# Computing

**Question:** *What can we do, in the field of scientific computing, to exchange information more effectively and to prevent reinventing the wheel? How can we better use synergies and foster intellectually stimulating discussions to provide the basis for innovation/developing novel ideas?*

Often not reinventing the wheel but running on multiple smaller wheels without an option to stop and replace them with one consolidated bigger wheel.

→ Need for simpler and more modularised components.
→ Better documentation and guidelines.

Need to allow and encourage early ideation.

→ Preventing duplication of work and ensuring collaboration.
→ Good ideas should be recognised before work even starts.
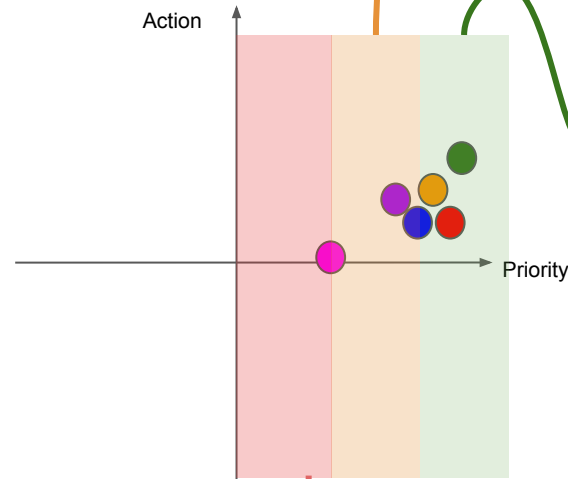
Software is a long-term investment.

→ Short (2-3 year) jobs often do not allow enough time to work on computing in the scope of the collaboration.
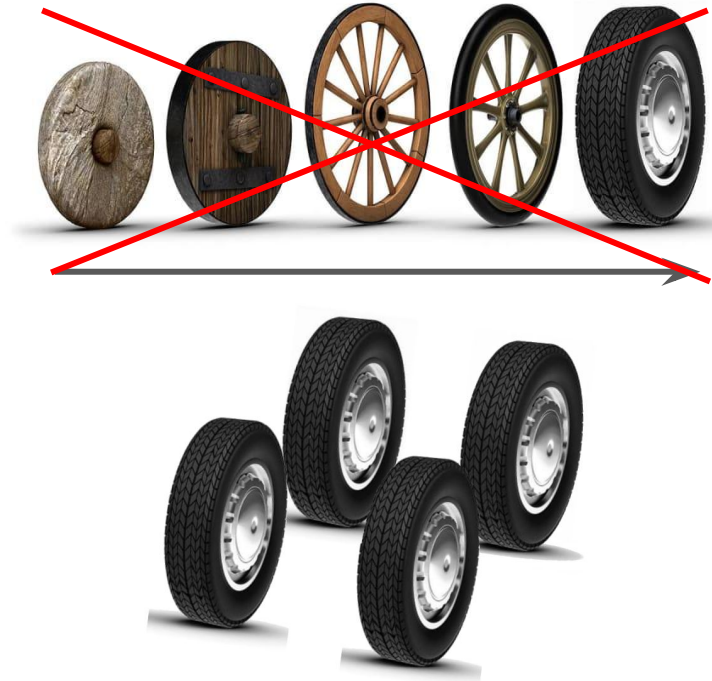
# Sustainability

