

**A few remarks about
the urgency of increasing the ambition
level of EU climate policies**

Jean-Pascal van Ypersele

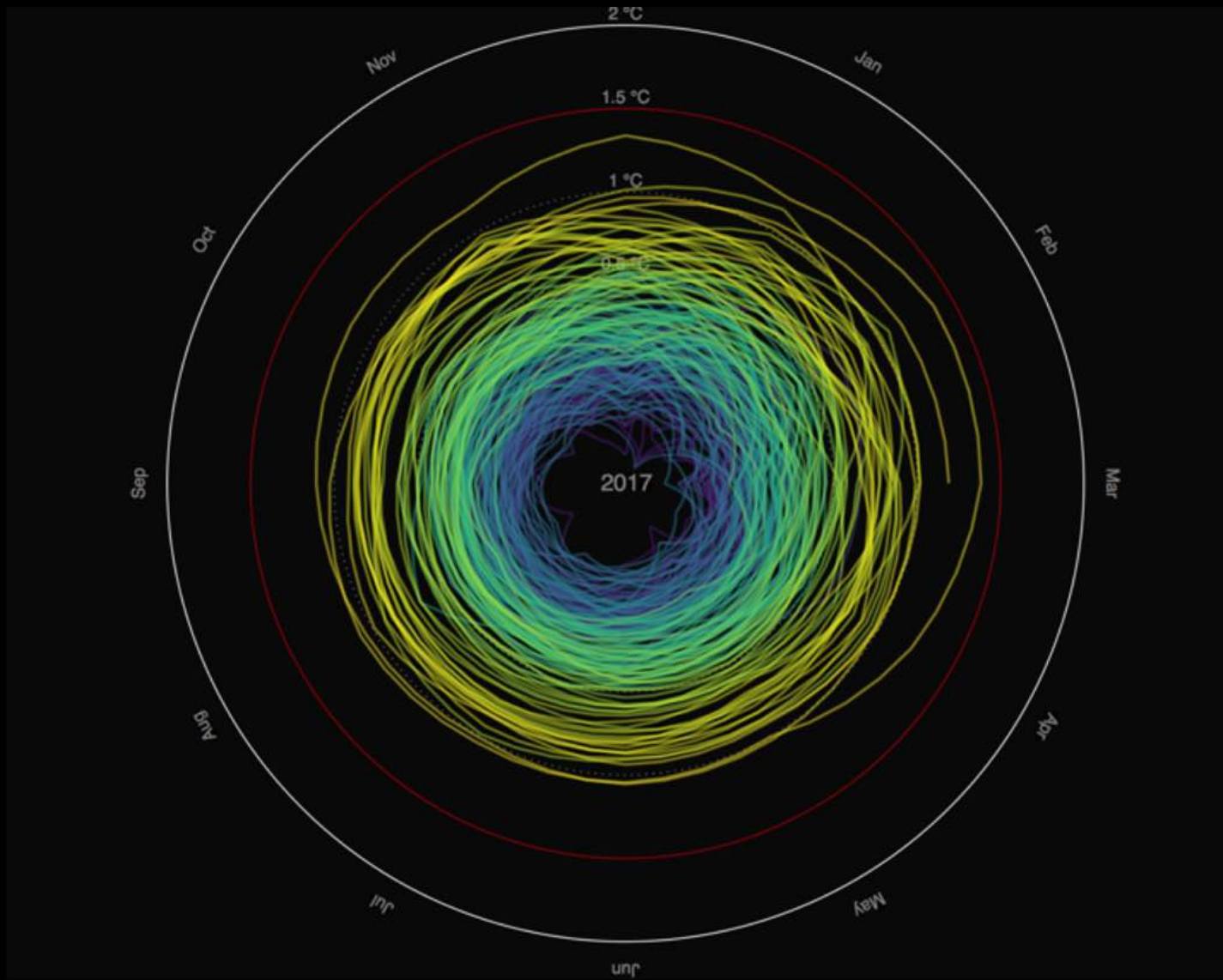
UCLouvain (Belgium), Earth & Life Institute

IPCC Vice-Chair from 2008 to 2015

Twitter: @JPvanYpersele

**Université Saint-Louis,
Brussels, 20 September 2018**

Temperature spiral



Global Mean Temperature in °C relative to 1850 – 1900

Graph: Ed Hawkins (Climate Lab Book) – Data: HadCRUT4 global temperature dataset

Animated version available on <http://openclimatedata.net/climate-spirals/temperature>

