

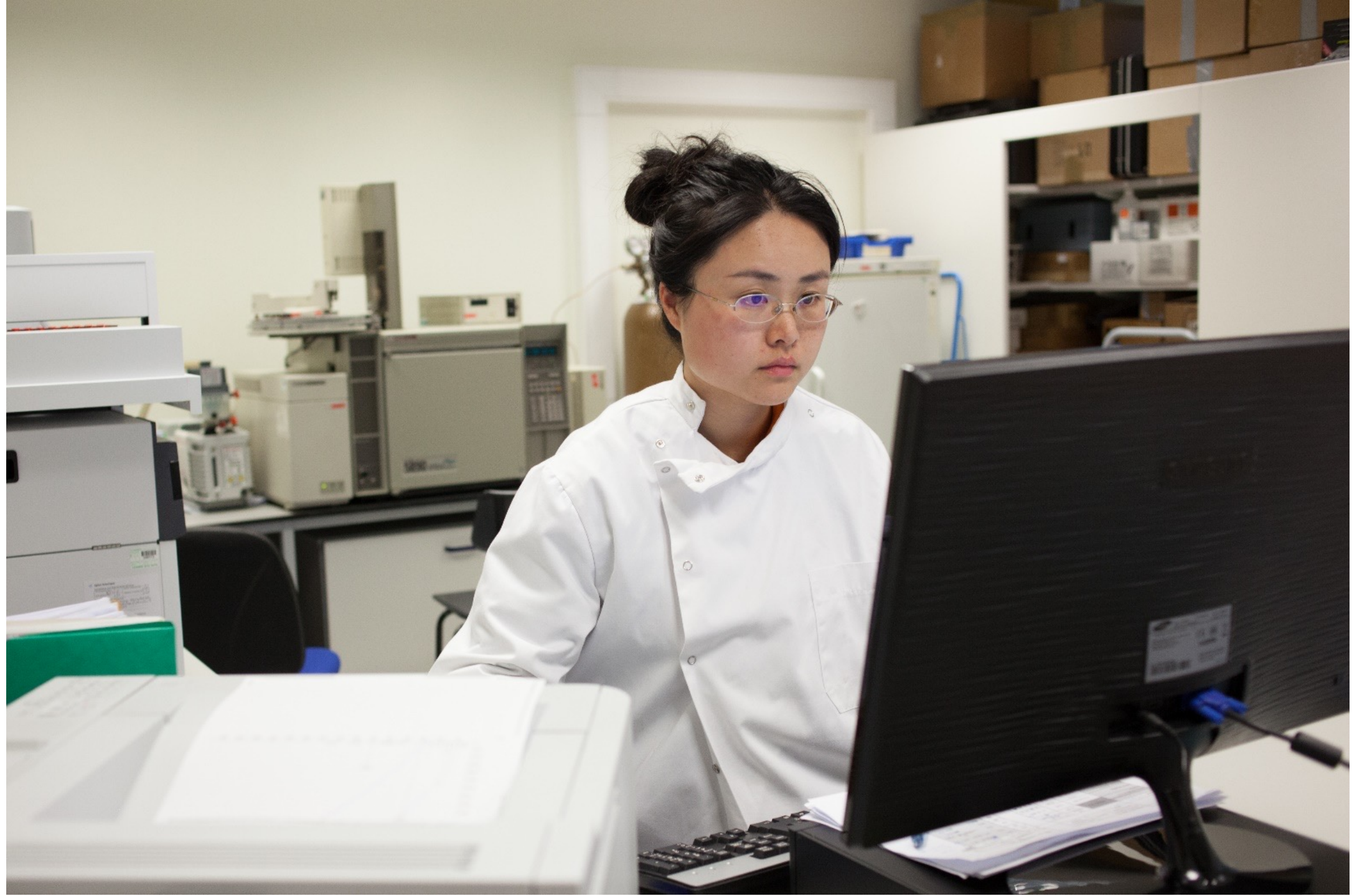


The invisible industry

Life saving.
Life enhancing.
Life promoting.

Industrial, food and medical gases, essential to the existence and wellbeing of hundreds of thousands of people in the UK everyday.

