3.0%	3.1%	1.17
04-Mar-21	Filing	0	0	Last Beach Cleanup v. TerraCycle, Inc.	The Coca-Cola Company	1.4%	2.2%	1.12
22-Apr-21	Filing	1	0	City of New York v. American Petroleum Institute,	BP	-0.3%	-2.4%	-0.84
22-Apr-21	Filing	1	0	City of New York v. American Petroleum Institute,	ExxonMobil	0.5%	-0.8%	-0.30
22-Apr-21	Filing	1	1	Patrick Pouyanné (CEO of TotalEnergies) v. Greenp	Marathon Petroleum	1.9%	0.1%	0.02
22-Apr-21	Filing	1	0	City of New York v. American Petroleum Institute,	Royal Dutch Shell	0.0%	-2.1%	-0.74
26-Apr-21	Filing	1	0	Anne Arundel v BP	BP	0.7%	-0.2%	-0.07
26-Apr-21	Filing	1	0	Anne Arundel v BP	CNX Resources	4.6%	3.5%	0.60
26-Apr-21	Filing	1	0	Anne Arundel v BP	Chevron	1.7%	0.2%	0.07
26-Apr-21	Filing	1	0	Anne Arundel v BP	Conocophillips	3.7%	2.0%	0.56
26-Apr-21	Filing	1	0	Anne Arundel v BP	Consol Energy	7.2%	6.2%	0.96
26-Apr-21	Filing	1	0	Anne Arundel v BP	ExxonMobil	2.1%	0.7%	0.24
26-Apr-21	Filing	1	0	Anne Arundel v BP	Hess Corp	5.1%	3.1%	0.71
26-Apr-21	Filing	0	0	Anne Arundel v BP	Marathon Oil	6.7%	5.0%	0.96
26-Apr-21	Filing	0	0	Anne Arundel v BP	Phillips 66	4.2%	2.5%	0.72
26-Apr-21	Filing	1	0	Anne Arundel v BP	Royal Dutch Shell	0.0%	-0.9%	-0.32
08-Jun-21	Filing	0	0	Earth Island Institute v. Coca-Cola Co.	The Coca-Cola Company	-1.4%	-1.3%	-0.68
16-Jun-21	Filing	0	0	Swartz and Muto v. Coca-Cola Co.	The Coca-Cola Company	-1.1%	-0.5%	-0.26
07-Jul-21	Filing	1	0	Conservation Law Foundation v. Shell Oil Co.	Royal Dutch Shell	-2.4%	-0.3%	-0.11
14-Sep-21	Filing	1	0	State of Vermont v Exxon	ExxonMobil	4.5%	4.3%	1.49
14-Sep-21	Filing	1	0	State of Vermont v Exxon	Royal Dutch Shell	4.0%	4.9%	1.70
14-Sep-21	Filing	0	0	State of Vermont v Exxon	Sunoco LP	0.7%	0.1%	0.02
16-Sep-21	Filing	0	0	Complaint to Ad Standards on HSBC's Great Barrie	HSBC	0.4%	2.3%	0.92
20-Sep-21	Filing	0	1	Deutsche Umwelthilfe (DUH) v. BMW	BMW	-4.2%	-1.9%	-0.81
20-Sep-21	Filing	0	1	Deutsche Umwelthilfe (DUH) v. Mercedes-Benz AG	Mercedes-Benz AG	-4.3%	-1.7%	-0.65
09-Nov-21	Filing	0	1	Kaiser et al v. Volkswagen AG	Volkswagen	-5.9%	-5.1%	-1.72
17-Sep-07	Decision	0	0	1 California v. GM Corp.	General Motors Co	7.3%	4.6%	1.14
20-Nov-07	Decision	0	0	1 Germanwatch vs. Volkswagen	Volkswagen	-3.6%	-2.1%	-0.79
29-Apr-08	Decision	0	0	-1 Australian Competition & Consumer Commission v. De	De Longhi Spa	2.3%	2.0%	0.61
25-Jun-08	Decision	0	0	-1 Australian Competition & Consumer Commission v. Go	Goodyear Tire & Rubber Co	-6.7%	-3.1%	-0.86
18-Sep-08	Decision	0	0	-1 Australian Competition & Consumer Commission v. GM	General Motors Co	11.3%	5.0%	1.08
02-Dec-08	Decision	0	0	-1 Southern Alliance for Clean Energy v. Duke Energy	Duke Energy	-5.1%	-3.1%	-1.50
24-Jun-09	Decision	0	0	1 California v. GM Corp.	General Motors Co	-3.1%	-6.3%	-1.02
13-May-10	Decision	0	0	1 Connecticut v. Am. Elec. Power	American Electric Power	-0.4%	0.6%	0.23
28-May-10	Decision	1	0	1 Comer v. Murphy Oil USA, Inc.	Chevron	1.1%	0.7%	0.35
28-May-10	Decision	1	0	1 Comer v. Murphy Oil USA, Inc.	ExxonMobil	0.0%	-0.3%	-0.12
28-May-10	Decision	0	0	1 Comer v. Murphy Oil USA, Inc.	Honeywell International	-0.4%	-0.8%	-0.32
28-May-10	Decision	1	0	1 Comer v. Murphy Oil USA, Inc.	Murphy Oil Corp	0.3%	-0.3%	-0.08