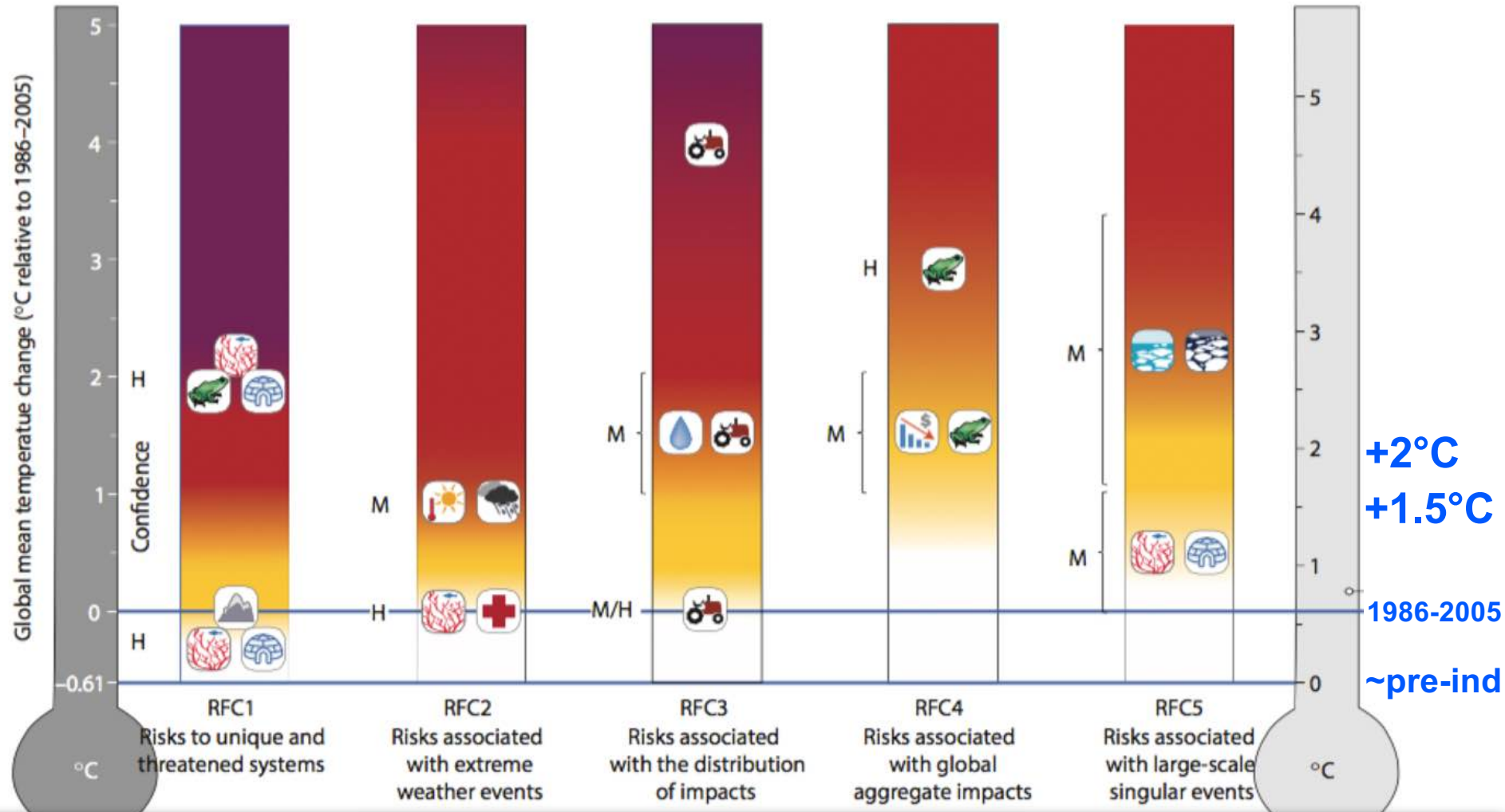
Since 1950, **extreme hot days** and **heavy precipitation** have become more common



There is evidence that anthropogenic influences, including increasing atmospheric **greenhouse gas concentrations**, have changed these extremes

IPCC reasons for concern / climate change risks

(Nat Climate Change 2017)



Average temperature is probably on its way to exceed the « conservation temperature » for the Greenland and (some of the) Antarctic ice sheet

There is therefore a very high risk that average sea level would increase by several metres over the next century or two

**Because we use the atmosphere
as a dustbin for our greenhouse
gases, we thicken the insulation
layer around the planet**

