ENVIRONMENT AS INVESTMENT BUSINESS OPPORTUNITY

There is a link between a high quality of life and a more sustainable approach to economic activities

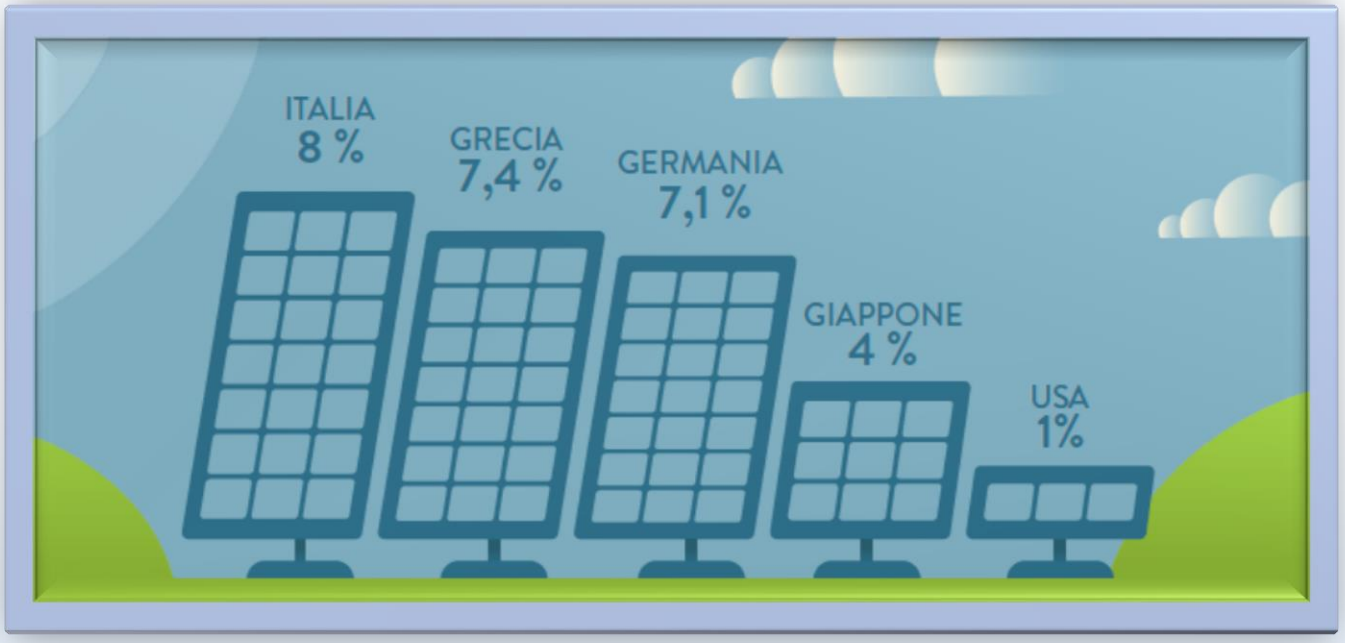
- **Renewable energies**
  - Hydropower
  - Photovoltaic
  - Wind
  - Geothermal

Investment
2004 – US$50 b.
2015 – US$ 350 b.

2015 – 9,5 million jobs
2030 – 24,4 million jobs (if R.E. reach 36%)

Estimated investment 2016-2030
US$ 900 b.

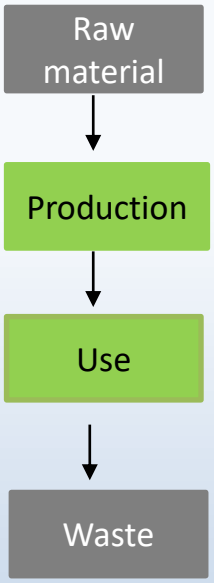
FIRST IN THE WORLD IN THE PHOTOVOLTAIC



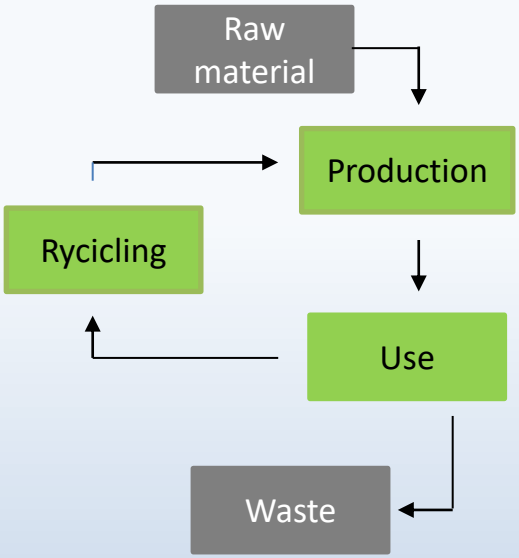
- Italy is the first country in the world for photovoltaic contribution to the national electric mix (8%)
- It is first among the major EU countries for renewable share in the gross domestic consumption (17.1%)

