



“Duurzame economische groei in een schaarse leefomgeving”

imec

Hans Lebon

An aerial photograph of a large, modern research and development hub, likely imec, featuring several large, interconnected buildings with flat roofs and glass facades. The facility is surrounded by lush green trees and a road with cars is visible in the foreground. The entire image has a blue tint.

imec Mission

As a **world-leading R&D** hub, we aspire the impossible and aim for **disruptive innovation**. We maximize societal impact by creating **smart sustainable solutions** that enhance **quality of life**.

At imec, we shape the future.

1984

with one office building and FABI (3600 m²)

Nano technology – Materials - Design



Today

What makes us the semiconductor lab of the world?



skilled
People

> 6000
> 100 nationalities



world-class
Infrastructure

12.000 m² Cleanroom
Operated 24*7



global
ecosystem

**Turn
Challenges
Into
Opportunities**

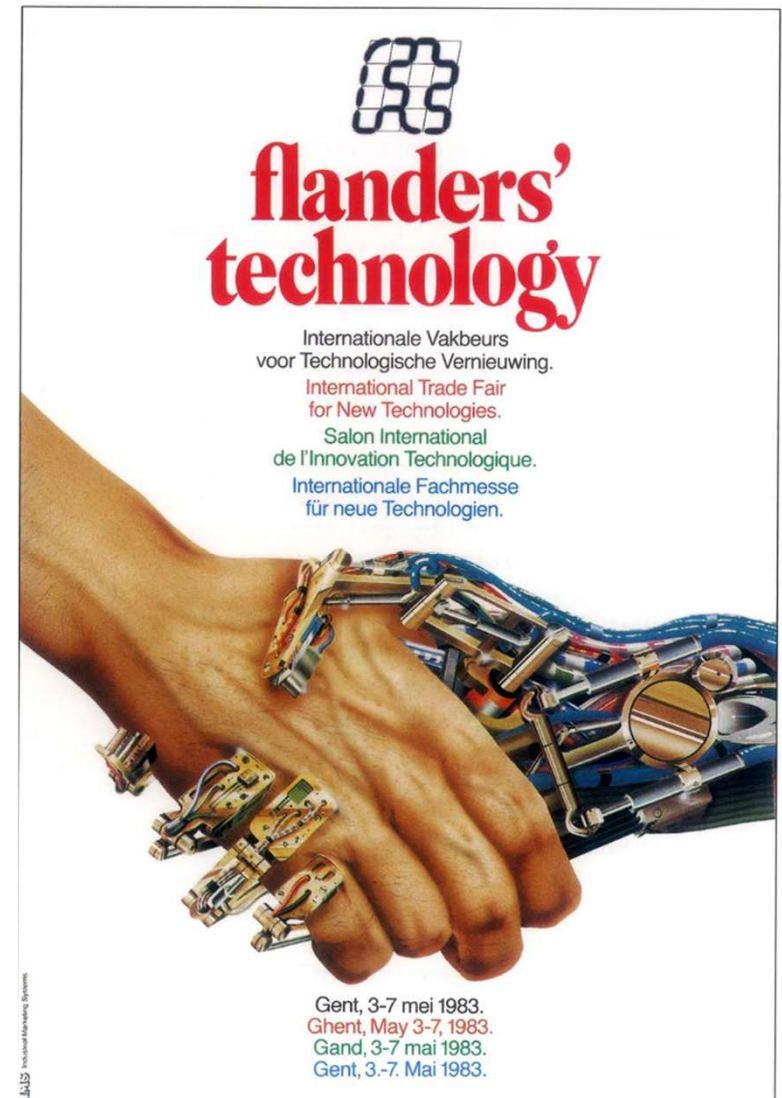
Derde industriële Revolutie Vlaanderen

DIRV - 1984

Derde industriële Revolutie Vlaanderen

- Oprichting van imec.
Een micro-elektronica-onderzoekscentrum.
- Oprichting van Mietec, een micro-elektronica-chipfabriek in Oudenaarde.
- Stimulering van opleiding in micro-elektronica met Invomec.
(Vandaag IC.Link binnen imec).
- Oprichting van het STV (Stichting Technologie Vlaanderen, vandaag de Stichting Innovatie en Arbeid), een studiecentrum voor de sociale impact van nieuwe technologieën.