28-May-10	Decision	1	0	1 Comer v. Murphy Oil USA, Inc.	Royal Dutch Shell	4.0%	-0.3%	-0.15
24-Nov-10	Decision	0	0	1 Sierra Club v. Duke Energy Indiana	Duke Energy	-0.6%	-0.4%	-0.16
19-Apr-11	Decision	0	0	1 Burton v. Dominion Nuclear Connecticut, Inc.	Dominion Energy	0.0%	-0.6%	-0.30
20-Jun-11	Decision	0	0	1 Connecticut v. Am. Elec. Power	American Electric Power	1.4%	-0.1%	-0.06
13-Mar-12	Decision	1	0	1 Norwegian Climate Network et al vs Statoil	Equinor	-1.0%	-2.2%	-0.92

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21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	BP	-0.2%	0.6%	0.23
21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Chevron	1.0%	1.4%	1.05
21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	ExxonMobil	1.4%	1.8%	1.45
21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Peabody	-7.7%	-6.5%	-1.96
21-Sep-12	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Royal Dutch Shell	-1.9%	-1.3%	-0.82
18-Mar-13	Decision	0	0	1	Sao Paulo Public Prosecutor's Office v. United Air	Delta Air Lines	1.6%	2.7%	0.66
18-Mar-13	Decision	0	0	1	Sao Paulo Public Prosecutor's Office v. United Air	United Airlines Holdings Inc	2.0%	3.0%	0.67
14-May-13	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Chevron	0.6%	-0.7%	-0.55
14-May-13	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	ExxonMobil Honeywell	1.2%	0.1%	0.05
14-May-13	Decision	0	0	1	Comer v. Murphy Oil USA, Inc.	International	2.7%	1.1%	0.77
14-May-13	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Murphy Oil Corp	2.9%	1.2%	0.57
14-May-13	Decision	1	0	1	Comer v. Murphy Oil USA, Inc.	Royal Dutch Shell	-0.3%	-0.5%	-0.38
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	BP	1.8%	1.0%	0.41
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Chevron	2.6%	1.4%	1.05
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	ExxonMobil	2.3%	1.3%	1.07
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Peabody	5.1%	3.6%	0.99
20-May-13	Decision	1	0	1	Native Village of Kivalina v. ExxonMobil Corp.	Royal Dutch Shell	1.6%	0.7%	0.53
03-Sep-14	Decision	0	0	-1	California Health Communities Network v. City of P	Walmart Inc	1.4%	1.4%	1.01
08-Jun-16	Decision	0	0	1	Nucor Steel-Arkansas v. Big River Steel, LLC, No.	US Steel	7.9%	7.6%	1.45
13-Sep-16	Decision	0	0	-1	People v. Southern California Gas Co.	Sempra Energy	1.2%	1.3%	0.79
18-Oct-16	Decision	0	0	1	Sao Paulo Public Prosecutor's Office v. United Air	Delta Air Lines	2.2%	1.2%	0.41
18-Oct-16	Decision	0	0	1	Sao Paulo Public Prosecutor's Office v. United Air	United Airlines Holdings Inc	4.2%	3.2%	0.82
07-Feb-17	Decision	0	0	-1	California ex rel. South Coast Air Quality Managem	Sempra Energy	1.4%	1.5%	0.84
30-Mar-17	Decision	1	0	1	Lynn v. Peabody Energy Corp	Peabody	-8.4%	-7.7%	-0.89
01-Jun-17	Decision	0	0	1	In re Vienna-Schwechat Airport Expansion	Flughafen Wien	3.8%	3.2%	1.44
30-Nov-17	Decision	1	0	-1	Lliuya v. RWE	RWE	-2.1%	-1.3%	-0.36
28-Mar-18	Decision	0	0	1	In re Vienna-Schwechat Airport Expansion	Flughafen Wien	-1.9%	-2.3%	-1.04
08-Aug-18	Decision	0	0	-1	California v. Southern California Gas Co.	Sempra Energy	-0.5%	-0.7%	-0.34
14-Aug-18	Decision	1	0	-1	Ramirez v. Exxon Mobil Corp.	ExxonMobil	-3.2%	-2.4%	-1.49