From linear economy to circular economy

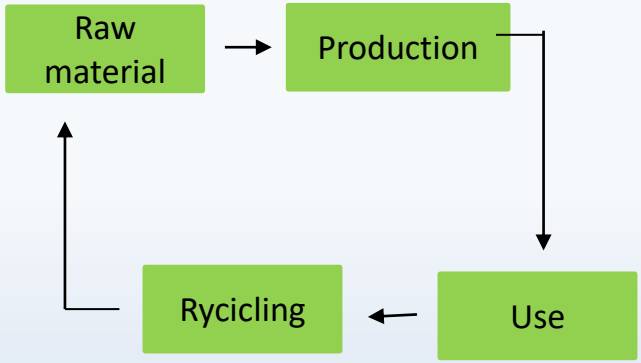
Linear economy



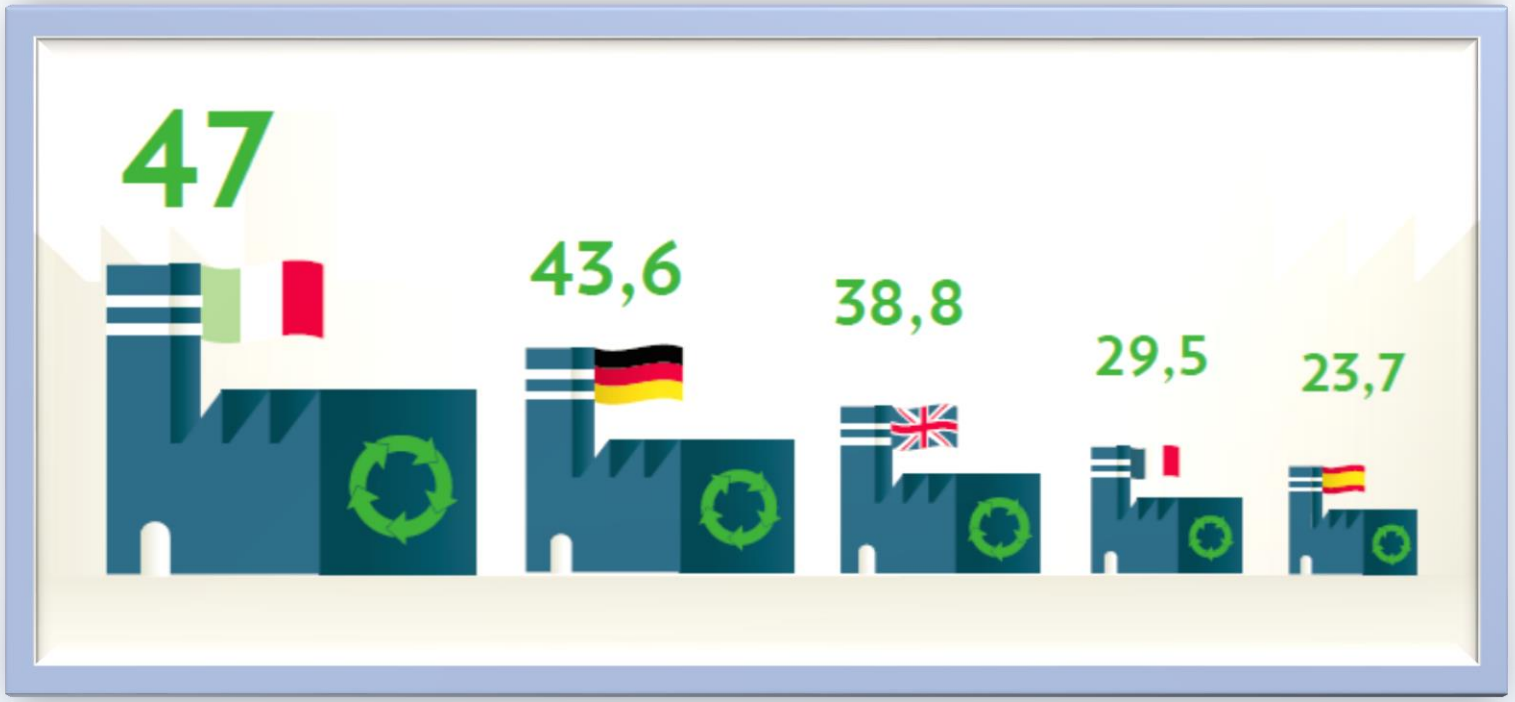
Recycling economy



Circular economy



FIRST IN EUROPE IN CIRCULAR ECONOMY



- Italy is the European leader in industrial recycling (47mln tons)
- Recycling in industrial production cycles has saved primary energy for over 17 million tons of oil equivalent, and emissions of about 60 million tons of CO2

REINVENTED REFINERY

ENI’S CRUDE OIL PROCESSING PLANT IN GELA CONVERTED TO BIOFUEL PROCESSING

NEW LIFE FOR END OF LIFE TYRES (ELT)

ECOPNEUS THROUG RESEARCH AND INVESTMENT HAS IMPROVED TIGHTNESS, LOWER WEAR AND LOWER FUEL CONSUMPTION

THE DANUBE CARPATHIAN REGION
THE GREEN HEART OF EUROPE

THE DANUBE CARPATHIAN REGION
THE GREEN HEART OF EUROPE

FORESTS

WILDERNESS

LARGE CARNIVORES

RIVERS AND WETLANDS

DANUBE STURGEON

The Drina River Basin in Bosnia and Herzegovina, Montenegro and Serbia

- The project is funded by the Italian Ministry for the Environment, Land and the Sea as “Greening economic development in Western Balkans through applying a nexus approach and identification of benefits of transboundary cooperation”. It will assess the interlinkages among four key sectors in the Drina Basin – water, energy, food and ecosystems.
- Budget: 300,000 EUR
- Implemented by UNECE with partners, ISRBC and others

Settore residenziale – Deep renovation

	Investimenti medio anno (milioni di €)	Investimenti (milioni di €)	Valore aggiunto incrementale (milioni di euro)			Nuova occupazione			
			da attività dirette e indirette	da attività indotte	Totale	da attività dirette e indirette	da attività indotte	Totale (unità complessive)	Nuova occupazione
Riqualificazione edifici	17.412	261.180	167.572	106.921	274.492	2.702.446	1.677.610	4.380.056	292.004

Sviluppo fonti rinnovabili elettriche

Potenza installata (GW)

	2015	2020	2025	2030
idroelettrico	18.512	18.808	18.808	18.939
eolico on-shore	8.958	8.963	12.570	15.577
fotovoltaico	18.905	20.057	23.015	24.562
biomassa	4.810	5.388	5.443	5.409
totale	51.185	53.216	59.836	64.487

Energia prodotta (TWh)

	2015	2020	2025	2030
Idroelettrico	48,1	47,5	49	49,7
eolico on –shore	14,6	14,6	25,6	32,7
Fotovoltaico	23,4	25,6	31,5	34
Biomassa	18,7	21,4	24,2	25,6
totale	104,8	109,2	130,2	142,1

Investimenti annui (M€)

