Roadmap Sustainable Campus

Towards an ecopositive footprint

Erasmus University Rotterdam

PHI FACTORY

Royal HaskoningDHV
Enhancing Society Together

Erasmus

Introduction of the Roadmap Sustainable Campus

Creating positive ecological impact
We at EUR take our responsibility for climate change and sustainable development. In this document we introduce and explain our ambition to become CO2 neutral in 2024 and to create a positive ecological impact in 2030.

This includes a presentation of our sustainability program in order to achieve our ambitions. We describe the main processes, roles en responsibilities we will organize to take measures. This includes our proposal to use our campus as a living lab for sustainable innovations. We have also listed the main dependencies and prerequisites we need to meet or tackle.

In the background slides we have included the numbers: our current CO2 footprint and a set of 30 measures to reduce this footprint. This will not be enough on the short term, so we have included a compensation program as well.

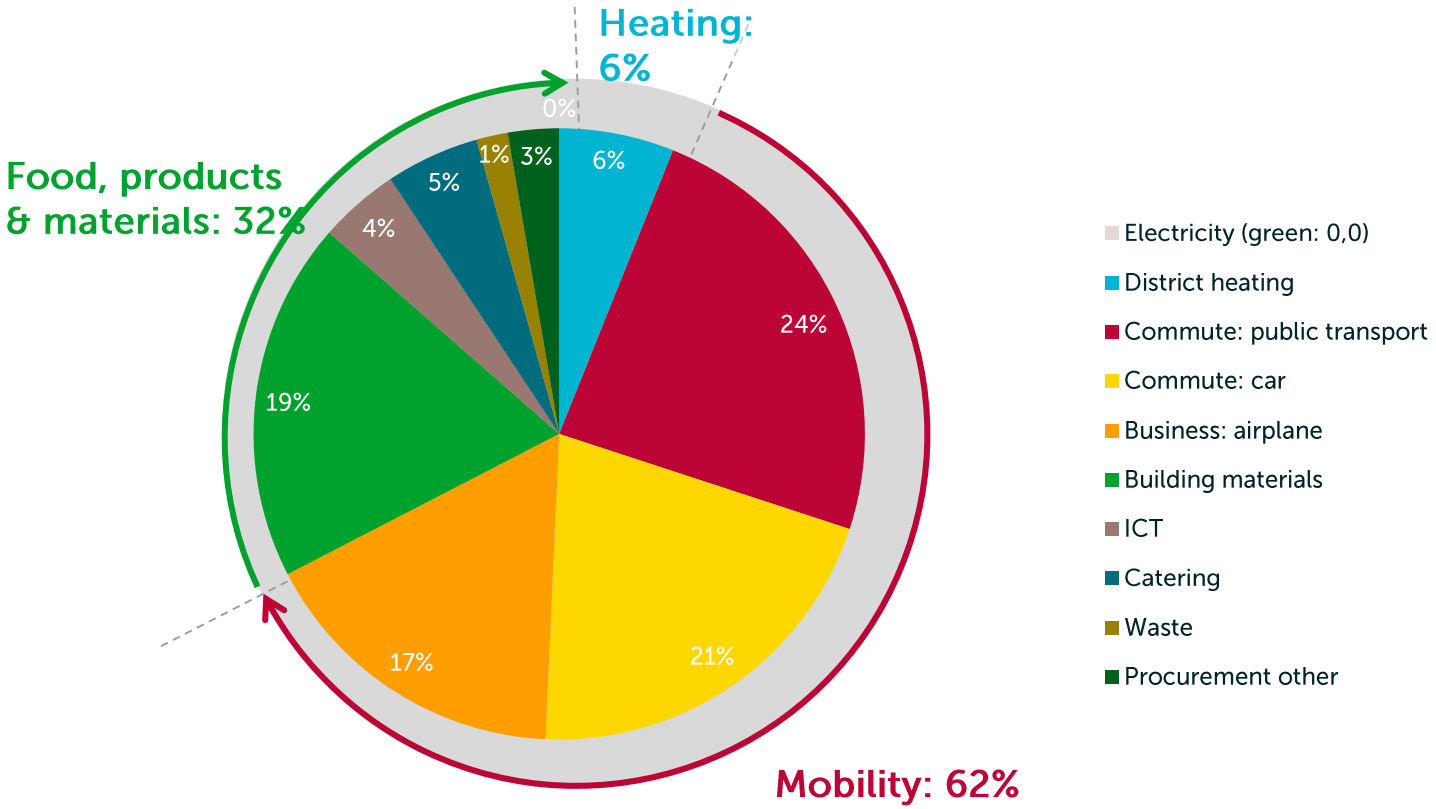
STRATEGY

CONTENTS

- WHY: vision and ambition
- HOW: framework and strategies
- WHAT: measures and activities
- WHO: roles and responsibilities
- Campus as living lab
- Commitment

Current CO2 footprint: 17.000 ton/jr

62% of our CO2 emissions come from mobility, **6%** from district heating (electricity is green) and **32%** from food, products and (building) materials we use.



