

# DIGITAL TWINS AT LIST

WITH APPLICATION IN ENERGY TRANSITION AND ELECTROMOBILITY

Eric Dubois and Sébastien Pineau

LIST

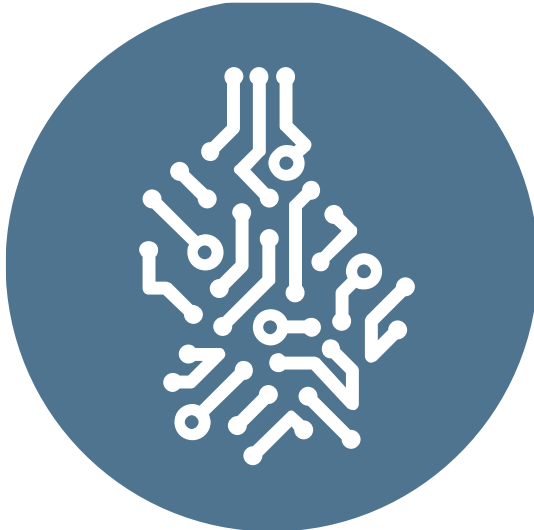
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June 30, 2022

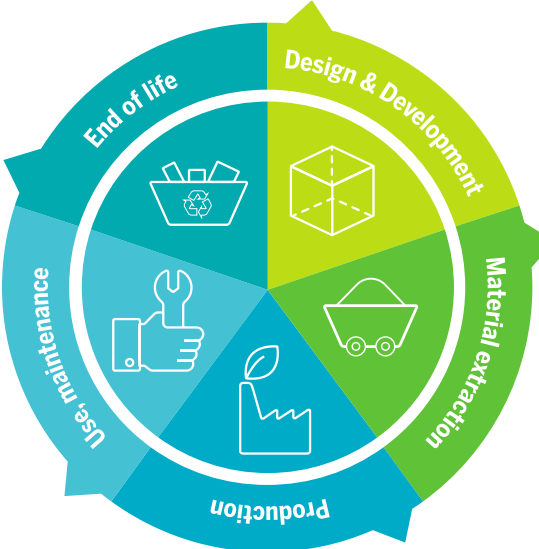
# SUSTAINABILITY BY DESIGN



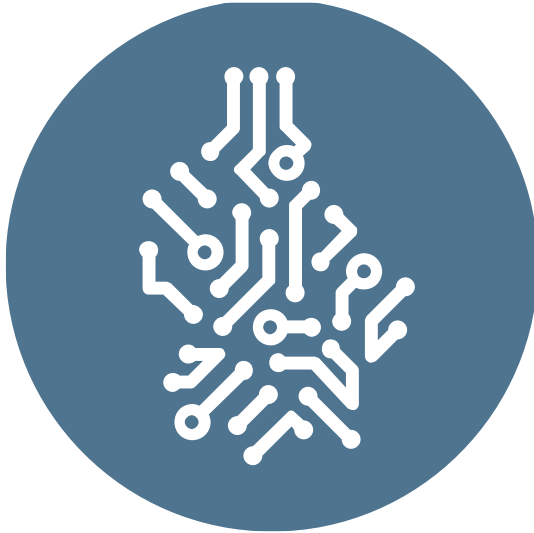
# A NATIONWIDE DIGITAL TWIN FOR SUSTAINABILITY BY DESIGN



