

Sustainability Dialogue Notes Topic #4

23.05.23

Campus Metabolism

- Brechje Maréchal, Sustainability Energy and Environment Programme

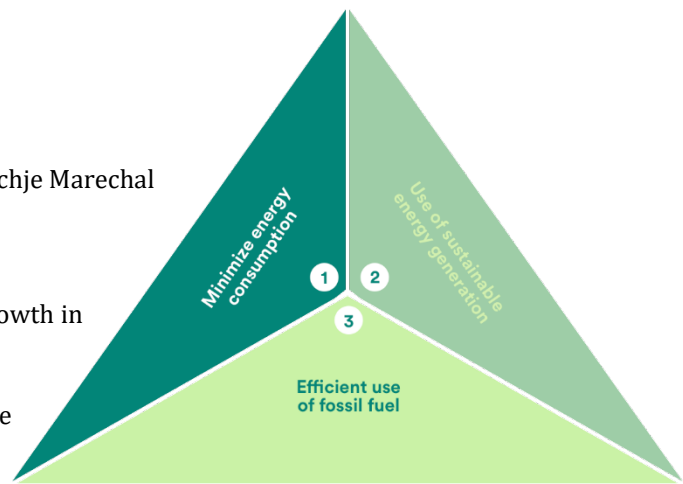
Operations policy – 10 Themes – posted and published May 2022

- Carbon negative & circular campus. First steps are easier although not really 'easy'.
- Reduce energy consumption 12% - via 'building things and behaviour'
- Energy and Mobility are the priorities currently
- Reduce CO₂ emissions from business travel – compensate for unavoidable travel.
- We need to decide together – what we understand under circular campus – what does this mean?
- Include sustainability more in procurement

Facts 2022:

Check/summarise slides

- Focus on the 'Trias Energetica' – See PPT Slides Brechje Marechal
- Efficient use of remaining fossil fuel
- More use of sustainable energy
- Minimise consumption
- 39% reduction over the whole period in spite of growth in # of students
- Train map: make it easier for people to make the more sustainable option/choice



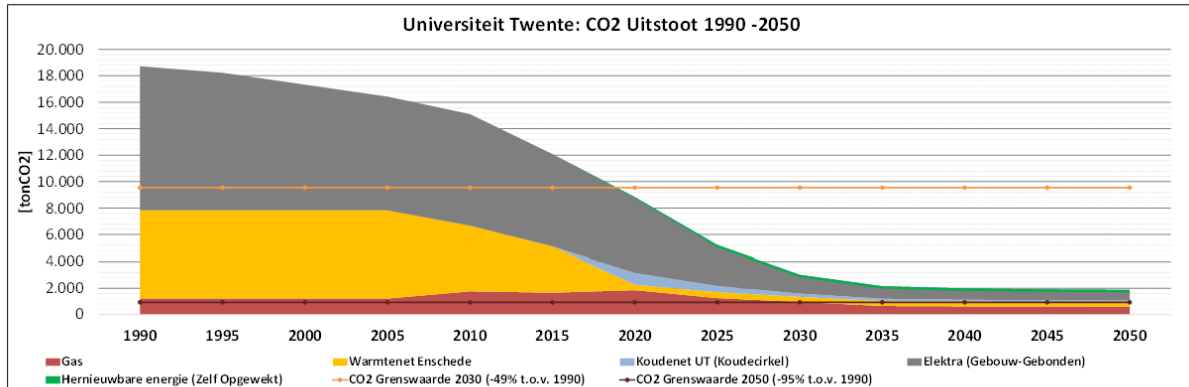
Rolf Slaats: Sustainable Labs coordinator

- Waste & Energy – reduce hazardous chemicals
- He checked the Energy Data Platform and the UT daily power consumption 60MWh, daily consumption of c.a. 5000 households
- Turn off equipment
- Consider energy efficiency during operations and purchase
- Turn ventilation down outside office
- Buy products that are easy to recycle
- Existing waste streams – manage better
- Reduce footprint of incinerated energy
- Open for ideas – we have to do it in collaboration with the lab users
- Help each other to do research more sustainably

Ray Klumperts:

