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City Trends



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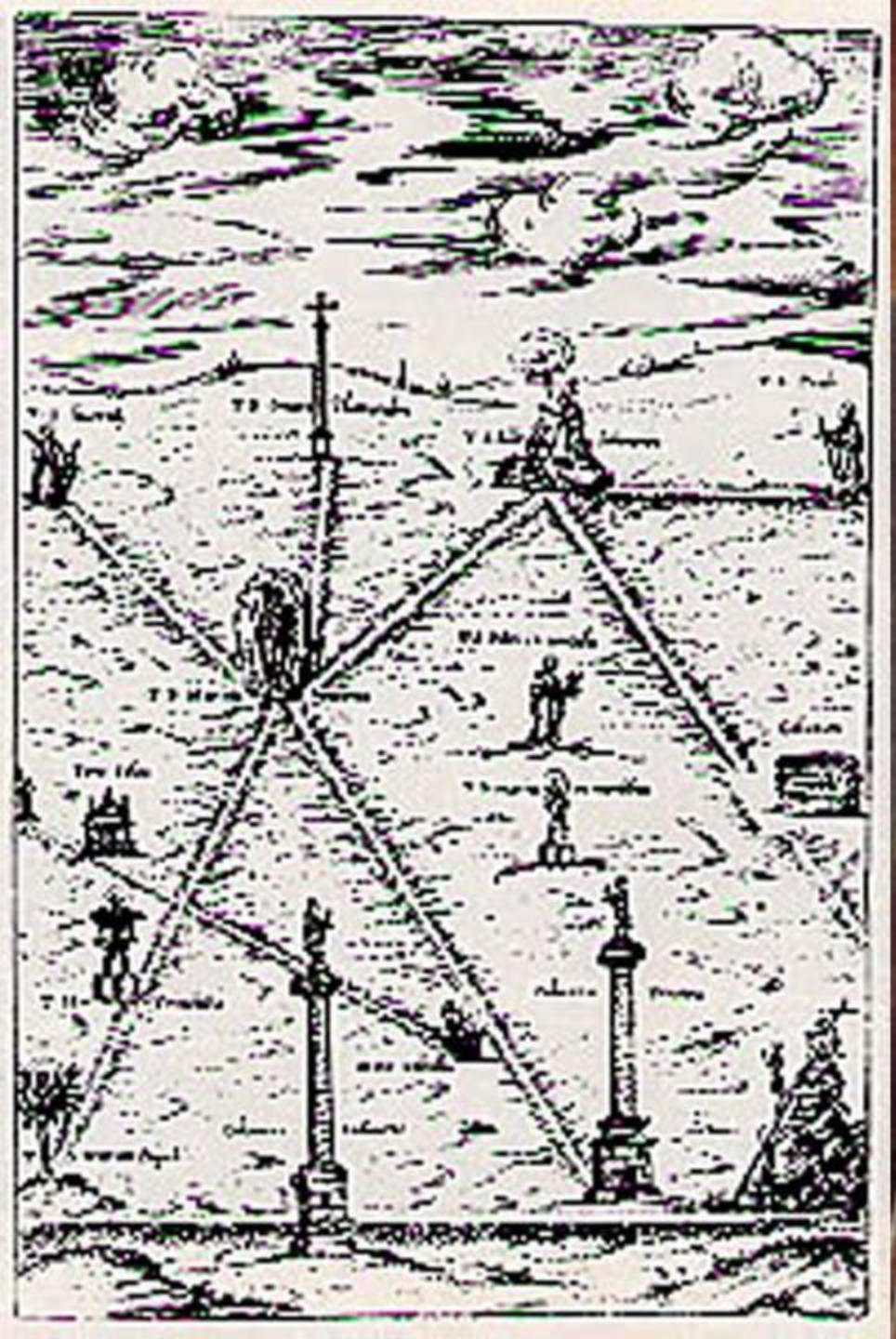
1 What kind of City




Smithfield
Piazza
Key
Custom House


WEST
SMITH
FIELD
HOLBOURN
CHEAPSIDE

2 City Trends

We are in the "urban millennium"

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Urban millennium

Population

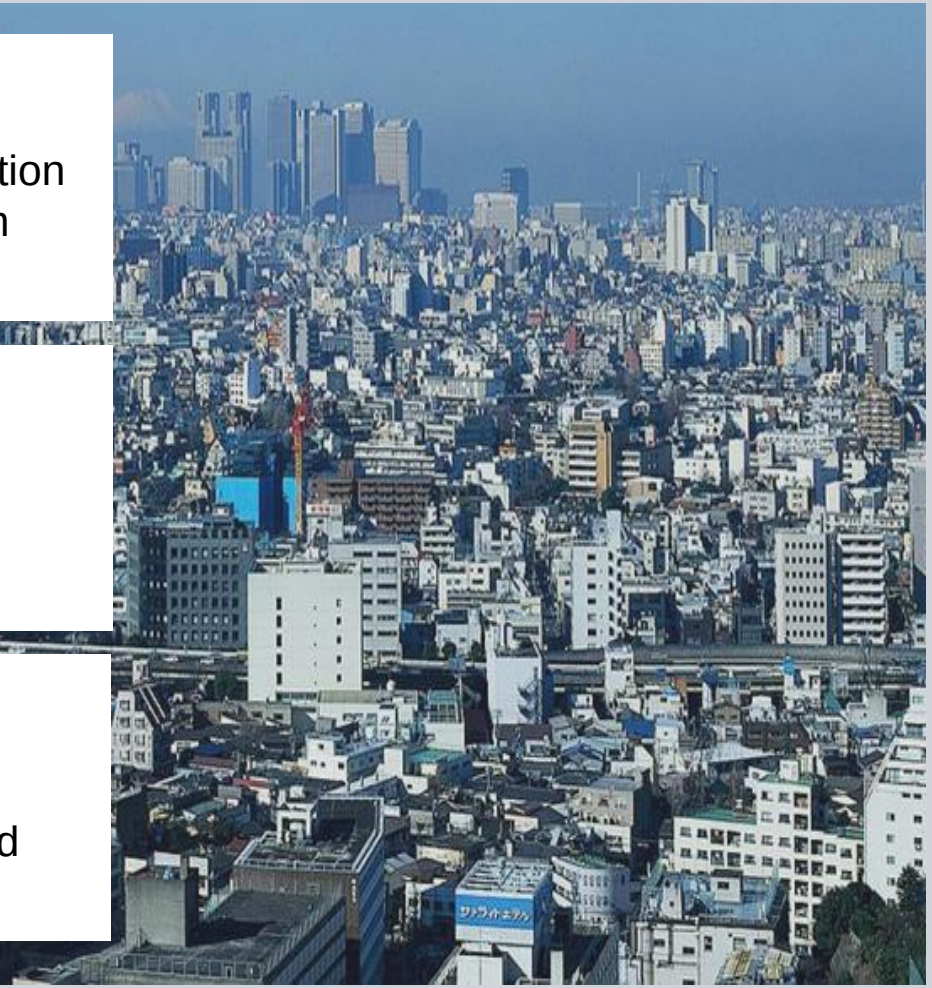
In 2007 ~50% of the world's population was living in cities, an increase from 3.5 B to 4.7 B until 2030

