

DE NIEUWE DOKKEN

An architectural rendering of a modern urban district at dusk. The scene features several multi-story buildings with illuminated windows and balconies, some with greenery on top. The buildings are situated along a waterfront with a canal or river. The sky is dark with some clouds, and the overall atmosphere is serene and modern.

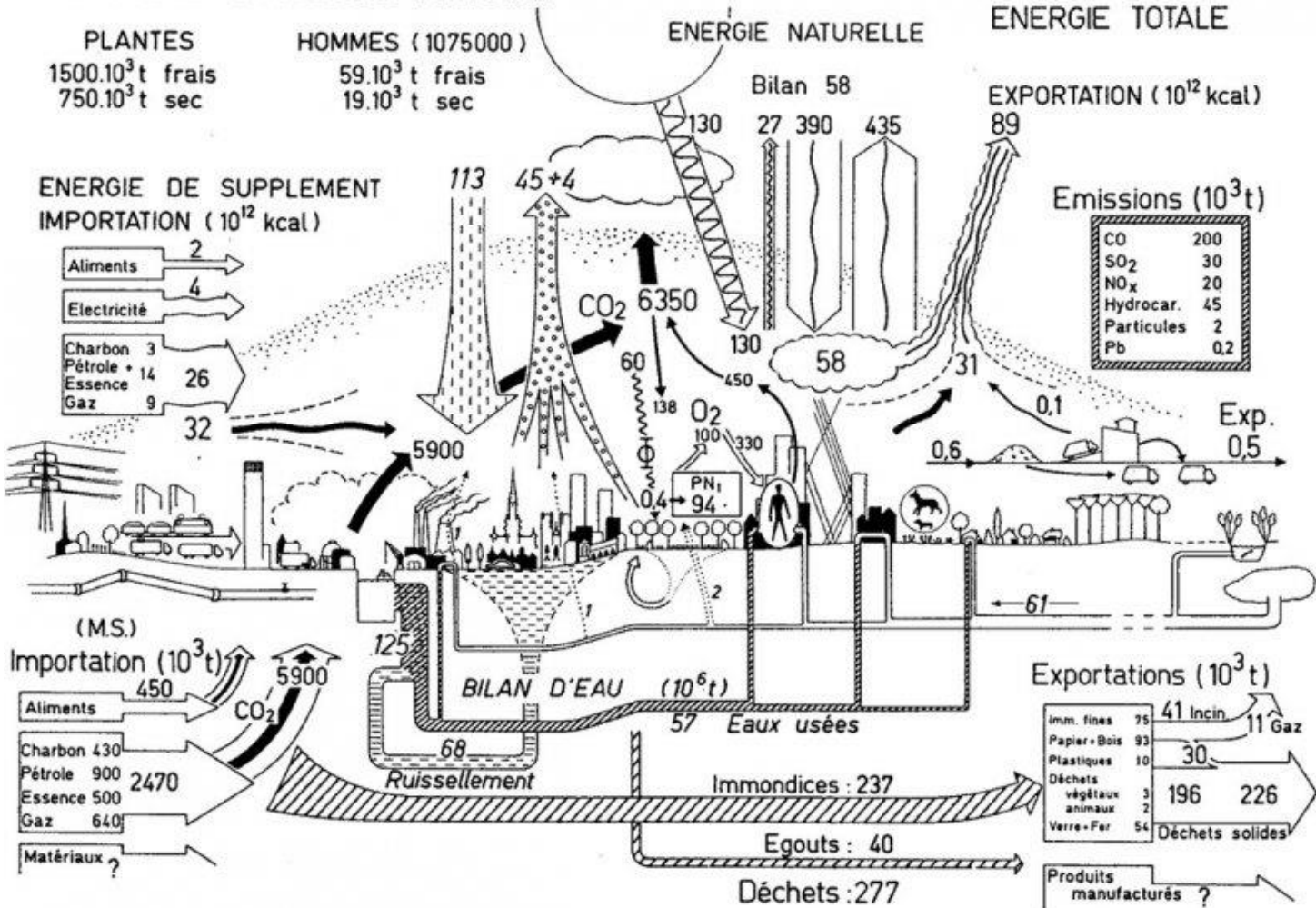
CIRCULAR ECONOMY IN A NEW URBAN DISTRICT IN GHENT