**That is why we must cut emissions
to ZERO as soon as possible**

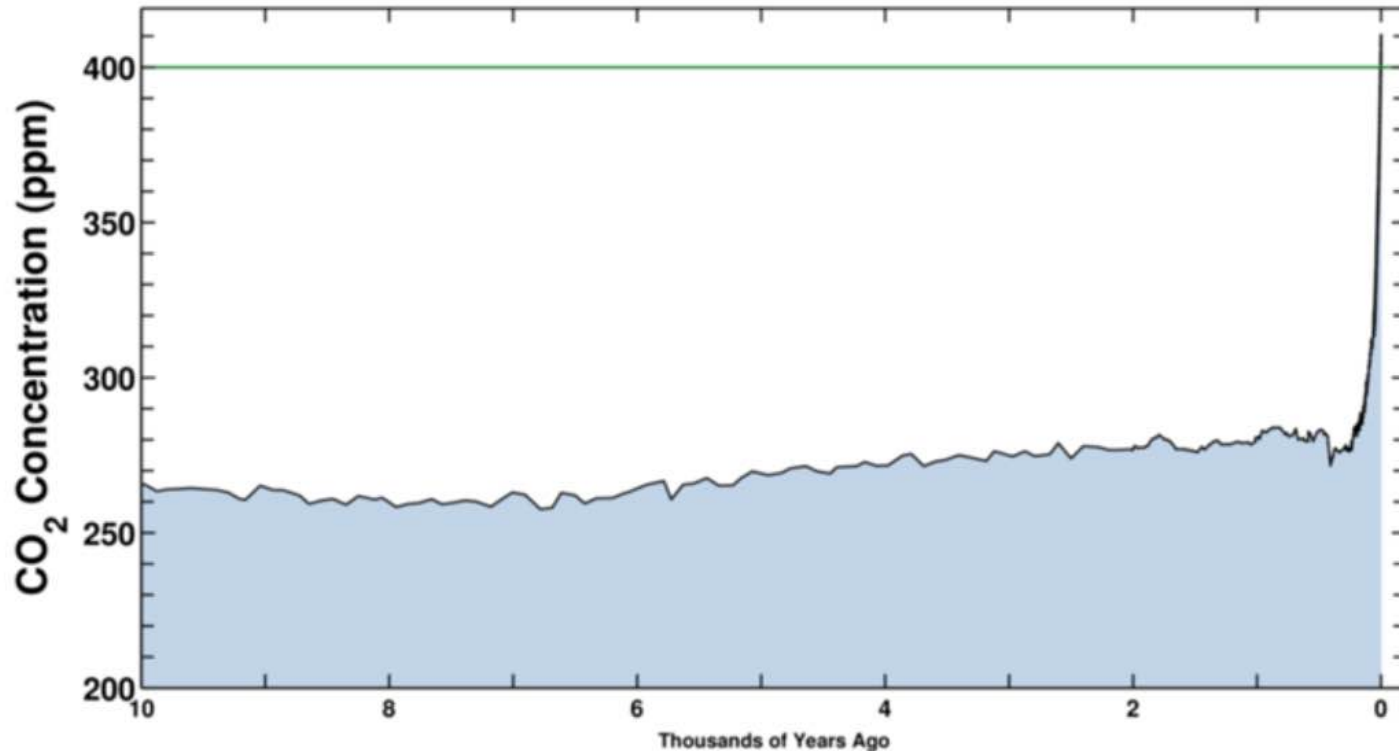
@JPvanYpersele

CO₂ Concentration, 28 May 2018 (Keeling curve)

