

SPORT-RELATED MOBILITY AND THE ENVIRONMENT

**TIM BREITBARTH, DAVID HEROLD*, STEFAN SCHOENFELDER* (*VIENNA UNIVERSITY
OF ECONOMICS AND BUSINESS)**



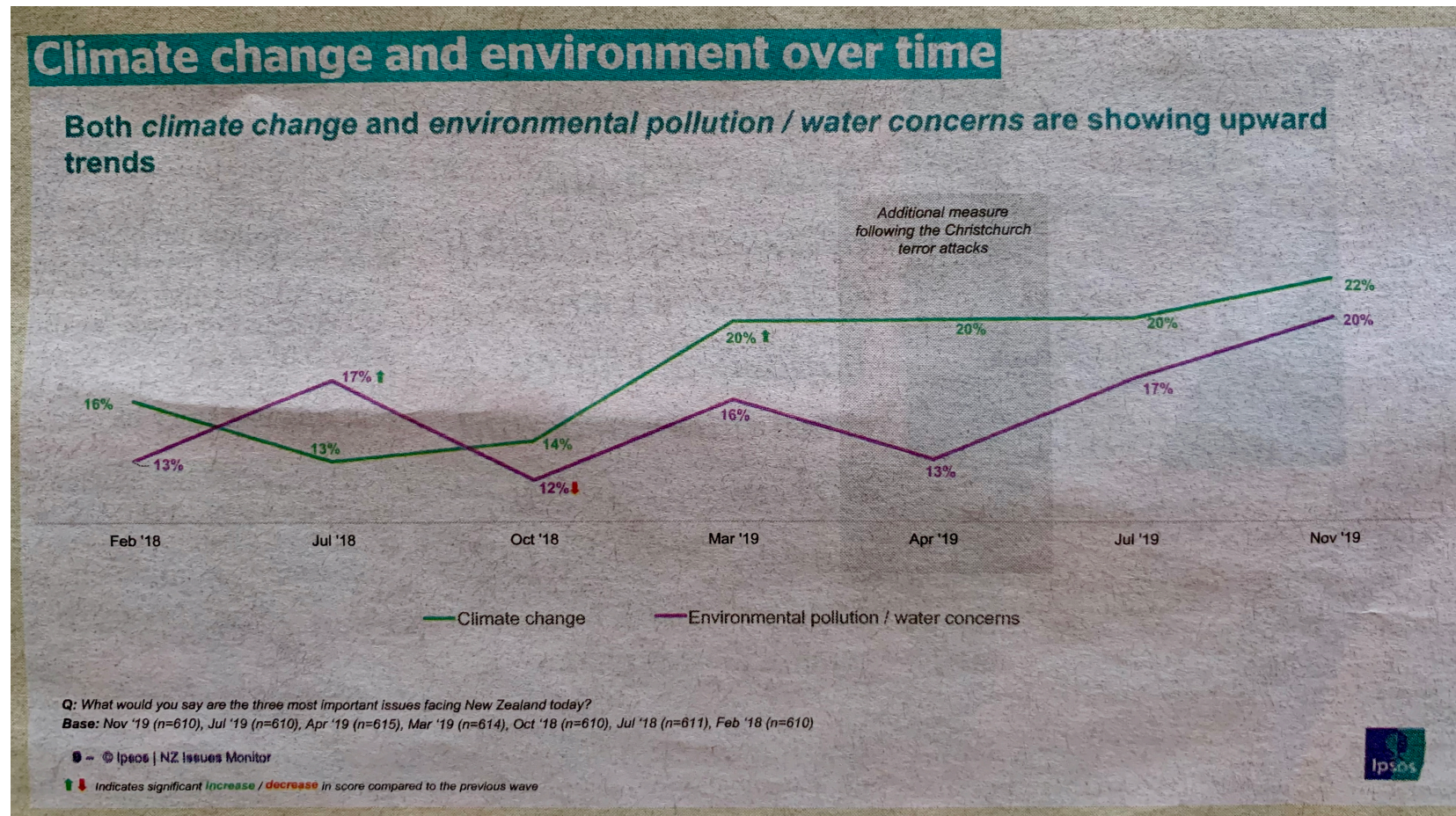
AN INCONVENIENT TRUTH



In 2015, by signing up to the Paris Agreement on climate change, nearly every country pledged to keep global temperatures “well below” 2C above pre-industrial levels and to “pursue efforts to limit the temperature increase even further to 1.5C”.

