

# SUSTAINABLE TRENDS

	What's trending?	What's the story?	So what?
<b>IN THE NEWS</b>			
	GLOBAL ENERGY  CEO PAY	Power shifts in the energy sector  Will shareholders spring into action?	Renewables are growing fast, though fossil fuels will remain dominant  Opposition to executive pay mounts, but boards appear entrenched
<b>EXPLAINER</b>			
	US POLITICS	All or nothing? Sustainable impacts of the US policy agenda	What does President Trump's policy agenda mean for sustainable investors?
<b>FEATURE</b>			
	DIGITIZATION	The good, the bad, and the Internet of Things	The IoT could be a major catalyst for the way ESG factors shape industries and drive investment returns
<b>WORLDVIEW</b>			
	GREEN BONDS	The big issue	The green bond market is expected to double in size this year

## PLUS!

Research Eye  
By the Numbers  
Reading List

Our pick of published research reports  
What we learned this quarter  
What we're reading



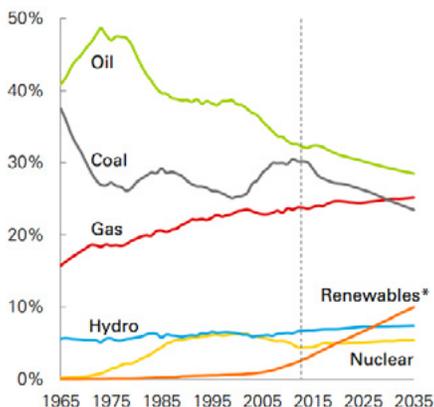
## POWER SHIFTS IN THE ENERGY SECTOR

### What happened?

BP released its [energy outlook](#) to 2035, which forecasts the renewable energy sector will quadruple over the next two decades due to environmental concerns and technological advances that are making renewables increasingly competitive.

The report predicts that low-carbon sources, including renewables, nuclear, and hydro, will account for half of the additional energy produced by the end of the period.

Energy businesses need to adapt to the “continued gradual decarbonization of the fuel mix,” says BP. Demand growth for oil is expected to slow — though consumption of the commodity will continue increasing for the foreseeable future, particularly due to transport-related use in emerging markets.



Source: BP Energy Outlook 2017

### Reaction

Highlighting intentions to switch to cleaner energy, in January [Saudi Arabia](#) said it would solicit bids for a renewable energy program costing up to \$50 billion. By 2030, the kingdom plans to produce 70% of its power from natural gas and 30% from renewables and other sources, including nuclear.

But despite gains for low-carbon energy, fossil fuels are forecast to remain dominant. Oil, gas, and coal will make up over 75% of the global energy mix by 2035, compared with 85% today.

The biggest trend is toward gas. Shell is preparing to “[remake itself into a gas giant](#)”, buying gas producer BG Group in February. It also announced a deal to shed \$7.5 billion of [Canadian oil-sands assets](#). Bloomberg headlined the sale as a move by the company to a “cleaner future” — others saw it as [motivated](#) more by the low oil price and a desire to pay down debt.

### What next?

BP expects winners and losers in the oil sector as downward pressure on oil prices is likely to persist. Reserves are abundant and, with demand growth expected to slow and eventually reverse, producers may ramp-up output to avoid being left with stranded assets. This could drive higher-cost players out of the market and help low-cost onshore producers, such as those in the Middle East and Russia, gain market share.

Although the changes are potentially significant in the energy industry, they are unlikely to do much to mitigate climate risk. Carbon emissions from energy use are expected to rise by 13% to 2035.

BP notes this is less than one-third of the rate of the preceding 30 years, but still “far in excess of the IEA’s 450 Scenario, which suggests carbon emissions need to fall by around 30% by 2035 to have a good chance of achieving the goals set out in Paris.”