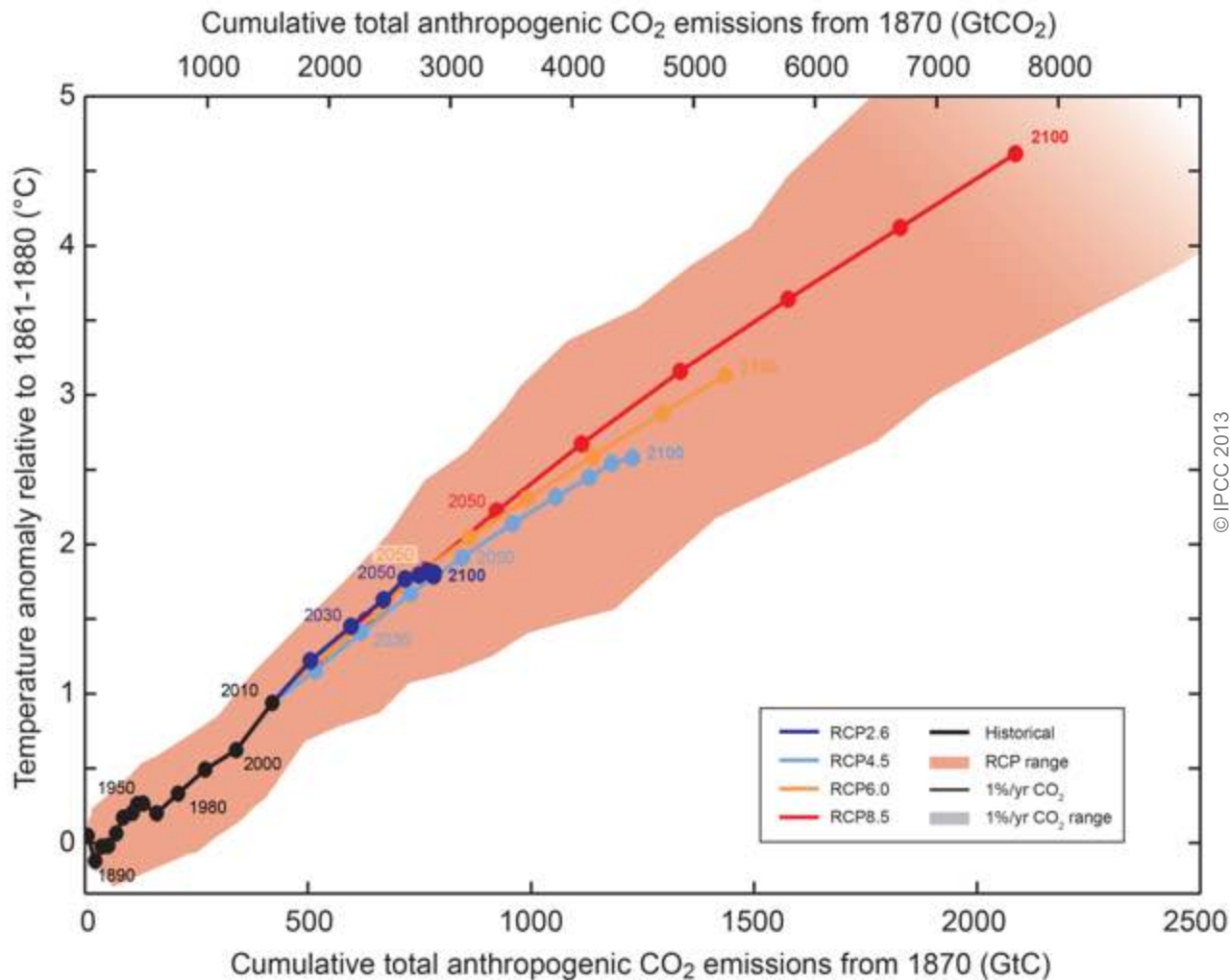
Latest CO₂ reading
May 28, 2018

411.98 ppm

Ice-core data before 1958. Mauna Loa data after 1958.



Source: scripps.ucsd.edu/programs/keelingcurve/



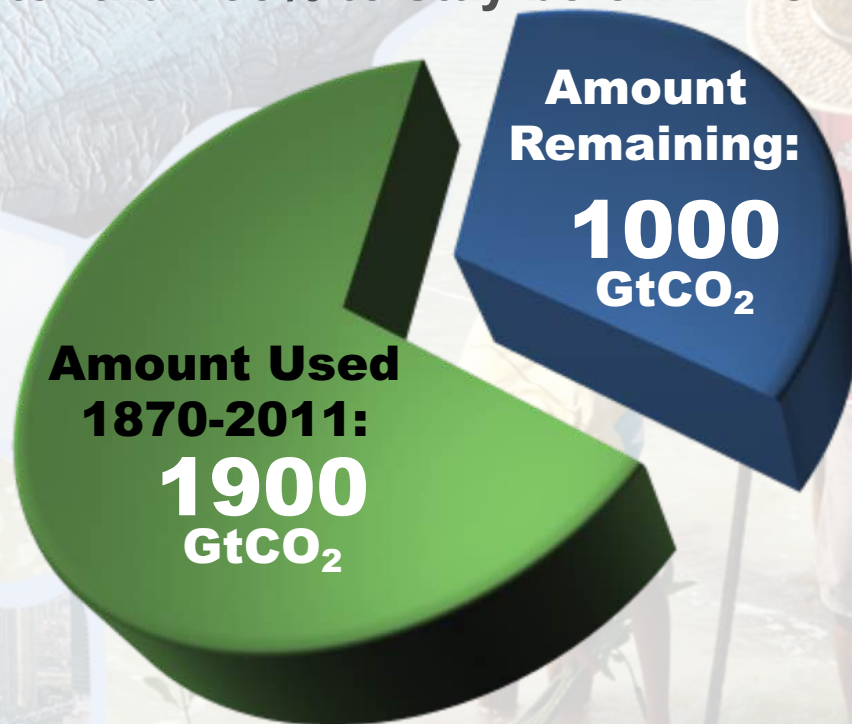
© IPCC 2013

Fig. SPM.10

Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.

The window for action is rapidly closing

65% of the carbon budget compatible with a 2° C goal is already used
NB: this is with a probability greater than 66% to stay below 2° C



