



# Scientists Warning on Affluence – Implications for Renewable Energy

Prof. Tommy Wiedmann  
Sustainability Assessment Program  
School of Civil and Environmental Engineering  
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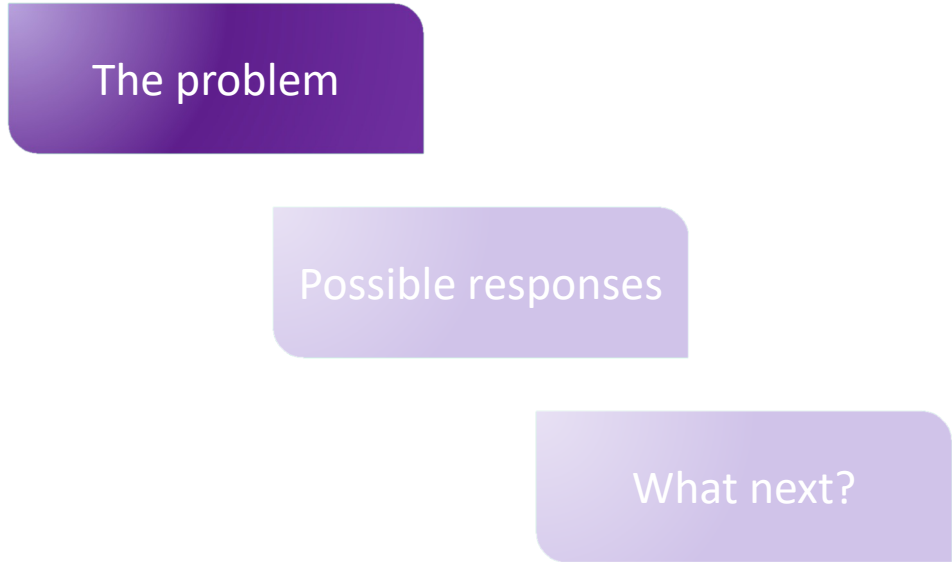


SUSTAINABILITY  
ASSESSMENT PROGRAM



With inputs from Dr Oliver  
Kunz and Erin Remblance



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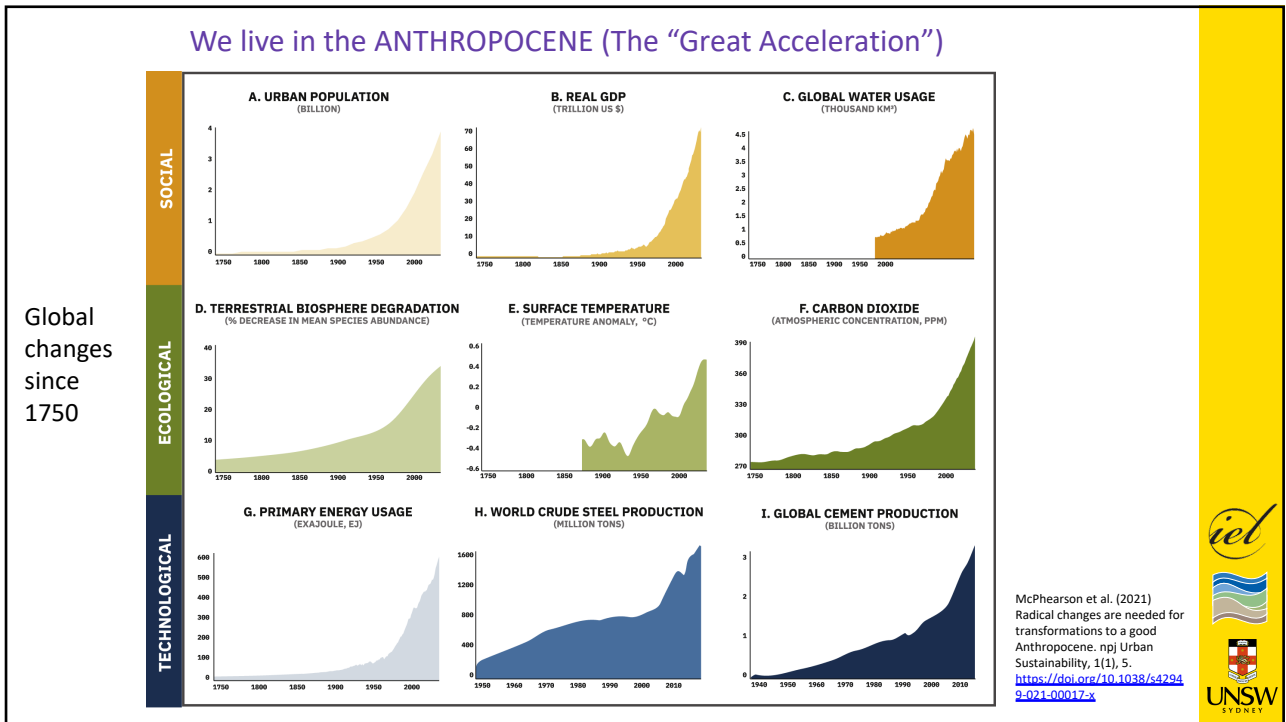
The problem

Possible responses

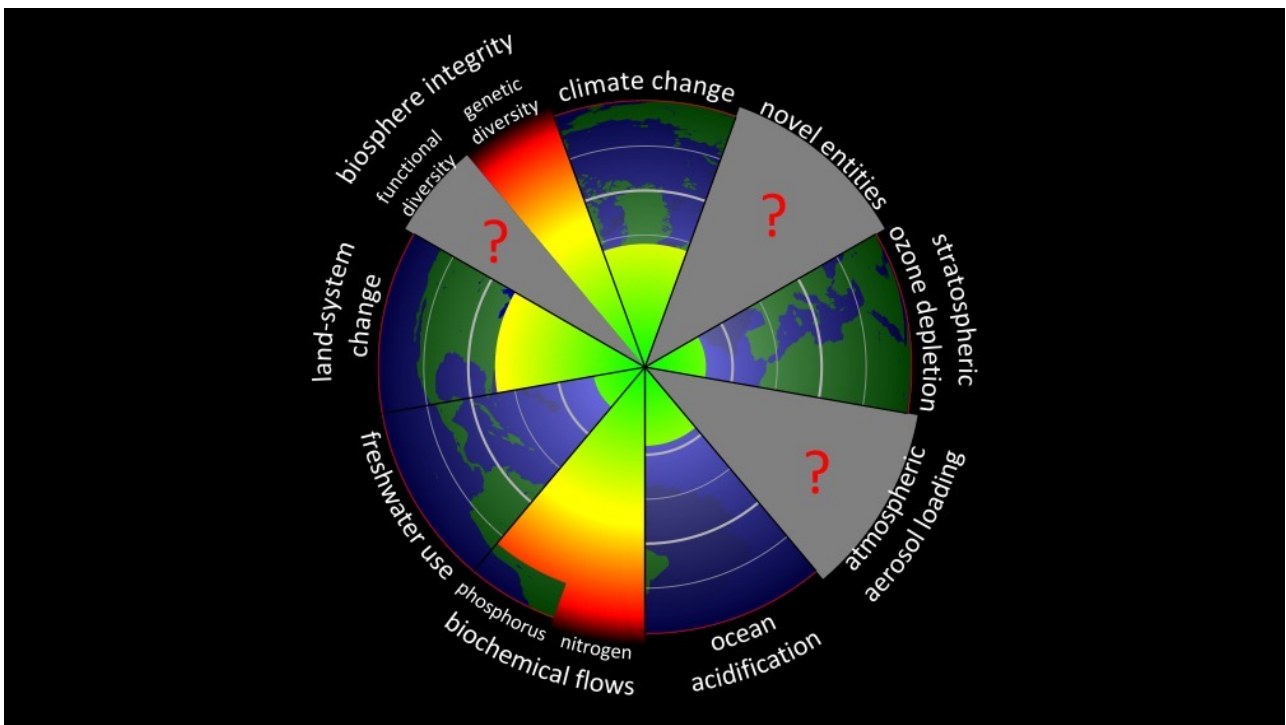
What next?