Powerhouses

50% of world GDP is produced in cities with a population over 750 K

Major energy and climate factor

75% of energy consumed in cities
80% of CO^2 emissions are produced in cities



The 21st Century will effect the ways we live…

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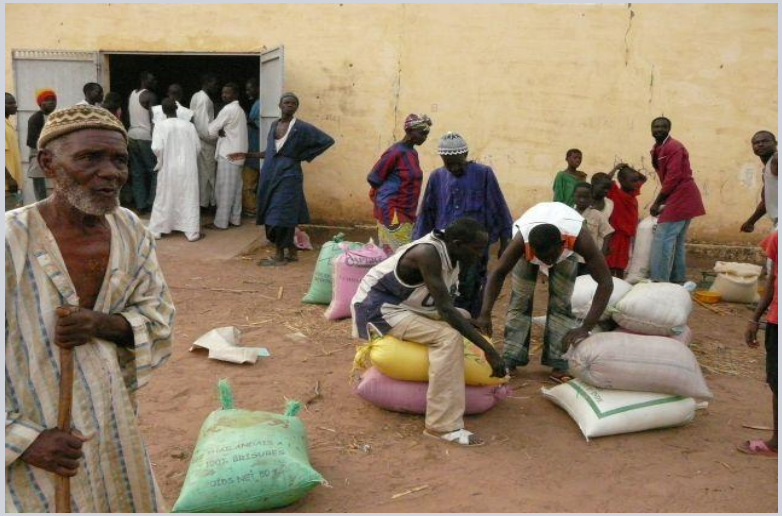

Cities are thrilling, exciting, creative, liberating, cruel and inhuman

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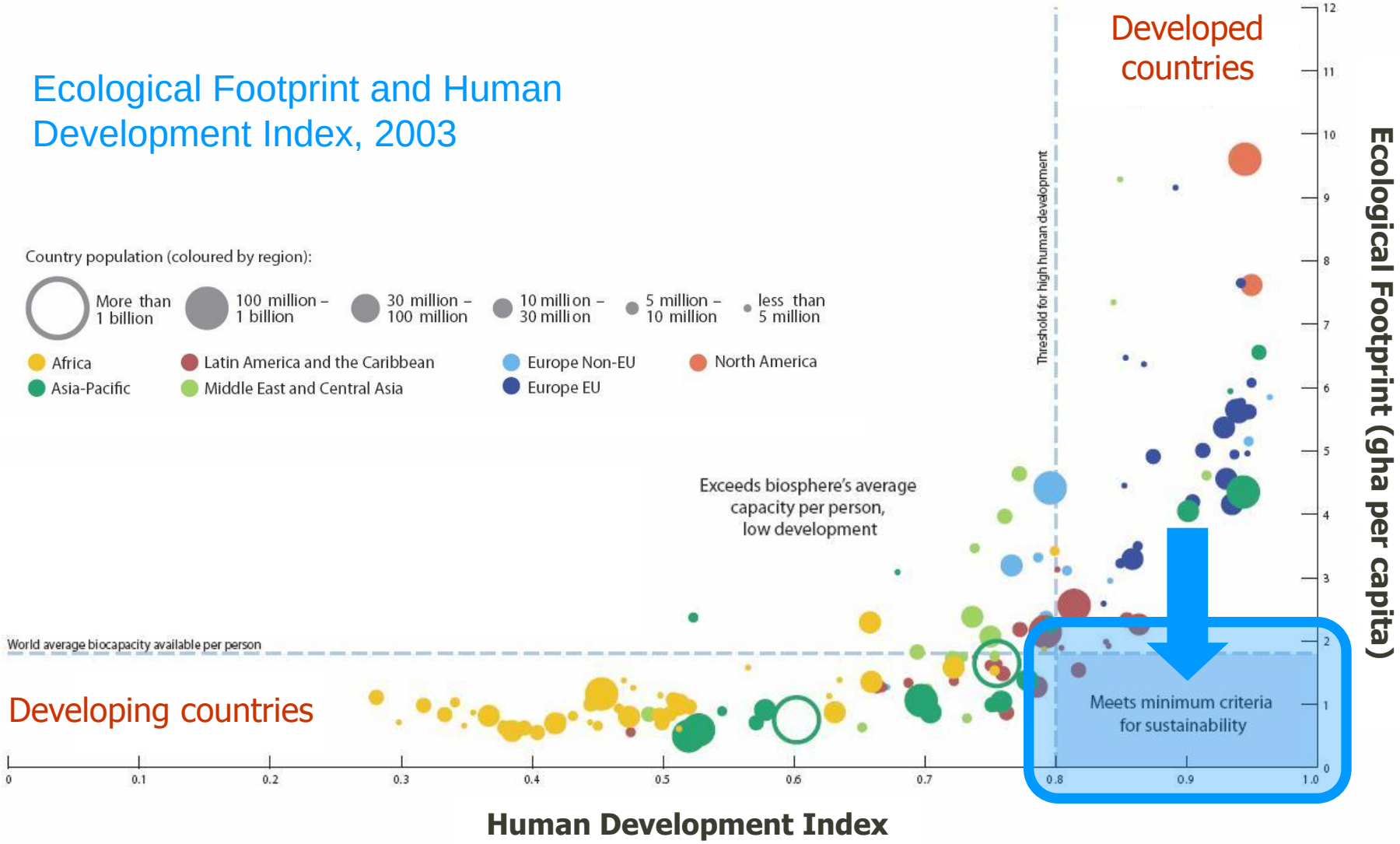
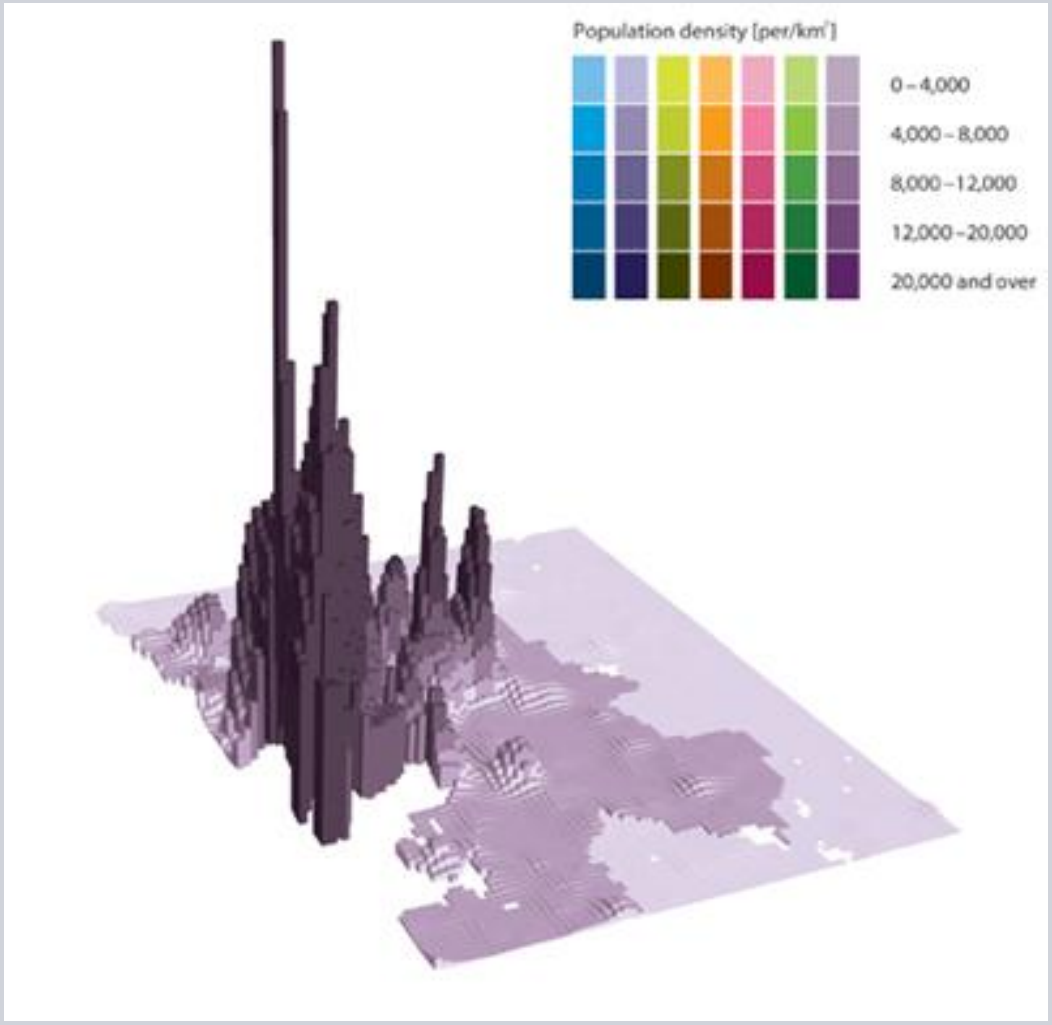
Ecological Footprint and Human Development Index, 2003