Back to start

17.000.000 kg CO_2

Melting 5 hectares of Arctic sea-ice

Source: Notz, D., & Stroeve, J. (2016). Observed Arctic sea-ice loss directly follows anthropogenic CO2 emission. Science, 354(6313), 747-750. | 3 m2 melting sea ice per ton CO2 —> 17.000 t CO2 = ca. 5 ha sea ice

WHY

CREATING SOCIETAL POSITIVE IMPACT

THE ERASMIAN WAY

Social responsibility, impact on and with students

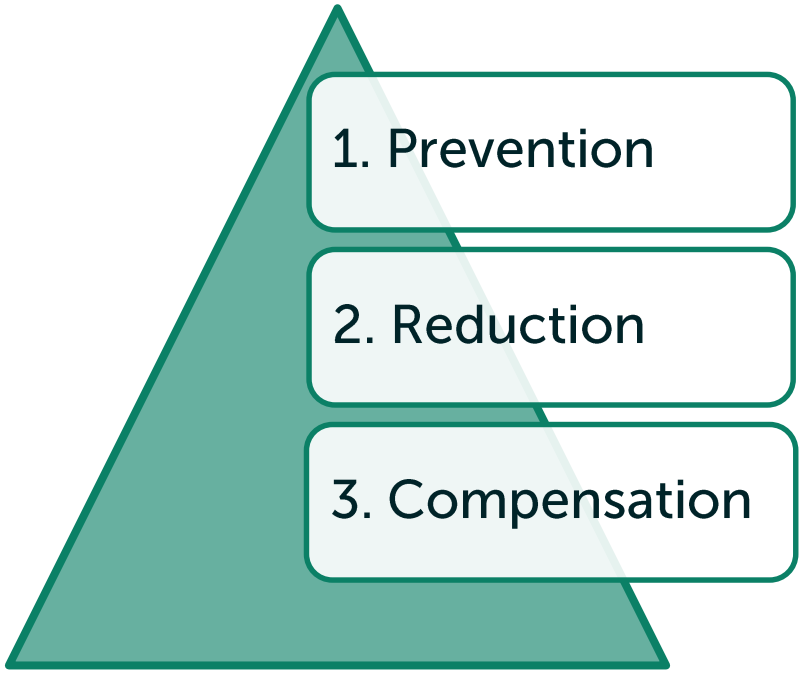
Laws and regulation, science builds on the burden of proof

Want to be the best in the rankings

VISION

2024: Carbon neutral

2030: Ecopositive footprint



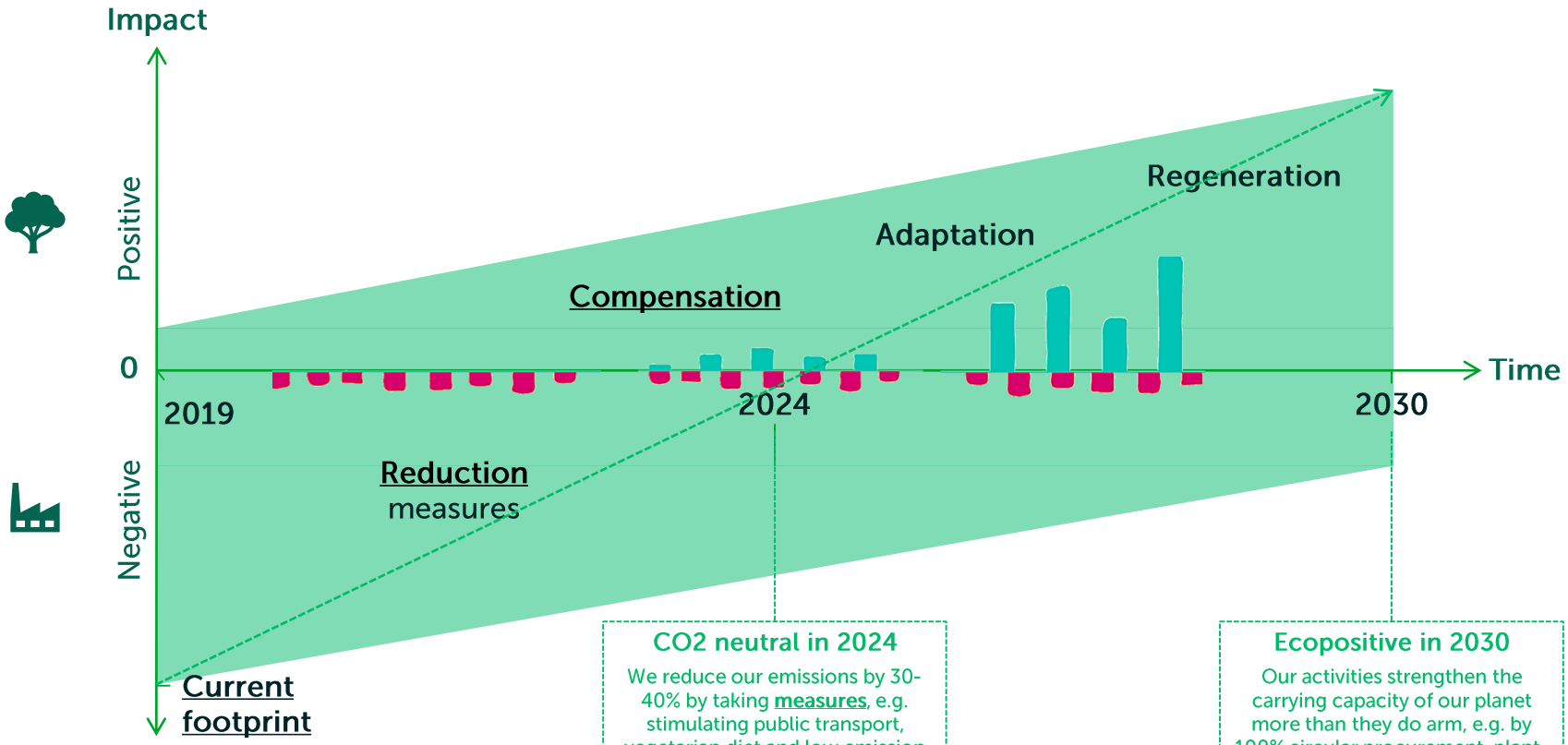
‘Giving more than taking in’

