Future-proofing HEP through sustainability

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The climate crisis is here.

“Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1° C above 1850-1900 in 2011-2020. Global greenhouse gas emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals (**high confidence**).”

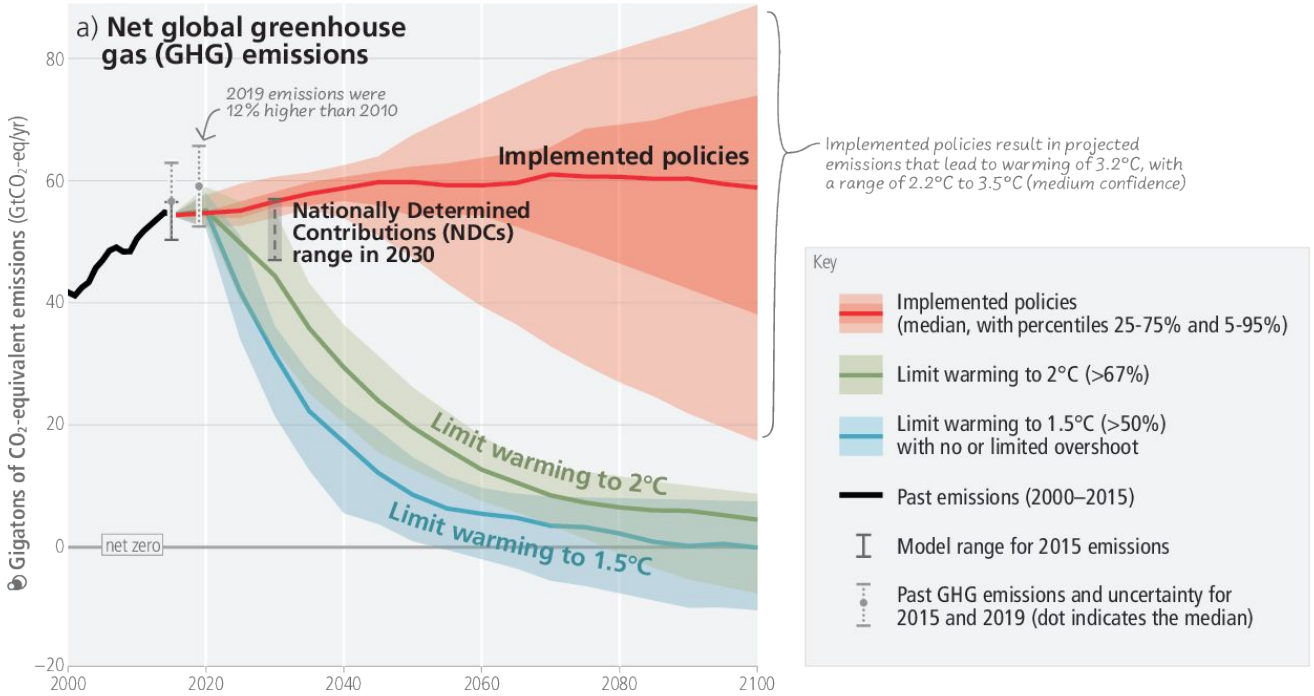
Excerpted from IPCC 2023 Synthesis Report Summary for Policymakers

It is not fair.

“Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred. Human-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people (high confidence). Vulnerable communities who have historically contributed the least to current climate change are disproportionately affected (**high confidence**).”