ARUP

Mumbai - 34,000 people per km (sq)



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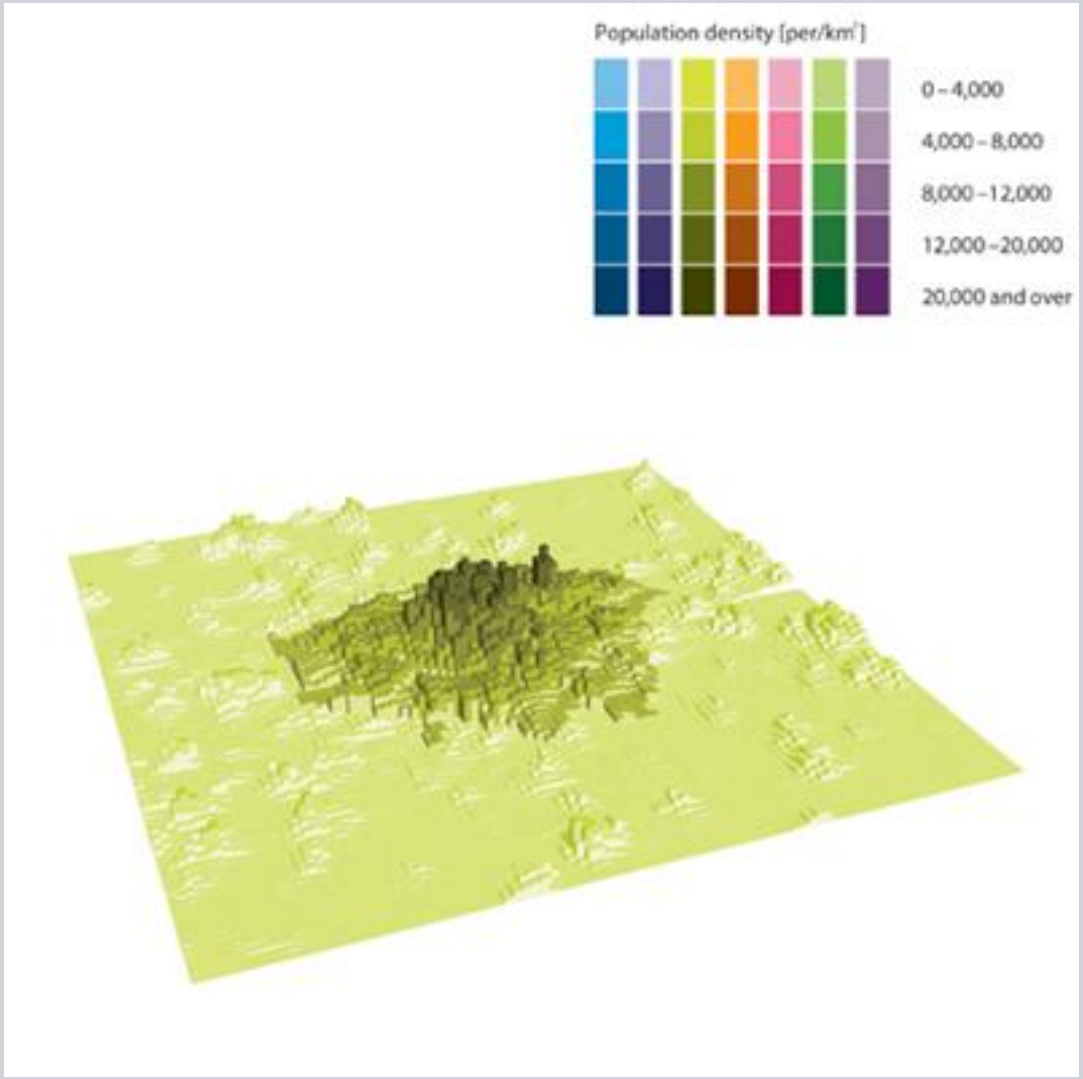
London - 4500 people per km (sq)



