

Anders Svensson

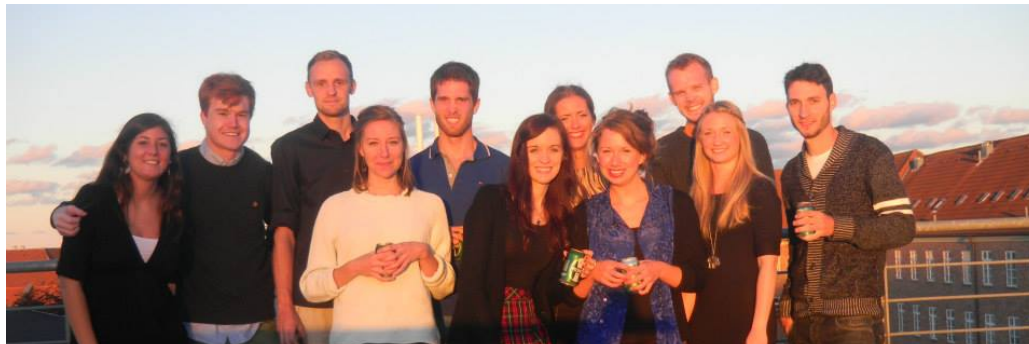


- 1969: Born (not Swedish)
- 1995: MSc in Atomic Physics, NBI,
Supervisors: Nils O. Andersen and Jan W. Thomsen
- 1998: PhD in Geophysics, Ice cores, NBI,
Supervisor: Claus U. Hammer
- 2012: Associate professor at CIC/PICE, NBI
- 2013: Head of studies for the MSc Climate Change
Program at Science, UCPH
- 2021: Winner of the Jens Martin Knudsen Prize at NBI!

The MSc Climate Change program

- Started in 2013 with 19 students (15 graduated)
- We now enroll ~60 students a year (>90% make it)
- We have 200+ applicants a year. Most are international from EU
- The program is interdisciplinary (but all at Science)
- Most students have a BSc in Natural Science
- BSc from UCPH / elsewhere: 22 / 78 %
- DK / Nordic / EU / overseas: 35 / 11 / 44 / 10 %
- Mand / Kone: 39 / 61 %