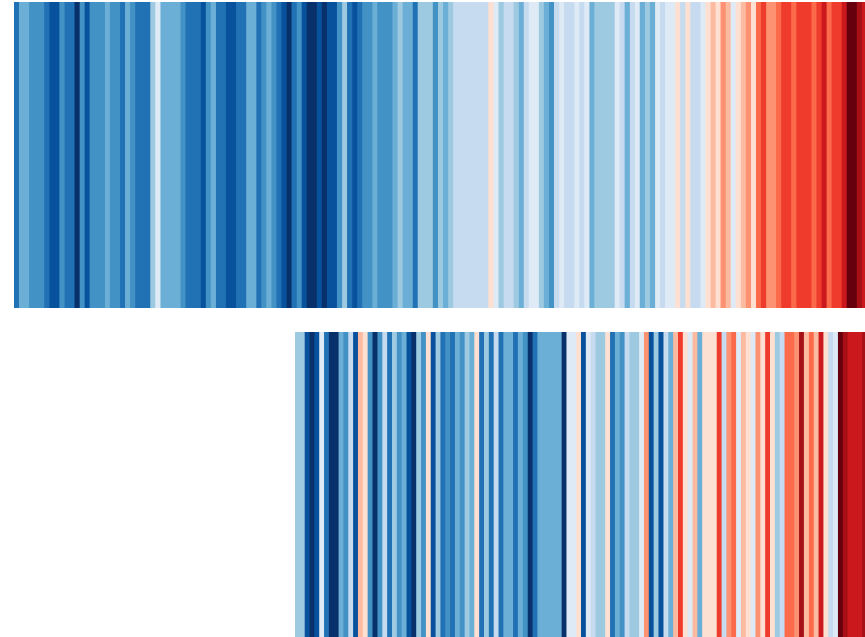
AN INCONVENIENT TRUTH

(THE PRESS 4/12/2019)



GLOBAL WARMING: CO₂(-E) SINGLE MOST IMPORTANT CAUSE AND MEASURE

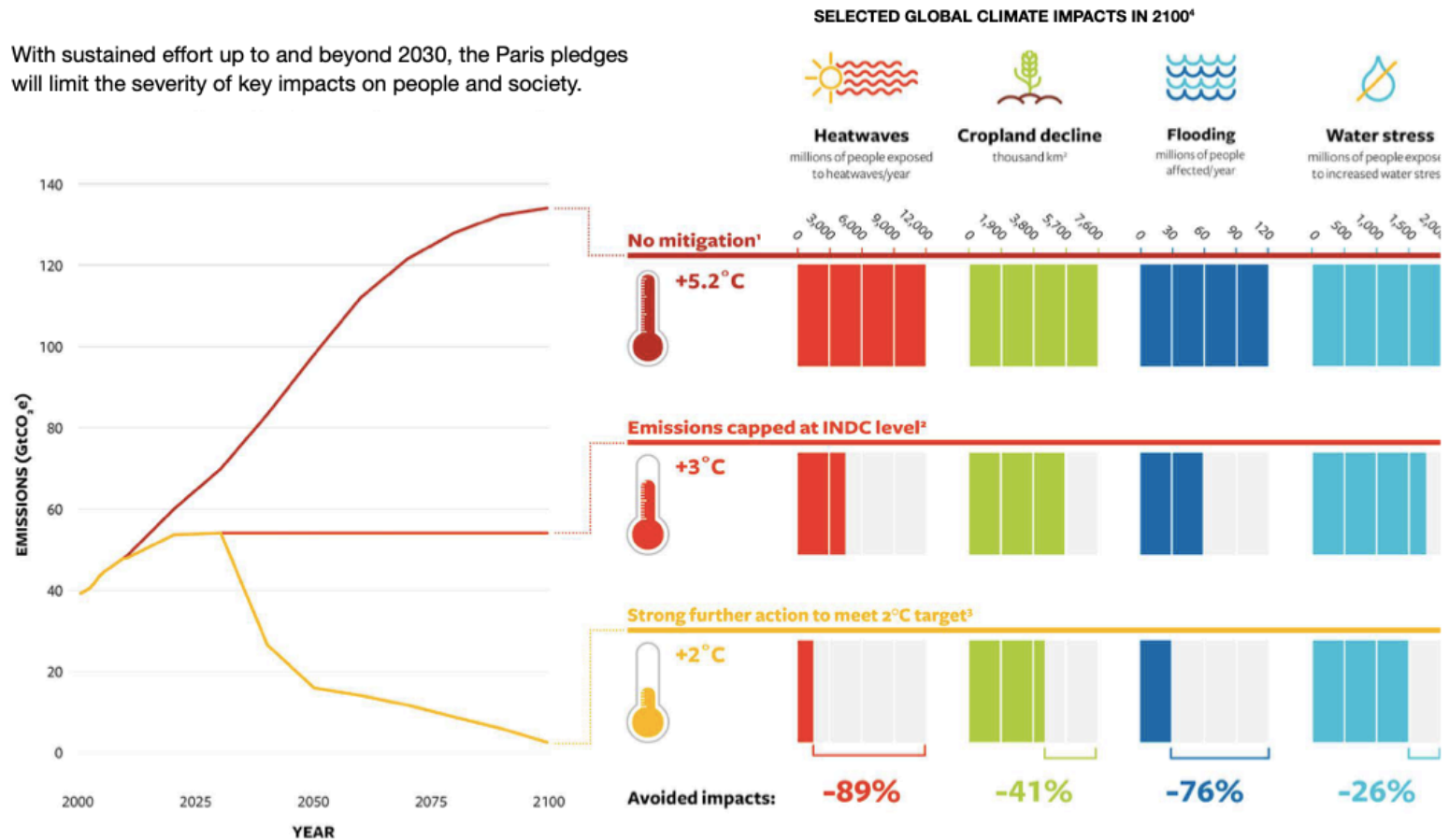
- Warming Stripes (showyourstripes.info):
Global 1850-2018, Australia 1901-2018



