

# A SPREADING ATTITUDE ON THE ENVIRONMENT AND A MOVEMENT TOWARD A NEW GRAND NARRATIVE: INDIVIDUALS, CORPORATIONS AND GOVERNMENTS TURN THEIR ATTENTION TO ECOLOGICAL ACTION



## CONTEXT & DYNAMICS

**Extreme weather** has been triggering extreme reactions, as more and more individuals realize that climate change is real and that humans have a need and a responsibility to take action. Schoolchildren walked out of classes twice this past spring to protest the lack of action by adults to preserve their future on Earth. Other groups have started to take action as well. The result is that at the individual, corporate and governmental levels, doing something to address climate change has moved to the front burner. What is intriguing about this spreading attitude among such a large swath of society is that it could represent another step toward a new grand narrative, a context of unified purpose that over the decades can guide society forward. For the moment, both public and private institutions are feeling the pressure from individuals (as customers, as employees and as citizens) to take action.

## IMPLICATIONS

- Companies making and marketing products and services that address the causes of climate change will find a ready market.
- Businesses that advance their environmental image through positive actions will retain customer and employee loyalty – those who fail to do so will face defections.
- Governments that take actions to remediate constituents' concerns about the environment will attract voters.
- Environmental, social and governance (ESG) investing will attract more assets.
- Desperation is leading some to try large geo-engineering projects, which could become more popular if public action does not increase.
- Climate-change-related legislation will follow, especially at the state level.
- Companies with transparent and effective environmental policies will be more attractive to investors.





## The Environment Speaks Louder and Louder

The Gaia hypothesis claims that the Earth is a living thing, a self-regulating organism, which, because of humans bending the planet to their desires, has made the Earth seem more and more like an organism...under human direction. Humans, by making the planet conform to their needs, have, as a June study discovered, pushed atmospheric carbon dioxide to the highest level since the beginning of the industrial revolution. Evidently, Gaia is growing “angry.”

◆ One million of the planet’s eight million plants and animals are approaching extinction thanks to human activity.

◆ Wildfires raged across California last year, destroying landscapes and houses, triggering a whole new wave of homeless citizens and bankrupting Pacific Gas & Electric.

◆ Europe is experiencing record-setting heat, with temperatures well above 100 degrees Fahrenheit, and such July heat followed that of the prior month, which worldwide was the hottest June on record.

◆ Last year, extreme heat triggered more air-cooling systems to work longer, and that sent the growth in energy demand to the highest level since 2010. In turn, the cycle of heat-and-cool furthered the extremes in temperature this year, and, according to recent studies, is a cause behind decreased productivity, sleep deprivation and even increased suicidality.



*“That can’t be good.”*

◆ Floods, storms and droughts continue to ravage landscapes across Europe, the U.S. and Asia.

◆ The International Energy Agency reported that only seven of the original 45 energy technologies and sectors in the world are on track to reach the goals set by the Paris Agreement.

◆ Between 1978 and 2018, the U.S. Department of Energy spent a total of \$27.65 billion using constant 2016 dollars on research for renewable energy, which amounts to roughly half of what Americans spent on pets last year alone.

◆ India’s gross domestic product has decreased, according to a recent Stanford University study, by 31 percent in the past five decades because of climate change.

◆ A Lloyd’s of London study revealed that the rise in water levels around Manhattan (up 20 centimeters) resulted

in an increase in damage from Hurricane Sandy by 30 percent.

(*MIT Technology Review*, 5/31/19; *Sky & Telescope*, 7/19; *World Economic Forum*, 7/18/19; *The Week*, 5/24/19; *Financial Times*, 6/11/19; *Foreign Policy*, Summer/19; *Financial Times*, 6/18/19)

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capacity of coal.