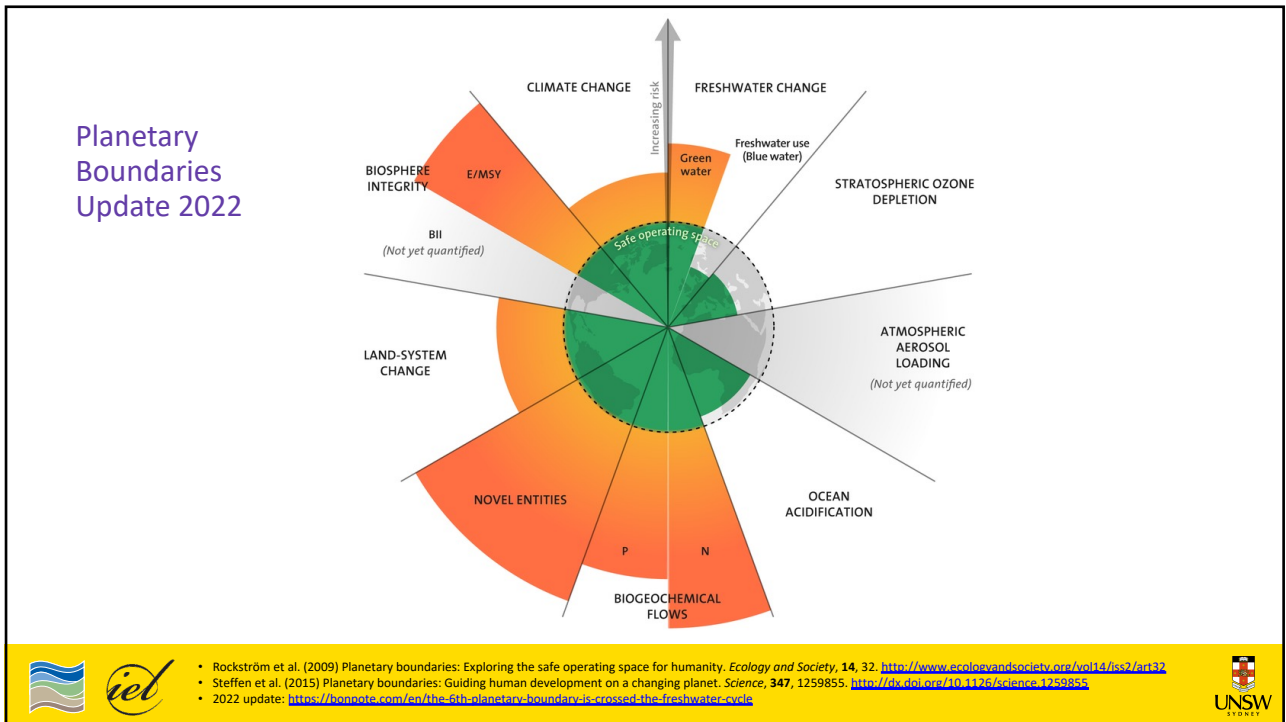
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## THE CONVERSATION

### 'Existential threat to our survival': see the 19 Australian ecosystems already collapsing

February 26, 2021 6:04am AEDT

- Great Barrier Reef
- Australian Tropical Savannas
- Mangrove Forests, Gulf of Carpentaria
- Wet Tropical Rainforest, North Queensland
- Western-central Arid Zones
- Georgina Gidgee Woodlands, central Australia
- Ningaloo Reef, northern Western Australia
- Shark Bay Seagrass Communities, Western Australia
- Murray Darling River Basin — waterways
- Murray-Darling River Basin — riverine
- Montane and Sub-alpine Forests, South Australia, New South Wales and the Victorian highlands
- Great Southern Reef Kelp Forests, southern Australia
- Mediterranean-type Forests and Woodlands
- Monaro Tablelands, South Eastern Highlands
- Snowpatch Herbfields, Australian Alps
- Mountain Ash Forests, Victorian Central Highlands
- Gondwanan Conifer forests, Tasmania
- Subantarctic Tundra, Macquarie Island
- East Antarctica Moss Beds, Windmill Islands (66°S), Vestfold Hills (68°S)

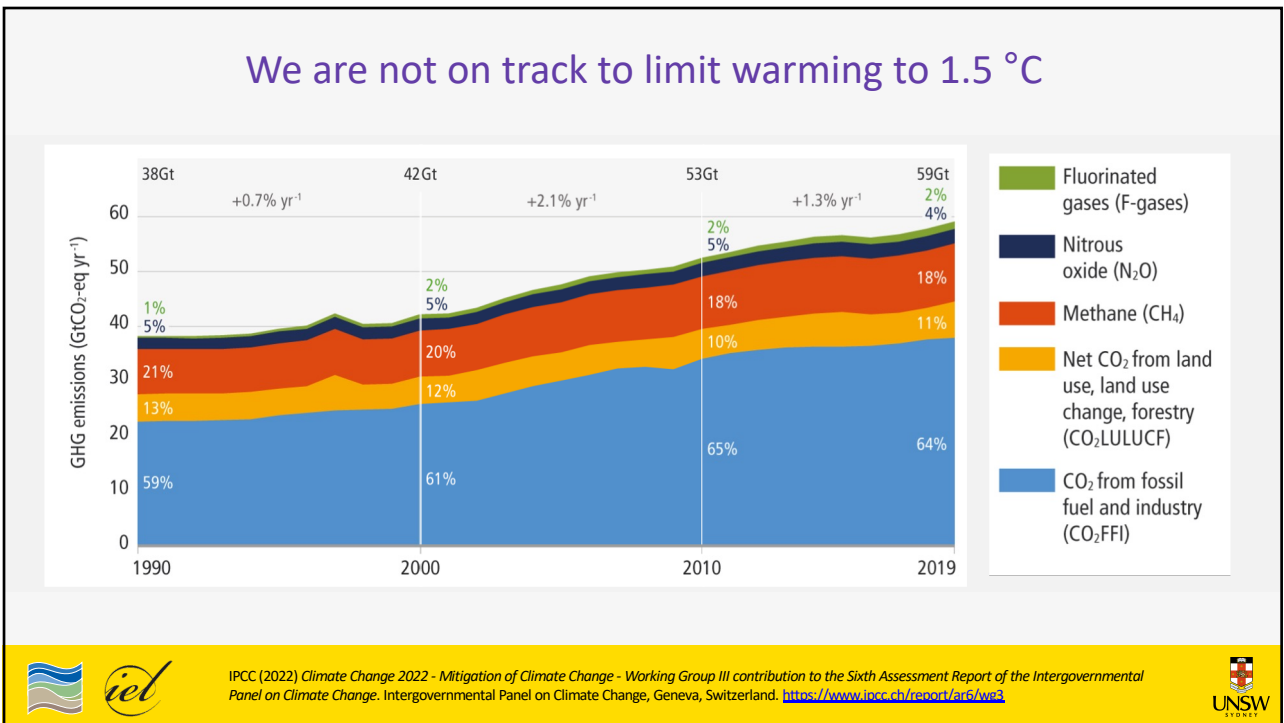
<https://theconversation.com/existential-threat-to-our-survival-see-the-19-australian-ecosystems-already-collapsing-154077>