**Question:** *'Do you think sustainability is enough of a priority @DESY and/or in HEP in general? What can we do to engage more people to help develop ideas and work on making DESY/HEP more sustainable?'*
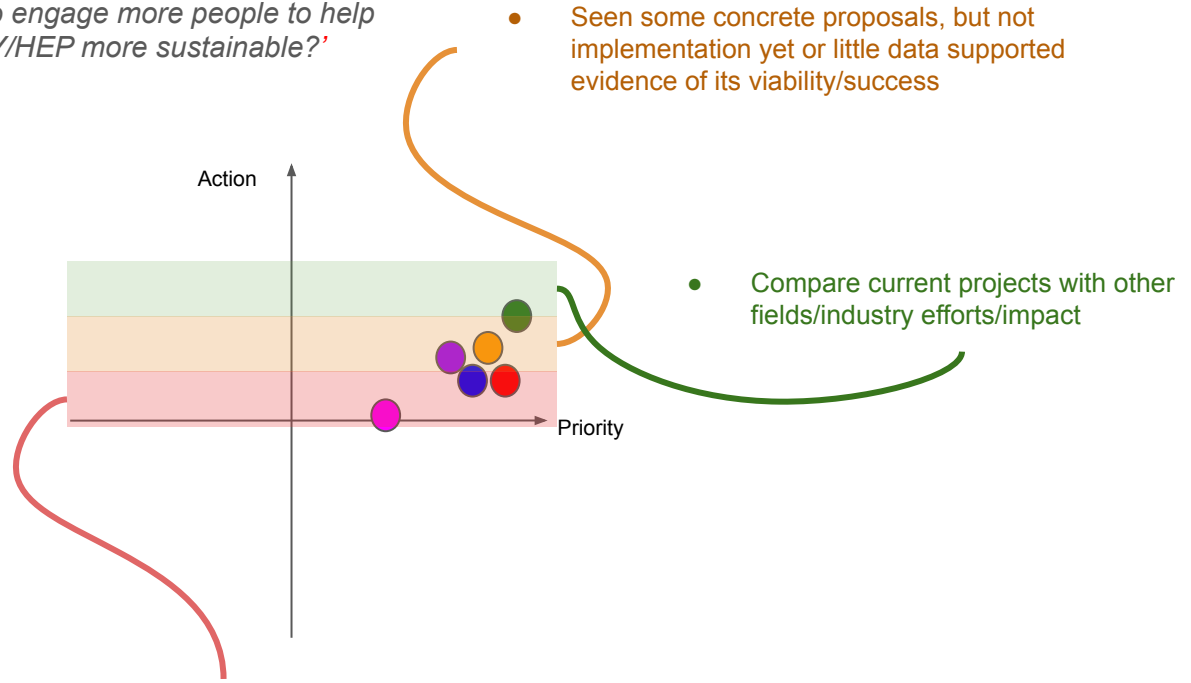
- Amount of communication traffic on the topic has increased so is clearly a priority, but only by a few number of people…

- Seems to be highly prioritised, but…

- Moderately prioritised but not a requirement of new jobs, grants, or funding cycles to make it a *necessity* of the physics programmes

Action

Priority

# Sustainability

**Question:** *'Do you think sustainability is enough of a priority @DESY and/or in HEP in general? What can we do to engage more people to help develop ideas and work on making DESY/HEP more sustainable?'*

- Seen some concrete proposals, but not implementation yet or little data supported evidence of its viability/success

- Compare current projects with other fields/industry efforts/impact



- There seems to be little action in the way of changes within a physics programme
- Seems to be more on a local basis - working lives of a university/laboratory.
- Data driven conclusions from actions lacking so quantifiable impact unknown

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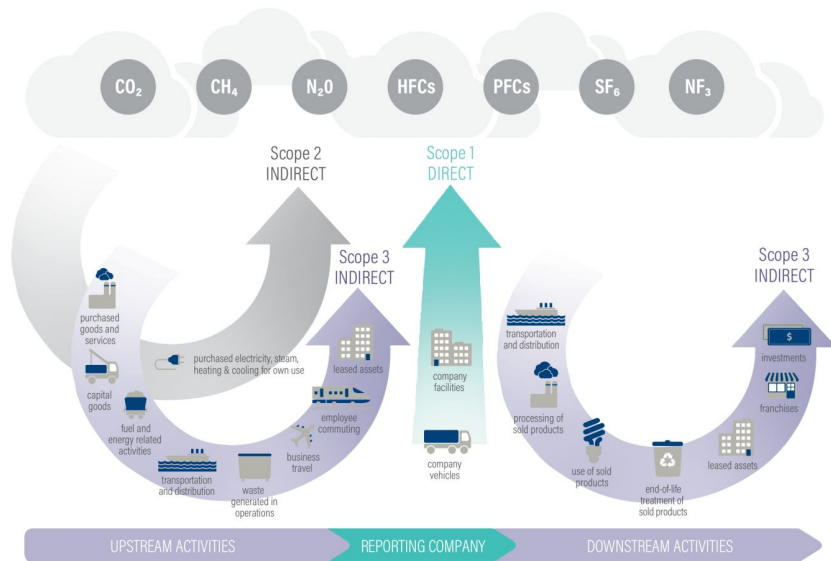


→ Paris Agreement gave rise to the Green House Gas Protocol (GHGP) from a joint initiative from World Resource institute and WBCSD

→ GHG protocol calculation tools defines relations between various gases and CO2 equivalents

## 'Physicists like equations - we want $dCO2(x)/dx$'

→ Model of CO2 per year emission for each physics programme
→ Make data available on how various aspects of work life impact CO2e budget - qualitative examples as well
→ Want to know how large impact each 'action' has on CO2e emissions

## 'Long term investment with expected productivity loss'

→ Academic model requires high impact on short time frames
→ Not suited to a longer term problem, such as the climate problem
→ Employment structure reflects this
→ This makes it undesirable for community members to contribute without significant incentives to job prospects or protections

## 'What is within our control?'

→ The community and the individual are examples of macro-entities and micro-entities
→ Decisions made at each level are sometimes independent with little correlation