To be defined...

Resources	Natural Resources Circular economy
Zero waste	Valuable Resources Carbon storage
Adaptation	Water adaptation Reducing heat stress
Regeneration	Creating ecosystems Enhancing biodiversity

AMBITION

Reducing our negative impact, whilst creating positive impact



CO2 neutral in 2024

We reduce our emissions by 30-40% by taking **measures**, e.g. stimulating public transport, vegetarian diet and low emission building materials. We compensate our remaining emissions.

Ecopositive in 2030

Our activities strengthen the carrying capacity of our planet more than they do arm, e.g. by 100% circular procurement, plant-based catering and zero residual waste. **More info**.

Tip: click on **links** for background information

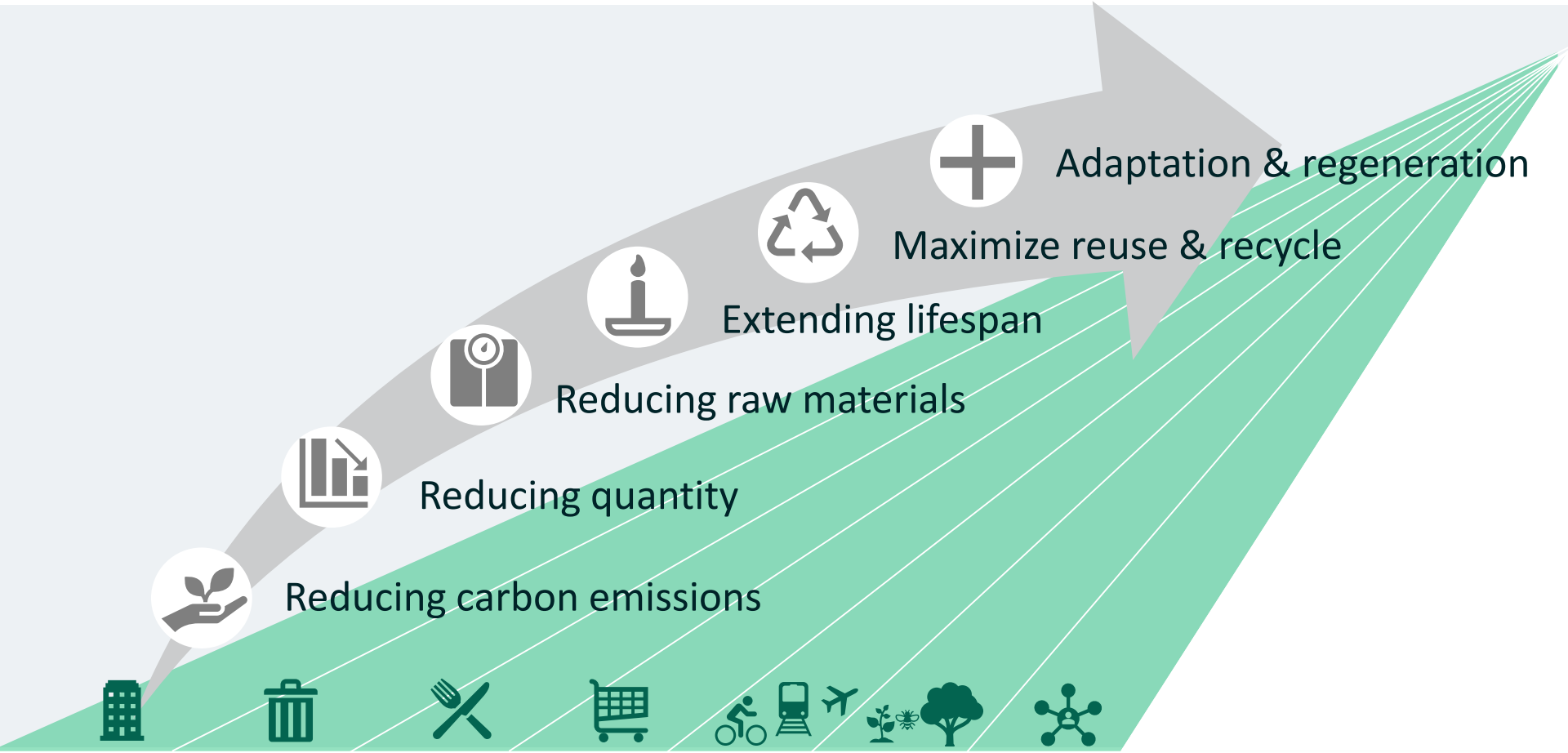
HOW

Program lines sustainable campus

- Built environment
- Waste management
- Food and catering
- Procurement
- Mobility
- Green campus
- Participation & Communication

HOW

Sustainable strategies



WHAT

Sustainable activities

Buildings	Waste	Food	Procurement	Mobility	Green campus	Community
Healthy and inspiring working environment	Zero waste and 100% circular economy	Healthy food and increasing learning performance	Circular procurement and multiple value creation	Combine mobility with healthy environment	Enlarging biodiversity and climate adaptation	
Modular, detachable and designed for reuse	Optimize waste separation, value retention	Reuse residual flows and facilitate next usage	Agreements on return and reuse, circular business models	Support repair on campus	Composting system in place	Repair café, exchange markets, new earning models
Total cost of ownership, flexible and adaptable	Reuse residual flows (scrap paper from printing paper)	Prevent single use and collaborate with suppliers		Preventing logistical movements	Good management, maintenance	Good ownership and value retention
	Stimulate mono flows and bring them back into the chain	Avoiding plastics and packaging	Insight share recycled and bio based and finding optimum	Reducing fossil fuels	Reflecting local ecology	Adjusting needs and shift social norm
Increase occupancy, use smarter	Less packaging, products and consumption	Reducing food waste based on needs and usage	Less purchasing, reuse or upgrading	Prevention (video conf.), rent and share	Softening grounds	Sharing economy and collaborations outside campus
Reduce energy usage and carbon emissions		More local, seasonal and plant based	Sustainable procurement criteria in tenders	Kilometers of business trips smarter, more sustainable	Greening area and promoting ecology	Community programs and sustainable behavior