- The relationship between the global average temperature anomaly and the total quantity of CO₂ emissions released is linear (Jenkins, Millar, Leach & Allen 2018)

AN INCONVENIENT TRUTH (CRO FORUM 2019, BASED ON IPCC DATA)

With sustained effort up to and beyond 2030, the Paris pledges will limit the severity of key impacts on people and society.

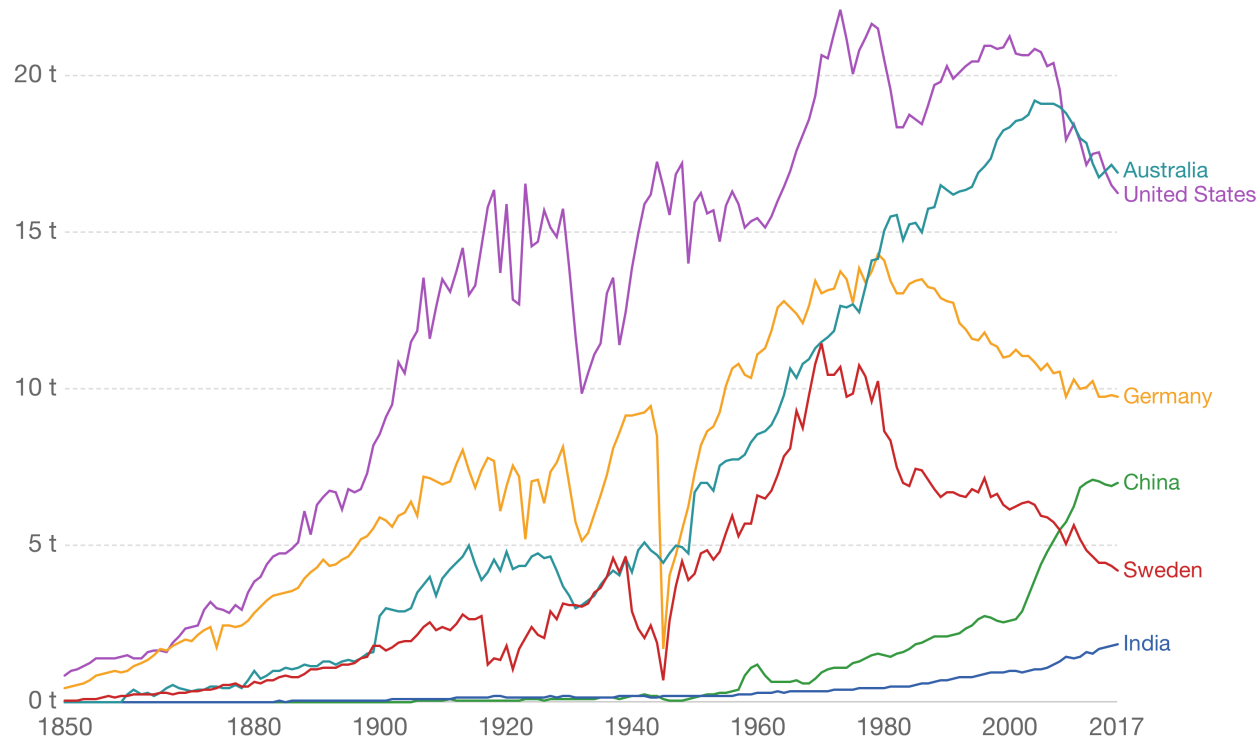


AN INCONVENIENT TRUTH

CO₂ emissions per capita

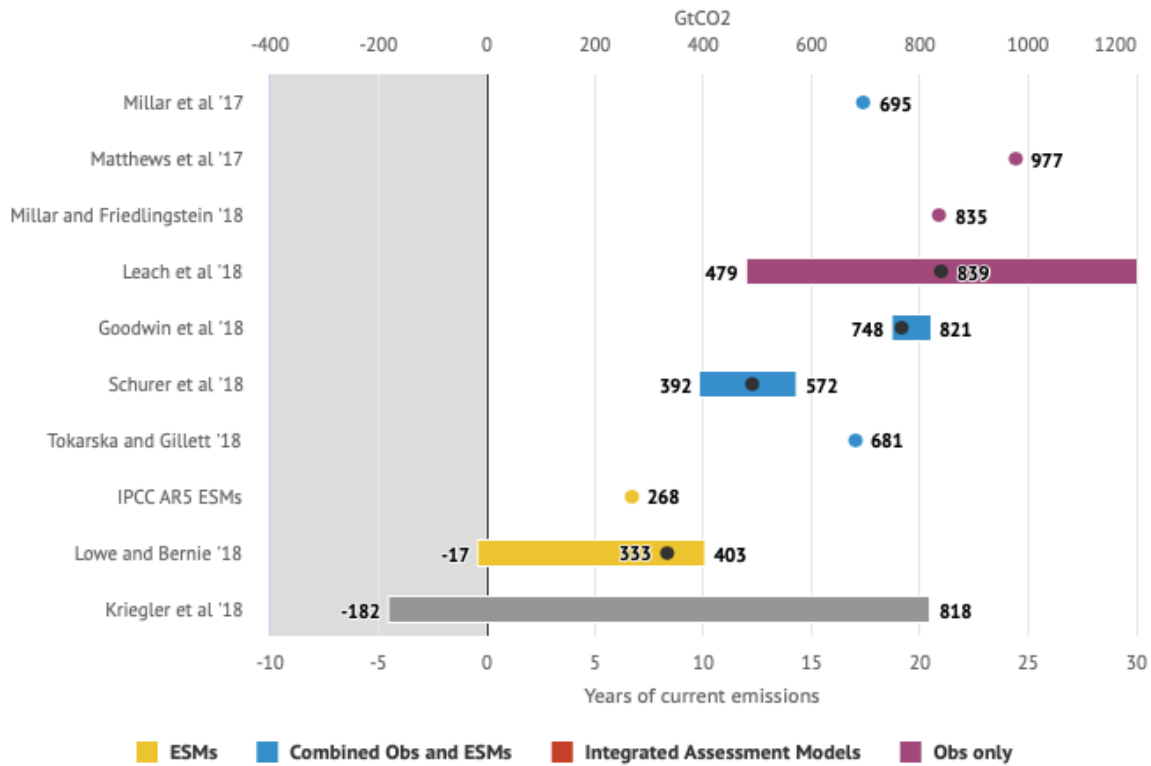
Average carbon dioxide (CO₂) emissions per capita measured in tonnes per year.

