

**From:** sonya mckay  
**To:** [info@frackinginquiry.wa.gov.au](mailto:info@frackinginquiry.wa.gov.au)  
**Subject:** WA Fracking Inquiry  
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**Attachments:** [Climate Change – There is an issue wa fracking inquiry.pdf](#)

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Independent Scientific Panel Inquiry  
Locked Bag 33  
Cloisters Square  
PERTH WA 6850  
[info@frackinginquiry.wa.gov.au](mailto:info@frackinginquiry.wa.gov.au)

The burning of fossil fuels exacerbate climate change. The impacts of climate change are already said to be felt. This includes impacts to the Great Barrier Reef. There is suggested to be a lag with the continued impacts of climate change. Therefore, the worse effects will be felt by the next generation.

The US GAO report states that... *'Over the last decade, extreme weather and fire events have cost the federal government over \$350 billion, according to the Office of Management and Budget. These costs will likely rise as the climate changes, according to the U.S. Global Change Research Program.'*

A lawyer dealing with climate change litigation case re: Juliana v US stated that..

*' We have found reports like this 1983 report during the Ronald Regan administration from the Environmental Protection Agency 'Can We Delay A Greenhouse Warming'. And the conclusion of this report is that what we're facing in the near term is catastrophic...it's urgent. And we are going to these bring these reports...we're going to bring the authors of these reports into the court room...they're going to testify about why the government knowingly chose climate change that will harm America over these children. Why the government made a cost benefit analysis of why the fossil fuel industry is more important than the lives of these kids. We're going to get the evidence in court of why the federal government refused to accept the years and years of data. The numerous reports that said we must do something because climate change is real, it's urgent, and its catastrophic.*

<https://youtu.be/uZ5KTluKVis> (around 53:30 minutes in) 

So if the impacts of climate change are significant and the need to deal with climate change is urgent, then it makes absolutely zero sense to extract fossil fuels to burn them. It makes even less sense when the cost of renewable energy is more then competitive and is being shown to be reliable. For the sake of our childrens it appears the only mitigation possible for the worsening of climate change impacts is to stop extracting, distributing and burning fossil fuels and work on technological remediation.

Our children have a human right to life and more.

Sonya McKay

# Climate Change

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# Video's

Science Video with Bill Nye - <https://www.climatealityproject.org/video/climate-101-bill-nye>

Climate Change in Australia on 'Weather Alert', 4 Corners ABC - <http://iview.abc.net.au/programs/four-corners/NC1803H005S00>

Exxon Knew at <https://www.youtube.com/watch?v=ppfpFZ92JAY> and <https://www.pbs.org/newshour/show/scientific-study-concludes-exxon-mobil-misled-climate-change> and embedded video at <http://iopscience.iop.org/article/10.1088/1748-9326/aa815f>

## **NASA Scientists: (past & present)**

James Hansen (2012), [https://www.ted.com/talks/james\\_hansen\\_why\\_i\\_must\\_speak\\_out\\_about\\_climate\\_change#t-1049763](https://www.ted.com/talks/james_hansen_why_i_must_speak_out_about_climate_change#t-1049763)

'Scientist Alex Gardner explains climate and sea level rise' (Feb 2017) <https://www.youtube.com/watch?v=5BfejRo37T8>

Eric Rignot 'Expert explains future sea level rise' (2017) <https://www.youtube.com/watch?v=AAPPq43iRLs>

## **Available on itunes...**

'An Inconvenient Truth' & 'An Inconvenient Sequel – Truth to Power' - Al Gore

'Before the Floods', Leonardo DiCaprio

'Time to Choose', Oscar Issac (narration), director Charles Ferguson

'Documentary about Greenland's ice melt & culture' - <https://www.youtube.com/watch?v=IfjoI-jliSk>

## **Fracking...**

'Gasland' & 'Gasland Part 11', Josh Fox & <https://www.youtube.com/watch?v=6mp4ELXKv-w> & <https://vimeo.com/97358756>