**Logos:** iel, UNSW SYDNEY

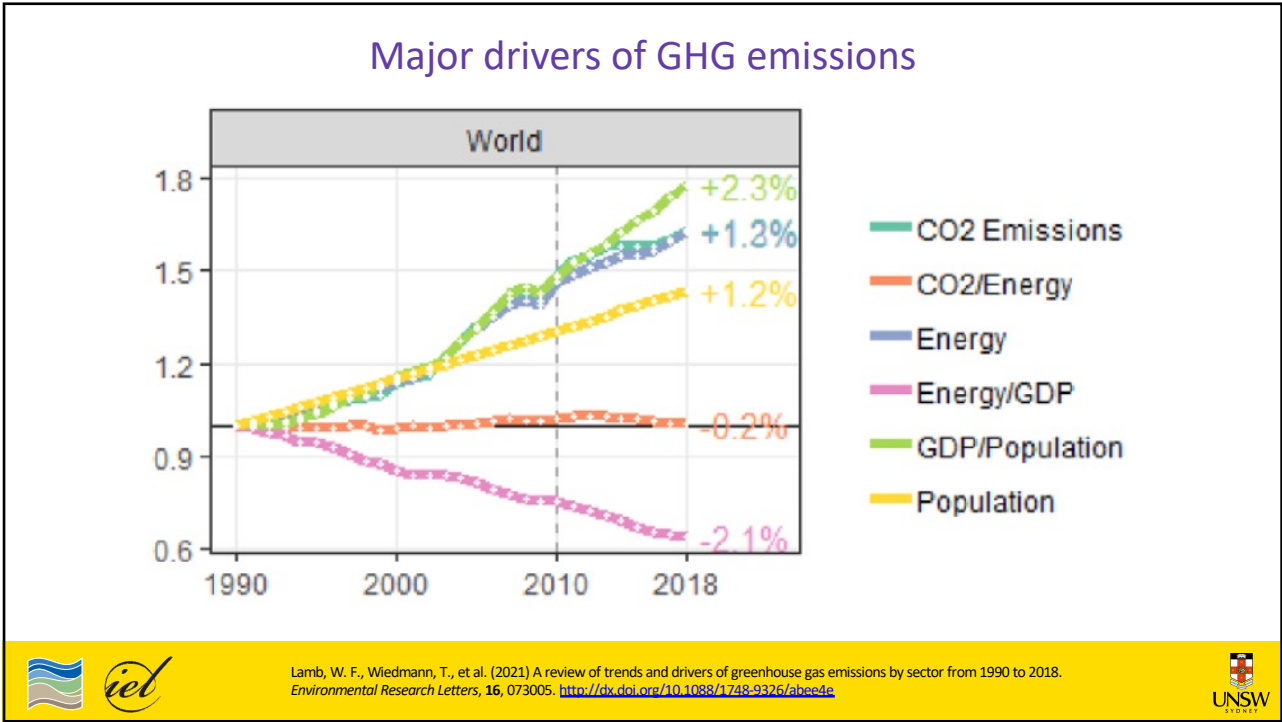
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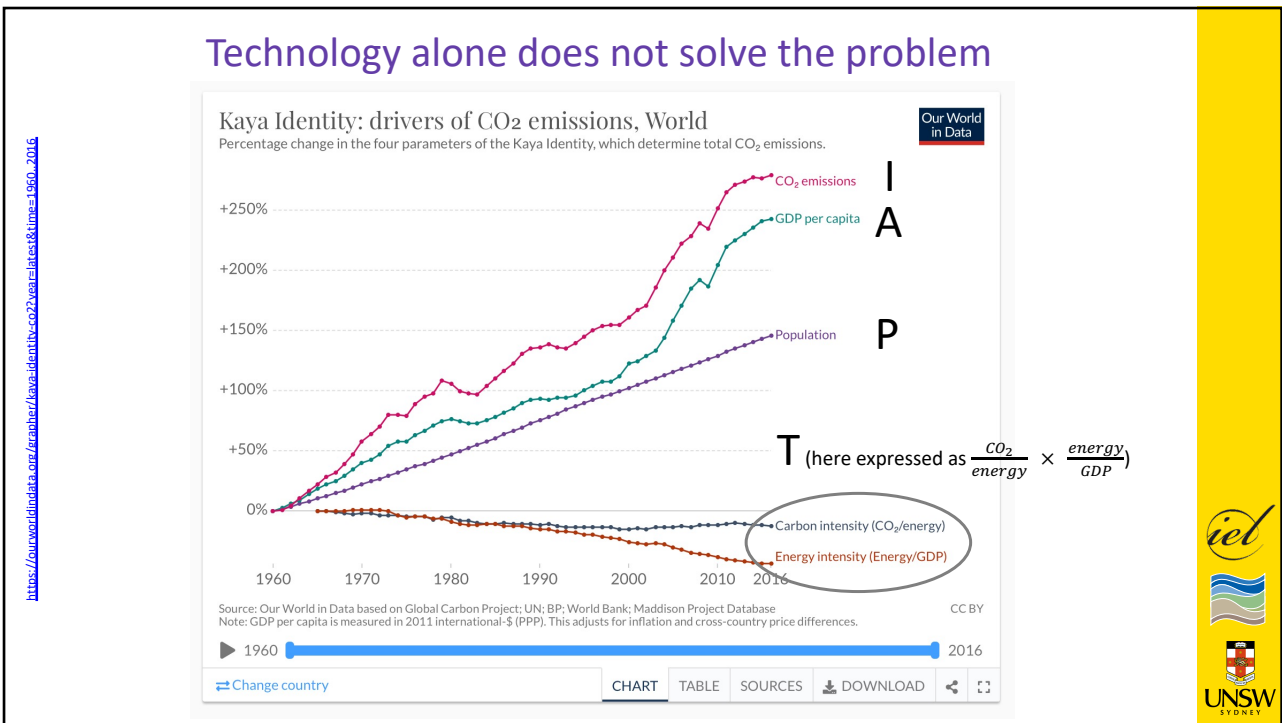
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## “Committed” emissions

Emissions from existing and planned fossil fuel infrastructure *alone* are nearly double the remaining carbon budget for limiting warming to 1.5°C

Or about the carbon budget for limiting warming to 2°C.

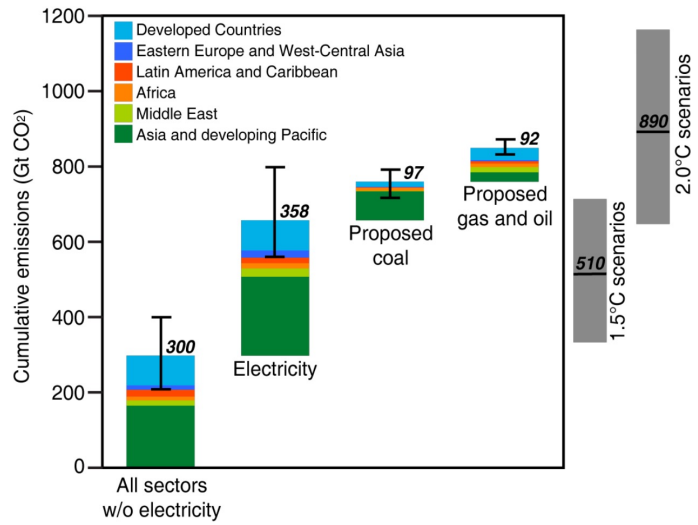


Fig.: Future CO<sub>2</sub> emissions from existing and currently planned fossil fuel infrastructure

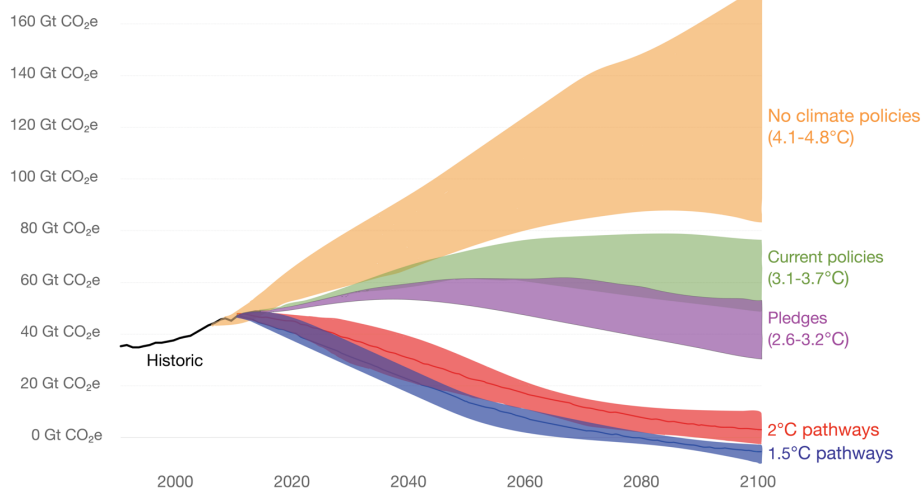


IPCC (2022) *Climate Change 2022 - Mitigation of Climate Change - Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Intergovernmental Panel on Climate Change, Geneva, Switzerland. <https://www.ipcc.ch/report/ar6/wg3>



## Global greenhouse gas emissions scenarios

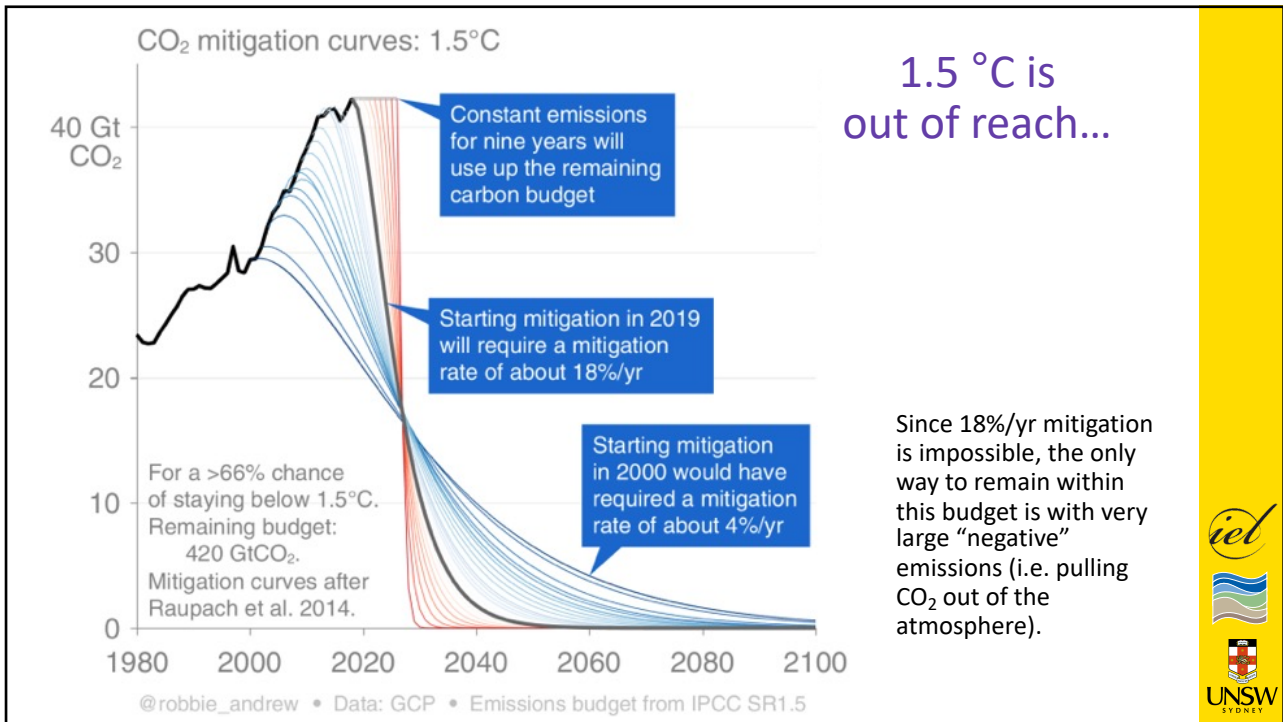
Potential future emissions pathways of global greenhouse gas emissions (measured in gigatonnes of carbon dioxide equivalents) in the case of no climate policies, current implemented policies, national pledges within the Paris Agreement, and 2°C and 1.5°C consistent pathways. High, median and low pathways represent ranges for a given scenario. Temperature figures represent the estimated average global temperature increase from pre-industrial, by 2100.