Our World
in Data



Source: OWID based on CDIAC; Global Carbon Project; Gapminder & UN
OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY

REMAINING "CARBON BUDGET": 50% CHANCE TO STAY AT/BELOW 1.5-DEGREE TEMPERATURE INCREASE
 (WWW.CARBONBRIEF.ORG/ANALYSIS-HOW-MUCH-CARBON-BUDGET-IS-LEFT-TO-LIMIT-GLOBAL-WARMING-TO-1-5C)



Your lifetime budget for limiting global warming to 1.5C is:

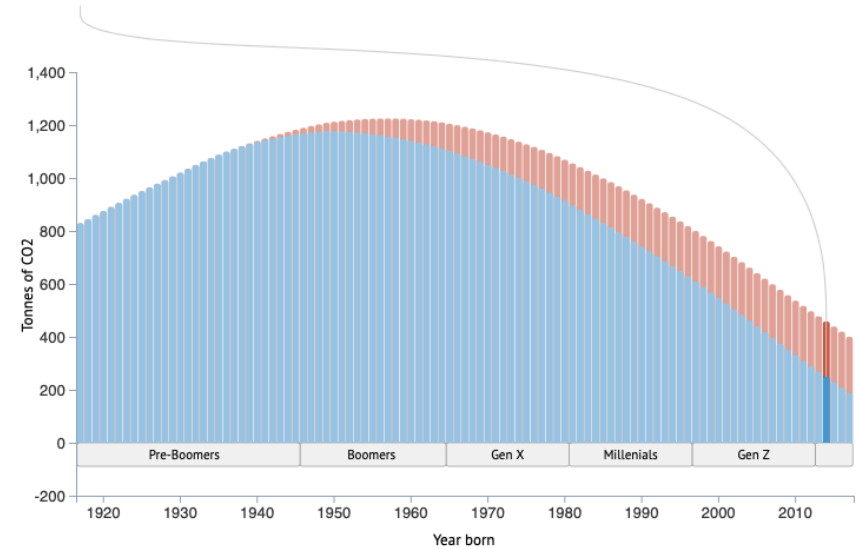
249 tonnes of CO2

Based on energy models for your country

This is **4.7 times** smaller than the carbon budget for someone born in 1950.