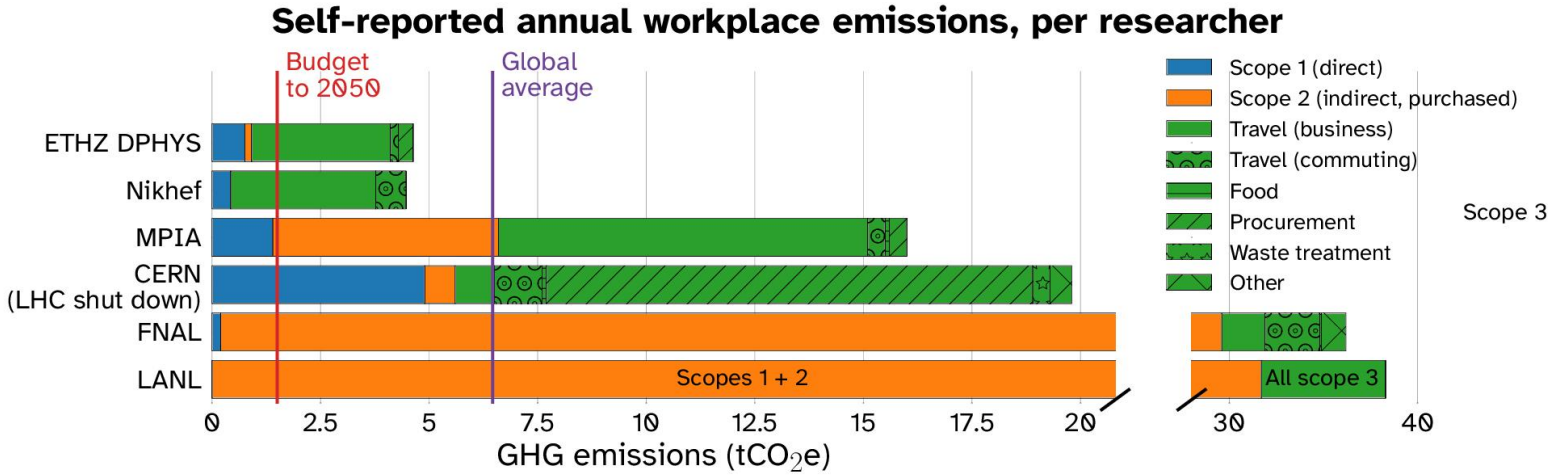
Excerpted from IPCC 2023 Synthesis Report Summary for Policymakers

And we are not on track.



Excerpted from IPCC 2023 Synthesis Report [Summary for Policymakers]

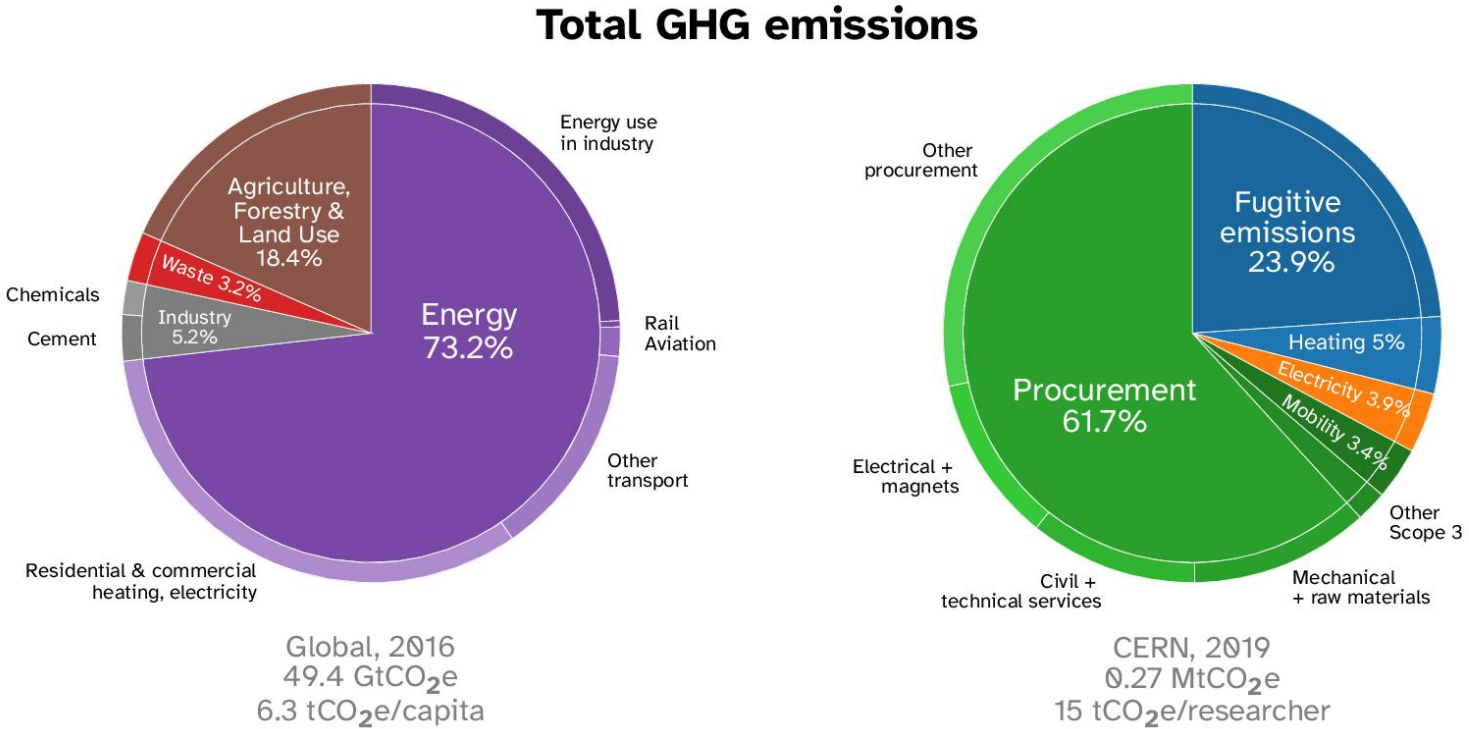
Our emissions are too high.