## **Short clips:**

UN speech on climate change from UN Messenger for Peace, Leonardo DiCaprio - [https://www.youtube.com/watch?v=vTyLSr\\_VCcg](https://www.youtube.com/watch?v=vTyLSr_VCcg)/<https://www.youtube.com/watch?v=m-FM845giaI>

Academy Award speech, Leonardo DiCaprio - <https://www.youtube.com/watch?v=AOoP56eXtzM>

Simon Baker speaking in support of the Great Barrier Reef - <https://www.marineconservation.org.au/petitions/199/join-simon-baker-fight-for-our-reef>

## **Solutions:**

Solutions Program back in 2015, Mark Raffalo, @ <https://vimeo.com/132014891>

Mark Raffalo and Leonardo DiCaprio launch 100% - renewables -<https://www.youtube.com/watch?v=Rk2MGyK9k7c>

'Power the world with Wind, Water and Sunlight' back in 2012 incl Mark Raffalo - [https://www.youtube.com/watch?v=N\\_sLt5gNAQs](https://www.youtube.com/watch?v=N_sLt5gNAQs)

# Who Knew about Climate Change

## NASA tells Congressional Committee in 1988

QUOTE:

*'Dr. James E. Hansen of the National Aeronautics and Space Administration told a Congressional committee that it was 99 percent certain that the warming trend was not a natural variation but was caused by a buildup of carbon dioxide and other artificial gases in the atmosphere.'*

*'The rise in global temperature is predicted to cause a thermal expansion of the oceans and to melt glaciers and polar ice, thus causing sea levels to rise by one to four feet by the middle of the next century.'*

<http://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html?pagewanted=all>

## InsideClimate news re: #ExxonKnew

QUOTE:

*'As early as 1977 Exxon scientists began to warn top executives that the buildup of carbon dioxide from burning fossil fuels was warming the planet, posing catastrophic risks to people around the world and threatening the company's core business.'*

*'Management's first reaction was to authorize a deep dive into climate research, but this forthright response did not last a decade. Instead, Exxon and its industry peers funded and developed a sprawling network to disseminate scientific misinformation.'*

*'The result of an eight-month effort supported by our entire staff, Exxon: The Road Not Taken is a nine-part, 21,000-word examination of Exxon's four-decade engagement with climate change. It is based on company memos dating from the 1970s and 1980s that we obtained exclusively and published for the first time with the permission of our sources. We also conducted dozens of interviews with former employees, scientists and officials and searched through archives and the existing scientific, academic and journalistic literature.'*

21 January 2016 cover letter for entry for Pulitzer at <http://www.pulitzer.org/finalists/insideclimate-news> and video at <https://www.youtube.com/watch?v=ppfpFZ92JAY>

See information on study of ExxonMobil documents at <https://www.pbs.org/newshour/show/scientific-study-concludes-exxon-mobil-misled-climate-change> and study and embedded video at <http://iopscience.iop.org/article/10.1088/1748-9326/aa815f>. Related article at <https://insideclimatenews.org/news/22082017/study-confirms-exxon-misled-public-about-climate-change-authors-say>

## Juliana v US

A lawyer (Phil Gregory) dealing with climate change litigation case re: Juliana v US stated that..

*'We have found reports like this 1983 report during the Ronald Reagan administration from the Environmental Protection Agency 'Can We Delay A Greenhouse Warming'. And the conclusion of this report is that what we're facing in the near term is catastrophic...it's urgent. And we are going to these bring these reports...we're going to bring the authors of these reports into the court room...they're going to testify about why the government knowingly chose climate change that will harm America over these children. Why the government made a cost benefit analysis of why the fossil fuel industry is more important than the lives of these kids. We're going to get the evidence in court of why the federal government refused to accept the years and years of data. The numerous reports that said we must do something because climate change is real, it's urgent, and its catastrophic.'*