2014
 Australia
 National emissions scenario

- Limiting warming to 1.5C
- Additional budget for 2C

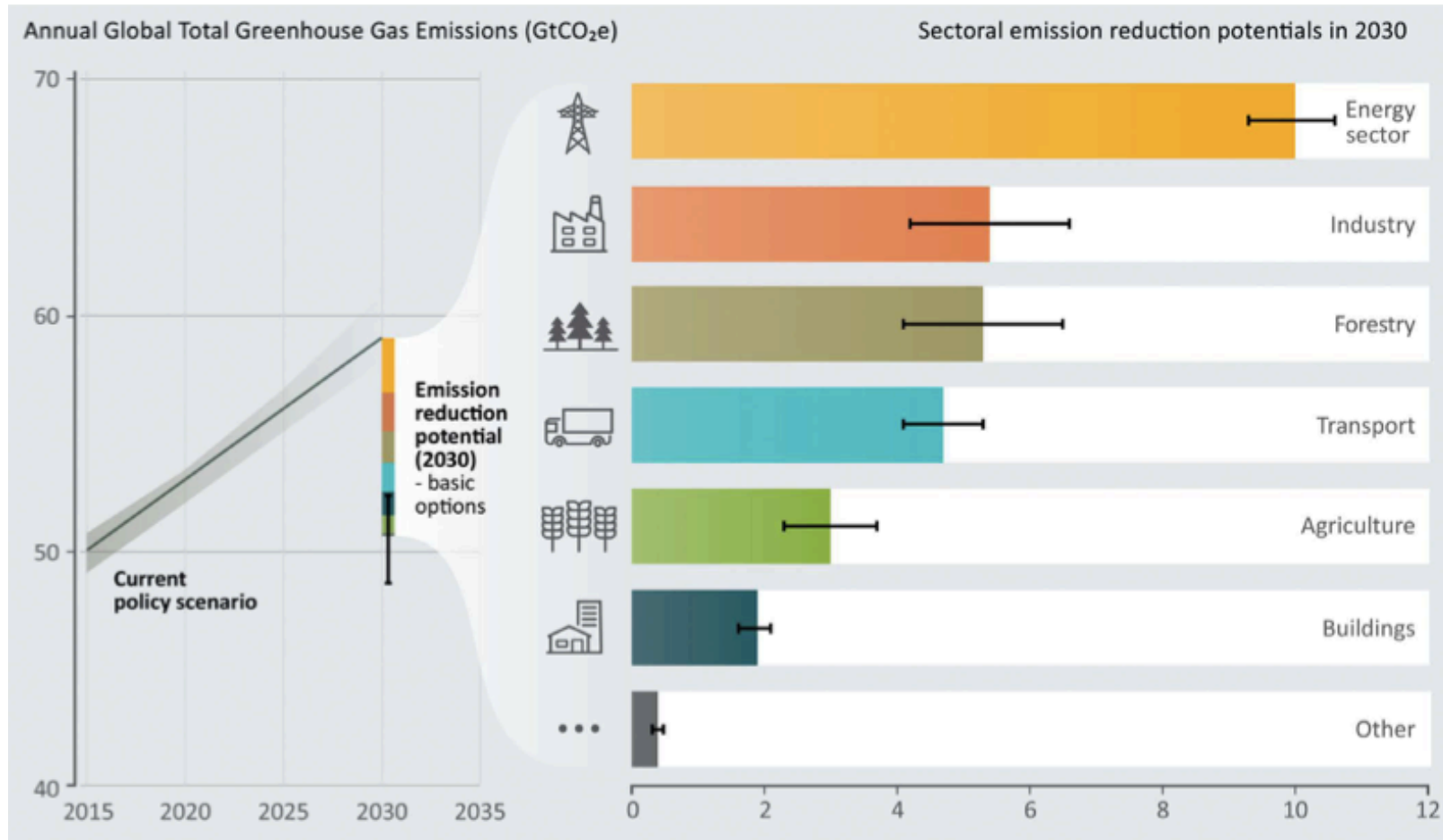


RESEARCH RATIONALE

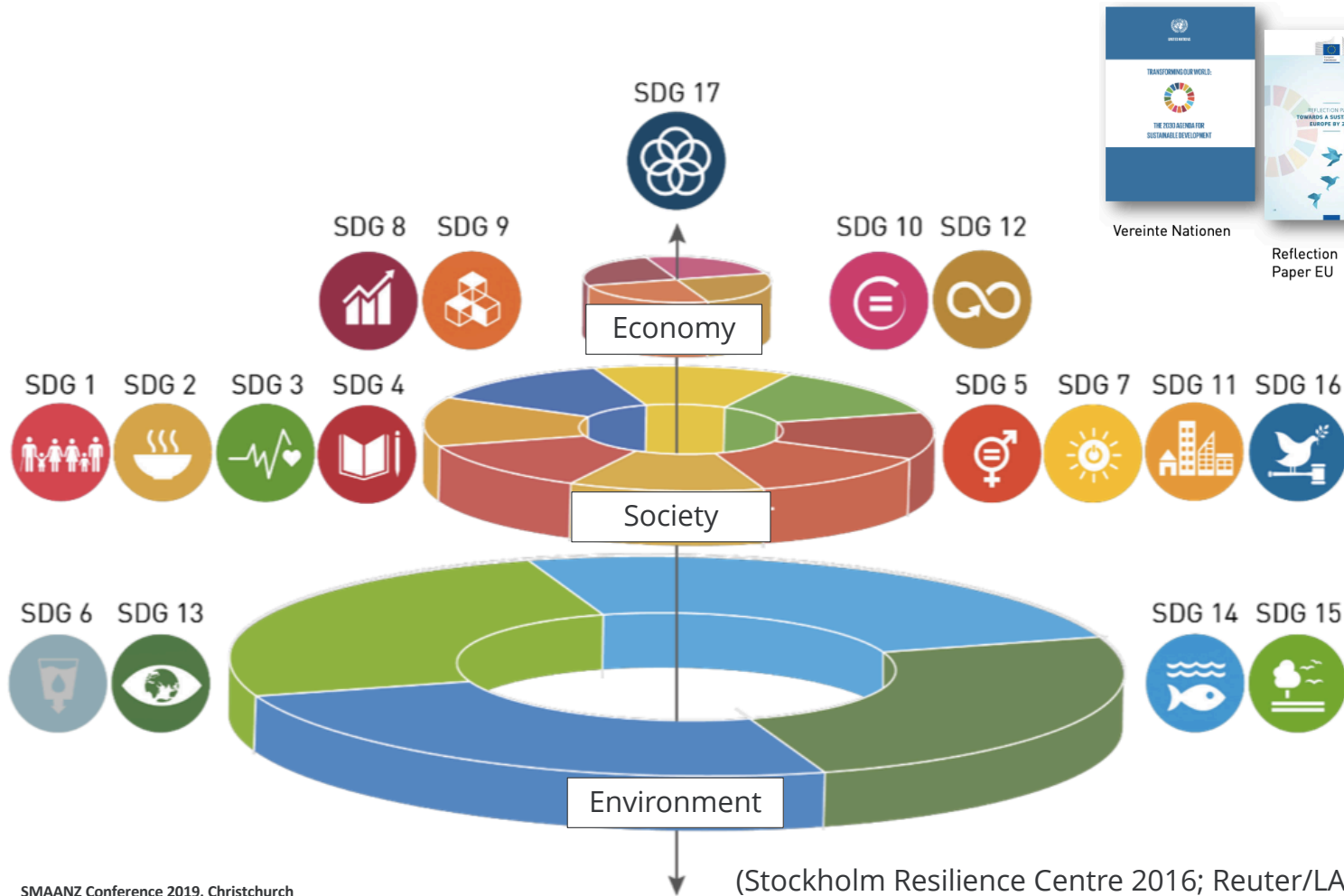
- Sport sector is not exempt from the responsibility to address environmental sustainability
- Until recently, sport management literature (and sport sector) has been hesitant to study, describe and scrutinize sports' impact on natural environments (Breitbarth et al. 2015; Orr & Inoue 2018; McCullough 2020/in press)
- Paradox of how we measure economic, social and environmental impacts
- Even less is known about regular, especially grassroots sport-related events and mobility (Bunds et al. 2018; Wicker 2018)