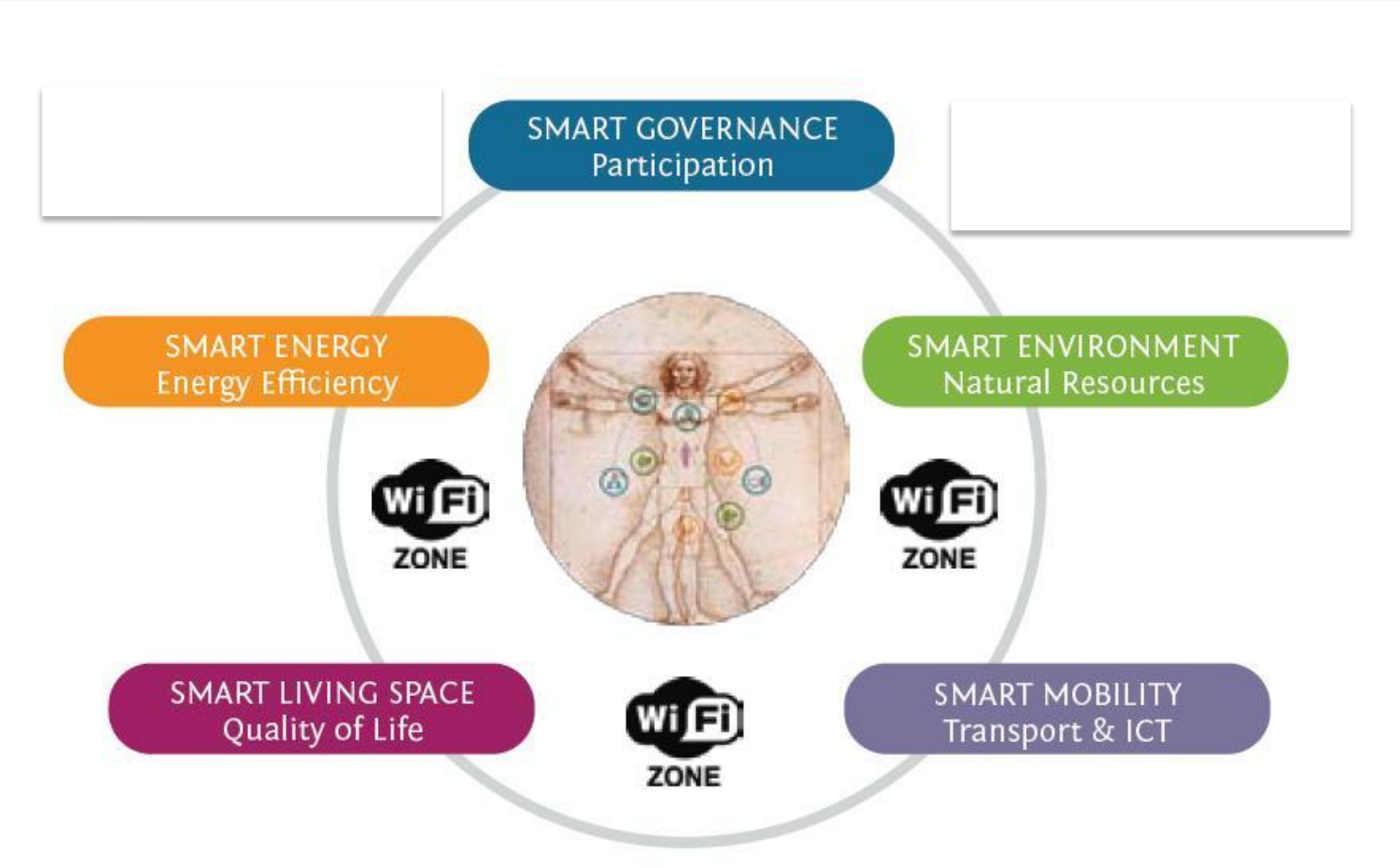
	2015-2020	2020-2025	2025-2030
idroelettrico	145	0	64
eolico on-shore	2	1006	839
fotovoltaico	267	467	213
biomassa	133	13	0
totale	**547**	**1.486**	**1.117**

Sviluppo fonti rinnovabili elettriche

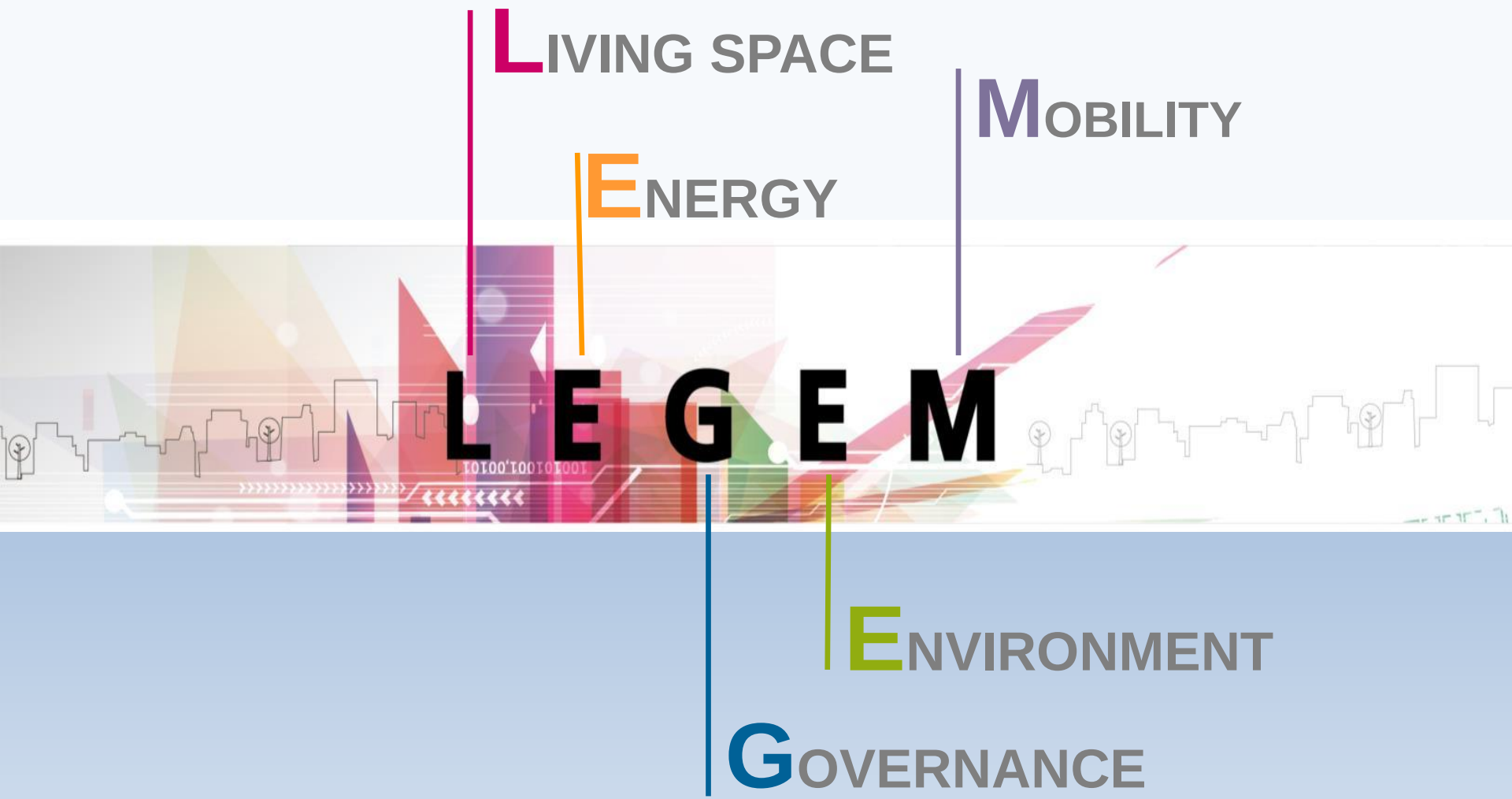
	Nuova occupazione			
	da attività dirette e	da attività indotte	Totale (unità complessive)	Nuova occupazione
Idroelettrico	10.977	7.569	18.546	1.236
Eolico onshore	82.970	61.317	144.287	9.619
Fotovoltaico	37.317	26.107	63.424	4.228
Biomasse	8.192	5.694	13.886	926
Totale FER	**139.455**	**100.688**	**240.143**	**16.010**