Based on data from the Climate Action Tracker (CAT). The data visualization is available at [OurWorldinData.org](https://OurWorldinData.org). There you find research and more visualizations on this topic.

Licensed under CC-BY-SA by the authors Hannah Ritchie and Max Roser.





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Sixth Assessment Report  
WORKING GROUP III – MITIGATION OF CLIMATE CHANGE

ipcc

## Why Haven't We Bent the Global Emissions Curve?

“

*Technical Summary, page 130:*

“Obstacles include both entrenched power relations dominated by vested interests that control and benefit from existing technologies, and governance structures that continue to reproduce unsustainable patterns of production and consumption.”

...

“Sustainable solutions require adoption and mainstreaming of locally novel technologies that can meet local needs, and simultaneously address the SDGs.”

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*Annual Review of Environment and Resources*

## Three Decades of Climate Mitigation: Why Haven't We Bent the Global Emissions Curve?

Isak Stoddard,<sup>1</sup> Kevin Anderson,<sup>1,2</sup> Stuart Capstick,<sup>3</sup>

collective failure to bend the global emissions curve. However, a common thread that emerges across the reviewed literature is the central role of power, manifest in many forms, from a dogmatic political-economic hegemony and influential vested interests to narrow techno-economic mindsets and ideologies of control. Synthesizing the various impediments to mitigation reveals

Stoddard et al. (2021) Three Decades of Climate Mitigation: Why Haven't We Bent the Global Emissions Curve? *Annual Review of Environment and Resources*, 46, 653-689.  
<https://doi.org/10.1146/annurev-environ-012220-011104>



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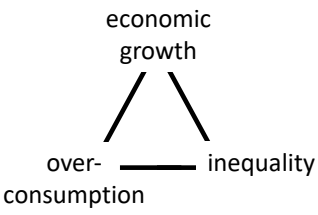
<https://doi.org/10.1038/s41467-020-16941-y> OPEN

## Scientists' warning on affluence

Thomas Wiedmann<sup>1</sup>, Manfred Lenzen<sup>2</sup>, Lorenz T. Keyßer<sup>3</sup> & Julia K. Steinberger<sup>4</sup>




- Overconsumption and affluence, driven by economic growth and positional consumption, increase environmental impacts disproportionately.
- The world's **top** / **bottom** 10% of income earners are responsible for **25-43%** / **3-5%** of environmental impacts. **Half** of all aviation emissions are caused by the **top 1%** of income earners alone.
- No evidence of (sufficient) decoupling. Technology alone cannot overcome environmental degradation. "Green Growth" or "Sustainable Growth" are bound to fail.



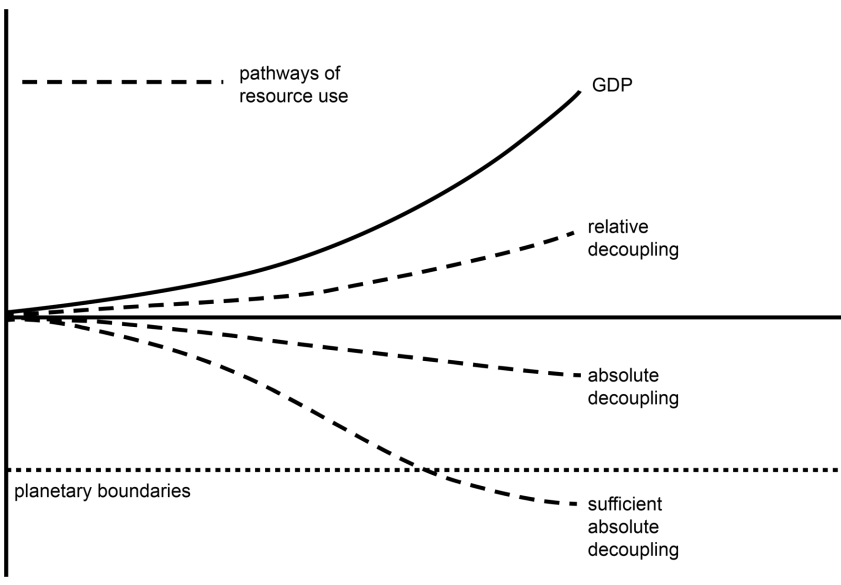
economic growth  
 / \  
 over- consumption    inequality

Wiedmann, T, Lenzen, M, Keyßer, LT and Steinberger, JK (2020) Scientists' warning on affluence. *Nature Communications*, 11, 3107. <https://doi.org/10.1038/s41467-020-16941-y>



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### The idea of decoupling



pathways of resource use

GDP


relative decoupling

absolute decoupling

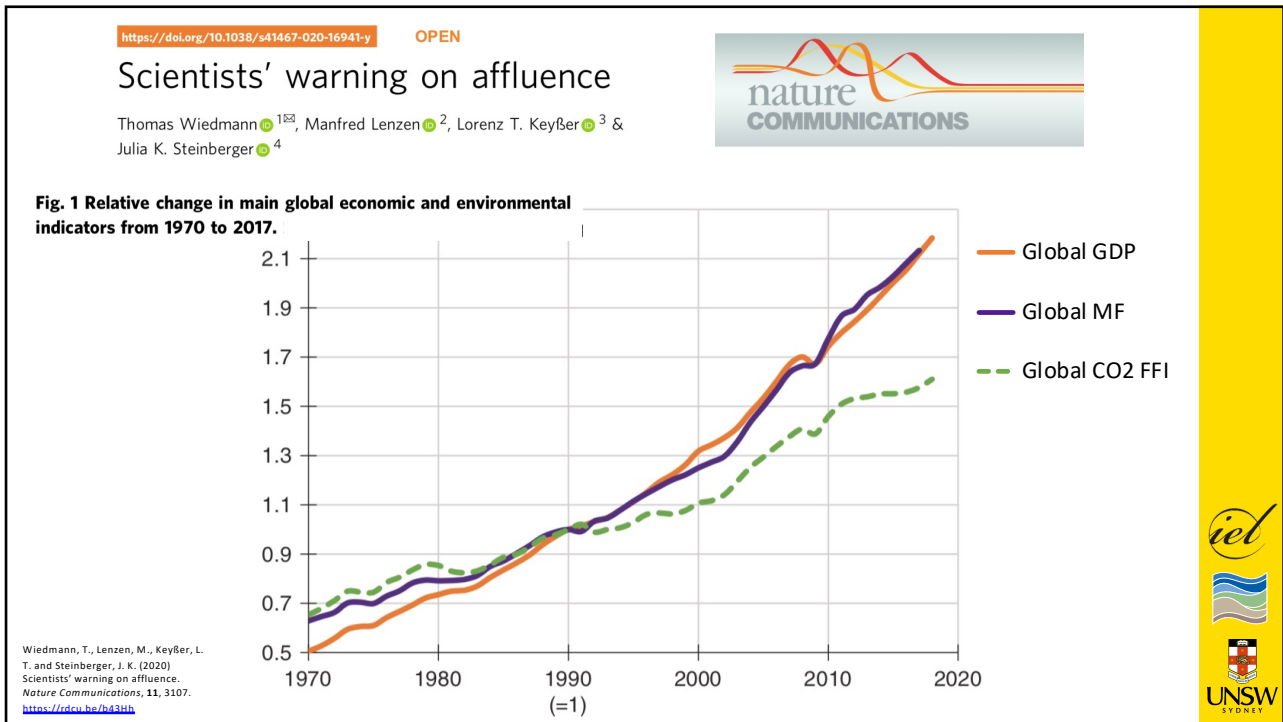
sufficient absolute decoupling

planetary boundaries

Source: Raworth, K. (2017) *Doughnut Economics - Seven Ways to Think Like a 21st-Century Economist*. Chelsea Green Publishing Vermont. <https://www.chelseagreen.com/doughnut-economics>



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# Decoupling Debunked

Evidence and arguments against green growth as a sole strategy for sustainability





Parrique, T., Barth, J., Briens, F. o., Kerschner, C., Kraus-Polk, A., Kuokkanen, A. and Spangenberg, J. H. (2019) *Decoupling debunked: Evidence and arguments against green growth as a sole strategy for sustainability*. European Environmental Bureau. <http://eeb.org/library/decoupling-debunked>





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<https://doi.org/10.1038/s41467-020-16941-y> OPEN