“The main story in this year’s Energy Outlook is about the energy transition that is taking place and is likely to continue to take place over the next 20 years. On the demand side, there’s a shift in the pattern of demand, away from the US and Europe to fast-growing Asian markets. On the supply side, the story is one of a continuing shift in the fuel mix towards lower carbon fuels.”

— Spencer Dale, group chief economist



# SHAREHOLDERS SPRING INTO ACTION OVER EXEC PAY

## What happened?

Bombardier’s board agreed to cut the pay of the transport business’ CEO and defer other executive payouts. The climb-down came in response to public outrage, including criticism from Canada’s prime minister, at C-suite pay rises after Bombardier had received state aid and announced plans to cut 14,000 jobs.

As AGM season progresses, politicians and pressure groups have their sights on executive pay. In Germany, the Social Democratic party [tabled proposals](#) to curb bosses’ remuneration, including allowing shareholders to set the multiple of average salaries that a CEO can earn.

UK politicians also called for reform, [saying that executive pay](#) had risen so fast that it was “impossible to see a credible link between remuneration and performance.” Meanwhile, the [EU has adopted new rules](#) that will give shareholders more influence over executive pay.

## Reaction

Shareholder rebellions over executive pay “loom in [a] shareholder spring”, the [FT says](#). An asset manager told the paper that executive compensation was “out of hand” and that “boards have managed to get away with giving excessive amounts of pay.”

Proposed rule changes in many countries prompted Norway’s sovereign wealth fund, the world’s largest, to spell out how it thinks executives should be compensated. Its guidelines include giving a large chunk of pay as shares that cannot be vested for five to ten years, and requiring boards to set a maximum that an executive can earn in one year.

It thinks current long-term incentive plans are opaque and should be scrapped as they can be managed to ensure a CEO is rewarded “[almost no matter what](#).”

## What next?

“The message is very clear to companies – times are different,” [says State Street Global Advisors](#), which is planning to address executive pay in the US, where bosses are paid the most. Yet for all the headlines, pay is not checked often — only 3% of FTSE 100 companies faced a shareholder rebellion last year.

And while shareholders are becoming more vociferous, the boards that set pay levels and structures haven’t changed much. Women [comprise 21% of S&P 500 directors](#), barely changed from 2015 and just six percentage points higher than a decade ago. The equivalent figures for the [FTSE](#) and the [Hang Seng](#) are 26% and 11%, respectively.

What’s more, the prestige board posts – including compensation – [tend not to be run by women](#). A [study by KPMG](#) found very little age diversity either: the average age of S&P500 directors is 62.4, with little dispersion around the median and almost no difference across industry sectors.



Source: Bloomberg



## ALL OR NOTHING? SUSTAINABLE IMPACTS OF THE US POLICY AGENDA

*Opinions about the implications for sustainable investors of President Trump's policy agenda tend toward extremes, with some predicting major impacts and others forecasting no change in sustainability trends. They can't both be right. We track the latest developments.*

### *What happened?*

On March 28, President Trump signed an Executive Order on Energy Independence, moving “aggressively to [undo his predecessor's](#) carbon-cutting commitments.” A primary aim is to roll back regulation that constrains the US domestic energy industry, including fossil fuel power plants.

The [White House said](#) the Order would serve the “twin goals” of protecting the environment and achieving the President's desire “to make the United States energy independent.” In total, the new administration wants to scrap [more than 30](#) of Obama's environmental documents and regulations.

### *What happens next?*

Federal agencies were given 120 days to review their policies and [provide recommendations](#) to mitigate or eliminate agency actions that are “burdensome to domestic energy producers.”

### *Which rules are being targeted?*

Among the most notable ones, the US Environmental Protection Agency wants to scrap the [Clean Power Plan](#), which promotes lower-carbon energy sources over fossil fuels, especially coal plants. The Plan was [already being challenged](#) in court by a number of states and industry groups. That challenge was initially coordinated by Oklahoma politician Scott Pruitt, who now heads the EPA.