6 July 2005

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Rising Urban Stars

technology

economy

environment

Future Scenarios

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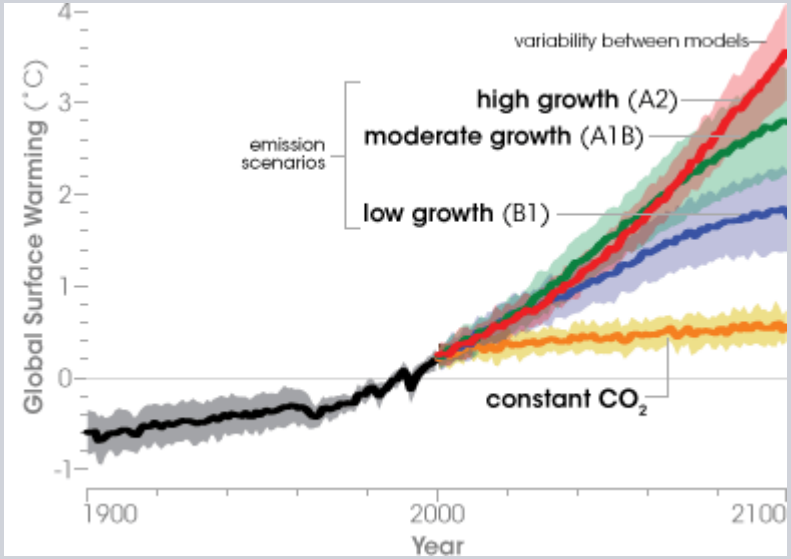
• Surface temperature of the Earth is likely to increase by 1.1-6.4°C by the end of the 21st century, with a best estimate of 1.8-4.0°C.



•The average rate of warming over each inhabited continent is very likely to be at least twice as large as that experienced during the 20th century.

•Most of North America; all of Africa, Europe, northern and central Asia; and most of Central and South America are likely to warm more than the global average.

The International Energy Agency's, the World Energy Outlook, has been sounding strong warnings to policymakers for some years now. This year, for the first time, it has put a deadline to its warnings: -

by 2017, if present trends continue, the world will be locked into a 2°C temperature rise.

3 Meeting the Challenge

Sustainable Green Growth – Energy efficiency in the city

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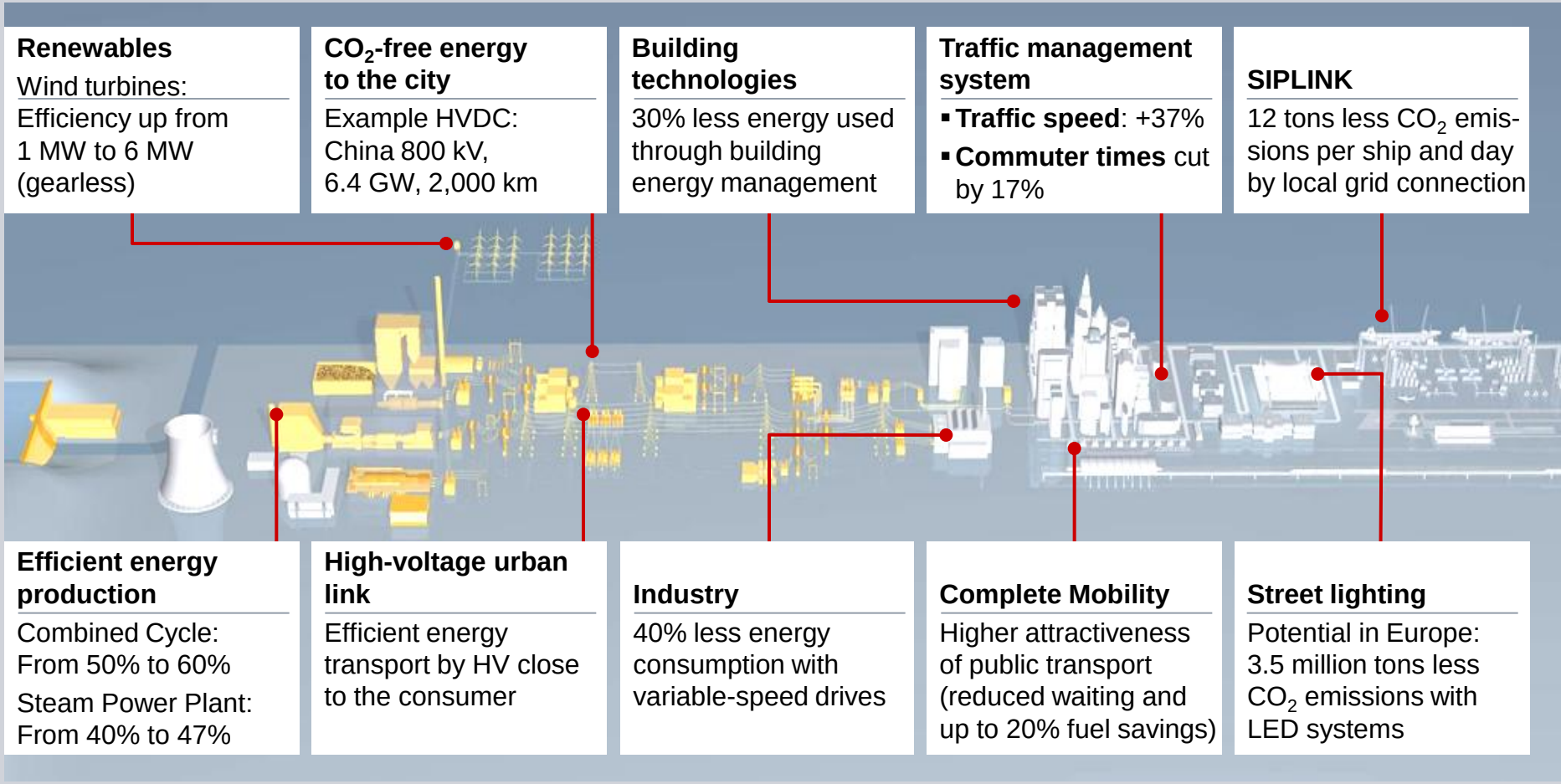
Existing technology achieves high gains in efficiency and CO^2 abatement



Renewables
Wind turbines:
Efficiency up from 1 MW to 6 MW (gearless)

CO_2-free energy to the city
Example HVDC: China 800 kV, 6.4 GW, 2,000 km

Building technologies
30% less energy used through building energy management

Traffic management system
- **Traffic speed**: +37%
- **Commuter times** cut by 17%

SIPLINK
12 tons less CO_2 emissions per ship and day by local grid connection

Efficient energy production
Combined Cycle: From 50% to 60%
Steam Power Plant: From 40% to 47%