<https://youtu.be/uZ5KTluKVis> (around 53:30 minutes in)

# Climate Change - Evidence

See NASA website for the following subject headings:

- ▶ *'Global Temperature Rise*
- ▶ *Warming Oceans*
- ▶ *Shrinking ice sheets*
- ▶ *Glacial Retreat*
- ▶ *Decreased Snow Cover*
- ▶ *Sea Level Rise*
- ▶ *Declining Artic Sea Ice*
- ▶ *Extreme Events*
- ▶ *Ocean Acidification'*

<https://climate.nasa.gov/evidence/>

# IPCC (International Panel on Climate Change)

## QUOTE:

*'Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems. {1}'* pg. 2

*'Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented* over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen. {1.1}' pg. 2

*'Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850. The period from 1983 to 2012 was likely the warmest 30-year period of the last 1400 years in the Northern Hemisphere, where such assessment is possible (medium confidence). The globally averaged combined land and ocean surface temperature data as calculated by a linear trend show a warming of 0.85 [0.65 to 1.06] °C 2 over the period 1880 to 2012, when multiple independently produced datasets exist (Figure SPM.1a). {1.1.1, Figure 1.1}'* pg. 2

Climate Change 2014 - Synthesis Report – Summary for Policy Makers @  
[https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf)



# IPCC (International Panel on Climate Change)

QUOTE:

*‘Since the beginning of the industrial era, oceanic uptake of CO<sub>2</sub> has resulted in acidification of the ocean; the pH of ocean surface water has decreased by 0.1 (high confidence), corresponding to a 26% increase in acidity, measured as hydrogen ion concentration. {1.1.2} Over the period 1992 to 2011, the Greenland and Antarctic ice sheets have been losing mass (high confidence), likely at a larger rate over 2002 to 2011. Glaciers have continued to shrink almost worldwide (high confidence). Northern Hemisphere spring snow cover has continued to decrease in extent (high confidence). There is high confidence that permafrost temperatures have increased in most regions since the early 1980s in response to increased surface temperature and changing snow cover. {1.1.3} The annual mean Arctic sea-ice extent decreased over the period 1979 to 2012, with a rate that was very likely in the range 3.5 to 4.1% per decade. Arctic sea-ice extent has decreased in every season and in every successive decade since 1979, with the most rapid decrease in decadal mean extent in summer (high confidence). It is very likely that the annual mean Antarctic sea-ice extent increased in the range of 1.2 to 1.8% per decade between 1979 and 2012. However, there is high confidence that there are strong regional differences in Antarctica, with extent increasing in some regions and decreasing in others. {1.1.3, Figure 1.1}’*,  
pg. 4

Climate Change 2014 - Synthesis Report – Summary for Policy Makers @  
[https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf)

# IPCC (International Panel on Climate Change)

*'Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. **This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years.** Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century. {1.2, 1.3.1}', pg. 4*

Climate Change 2014 - Synthesis Report – Summary for Policy Makers @ [https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf)



Graph from <http://www.nasa.gov/evidence>

Shows Atmospheric CO<sub>2</sub> has increased since the industrial revolution.



# Exxonmobil Policy Statement

*'The risk of climate change is clear and the risk warrants action. Increasing carbon emissions in the atmosphere are having a warming effect. There is a broad scientific and policy consensus that action must be taken to further quantify and assess the risks.'*

<http://corporate.exxonmobil.com/en/current-issues/climate-policy/climate-perspectives/our-position>

## COMMENT

JUNE 22 2017

**Australia, deep in climate change's 'disaster alley', shirks its moral responsibility**

**Ian Dunlop**

*Climate change poses an existential risk to humanity that, unless addressed as an emergency, will have catastrophic consequences.'*

*'There is overwhelming evidence that we have badly underestimated both the speed and extent of climate change's effects. In such circumstances, to ignore this threat is a fundamental breach of the responsibility that the community entrusts to political, bureaucratic and corporate leaders.'*