WinVorm Smart City

24 oktober 2017

URBAN ECOSYSTEMS

ECOSYSTEME BRUXELLES (16.178 ha)



After: Duvigneaud, P., Denayer-De Smet, S., 1977. L'Ecosystème Urbs, in L'Ecosystème Urbain Bruxellois

WAT IS ZAWENT?

TRADITIONEEL: lange lineaire ketens



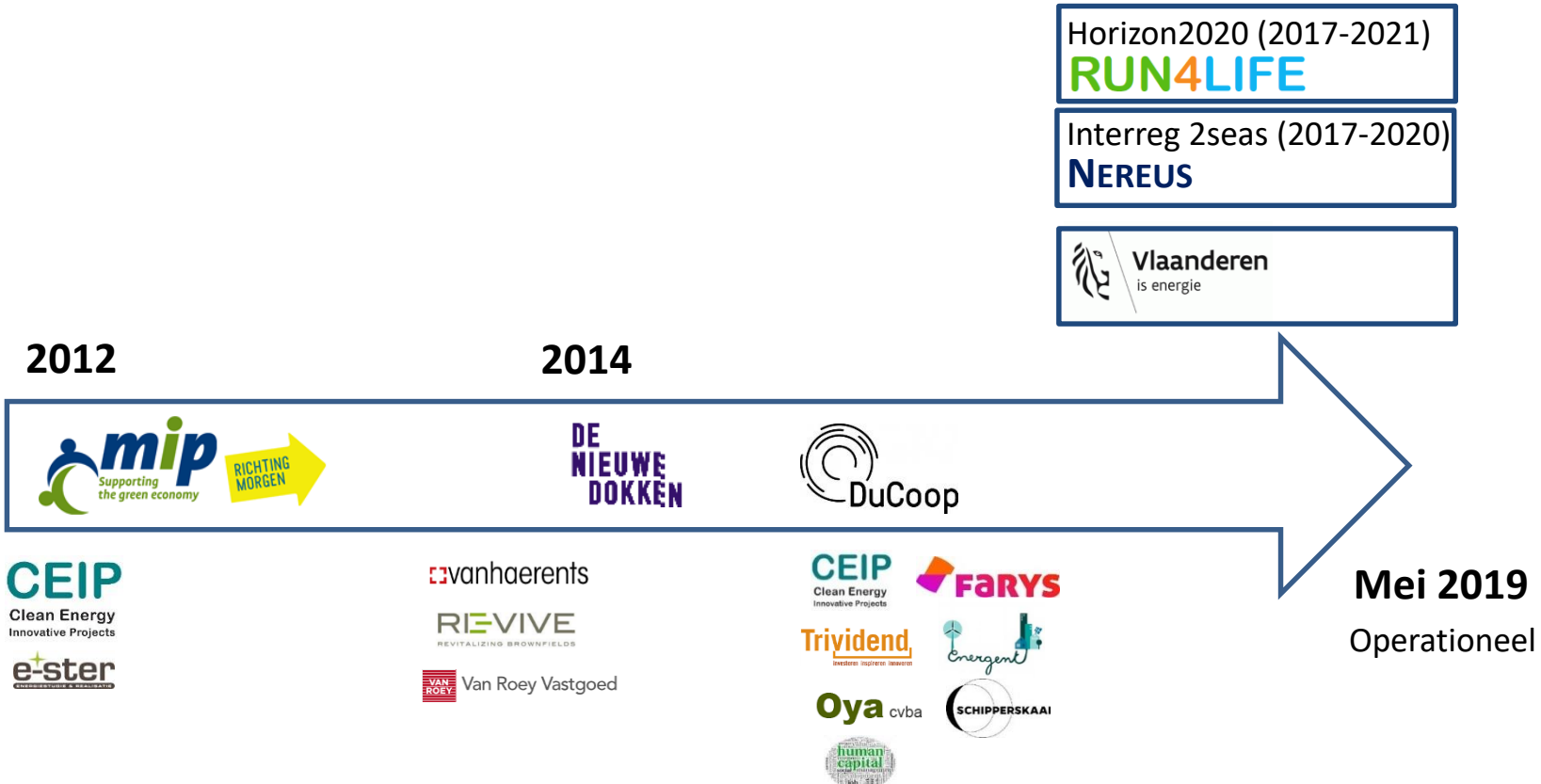
ZAWENT: korte circulaire ketens

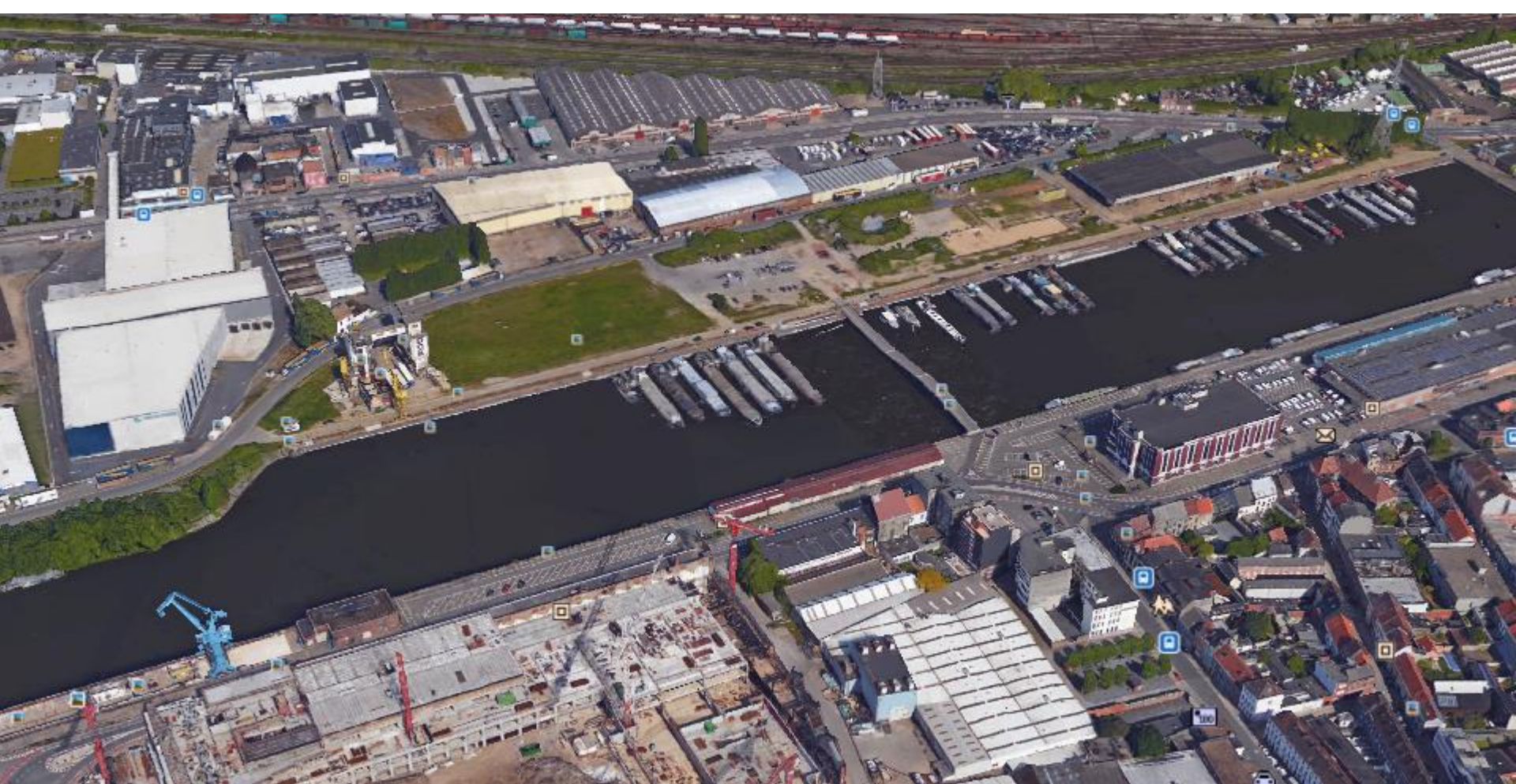
- Gesloten kringlopen van water
- Gesloten kringlopen van energie
- Gesloten kringlopen van nutriënten