NB: Emissions in 2011: 38 GtCO₂/yr

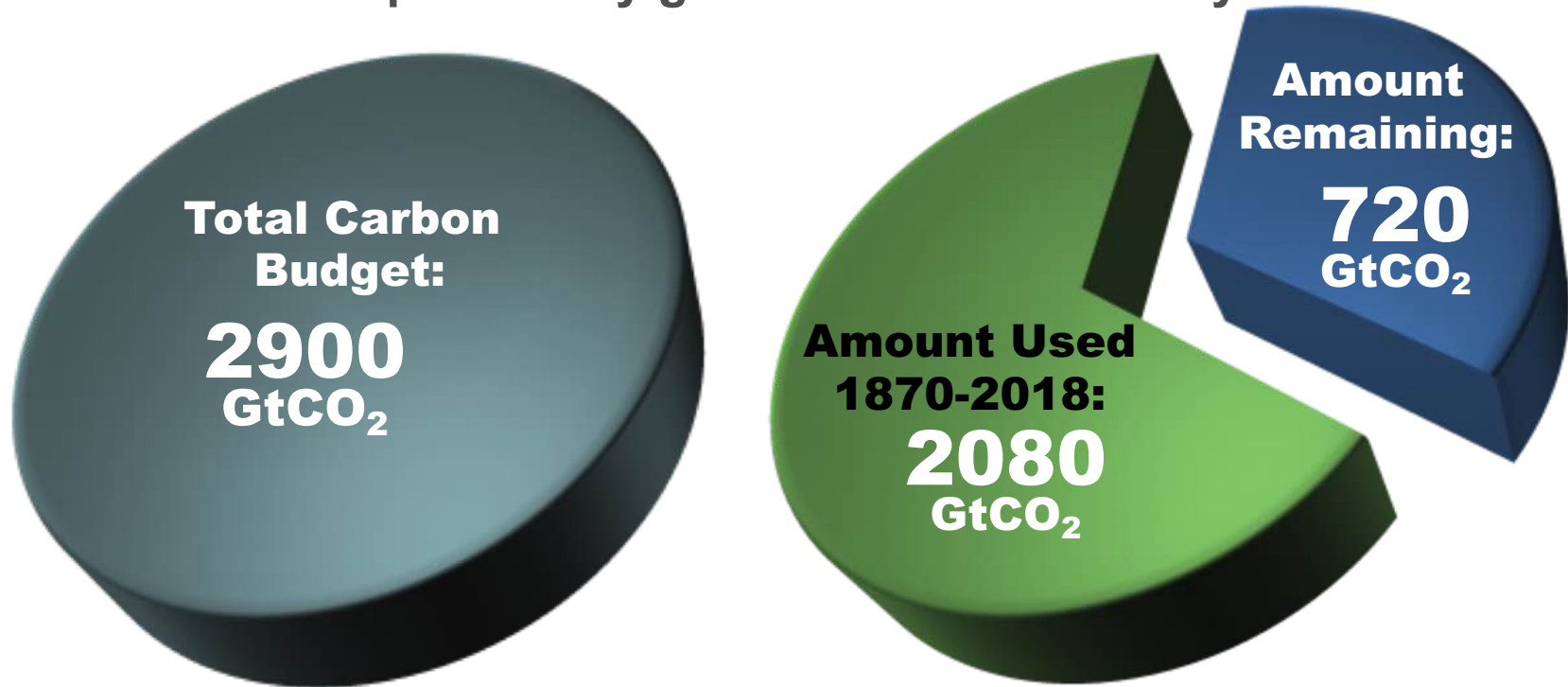
AR5 WGI SPM

My personal update (2018):

The window for action is VERY rapidly closing

75% of the carbon budget compatible with a 2° C goal is already used

NB: this is with a probability greater than 66% to stay below 2° C



NB: Emissions in 2011: 38 GtCO₂/yr

AR5 WGI SPM

Adapted by @JPvanYpersele from the IPCC AR5

AR5 SYR: Carbon dioxide « budgets »

