



## Trump's anti-science era begins

THE writing is on the wall for Barack Obama's climate legacy. Hours after Donald Trump was sworn in as president, his administration removed the page on climate change from the White House website and published a new page, *An America First Energy Plan*.

This plan says Trump will roll back two key elements of Obama's environment policy: the Climate Action Plan and the Waters of the US rule, which expanded the freshwater areas protected by the Environmental Protection Agency (EPA) and the Army Corps of Engineers.

It outlines plans to exploit untapped shale, oil and natural gas reserves on federal land and revive the US coal industry. It also says Trump will "refocus the EPA on its essential mission of protecting our air

and water", suggesting it will abandon regulating greenhouse gas emissions.

That may not prove simple. A US Supreme Court ruling established that carbon dioxide is a pollutant and the EPA must therefore address it under the Clean Air Act. "The Trump administration is legally obligated to do something and if they don't there will be litigation and lawsuits," says Henrik Selin at the Pardee School of Global Studies, Boston University.

Although Trump has called global warming "a hoax", his nominees for relevant cabinet positions have struck a more conciliatory note. For example, Scott Pruitt, his pick to lead the EPA, said: "Science tells us that the climate is changing and that human activity, in some manner, impacts that change."

Such statements make it difficult for their opponents to label them as

climate change deniers, while giving them room to manoeuvre on policy.

Other decisions in Trump's first days in office have also dismayed observers. He has reinstated a federal ban on US funding for international health organisations that counsel women on abortion.

And he selected Ajit Pai as chairman of the US Federal Communications Commission. Pai opposed net neutrality regulations that were passed in 2015 to ensure an open internet and prevent broadband providers from blocking or throttling access to content. Meanwhile, there were rumours that the EPA this week has frozen all of its grants and that the US Department of Agriculture has banned its scientists from talking openly about their work.

Quite the first 100 hours in office.

## Texas abortion law

A LAW that was later ruled unconstitutional has been linked to a drop in clinic-performed abortions across Texas.

The 2013 Texas House Bill 2 required facilities that perform abortions to meet hospital-like building standards. Before the US Supreme Court overturned it in 2016, many clinics were forced to close. In 2012, 41 facilities offered abortions in Texas – by 2014, there were just 21. The distance a woman needed to travel to get an abortion increased by an average of 80 kilometres across the state.

Where this distance went up by 160 kilometres or more, Texas Department of State Health Services data reveals that the

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number of clinic abortions halved. Overall, the number of abortions in Texas dropped by more than 12,000 in a two-year period.

"The law was purportedly intended to protect women's health," says Liza Fuentes at health organisation the Guttmacher Institute. But because some clinics were forced to stop offering abortions, some women could not get the services they were seeking, she says.

## Potato warning

THE UK Food Standards Agency (FSA) has launched a campaign warning of the cancer risk associated with cooking potatoes and other starchy foods at high temperatures.

During cooking, sugars and amino acids react together to form thousands of chemicals. One of these is acrylamide, which can be found in foods like bread and potatoes when they have been cooked above 120 °C.

In the body, acrylamide is

converted to another compound that can trigger DNA mutations, and animal studies suggest this can cause cancer. But it has been difficult to establish the risk to humans. "Although evidence from animal studies has shown that acrylamide in food could be linked to cancer, this link isn't clear and consistent in humans," says Emma Shields at charity Cancer Research UK.

Nevertheless, the FSA is encouraging people to "go for gold" – aim for a golden yellow colour or lighter when frying, baking, toasting or roasting starchy foods.

## Phone fire faults

SAMSUNG has identified the battery faults that caused its Galaxy Note 7 cellphones to catch fire, leading to a global recall of 2.5 million devices in 2016.

After testing more than 20,000 Galaxy Note 7 phones and 300,000 batteries, the company found two different issues with the phones' lithium-ion batteries that could cause them to short circuit and overheat. Independent investigations also found that the batteries were to blame.