WHO

Collaboration faculty and services

- University agenda shows priority
- Sustainable requirements
- Awareness students and link education

The faculties need commitment services and an integral approach.

- Policy making, initiate projects
- Facilitate opportunities
- Procurement an important tool

Services need faculties, scale and insight in impact measures.

WHO

Roles, responsibilities and mandate

Executive board

- Promote vision and ambition
- Commitment and budget
- Challenge and facilitate development

Green team

- Creating vision and ambition
- Promote and follow policies
- Develop initiatives
- Facilitate pilots and people
- Creating support
- Monitoring and reporting

Services

- Build up knowledge and experience
- Translate ambition into projects
- Facilitate sustainable solutions
- Working together in the chain
- Sustainable purchasing procedure
- Sustainable management and use

Faculties

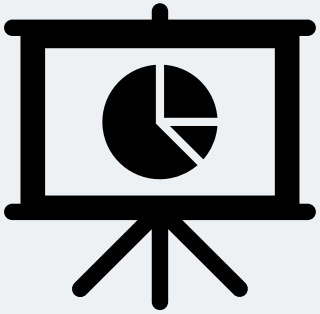
- Promote and follow up policy
- Role in making the requirements
- Perpetuate ambitions in projects
- Support and create initiatives
- Share data on impact and progress
- Share good examples and stories

Students

- Promoting the vision and ambitions
- Shifting the social norm / mindset
- Community education and bottom-up initiatives
- Challenging business operation for development
- Be a good user and participating in initiatives
- Making responsible choices and sustainable behaviour

WHAT

Examples of CO2 reduction measures

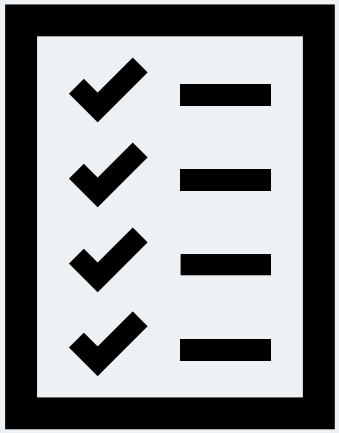


	Reduction potential (ton/year)	Reduction on total emission
10% of commuting will be replaced by teleconferencing	1053	6,1%
50% of the new building will be housed in existing and vacant buildings on campus or in Rotterdam	863	5,0%
10% of employees and students uses public transport instead of private/lease car	311	1,8%
75% reduction of residual waste by improved waste separation	171	1,0%

A set of 30 measures potentially reduce 30% of our CO2

WHAT

Leading principles in a project



1. There is a baseline analysis we use as starting point.
2. Every EUR-entity defines activities towards goal +Resources.
3. Decision framework based on CO_2-impact, influence and visibility.
4. We engage suppliers towards our goals, current and new.
5. In every project we make a sustainable business case.
6. We monitor (data measuring) and report on data and initiatives.
7. We communicate, propagate ambition and create support.
8. We engage; participation and collaboration on & outside campus.