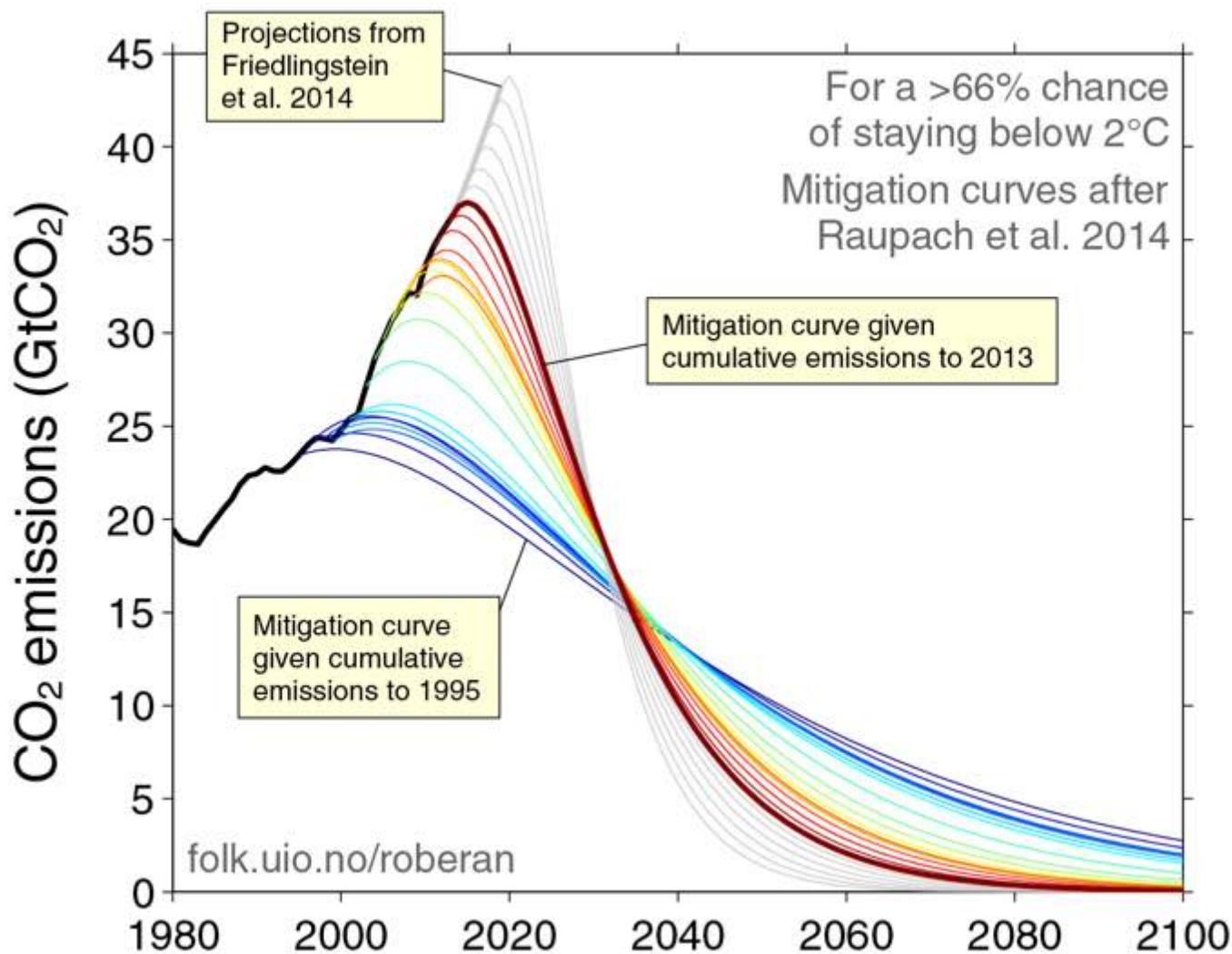
3°C
(see AR5 SYR)

Cumulative CO ₂ emissions from 1870 in GtCO ₂						
Net anthropogenic warming ^a	<1.5°C			<2°C		
Fraction of simulations meeting goal ^b	66%	50%	33%	66%	50%	33%
Complex models, RCP scenarios only ^c	2250	2250	2550	2900	3000	3300
Simple model, WGIII scenarios ^d	No data	2300 to 2350	2400 to 2950	2550 to 3150	2900 to 3200	2950 to 3800
Cumulative CO ₂ emissions from 2011 in GtCO ₂						
Complex models, RCP scenarios only ^c	400	550	850	1000	1300	1500
Simple model, WGIII scenarios ^d	No data	550 to 600	600 to 1150	750 to 1400	1150 to 1400	1150 to 2050

possible?
implications?

