



How e^3 Works

Prosper



Entropic economy and planetary borders

...we are measuring the wrong thing

The crossing of the planetary borders is the most critical and most existential human problem of our time.

- With soils, rainforests and coral reefs, the most important CO₂ sinks and their contribution to negative entropy (negentropy) disappear
- Fossil energy sources, ecological overexploitation increase entropy, also due to the emergence of Climate gases → Imbalance in the Earth's radiation budget Reduced infrared radiation prevents entropy degradation.

The further consequences of the rapid global entropy increase through economic activities are :

- Acidification and eutrophication of aquatic ecosystems,
- soil erosion
- forest degradation
- loss of biodiversity

After crossing the planetary boundaries, ecosystems are no longer able to maintain the unstable flow equilibrium of the planet → tipping points





Navigator for sustainable management wanted

Distance to Tipping Points

- Planetary boundaries mark the global boundaries of ecological carrying capacity or the boundaries of entropy receptivity.
- If the limit is threatened to be exceeded, the budgets of all producers must be reduced → Consideration of regional and social aspects.
- Whoever operates within his limit is rewarded.
- Those who work regeneratively are rewarded even more.
- Limit overruns = entropy overrun is punished exponentially.
- The algorithm should take into account best practice, industry average and local carrying capacity limits, among other things.
- Geodatabases and LCA databases serve as database.

The [e³ rating](#) system measures the following in the categories of entropy and [syntropy](#) contribution (negative entropy)





e³ rating

Syntropy as operating system for economy of the 21st century

- In order to survive, the organization of the economy in the 21st century must have a symmetrical effect to that of the 20th century. → Syntropy instead of entropy
- Every economic design must be regenerative, i.e. it must positively promote the development of ecosystem functions. A “Do not Harm” is no longer an option.
- e³ Rating = economic x ecologic x ethic. Distributive issues such as local share of value added, gender issues and “good laboratory” are taken into account. Sustainability limits and industry budgets correspond to the current state of knowledge
- The e³ rating integrates ethical and environmental behaviour into the competition mechanism, companies no longer compete for the cheapest offer price but for the best price/sustainability ratio.
- Investors and institutions are enabled to check the fulfilment of ethical and ecological requirements with the e³ Score. e³ also creates the basis for a fair tax system.
- Financial investments or tenders: the contract is awarded to whoever achieves the highest sustainability effect with the lowest capital investment.





Project goals

- Proof of concept: Project delivers application (DAPP) for Absolute Environmental Sustainability Indicator (AESI) based on Planetary Borders and SDG 30
- Application of e³ ratings to at least 3 real projects. Simulation of changes in limit values and plausibility checks
- Field testing and further development of the method
- An aggregated key figure plus numerous scores in categories of the planetary borders enable companies to compare best practice and state of the art and show improvement potentials for the company.
- Involvement of experts to derive a scientifically based allocation approach for translating planetary boundaries to the company level, proposals for application for planning projects, settlements...
- Effort for sustainability ratings is drastically reduced
- e³ acts as an "invisible green hand" (see Adam Smith) sets the course for decoupling the increase in prosperity from entropic resource consumption.

The e³ rating system transforms ethical and environmentally responsible conduct into a competitive advantage for companies.





Advantages for the economy

- World first: records absolute sustainability performance of companies, projects or products with one key figure
- Reliable frame of reference: Planetary Borders and SDG 30
- A reliable navigator for the restructuring of the economy
- Everyone can join in
- Fully automated → Simultaneous sustainability assessments for thousands of companies
- Radical cost reduction through secondary use of data (geo, environment, sustainability, life cycle assessment)
- Customers and investors have a wider choice of sustainable products/companies.
- Enables simple specifications for public contracts
- Simplifies project selection for impact investors





Advantages for SMEs

- Products with sustainability ranking give SMEs a competitive advantage
- Start-ups with e³ ratings in particular are preferred by investors
- Fully automated service → low cost
- Numerous key figures and recommendations for improving the score increase resource efficiency and cost structure





Partners

GFEU an der TUHH e. V.



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References

Carrying Capacity

The maximum sustained environmental intervention a natural system can withstand without experiencing negative changes in structure or functioning that are difficult or impossible to revert.

Negative entropy is also called syntropy.

Entropy

is understood here as an irreversible devaluation of nature through economic processes. Energy and matter are transformed from available forms (usable resources) into no longer available forms (waste) by the economic processes.

The basis for the e³ rating is the Donught Model by Kate Raworth



Scientific Basis

Extract

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