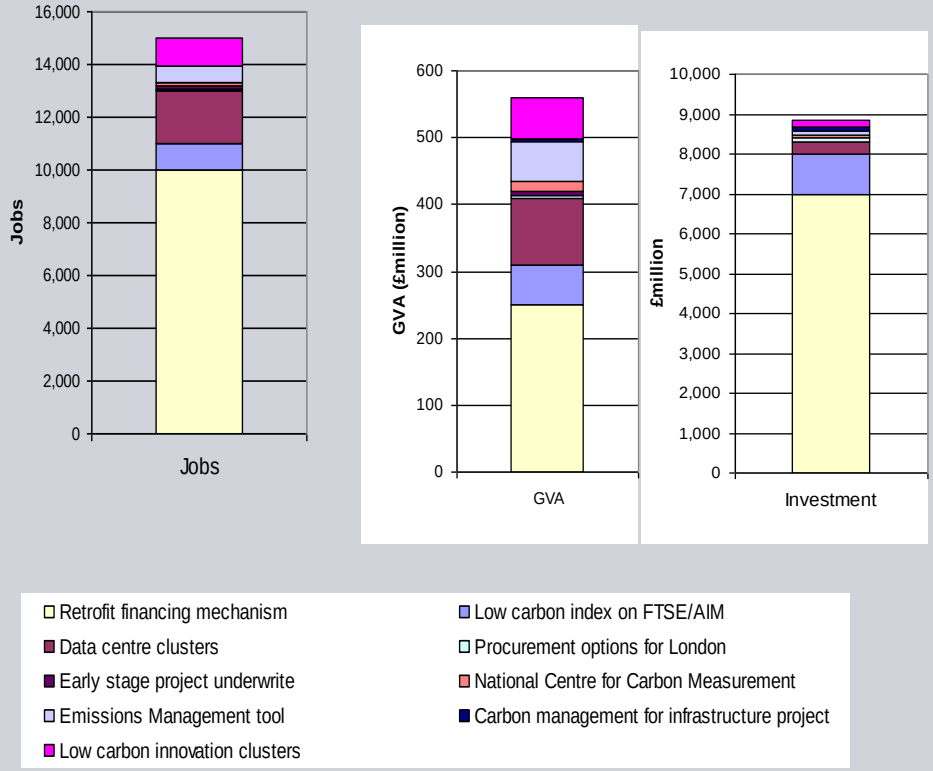
High-voltage urban link
Efficient energy transport by HV close to the consumer

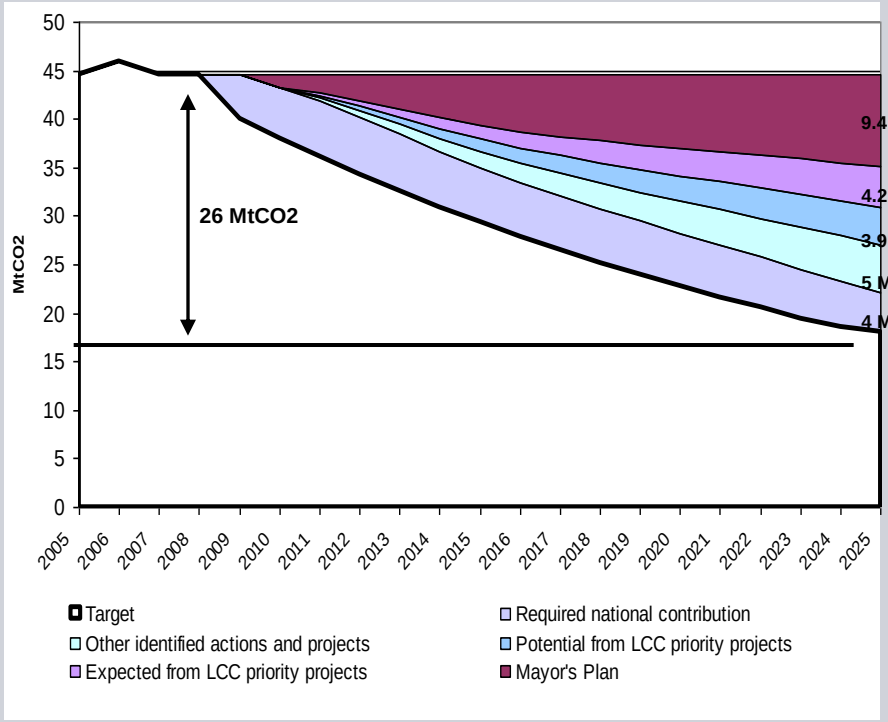
Industry
40% less energy consumption with variable-speed drives

Complete Mobility
Higher attractiveness of public transport (reduced waiting and up to 20% fuel savings)

Street lighting
Potential in Europe: 3.5 million tons less CO_2 emissions with LED systems

The projects with the greatest economic benefits





4 Rethinking Required

Cities offer huge growth potential and need pioneering solutions to solve their problems

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- How to **get enough electric power,** … how to **bring enough goods** into the city?
- How to **manage the ever increasing traffic**?
- How to r**educe the energy consumption** … and emissions?
- How **to ensure security and safety** of people?
- How to **finance all** this?

From closed island solutions and single products to cross-linked intelligent infrastructure solutions

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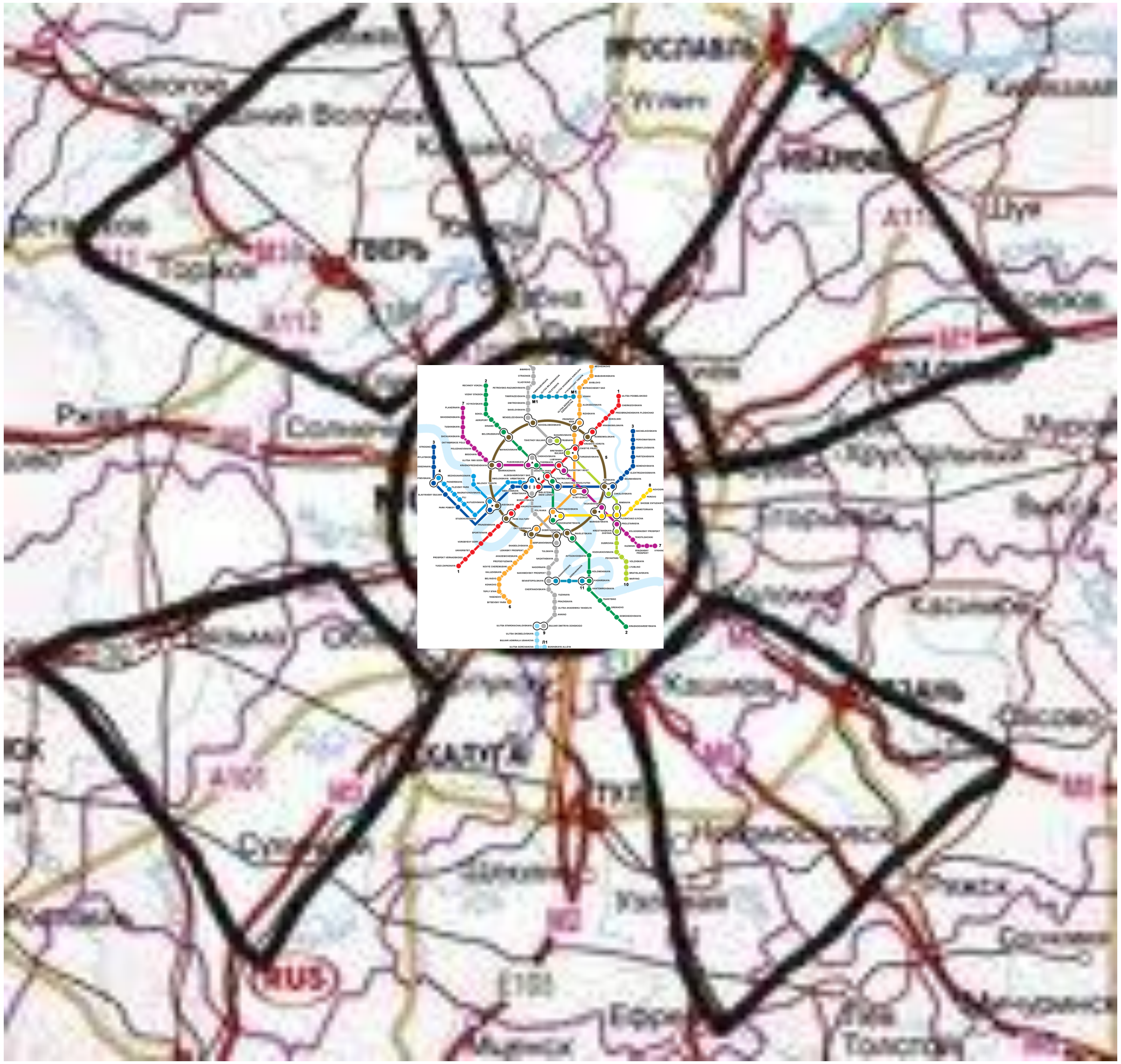
Moscow