Pretty bleak stuff for Gaia, but that bleakness has started to catch people’s attention. The United Nations said that it had heard from roughly 80 countries that would like to up their goals from those set in the Paris Agreement. Also, more than 7,000 companies have submitted reports on the risks and opportunities they face from carbon emissions to the Carbon Disclosure Project, a nonprofit that helps companies

worldwide make such assessments. And already in the U.S., installed renewable energy capabilities exceed the installed capacity of coal. (*New York Times*, 5/29/19 and 6/5/19; *CNN*, 6/12/19)

Such good news might seem insignificant in the face of trying to reverse degradation of the Earth's environment...Gaia's bleakness. Still, when we look across a wide span of responses to the damages being wreaked by Nature under extreme conditions, the situation is looking less than bleak, as citizens, corporations and governments have started to take significant actions to halt the damage. Deniers of human-caused climate change might receive lots of attention, but activists, businesses, governments and scientists have decided that they need to take action, and in doing so, they not only address the world's critical problem, but they are also starting to build on a segment of a new grand narrative, one we have called Repair and Enhance (see [inThought](#), 3/10/16).

## Citizens Take Action

The emerging citizen attitude surfaced in the recent European Union elections, where the two major party alliances – the center right and the center left – lost seats in the parliament, while one of the biggest winners was the Green Party, which vaulted into second place in Germany and third place in other countries. The leader of the extreme right-wing Alternative for Germany, which denies climate change and which failed to attract the votes it did in the 2017 federal elections, said that the Greens are now “our main enemy.” Meanwhile, the two main political-party alliances got defensive as well, with a senior Dutch politician from the center-left alliance claiming, “Green is not the sole property of the Green Party.” The losing parties apologized to the public for not seeing the importance to voters of the environment. (*Washington Post*, 5/27/19)

Perhaps those leaders did not notice the shift to concern about the environment because the loudest voices calling for action to halt climate damage belonged to citizens not old enough to vote. In the days before the EU elections, students at 2,300 schools across 130 countries in the world walked out of classes to

protest the inaction of adults on environmental issues. “System change, not climate change” read one sign carried by students in London. This was the second such strike, with the first taking place in March and involving tens of thousands of students in 112 countries. In the U.S., students have filed the “climate lawsuit” against the federal government for profiting from fossil fuels that are causing temperatures to rise.

“Politicians have known about climate change for decades,” explains the 16-year-old who started these protests, Greta Thunberg of Sweden. “They have willingly handed over their responsibility for our future to profiteers whose search for quick cash threatens our very existence.” Seeing the protests, Germany's Angela Merkel said the EU should pass legislation to make mandatory net-zero greenhouse gas emissions across the Continent by 2050, a target that the British government echoed. (*Vox*, 5/24/19)

Citizens are becoming more assertive, with the rise of an action-oriented group, Extinction Rebellion, whose website says, “The government has failed to protect us. To survive, it's going to take everything we've got.” The group's pressure inspired the founding in 2017 of the Climate Action 100+, which is focused on getting institutional investors to take into consideration the risks of climate change on corporate returns. The group favors the 2050 deadline to reach net-zero emissions as claimed by a UN study and echoed by Angela Merkel and the British government. (*Financial Times*, 7/28/19).

At a personal level, some young people are on what they call a BirthStrike, saying they are not going to become parents because they do not want to bring a child into a world facing the disasters that will result from unmitigated climate change.

Also, a group called Conceivable Future is an assembly of women formed in 2015 with the purpose of spreading awareness to “the threat climate change poses to reproductive justice.” The relation between giving birth and the environment received an international boost when the Duchess of Sussex and Prince Harry said they would have only two children because of the stress humans put on the planet. “We

are the one species on this planet,” Harry told famed primatologist Jane Goodall during an interview for *British Vogue*, “that seems to think that this place belongs to us, and only us.” (*New York Times*, 8/1/19)

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"You wouldn't believe how far I had to go to find ice."

## Corporations Start Paying Attention

At annual meetings of corporations this year, companies are expected to vote on 75 or more climate-related shareholder proposals, up from 17 in 2013. In May, 99 percent of BP's shareholders voted in favor of the company reporting in detail how its investments align with the Paris Climate Agreement, which caught our attention for two reasons: First, 99 percent on any vote is a very high level of consensus. Second, it came from a fund whose money was accrued mostly from oil and gas.