Ian Dunlop was an international oil, gas and coal industry executive, chairman of the Australian Coal Association and chief executive of the Australian Institute of Company Directors. This is an extract from his report with David Spratt, [\*Disaster alley: climate change, conflict and risk\*](#),

- ▶ <http://www.smh.com.au/comment/australia-deep-in-climate-changes-disaster-alley-shirks-its-moral-responsibility-20170621-gwvhs6.html>
- ▶ <https://www.griffith.edu.au/conference/economic-growth-climate-change-g20/speakers/ian-dunlop>

## Climate Science Special Report (CSSR)

QUOTE...

*'The climate of the United States is strongly connected to the changing global climate. The statements below highlight past, current, and projected climate changes for the United States and the globe.'*

*'Global annually averaged surface air temperature has increased by about 1.8°F (1.0°C) over the last 115 years (1901–2016). **This period is now the warmest in the history of modern civilization.** The last few years have also seen record-breaking, climate-related weather extremes, and the last three years have been the warmest years on record for the globe. These trends are expected to continue over climate timescales.'*

*'This assessment concludes, based on extensive evidence, that it is extremely likely that **human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century.** For the warming over the last century, there is no convincing alternative explanation supported by the extent of the observational evidence.'*

*'In addition to warming, many other aspects of global climate are changing, primarily in response to human activities. **Thousands of studies conducted by researchers around the world have documented changes in surface, atmospheric, and oceanic temperatures; melting glaciers; diminishing snow cover; shrinking sea ice; rising sea levels; ocean acidification; and increasing atmospheric water vapor.**'*

<https://science2017.globalchange.gov/chapter/executive-summary/>

## US GOVERNMENT ACCOUNTABILITY OFFICE (GAO) REPORT

QUOTE...

*'**Over the last decade, extreme weather and fire events have cost the federal government over \$350 billion, according to the Office of Management and Budget. These costs will likely rise as the climate changes,** according to the U.S. Global Change Research Program. In February 2013, GAO included Limiting the Federal Government's Fiscal Exposure by Better Managing Climate Change Risks on its High-Risk List.'*

*'**GAO recommends** that the appropriate entities within the Executive Office of the President (EOP), including the Office of Science and Technology Policy, **use information on potential economic effects to help identify significant climate risks and craft appropriate federal responses.** EOP entities and the Environmental Protection Agency did not provide official comments on the report.'*

<https://www.gao.gov/assets/690/687466.pdf>

## UNESCO IMPACTS OF CLIMATE CHANGE ON WORLD HERITAGE CORAL REEFS-A FIRST GLOBAL SCIENTIFIC ASSESSMENT (2017)

QUOTE:

*'UNESCO's World Heritage Centre released the first global scientific assessment of climate change impacts on World Heritage coral reefs. Soaring ocean temperatures in the past three years have subjected 21 of 29 World Heritage reefs to severe and/or repeated heat stress, and caused some of the worst bleaching ever observed at iconic sites like the GREAT BARRIER REEF (AUSTRALIA), Papahānaumokuākea (USA), the Lagoons of New Caledonia (France) and Aldabra Atoll (Seychelles). The analysis predicts that all 29 coral-containing World Heritage sites would cease to exist as functioning coral reef ecosystems by the end of this century under a business-as-usual emissions scenario.'*

*'Climate change has been impacting coral reefs for more than three decades through the bleaching and mortality of corals due to heat stress. Bleaching events are becoming more frequent, more widespread and more severe, and are having major impacts on coral reefs globally. Warming is projected to exceed the ability of reefs to survive within 1-3 decades for the majority of World Heritage sites containing coral reefs, and the impact is aggravated by the additional pressures such as ocean acidification and local stressors.'*