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11-15 March 2019

UN 
environment
assembly

Sustainable Innovation Expo
Eco-innovation and Sustainable Finance

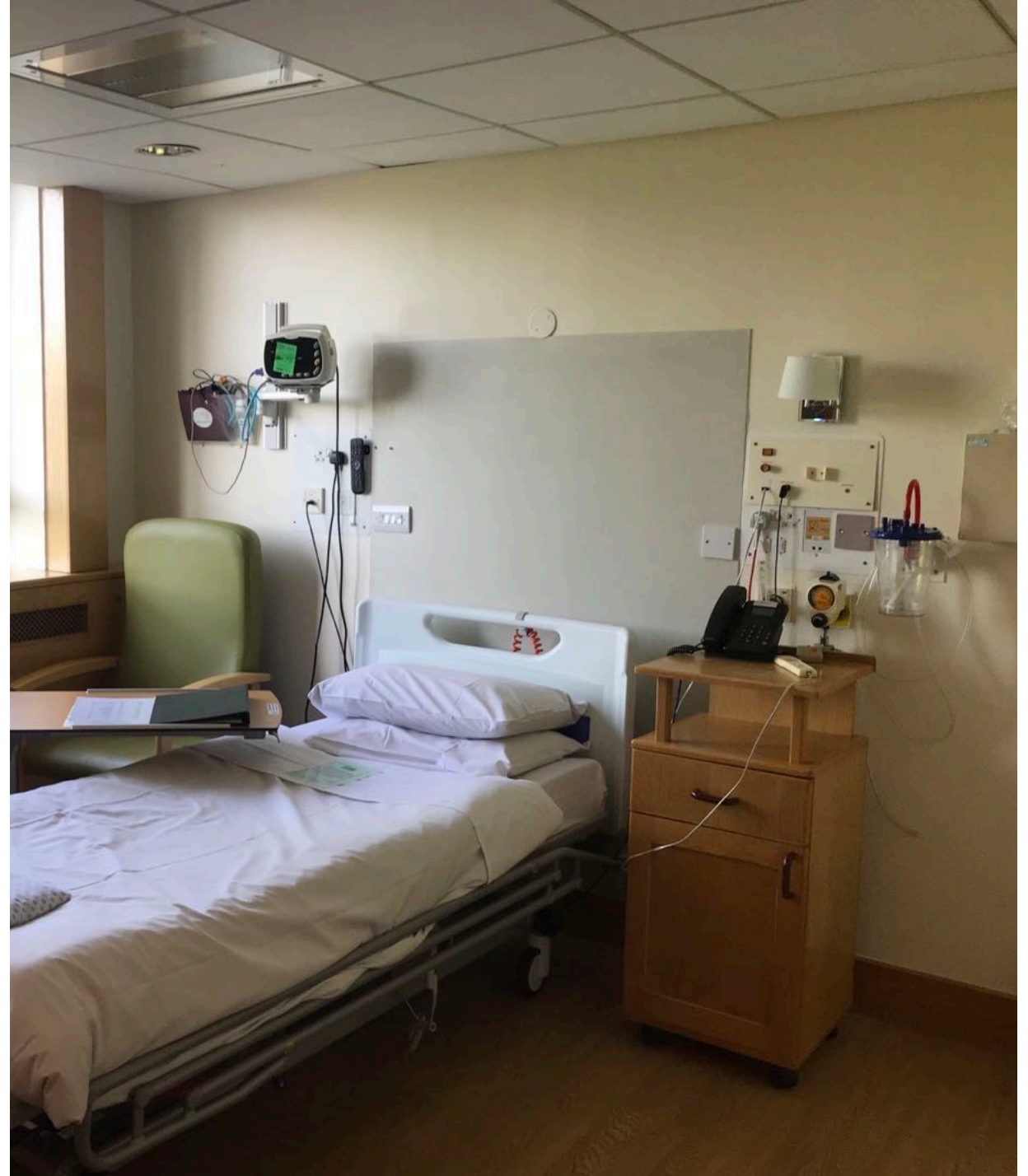
THINK
BEYOND

#SolveIt

Prem... Oriented Pla...

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Alternative Fuels for Vehicles

Beverage Dispense Gas Services

Consultants

Cryogenic Tank Providers & Disposal Agents

Cylinder Recovery & Disposal

Cylinder Testing

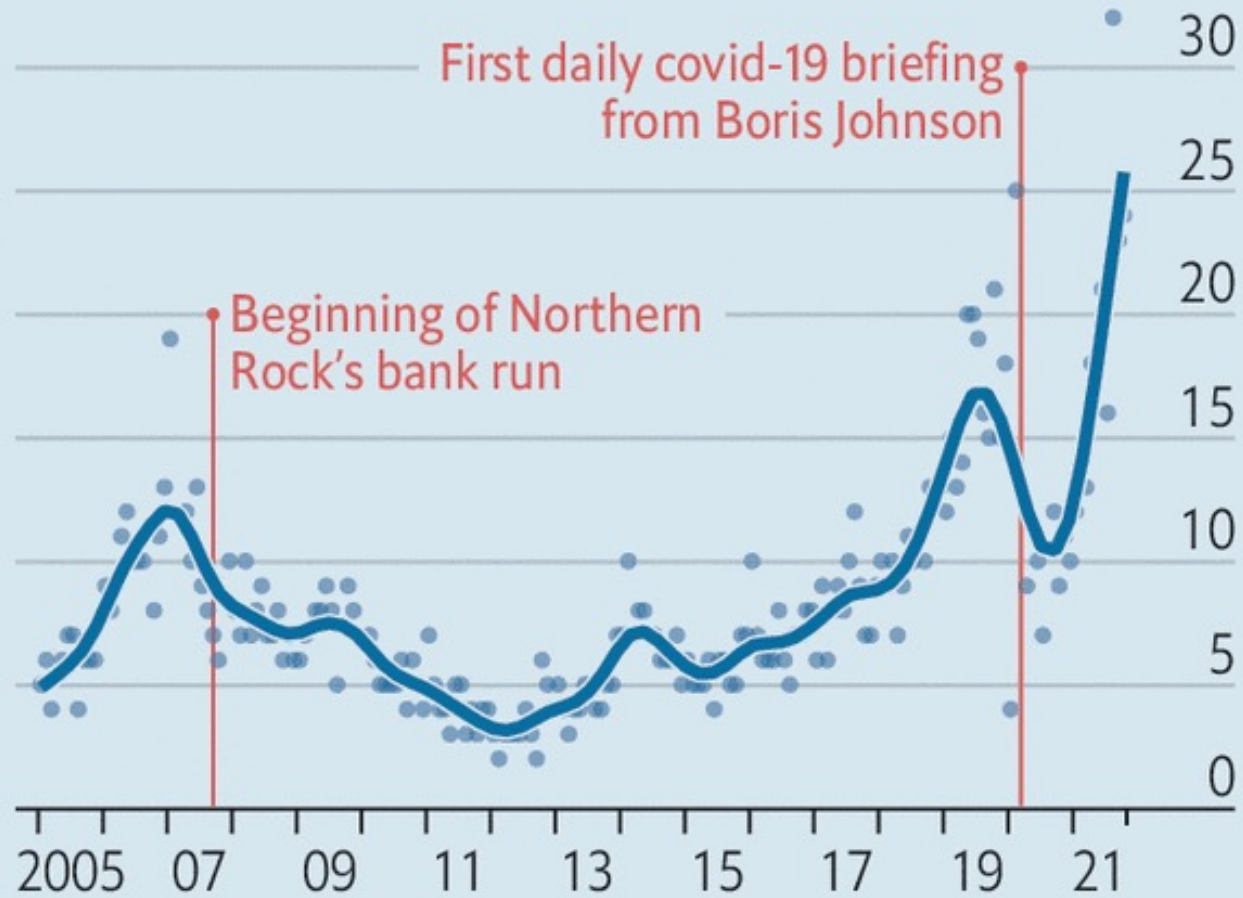
Gas Cylinder Valve Services

Medical Gas Services

Pipework Installers

Financial slump, pandemic pause

Britain, % citing pollution, the environment or climate change as a top issue facing the country



Source: Ipsos MORI

THE CLIMATE TARGETS

OF FORTUNE 500 COMPANIES

In 2019, the world's 500 largest companies employed **70M people** and generated **\$33T in revenues**. Given their size and influence, many of these companies have made commitments to reduce their carbon footprint.

This timeline provides a holistic view of when each company expects to achieve its stated target.

CLIMATE TARGET TYPE



CARBON NEUTRAL¹

Achieved when a company completely offsets its greenhouse gas emissions.



RENEWABLE 100% (RE100)

Achieved when a company relies on 100% renewable energy.



SCIENCE BASED TARGETS (SBT)