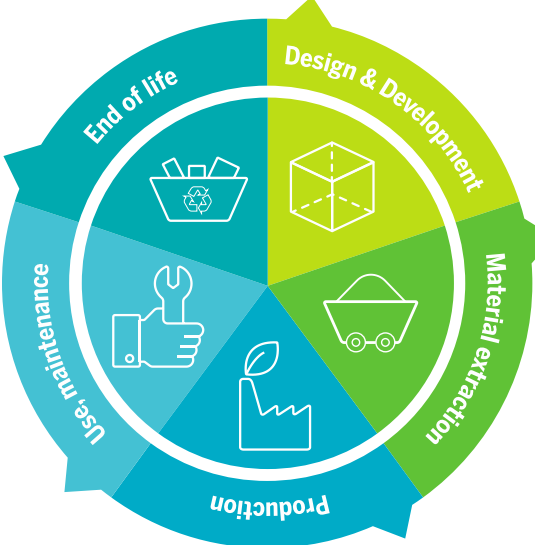
digital  
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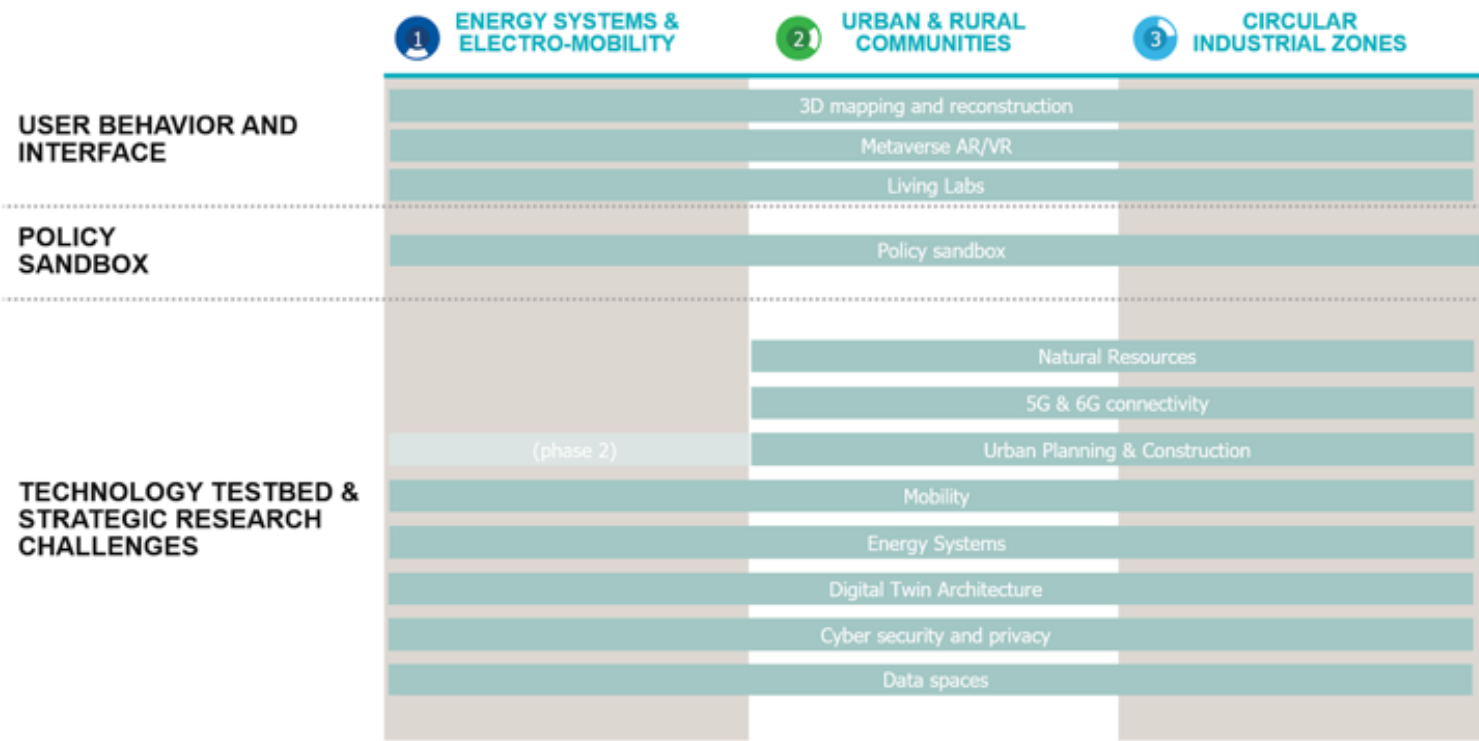
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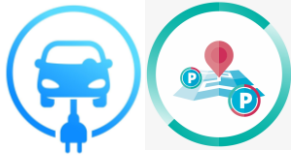
# DIGITAL TWIN ROADMAP BASED ON THREE MAJOR USE CASES