MEERVOUDIG GEKOPPELDE KRINGLOPEN

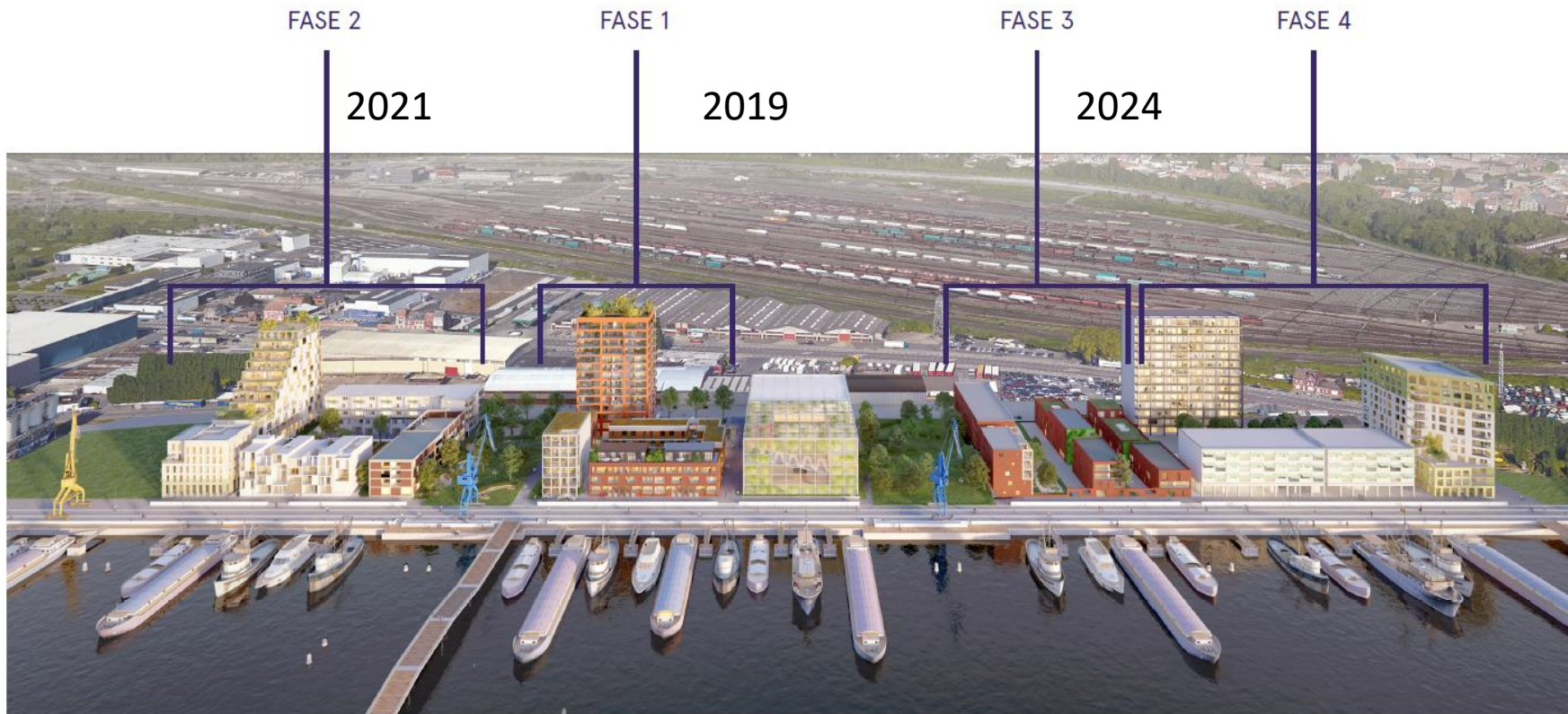


Een lang realisatiepad









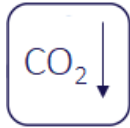
>400 wooneenheden+ stadscomplex (scholen, sportinfrastructuur etc.)







