**ESSRI life cycle session**

* this is a process, start small and easy and to how we can scale up
* when is the correct time – right at start of project (no sufficienbt data yet), if to late you can`t change a lot in the design
* Trade-Offs with other criteria

Parameters

* Development of science specific methodologies
* standard operating time

Scope:

* assessment boundaries – which machine parts to look at and what not?
* Which parts of the life cycle? (construction, operation, decommissioning)
* What to assess: CO2, GHG, complete environmental footprint, other non-ecological impacts? Energy assessment
* judgement system between CO2 and other impacts

Whose feet?

* Footprint per annual energy demand, per luminosity, per higgs boson, per user….

Basis:

* Many times no sufficient data
* Different databases and software
* Conversion factors

Economics

* environmental externalised costs, shadow carbon costs
* new project / upgrade project (reuse parts of old machine)
* end of life should be dealt with from “old” machine → complete life cycle (financing logic has to be adapted)

Political surrounding

* criteria and regulations not global (EU, LKSG Germny…)
* fit in to legal frameworks and demands from funders
* how much power do we have over supply chains; who has agency? Whom we can join forces with, whom we can influence, whom we need to report to → check with O.Renn transdisziplinary concept of science (<https://agenda.ciemat.es/event/4431/contributions/5050/>)