ranges likely to change
at least due to more studies

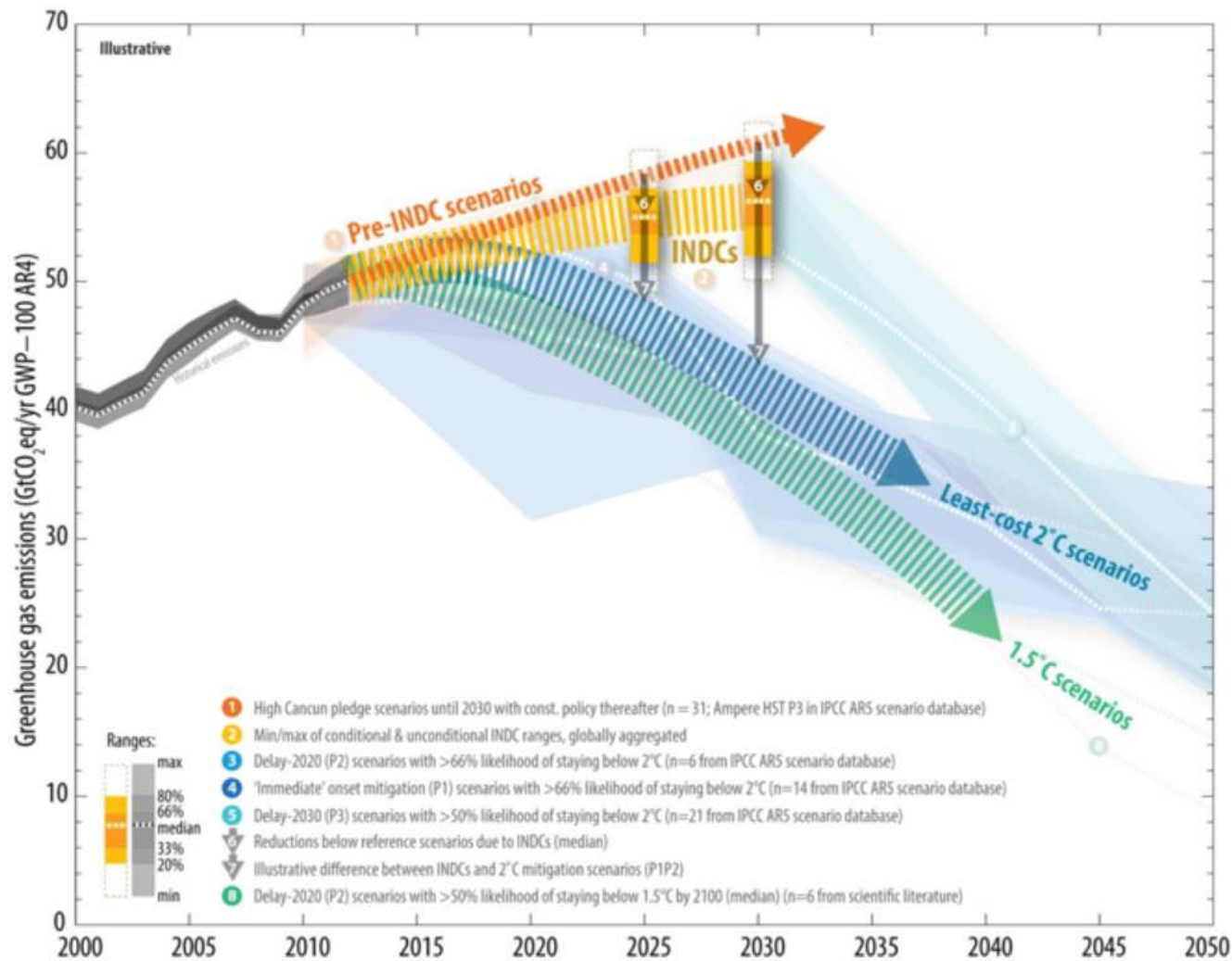
Limiting warming becomes much more difficult when the peak happens later



Source and details:

http://folk.uio.no/roberan/t/global_mitigation_curves.shtml

Comparison of global emission levels in 2025 and 2030 resulting from the implementation of the intended nationally determined contributions



UNFCCC, Aggregate effect of the intended nationally determined contributions: an update

<http://unfccc.int/resource/docs/2016/cop22/eng/02.pdf>

Synergies: Combustion of fossil fuels, wood, and biomass also cause air pollution, which kills 7 million people per year (including 500 000 in Europe) (World Health Organization, 2018)

Opportunity: Addressing the causes of climate change can also improve air quality and wellbeing

Children are particularly sensitive to air pollution



Photo: Indiatoday.in, 6-12-2017

European Union loses at least 1 billion euros *per day* simply to buy fossil fuels outside its borders

True, decarbonizing the EU economy will cost, but not doing it could cost much more in impacts. Saving these 400 billions €/year could offer many opportunities

Objectifs à long terme

• Vision

- « **renforcer la riposte mondiale** à la menace des changements climatiques, dans le contexte du **développement durable** et de la **lutte contre la pauvreté** »

• Objectifs

1. Limitation de l'augmentation de température:

- « **nettement en dessous de 2 ° C** par rapport aux niveaux préindustriels »
- « **poursuivre l'action menée pour limiter le réchauffement à 1,5 ° C**, étant entendu que cela réduirait sensiblement les risques et les impacts »

2. Résilience et développement bas-carbone

- « **promouvoir la résilience** aux changements climatiques et un **développement à faible émission** de gaz à effet de serre, d'une manière qui ne menace pas la **production alimentaire** »

3. Financement

- « rendre les **flux financiers compatibles** avec un profil d'évolution vers un **développement à faible émission** de gaz à effet de serre et **résilient** aux changements climatiques »

Global warming of 1.5°C

*A IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, **in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty***

Proposed outline (as adopted in October 2016; report to be finalized in 2018) :

- Summary for policy makers (max 10 pages)
- Chapters :
 - ▶ 1. Framing and context
 - ▶ 2. Mitigation pathways compatible with 1.5°C in the context of sustainable development
 - ▶ 3. Impacts of 1.5°C global warming on natural and human systems
 - ▶ 4. Strengthening and implementing the global response to the threat of climate change
 - ▶ 5. Sustainable development, poverty eradication and reducing inequalities
- Boxes (integrated case studies/regional and cross-cutting themes),
- FAQs (10 pages)

Tentative and personal conclusions

(The SR1.5 has not been finalized yet!)

1.5°C matters: reducing the warming, even by tenths of a °C, can make large differences for impacts, as many of these are non-linear, that is they worsen faster with warming than the warming itself.

The probability of extremes (heat waves, drought, floods, extreme sea level) is significantly lower in a 1.5°C world than in a 2°C world

1.5°C is much safer than 2°C in terms of long-term sea-level rise associated to ice-sheet processes, particularly for low-lying regions

Tentative and personal conclusions

(The SR1.5 has not been finalized yet!)