The MSc CC program
started in 2013 with
19 students enrolled

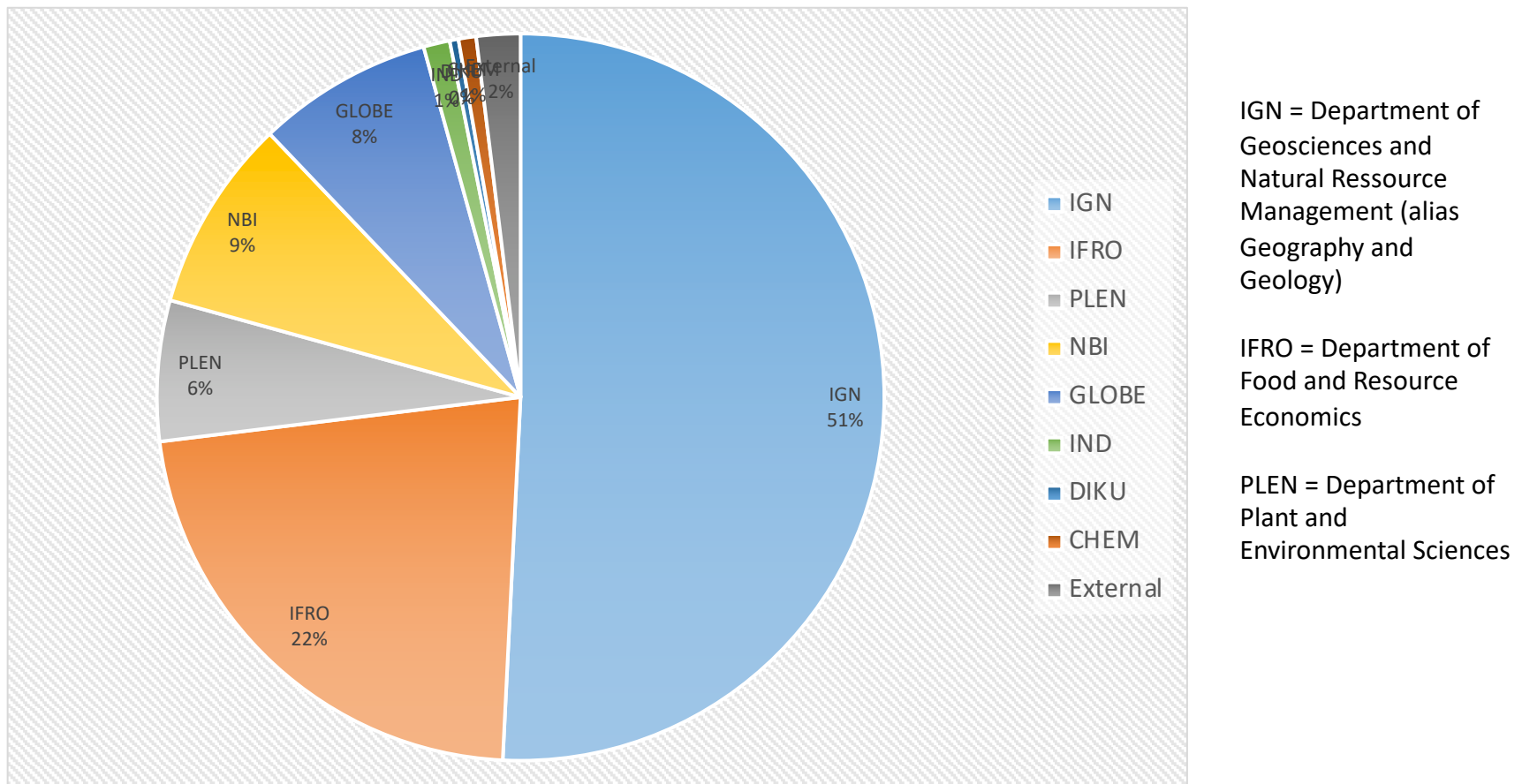




Who are the MSc Climate Change lecturers?



Where do MSc Climate Change students write their Master's thesis?



How to secure a good job for the graduates?

The screenshot shows a LinkedIn group page for 'MSc in Climate change, University of Copenhagen'. The page layout includes a top navigation bar with icons for Home, My Network, Jobs, Messaging, Notifications, and Me. On the left sidebar, there are sections for 'Recent' (listing the group and hashtags like #tippingpoints, #climatejourney, #paleoclimatology, and Bohr Alumni Association), 'Groups' (listing similar groups), and 'Followed Hashtags'. The main content area features a post by Susanne Konrad, a Programme Associate at UNEP DTU Partnership, who is looking for talented interns. The post includes a photo of the Boston skyline with the text 'WE ARE HIRING' overlaid in large yellow letters. To the right of the post, there is a 'Group admin' section featuring Amalie Bastrup-Birk Wachmann, the 1st Owner of the group, with her bio: 'MSc in Climate Change | Sustainability | Environmental management | Geology and geochemistry |'. Below the admin section is a 'Promoted' section with three items: 'Go Passwordless', 'Visual Data Vault', and 'Invitation from LinkedIn'. At the bottom of the page, there are links for 'About', 'Help Center', 'Privacy & Terms', 'Advertising', 'Business Services', 'Get the LinkedIn app', and 'More', along with the LinkedIn Corporation copyright notice for 2019.

in Search

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Recent

- MSc in Climate change, Univ...
- # tippingpoints
- # climatejourney
- # paleoclimatology
- Bohr Alumni Association

Groups

- MSc in Climate change, Univ...
- Bohr Alumni Association
- DM Naturvidenskab, sundhe...
- See all

Followed Hashtags

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- # paleoclimatology
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MSc in Climate change, University of Copenhagen

Standard group

Start a conversation in this group

Susanne Konrad • 1st
Programme Associate at UNEP DTU Partnership
2w

Maybe interesting for some of you

Innovation Centre Denmark Boston
509 followers
2w • Edited

★ We are looking for talented interns ★

Would you like to help Danish companies and universities in the intersi ...see more