SMART CITIES

"Infusing smartness in all the infrastructure systems to increase the efficiency of functions, the quality of life and the civic participation"

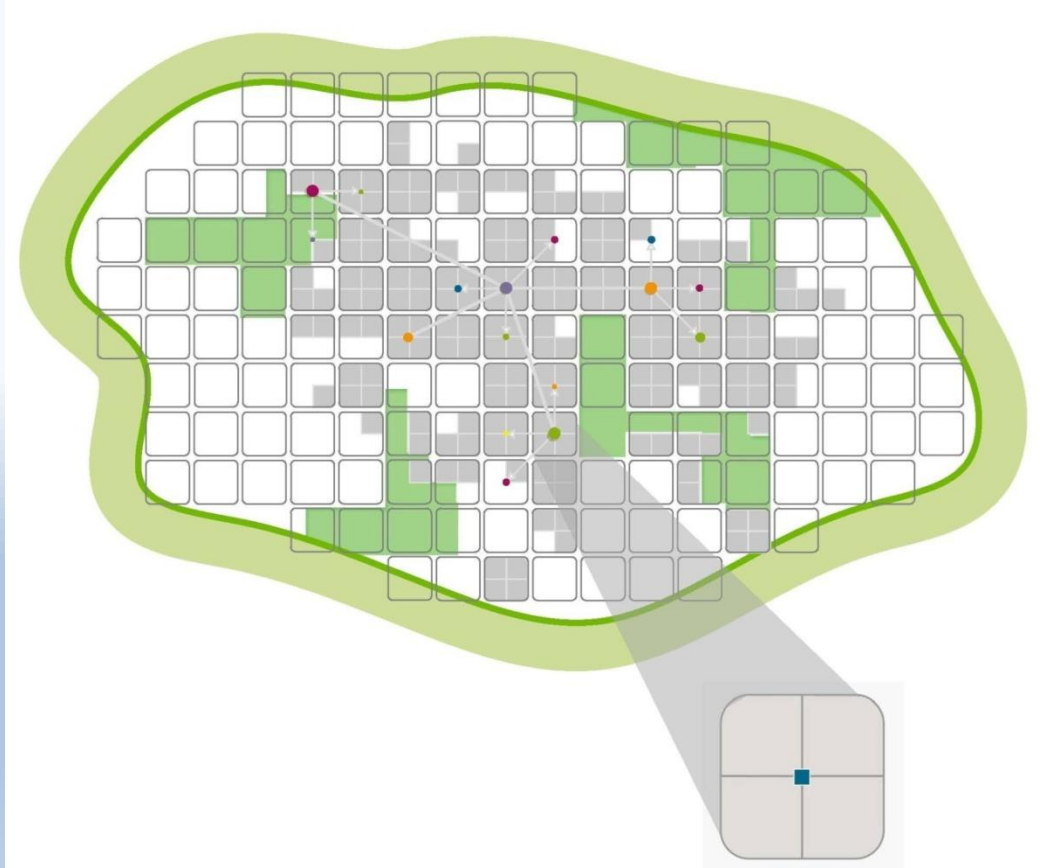


Challenges and answers


LIVING SPACE
MOBILITY
ENERGY
LEGEM
ENVIRONMENT
GOVERNANCE

LIVING SPACE

City Strategy



Multi-centric model
each centre is a self-sufficient village

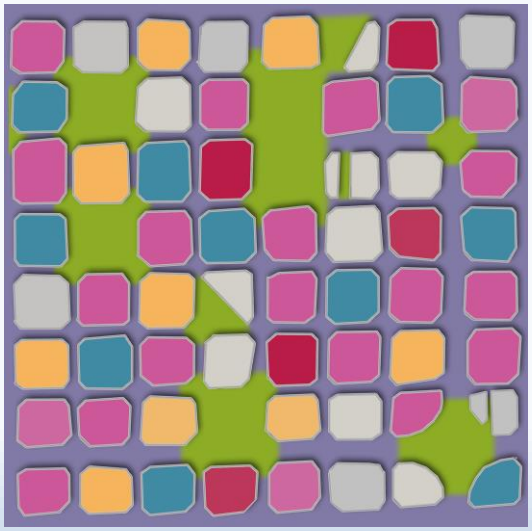
Village = module
from which arise several different possible combinations