2019 data, save MPIA (2018), and ETHZ business travel (average 2016-2018).

Based on self-reported data from institutional reports; see HECAP+ reflective document for full references

Our emissions profile is different.



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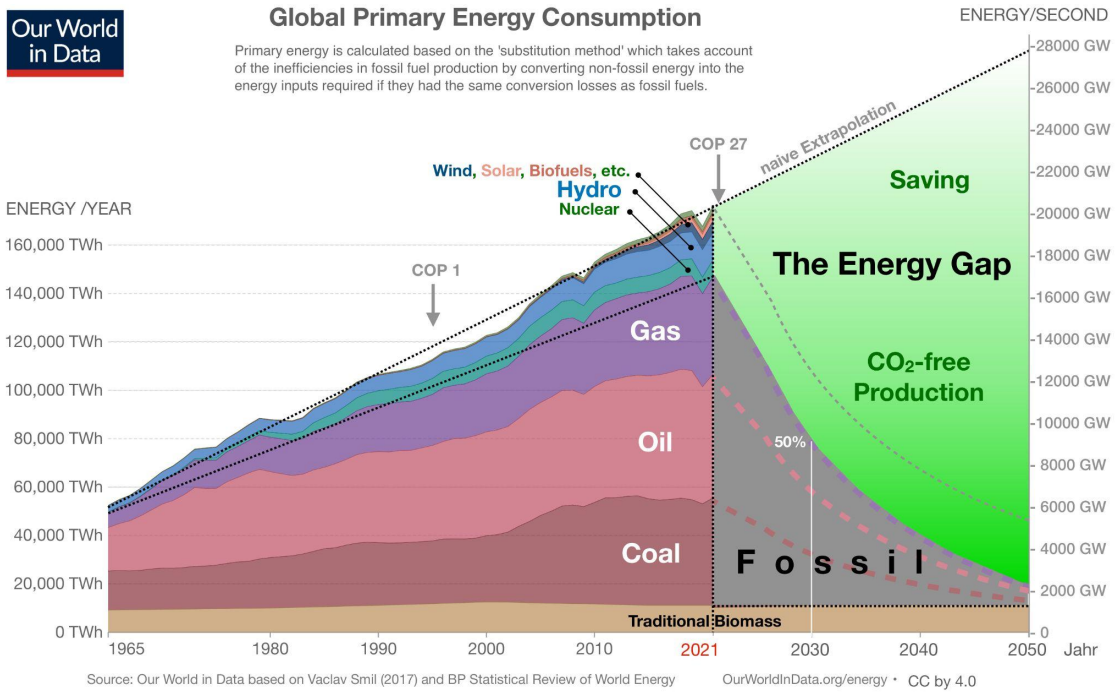
Energy will be scarce and expensive



From H. Ritchie et. al. "Energy". Our World in Data 2020, adapted in the HECAP+ reflective document under CC BY 4.0.