WHAT

Strategies for extending usage time in contracts

- Extending warranty period
- Contract agreements on maintenance and repair
- Contract agreements on upgrading products
- Product specifications on long life qualities
- Product specifications on repairability and maintainability
- Product specifications on modular / customizable design
- Performance indicators on extension of service life
- Performance indicators on user optimization by supplier

WHAT

Compensation through CO_2 credits

17.795 ton/jr
0,17 - 2,3 mln

There is a range of projects to generate CO_2 credits. Compensation can be realized by reducing overall CO_2 emissions (such as spreading energy-efficient ovens) or capturing CO_2 from the atmosphere (such as planting trees, protecting forests).

CO_2 emission reduction through projects on the CO_2 market cost circa 10 euros per tonne CO_2, but in reality capturing and reducing CO_2 costs between 100 and 150 euros per tonne of CO_2. The UN standard is 130 euros.

Various methods to compensate your CO_2 emissions:

- by planting trees that capture your direct emissions (Trees for all)
- with various certified climate projects (Gold Standard)
- invest in innovation that reduces your emissions (KLM & TU Delft)

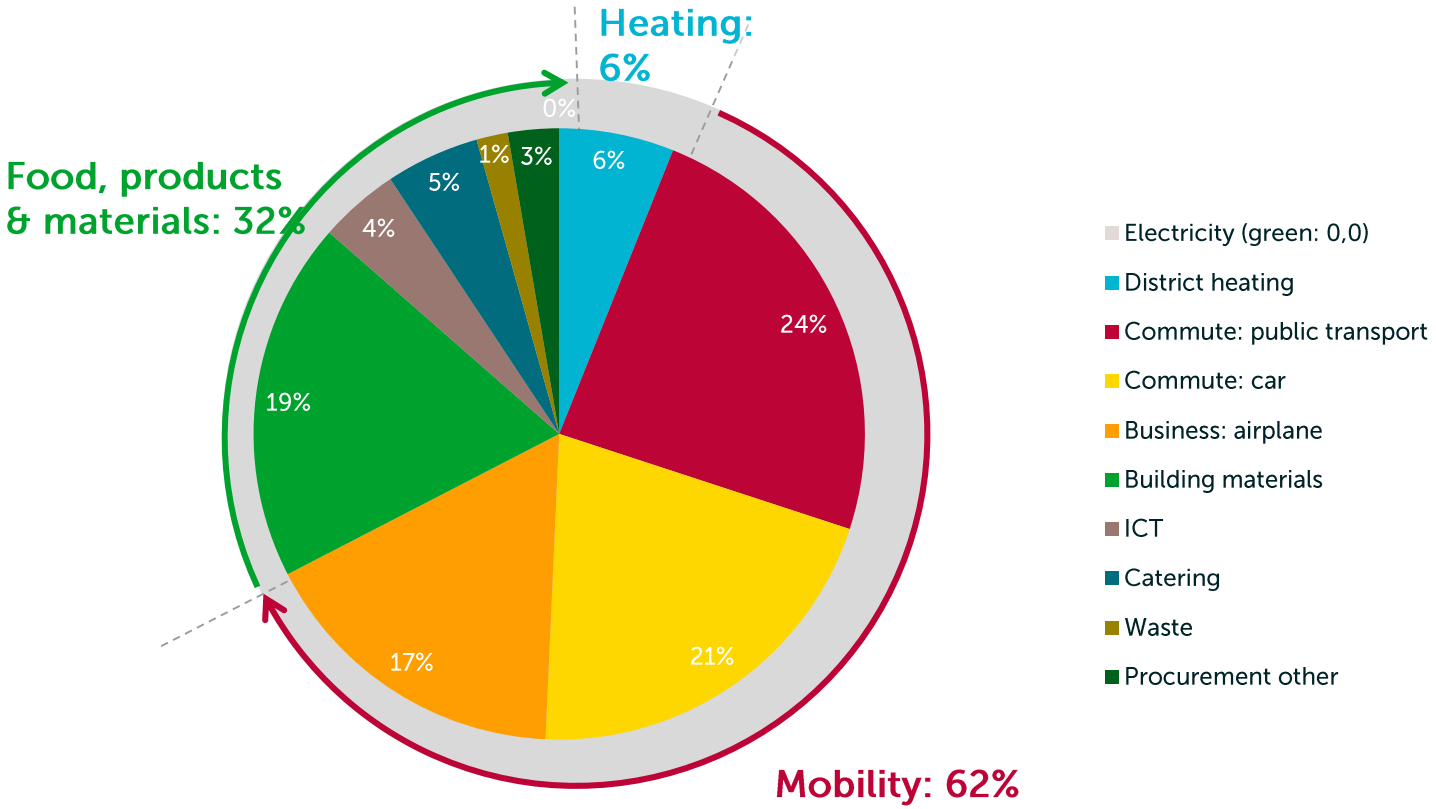
EUR CO_2 reduction fund on campus


Campus as living lab
We will make it happen.