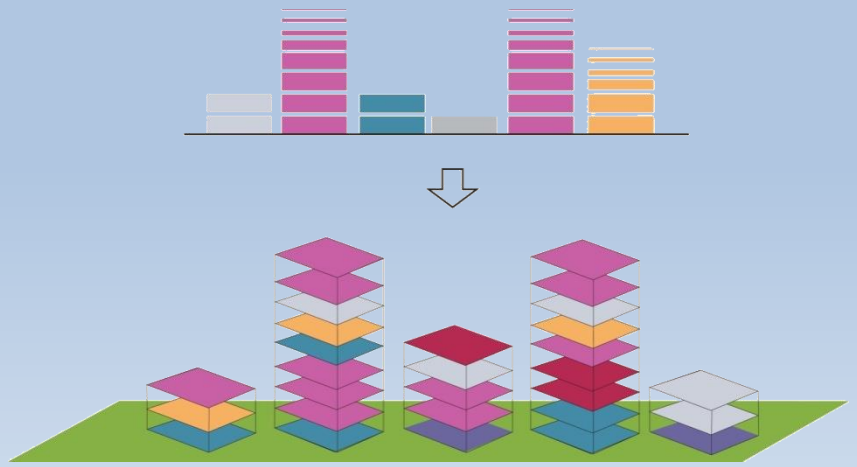
Basic regular grid
services and infrastructure networks will guide progressive aggregation of the module

Functions

To ensure a uniform and effective usability, the new city of **LEGEM** is characterized by **a balanced functional mix.**

Functional percentages can be customized according to the specific strategic political choices for the new city.

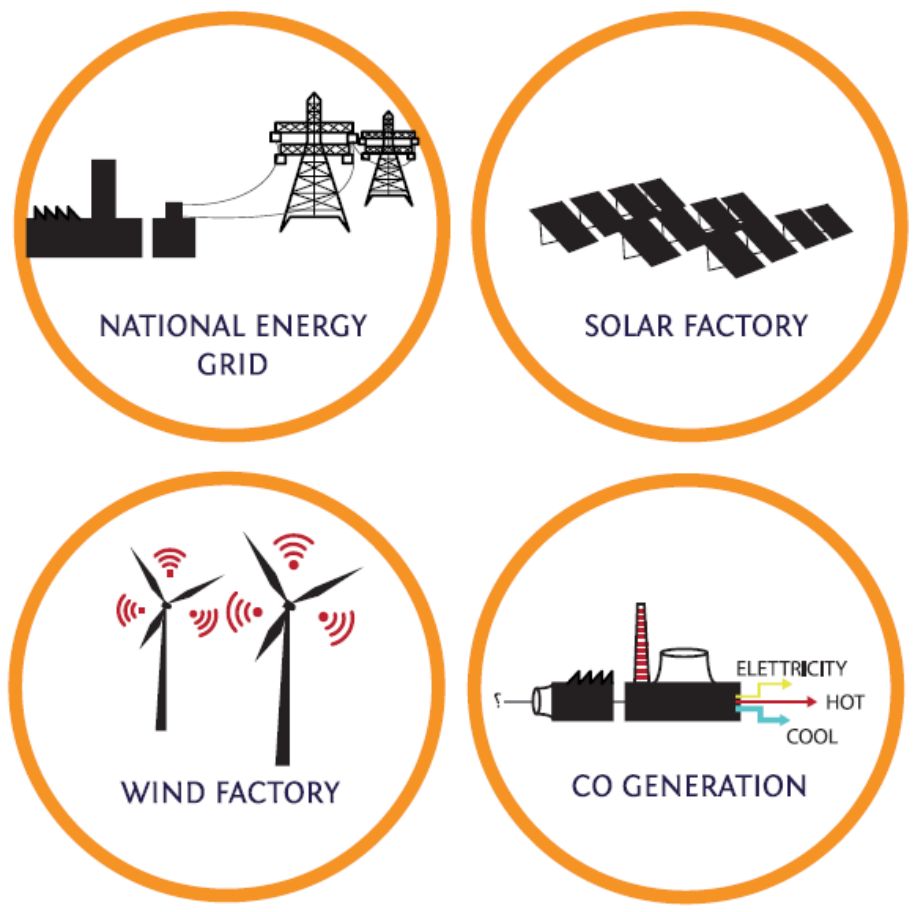




- 30% RESIDENTIAL
- 12% COMMERCIAL
- 10% RETAIL
- 8% INDUSTRIAL
- 15% PUBLIC FACILITIES & ISTITUTIONAL
- 6% RECREATIONAL
- 8% PUBLIC GREEN
- 11% TRANSPORTATION UTILITY


EGEM
ENERGY

Energy Production



The **Clean Energy Park** is the main location where the first block of energy sources will be established.

The Clean Energy Park shall be:

- Established 15 to 30 Km out of the Green Belt
- Based on an integrated mix of sources
- Connected to the National Energy Grid (to ensure 100% of energy provision)
- Connected to the city backbone