WE ARE HIRING

Group admin

Amalie Bastrup-Birk Wachmann
• 1st Owner
MSc in Climate Change | Sustainability
| Environmental management | Geology
and geochemistry |

Promoted

- Go Passwordless
Secure modern authentication. Save \$20 on 2 keys from the YubiKey 5 series.
- Visual Data Vault
Logical Modeling Language for the Enterprise Data Warehouse. Free Download.
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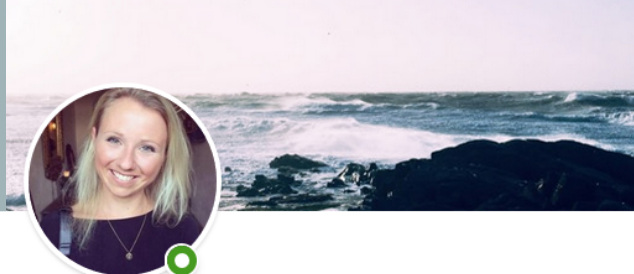


Emelie Öhlander · 1st

Climate Action Program Manager på Ericsson

Stockholm, Stockholm County, Sweden · [500+ connections](#) ·

[Contact info](#)



Stina Jansson · 1st

Parliamentary Assistant

Brussels, Brussels Capital Region, Belgium · [340 connections](#) ·

[Contact info](#)



Stine Maj Krigslund · 1st

Stormflodssikring & Klimatilpasning, Københavns Kommune

Copenhagen, Capital Region, Denmark · [311 connections](#) ·

[Contact info](#)



ESG = Enabling Sustainable Growth

Jessica Wright · 1st

ESG Specialist at Ørsted

Copenhagen, Capital Region, Denmark · [500+ connections](#) ·

[Contact info](#)



Peter Ukkonen · 1st

PhD student (machine learning in weather/climate modeling)

Copenhagen, Capital Region, Denmark · [107 connections](#) ·

[Contact info](#)



FAO = The Food and Agriculture Organization of the United Nations

Srijita Dasgupta · 1st

Consultant at FAO

Bangkok City, Thailand · [211 connections](#) · [Contact info](#)



Frederik Roland Sandby · 1st

Formand for Klimabevægelsen i Danmark // 350.dk

Sealand Region, Denmark · [500+ connections](#) · [Contact info](#)



350 Klimabevægelsen i Danmark



Københavns Universitet - University of Copenhagen

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Copenhagen Climate Consulting

CCC is a sustainability company that offers a wide range of services related to decreasing your climate impact

Environmental Services · København · Capital Region · 515 followers



Liam & 4 other connections work here · 5 employees

[Visit website](#)

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(Foto: Matt Homewood)



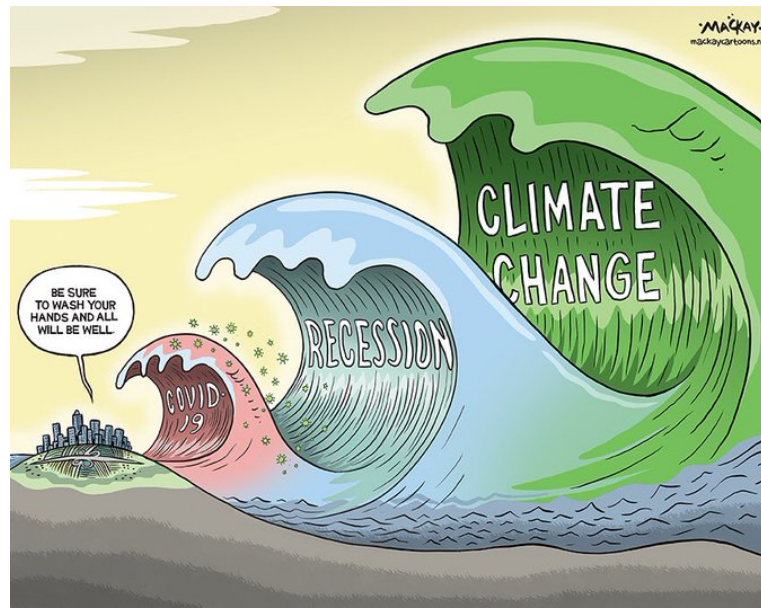
Where are MSc Climate Change graduates employed?