Background slides

Current CO2 footprint: 17.000 ton/jr

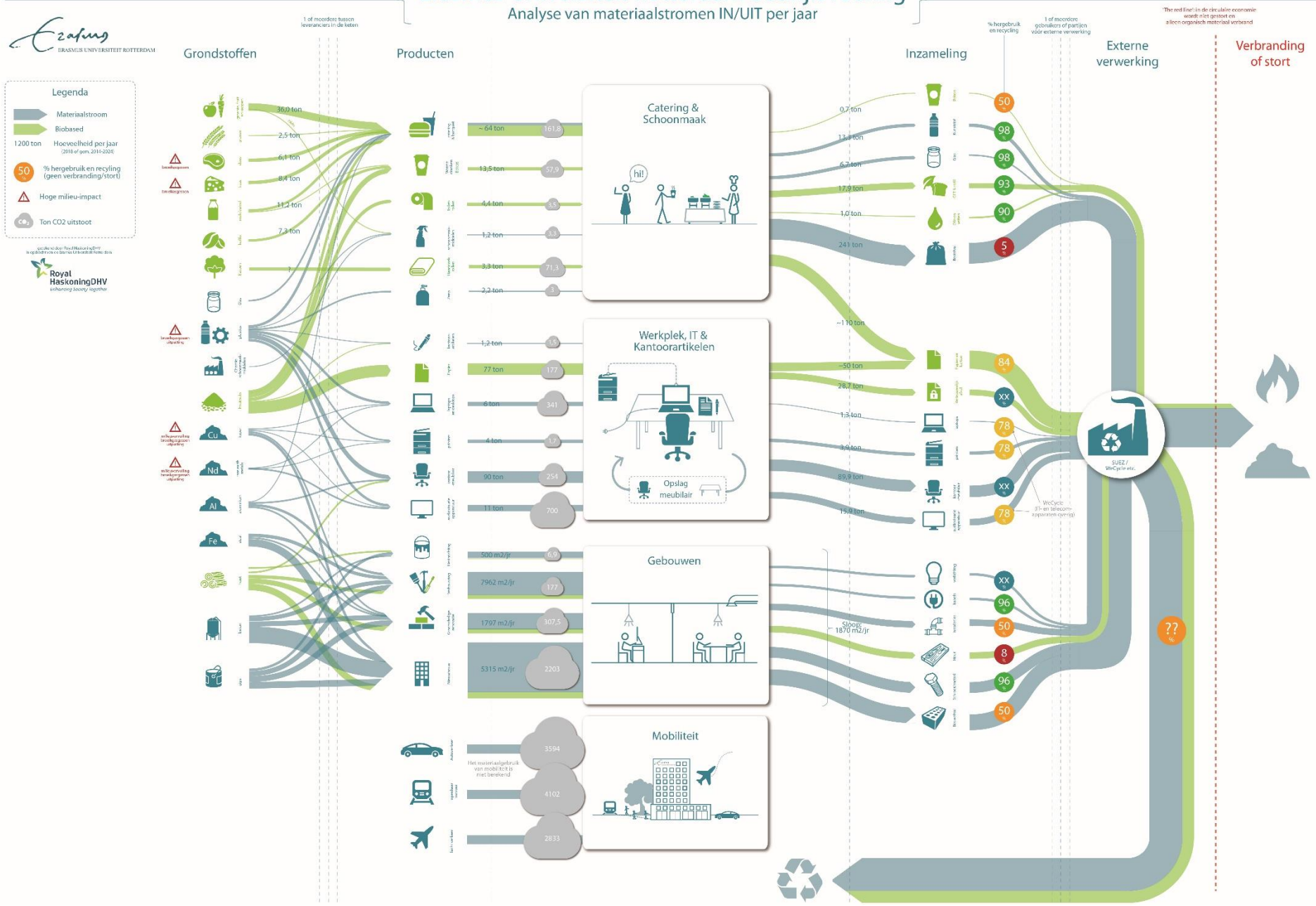
62% of our CO2 emissions come from mobility, **6%** from district heating (electricity is green) and **32%** from food, products and (building) materials we use.



Back to start

Erasmus Universiteit Rotterdam bedrijfsvoering

Analyse van materiaalstromen IN/UIT per jaar



CO2 reduction measures

A set of 30 measures potentially reduce 30% of our CO2 footprint.

Built Environment

	Reduction potential (ton/year)	% of total CO2-emission of EUR
50% of the new building will be housed in existing and vacant buildings on campus or in Rotterdam	863	5,0%
Maximum of 0,7 MPG/m2 BVO (30% reduction) for construction of buildings	661	3,9%
Build all new buildings in wood instead of standard concrete and steel	421	2,5%
Replace 50% of district heating with thermal energy storage in combination with a heat pump and low temperature heating	191	1,1%
Indication of energy saving measures in five existing university buildings	132	0,8%
50% use of reused interior elements for new buildings and renovations	104	0,6%
Replace all lighting by LED lighting and apply energy saving sensors in existing buildings	52,7	0,3%

Back to start

CO2 reduction measures

A set of 30 measures potentially reduce 30% of our CO2 footprint.