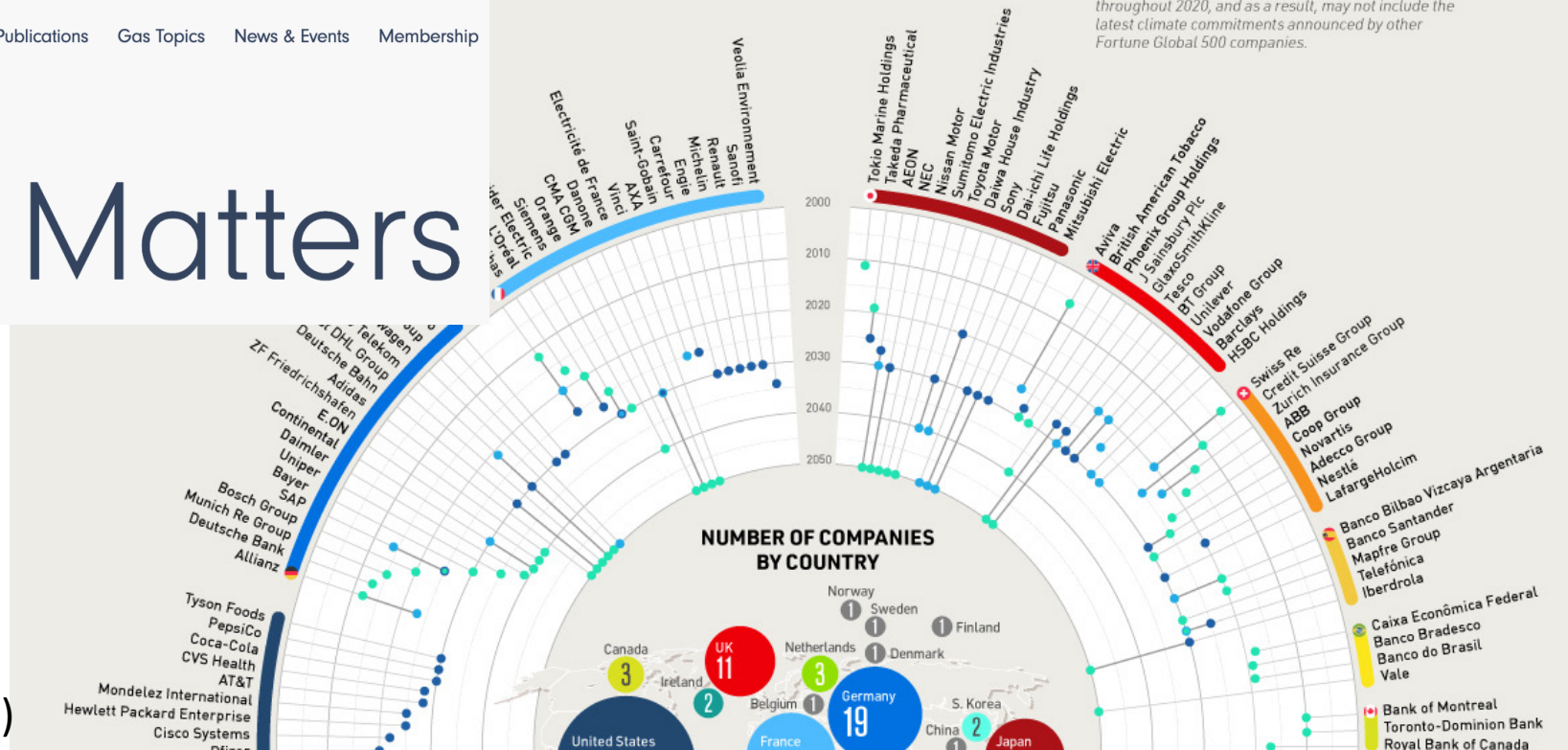
Emissions are reduced in line with the need to keep global warming below 2 degrees Celsius.



[About](#) [Publications](#) [Gas Topics](#) [News & Events](#) [Membership](#)

Environment Matters

Note: This data was aggregated from various sources throughout 2020, and as a result, may not include the latest climate commitments announced by other Fortune Global 500 companies.



(www.visualcapitalist.com)

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WARNS OF CHANGE...
Can UK lead world back from brink?
foreign break
ESTS
ROOM

Can we have two golfs?
Our writers' best moments of Tokyo 2020
The Guardian
For 200 years



Global climate crisis: inevitable, unprecedented and irreversible

Scientists warn of a 'code red' for humanity as the world's temperature rises and extreme weather becomes more frequent and intense.

FINANCIAL TIMES
Inside Kim's regime
Silencing staff
In China's debt
World likely to be 1.5C warmer by 2040, UN's science panel warns
• 'Code red for humanity' • More extreme weather expected • Call for urgent action

CODE RED FOR HUMANITY
EXTREME WEATHER DOWN TO GLOBAL WARMING, SAYS SCIENTIST REPORT FROM UN
WORLD WILL HEAT UP AT LEAST 1.5C BY 2040, UN SCIENTIST PANEL WARNS

REPORT OF THE YEAR - JOURNALISM TO

CODE RED
Each day you die 1.6 million of humanity
...to create the climate



...the world's temperature rises and extreme weather becomes more frequent and intense.

CODE RED FOR HUMANITY

DAILY EXPRESS

FREE
Brilliant puzzles pull out

David Cameron denies £7m Greensill pay packet

QUEEN'S BREAK WITH TRADITION

Next decade 'plunka' to secure planet's future after alarming scientific report

PM: WAKE UP TO RED ALERT ON CLIMATE CRISIS



(The guardian)

The background of the image is a marbled pattern of green and blue colors, resembling a watercolor or ink wash effect. The colors are blended together, creating a textured, organic appearance. The green is on the left and bottom, while the blue is on the right and top.

greenwash

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plastic pollution

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Plastic pollution - Wikipedia
en.wikipedia.org



plastic pollution | Sources & Effects ...
[britannica.com](https://www.britannica.com)



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End of the earth





Revealed: microplastic pollution is raining down on city dwellers

Exclusive: London has highest level yet recorded but health impacts of breathing particles are unknown

Plastic fibres found in tap water around the world, study reveals

Exclusive: Tests show billions of people globally are drinking water contaminated by plastic particles, with 83% of samples found to be polluted

Urban and Health
- microplastics



Airborne plastic pollution 'spiralling around the globe', study finds

Rising levels of microplastic pollution raise questions about the impact on human health, experts say



People eat at least 50,000 plastic particles a year, study finds

Health effects of ingestion of microplastics via food, water and breathing still unknown



Environment International
Volume 146, January 2021, 106274



Urban and Health
- microplastics

Plasticenta: First evidence of microplastics in human placenta

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The Guardian For 200 years
News website of the year

Thu 24 Mar 2022 11:00 GMT

Microplastics found in human blood for first time

Bloomberg

6 April 2022, 15:54 GMT+8

Once Thought Impossible, Microplastics Found in Live Human Lungs for First Time

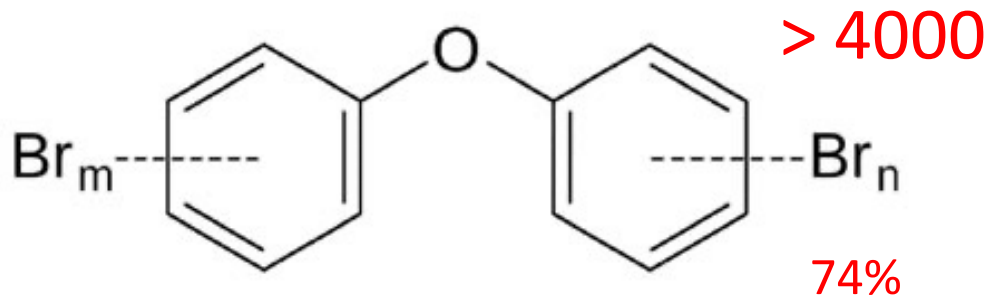


Tiny bits of plastic are in our food, water and air. Find out how much plastic you eat at

YOUR PLASTIC DIET.ORG



Plasticenta: First evidence of microplastics in human placenta



It took you
approximately
1 WEEK
to eat this
credit card



Tiny bits of plastic are in our food, water and air.
Find out how much plastic you eat at