*'this study predicts that 25 of the 29 World Heritage reefs will experience twice-per-decade severe bleaching by 2040, a frequency that will rapidly kill most corals present and prevent successful reproduction necessary for recovery of corals. All properties will experience annual severe bleaching, and thus will cease to host functioning coral reef ecosystems, by the end of the century unless CO2 emissions are reduced.'*

*'For the first time, a ubiquitous global threat - heat stress sufficient to cause frequent severe bleaching and mortality - now threatens the OUV of World Heritage sites in a way that cannot be resolved through local management alone. The only viable solution is for all countries with world heritage coral reefs to not only act to reduce local stressors but also to reduce their greenhouse gas emissions to net zero, along with supporting active co2 removal from the atmosphere and upper ocean'*

*'Delivering on the paris agreement target of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C"32 offers the only opportunity to prevent coral reef decline globally, and across all 29 reef-containing natural world heritage sites.'*

<http://whc.unesco.org/en/news/1676>

**VIDEO:** Simon Baker speaking in support of the Great Barrier Reef -

<https://www.marineconservation.org.au/petitions/199/join-simon-baker-fight-for-our-reef>

# NOAA/NASA climate data on global average temperatures

## QUOTE:

*'Earth's globally averaged temperature for 2017 made it the third warmest year in NOAA's 138-year climate record, behind 2016 (warmest) and 2015 (second warmest).'*

<http://www.noaa.gov/news/noaa-2017-was-3rd-warmest-year-on-record-for-globe>

## QUOTE:

*'The US National Oceanic and Atmospheric Administration (NOAA) released climate data that confirmed global average temperatures between 2013 and 2017 made up the hottest five-year period since monitoring began more than 100 years ago.'*

<http://www.couriermail.com.au/technology/the-world-experienced-its-hottest-fiveyear-period-on-record-between-201317/news-story/ca185220a29c505fe2308f5559c94de7> <https://www.theguardian.com/environment/2018/jan/18/2017-was-the-hottest-year-on-record-without-el-nino-boost>

## QUOTE:

*'Earth's global surface temperatures in 2017 ranked as the second warmest since 1880, according to an analysis by NASA. Continuing the planet's long-term warming trend, globally averaged temperatures in 2017 were 1.62 degrees Fahrenheit (0.90 degrees Celsius) warmer than the 1951 to 1980 mean, according to scientists at NASA's Goddard Institute for Space Studies (GISS) in New York. That is second only to global temperatures in 2016. In a [separate, independent analysis](#), scientists at the National Oceanic and Atmospheric Administration (NOAA) concluded that 2017 was the third-warmest year in their record. The minor difference in rankings is due to the different methods used by the two agencies to analyze global temperatures, although over the long-term the agencies' records remain in strong agreement. Both analyses show that the five warmest years on record all have taken place since 2010. Because weather station locations and measurement practices change over time, there are uncertainties in the interpretation of specific year-to-year global mean temperature differences. Taking this into account, NASA estimates that 2017's global mean change is accurate to within 0.1 degree Fahrenheit, with a 95 percent certainty level. "Despite colder than average temperatures in any one part of the world, temperatures over the planet as a whole continue the rapid warming trend we've seen over the last 40 years," said GISS Director Gavin Schmidt. The planet's average surface temperature has risen about 2 degrees Fahrenheit (a little more than 1 degree Celsius) during the last century or so, a change driven largely by increased carbon dioxide and other human-made emissions into the atmosphere. Last year was the third consecutive year in which global temperatures were more than 1.8 degrees Fahrenheit (1 degree Celsius) above late nineteenth-century levels.'*

<https://www.nasa.gov/press-release/long-term-warming-trend-continued-in-2017-nasa-noaa>