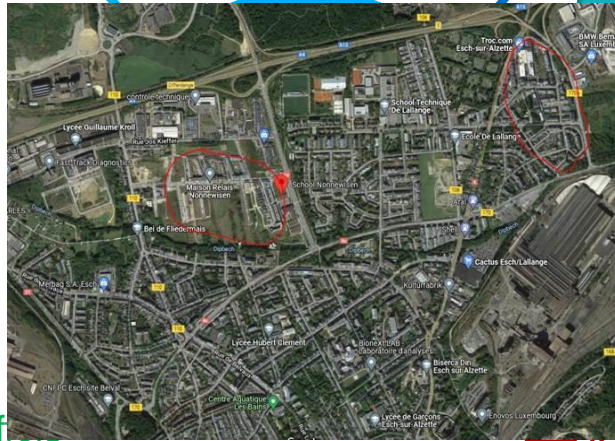
# ENERGY SYSTEMS AND ELECTROMOBILITY

## A First Demonstrator with the following context

EV MOBILITY - Demand



GRID CONSTRAINTS



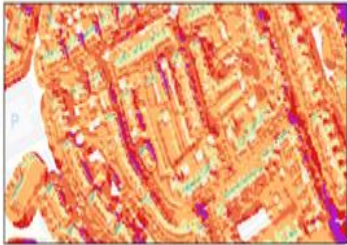
PV PRODUCTION - Of



analyse the role of optimal energy communities and conveniently located public charging stations to improve the overall balance and performance of the grid.

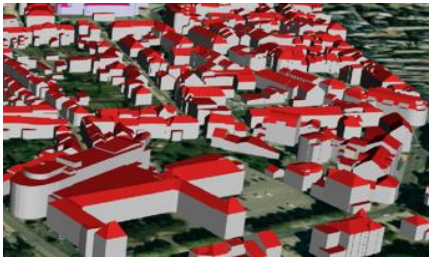
# ENERGY SYSTEMS AND ELECTROMOBILITY

## ASSETS: OPTIMAL PV INSTALLATION



Esch Solar Irradiation - 1m ICAO DSM  
Result of a WPS execution  
IGUESS dataset server  
WCS - WMS