1.5°C lower impacts will make adaptation less costly than in 2°C world, even if there is a temporary overshoot above 1.5°C

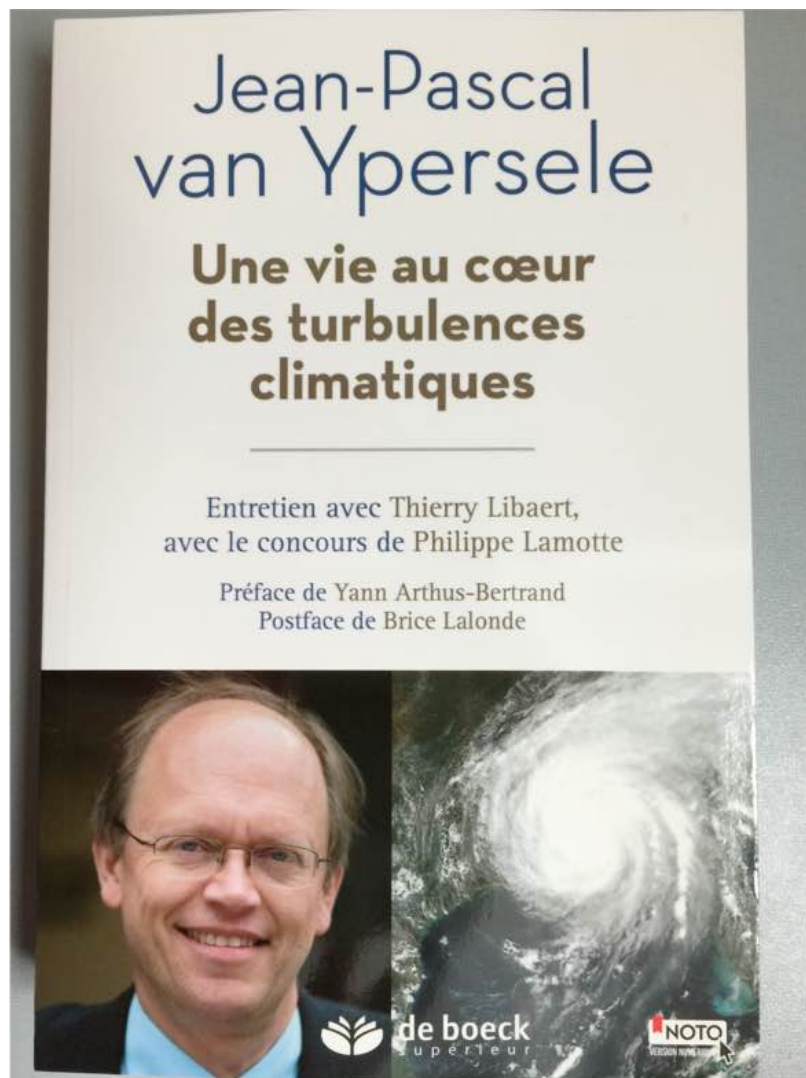
It is very ambitious to reduce emissions fast enough to ZERO for a 1.5°C long-term average temperature above pre-industrial objective; a little easier with overshoot above 1.5°C for a short period

The slower radical changes in emission patterns take place, the more we may need uncertain or risky technologies, such as large use of carbon dioxide removal from the atmosphere (possibly at the expense of bio-energy competition with food production)

Decision making needs the best scientific information possible – the IPCC SR 1.5 will be essential, but much can be done to raise ambition without waiting for it

Pour en savoir plus:

**Publié chez De Boeck
supérieur,**



Bij EPO (2018)

**Voorwoord:
Jill Peeters**

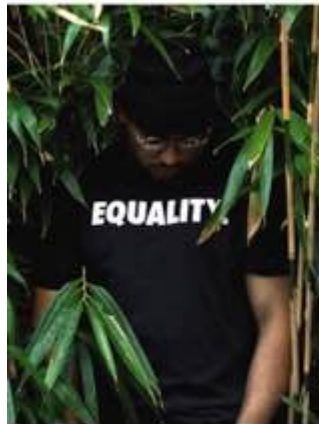


**Excellent resource
(7 may 2018) :**

**Available on :
www.naacp.org**

YOUTH & COLLEGE ORGANIZING TOOLKIT

**FOR
Environmental & Climate Justice**



NAACP

Environmental and Climate Justice Program

To go further :

- www.climate.be/vanyp : my slides (under « conferences)
- www.ipcc.ch : IPCC
- www.realclimate.org : answers to the merchants of doubt arguments
- www.skepticalscience.com : same
- www.plateforme-wallonne-giec.be : Plateforme wallonne pour le GIEC (e.a., Lettre d'information)
- www.my2050.be : calculateur de scénarios
- **Twitter: @JPvanYpersele**
@IPCC_CH

Jean-Pascal van Ypersele
(vanyp@climate.be)