# Arctic Report

## QUOTE:

*'Permafrost in the Arctic is thawing faster than ever,' according to a new US government report that also found Arctic seawater is warming and sea ice is melting at the fastest pace in 1,500 years. The annual report released on Tuesday by the National Oceanic and Atmospheric Administration showed slightly less warming in many measurements than a record hot 2016. But scientists remain concerned because the far northern region is warming twice as fast as the rest of the globe and has reached a level of warming that's unprecedented in modern times. "2017 continued to show us we are on this deepening trend where the Arctic is a very different place than it was even a decade ago," said Jeremy Mathis, head of NOAA's Arctic research program and co-author of the 93-page report. "What happens in the Arctic doesn't stay in the Arctic; it affects the rest of the planet," said acting NOAA chief Timothy Gallaudet. "The Arctic has huge influence on the world at large." Arctic sea ice usually shrinks in September and this year it was only the eighth lowest on record for the melting season. But scientists said they were most concerned about what happens in the winter – especially March – when sea ice is supposed to be building to its highest levels.'*

[https://www.theguardian.com/environment/2017/dec/12/arctic-permafrost-sea-ice-thaw-climate-change-report?CMP=share\\_btn\\_tw](https://www.theguardian.com/environment/2017/dec/12/arctic-permafrost-sea-ice-thaw-climate-change-report?CMP=share_btn_tw)

## QUOTE:

*'An alarming heatwave in the sunless winter Arctic is causing blizzards in Europe and forcing scientists to reconsider even their most pessimistic forecasts of climate change.*

*Although it could yet prove to be a freak event, the primary concern is that global warming is eroding the polar vortex, the powerful winds that once insulated the frozen north.*

*The north pole gets no sunlight until March, but an influx of warm air has pushed temperatures in Siberia up by as much as 35C above historical averages this month. Greenland has already experienced 61 hours above freezing in 2018 - more than three times as many hours as in any previous year.*

*Seasoned observers have described what is happening as "crazy," "weird," and "simply shocking".*

*"This is an anomaly among anomalies. It is far enough outside the historical range that it is worrying – it is a suggestion that there are further surprises in store as we continue to poke the angry beast that is our climate," said Michael Mann, director of the Earth System Science Center at Pennsylvania State University. "The Arctic has always been regarded as a bellwether because of the vicious circle that amplify human-caused warming in that particular region. And it is sending out a clear warning." '*

<https://www.theguardian.com/environment/2018/feb/27/arctic-warming-scientists-alarmed-by-crazy-temperature-rises>



**The Emissions GAP Report 2017 Executive Summary produced by UN Environment indicates**  
**COAL SHOULD REMAIN IN THE GROUND**

**QUOTE:**

*‘The assessment shows that between 80 and 90 percent of coal reserves worldwide will need to remain in the ground, if climate targets are to be reached. This compares with approximately 35 percent for oil reserves and 50 percent for gas reserves.’*

[https://wedocs.unep.org/bitstream/handle/20.500.11822/22101/EGR\\_2017\\_ES.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/22101/EGR_2017_ES.pdf?sequence=1&isAllowed=y)

**UN ASSESSMENT FROM GAP EMISSIONS REPORT 2017 – AUSTRALIA LIKELY TO**  
**REQUIRE FURTHER ACTION TO MEET 2030 TARGETS**

**QUOTE:**

*‘recent studies assessed suggest that Brazil, China, India and Russia are likely to – or are roughly on track to – achieve their 2030 NDC targets with currently implemented policies. Conversely, Argentina, Australia, Canada, the European Union, Indonesia, Japan, Mexico, South Africa, the Republic of Korea and the United States are likely to require further action in order to meet their NDCs, according to government and independent estimates.’*

[https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR\\_2017.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/22070/EGR_2017.pdf?sequence=1&isAllowed=y)



# APRA- Climate Change risks threaten industry stability

## QUOTE:

*'Banks and insurers are jeopardising their futures if they fail to prepare for climate-related risks, the Australian Prudential Regulation Authority (APRA) has warned.*

*The stark advice from the industry watchdog was delivered during a speech last night to the Centre for Policy Development in Sydney.*