REDUCTION POTENTIAL

(<https://www.ipcc.ch/site/assets/uploads/2018/12/UNEP-1.pdf>)



UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS



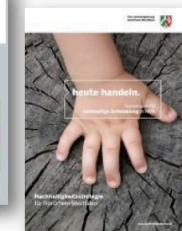
Vereinte Nationen



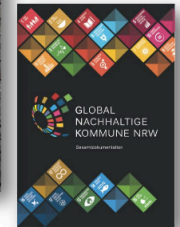
Reflection Paper EU



Deutschland



NRW



Kommunen



17 big sporting organizations - including @UEFA, @iocmedia & more - joined the race against climate change with the launch of the Sports Climate Action Framework at the UN Climate Conference #COP24 in Poland this week. bit.ly/2zUrUX6

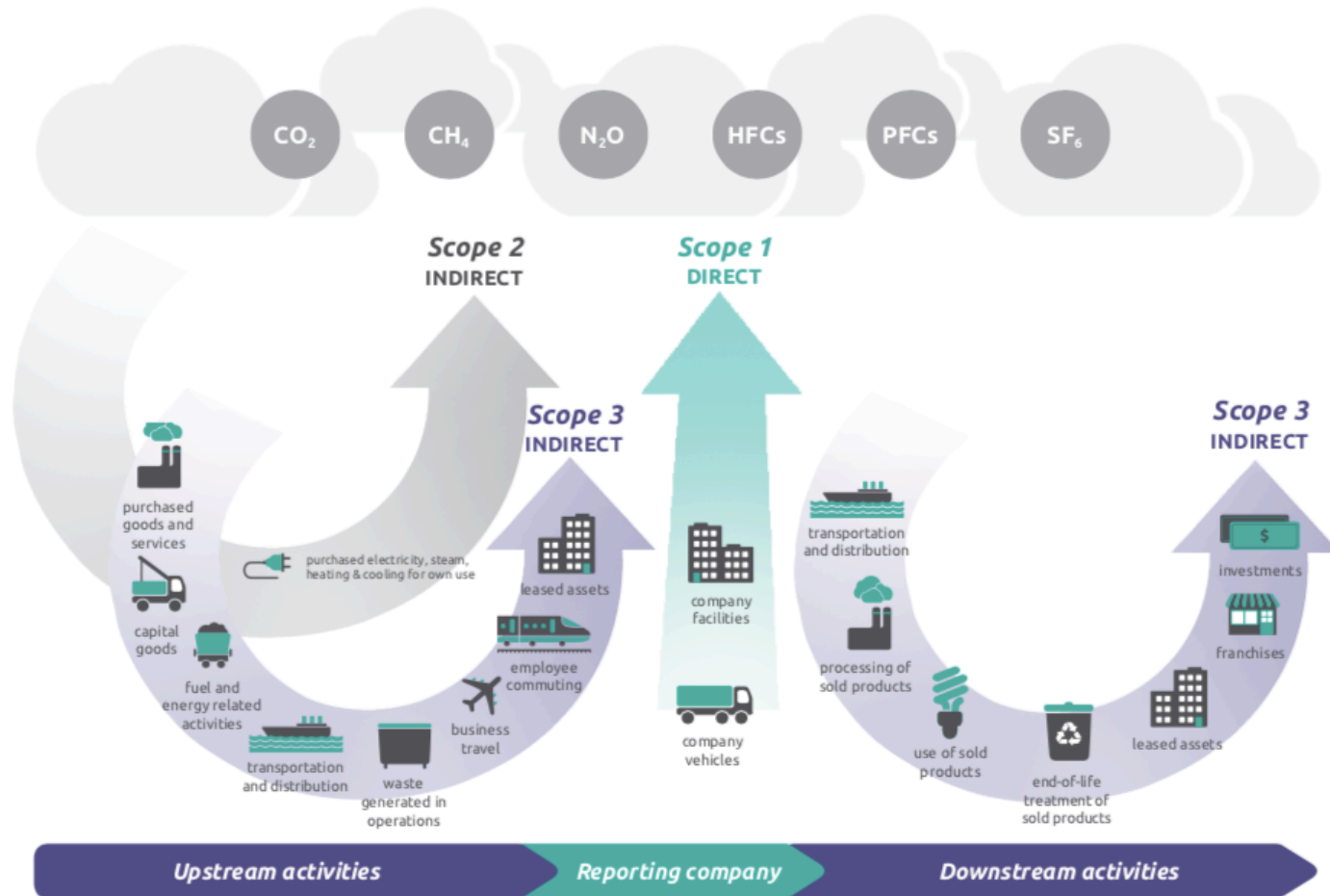


3:05 am - 13 Dec 2018

80 Retweets 192 Likes

21 80 192

SCOPE 1/2/3 ANALYSIS



SURVEY SAMPLE

- Victoria/AUS
- November 2019
- 296 participants (panel)
- 18+
- 51.4% women (representative)
- 73.3% Melburnians (representative)

- Sport participation (SportAUS 2017; 1+/**week**)
 - 0-14: 63% (outside school)
 - 15+: 43%
- Sport participation (Sample; 1+/**week**)
 - 18+: 37.8%
 - (Spectating: 70.6%)

RESULTS AND CO2(-E) CALCULATIONS

(AUSTRIAN ENVIRONMENTAL OFFICE CALCULATOR, WWW.UMWELTBUNDESAMT.AT; CAR FUEL CONSUMPTION ADJUSTED TO AUSTRALIAN AVERAGE)

In an average week, how many kilometers do you travel to your sport-related activity...

	Mean all (km)	CO2-e (kg/km)	CO2-e (kg/year)	Mean active (km)	CO2-e (kg/year)	"Personal CO2 budget"
Own Sport - Car	12.01	0.2923	182.5	25.1	381.5	12.7%
Own Sport - PT	3.15	0.0144	2.4	25.0	18.7	0.6%