18-Jan-19	Decision	0	0	-1	New York City Employees' Retirement System v. Tr	TransDigm Group	-1.4%	-2.2%	-0.95
04-Feb-19	Decision	1	0	1	Fentress v. Exxon Mobil Corp.	ExxonMobil	3.2%	2.2%	1.39
25-Feb-19	Decision	0	0	1	California v. Southern California Gas Co.	Sempra Energy	1.1%	0.8%	0.42
14-Mar-19	Decision	1	0	-1	Conservation Law Foundation v. ExxonMobil Corp.	ExxonMobil	0.2%	-0.5%	-0.36
19-Apr-19	Decision	0	0	-1	BankTrack, et al. vs. ING Bank	ING Group	0.0%	0.3%	0.25
06-May-19	Decision	1	0	-1	City of Birmingham Relief & Retirement System v. E	ExxonMobil	-0.7%	0.1%	0.05
26-Jul-19	Decision	0	0	-1	Development YES – Open-Pit Mines NO v. Group PZU	Powszechny Zakład Ubezpieczeń	-3.6%	-3.5%	-1.36
31-Jul-19	Decision	0	0	-1	ClientEarth v Enea	Enea SA	-2.7%	-1.1%	-0.32
10-Dec-19	Decision	1	0	1	People of the State of New York v. Exxon Mobil Cor	ExxonMobil	-0.8%	-0.6%	-0.40
05-Feb-20	Decision	0	0	-1	ASA Ruling on Ryanair Ltd t/a Ryanair Ltd	Ryanair	0.6%	-2.1%	-0.67
08-Jun-20	Decision	1	0	-1	Advertising Standards Authority's Ruling on Shell	Royal Dutch Shell	4.9%	4.0%	1.74
16-Jun-20	Decision	1	0	-1	Complaint against BP in respect of violations of t	BP	-1.8%	-5.4%	-2.41

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22-Sep-20	Decision	0	0	-1	ClientEarth v. Polska Grupa Energetyczna Conservation Law Foundation, Inc. v. Shell Oil	PGE SA	-8.6%	-4.7%	-1.05
28-Sep-20	Decision	1	0	-1	Pro City of Torrance v. Southern California Edison Co.	Royal Dutch Shell	-2.1%	-4.6%	-1.87
17-Mar-21	Decision	0	0	-1	Co.	Edison International	-1.7%	-0.4%	-0.12
01-Apr-21	Decision	1	0	1	City of New York v. BP p.l.c.	BP	-3.3%	-4.4%	-2.27
01-Apr-21	Decision	1	0	-1	Friends of the Earth et al. v. Prefect of of Bouch	Total Energies SE	-2.5%	-3.5%	-2.27
27-Apr-21	Decision	0	0	1	Barnes v. Edison International	Edison International	-1.3%	-1.6%	-0.52
26-May-21	Decision	1	0	-1	Milieudefensie et al. v. Royal Dutch Shell plc.	Royal Dutch Shell	-3.7%	-3.8%	-1.35
22-Jun-21	Decision	1	0	-1	Commonwealth v. Exxon Mobil Corp.	ExxonMobil	6.3%	4.5%	1.60
20-Sep-21	Decision	0	0	1	Greenpeace, Inc. v. Walmart Inc.	Walmart Inc	-1.4%	-0.2%	-0.10
28-Sep-21	Decision	1	0	1	King County v. BP p.l.c. Adorers of the Blood of Christ v. Transcontinental	BP	3.6%	7.5%	2.48
30-Sep-21	Decision	0	0	1	Williams Companies Campbell Soup Company	Williams Companies Campbell Soup Company	1.2%	1.2%	0.38
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	Colgate-Palmolive Co	1.1%	0.7%	0.26
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	Nestle	-0.1%	-0.7%	-0.36
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	Proctor & Gamble	-0.8%	-0.8%	-0.50
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	The Clorox Co	0.5%	-0.2%	-0.09
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	The Coca-Cola Company	2.4%	2.1%	0.79
15-Nov-21	Decision	0	0	1	Last Beach Cleanup v. TerraCycle, Inc.	Company	-0.9%	-1.6%	-0.81
18-Nov-21	Decision	1	0	-1	Notre Affaire a Tous and Others v. Total Public Watchdogs v. Southern California Edison Co.	Total Energies SE	-4.8%	-3.6%	-1.49
06-Dec-21	Decision	0	0	1	Edison Co.	Edison International	2.7%	1.0%	0.32
16-Dec-21	Decision	1	0	-1	Friends of the Earth et al. v. Total	Total Energies SE	-0.2%	-0.7%	-0.31