# Scientists' warning on affluence


Thomas Wiedmann <sup>1</sup>, Manfred Lenzen <sup>2</sup>, Lorenz T. Keyßer <sup>3</sup> & Julia K. Steinberger <sup>4</sup>



**THE CONVERSATION**  
Academic · rigorous · journalistic · fair


## Affluence is killing the planet, warn scientists


June 24, 2020 10:30am BST




Lifestyles of the rich and harmful. Midnight Runner / wiki, CC BY-SA

**Authors**



  
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**Manfred Lenzen**  
Professor of Sustainability Research, School of Physics, University of Sydney

Wiedmann, T., Steinberger, J. K. and Lenzen, M. (2020) Affluence is killing the planet, warn scientists. *The Conversation*.  
<https://theconversation.com/affluence-is-killing-the-planet-warn-scientists-141017>


Wiedmann, T., Lenzen, M., Keyßer, L. T. and Steinberger, J. K. (2020) Scientists' warning on affluence. *Nature Communications*, 11(1), 3107.  
<https://doi.org/10.1038/s41467-020-16941-y> or <https://rccu.be/6d3Hh>




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**Ecological Economics**  
Volume 193, March 2022, 107297




## Willingness to reduce travel consumption to support a low-carbon transition beyond COVID-19

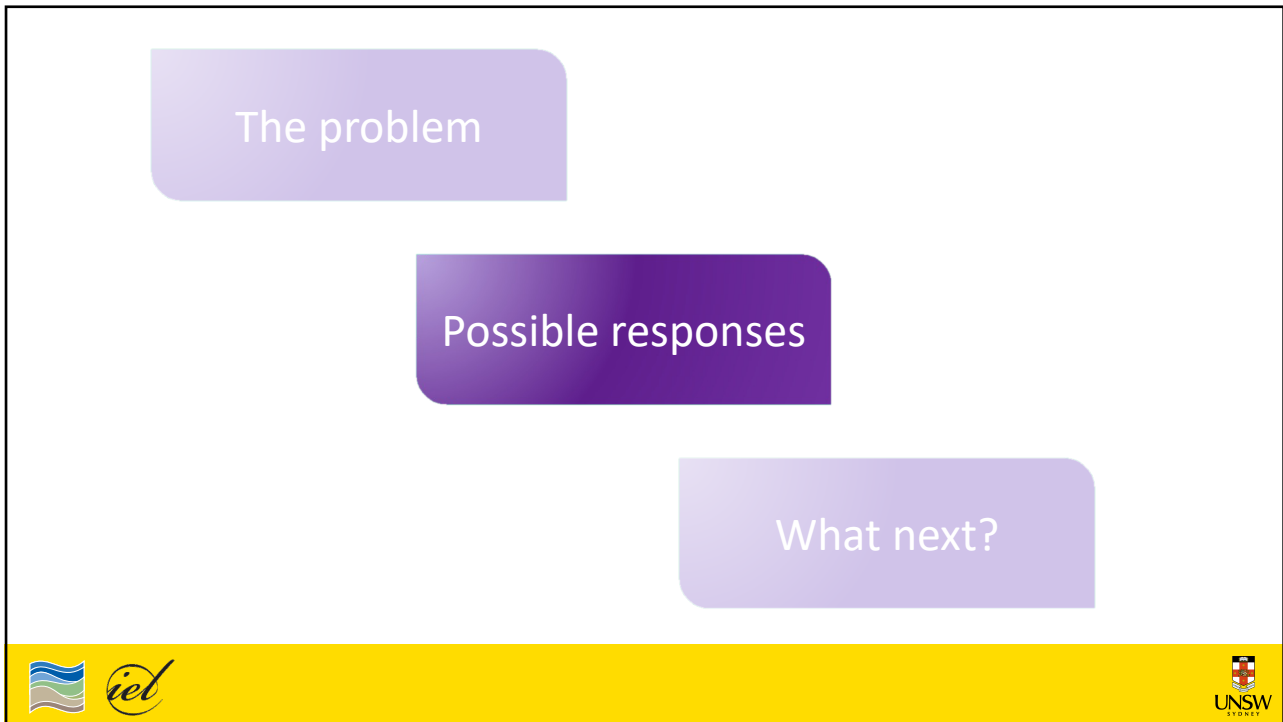
Tanya O'Garra <sup>a, b</sup>  , Roger Fouquet <sup>c</sup> 

“We conclude that behaviour associated with affluence represents a major barrier to a low-carbon transition, and that policies must address over-consumption associated with affluence as a priority.”

 O'Garra, T. and Fouquet, R. (2022) Willingness to reduce travel consumption to support a low-carbon transition beyond COVID-19. *Ecological Economics*, 193, 107297. <https://doi.org/10.1016/j.ecolecon.2021.107297>



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### Demand and services

- potential to **bring down global emissions** by **40-70%** by 2050
- walking and cycling, electrified transport, reducing air travel, plant-based diets etc. make large contributions
- **lifestyle changes** require **systemic changes** across all of society
- **some** people require additional **housing, energy and resources** for human wellbeing


[Bosch, Unsplash/Yoav Aziz, Adam Bartoszewicz, Victor Hernandez]

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In modelling pathways that assume lower demand, mitigation challenges are clearly reduced.

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Article | [Open Access](#) | [Published: 11 May 2021](#)

### 1.5 °C degrowth scenarios suggest the need for new mitigation pathways

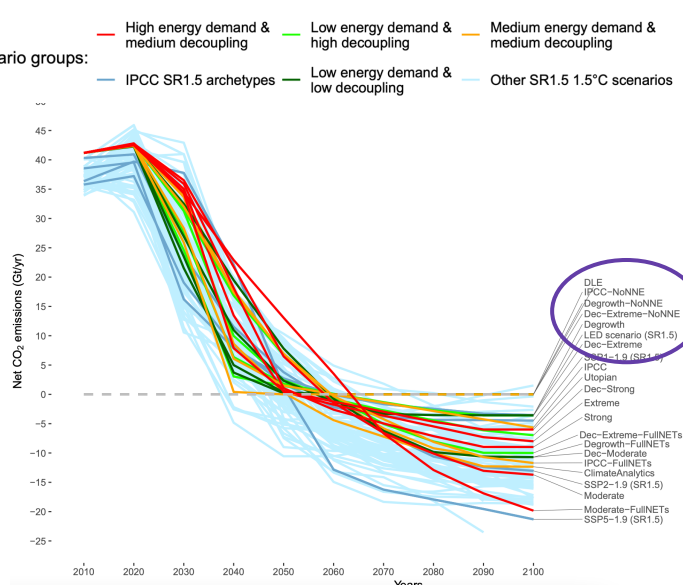
[Lorenz T. KeyBer](#) & [Manfred Lenzen](#)


*Nature Communications* 12, Article number: 2676 (2021) | [Cite this article](#)

“...we find that the degrowth scenarios minimize many key risks for feasibility and sustainability compared to technology-driven pathways, such as the reliance on high energy-GDP decoupling, large-scale carbon dioxide removal and large-scale and high-speed renewable energy transformation.”


**Scenario groups:**

- High energy demand & medium decoupling
- Low energy demand & high decoupling
- Medium energy demand & medium decoupling
- IPCC SR.1.5 archetypes
- Low energy demand & low decoupling
- Other SR.1.5 1.5°C scenarios





KeyBer, L. T. and Lenzen, M. (2021) 1.5 °C degrowth scenarios suggest the need for new mitigation pathways. *Nature Communications*, 12, 2676. <https://doi.org/10.1038/s41467-021-22884-9>



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## Scenarios for mitigating CO<sub>2</sub> emissions from energy supply in the absence of CO<sub>2</sub> removal

Mark Diesendorf 

School of Humanities & Languages, Faculty of Faculty of Arts, Design & Architecture, UNSW Sydney, Sydney, Australia

### Key policy insights:

- If global energy consumption grows at the pre-COVID rate, technological change alone cannot halve global CO<sub>2</sub> emissions by 2030 and hence cannot keep global heating below 1.5°C by 2050.
- In the absence of substantial CO<sub>2</sub> removal, policies are needed to reduce global energy consumption and hence foster degrowth in high-income economies.
- Policies to drive technological and socioeconomic changes could together cut global energy consumption and thus total primary energy supply and associated emissions by at least 75% by 2050.




Diesendorf, M. (2022) Scenarios for mitigating CO<sub>2</sub> emissions from energy supply in the absence of CO<sub>2</sub> removal. *Climate Policy*, 22, 882-896. <https://doi.org/10.1080/14693062.2022.2061407>



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<https://doi.org/10.1038/s41467-020-16941-y> OPEN

## Scientists' warning on affluence

Thomas Wiedmann <sup>1</sup>, Manfred Lenzen <sup>2</sup>, Lorenz T. Keyßer <sup>3</sup> & Julia K. Steinberger <sup>4</sup>



- To solve the problem, we need to end over-consumption (and over-production). This also means to get away from our obsession with economic growth.
- Deliberate downscaling of physical throughput (energy and materials) in the wealthiest countries required.
- A-growth, post-growth, managing/prosperity without growth, steady-state economy, degrowth  
> all of them 'ignore' GDP.