### *When will the Plan be abolished?*

As [CNBC reports](#), scrapping the rule “will likely be a drawn-out process and face a thicket of legal obstacles.” “This is not a situation where they can just junk the regulations,” [says New York's Attorney General](#). Legislation will be needed to replace the Clean Power Plan, which Bloomberg estimates will take at least a year — and whatever alternative the EPA comes up with will need “[to hold up in court](#)” as groups in favor of the rule mobilize to defend it.

### *What other sustainability-related policies may be scrapped?*

The new administration also wants to kill off the Waters of the United States rule, another contentious Obama-era policy that expanded the types of waterway and wetland that are subject to anti-pollution regulations. The water rule was already the subject of law suits from various groups, including parts of the agriculture and construction sectors. It is likely to continue being so as attempts are made to scrap it, potentially with “[litigation of breathtaking proportion](#).”

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### *How about the Paris Agreement?*

Since Trump's election win, there has been speculation about a withdrawal from the Paris accord. At the time of writing, the White House was reportedly divided on the issue: voices urging the President to stick with the deal reportedly include [ExxonMobil](#), [US coal businesses](#), and [Ivanka Trump](#). But even if the US stays in, scrapping the Clean Power Plan means the US is very [unlikely to meet its Paris commitments](#).

### *What are the implications for investors?*

Clearly, they need to figure out how the new administration will impact their portfolios. Perhaps typically for US political issues at the moment, opinions tend toward extremes: significant impacts or almost none. For instance, the UK Guardian reports "fear that the rapid expansion of [solar energy generation](#) overseen by Obama could soon be undermined," while Forbes quotes that "Trump's politics [cannot stop the growth of renewables](#) at home or abroad." They can't both be right.

### *Why do people expect little or no impact on sustainability?*

Those of this opinion point to the fact that some sustainability-related policy is [decided by states and cities](#), not at the federal level: [California and New York](#) are among states that remain committed to renewable energy, for example. Also, legal or political challenges may water down or derail some policy ambitions – as the administration's difficulties in pursuing its [health-care agenda](#) highlight. They also point to non-policy drivers of sustainability issues.

### *Such as?*

Economic factors, to name an obvious one: coal has [become unprofitable](#) in many places, while renewables are becoming more cost-competitive absent regulation – though their [ability to compete is disputed](#). Some people also think that [corporations](#)

and consumers won't change their sustainability practices and buying habits, with [some even arguing](#) that a Trump administration may actually spur additional investment in sustainable businesses and [ESG funds](#).



Source: [The Guardian](#)

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### *What's the counter argument?*

“A lot of people are going through [a] period of denial,” one sustainable investment expert [told the FT](#). “Policy is really important in terms of speeding things up or slowing things down,” added an ESG specialist from index provider MSCI. According to the newspaper, since the election “asset owners have tilted away from companies that rank higher in terms of their approach to managing environmental, social and governance issues.”

### *How should investors adapt to the new administration?*

It's early days, but it's already clear that the Trump administration is determined to implement the policy agenda it outlined during the election campaign, which diverges sharply from what preceded it. Policy changes appear very likely to alter the conditions many firms operate under, and therefore influence (to widely varying extents) businesses' competitiveness and their exposure to ESG risks.

SICM's analysis shows that the influence of ESG factors on investment performance tends to vary substantially over time. With so much change and uncertainty under the new administration, we think that the ability to track, interpret, and evaluate ESG data has become more important than ever. And in the near term at least, it has almost certainly become more complex.