Flemish government





2024 : NanoIC

Accelerating beyond-2nm chip innovation across Europe

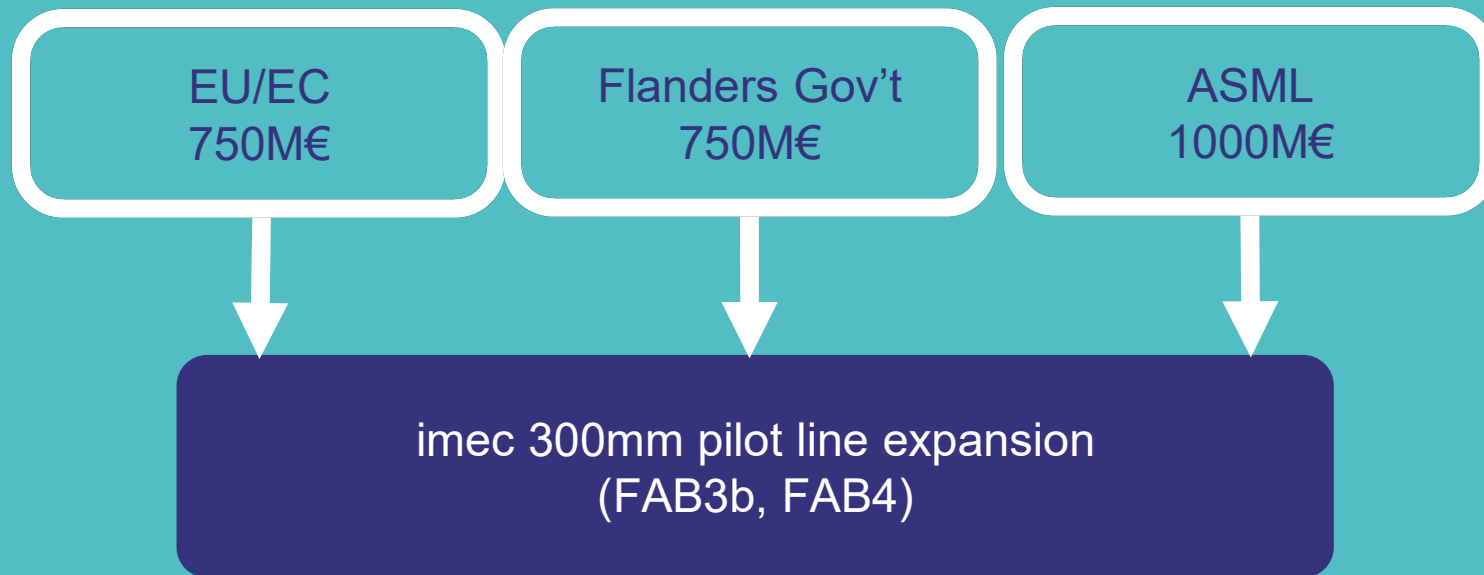
Systems-on-chip based on **beyond-2nm logic nodes** promise great opportunities for the European semiconductor industry.



NanoIC

The NanoIC pilot line, deployed by the European Chips Act, offers **low-barrier access** to state-of-the-art equipment, and advanced research and development of new materials, process steps, and modules.

2024 : NanoIC





To be constructed

New opened

FAB4 construction
(4000m² - 2027)

FAB3 expansion
(2000m² opened 2023)

Imec VI construction
(2025)

imec Leuven Campus:
World leading semiconductor R&D

imec Global ecosystem



Nano Technology

Chemicaliën (HF, H₂SO₄, H₂O₂, HNO₃, ...)

Gassen (N₂, H₂, He, O₂, HBr, HCl, SF₆, ...)

=> Health and safety risks

Seveso company

Duurzaamheid!

HAZARDOUS MATERIAL IDENTIFICATION GUIDE													
TYPE OF HAZARD	HEALTH			DEGREE	4 EXTREME								
	FLAMMABILITY				3 SERIOUS								
	INSTABILITY				2 MODERATE								
	PROTECTIVE EQUIPMENT				1 SLIGHT								
HAZARD RATING	HEALTH			FLAMMABILITY			INSTABILITY						
	4 - EXTREME - MATERIALS THAT ON VERY SHORT EXPOSURE COULD CAUSE DEATH OR MAJOR RESIDUAL INJURY. 3 - SERIOUS - MATERIALS THAT ON SHORT EXPOSURE COULD CAUSE SERIOUS TEMPORARY OR RESIDUAL INJURY. 2 - MODERATE - MATERIALS THAT ON INTERMEDIATE OR CONTINUED BUT NOT CHRONIC EXPOSURE COULD CAUSE TEMPORARY IRRITATION OR POSSIBLE RESIDUAL INJURY. 1 - SLIGHT - MATERIALS THAT ON EXPOSURE WOULD CAUSE IRRITATION BUT ONLY MINOR RESIDUAL INJURY. 0 - MINIMAL - MATERIALS THAT ON EXPOSURE UNDER FIRE CONDITIONS WOULD OFFER NO HAZARD BEYOND THAT OF ORDINARY COMBUSTIBLE MATERIAL.			4 - EXTREME - MATERIALS THAT WILL RAPIDLY OR COMPLETELY VAPORIZE AT ATMOSPHERIC PRESSURE AND NORMAL AMBIENT TEMPERATURE, OR THAT ARE READILY DISPERSED IN AIR AND THAT WILL BURN READILY. 3 - SERIOUS - LIQUIDS AND SOLIDS THAT CAN BE IGNITED UNDER ALMOST ALL AMBIENT TEMPERATURE CONDITIONS. 2 - MODERATE - MATERIALS THAT MUST BE MODERATELY HEATED OR EXPOSED TO RELATIVELY HIGH AMBIENT TEMPERATURES BEFORE IGNITION CAN OCCUR. 1 - SLIGHT - MATERIALS THAT MUST BE PRE-HEATED BEFORE IGNITION CAN OCCUR. 0 - MINIMAL - MATERIALS THAT WILL NOT BURN.			4 - EXTREME - MATERIALS THAT IN THEMSELVES ARE CAPABLE OF DETONATION OR OF EXPLOSIVE DECOMPOSITION OR REACTION AT NORMAL TEMPERATURES AND PRESSURES. 3 - SERIOUS - MATERIALS THAT IN THEMSELVES ARE CAPABLE OF DETONATION OR EXPLOSIVE DECOMPOSITION ON REACTION BUT REQUIRE A STRONG INITIATING SOURCE OR WHICH MUST BE HEATED UNDER CONFINEMENT BEFORE INITIATION OR WHICH REACT EXPLOSIVELY WITH WATER. 2 - MODERATE - MATERIALS THAT READILY UNDERGO VIOLENT CHEMICAL CHANGE AT ELEVATED TEMPERATURES AND PRESSURES OR WHICH REACT VIOLENTLY WITH WATER OR WHICH MAY FORM EXPLOSIVE MIXTURES WITH WATER. 1 - SLIGHT - MATERIALS THAT IN THEMSELVES ARE NORMALLY STABLE, BUT WHICH CAN BECOME UNSTABLE AT ELEVATED TEMPERATURES AND PRESSURES. 0 - MINIMAL - MATERIALS THAT IN THEMSELVES ARE NORMALLY STABLE, EVEN UNDER FIRE EXPOSURE CONDITIONS, AND WHICH ARE NOT REACTIVE WITH WATER.						
	PROTECTIVE EQUIP.	A	B	C	D	E	F	G	H	I	J	K	X
													