LIVING TOMORROW



- 70%

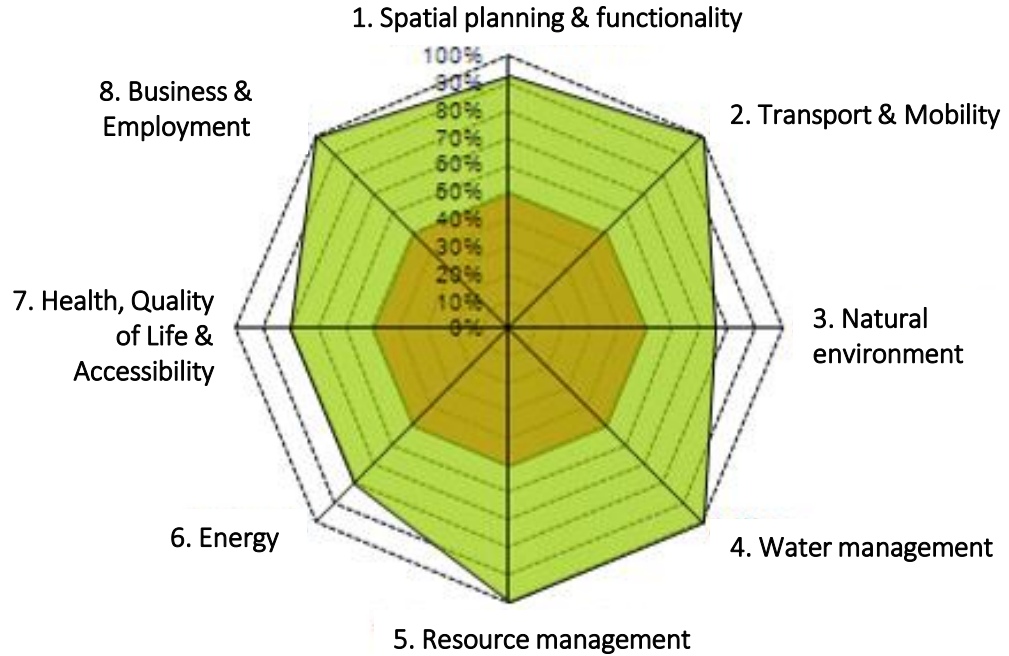


13%



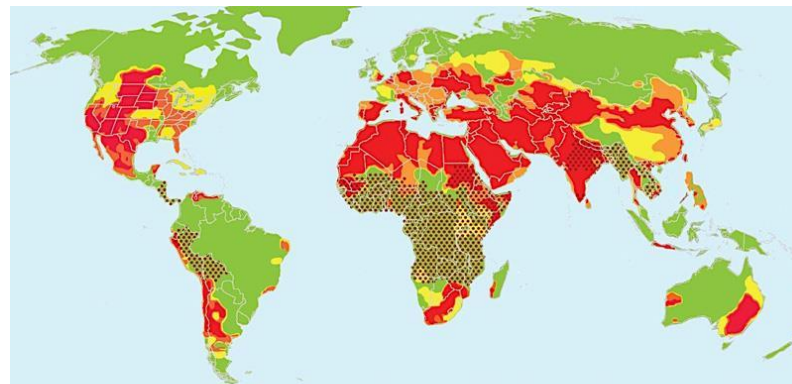
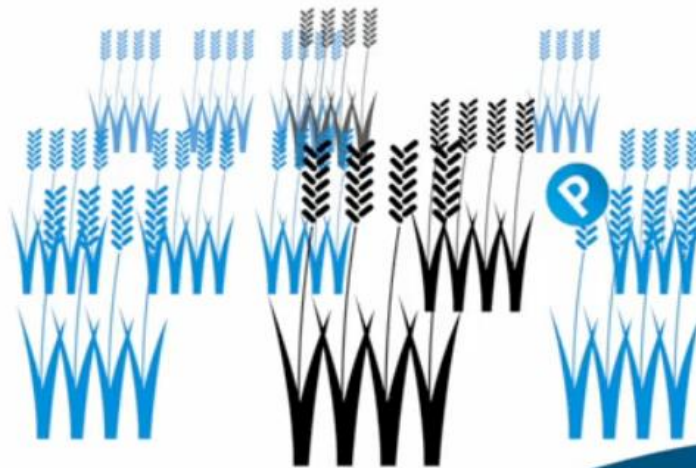
47 kWh/m²