Meanwhile, companies from a broad range of industries, from oil and gas to food production and from consumer goods to electric power, have joined the CEO Climate Dialogue and are focused on getting the government to enact legislation to put a price on carbon. (*Green Business*, 5/28/19)

BlackRock, the world's largest asset manager, announced plans to pay \$50 billion for an 80 percent stake in General Electric's solar business, and Florida-based electricity supplier NextEra said it would halt construction of all gas-fired facilities in 2020 and turn

Patagonia, the outdoor sportswear company, said it would use all the money it saved from the recent federal tax cut (roughly \$10 million) to fight global warming.

entirely to constructing facilities for renewable energy. Meanwhile, Apple has become the largest corporate adopter of solar power, with nearly 400 megawatts of installed capacity. Another large company, Walmart, has set a goal of having 50 percent of its operations powered by renewable energy by 2025. At present, the company relies on such sources for 28 percent of its overall operations. In pursuit of its goal to cut carbon-based energy use by half, the retailer recently signed a deal with C2 Energy Capital to supply solar power at stores located in five states. (*Investor's Business Daily*, 7/29/19; *Chain Store Age*, 5/9/19)

HSBC joined with Walmart to launch a Sustainability Index Program, which will judge all vendors' movement toward sustainable processes, offering better financing and more rewards for companies moving away from carbon emissions, plastic packaging and other practices with negative effects on the environment. Patagonia, the outdoor sportswear company, said it would use all the money it saved from the recent federal tax cut (roughly \$10 million) to fight global warming.

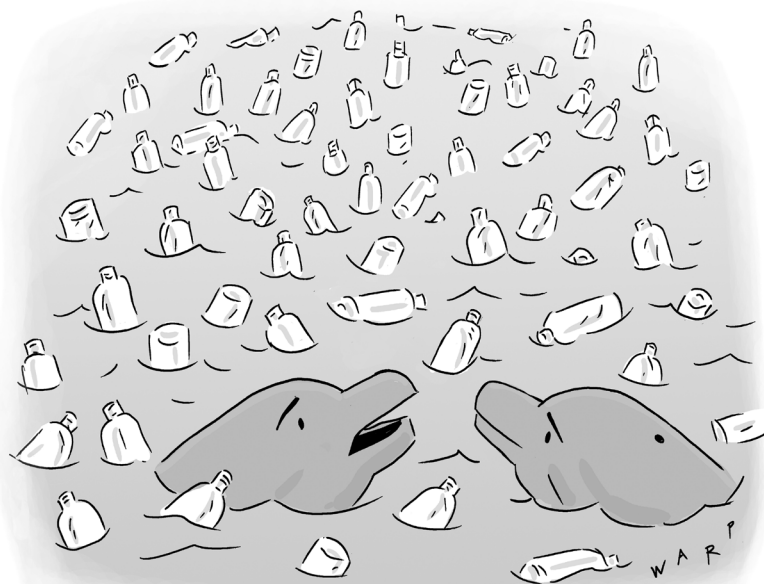
Carbon capture is being applied to the well-drilling industry, and machinery is being developed by three companies – Carbon Engineering, Climeworks and Global Thermostat. Each year, human activity produces 37.1 gigatons of carbon dioxide. By one measure, it would take nine million of Global Thermostat's carbon-capture units to eat that much CO<sub>2</sub>. Climeworks can manufacture 100 to 150 of its carbon-reduction units each year. Carbon Engineering says it would take roughly 5,000 of its units to offset the U.S. contribution of CO<sub>2</sub> (5.3 gigatons), at a cost of \$3 trillion. (*Washington Post*, 4/19/19)

Even though carbon capture has impacted the mindsets of Wall Street and other businesses, industries continue to tackle the larger issue of cutting back on emissions. For instance, the automobile industry is pushing hard toward supplying markets with electric vehicles, thereby eliminating CO<sub>2</sub> emissions from internal combustion engines. Volvo recently signed a long-term deal with Asian companies CATL and LG Chem to supply lithium ion batteries, all part of the company's plans to have half of its entire production be all-electric vehicles by 2025. Volkswagen plans to deliver its first EV by 2020. On another

front in the auto business, Toyota continues to work on a car powered by hydrogen fuel cells, with its Mirai sedan entering the market in Europe. (*Automotive News*, 5/20/19 and 5/27/19)