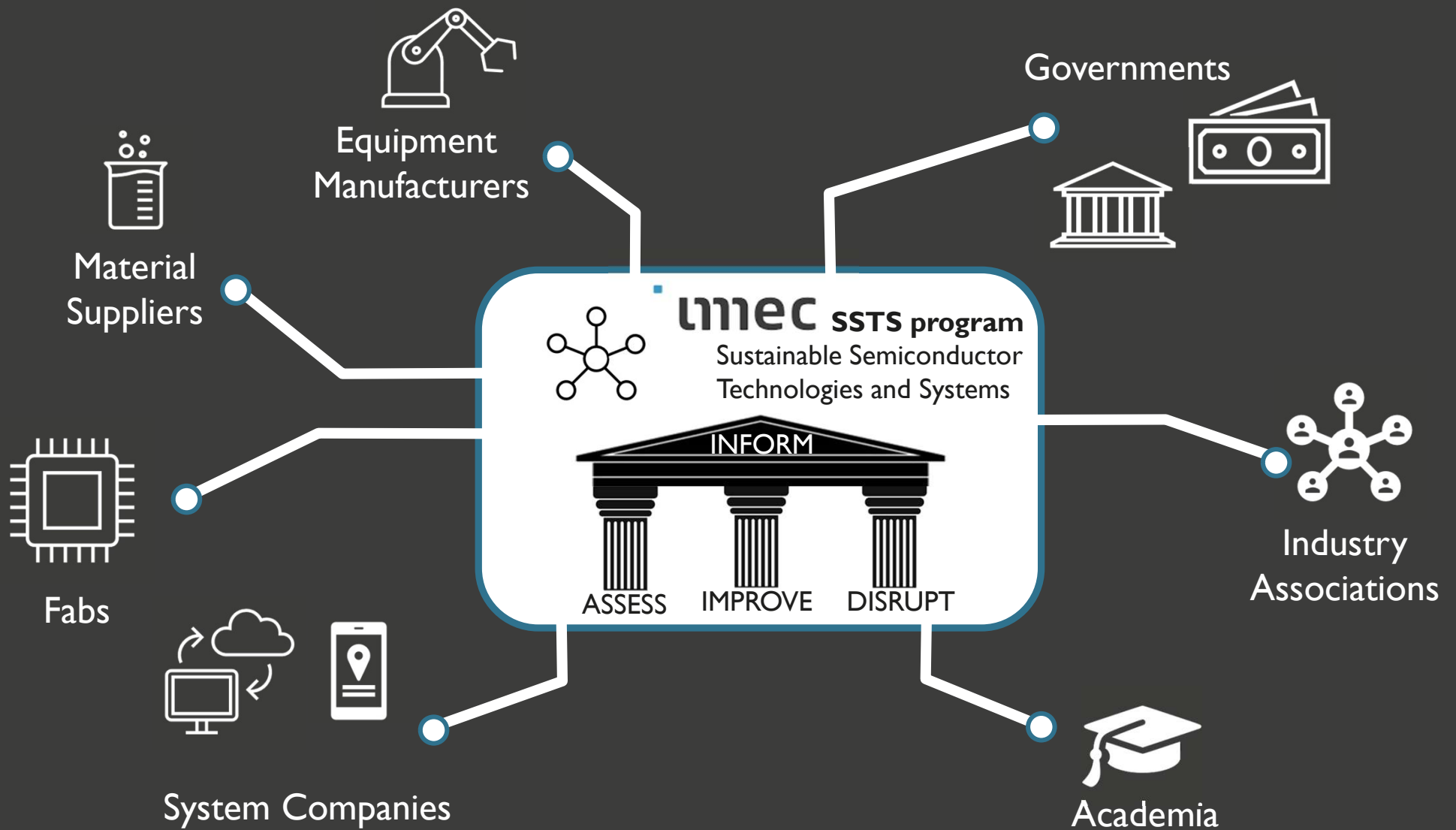
Omgevingsvergunning

- Chemicalien (HF, H₂SO₄, H₂O₂, HNO₃, ...)
- Gassen (N₂, H₂, He, O₂, HBr, HCl, SF₆, ...)
- => Health and safety risks
- **Seveso company**
- Geluid
- Water:
 - Stadswater verbruik
 - Afvalwater behandeling & lozing.
 - Hemelwater
- Exhaust
 - VOC
 - Nox
- Elektriciteit
- Inplanting & Erfgoed
- ...