7. Gezoel



gent: klimaatstad

Klimaatstad Gent draait overuren



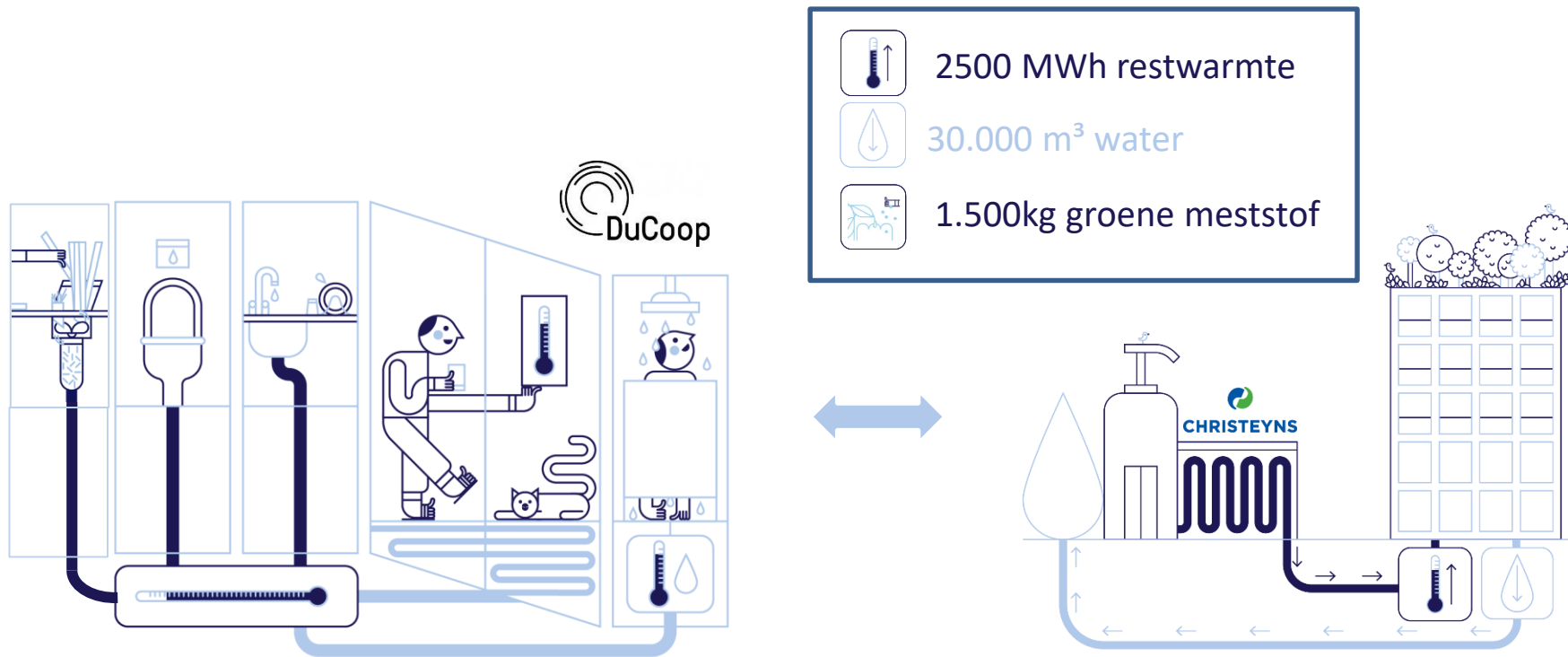
Global Water Stress: 2030

(Based on OECD Environmental Outlook, 2008)