**National Geographic** is tracking the US administration's sustainability-related policy steps, which include potential actions relating to:

- ✓ Pollution / emissions controls
- ✓ Pipeline permits
- ✓ Fuel efficiency standards
- ✓ Approval of chemicals, such as pesticides
- ✓ Budgets for sustainability-related agencies
- ✓ International climate agreements



# THE GOOD, THE BAD, AND THE INTERNET OF THINGS

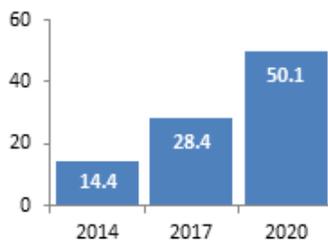
The Internet of Things – i.e., web-connected devices equipped with sensors or other data-collecting features – is slowly “changing everything from the way our goods are manufactured to the way we heat our homes.” It will be “biggest, most sophisticated piece of equipment that we’ve deployed across the planet,” making it a potential catalyst for the way ESG factors shape industries and drive investment returns. That brings sustainable opportunities and threats for businesses and investors.

## The Good The Bad?

**Data harvest** There are thought to be 28 billion internet-connected devices in the world, which are accumulating an unprecedented volume of ESG data and other information. They are giving companies deep insight not only into manufacturing and business practices, but also into supply chains and consumer habits — creating “huge untapped potential for data collected via IoT-enabled devices to inform and direct” corporate sustainability policy. It should also improve corporate disclosure of ESG issues.

**ESG relevance** At the company level, the IoT could improve many areas of ESG performance, such as a business’ energy and water usage, emission levels and pollution risks, and employee health and safety. For example, smart building control systems can reduce electricity consumption by a reported 40%, while smart soil monitoring helped one avocado farmer cut the water consumption of his crop by 75% (he also got into trouble for tampering with his water meter).

**Recycling and efficiency gains** Beyond utilities, the IoT could particularly impact the sustainability scores of any business with a large and complex manufacturing process, supply chain, or distribution network. For example, by allowing companies to monitor the condition, usage, and location of products and machinery at almost every step from manufacture to disposal, the “natural lifespans [of products and equipment] can be increased and energy efficiency maximised.”



Number (in billions) of internet-connected devices globally. Source: Statista

**Big picture benefits** At a macro level, some people think the IoT could be a key enabler of the circular economy – with today’s take-make-dispose model replaced with one based on re-use and recycling. That would let companies “decouple themselves from resource scarcity” and allow them “to drive arbitrage opportunities across complex, global supply chains” — both of which could radically change a business’ sustainability profile.

From solving transport problems to sorting out air pollution, the IoT also has the potential to tackle some of the major sustainability challenges facing the world’s cities. For example, one-third of urban driving is reportedly devoted to finding a parking space. An IoT-enabled concept to improve matters is being tested in Stuttgart, Germany, with other pilot parking projects due in the US this year.

**Too much information?** “IoT connected networks dwarf the data volume from this first era of big data,” says an Intel expert, who notes that the latest Airbus A380 airplane has 10,000 sensors in each wing. The IoT represents a steep learning curve for everyone, and companies face a tough task to make sense of the vast amounts information generated by IoT devices and turn it into management decisions that drive ESG performance. While some businesses will make great sustainability strides, others could flounder. The IoT also brings threats that need careful management, notably cyber-security weak points: which is a particularly important ESG factor for banks and other financial institutions.

**Disruption brings risks** Among businesses likely to be disrupted by the IoT, electricity and water companies could see major changes in the way they generate, distribute, and price their products — all of which could have a significant bearing on their ESG performance. “Many utilities see the digital revolution as a threat,” says McKinsey. Digitization is “triggering new business models and regulatory frameworks” for utilities — suggesting winners and losers as some companies adapt quicker than others.

**A sustainable snag?** The sustainability potential of IoT devices could be undermined by their consumption of energy. The problem will be “pernicious”, says one Australian IT expert. Referring to his home market, he says that although individual devices may be small-scale power consumers, collectively the vast number of internet-enabled, data-transmitting devices could “boil down to another power station or two” in Australia alone.

### Five business uses of the IoT with potential ESG impacts

The IoT is forecast to become a \$1.5 trillion global market by 2020, up from \$700 billion in 2016. Here are five ways businesses are starting to use it.