Unofficial statistics based on LinkedIn

Employment	Total	%
Governmental agencies and municipalities	36	20
Consultancy companies	47	26
Research, teaching and dissemination	37	20
Industry and business	31	17
NGOs and international organisations	16	9
Unemployed	14	8
Unknown	61	
Total	242	100

The Climate Change Mechanisms and Tipping Points course

- Started in 2014 (as a fairly poor course)
- Some 50 students are signing up
- MSc CC / MSc other: 60 / 40 %
- Ladies / Gentlemen: 50 / 50 %
- Danish / International: 33 / 67 %



Easy text book (BSc level): Kump et al.: The Earth System, 3rd edition

Supplementary reading

What is hot in climate change

Recent challenging material

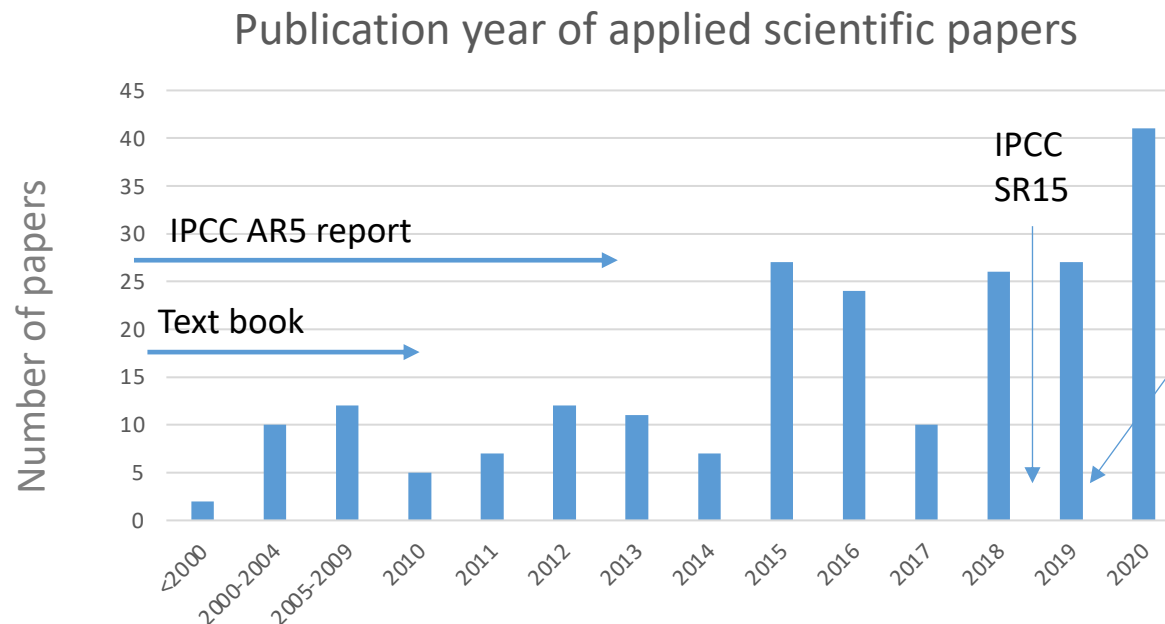
Course week	Calendar week	Topics	Kump chapters	Additional reading material	CarbonBrief	Papers for discussion
1	6	The Earth system	1, 2, 3	Ruddiman, Earth Climate System Today, p. 1-14	https://www.carbonbrief.org/qa-how-do-climate-models-work	
		Global energy balance				
2	7	The atmosphere and the oceans	4, 5	Ruddiman, Earth Climate System Today, p. 15-35	https://www.carbonbrief.org/cmip6-the-next-generation-of-climate-models-explained	Rahmstorf, Nature, 2002
						Cox et al., Nature, 2018
3	8	The cryosphere and the Arctic	6	Slater et al., The Cryosphere, 2021: Review article: Earth's ice imbalance	https://www.carbonbrief.org/the-carbon-brief-interview-prof-jonathan-bamber	Garbe et al, Nature, 2020
						Briner et al., Nature, 2020
4	9	The carbon and nutrient cycles	7, 8	Falkowski et al., Science, 2000: The Global Carbon Cycle: A Test of Our knowledge of Earth as a system	https://www.carbonbrief.org/analysis-how-carbon-cycle-feedbacks-could-make-global-warming-worse	Mathesius et al., NatureCC, 2015
						Cai et al., NatureCC, 2015
5	10	Paleoclimate	14	Brook and Buizert, Nature, 2018: Antarctic and global climate history viewed from ice cores	https://www.carbonbrief.org/explain-how-the-rise-and-fall-of-co2-levels-influenced-the-ice-ages	Burke et al., PNAS, 2018
						Clark et al., NatureCC, 2016
6	11	The Holocene	15	Dutton et al., Science, 2015, p. 153: Sea-level rise due to polar ice-sheet mass loss during past warm periods	https://www.carbonbrief.org/explain-how-climate-change-is-accelerating-sea-level-rise	Abram et al., Nature, 2016
		Sea level change				Nerem et al., PNAS, 2018 / Frederikese et al., Nature 2020
7	12	Global warming, future climates and Geoengineering	16	Smith et al., NatureCC, 2015: Biophysical and economic limits to negative CO2 emissions	https://www.carbonbrief.org/existing-paris-climate-pledges-commit-sea-level-rise-to-one-metre-by-2300	Caesar et al., Nature, 2018
						Lenton et al., PNAS, 2008
8	13	EASTER VACATION				
9	14	Tipping points		Steffen et al., PNAS, 2018: Trajectories of the Earth System in the Anthropocene	https://www.carbonbrief.org/explain-how-nine-tipping-points-that-could-be-triggered-by-climate-change	Raymond et al., Sci.Adv., 2020 / Xu et al., PNAS, 2020
						LeQuéré et al., NatureCC, 2020
10	15	Examination week				