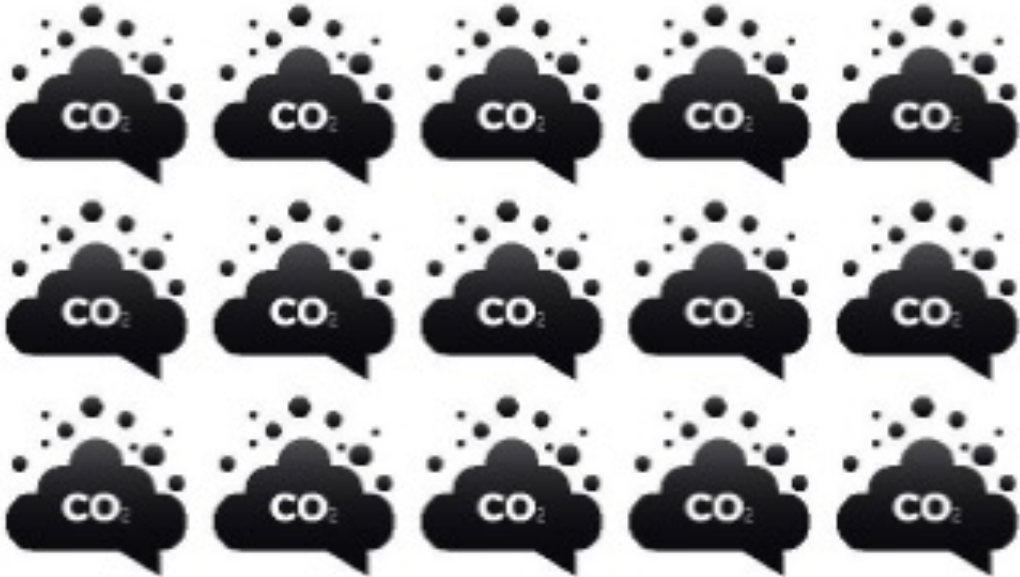
[YOUR PLASTIC DIET.ORG](https://www.yourplasticdiet.org)

Plastics and the circular economy

A STAP document

STAP SCIENTIFIC AND TECHNICAL
ADVISORY PANEL
*An independent group of scientists that
advises the Global Environment Facility*



	Recent Estimates	Business as Usual Projections
Production and Use		
Tonnes of plastic produced	 <p>311-380 Mt in 2015^a</p>	 <p>1244-1520 Mt by 2050^b</p>
Plastics share of global oil and gas consumption ^c	 <p>6% in 2014</p>	 <p><u>20% by 2050</u> drive 50% of oil demand growth (IEA)</p>
Plastics share of global carbon budget ^d	 <p>1% in 2014</p>	 <p>15% by 2050 GEF/STAP & UNEP (2018)</p>

Social justice



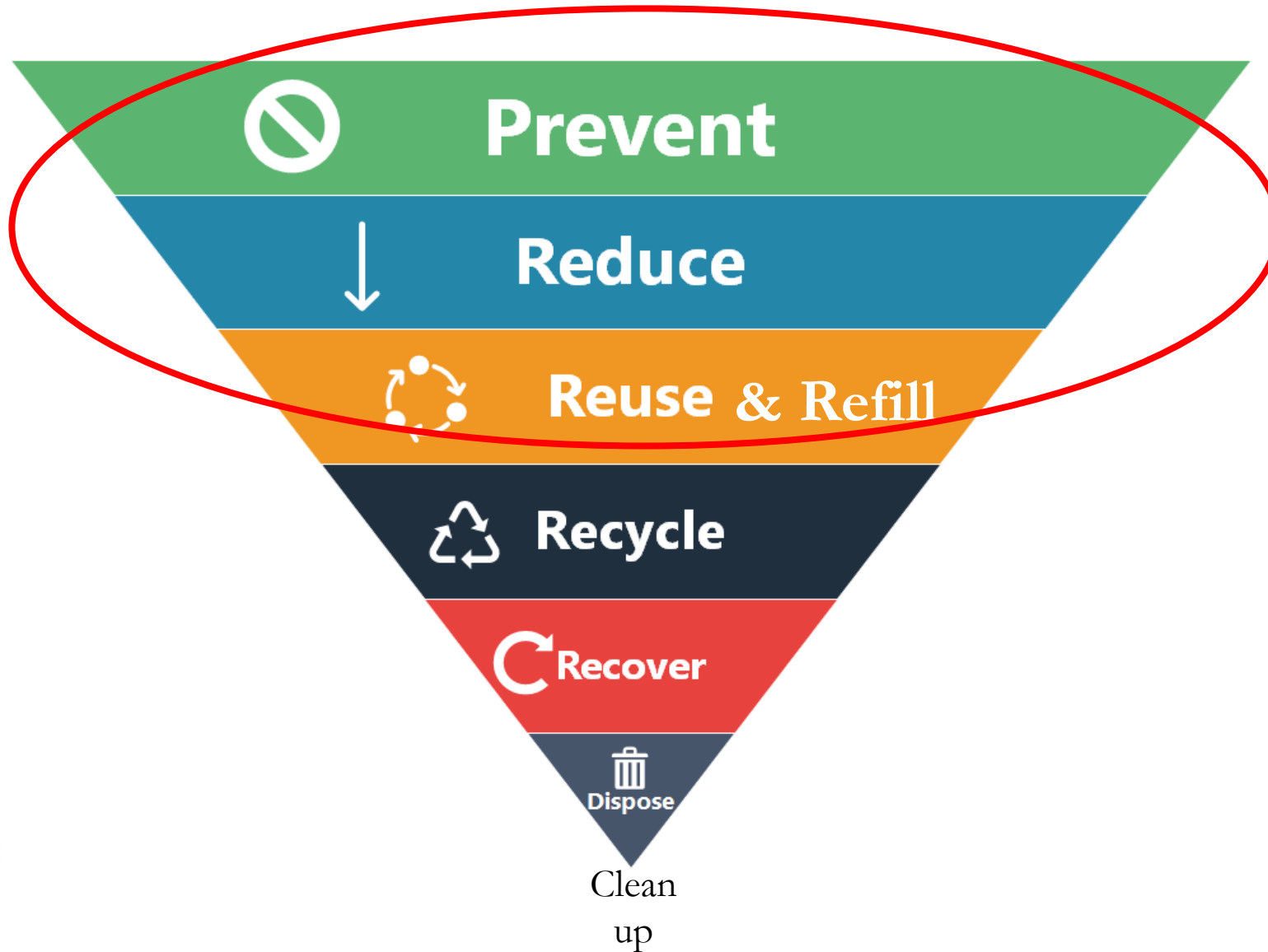
Ship Channel and Oil Facilities in Texas. ExxonMobil Baytown refinery and petrochemical complex in Baytown, Texas near the Houston Ship Channel.