Groeiend bedrijf ⇔ Reductie Impact

SSTS

Sustainable Semiconductor
Technology and Systems



Our mission: Help the IC manufacturing value chain reach its environmental sustainability targets

100 klimaat neutrale en slimme steden tegen 2030

Leuven



MINDER UITSTOOT, MEER TOEKOMST

**LEUVEN2030
URBAN LAB**

**MOBILISING RESEARCH & EDUCATION
TO ACCELERATE CLIMATE TRANSITION**

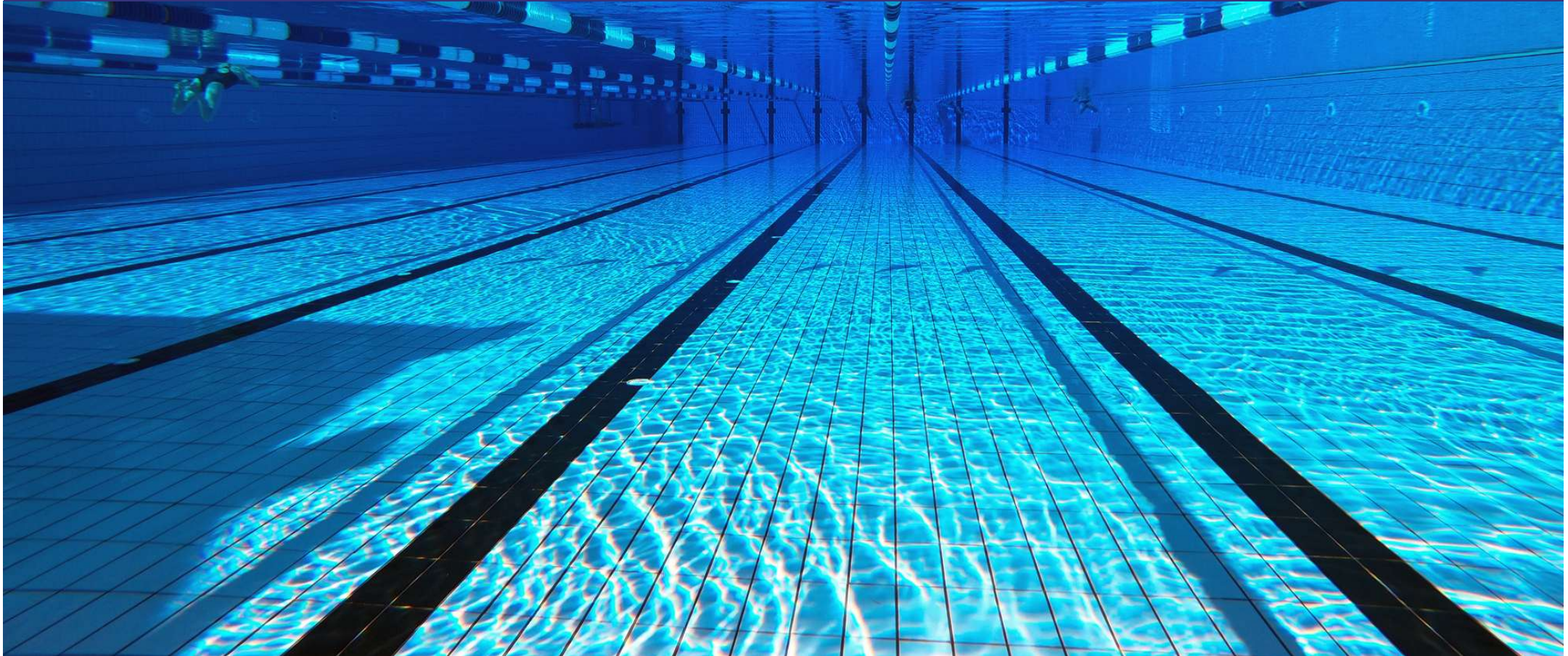
POWERED BY



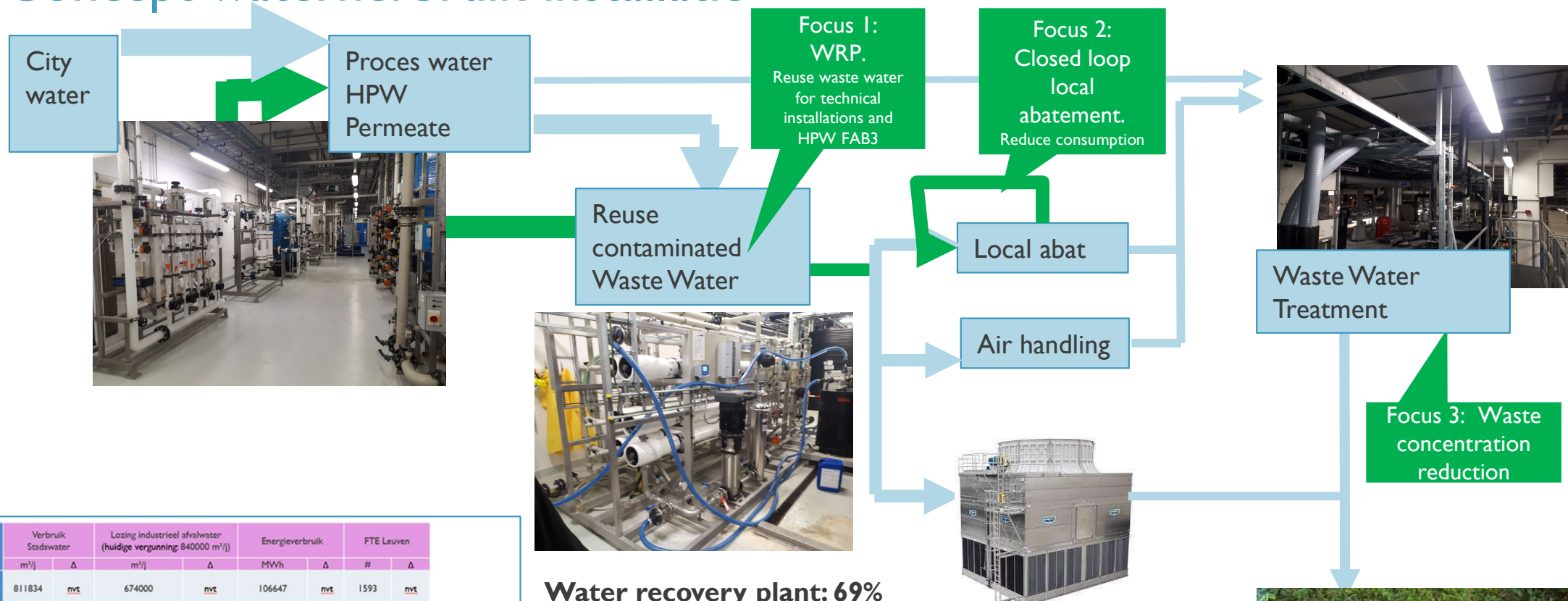
leuven



imec stadswaterverbruik
800,000,000 LITER PER JAAR=



Concept waterherbruik-installatie



Water recovery plant: 69%

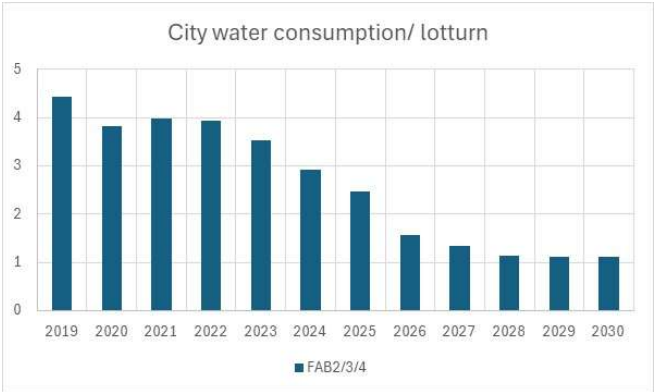
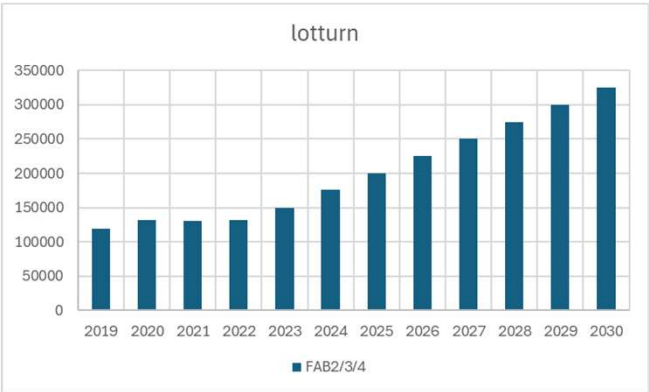
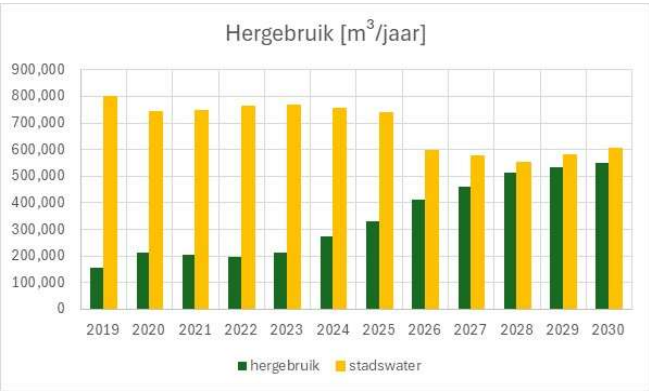
