

EPISODE 2

Climate science is well understood



2 ANSWERS TO SCEPTICAL QUESTIONS

“Does science really know enough about climate change? Wouldn't it make sense to collect more data before we decide to take action?”

No, the **science is clear and well-understood**. Climate science has a long history, with early recognition that **changing CO₂ levels in the atmosphere could impact the climate**. By 1896, calculations of global warming due to human CO₂ emissions were already remarkably accurate and comparable to today's estimates. In 1912, a newspaper article reported the correlation between burning coal and the production of polluting gases, recognising its warming effect on the planet over centuries. This indicates that climate science information was already available in public sources more than a hundred years ago.

“Can we really trust the motivations of scientists when they claim to understand climate change?”

Not only the scientific community but also **fossil fuel companies like Exxon and Shell have long understood climate change**. Over 40 years ago, Exxon produced a report accurately predicting a 1.2°C temperature increase with an atmospheric CO₂ concentration of 420 ppm, a prediction that closely matches today's reality. This Exxon report, leaked in 2015, revealed their early awareness of climate impacts, including the potential for devastating sea-level rise. Despite their knowledge, these companies ran campaigns **downplaying climate risks**, contributing to **public confusion and delaying climate action**.

3 FAST FACTS

> 150 years

– that is how long climate science has understood the correlation between CO₂ in the atmosphere and global warming.

1856

– the year the scientist Eunice Newton Foote first proposed the connection between CO₂ and global warming¹.

1982

– that was when fossil fuel company Exxon produced an internal report showing that it was well aware of the causes and effects of climate change.

¹Perfetto 2022

3 KEY TAKEAWAYS

- ▶ Active disinformation campaigns continue to sow public uncertainty and inaction despite well-understood climate science.
- ▶ Communicate that climate science is not a recent discovery; the research has a long history, and it is robust and irrefutable.
- ▶ We know what the problem is, and we know there are many solutions available that will make a real difference for our future.

3 ESSENTIAL RESOURCES

- ▶ Since the 1950s, the increase in atmospheric CO₂ has been measured daily by the Mauna Loa Observatory in Hawaii and the [Keeling Curve](#) is the record of these measurements.
- ▶ This [graph from NASA](#) shows the atmospheric CO₂ over the last 800,000 years.
- ▶ The [leaked internal Exxon report](#) offers valuable insights into the early recognition of climate change concerns within the fossil fuel industry.