Moscow




PIZZA-CAFE

Press Office City of Munster, Germany

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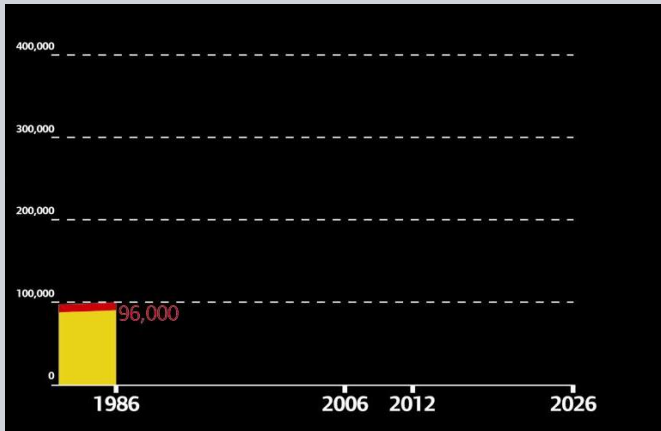
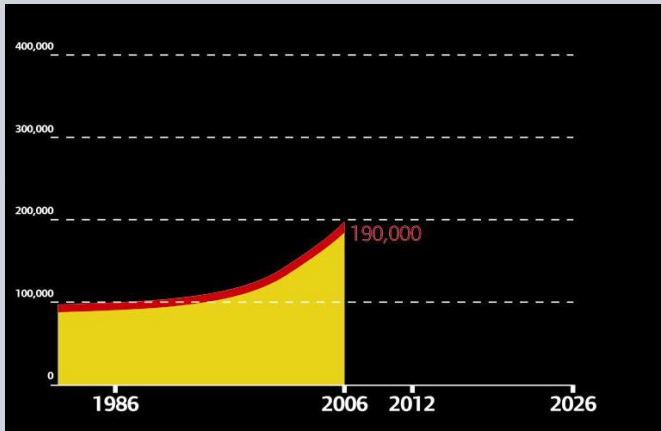
5 Smart Growth

1986 2006 2012 2026



1986 2006 2012 2026



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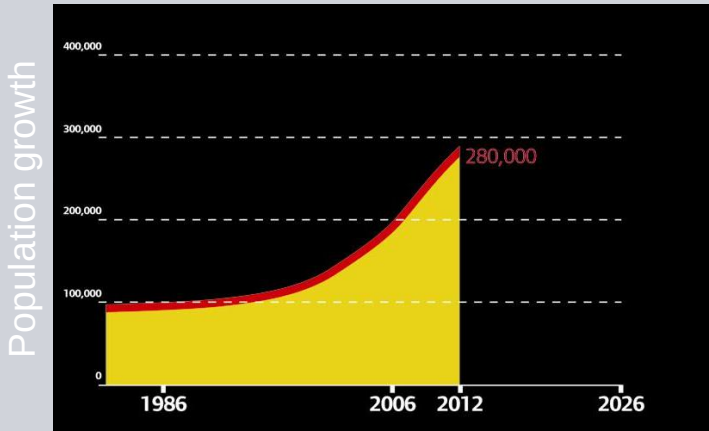

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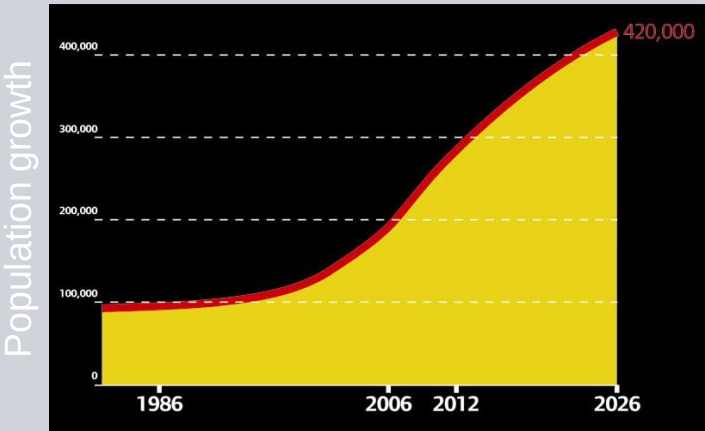