There was a collaboration with Royal Haskoningdhv

Routecart for energy usage & CO₂ emissions



CO ₂ (2025)	-73%	5.044	CO ₂ (2030)	-85%	2.830	CO ₂ (2050)	-91%	1.697
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- Energy demand in buildings – projection to 2050 – goes down but not by as much as you would ideally need.
- CO₂ emissions projected to reduce significantly based on the projections of the Dutch government (See Slides – Roadmap towards CO₂ neutral real estate)
- less CO₂ due to improvements in Dutch energy mix (UT green electricity contract not included in this graph)
- Reducing energy demand is imperative
- E.g. alternatives for air humidification using gas
- We could actually produce more energy
- 1900 panels PV on roofs – can be more than doubled e.g. on parking lots → 7% of energy usage

Efia Addo:

- Every activity on campus produces waste
- Green Certificate Tool from Green Hub to guide users – events managers – at various associations
- Implementation → Green Pass → gives access to go through and reduce environmental impact of every attendee

Quinty SU: SU wants to help raise awareness for sustainability for students and associations

- Her predecessor, Joris Harbers, came up with a sustainability fund to help support students become more green – a bit of funding to help them make the transition.
- Different categories they can apply under: clothing, promotional material and catering.
- Future plans – together with Green Hub, evaluate and expand

Fishbowl 1:

Q1: effective monitoring and reporting, promote sustainable mobility;

- Aspiration: We produce more energy than we consume
- We need to manage and match energy needs at every time instant
- Use energy when it's available
- What is the excess we need to get from the energy grid
- Energy Data Dashboard – two things – CO₂ emissions & energy usage. We buy green energy annually from renewable sources e.g. Ireland. Although there are no cables from there to UT. However the issue would still be that the production is not matched with the consumption needs in time.
- Nolan Gertz – TEDx Frankfurt – becoming responsible citizens.

- Catering for the Bataviarace was 'only meat and fries'.
- What is the true visit card we give them when they see us at the UT
- You as an individual can approach the organisation
- Become responsible yourself – tell people if you see room for improvement.
- Help some students past the reported view that through their brains they'll have 'professional impact anyway' so they don't need to learn and do more for sustainability and climate now.
- 'I joined from the University of Berlin – there was cheap and healthy food there. We don't have this here. Maybe we have an increase in vegetarian food' that's affordable. There is potential!
- Branch of the Mensa there was vegan
- It is difficult to make it cheaper – we should be looking at full cost accounting.

Q; monitoring and reporting towards carbon neutrality: where are the weak points

- Brechje in many fields this data can improve, but you need a lot of people to work on it. We need reliable data.
- We try to encourage more reliable data – if you use options to improve it let us know!
- ➔ Connects to the idea from Green Hub intelligence platform to set up a 'Sustainability Detective' function where people can report with pictures in real time what needs improving and how to a central digital place.
- The SEE-Programme reports are published as an invitation to let us know that is going wrong and receive feedback.
- The report on the water footprint years back from Arjan Hoekstra helped Erik Kemp understand.
- We need the data/information to be put in front of students and staff about the products they buy. Not just factually but let people know that they have options.
- Faculty Green Teams can also support here

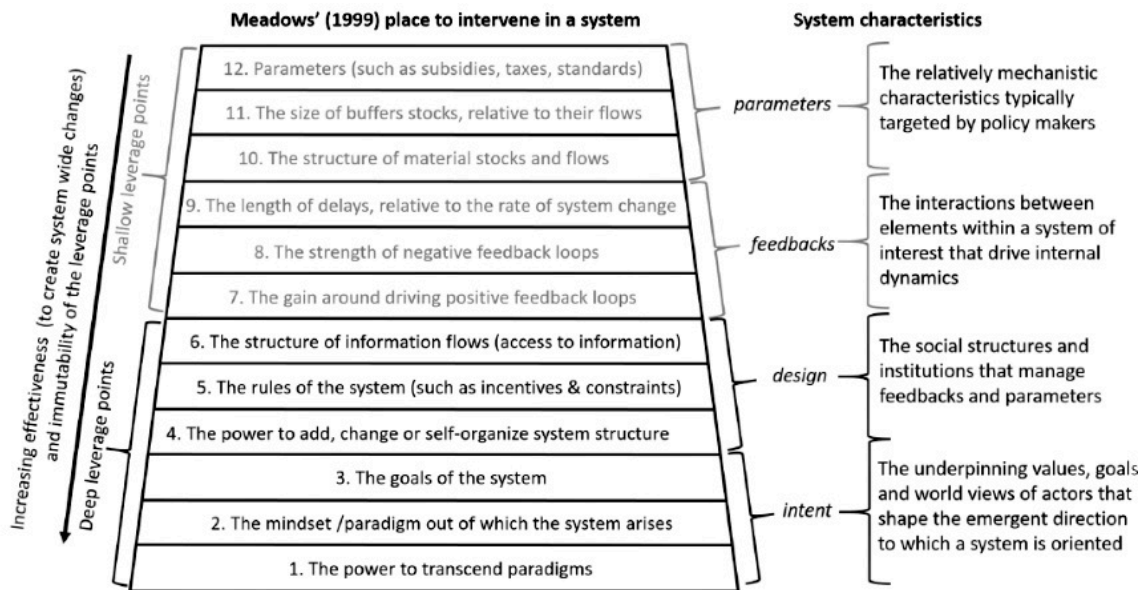
Mobility: Train Map – 'keeps appearing in my newsfeed!' 'doing a good job promoting it!'