*APRA said it had a duty to warn the institutions that it regulates, like banks, superannuation funds and insurers, if it identified a risk that could threaten their stability.'*

<http://www.abc.net.au/news/2017-11-30/climate-related-risks-will-jeopardise-stability-of-banks:-apra/9209912>

# Implementing Paris Agreement could save in Health Care

*‘UN Climate Change News, 5 March 2018 - Meeting the objectives of the Paris Climate Change Agreement by investing in low emissions technology would save governments around USD 54 trillion in health care costs by mid-century, leading medical experts say in a new report.*

*Investing in the reduction of greenhouse gas emissions would be far cheaper than paying the health costs associated with polluted air, and would also result in millions fewer premature deaths, write the authors of a study published in the Lancet Planetary Health.*

*According to the World Health Organization, 92% of people who live in cities do not breathe safe air, and 6.5 million people die each year due to poor ambient air quality.*

*The report also outlines basic climate policy options which would have an immediate and positive impact both on the health and economies of the world's societies.*

*“Removing fossil fuel subsidies and implementing carbon taxes could, if properly designed, improve health, reduce greenhouse gas emissions, redistribute wealth, and stimulate employment,” say the authors of "Health co-benefits from air pollution and mitigation costs of the Paris Agreement: a modelling study”.*

<https://cop23.unfccc.int/news/implementing-paris-agreement-could-save-governments-usd-54-trillion-in-health-care-report>

► Report details at [http://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(17\)30003-7/fulltext](http://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(17)30003-7/fulltext)

# Further Health Impacts from fossil fuels - fracking, mining, coal fired power stations

- ▶ **REPORT: Five Major Health Threats from Fracking-Related Air Pollution, NRDC, 2014** @ <https://www.nrdc.org/media/2014/141216>

*'SAN FRANCISCO – A growing body of evidence shows that people both near and far from oil and gas drilling are exposed to fracking-related air pollution that can cause at least five major types of health impacts, according to a new comprehensive analysis of scientific studies to-date by the Natural Resources Defense Council. The health impacts include respiratory problems, birth defects, blood disorders, cancer and nervous system impacts, raising serious concerns for workers and people living closest to wells, as well as entire regions with high volumes of oil and gas activity.'*

- ▶ [http://www.lockthegate.org.au/study\\_finds\\_increased\\_hospitalisations\\_in\\_darling\\_downs\\_raising\\_red\\_flag\\_over\\_health\\_impacts\\_of\\_coal\\_seam\\_gas](http://www.lockthegate.org.au/study_finds_increased_hospitalisations_in_darling_downs_raising_red_flag_over_health_impacts_of_coal_seam_gas)

Report at <https://www.tandfonline.com/doi/full/10.1080/00207233.2017.1413221>

- ▶ **Dust from mines can be an issue –**

- ▶ <http://www.health.nsw.gov.au/environment/factsheets/Pages/mine-dust.aspx> and

- ▶ <http://www.abc.net.au/news/2017-05-29/black-lung-report-catastrophic-failure-qld-public-administration/8568000>

- ▶ **REPORT: 'Toxic and terminal: How the regulation of coal-fired power stations fails Australian communities is the result of exhaustive research, Freedom of Information searches, surveillance of Australia's major power stations and advice from health experts and industry whistleblowers.'**

*The report finds:*

*Coal-fired power stations emit more than 30 toxic substances and are Australia's biggest source of fine particles (PM2.5), sulfur dioxide (SO2) and oxides of nitrogen (NOx).*

*These substances cause and contribute to asthma, lung cancer, heart attacks, stroke, respiratory disease, headaches and nausea in nearby communities.*

*In most cases emissions limits in Australia are much more lax than those in the US, EU and China.*

*Mercury limits for some NSW power stations are 666 times higher than the US limits.*

*Pollution reduction technologies that have been available for many years and are used overseas could significantly reduce power station emissions but are not in use in Australia.*