© Aaron Sprecher / Greenpeace



(Greenpeace)

Life cycle of plastics – holistic view



Climate change

Health

Environment
pollution &
biodiversity

Justice

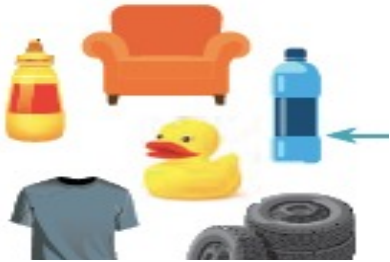
Extraction & Transport



Refining & Manufacture



Consumer Use

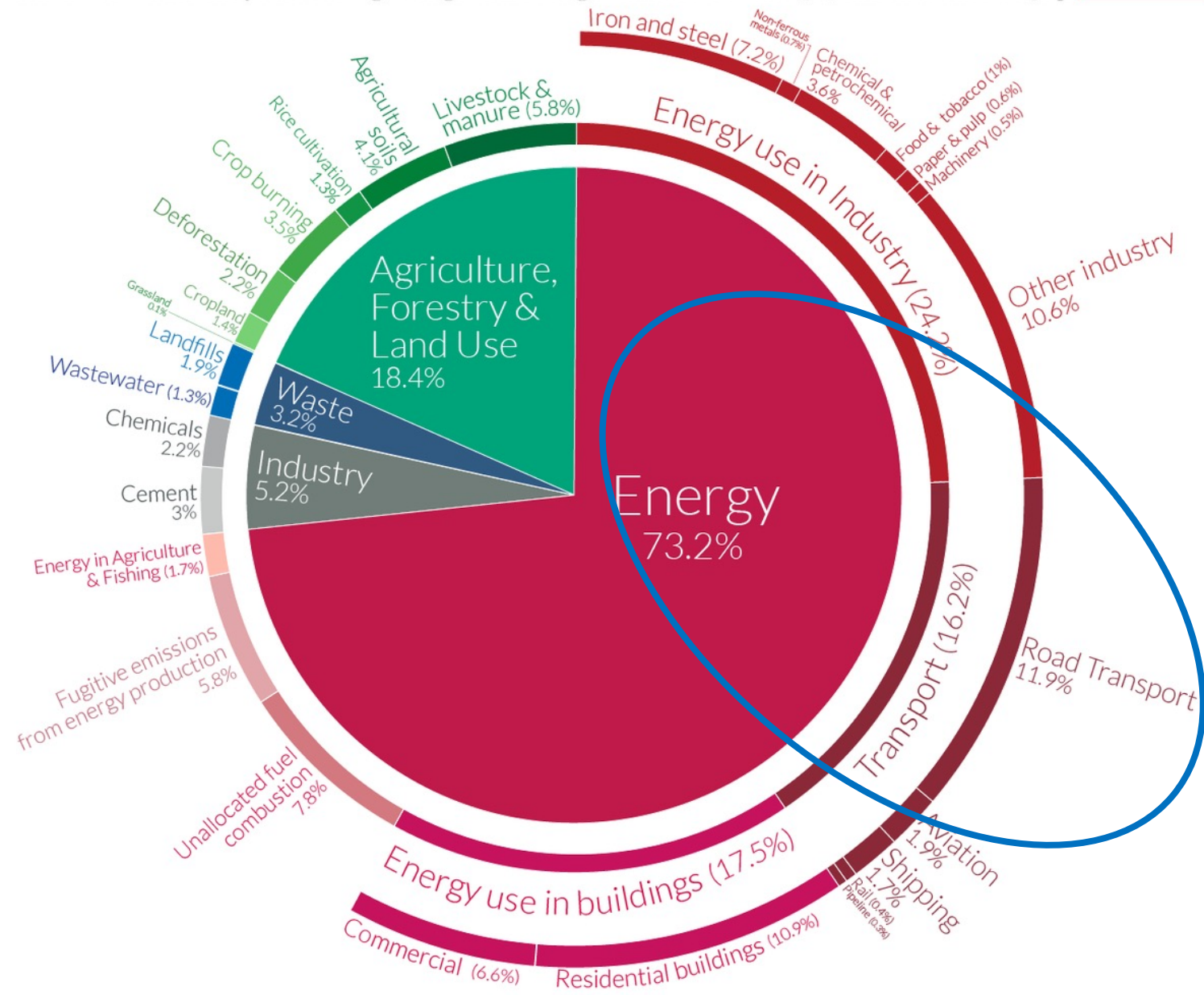


Waste Management



Global greenhouse gas emissions by sector

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO₂eq.