In the initial batch of Note 7s, the battery's layers of negative and positive electrodes could sometimes get squished in one corner, causing them to bend and get close enough to each other to produce a short circuit.

After people reported incidents of their phones catching fire, Samsung changed battery supplier. But the new batteries had a different flaw. A thin layer that separates the positive and negative electrodes contained punctures, which could again lead to a short circuit.

Samsung stopped producing Galaxy Note 7s in October, but will be launching the Galaxy S8 phone this year. The firm says it will introduce protocols including a new battery safety check to prevent problems in the future.

## 2016: Hottest year

LAST year was the hottest year on record globally, beating 2015's exceptionally high temperatures, the World Meteorological Organisation has said.

The global average temperature in 2016 was 1.1°C higher than pre-industrial levels and about 0.07°C higher than the previous record set in 2015. The WMO said that 2016 also saw record levels of greenhouse gases and melting ice.

"Long-term indicators of human-caused climate change reached new heights in 2016. Carbon dioxide and methane

concentrations surged to new records. Both contribute to climate change," said WMO secretary general Petteri Taalas.

The analysis is based on data from the UK's Met Office Hadley

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Centre, the University of East Anglia's Climatic Research Unit, the US National Oceanic and Atmospheric Administration and NASA's Goddard Institute for Space Studies.

## No-strike list for Yemen's history

TENS of thousands of archaeological sites are being discovered in Yemen by researchers who are shortlisting candidates to go on a "no-strike list" for combatants in the latest attempt to protect treasures from the war.

Since 2015, the Yemen government, backed by a Saudi Arabian-led coalition, has been fighting Houthi rebels. The death toll reached at least 10,000 last week, and damage is widespread, including to the old cities of Sana'a and Zabid – both World Heritage Sites.

"It's almost a joke the rate at which we are discovering sites – it's hard to convey just how much we are recovering," says Michael Fradley at the University of Oxford's Endangered Archaeology in the

Middle East and North Africa (EAMENA), which is documenting ancient sites using Google Earth.

Spectacular discoveries include ancient walled cities, historic mountaintop villages, prehistoric burial sites and long rows of standing stones, or trilithons, linked with the incense trade.

EAMENA is producing a cultural heritage list that it says the US Committee of the Blue Shield will put to the Saudi-led coalition to use as a no-strike list.

Whether the combatants will pay heed is another matter. The list may increase the legal pressure on the coalition, because there is criminal liability for some cultural offences under a 1954 Hague Convention.



Will anyone heed the cultural list?

## 60 SECONDS

### Mars cracks up

NASA's Mars Curiosity rover has examined slabs of rock that seem to be cracked, dry mud. Found in a region nicknamed "Old Soaker", the rocks are scored with thin, shallow ridges that break the surface into four and five-sided shapes, unlike anything else seen on Mars so far. The cracks might be from long-lived Martian lakes periodically drying up.

### Early menopause link

Women are 31 per cent more likely to have an early menopause if they started menstruating before age 12. The largest study of its kind found that 8.8 per cent of women who got their first period aged 11 or younger experienced the menopause early, between the ages of 40 and 44. Just over 3.1 per cent began before the age of 40 (*Human Reproduction*, DOI: 10.1093/humrep/dew350).

### Hack-proof

The world's first quantum communication satellite is performing "much better" than expected. China's Quantum Experiment at Space Scale (QUESS) satellite, launched in August 2016, will use quantum mechanics to enable ultra-secure communications.

### 10 metres of sea rise

Global sea levels could rise by up to 2.5 metres by 2100 and up to 9.7 metres by 2200. So says the US National Oceanic and Atmospheric Administration. The agency revised its worst-case scenarios now several recent studies suggest Antarctic ice is melting faster than expected.

### Sexual feeling

In the mood? Injections of a hormone named kisspeptin increase the brain's response to arousing images (*Journal of Clinical Investigation*, doi.org/bxqh). The study involved 29 young men, but the team plans to look at the effects in women too. They hope the research may help devise treatments for psychosexual disorders.