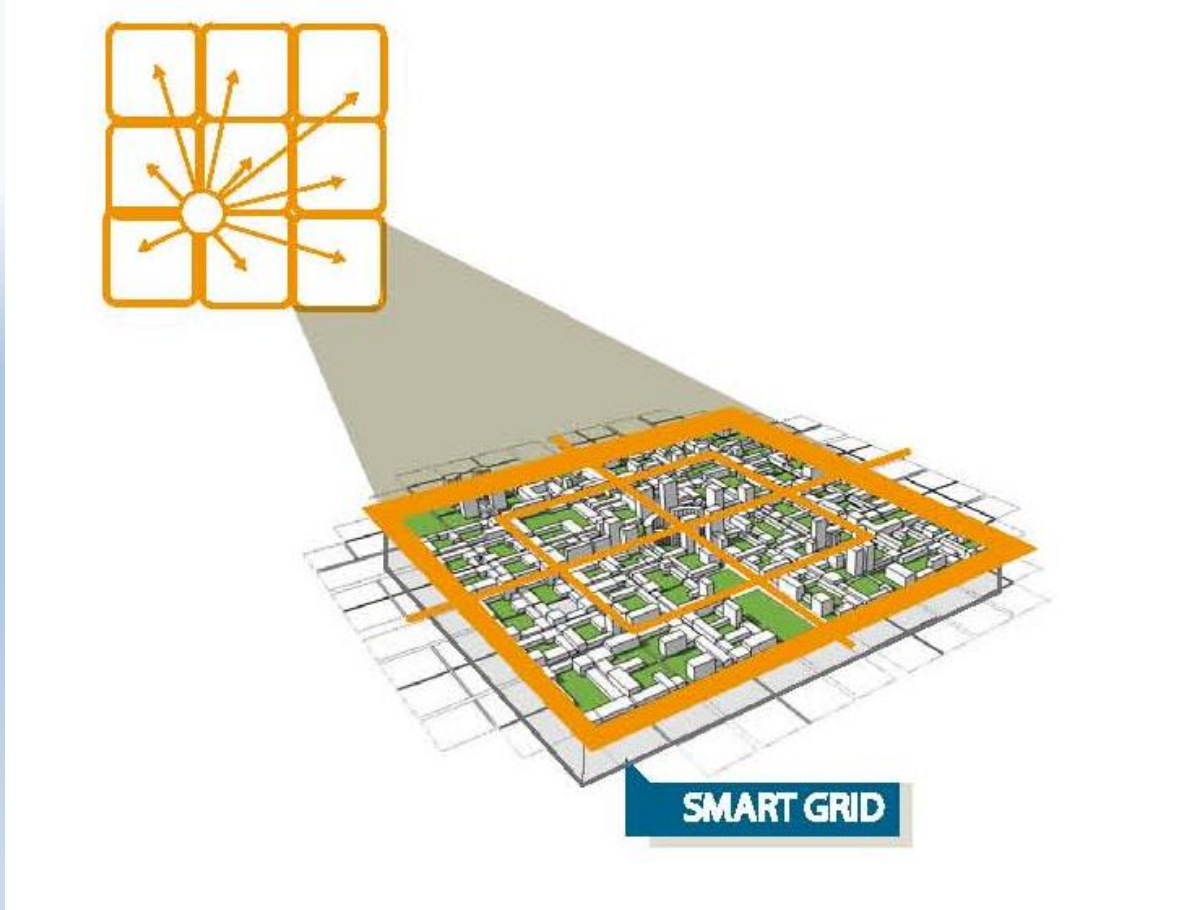
ENERGY

Key Features of LEGEM Energy System

- **Integration**: full integration of different energy sources, types (electricity and gas) and organization (central production and distributed production)
- **Mixing**: the system combines new and renewable energy sources with non renewables (the middle term target being the minimization of the non renewable sources)
- **Scalability**: the entire system is designed to be scalable in order to support the city development process
- **Flexibility**: the system is designed to minimize the energy absorbtion of the central production factory by using “green approaches” in designing other subsystems (buildings, mobility, etc.)
- **Dynamic balance**: the overall system is designed to balance the production with the energy produced in the distributed systems and to manage energy demand and local needs.

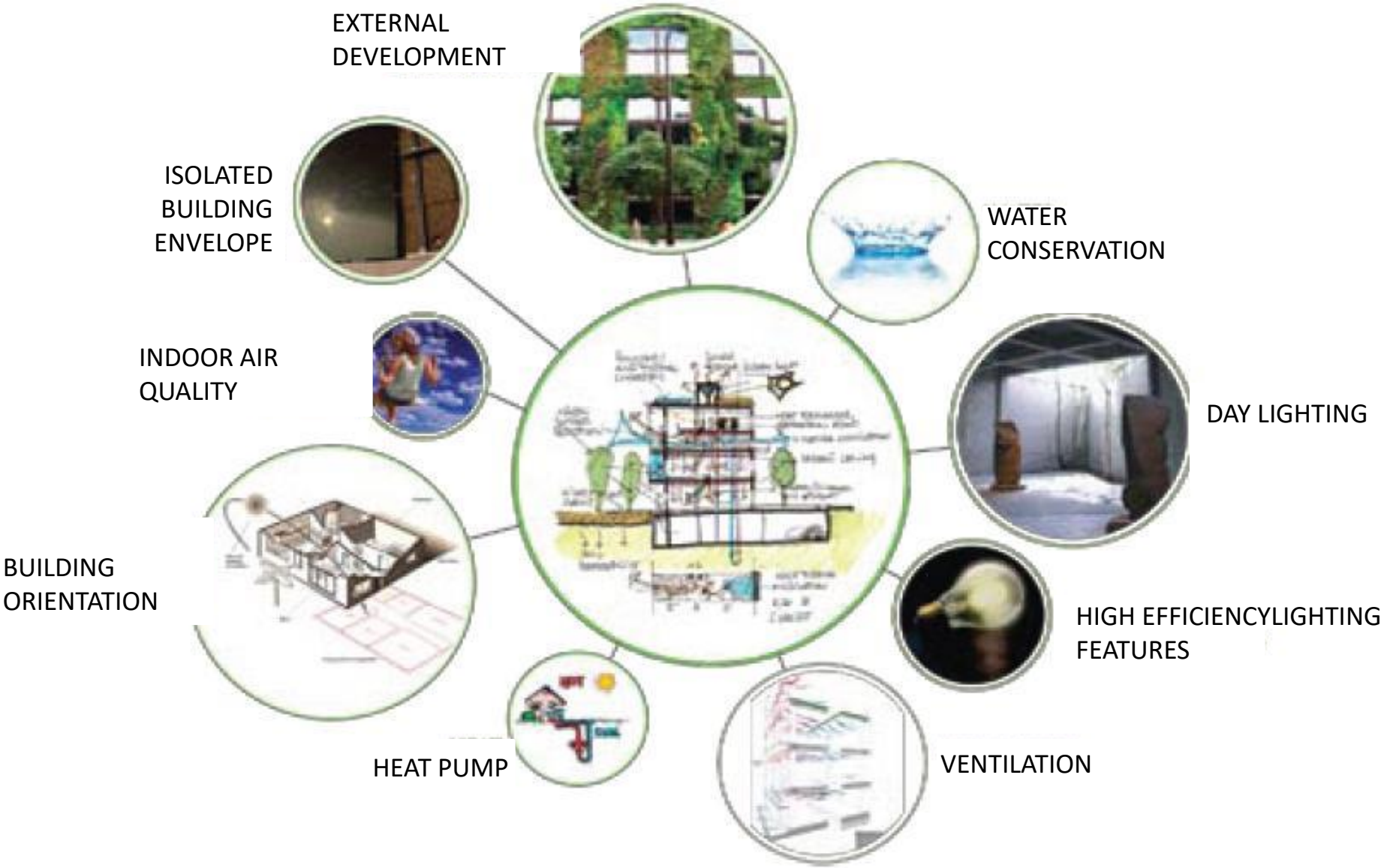
Energy Distribution (Primary Network)