In the restaurant arena, environmental issues revolve around whether or not the establishment is operated sustainably. For instance, Chipotle announced plans to launch a pilot program to recycle the rubber gloves used in its restaurants and convert them to trash bags. Nationally, roughly 200 million pairs of rubber gloves are discarded by the restaurant industry **every day**. In 2016, Chipotle set a goal of diverting 50 percent of its waste from landfills by 2020, and officials at the chain say it has already reached 42 percent. At the same time, Yelp, the online rating site, started its Green Practices Initiative, which will enable customers to rate a restaurant based on its sustainability practices, including items such as plastic bags and straws and compostable take-out containers. (*Nation's Restaurant News*, 5/20/19)

Twelve states have passed legislation in the past year or so to strengthen environmental laws.



*"Uh, back to Sea World?"*

## Governments Get the Message

California continues to lead state governments in its efforts to pursue the goals set in the Paris Agreement. Its stringent policies concerning efficiency standards for appliances as well as businesses and vehicles in general resulted in lowering emissions by nine percent between

2000 and 2016, even as the population and the economy expanded. The state recently signed a deal with four major automobile manufacturers – Ford, BMW, Volkswagen and Honda – to compromise its strict standards with the car

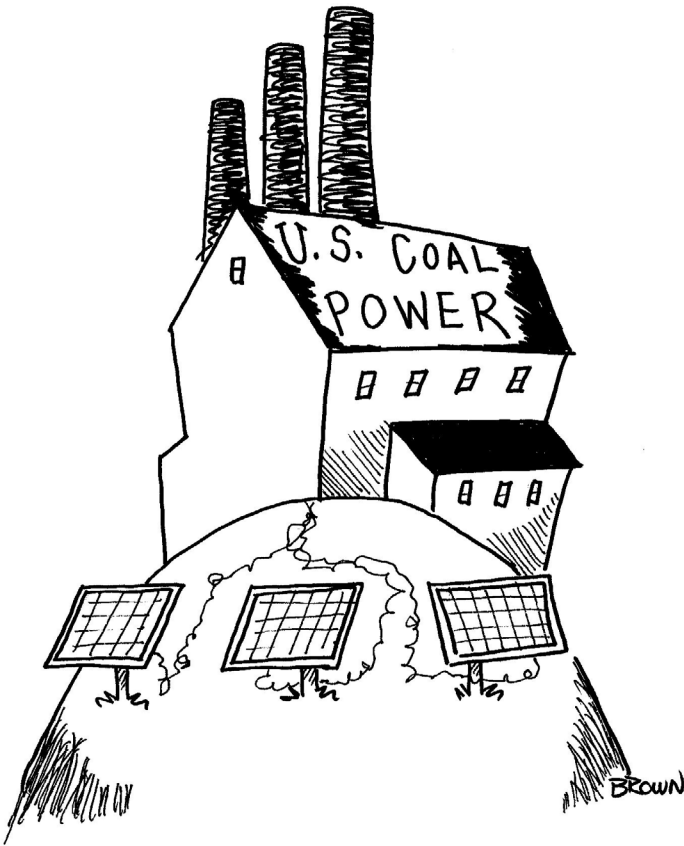
makers who agree to up their mileage standards closer to California's original goals. The agreed upon standards are much tougher than the modified ones set by the federal government. Industry observers expect more car makers to sign similar deals with California. (*New York Times*, 7/26/19; *Economist*, 6/29/19)