Fossil Carbon

Plastics &
petrochemicals

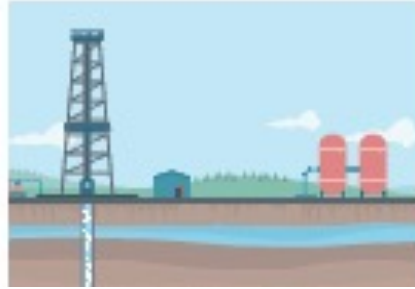
Refining & Manufacture



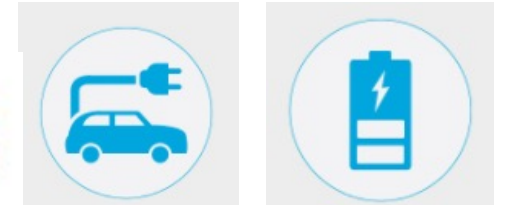
Consumer Use



Waste Management

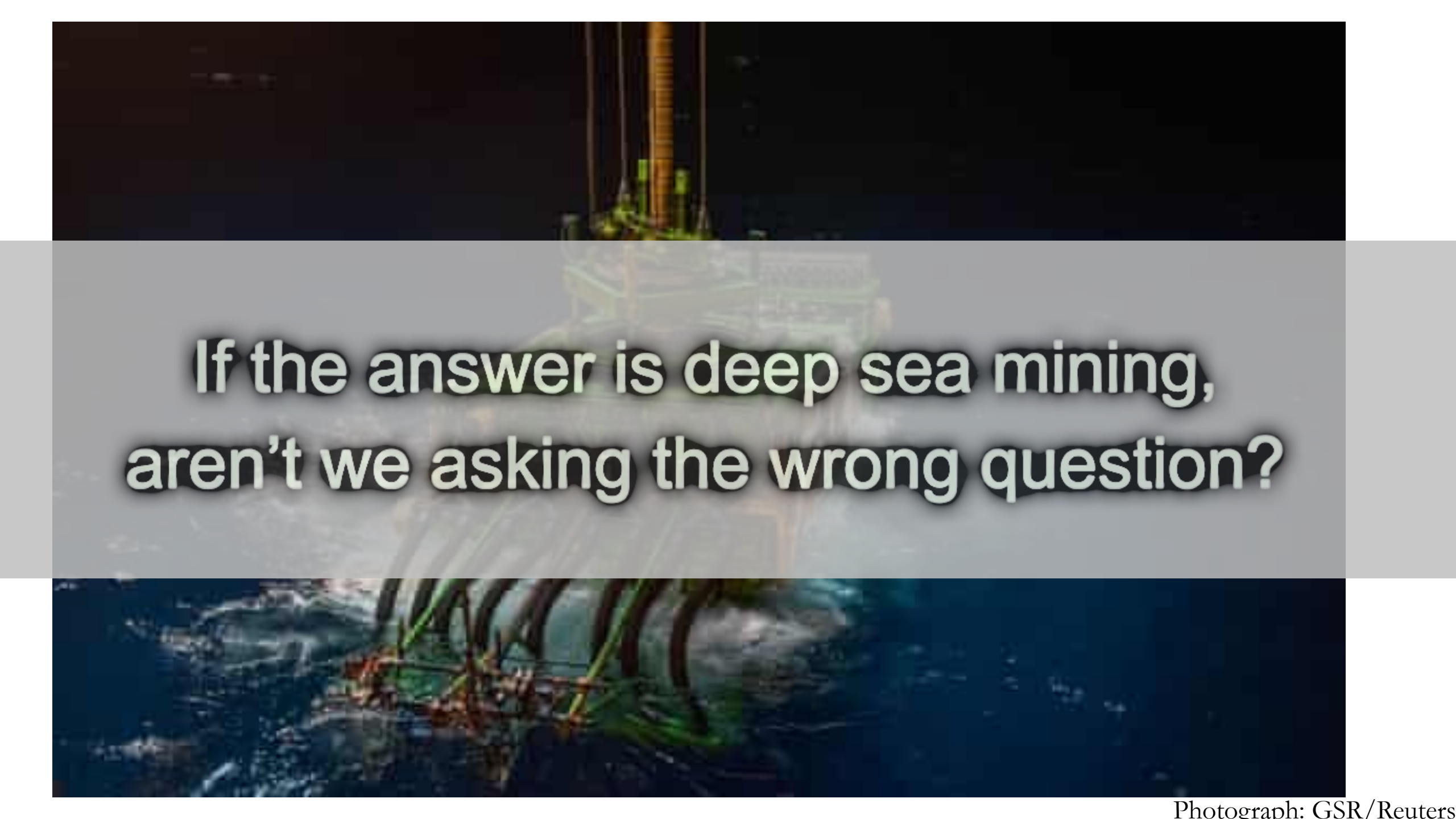


Fossil fuel



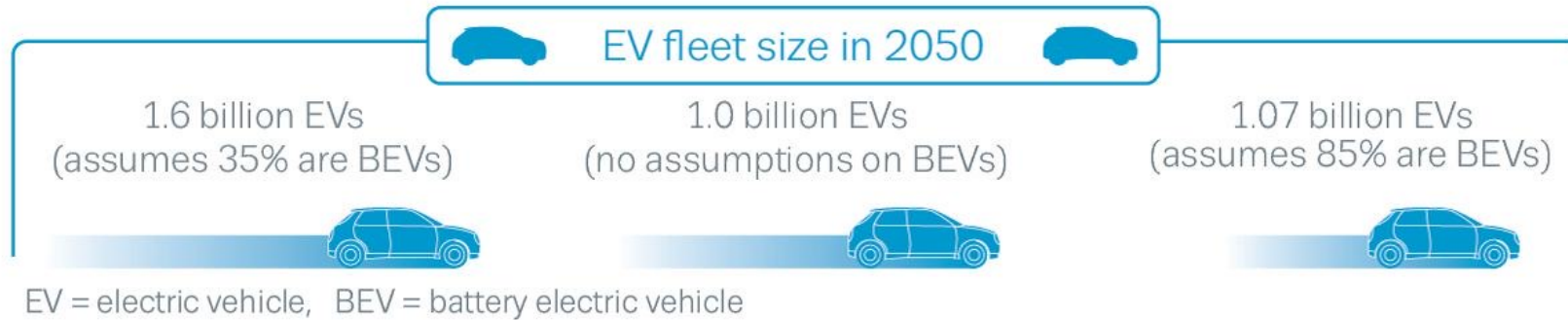
CO₂
NO_x, SO_x
microplastics



A photograph of deep-sea mining equipment, likely a hydrothermal vent collector, in the dark blue ocean. The equipment consists of several vertical metal poles and a complex structure of pipes and cables. The background is a dark, deep blue sea with some white foam or bubbles visible. The text is overlaid on a semi-transparent grey band across the middle of the image.

**If the answer is deep sea mining,
aren't we asking the wrong question?**

Multiple assumptions and uncertainties underpin models used to estimate future metal demand



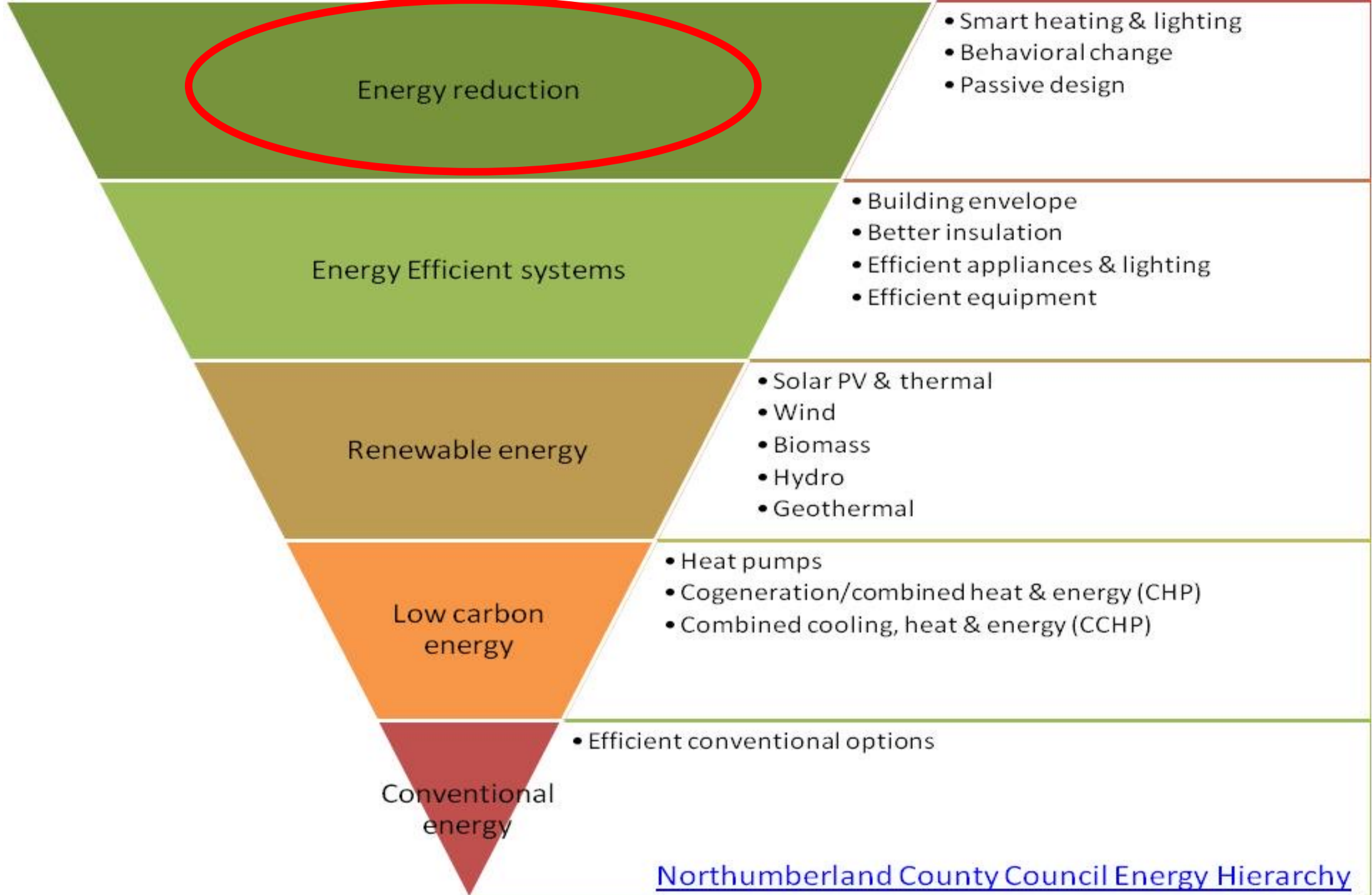
Projections of the number of **EVs** that will be in circulation are variable. Some studies assume that plug-in hybrid EVs, which rely on fossil fuels, make up some of the 2050 fleet.