PV PRODUCTION - Offer



and precise production estimation



# ENERGY SYSTEMS AND ELECTROMOBILITY

## ASSETS: ELECTROMOBILITY TRAFFIC SIMULATION

EV MOBILITY - Demand



Parking and Charging Demand

Traffic analysis with different EV ratios

# ENERGY SYSTEMS AND ELECTROMOBILITY

## ASSETS: Distribution Grid Performance

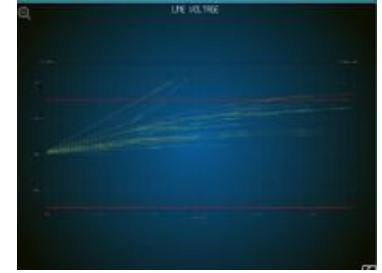
GRID CONSTRAINTS



Smart meters

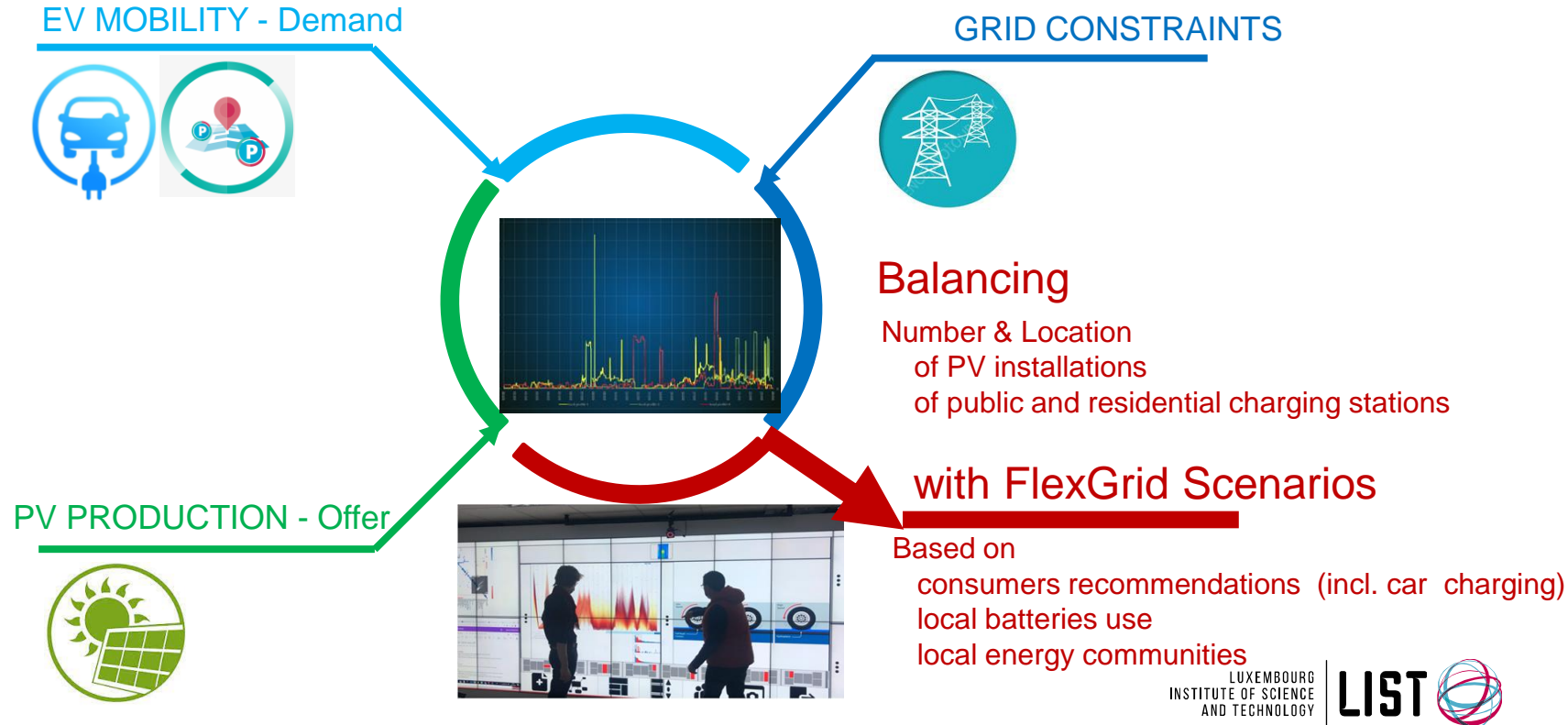


Distribution Grid  
Topology

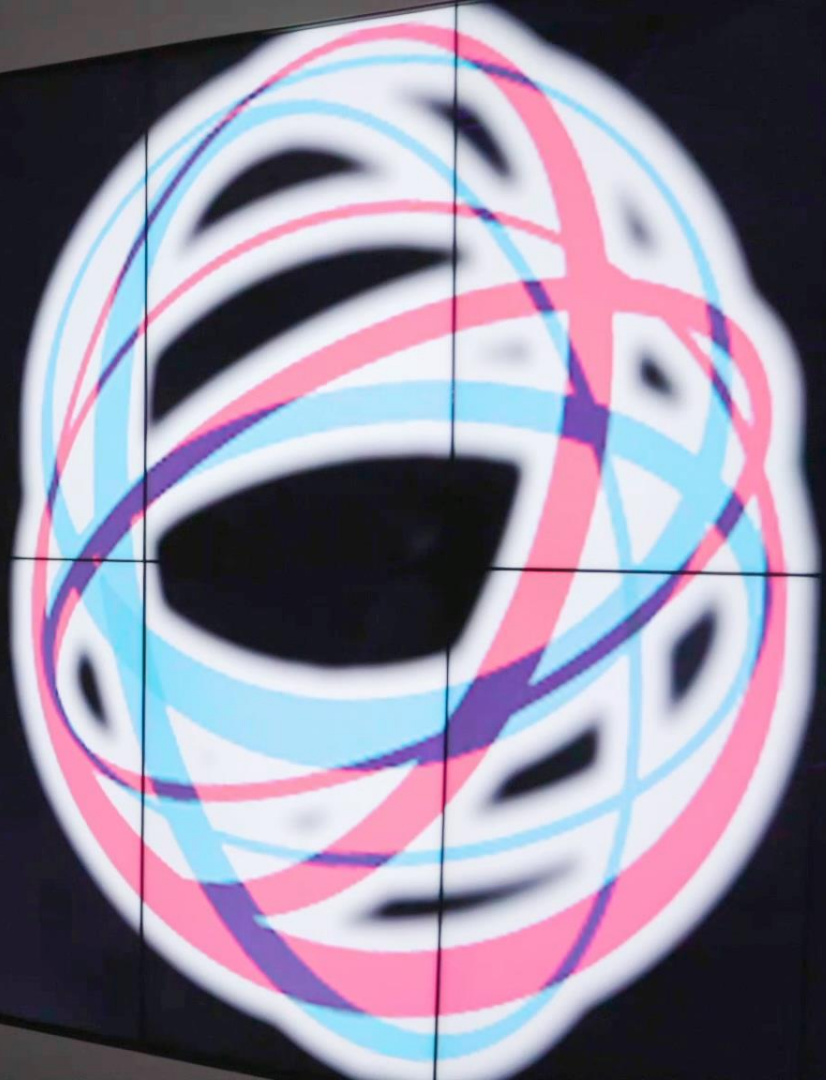


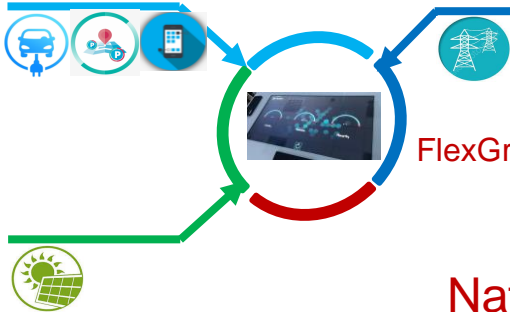