- Update AFAS info for where you're commuting from
- Q2: what can we do better: we currently have a 'car positive campus'.
- Room for improvement in commuting on and to campus – incentivise/reimbursement

Fishbowl 2: Energy Usage, Sustainable Labs, Energy Generation

- Combine our new ambitions with the things we're already doing for 6 years – researchers – carbon capture – smart grids
- Treat the campus as a playground to put these researchers to work
- Cut the cord to the rest of the NL grid. Be a model to the rest of the world – actually be a carbon positive campus.
- Sustainable production and energy systems - solar energy → why not just use UT campus as a case study
- Peak demand is not equal to peak generation. These are not matching.
- Sustainable process technology → built 2 plants to capture CO₂ but they're elsewhere. Keep them here on the UT campus.
- Solar energy → we only have this for as long as it's sunny.
- Flat energy consumption profile
- Solution: Batteries – storage to flatten energy profile.
- Efficiency alone cannot do the trick to reduce back within planetary boundaries
 - o Green growth assumes absolute, permanent, global decoupling of growth from all environmental impacts
 - o There is no evidence of this, as decoupling is local, temporal, and limited to specific environmental inputs at best
- "To 'decouple environmental impact from economic growth' not aligned with the science"

- Thus the UT needs to supplement its efficiency policies with sufficiency policies and get away from growing the UT



INSERTION CONSIDERED RELEVANT to optimisation/efficiency vs. Deep change debate: [Leverage points for changing a system](#) – Shallow leverage point is optimisation. Deep ones are mindset/paradigm change. However, you need multiple leverage points at different levels. (Abson et al., 2017; Meadows, 1999)

[Leverage Points for Sustainability Transformation Project](#), Leuphana University Lüneburg.

- Talk Degrowth: what is the limit of how big can the campus become?
- JOKE: "I'm a smart grid guy, but if you cut the cord [from the national grid] I'll be working from home".
- Shrink/minimise our usage. We should not just use batteries..
- 2nd step of the Trias Energetica
- There are more flexible sources. Flexibility is the key. Load the energy production. Revive the Tiny Houses project - 'Twente Green Village'.
- Reduce the materials we use
- In collaboration with specialists in our field @ Hegeman for installations – collaboration leads to 1+1=5! The Municipality or Heijmans get the external partners in as well.
- (Connects back to Degrowth) New building made of glass and steel – embedded energy → becomes more relevant. Use other abandoned buildings instead that are already there rather than building new ones. Use other materials that are not fossil-based such as wood (if sourced sustainably).
- Don't forget about other aspects of sustainability, such as water. Social and economic components. People are researching that but it's not a bundled on campus project. Room for improvement and potential.

[Fishbowl 3: Event funds, Campus Vision for 2050](#)

- Quinty SU: one of the things I get questions about is how to make events more sustainable.
- E.g. at the Kick-in, there are struggles for a lot of organisations and associations – they don't know where to start
- Solution: give them more info on Single-Use Plastic legislation
- Keep on talking with them. They're still learning. Give students more input on goals and how to achieve them [we see a link to e.g. SEE-Programme goals here
- Implement student ideas in the city of Enschede. Convince the Gemeente to make it possible.