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Hawaii, New York and California banned an agricultural pesticide, chlorpyrifos, which research has shown causes neurological problems in children, thereby moving past the federal government, which has not banned the substance. Michigan, New Jersey and others have voted to restrict a wide class of chemical compounds, called polyfluoroalkyl and perfluoroalkyl (PEAS), which have surfaced in their water supply, with legislators saying they could no longer wait for the federal government to take action. Colorado and New Mexico adopted policies to restrict production of greenhouse gas emissions from fossil-fuel drilling, as did the state of Washington, which calls on the state to be coal-free by 2025, and as did New York, which has a legally bound goal of supplying 70 percent of electricity from renewable sources by 2030. And more than 14 states have followed California's example and upped their fuel-efficiency measures beyond the federally set standards. They will likely adjust those standards to fit with the deal California signed with the four large automakers. (*Washington Post*, 5/19/19; *Economist*, 6/29/19; *Vox*, 7/22/19)

In a large study of countries around the world and their respective declines in carbon emissions, those countries that saw declines in greenhouse-gas emissions had an average of 35 governmental policies to promote renewable energy sources and 23 policies to promote energy-use efficiency. France, to take just one government's recent actions, is levying an environmental tax on all flights out of the country, charging ticket buyers anywhere from 1.5 to 18 euros, depending on the class of service booked. In a recent example in the U.S., Oregon joined many cities and states mandating reductions in greenhouse-gas emissions in electricity generation statewide, but it went further, becoming the first state to mandate such reductions across every sector, including

transportation and industry, and setting an emissions cap for each sector. Meanwhile, in New Jersey, that state's last coal-burning electric plant is shutting down, and the Board of Public Utilities approved the nation's largest offshore wind farm, to be built 15 miles off the Atlantic City shoreline. (*Ars Technica*, 2/26/19; *Vox*, 6/5/19)



## Scientists Get Involved

A recent study of scientists who specialize in fields linked to climate change revealed that they had an elevated rate of depression because they see the “catastrophe ahead” and have seen only indifference from the public. “There’s deep grief and anxiety for what’s being lost,” explained the filmmaker whose *Let Science Speak* looks at the elevated rate of depression among scientists who study the issue. “They know the deep truth.” (*Mother Jones*, 7/19)

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As a result of their awareness of the problem, matched with so little public action in the past, scientists have been researching for more immediate fixes.

◆ Joanne Chory, a botanist at the Salk Institute, is working on the Ideal Plant project and is adjusting the genetic make-up of specific plants to enable them to absorb more carbon – that is, enhancing the plant’s participation in a natural process of absorbing carbon by increasing a compound called suberin. The plant then pushes the carbon into the soil, which, because of expansive industrial farming, is growing weak in carbon. Chory’s conclusions are that by adjusting plants’ suberin to increase carbon absorption by two percent, the carbon not already absorbed in natural processes could be eliminated. (*Foreign Policy*, Summer/19)

◆ Six-year old LanzaTech, a Chicago-area biotech firm, is operating a steel mill outside Beijing that transforms carbon emissions into fuel. The system uses a bioreactor filled with microbes that consume waste gases and produce ethanol. The company is building additional facilities in Belgium, India, South Africa and the U.S. In a project in Japan, LanzaTech is producing ethanol from gasified garbage. The company’s ethanol fuel blend powered a Virgin Atlantic jet as it crossed the Atlantic Ocean. (*Fast Company*, 4/19)

◆ New research, published in the journal *Science*, has concluded that planting trees around the world can all but eliminate excess carbon from the atmosphere. The study revealed that worldwide there are 1.7 billion hectares of treeless land, which, if planted with 1.2 trillion trees, could consume carbon. Estimates of the cost run to \$300 billion, by far the least expensive solution offered to solve climate change problems. (*Guardian Weekly*, 7/12/19)

◆ Scientists estimate that between a quarter and a third of rising temperatures are the result of melting sea ice. “Bright reflective ice in the Arctic,” explains Leslie Field, an engineer, “has been like having that area of the Earth wearing a bright white T-shirt in the hot summer sun. We don’t have that anymore.” His project, called Ice911, is intended to reflect the sun’s rays by covering the melting ice fields with tiny silica spheres, which have passed strict ecotoxicological testing to prove their lack of toxicity to birds



and fish. Meanwhile, David Keith, of Harvard University's Solar Geoengineering Research Program, wants to spray tiny particles into the stratosphere to reflect some of the sun's rays away from Earth. (*Stanford Social Innovation Review*, Summer/19)