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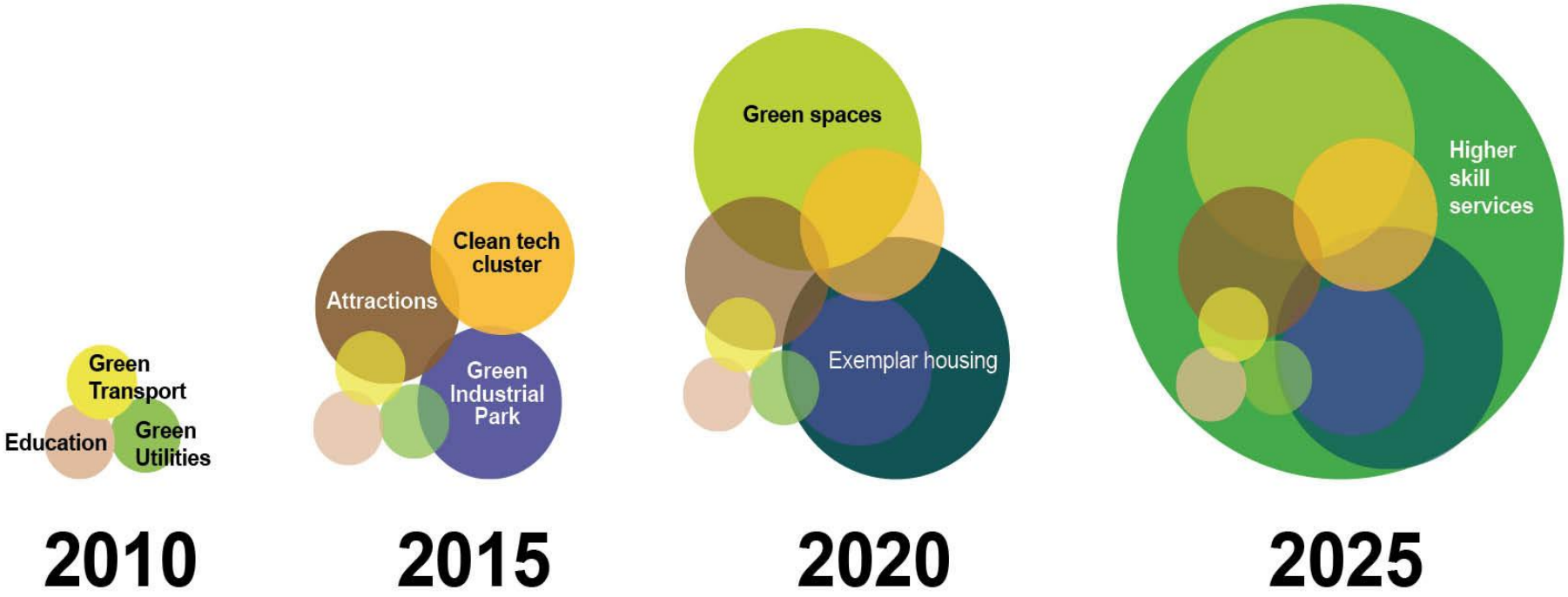