Mobility

	Reduction potential (ton/year)	% of total CO2-emission of EUR
10% of commuting will be replaced by teleconferencing	1053	6,1%
50% of the cars will be electric instead of fuel-based	907	5,3%
10% of employees and students uses public transport instead of private/lease car	311	1,8%
Replace all airplane flights <700 km by travelling by rail	229	1,3%
Bicycle plan: 50% of the short distance (<15km) will be travelled by bike instead of by car	173	1,0%
All Erasmians drive their cars with sufficient tire pressure	121	0,7%

Back to start

CO2 reduction measures

A set of 30 measures potentially reduce 30% of our CO2 footprint.

Waste Management

	Reduction potential (ton/year)	% of total CO2-emission of EUR
75% reduction of residual waste by improved waste separation	171	1,0%
50% reduction of the production of waste	141	0,8%
Include waste disposal in contract of catering company	28	0,2%
50% reduction of packaging material	16	0,1%
50% reduced use of coffee cups (reuse)	0,01	0,0001%

Back to start

CO2 reduction measures

A set of 30 measures potentially reduce 30% of our CO2 footprint.

Food and catering

	Reduction potential (ton/year)	% of total CO2-emission of EUR
50% of meat will be replaced by plant-based proteins, like tofu	148	0,9%
Replace cheese for hummus or other vegan alternatives	24	0,1%
50% of leftover food will be consumed by for example '*Voedselbank*' instead of organic waste disposal	14,9	0,09%

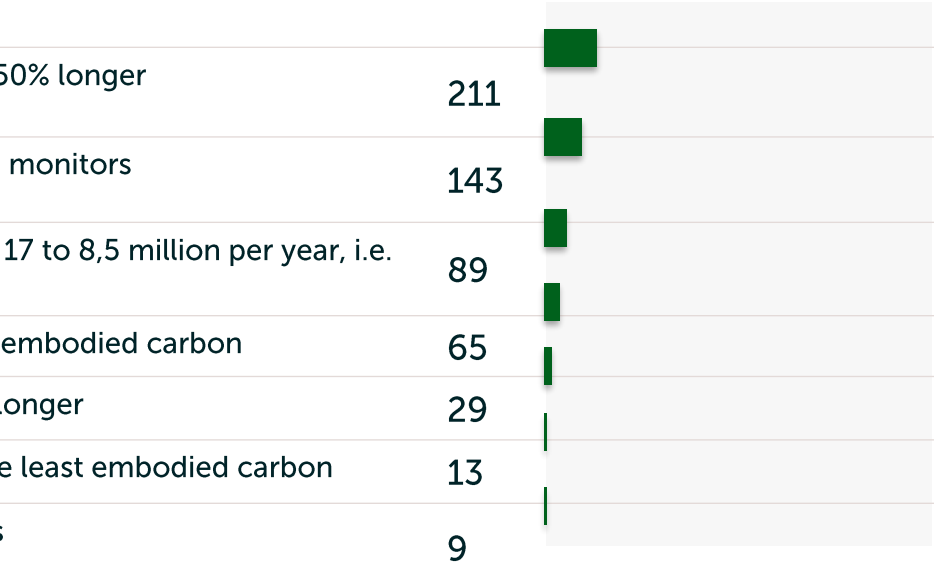
Back to start

CO2 reduction measures

A set of 30 measures potentially reduce 30% of our CO2 footprint.

Procurement

	Reduction potential (ton/year)	Reduction on total CO2-emission of EUR
Use workplace IT equipment 50% longer	211	1,2%
Purchase 50% reused desktop monitors	143	0,8%
50% reduction of prints (from 17 to 8,5 million per year, i.e. 500 to 250 p.p.)	89	0,5%
Purchase desks with the least embodied carbon	65	0,8%
Use network equipment 50% longer	29	0,2%
Purchase office chairs with the least embodied carbon	13	0,1%
Phase out landline telephones	9	0,1%