## Moving Ahead

One interesting element in this movement toward environmental action is the way in which so many sectors of society seem to be coalescing around a common issue. Such unity has been missing from society since the last grand narrative – what we have called the Dispersed Wealth Grand Narrative – fell from sight. Society has been lurching along from one conflict to another, even electing a president whose strength has been in initiating conflicts. But this slowly developing agreement around the need for global action

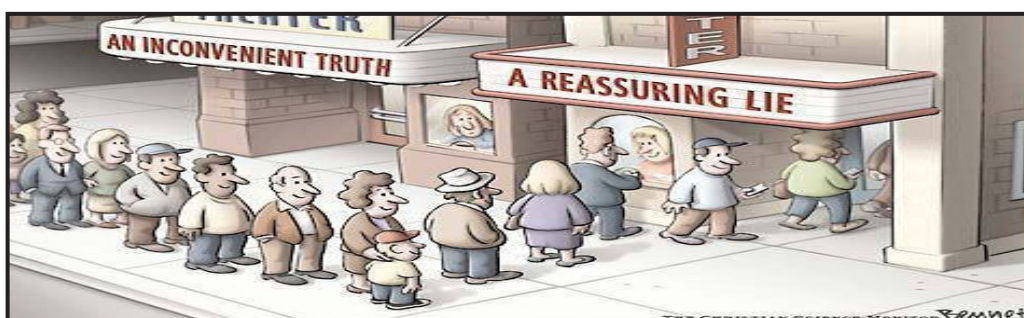
This slowly developing agreement around the need for global action to confront climate change is starting to look like one aspect of the next grand narrative, which we have called the Repair and Enhance Grand Narrative.

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Citizens are growing more and more restless across the globe, companies are turning to environmental causes, if not for ecological reasons then at least for a better market image with customers and employees, and governments have started to act in response to the push toward sustainability initiated by citizens. And all of the action, from citizens to corporations and governments, is being spurred by what increasingly seems like a very angry Gaia...or at least by disrupted natural processes triggering extreme environmental events.

The UN's Intergovernmental Panel on Climate Change, comprising scientists from around the world, recently reported that its assessment of the pace of change in climate conditions gives humans roughly a dozen years to reduce greenhouse-gas emissions to levels 45 percent below the 2010 figure and to net zero by 2050 or face ever-more extreme weather conditions as routine and part of a new norm. Already, damage is mounting, with insured losses from weather-related disasters having increased fivefold since the 1980s and uninsured losses having doubled. Further, a recent study revealed that insurance companies are underestimating the potential damage from extreme weather conditions by 50 percent. (*Foreign Policy*, Summer/19)

With the UN reporting that one of every eight plants and animals is threatened with extinction because of human activity, more and more individuals are looking at the extreme floods, droughts, fires, tornadoes, hurricanes and very high temperatures as well as other unusually intense natural disasters and might start wondering what one environmentalist concluded: Humans are on "a suicide watch." The youth who walked out of their schools worldwide this past spring do not want to face even the remotest chance of such chaos. And more and more individuals, corporations and governments are taking the youths' concerns to heart.





## Some of our previous looks at this topic:

- IF 4013** Rethinking Food: Restructuring An Industry From The Farm To The Table, 7/8/19
- IF 4006** Growth Versus Sustainability: Real Estate, Land Use And Food Are Caught In The Transition From The Old To A New Grand Narrative, 4/4/19
- IF 4003** Less Of This And More Of That: Individuals Move Away From Consumerism And Toward Control, 2/27/19
- IF 4002** Larger Responsibilities: Characteristics Of Effectiveness In A New Leadership Model, 2/14/19
- inThought 10/22/18** The Disorienting Environment: A Missing Grand Narrative, The Greater Restructuring And A Rethinking Of Nearly Everything
- inF 1113** Seeking A Grand Narrative: Companies Seek More Ways To Do Good, 12/12/16
- inThought 3/10/16** The Rise Of Society's Next Grand Narrative: Perspectives And Values That Will Be Part Of A New Shared Vision