Teaching material

- Lectures consist of some 750 slides
- Some 200 scientific papers are introduced
- 100+ figures from IPCC AR5, SR15 and SROCC
- 100+ figures from other sources

IPCC =
Intergovernmental
Panel on Climate
Change

SR15 = IPCC
Special Report on
Global Warming
of 1.5 °C

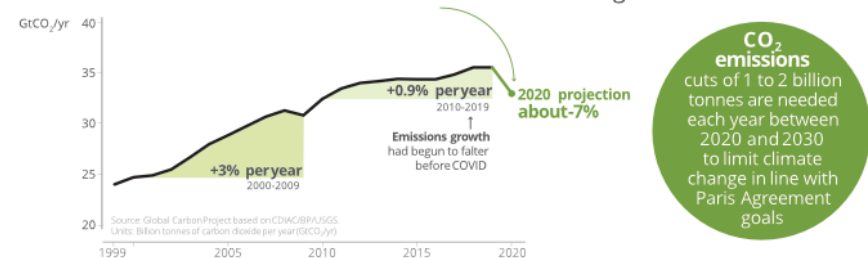


SROCC = IPCC
Special Report on
the Ocean and
Cryosphere in a
Changing Climate

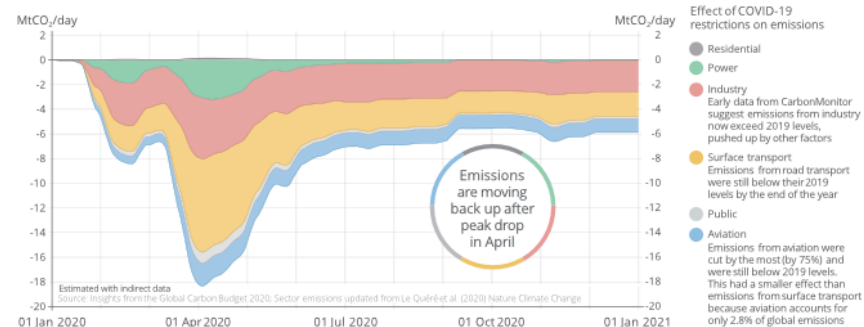
Global Carbon Budget 2020

COVID lockdown causes record decrease in CO₂ emissions for 2020

2020 fossil emissions decrease of 2.4 billion tonnes is largest ever recorded



Emissions from road transport cause the largest share of the global 2020 decrease