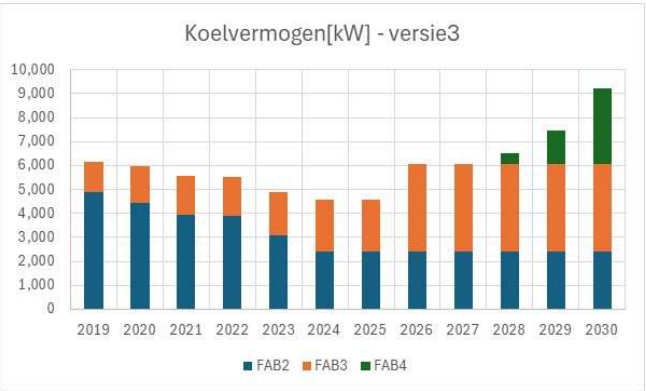
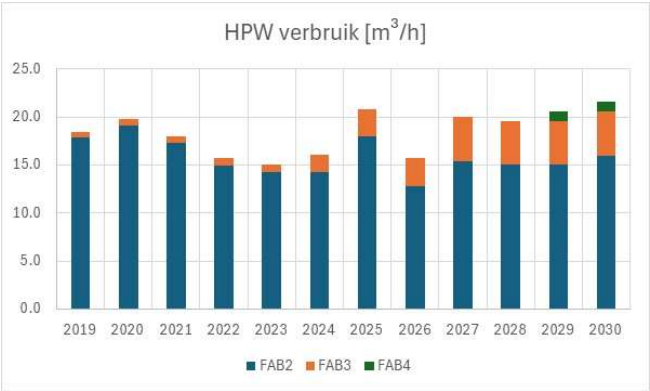
- Step 1: Ultrafiltration:
 - Efficiency 95%
- Step 2: Reverse osmosis:
 - Efficiency 80%

Jaar	Verbruik Stadswater		Lozing industrieel afvalwater (huidige vergunning: 840000 m³/j)		Energieverbruik		FTE Leuven	
	m³/j	Δ	m³/j	Δ	MWh	Δ	#	Δ
2017	811834	nvt	674000	nvt	106647	nvt	1593	nvt
Reeds belangrijke inspanningen inzake duurzaam watergebruik								
2023	768296	-5%	603000	-11%	122406	+15%	2245	+41%
Onze ambitie ligt nog veel verder								
2030	650000	-20%	380000	-45%	125000	+17%	2650	+66%

Cleanroom 200mm: 4000m³
300mm: 6000m³

Cleanroom 200mm: 4000m³
300mm: 12000m³

Masterplan reuse water



Electricity

Electricity Peak consumption forecast



10KV

Max 25 MVA

fluvius.