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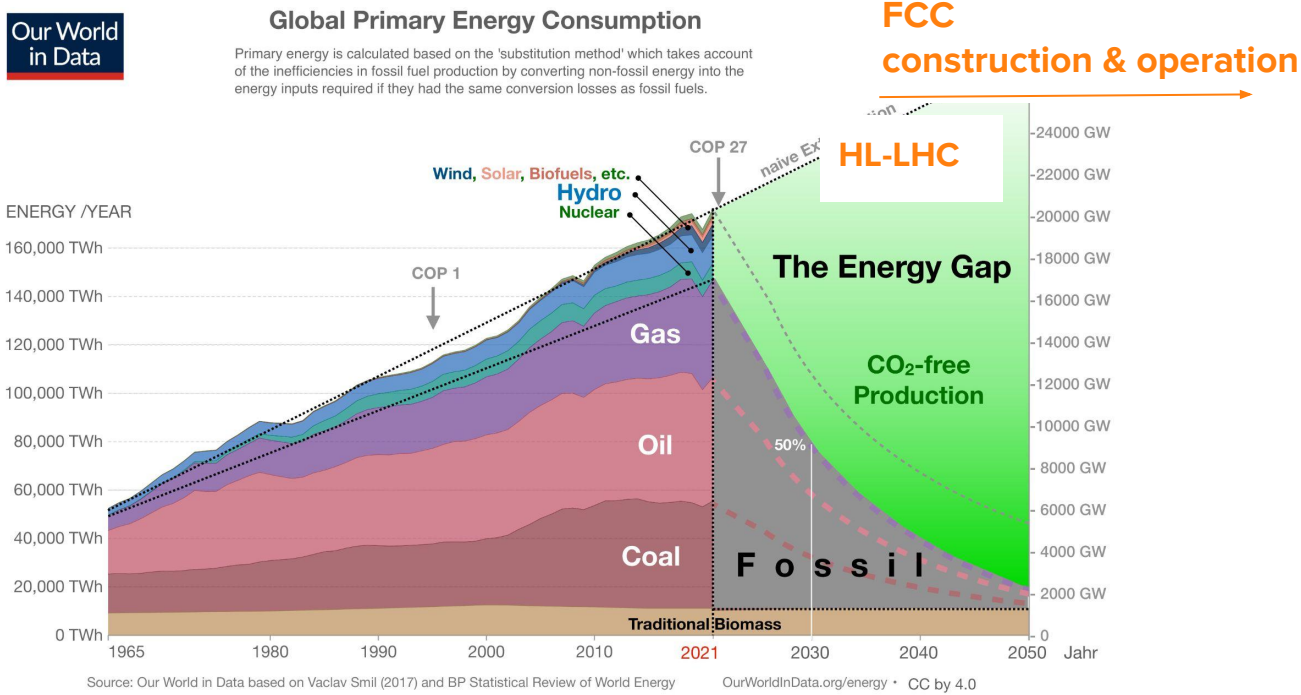

From [H. Ritchie et. al. "Energy". Our World in Data 2020](), adapted in the [HECAP+ reflective document]() under CC BY 4.0.

We have moral and pragmatic reasons to act.

- As scientifically literate citizens, we have a responsibility to lead by example and limit our negative environmental impacts.

- If we believe our science is of value to society then we want to be allowed to keep doing it.

Our social licence to operate is a fragile privilege

The public, funders and governments entrust us with financial and material resources, and we are accountable for how we use them.

What does a truly sustainable, global and equitable cutting-edge science look like?

And how might we get there?

“Long-term sustainability should be

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“Long-term sustainability should be a consideration for the next large accelerator facility, and supported by international agreements.”

“Long-term sustainability should be a guiding principle for the next large accelerator facility, and supported by international agreements.”

“Long-term sustainability should be a priority for the next large accelerator facility, and supported by international agreements.”