nature
climate change

ARTICLES

<https://doi.org/10.1038/s41558-020-0797-x>

Check for updates

Temporary reduction in daily global CO₂ emissions during the COVID-19 forced confinement

Corinne Le Quéré^{1,2}, Robert B. Jackson^{3,4,5}, Matthew W. Jones^{1,2}, Adam J. P. Smith^{1,2}, Sam Abernethy^{3,6}, Robbie M. Andrew⁷, Anthony J. De-Gol^{1,2}, David R. Willis^{1,2}, Yuli Shan⁸, Josep G. Canadell⁹, Pierre Friedlingstein^{10,11}, Felix Creutzig^{12,13} and Glen P. Peters¹⁷

Government policies during the COVID-19 pandemic have drastically altered patterns of energy demand around the world. Many international borders were closed and populations were confined to their homes, which reduced transport and changed consumption patterns. Here we compile government policies and activity data to estimate the decrease in CO₂ emissions during forced confinements. Daily global CO₂ emissions decreased by -17% (-11 to -25% for $\pm 1\sigma$) by early April 2020 compared with the mean 2019 levels, just under half from changes in surface transport. At their peak, emissions in individual countries decreased by -26% on average. The impact on 2020 annual emissions depends on the duration of the confinement, with a low estimate of -4% (-2 to -7%) if prepandemic conditions return by mid-June, and a high estimate of -7% (-3 to -13%) if some restrictions remain worldwide until the end of 2020. Government actions and economic incentives postcrisis will likely influence the global CO₂ emissions path for decades.