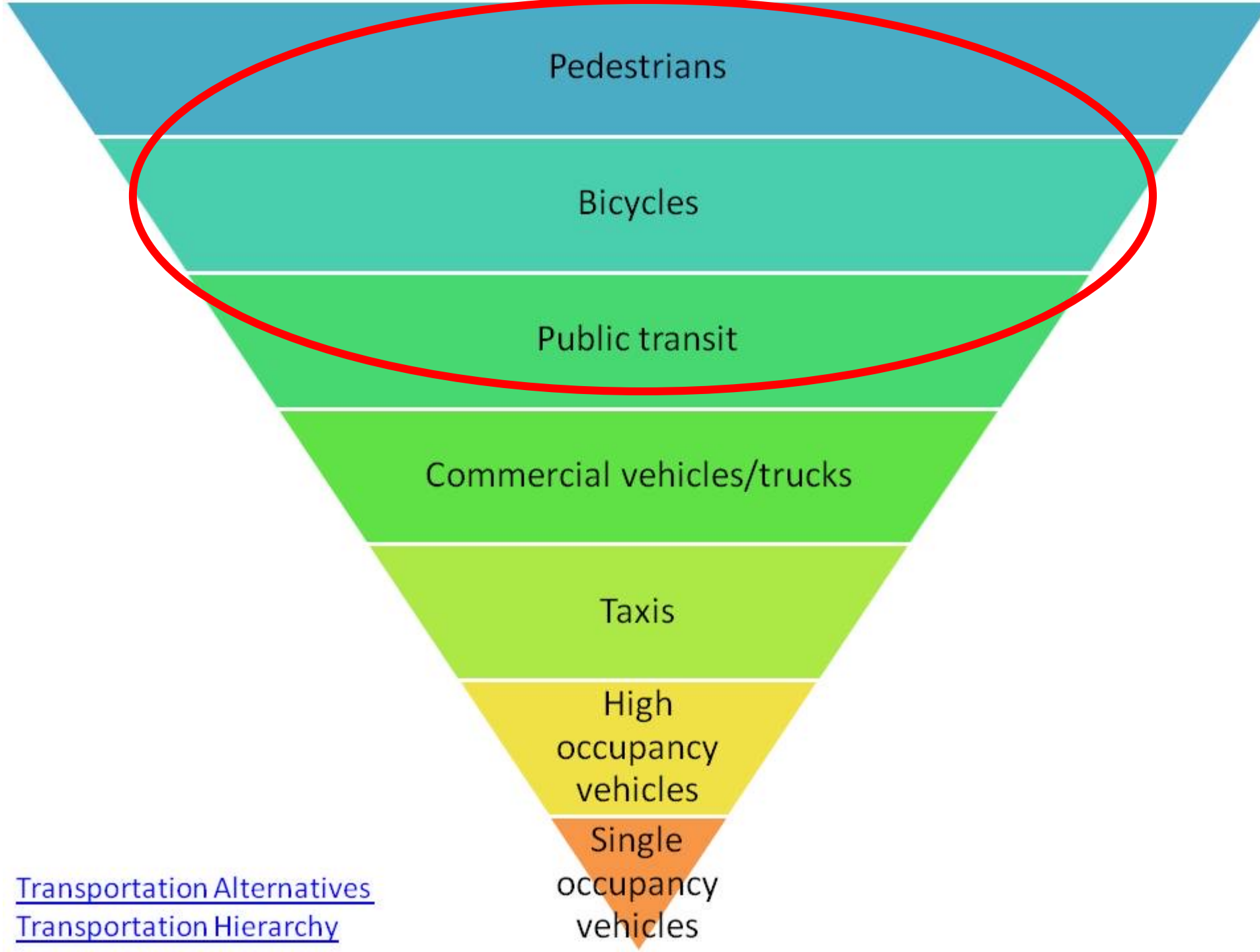


Studies often assume different **battery** technologies in their projections. As new innovations reach the market, mineral demand may diminish.