Grid Performance

# ENERGY SYSTEMS AND ELECTROMOBILITY



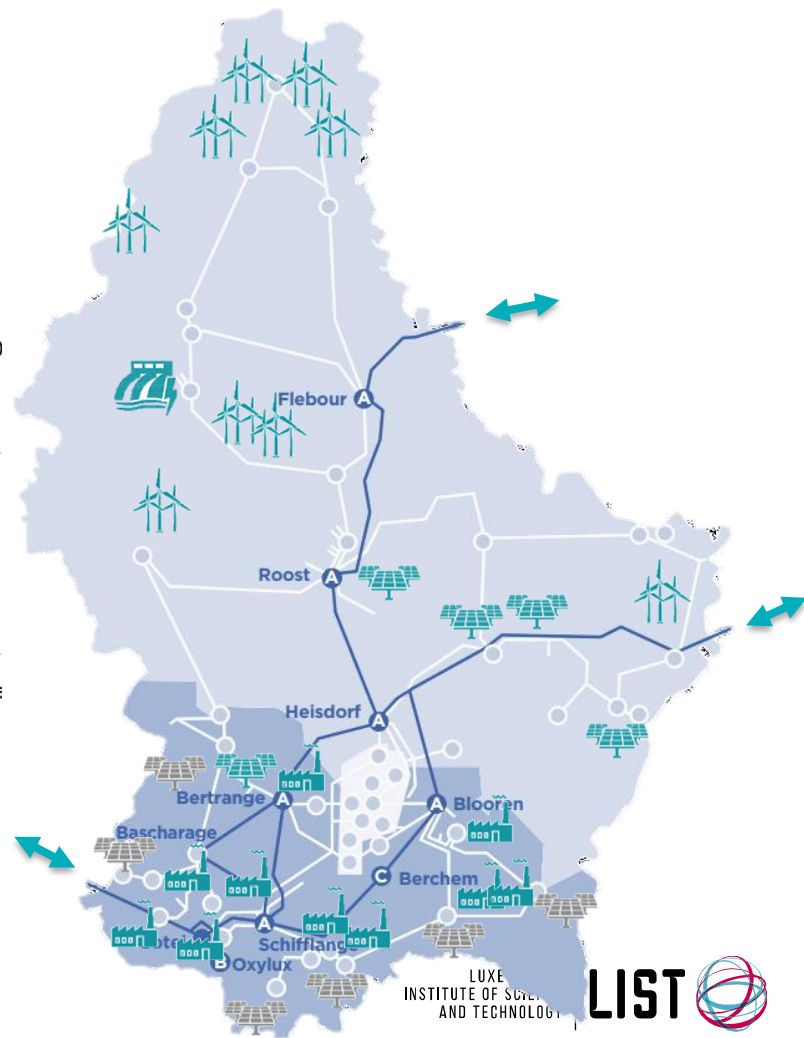
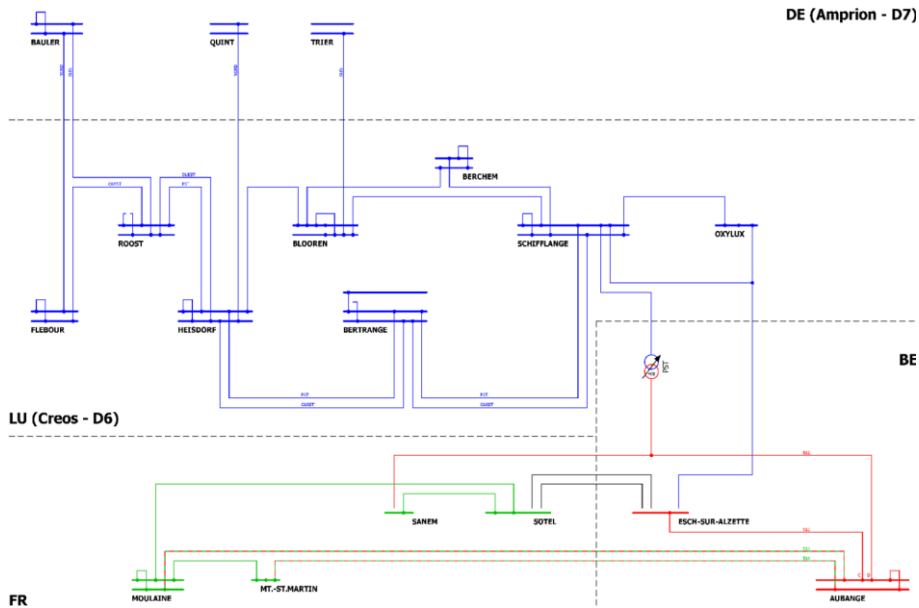
LIST





FlexGrid Scenarios

National Grid Impact



LUXE  
INSTITUTE OF SCIENCE  
AND TECHNOLOGY



# THANK YOU FOR YOUR ATTENTION