- If students do this they might not be so alone. Positive connections between the university and the city. Vouch for them as the UT.
 - We can learn here from what we're doing with entrepreneurial students.
 - No prize for people who want to entrepreneur to have a social or environmental impact – for People and Planet too.
 - Idea/Solution: lobby/encourage the UT alumni network to donate € to alma mater.
 - Prizes and funds for e.g. women in research.
 - Next year idea: sustainability prize for the most sustainable thesis [addition/connection: this was also a key action formulated by the SEG for Sustainability in 2022 – Realise this!]
 - Why not include sustainability criteria in how these prizes are awarded.
 - There is a bit of a disconnect (topic #3). Enschede is a textile city. Hemp and eucalyptus based clothes. A lot of chances to think how we can do it differently. Collaborate on this in the region and with Saxion's smart textile lab.
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- When it comes to awards and funds we already have one: the Shell Eco-prize.
 - Important to reflect and inquire in to who is funding our sustainability efforts and what kind of image this creates.
 - There actually is money to use. It's not the case that the UT cannot pay for this itself. Look at Strategy & Policy's recent investments and hires.
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- Degrowth point: to create space for 'wellbeing' reduce the work load. The TOM model burns out students.
 - Reduce the pressure on students in order to make space for them to work/learn and research about sustainability.
 - No space to experiment for the students themselves
 - 5ECTS where you can experiment with these technologies – I don't know what the administrative hurdles for this are though.
 - Example could be a student-led course on self-constructed solar energy plants (that can be deployed in areas that are hard to reach in the Global South?)
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- We want to integrate all these goals. One person who is the point of focus that connects all of this. Sole responsibility is sustainability – at the Director level. → Vinod interjects: "it's called the VP!" "we are giving it the attention at the level of the Board". 'we put this in the EB as a hot topic to focus on every day'.
 - I'm very happy with all the voices I hear, also at the UC and the SU. What I feel is very much empowered in my position to make choices in the right way. We have to empower each other.
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- Green Hub/Sean Veilink: We have a workshop – Your Sustainability Journey – to show people what they can actually do. To empower anyone. The resources are online. Can be to do with clothes or local food. → Why not make this a list for anyone who wants to build an event? Then it can be a concrete protocol. Use examples others can learn and pick up from.
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- Meeting about the sustainability garden for vegan kitchen
 - Bring research into the campus as a living lab. Share an open invitation: 'if you have ideas, come to us for a Living Lab'.
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- What is following after this? I feel like we are going in circles. When Brechje started 5 years ago there were also campus conversations in different forms [paraphrased due to difficulty following]. In essence, these talks are the same for many years.
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 - Inspired by 'food forest' on campus. Too few corridors for pollinators. Increasing/safeguarding these can be a means to increase biodiversity.
 - "Yes we can have a smart campus, but we can also show the city biodiverse spaces on our campus. Show them what the future looks like."

- If you believe in the climate crisis then you should also agree that we cannot just offset our flights. We have to reduce our flights as an academic community. ITC has the highest level of international flights in spite of its focus on earth sciences and clear link to sustainability therein.

Machteld Roos Closing Words:

- We will discuss what's coming after this in the final session (Exec Action Breakfast 28th June). There will not only be doing the talking but taking steps forward and faster.
- Compliments to everyone who already works on sustainability, including Brechje.
- There are 3 important topics to follow up on
 - 1) Behaviour and making things easier
 - 2) Reducing and compensation
 - 3) Innovation, new views and perspectives
- This week was Biodiversity Day. There will be a biodiversity walk at 1500.
- Frans Timmermans made a passionate speech at the Dies Natalis.
- With regards to ESG (Environmental Social Governance) and CSRD (Corporate Social Responsibility Directive – new EU Legislation), we have two people (in Strategy & Policy Dept) who are taking this up for the UT. We don't have to do this as a university, but we feel we want to make progress.
- There is also a Sounding Board that works on solutions in the SEE-Programme, and there will be a Panel set up (open governance and democratic representation) [paraphrased due to difficulty following].

References:

Abson, D. J., Fischer, J., Leventon, J., Newig, J., Schomerus, T., Vilsmaier, U., . . . Lang, D. J. (2017). Leverage points for sustainability transformation. *Ambio*, 46(1), 30-39. doi:10.1007/s13280-016-0800-y

Meadows, D. H. (1999). *Leverage points: Places to intervene in a system*: Sustainability Institute Hartland, VT.