150KV

>25 MVA

elia
Elia Group



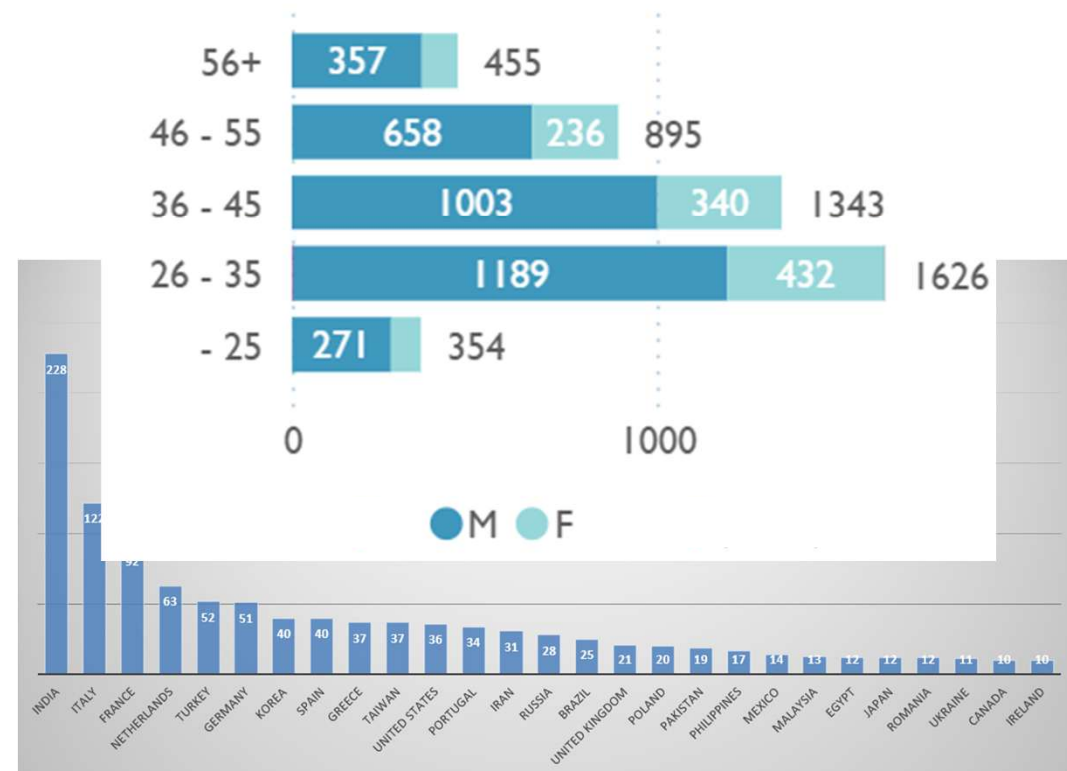
Attract, Train and Retain Skilled work force

■ Attract & Retain:

From operator to Specialist
International workforce

- Business model
- International workforce
Work permit
- Competitive benefits
- Remote working
Huisvesting

Payroll vs Extended workforce



Attract, Train and Retain Skilled work force

brightlab

- Education

- International school
- imec School
- Bright Lab (RVO society)