Wiedmann, T, Lenzen, M, Keyßer, LT and Steinberger, JK (2020) Scientists' warning on affluence. *Nature Communications*, 11, 3107. <https://doi.org/10.1038/s41467-020-16941-y>



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# Time to leave GDP behind

Gross domestic product is a misleading measure of national success. Countries should act now to embrace new metrics, urge Robert Costanza and colleagues.

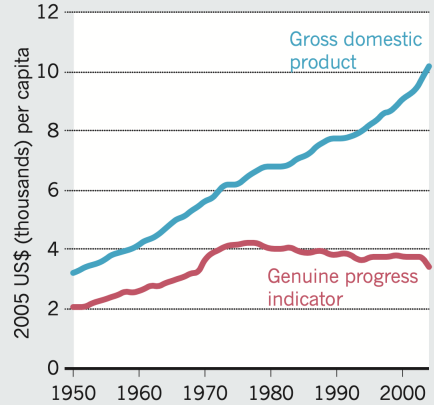
16 JANUARY 2014 | VOL 505 | NATURE | 283



Robert F Kennedy, 1968:  
"[GNP] ... measures everything,  
except that which makes life worthwhile"

## GENUINE PROGRESS FLATTENS

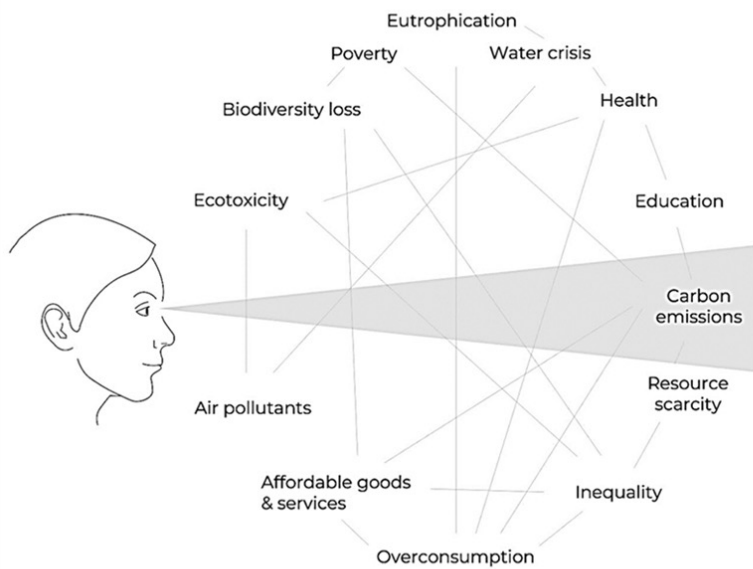
World GDP has soared since 1950, but a metric for life satisfaction called GPI has not.



Costanza, R., Kubiszewski, I., Giovannini, E., Lovins, H., McGlade, J., Pickett, K. E., Ragnarsdóttir, K. V., Roberts, D., Vogli, R. D. and Wilkinson, R. (2014) Time to leave GDP behind. *Nature*, 505, 283-285. <https://doi.org/10.1038/505283a>



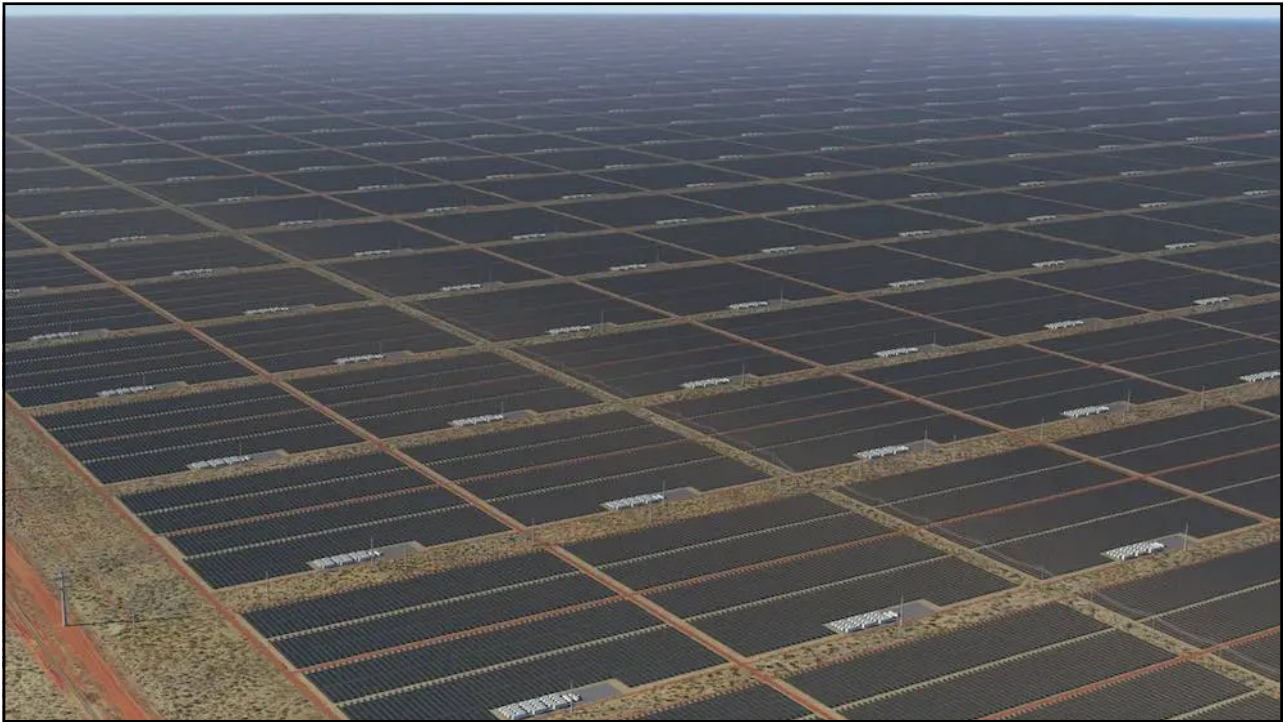
## Carbon Tunnel Vision



Sustainability transition

Graphic by Jan Konietzko





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nature sustainability **ANALYSIS**  
<https://doi.org/10.1038/s41893-021-00838-9>  
Check for updates

### The aluminium demand risk of terawatt photovoltaics for net zero emissions by 2050

Alison Lennon, Marina Lunardi, Brett Hallam and Pablo R. Dias

“We show that it will be critical to maximize the use of secondary aluminium and rapidly decarbonize the electricity grid within 10 years if cumulative emissions are to be kept below 1,000 Mt of CO<sub>2</sub> equivalent by 2050.”

Year	Cells (Mt)	Module frames (Mt)	Mountings (Mt)	Inverters (Mt)	Cumulative Al demand (Mt)
2025	0.5	1.5	1.5	0.5	4.0
2030	1.0	3.0	3.0	1.0	8.0
2035	1.5	4.5	4.5	1.5	12.0
2040	2.0	6.0	6.0	2.0	16.0
2045	2.5	7.5	7.5	2.5	20.0
2050	3.0	9.0	9.0	3.0	24.0

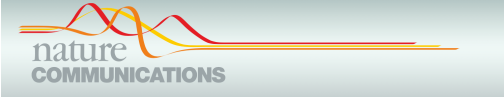
Lennon, A., Lunardi, M., Hallam, B. and Dias, P. R. (2022) The aluminium demand risk of terawatt photovoltaics for net zero emissions by 2050. *Nature Sustainability*, 5, 357-363. <https://doi.org/10.1038/s41893-021-00838-9>

**Fig. 2 | Annual and cumulative Al demand for the cells, module frames, mountings and inverters until 2050.** Values were calculated for the ITRPV's

iel  
UNSW SYDNEY

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<https://doi.org/10.1038/s41467-020-17928-5> **OPEN**

## Renewable energy production will exacerbate mining threats to biodiversity

Laura J. Sonter<sup>1,2,3✉</sup>, Marie C. Dade<sup>1,2,4</sup>, James E. M. Watson<sup>1,2,5</sup> & Rick K. Valenta<sup>1,6</sup>

“Mining threats to biodiversity will increase as more mines target materials for renewable energy production and, without strategic planning, **these new threats to biodiversity may surpass those averted by climate change mitigation.**”

Sonter, L. J., Dade, M. C., Watson, J. E. M. and Valenta, R. K. (2020) Renewable energy production will exacerbate mining threats to biodiversity. *Nature Communications*, 11, 4174. <https://doi.org/10.1038/s41467-020-17928-5>





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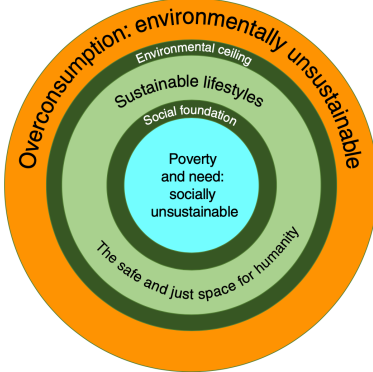
<https://doi.org/10.1038/s41467-020-16941-y> **OPEN**

## Scientists' warning on affluence



Thomas Wiedmann<sup>1✉</sup>, Manfred Lenzen<sup>2</sup>, Lorenz T. Keyßer<sup>3</sup> & Julia K. Steinberger<sup>4</sup>



- A-growth, post-growth, managing/prosperity without growth, steady-state economy, degrowth > all of them 'ignore' GDP.
- Sustainable lifestyles lie between "better but less" and "enough and better".