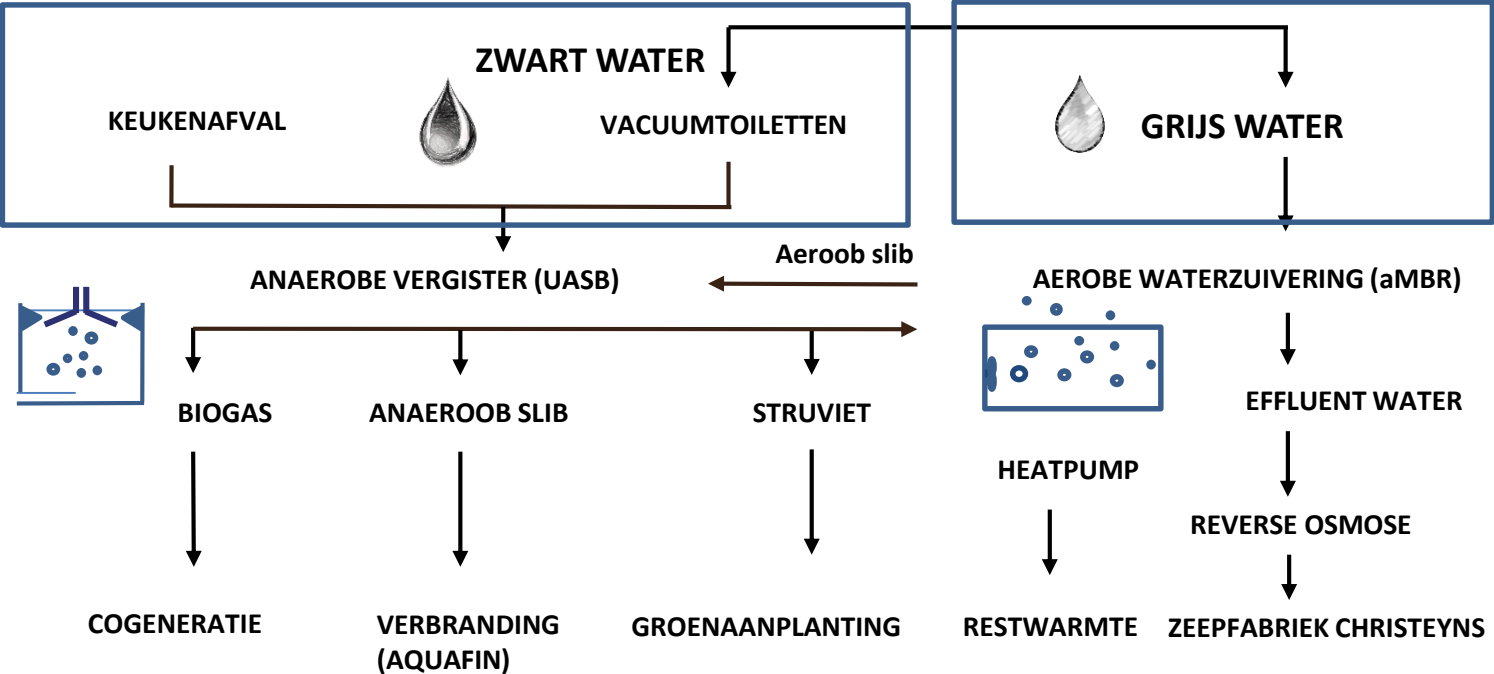
- No Water Stress
- Low Water Stress
- Moderate Water Stress
- Severe Water Stress
- Economic Water Stress (based on U.S. FAO, 2007)