The Smart Grids (Local Network)



ENVIRONMENT

Green Building



ENVIRONMENT

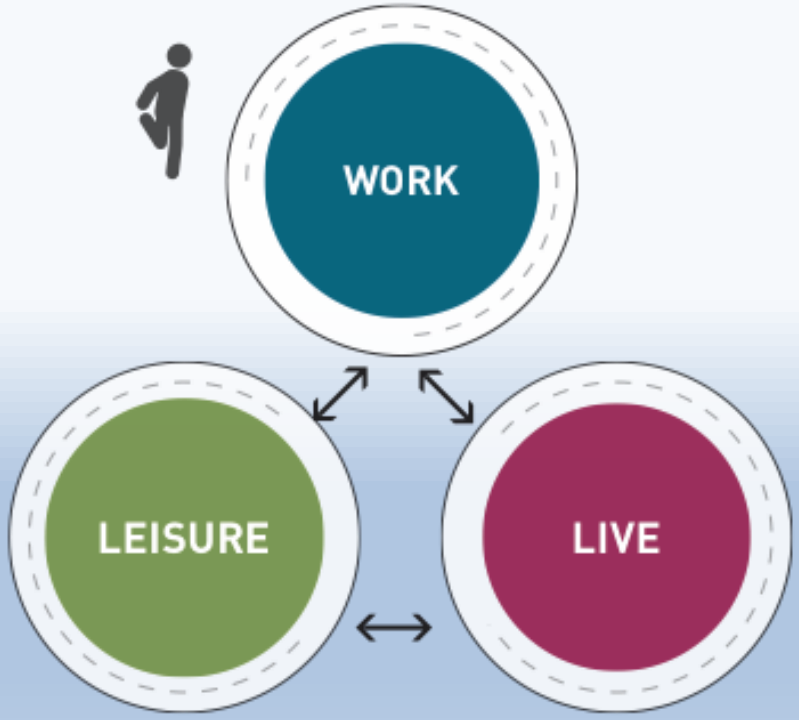
Innovative Features

The LEGEM Waste Management system is based on the following pillars:

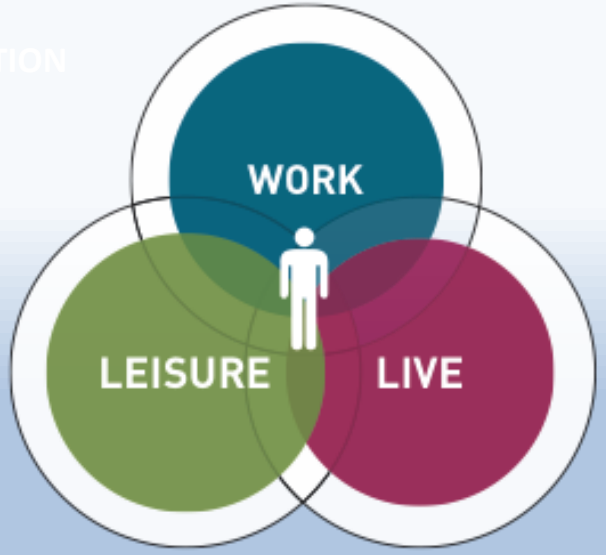
- **Production:** prevention and minimization of waste from different sources
- **Recycling & Reuse:** recovery of materials and energy from waste
- **Collection:** optimization of collection system for low emissions and energy consumption
- **Treatment:** application of Best Available Technologies
- **Disposal:** minimization of sanitary landfill practice