Wiedmann, T, Lenzen, M, Keyßer, LT and Steinberger, JK (2020) Scientists' warning on affluence. *Nature Communications*, 11, 3107. <https://doi.org/10.1038/s41467-020-16941-y>

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**Legend:**  
■ Beyond the boundary  
■ Boundary not quantified

**Indicators:**  
 Beyond the boundary (red): climate change, ozone layer depletion, air pollution, biodiversity loss, land conversion, freshwater withdrawals, nitrogen & phosphorus loading, chemical pollution, ocean acidification.  
 Boundary not quantified (blue): overshoot.  
 Social Foundation (green): water, food, health, education, income & work, peace & justice, political voice, social equity, gender equality, biosphere, networks, energy.  
 Ecological Ceiling (green): freshwater withdrawals, nitrogen & phosphorus loading, ocean acidification, chemical pollution, overshoot.

**Book Cover:**  
 DOUGHNUT ECONOMICS  
 7 Ways to Think Like a 21st Century Economist  
 KATE RAWORTH  
 Financial Times Book of the Year Longlist

Raworth, K. (2017) *Doughnut Economics - Seven Ways to Think Like a 21st-Century Economist*. Chelsea Green Publishing Vermont.  
<https://www.chelseagreen.com/doughnut-economics>

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<https://doi.org/10.1038/s41467-020-16941-y> OPEN

## Scientists' warning on affluence

Thomas Wiedmann <sup>1</sup>, Manfred Lenzen <sup>2</sup>, Lorenz T. Keyßer <sup>3</sup> & Julia K. Steinberger <sup>4</sup>

### Meta approaches for sustainable prosperity

**Reformist approaches:** A-growth, post-growth, steady-state economy or prosperity without growth, (degrowth)

- Compatible with existing centralised states and capitalism and can be achieved with reforms (e.g. through strong environmental limits and social justice in policies)
- Example: The Wellbeing Economy

**Radical approaches** lead away from capitalism and increase social control over economic processes (degrowth)

- Eco-socialists: democratic state + grassroots guide the transition and beyond
- Eco-anarchists see grassroots participatory-democratic movements as central
- Examples: individual downshifting, transition initiatives, eco-villages

Wiedmann, T, Lenzen, M, Keyßer, LT and Steinberger, JK (2020) Scientists' warning on affluence. *Nature Communications*, 11, 3107. <https://doi.org/10.1038/s41467-020-16941-y>

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<https://doi.org/10.1038/s41467-020-16941-y>

OPEN

## Scientists' warning on affluence

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### Some practical policies that have been suggested or trialled:

- shorter working week & job sharing
- expansion of health care, social services and education
- universal basic income / universal basic services
- stabilising population
- investment in 'green' infrastructure
- more local food production and manufacturing
- role of social movements is pivotal

Wiedmann, T, Lenzen, M, Keyßer, LT and Steinberger, JK (2020) Scientists' warning on affluence. *Nature Communications*, 11, 3107. <https://doi.org/10.1038/s41467-020-16941-y>



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*Journal & Proceedings of the Royal Society of New South Wales*, vol. 152, part 1, 2019, pp. 47–65. ISSN 0035-9173/19/010047-19

### Is a sustainable future possible?

Graham M. Turner\*

Earth Accounts Consulting, Verona, NSW 2550, Australia  
E-mail: [contact@earthaccounts.com.au](mailto:contact@earthaccounts.com.au)

#### Pathways to sustainability

Nevertheless, human societies are inherently innovative. Consequently, to examine the possible strategies for alleviating the environmental/resource stresses identified above, ASFF was used to model ambitious technological, population and lifestyle changes in succession (Turner, 2016):

- sweeping efficiency gains are made, across every sector of the economy;
- the power sector was also transitioned to mostly renewables;
- population was stabilised by halving the fertility rate and imposing a zero net immigration rate—so the number of people entering Australia matches those leaving; on the lifestyle front, in order to avoid unemployment:
- personal and household consumption rates were halved, and;
- crucially, the labour force shifts over decades to a 3-day working week, though the four days of “leisure” would be quite different from contemporary experience.

The modelling shows it takes the whole collection of ambitious strategies to achieve meaningful change (Figure 4). For GHG,



Turner, G. M. (2019) Is a sustainable future possible? *Journal and Proceedings of the Royal Society of New South Wales*, 152, 47-65. [https://www.sconus.com/inward/record.url?eid=2-37\\_0-850732407798&partnerID=40&md5=25d9db1c26385bb4487b954d8d1aee3b](https://www.sconus.com/inward/record.url?eid=2-37_0-850732407798&partnerID=40&md5=25d9db1c26385bb4487b954d8d1aee3b)



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# THE CONVERSATION

## Net zero by 2050 will hit a major timing problem technology can't solve. We need to talk about cutting consumption



Mark Diesendorf

Honorary Associate Professor, UNSW Sydney

Published: April 28, 2022 5:59am AEST

These policies would actually cut consumption, while also smoothing the social transition:

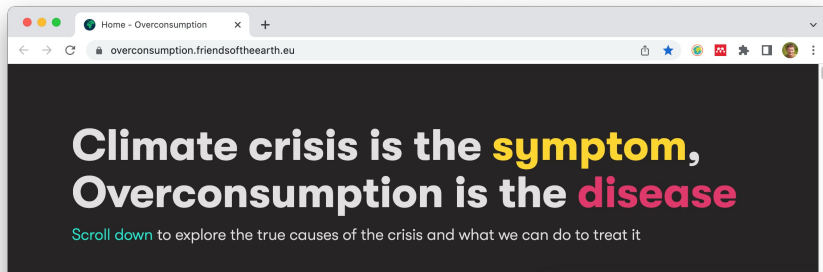
- a carbon tax and additional environmental taxes
- wealth and inheritance taxes
- a shorter working week to share the work around
- a job guarantee at the basic wage for all adults who want to work and who can't find a job in the formal economy
- non-coercive policies to end population growth, especially in high income countries
- boosting government spending on poverty reduction, green infrastructure and public services as part of a shift to Universal Basic Services.



<https://theconversation.com/net-zero-by-2050-will-hit-a-major-timing-problem-technology-cant-solve-we-need-to-talk-about-cutting-consumption-181951>



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### 1/The disease

The European Union's growth-based economy is driving a depletion of Earth's finite resources. This is fueling a double burnout of people and planet.

### 4/The treatment

The climate crisis, and other ecological and social crises, can only be addressed by tackling overconsumption and transitioning to a new economic model that is not dependent on continuous economic growth.



<https://overconsumption.friendsoftheearth.eu> published 2022



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## Alternatives to economic growth

In an analysis of the IPCC's Working Group II report, "Impacts, Adaptation and Vulnerability," released in February 2022, Parrique notes the mention of degrowth 15 times.

The IPCC Working Group III report, "Mitigation of Climate Change," released in early April 2022, refers to degrowth five times and declares that "prosperity and the 'Good Life' are not immutably tied to economic growth."

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## Growth without economic growth


Economic growth is closely linked to increases in production, consumption and resource use and has detrimental effects on the natural environment and human health. It is unlikely that a long-lasting, absolute decoupling of economic growth from environmental pressures and impacts can be achieved at the global scale; therefore, societies need to rethink what is meant by growth and progress and their meaning for global sustainability.

Published 11 Jan 2021 — Last modified 18 Jan 2022 — 15 min read — Photo: © Ricardo Gomez Angel on Unsplash





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European Environment Agency




## Key messages


- ➔ The ongoing 'Great Acceleration' <sup>[1]</sup> in loss of biodiversity, climate change, pollution and loss of natural capital is tightly coupled to economic activities and economic growth.
- ➔ Full decoupling of economic growth and resource consumption may not be possible.
- ➔ Doughnut economics, post-growth and degrowth are alternatives to mainstream conceptions of economic growth that offer valuable insights.
- ➔ The European Green Deal and other political initiatives for a sustainable future require not only technological change but also changes in consumption and social practices.
- ➔ Growth is culturally, politically and institutionally ingrained. Change requires us to address these barriers democratically. The various communities that live simply offer inspiration for social innovation.


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European Environment Agency







### Imagining sustainable futures for Europe



- ➔ The need to preserve and reconnect to nature and the local community is part of society's 'common sense'. Technology is used sparingly to enable sustainable lifestyles.
- ➔ Consumption and resource use are being scaled back. Reduced economic output is limiting the size of the public sector, implying a bigger role for civil society in maintaining welfare.
- ➔ Businesses are managed with the involvement of diverse stakeholders, while communities play an active role in bottom-up decision-making processes, including at the European scale.