- ✓ Utilities: Detection of leaking water pipes in homes
- ✓ Transport: Driverless cars and fuel efficiency gains
- ✓ Manufacturing: Predictive maintenance, instead of preventative\*
- ✓ Agriculture: Precision watering / fertilising
- ✓ Healthcare: Remote monitoring of patients’ health

\*i.e. Accurately forecasting when machines need repairing, rather than replacing parts to a schedule before they’re worn out



WORLDVIEW

# GREEN BONDS: THE BIG ISSUE

Demand for sustainability-related investments is spurring a rapid increase in issuance of green bonds. Research suggests that investors are even willing to **pay a premium** – i.e., accept a lower yield – for the knowledge that their funds will be directed toward sustainability-related projects. We map the latest developments in this fast-growing debt market.

### Seeing double

\$15 billion of green bonds were issued in the US in 2016, 55% more than a year earlier, out of a global total of \$93 billion. **Moody's estimates** that global issuance will more than double in 2017 to \$206 billion, with \$23 billion in the US, driven especially by China and "momentum from the Paris Agreement."

### Green benefits

For issuers like New York's Metropolitan Transport Authority, which **issued \$500 million of green bonds** in February, green bonds have two big benefits over conventional debt. The first is PR, allowing issuers to "publicize programs that might fall under the radar." The second is that they are "seen to broaden their investor base." Demand for investments with a sustainability or social impact angle is especially strong among millennials and women.

### Corporate issuers

Spanish utility **Iberdrola** was the biggest corporate issuer of green bonds in 2016, with US\$2.7 billion of new debt. Other big businesses to tap investor demand for green bonds last year included **Apple**, **Toyota**, and **EDF**.

### Keeping track

BlackRock launched its **first green bond index** in March, which tracks the Bloomberg Barclays MSCI Global Green Bond Index. The firm **said green bonds were popular** because they allowed investors to buy into sustainable investments "without making major changes to sector allocation or liquidity risk in their holdings." Earlier in the month, Lyxor issued an **ETF that tracks** the **Solactive Green Bond EUR USD IG Index**, the first ETF to offer exposure to the global investment-grade green bond market.

### Shady issues

Green bonds are the best instrument to make sustainable investing "palatable to institutional investors," one expert told a **green bond conference** in London this March. More variety is needed to widen their appeal. Already bonds come in shades of green — dark green ones adhere to the strictest environmental criteria — and other innovations are in the works to help increase their attractiveness. For example, Natixis has created green bonds whose payout is linked to an equity index.

### Setting standards

China is **planning to make its green bond standards** more consistent to help it attract the \$290 billion of investment it needs to deal with pollution and other sustainability problems. China accounted for almost 40% of global green bond issuance in 2016.

### Grants for greens

Singapore's Monetary Authority will introduce a **grant scheme for green bond issuers**, to offset the cost of obtaining an external review, of up to S\$100,000 per issuance. The initiative is part of a wider move to spur sustainable finance.

### Bigger in Japan

Nippon Life and Meiji Yasuda Life, two of Japan's big life insurers, **plan to buy more green bonds** to diversify their credit investments. Together, the additional investments will amount to about 700 billion yen (US\$6.4 billion). Starbucks issued the first **yen-denominated global sustainability bond** in March with a \$754 million issuance.

### Sovereign pioneers

Large institutional investors backed **France's first sovereign green bond**, which debuted in January. The €7 billion issuance was three times oversubscribed. Asset managers took the largest share, followed by banks, pension funds, and insurers. France was pipped to the post by Poland, which became the first sovereign to issue a green bond in December 2016.



Sources: Sources: Bloomberg; Channel News Asia; Environmental Finance; ETF Strategy; FT Adviser; Globe Newswire; Investment Week; IPE; Moody's; PR Newswire; Reuters; The Star; Yahoo

RESEARCH EYE



**BP**  
*Energy Outlook 2017*

**Power plays**

The global energy industry is set for a major shake-up over the next two decades, driven by pressing environmental concerns and economic trends. The renewables sector could grow four-fold, but it's gas that will dominate. Despite the shift to cleaner fuels, emissions from the energy sector are set to keep rising.