LEGEM
MOBILITY

Mobility System Vision



Zoning of Activities leads to reliance on private cars



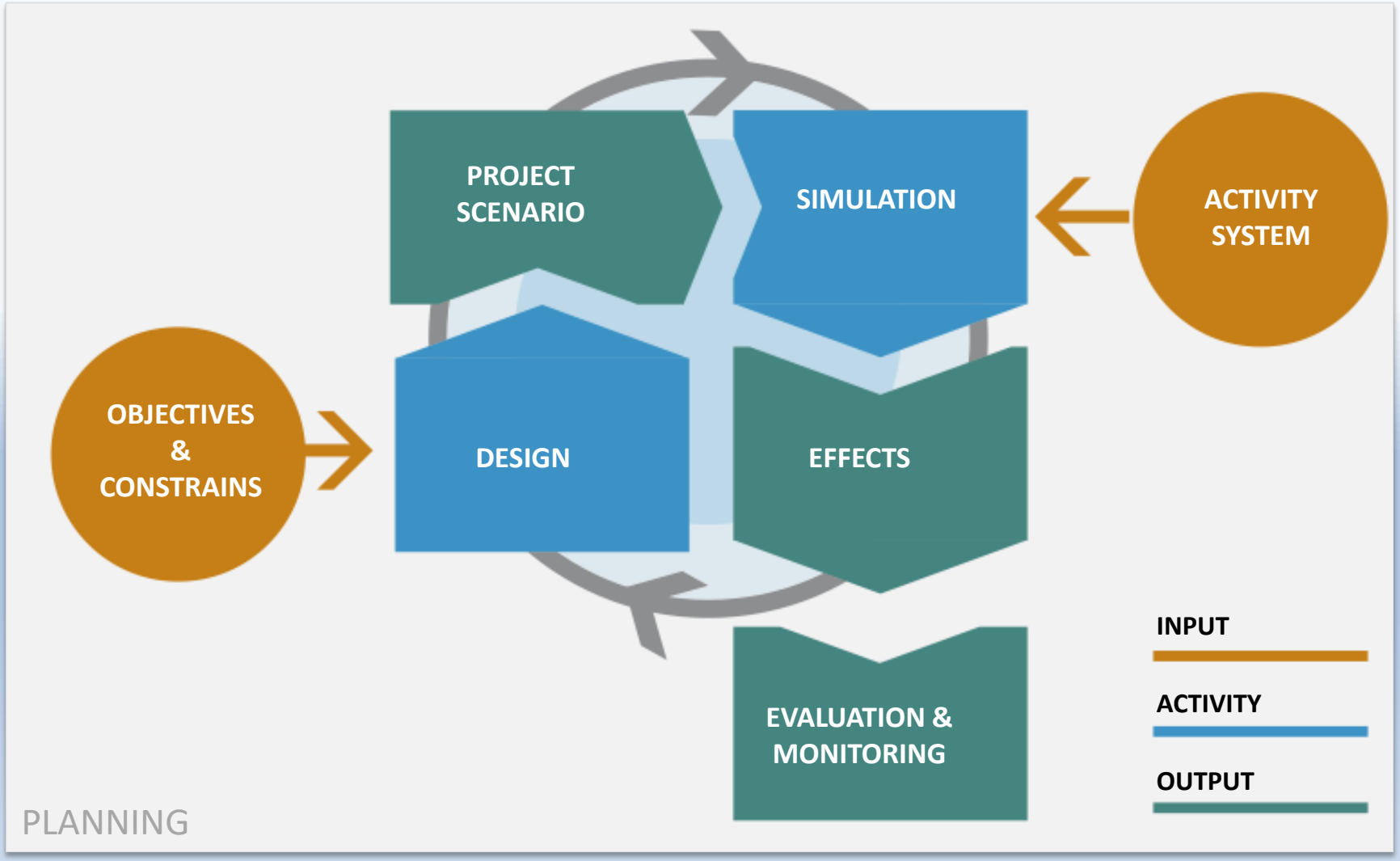
Compact Junctions reduce travel and allow walking and cycling

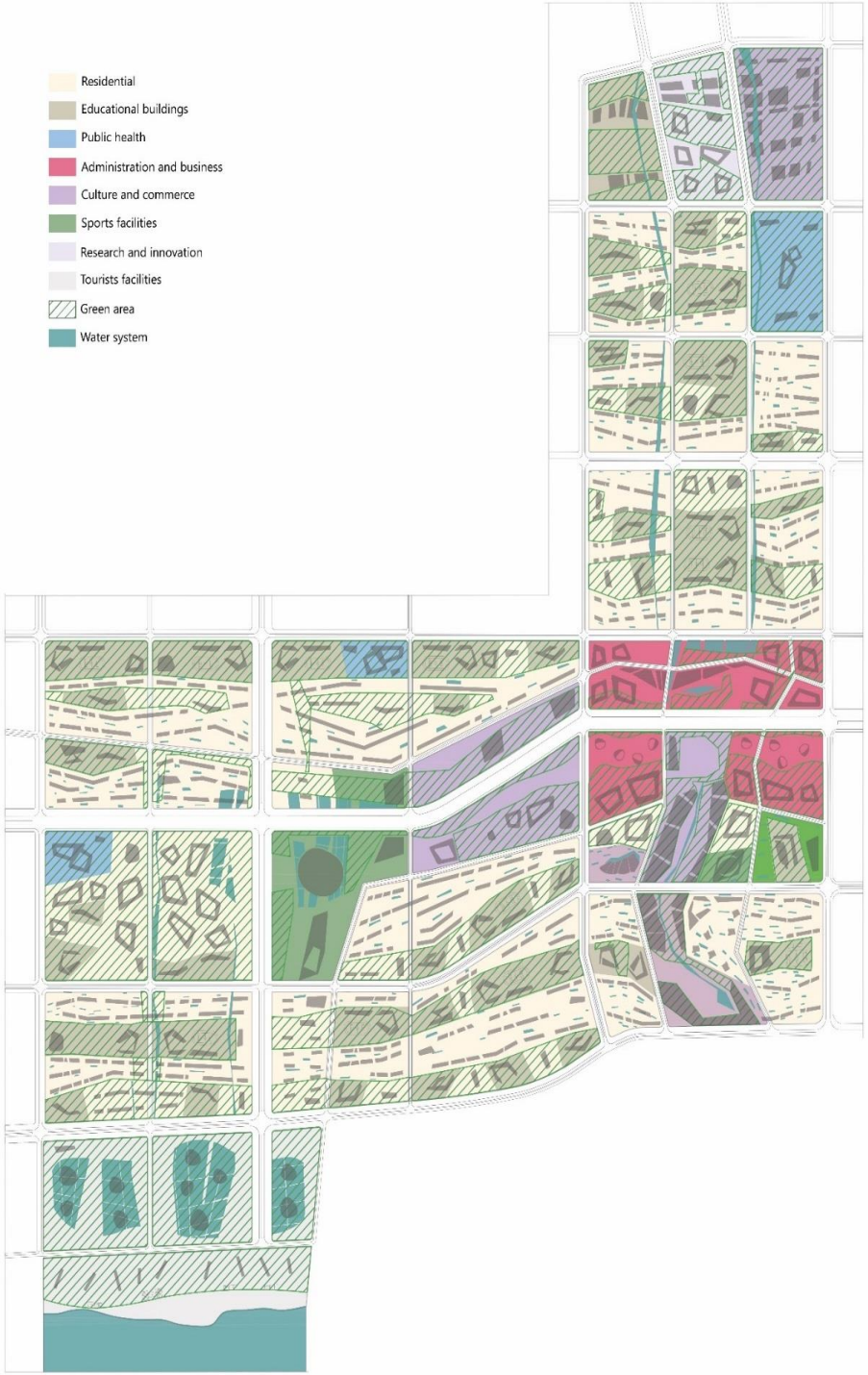
Transport Planning & Design

MOBILITY

Objective:

Rigorous and rational transport **PLANNING** and **DESIGN**




Residential
Educational buildings
Public health
Administration and business
Culture and commerce
Sports facilities
Research and innovation
Tourists facilities
Green area
Water system