nature
climate change

ARTICLES

<https://doi.org/10.1038/s41558-020-0883-0>

Check for updates

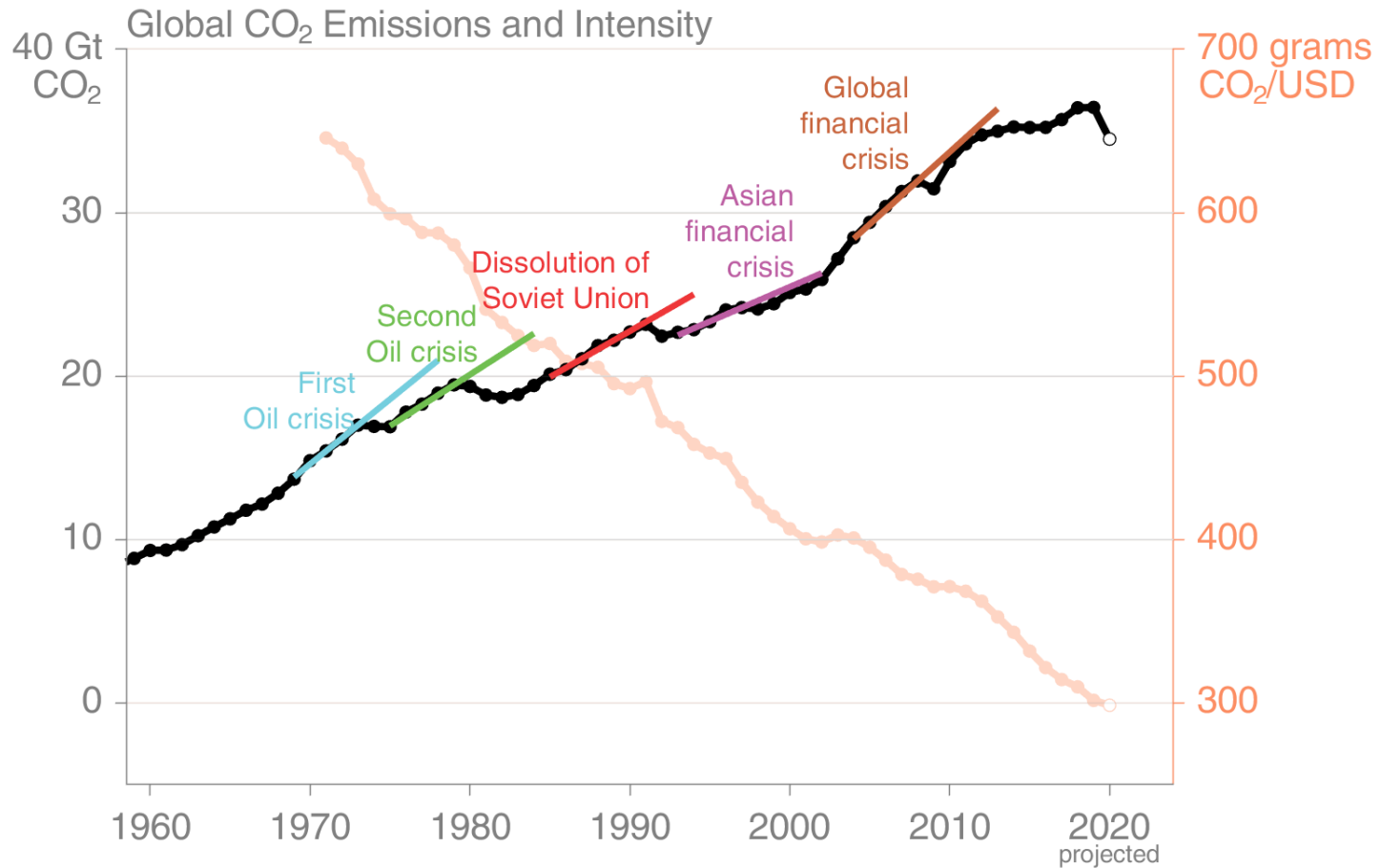
Current and future global climate impacts resulting from COVID-19

Piers M. Forster¹, Harriet I. Forster², Mat J. Evans^{3,4}, Matthew J. Gidden^{5,6}, Chris D. Jones⁷, Christoph A. Keller^{8,9}, Robin D. Lamboll¹⁰, Corinne Le Quéré^{11,12}, Joeri Rogelj^{6,10}, Deborah Rosen¹, Carl-Friedrich Schleussner^{5,13}, Thomas B. Richardson¹, Christopher J. Smith^{1,6} and Steven T. Turnock^{1,7}

The global response to the COVID-19 pandemic has led to a sudden reduction of both GHG emissions and air pollutants. Here, using national mobility data, we estimate global emission reductions for ten species during the period February to June 2020. We estimate that global NO_x emissions declined by as much as 30% in April, contributing a short-term cooling since the start of the year. This cooling trend is offset by ~20% reduction in global SO₂ emissions that weakens the aerosol cooling effect, causing short-term warming. As a result, we estimate that the direct effect of the pandemic-driven response will be negligible, with a cooling of around 0.01 ± 0.005 °C by 2030 compared to a baseline scenario that follows current national policies. In contrast, with an economic recovery tilted towards green stimulus and reductions in fossil fuel investments, it is possible to avoid future warming of 0.3 °C by 2050.

Fossil CO₂ emission intensity

Global CO₂ emissions growth has generally resumed quickly from financial crises.
Emission intensity has steadily declined but not sufficiently to offset economic growth.



Economic activity is measured in purchasing power parity (PPP) terms in 2010 US dollars.
Source: [CDIAC](#); [Peters et al 2012](#); [Friedlingstein et al 2020](#); [Global Carbon Budget 2020](#)

Where are MSc Climate Change graduates going?

From/To:	DK	Nordic	EU	Non-EU
DK	53	0	3	0
Nordic	6	12	2	0
EU	29	1	38	1
Non-EU	11	0	1	5

'From': Citizenship at enrolment

'To': Country of employment