<https://www.eea.europa.eu/publications/scenarios-for-a-sustainable-europe-2050>



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## Beyond Growth

### *Towards a New Economic Approach*

We are facing a series of converging planetary emergencies linked to the environment, the economy, and our social and political systems, but we will not meet these challenges using the tools of the last century. We need to rethink the role of the economy in improving the well-being of people and the planet. As the world's leading intergovernmental forum on economic policy, the OECD has a central role to play in creating a new economic narrative. OECD Secretary-General



[https://www.oecd-ilibrary.org/economics/beyond-growth\\_33a25ba3-en](https://www.oecd-ilibrary.org/economics/beyond-growth_33a25ba3-en)



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## Only Radical is Realistic Now

International Carbon Rationing  
in a Climate Emergency

Joachim H. Spangenberg




This Think Piece was developed in partnership with the [Sustainable Europe Research Institute](https://www.seri.de/publications/only-radical-is-realistic-now).

<https://www.seri.de/publications/only-radical-is-realistic-now>



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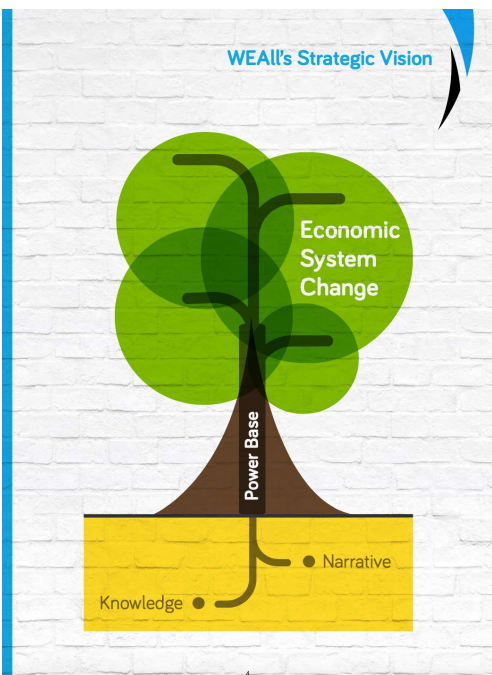
**WELLBEING ECONOMY ALLIANCE**

WEAll is a collaboration of organisations, alliances, movements and individuals working towards a wellbeing economy, delivering human and ecological wellbeing.

[Learn more about WEAll](#)

WEGo, which currently comprises **Scotland, New Zealand, Iceland, Wales and Finland**, is founded on the recognition that 'development' in the 21<sup>st</sup> century entails delivering human and ecological wellbeing.

WEAll - <https://weall.org>  
 WEGo - <https://weall.org/wego>





WEAll's Strategic Vision

Economic System Change


Power Base

Knowledge

Narrative


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**A wellbeing budget for NSW**

Foundation paper


April 2022



“The increasing adoption of wellbeing frameworks and budgets is also driven by a **strong imperative for ecological and social sustainability**, given the inherent constraints of our biosphere, also known as ‘limits to growth’, or ‘planetary boundaries’.”



Parsons, Richard, Centine Wilbello, Tarini Kalra, Steven Weng, Bronagh Brbich & Kelli Ng (2022). *A wellbeing budget for NSW: Foundation paper*. NSW Department of Planning and Environment. <https://www.dpie.nsw.gov.au>



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**FINANCIAL REVIEW**  
PLATINUM 70 YEAR

**Chalmers' first budget will include a chapter on 'wellbeing'**

Ronald Mizen *Economics correspondent*

**ABC NEWS**  
ANALYSIS

**Why Labor's first 'wellbeing' budget will have more rigour than any before it**

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Published: June 24, 2022 6.07am AEST

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The problem

Possible responses

What next?

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<https://doi.org/10.1038/s41467-020-16941-y> OPEN

## Scientists' warning on affluence

Thomas Wiedmann <sup>1</sup>, Manfred Lenzen <sup>2</sup>, Lorenz T. Keyßer <sup>3</sup> & Julia K. Steinberger <sup>4</sup>



- Need to focus on sufficiency lifestyles, community action and policy change
- Identify barriers and enablers of social and cultural transformation.
  - Can inspiring visions for a sustainable life with less material affluence be formulated and demonstrated?
  - What is the role of social groups, organisations and bottom-up movements?
  - What can we learn from societies, for example indigenous societies, which managed to live without economic growth?
  - What are the consequences for trade and for the global South in particular?

Wiedmann, T, Lenzen, M, Keyßer, LT and Steinberger, JK (2020) Scientists' warning on affluence. *Nature Communications*, 11, 3107. <https://doi.org/10.1038/s41467-020-16941-y>




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### Three Decades of Climate Mitigation: Why Haven't We Bent the Global Emissions Curve?

Home / Annual Review of Environment and Resources / Volume 46, 2021 / Stoddard, pp 653-689

**Sections**

ABSTRACT

KEYWORDS

INTRODUCTION: THREE DECADES OF CLIMATE MITIGATION

REVIEWING THREE DECADES OF CLIMATE MITIGATION: GOVERNANCE, GEOPOLITICS, ECONOMICS, MITIGATION, EQUITY, LIFESTYLES, AND INDIVIDUALS

DISCUSSION

CONCLUSION

► SUMMARY POINTS

FUTURE ISSUES

DISCLOSURE STATEMENT

AUTHOR CONTRIBUTIONS

ACKNOWLEDGMENTS

LITERATURE CITED

RELATED RESOURCES



**SUMMARY POINTS**

1. Despite three decades of political efforts and scientifically informed warnings of the likely catastrophic effects of climate change, CO<sub>2</sub> emissions have continued to rise globally and are 60% higher today than they were in 1990.
2. Since the first IPCC report was published in 1990, more anthropogenic fossil CO<sub>2</sub> has been released into the atmosphere than previously throughout all of human history.
3. The failure of leadership, particularly from within high-emitting countries, sectors, corporations, and individuals, has locked in intra- and intergenerational suffering and long-term existential threats to livelihoods and ecosystems.
4. Entrenched geopolitical, industrial, and military power and associated mindsets are fundamental barriers to effective mitigation.

**8. Attention to equity, high-carbon lifestyles, and conditions for enabling new **social imaginaries** has the potential to disrupt dominant, high-carbon development pathways.**

8. Attention to equity, high-carbon lifestyles, and conditions for enabling new **social imaginaries** has the potential to disrupt dominant, high-carbon development pathways.

Stoddard et al. (2021) Three Decades of Climate Mitigation: Why Haven't We Bent the Global Emissions Curve? *Annual Review of Environment and Resources*, 46, 653-689. <https://doi.org/10.1146/annurev-environ-012220-011104>

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<https://simplicityinstitute.org/ecological-civilisation-video-series>

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<https://doi.org/10.1038/s41467-020-16941-y> OPEN

## Scientists' warning on affluence

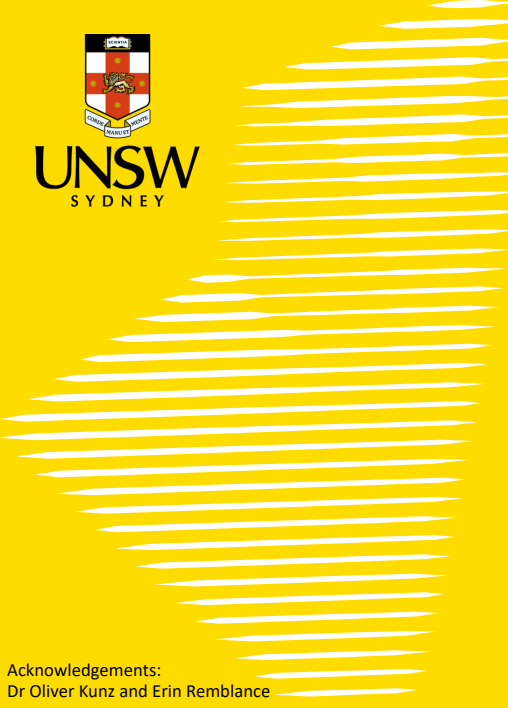

Thomas Wiedmann<sup>1</sup>, Manfred Lenzen<sup>2</sup>, Lorenz T. Keyßer<sup>3</sup> & Julia K. Steinberger<sup>4</sup>



- It is important to create a sense of collective responsibility and action. This could be trialled and organised, for example, through **citizen assemblies or juries**, as already practised by Transition Initiatives.
- We ended our paper by calling
  - for multidisciplinary research to identify and support solutions
  - for the public to engage in broad discussions about solutions and for
  - policy makers to trial, enable and implement solutions in policy processes.

Wiedmann, T, Lenzen, M, Keyßer, LT and Steinberger, JK (2020) Scientists' warning on affluence. *Nature Communications*, 11, 3107. <https://doi.org/10.1038/s41467-020-16941-y>

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# Thank you

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SUSTAINABILITY  
ASSESSMENT PROGRAM



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