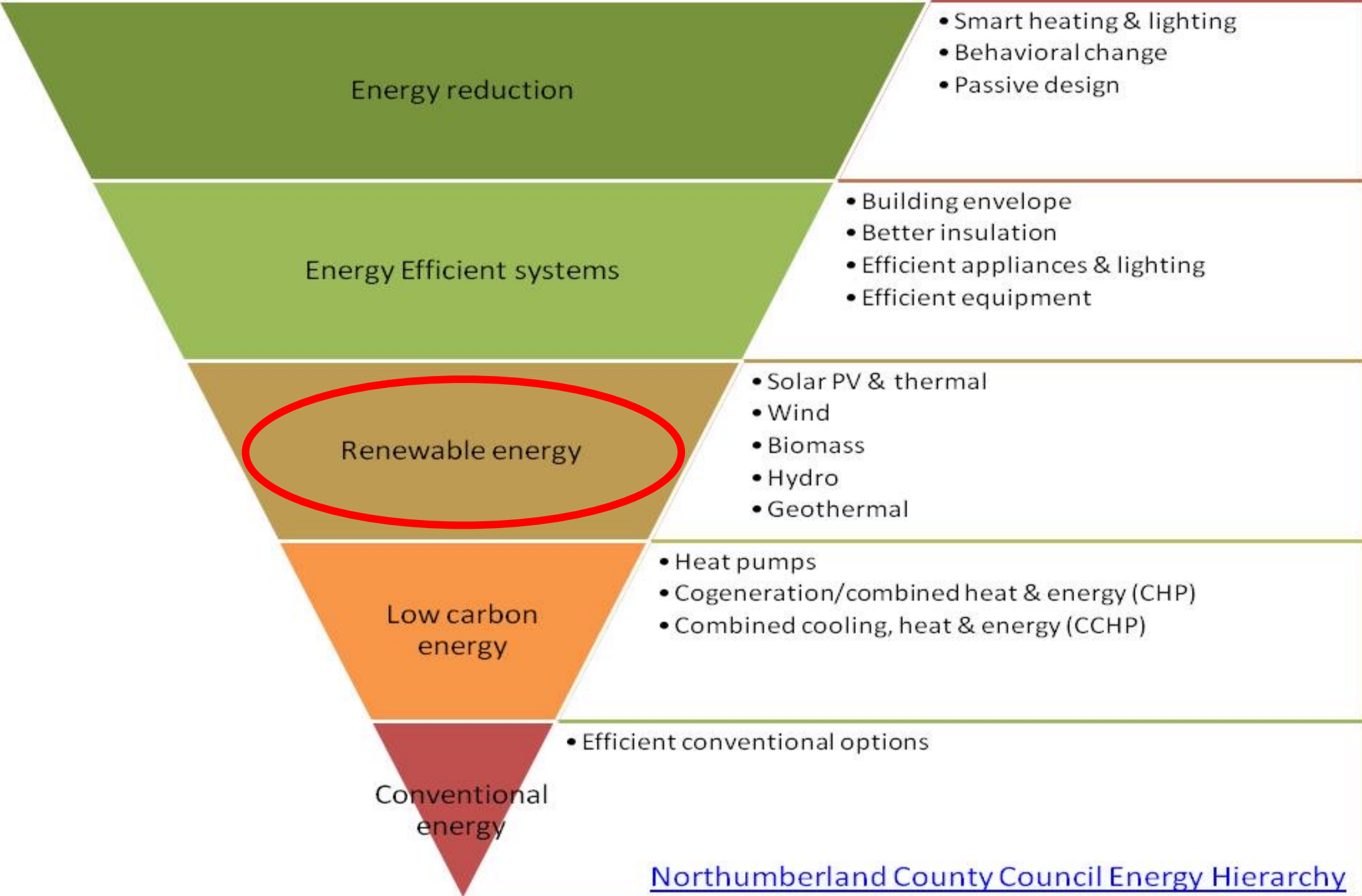


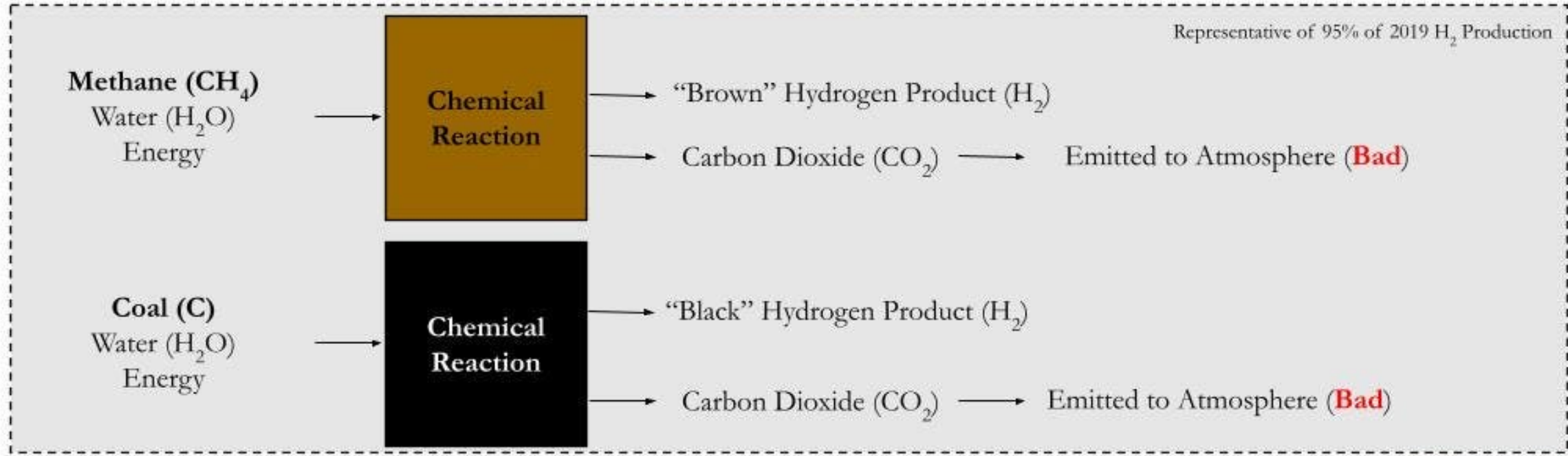
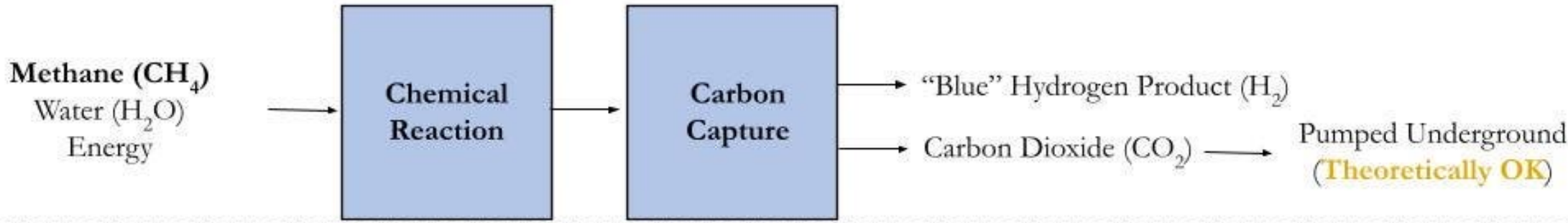
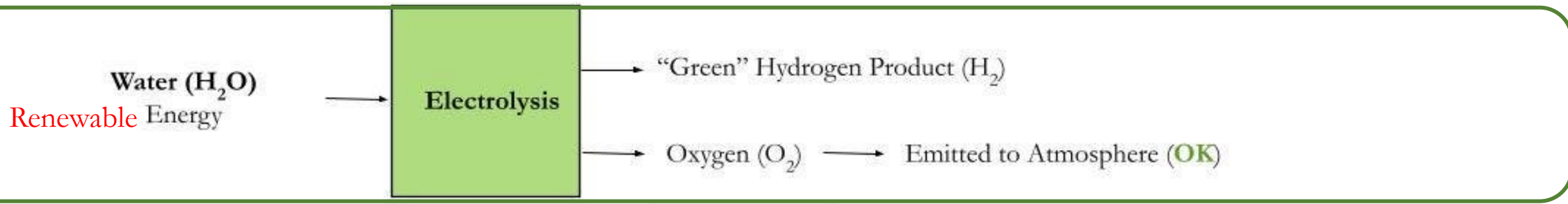
Studies assume different projected **recycling** capability for battery components. We focus on cobalt, lithium and nickel for simplicity.





[Transportation Alternatives](#)
[Transportation Hierarchy](#)





Main Pathways for Producing Hydrogen (Actual and Proposed)

Prevention and
reduction

Mindset: **Value creation**
Do more good
Doing different things

Sustainability
spectrum

Replace

**Value creation
spectrum**

Reduce
impacts

Mindset: Risk management
Do less bad
Doing thing differently



HYDROLINER Now a bus journey doesn't cost the earth.

#DRIVINGAGREENERFUTURE

#BUSBACKCATER

Refuel in less than 10mins

Range 290miles

Zero-emissions

Hydrogen capacity 27kg

Emissions = H₂O

Maximum capacity 86

Improved air quality