ZERO AFVALWATER MET TERUGWINNING VAN ENERGIE & NUTRIENTEN



RESIDENTIEEL AFVALWATER



INPUT

LOKAAL PROCES

OUTPUT

REUSE

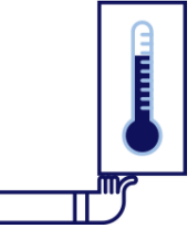
Duurzaamheidscoöperatieve DuCoop cvba

- Implementatie nieuwe technologie vergt nieuw business model
- DuCoop = ESCO (Energy Service Company) met uitgebreide scope
 - Breed draagvlak: 7 impact capital investeerders
 - Bewonersparticipatie



BUSINESS MODEL INNOVATION

Duurzaamheidscoöperatie DuCoop




Energie

4de gen. Warmtenet
(restwarmte Christeysn)
rooftop PV
Smart Grid toepassingen



Water

Local sanitation
Reuse as process water
(Christeysn)



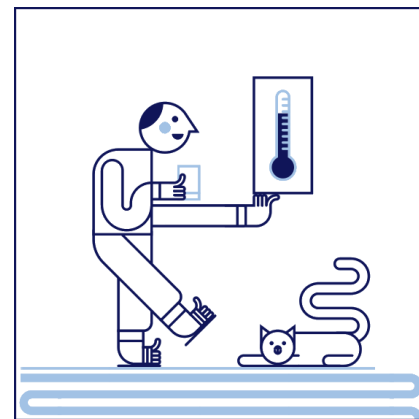
Afval

Brondscheiding
e.g. vacuum systeem
Afvalinzameling
Waterbehandeling
Nutrient recovery



Mobiliteit

Elektrische fietsen
Elektrische deelwagens
& Laadpalen



Smart Multi-energy District



Energy Harbors



Microgrids



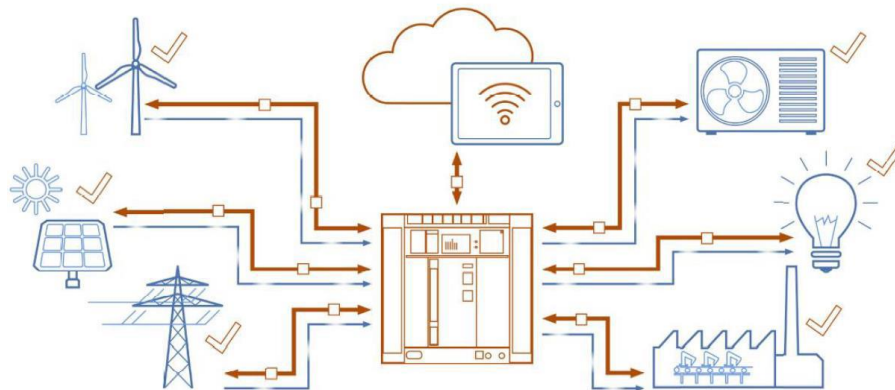
Multi-energy Solutions



Energy Cloud platforms



Intelligent Renovation





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