**ISS**  
*Board refreshment: A review of trends at U.S. firms*

**Familiar faces**

Despite calls for change in the boardroom, investors remain frustrated by lengthy director tenure, low turnover rates, and slow progress on the diversity front. This report examines rates of refreshment amid efforts to increase board diversity at U.S. companies.



**Ellen MacArthur Foundation**  
*The new plastics economy: Catalyzing action*

**Plastic-not-so-fantastic**

It's time to rethink the way we use plastics, the "ubiquitous workhorse material of the modern economy." Without action, by 2050 the oceans could contain more plastic than fish. This paper sets out a strategy to increase the re-use and recycling of plastics from 14% today to 70%.



**Sustainalytics**  
*ESG risk in default funds: Analysis of the UK's DC market*

**ESG in UK DC**

Nine out of 10 pension savers in UK defined contribution plans end up in their scheme's default funds. This study shows they're "significantly exposed to a number of ESG risks, including those related to human capital, business ethics, product safety and data privacy and security."

**CICERO Climate Finance**  
*Shades of climate risk: Categorizing climate risk for investors*



**Climate risk isn't black and white**

Which aspects of climate risk should investors focus on? This paper describes the different types of climate risk – physical, policy, liability, and technological – and suggests a framework for categorizing them by region, timeframe, and probability.

### THE QUARTER... BY THE NUMBERS

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#### Environmental

##### 206 Billion

USD value of green bonds expected to be issued this year, according to Moody's

##### 50

Number of air quality audits funded by London's mayor to protect primary school children

##### 31%

Targeted reduction in funding for the US Environmental Protection Agency

##### 30%

Increase in global demand for energy by 2035, with gas likely to be the main way it is generated

##### 2.5

Number of minutes to midnight on the Bulletin of Atomic Scientists' countdown clock to the end of the world

#### Social

##### 140 Billion

Tax revenue in USD that could be levied if all governments increased cigarette duties by 80 cents a pack

##### 80,000

Number of Audi diesel cars being investigated over emissions tests

##### 62

Number of people who own as much as the poorest half of the world's population

##### 10,000

Number of refugees to be hired by Starbucks worldwide over five years

##### 30,000

Number of HSBC customers who urged the bank to stop funding palm oil companies

#### Governance

##### 2016

The most active year for securities class action litigation since the dot.com bubble burst

##### 31

Number of Chinese provinces instructed to account for money earmarked for water pollution prevention

##### 14.7%

Female representation on boards, in a study of 3,000 global companies

##### 3

Number of firms excluded from Nordea's investable universe because of their association with the Dakota Access Pipeline

##### 1

Massachusetts' position in ranking of the Best States

## READING LIST

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**Transparency International**  
*Corruption Perceptions Index 2016*  
([link](#))



**Greenbiz**  
*The state of Green Business 2017*  
([link](#))



**UBS**  
*Mobilizing private wealth for public good*  
([link](#))



**World Health Organization**  
*Global priority list of anti-biotic resistant bacteria*  
([link](#))



**European Environmental Agency**  
*Renewable energy in Europe 2017 — recent growth and knock-on effects*  
([link](#))



**Ethisphere**  
*2017 world's most ethical companies*  
([link](#))



**Champions 12.3**  
*The business case for reducing food loss and waste*  
([link](#))



**Investor Responsibility Research Center Institute**  
*How Leading U.S. Corporations Govern and Spend on State Lobbying*  
([link](#))

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## QUOTE OF THE QUARTER

Oil and gas companies are realising that the future of their industries is in a transformation into clean energy companies. The transformation has started. I think it's unstoppable.

– Patricia Espinosa Cantellano, Executive Secretary of UNFCCC, on the future of oil and gas companies.  
Quoted by the [BBC](#).