Own Sport - Walking	1.77	0		9.0		0%
Own Sport - Bike	0.53	0		8.1		0%
Own Spec - Car	6.46	0.2923	98.2	18.3	278.2	9.3%
Own Spec - PT	5.06	0.0144	3.8	29.1	21.8	0.7%
Own Spec - Walking	0.90	0		6.5		0%
Own Spec - Bike	0.19	0		3.3		0%
Others - Car	6.93	0.2923	105.3	18.1	275.1	9.2%
Others - PT	0.88	0.0144	0.7	10.6	7.9	0.3%
Others - Walking	0.18	0		3.2		0%
Others - Bike	0.06	0		2.0		0%

FUEL CONSUMPTION PER YEAR

(0.4% OF PASSENGER VEHICLES' ANNUAL CONSUMPTION IN AUSTRALIA)



CONCLUSION & OUTLOOK

- **Wake-up call rather than relativism**
 - "...the average annual carbon footprint amounted to 844.0 kg CO₂-e ... Compared to the average carbon footprint of a person living in Germany which was estimated at 11,000 kg CO₂-e ... sport-related travel makes up only 7.7% and can, therefore, be considered only a small contributor to overall emissions." (Wicker 2018)
- **Initial findings, but time for the sport sector (and governments/urban planning) to proactively contribute to reduction strategies**
 - Initial social responsibility efforts in sport might be appreciated, but more complete and bold CSR engagement required
 - Void in research dealing with organisational and managerial motivation/resistance to accept ecological responsibilities in general and to address (negative) environmental impact caused (Schaltegger & Burritt 2018)

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