*New coal-fired power stations, even those described as 'ultra-super critical' or 'HELE' (high efficiency, low emission) only marginally reduce toxic emissions*

*Despite much evidence of failure to comply with pollution licence conditions, no power station in Victoria, NSW or Queensland has been prosecuted for any offence in the past ten years (instead they have been issued with inadequate penalty notices).*

<https://envirojustice.org.au/powerstations>

Summary @ [https://envirojustice.org.au/sites/default/files/files/EJA\\_CoalHealth\\_exec\\_recs.pdf](https://envirojustice.org.au/sites/default/files/files/EJA_CoalHealth_exec_recs.pdf)

Taxpayers maybe exposed to Queensland's Coal Mines clean up.  
NSW Department security deposits not likely to be sufficient to cover the full cost of each mine's rehabilitation in the event of a default.

### TAXPAYERS MAY BE EXPOSED TO 3.2B CLEAN UP FOR COAL MINES...

*'Taxpayers are exposed to a \$3.2-billion black hole in funding for the future environmental clean-up of the state's coal mines, an internal Queensland Government report was warned.'*

*'The report titled Financial Assurance for Queensland Coal Mines, obtained by the ABC, found that 90 per cent of the financial assurance (FA) put forward by the industry was 'incorrect' and 'too low'.*

<http://www.abc.net.au/news/2016-08-04/taxpayers-exposed-to-multi-billion-clean-up-of-coal-mines-report/7685760>

### Audit on Mining Remediation

*'The Department holds security deposits for mining rehabilitation consistent with the amounts it has requested from mining companies, and it should be able to claim on a deposit if a mining company defaults on its rehabilitation obligations. The total value of deposits has increased from \$500 million in 2005 to around \$2.2 billion in 2016, covering around 450 mine sites. The Department's management of the security deposit process has improved in recent years, and it has well advanced plans for further improvement, including a revised cost calculation tool.*

*The Department's policy is that each mine's security deposit should cover the full costs of rehabilitation for that mine. The security deposits the Department holds are not likely to be sufficient to cover the full costs of each mine's rehabilitation in the event of a default. The rates and allowances in the current cost calculation tool have not been updated since 2013 and some activities required for effective rehabilitation are not covered, or not covered adequately.*

*Security deposits also do not include sufficient contingency given the substantial risks and uncertainties associated with mine rehabilitation and closure, particularly in the absence of a detailed closure plan. This risk is exacerbated by the limited independent verification of mining company claims about the size of the outstanding rehabilitation task, which remains the case despite recent improvements to monitoring and review procedures and practices.*

*There is also no financial assurance held over the risk of significant unexpected environmental degradation in the long-term after a mine is deemed to be rehabilitated and the security deposit is returned. A security deposit is not an appropriate vehicle for covering this risk.'*

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<https://www.audit.nsw.gov.au/publications/latest-reports/performance/mining-rehabilitation-security-deposits/executive-summary/1-executive-summary>

# Renewable energy competitive and reliable

## Climate Council report -

### *Key report findings:*

- ▶ *Globally, solar photovoltaic (PV) power is surging on the back of scaled-up production and continually falling costs.*
- ▶ *Solar costs are now so low that large-scale solar plants are providing cheaper power than new fossil and nuclear power in many countries.*
- ▶ *Solar costs have dropped 58% in five years and are expected to continue to fall by a further 40-70% by 2040.*
- ▶ *Australia is expected to reach over 20GW of solar PV in the next 20 years, equivalent to about a third of Australia's current total power generation capacity.*
- ▶ *Solar and battery storage for households and businesses is already gaining traction in Australia.*

<https://www.climatecouncil.org.au/solar-power-plants-now-cheaper-than-coal>

## Continued Coal unit trips saved by Tesla big battery

<http://reneweconomy.com.au/pas-de-deux-two-big-coal-units-trip-at-same-time-in-victoria-36587/>