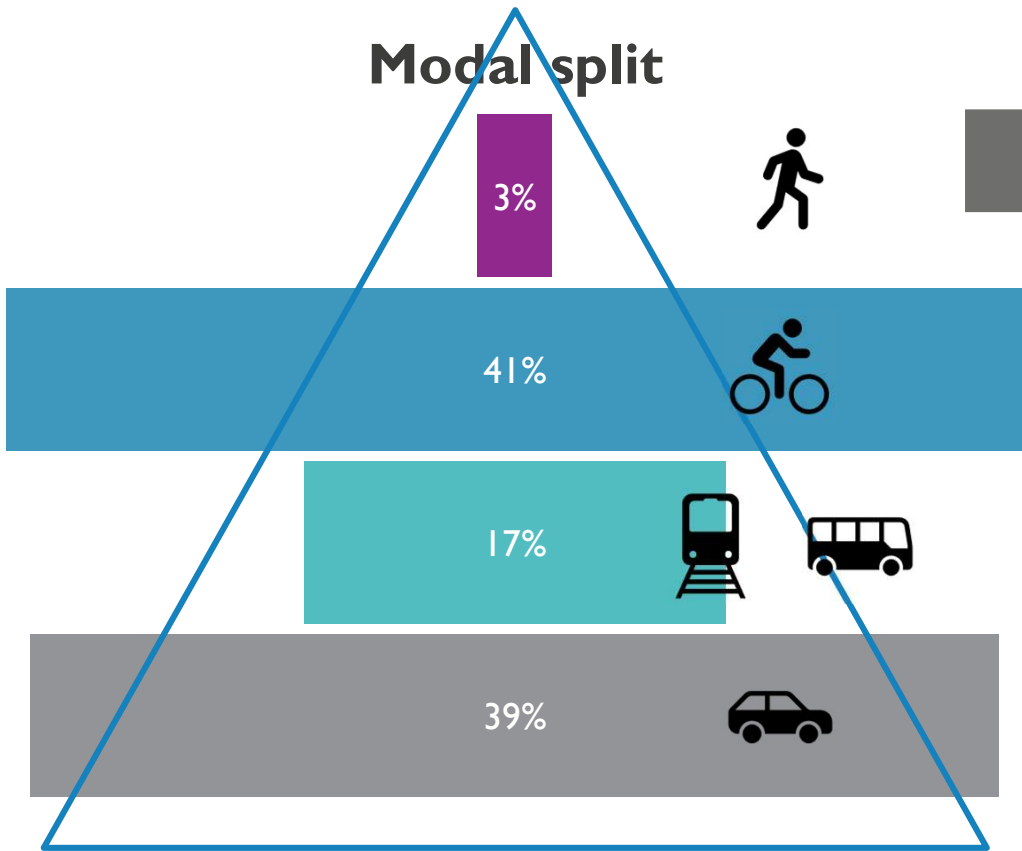


International
School of
Leuven

KU LEUVEN

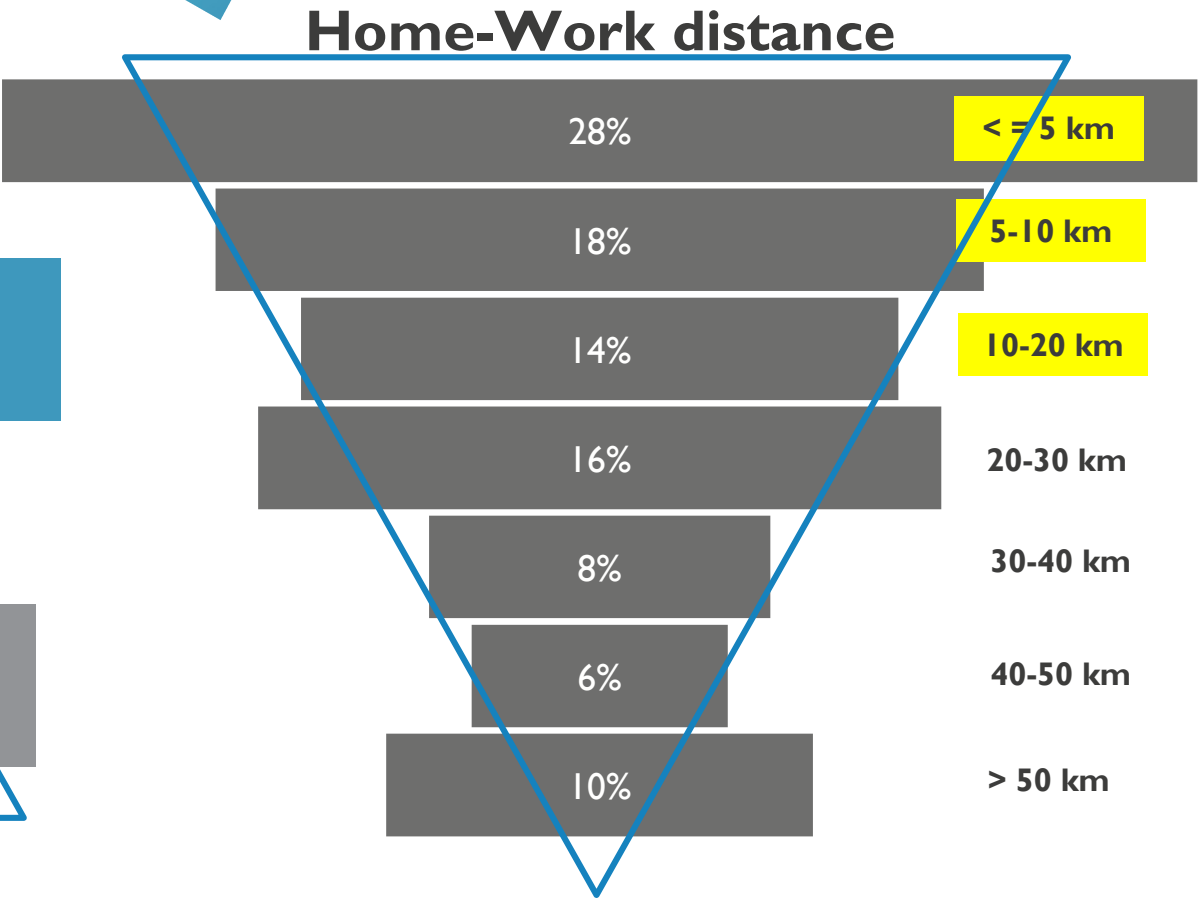
MOBILITY PLAN

Input Modal Split - 2030



Bike potential: 60% of total headcount

For all payroll

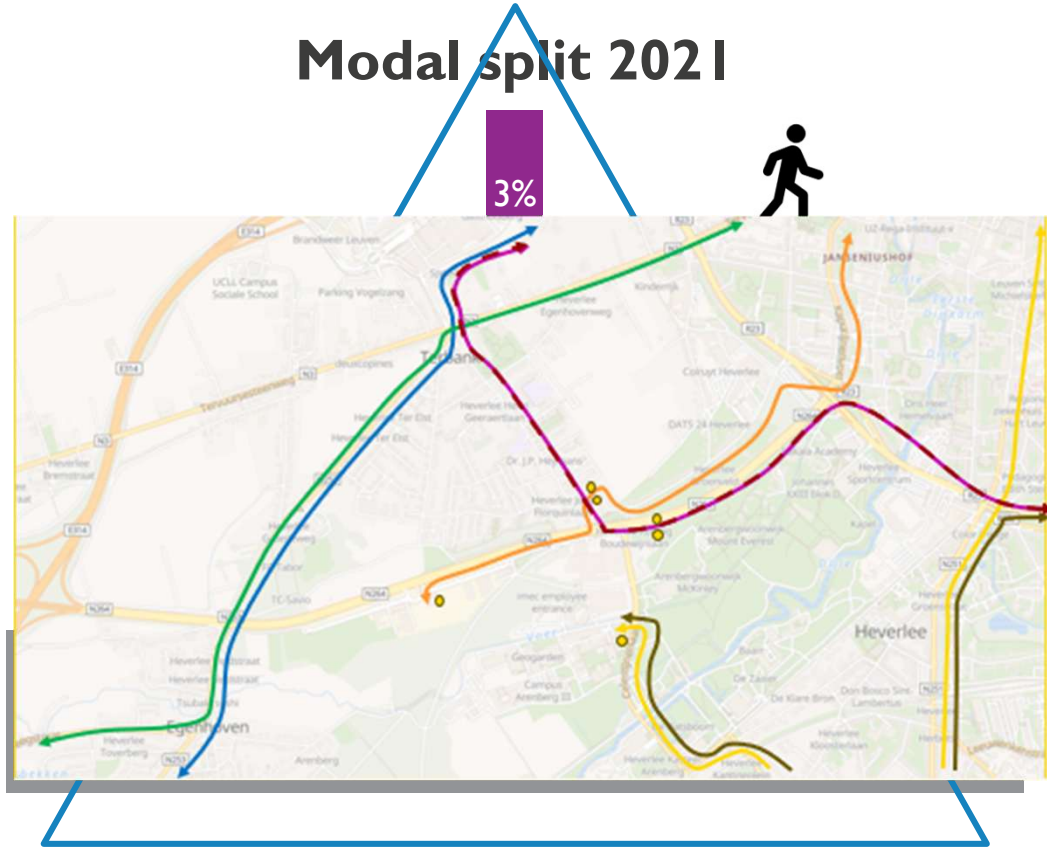