Back to start

Sustainable activities

	Waste	Food	Procurement	Mobility	Green campus	Community
Adaptation & regeneration		- Volledig klimaatneutraal catering aanbod - Campus als een living lab; nieuwe vormen van voedsel: eco-positief - Compensatie van producten met negatieve milieu-impact		- Compenseren vluchten: relevant onderzoek, onderwijs en projecten - Fiets of lopend uitgangspunt: gesprek met de gemeente over bereikbaarheid campus - Technologische ontwikkelingen volgen (bijv hyperloop)	- EdibleEUR: groenvoorziening in Rotterdam. Onderdeel zijn de campustuin en bijenkorf (ESH) - Green roofs/walls (adaptief)	- Community outreach programs (SDG's, educatie concreet en toegankelijk maken voor iedereen)
Maximize reuse & recycle	- Onderzoek afvalscheiding - Uniforme, zichtbare afvalscheiding - Composteermachine - Reststromen omzetten in producten	- Share left over in samenwerking met initiatieven op campus en stad	- Platform voor delen best practises (@sustainable.eur.nl)			- Platform voor verkoop duurzame producten om gebruik van herbruikbare producten te stimuleren (ESH)
Extending lifespan			- Langer gebruik de standard - Interne EUR marktplaats			
Reducing raw materials	- Post Plastic Generation: activiteiten rondom verminderen plastic (ESH)	- Ruimte voor startups op campus; innovatie op catering - Convenanten retailers - Terugdringen plastic verpakkingen	- Behoeftestellers informeren (dienstdirecteuren, gebruikers)			
Reducing quantity	- Cupsharing project: stimuleren gebruik herbruikbare koffiebekers (ESH)	- Voedselverspilling tegengaan door afgemeten hoeveelheden en bewustwording				
Reducing carbon emissions		- Kritische blik assortiment: plantaardig/dierlijk, herkomst - Afspraken met cateraars en horeca stapsgewijs beprijzing obv milieu impact. ('true price' incl externe effecten) - Food research team: inzicht CO2 impact voedsel op campus (ESH)	- Samenwerking met organisaties in de omgeving (slimme logistiek) - Logistiek onderdeel maken van inkoopvraagstuk - Inhuur en inkoop lokaal - Hubs (zowel voor transport van goederen als mensen)	- Reisbureau contracteren, deze waarborgt het beleid in het proces. (indien niet via reisbureau: comply or explain) - Carbon pricing systeem - Beleid en sturing vanuit strategische pijler duurzaamheid (bijv <500 niet vliegen) - Kracht van studenten benutten als het gaat om nieuwe initiatieven/innovaties (early adapters) - Verschillende vormen van openbaar en gedeeld vervoer inzetten, en dit ook faciliteren voor de medewerkers (algemene pas voor alles of makkelijk declaratiesysteem)		- 'Let's talk trash' podcast: interview over specifiek onderwerp (ESH) - EURWardrobe: evenementen omtrent duurzame mode (bijv kleding swap) (ESH) - Foodlab: kookworkshops met biologisch lokale groenten (ESH) - 'My sustainable EUR'

Sustainable activities

	Buildings					
	Gebouw	Meubilair	Kantoorartikelen	Repro/post	Schoonmaak	ICT
Adaptation & regeneration	- Energie opwekken			- Ecosia al zoekmachine. (ESH)		
Maximize reuse & recycle	- Water: Hergebruik regenwater - Warmte: isolatie van oude kleding, folie op de ramen, PCM	- Verandering in mindset: focus op hergebruik, onderhoud en herstel. '2e hands is hip' - Hergebruik na einde gebruiksfase, zorgvuldig afdanken	- In gesprek met leveranciers afspraken over retourname		- Circulaire schoonmaakkarren - Extra rol schoonmaker; afvalcoach (signaleringsfunctie)	- Onderzoek naar circulariteit ICT en optionele samenwerkingsverband en - Mogelijkheden retourname door leveranciers
Extending lifespan	- Renovatie ipv nieuwbouw	- In kaart brengen huidige voorraad - Marktplaats met vraag en aanbod				
Reducing raw materials		- Andere business modellen	- Duurzame / circulaire materialen		- Meer schoonmaak naar behoefte (minder vaak op basis van monitoring) - Standaard gebruik biologisch afbreekbare schoonmaakmiddelen.	- Behoefte ICT ophalen gebruikersgroep - In kaart brengen huidige voorraad - Andere business modellen
Reducing quantity	- Water: sensoren en zuinige kranen, hydraloop		- Verandering in mindset: gebruik van kantoorartikelen alleen als het noodzakelijk is. - Opvolgend op mindset, aan de hand van huidige gebruik en inkoop specifieke interventies om verbruik te verminderen (iemand eigenaar maken, minder onbewaakte punten etc)	- RefEURestation project: verminderen van papiergebruik op de campus (bv digitaal toetsen geen hardcopy assignments en minder printers) - Digitalisering		Hergebruik oud ICT materiaal
Reducing carbon emissions	- Optimaal gebruik m2, activiteit gericht en flexibel (geen exclusief gebruik persoon of afdeling) - Faciliteer mensen in optimaal gebruik door overzicht van bezetting zowel voor faciliteiten als ruimte. Dit helpt ook benutten van ruimte/services onderling tussen diensten en faculteiten. - Elektriciteit: Installaties inregelen, buitenlampen overdag uit, datacenter onder de loep, geen 24/7 campus - Warmte: Temperatuur een graad lager (onderzoek bij eindgebruiker), Truiendag insutionaliseren, eindgebruiker meer invloed geven	- Volledig circulaire inzet meubilair, zowel hergebruik als nieuw. Geen uitputting van schaarse grondstoffen en minimaal energieverbruik				- Cloud computing - RASP (kleine desktop met simpele applicaties, voor de meeste mensen voldoende, minder schaarse grondstoffen nodig)