MOBILITY PLAN

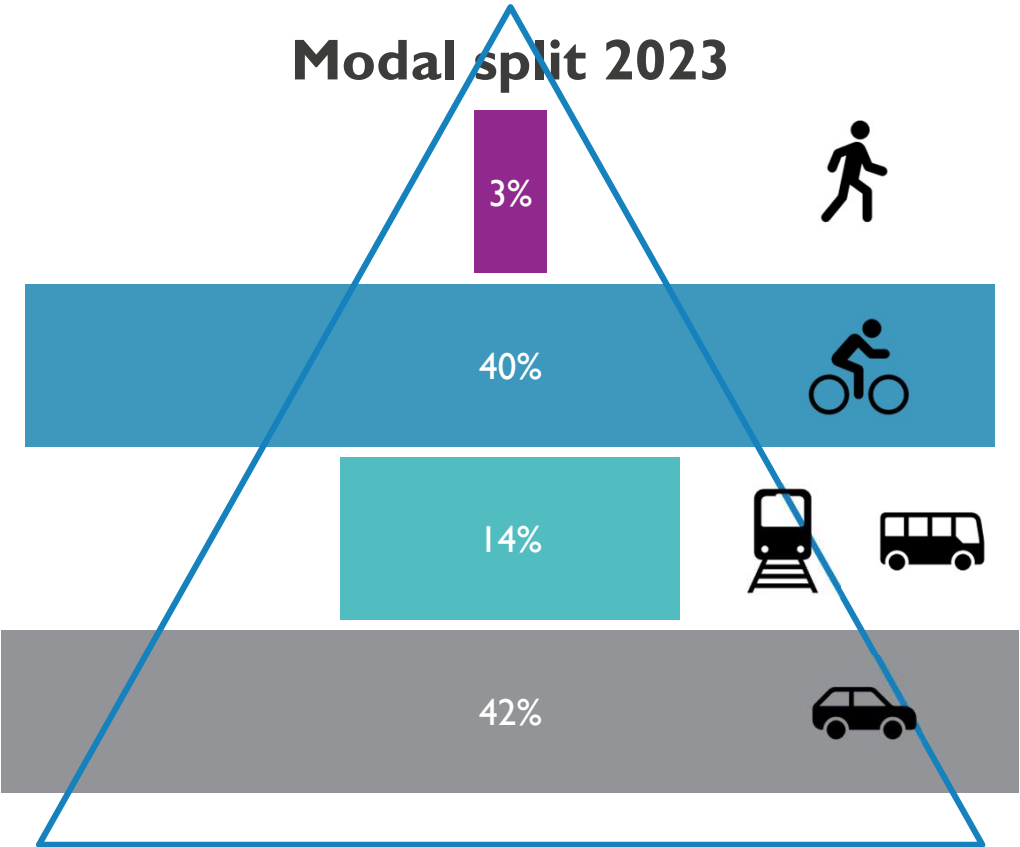
Input 2021 - 2023

For all payroll

Modal split 2021



Modal split 2023



IMEC mobility Plan

Time

**Innovation and creativity
&
Supportive Stakeholders**

Yield

Opportunities & Solutions



embracing a better life