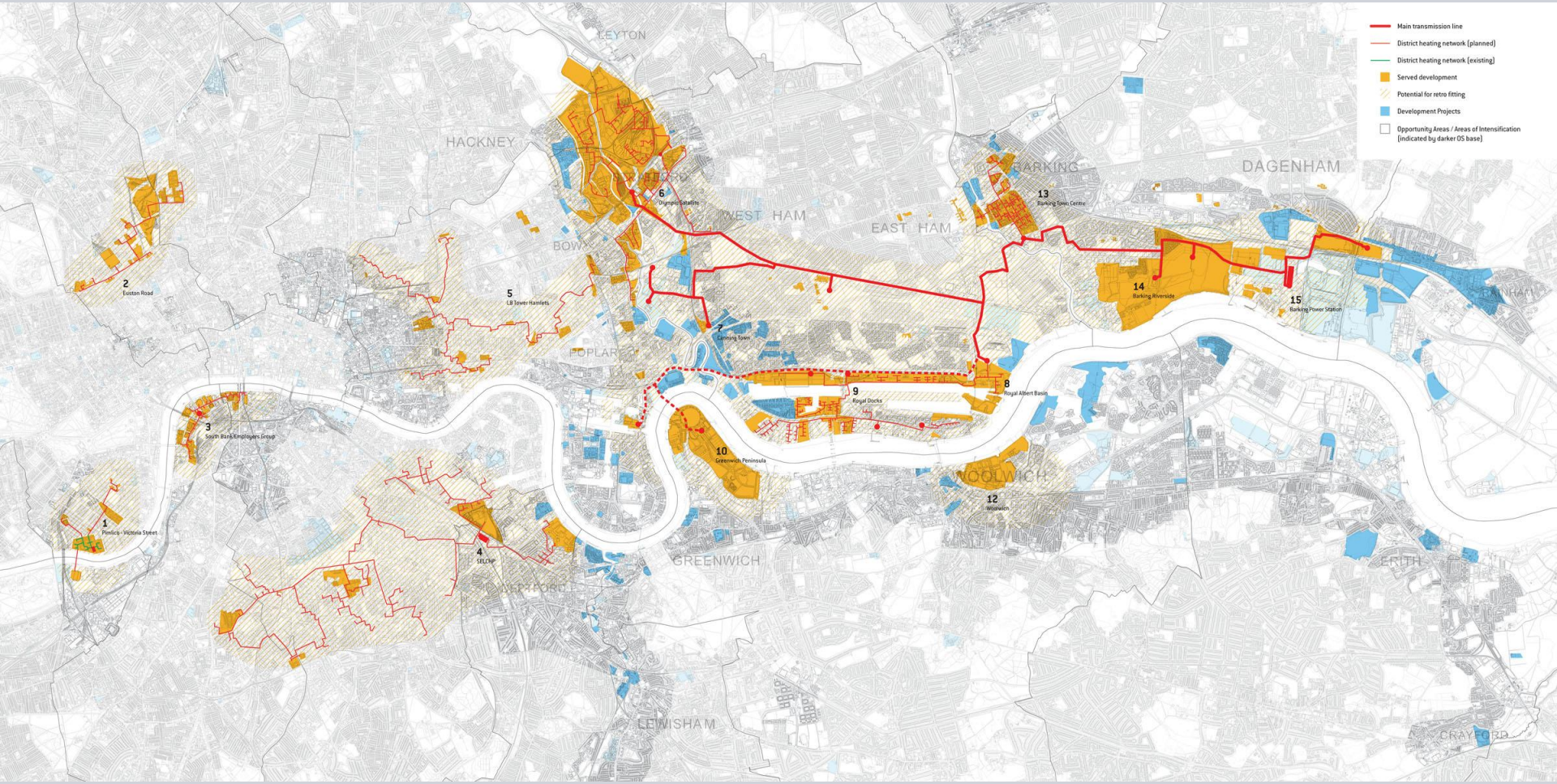
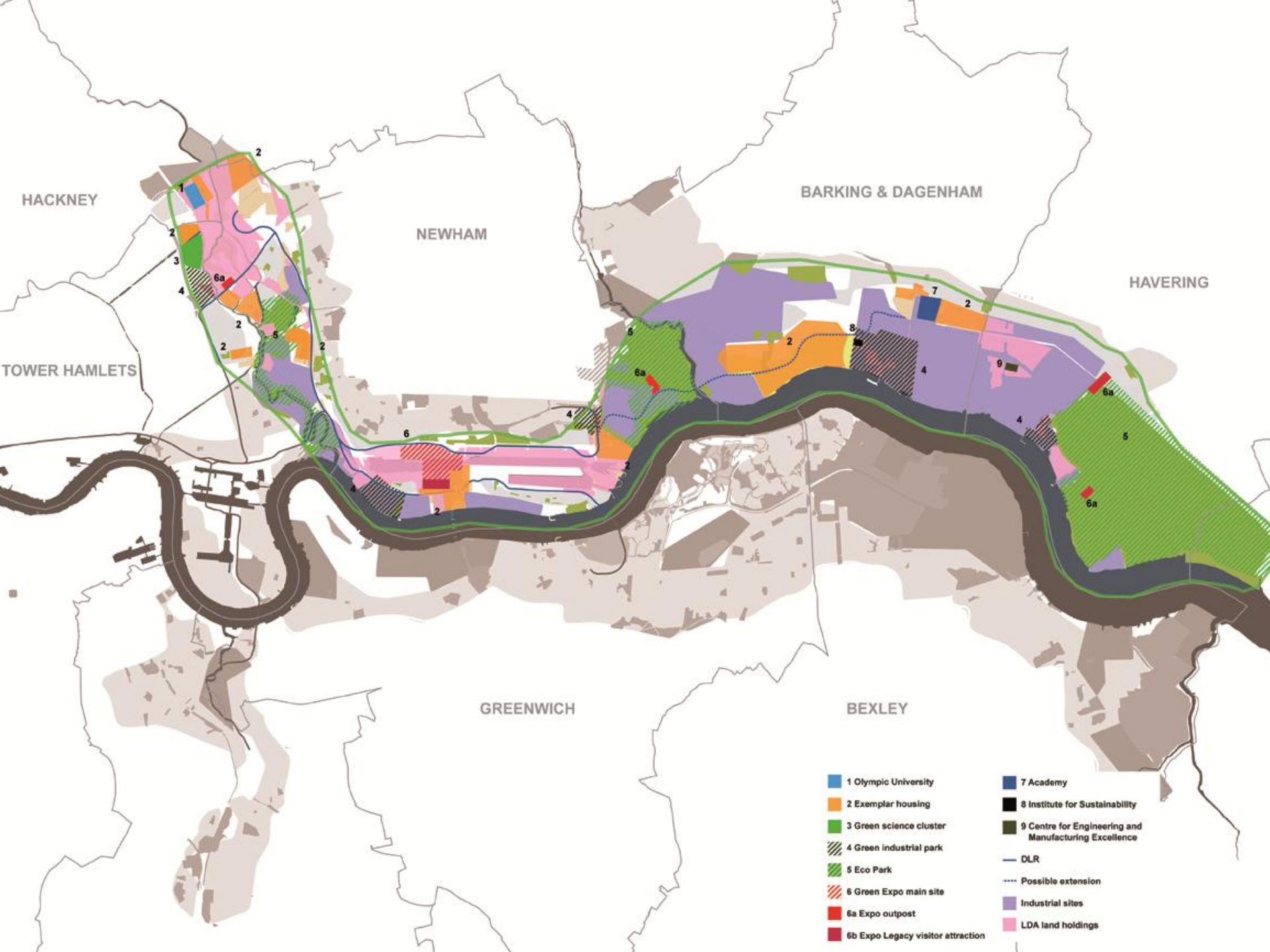
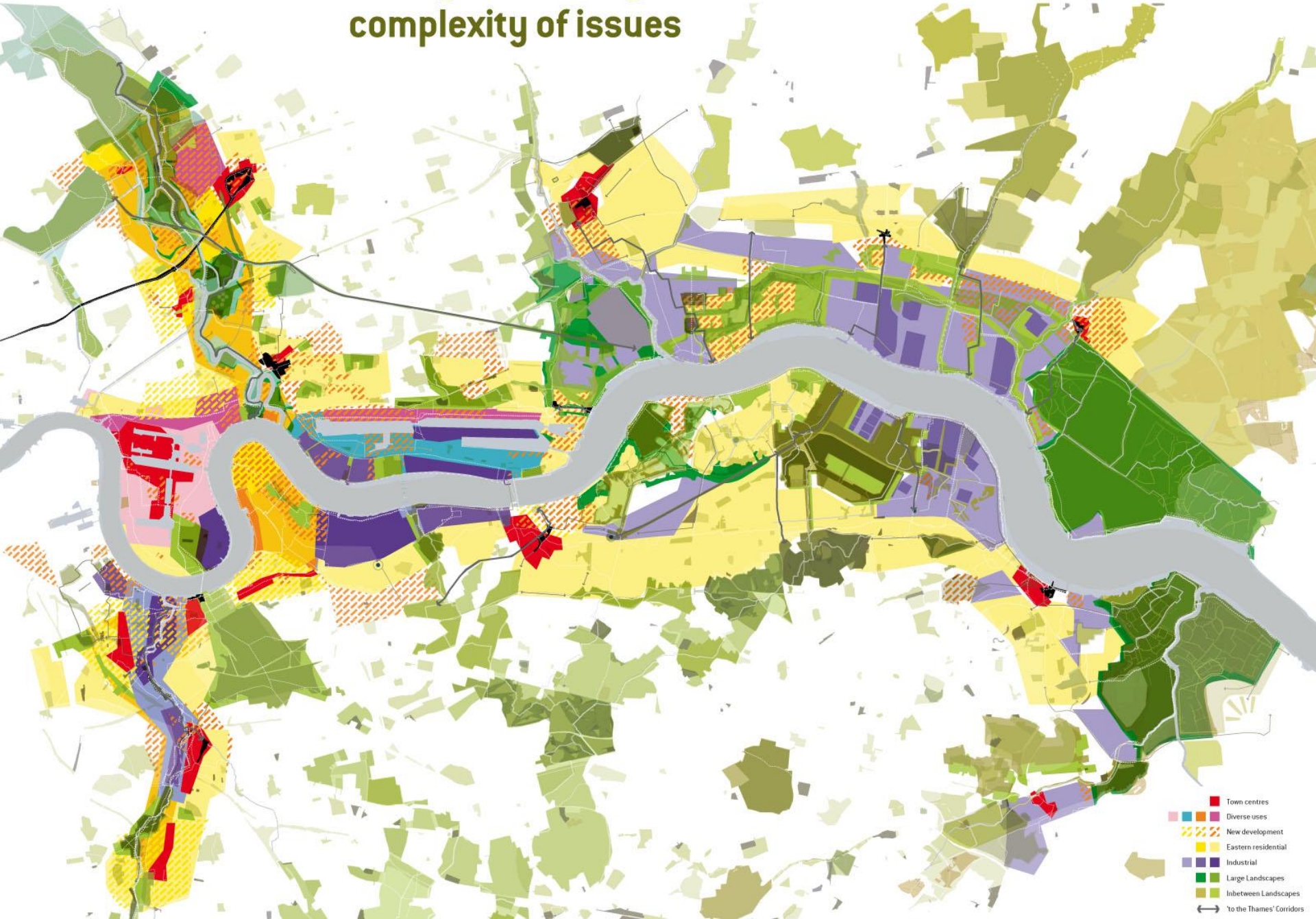
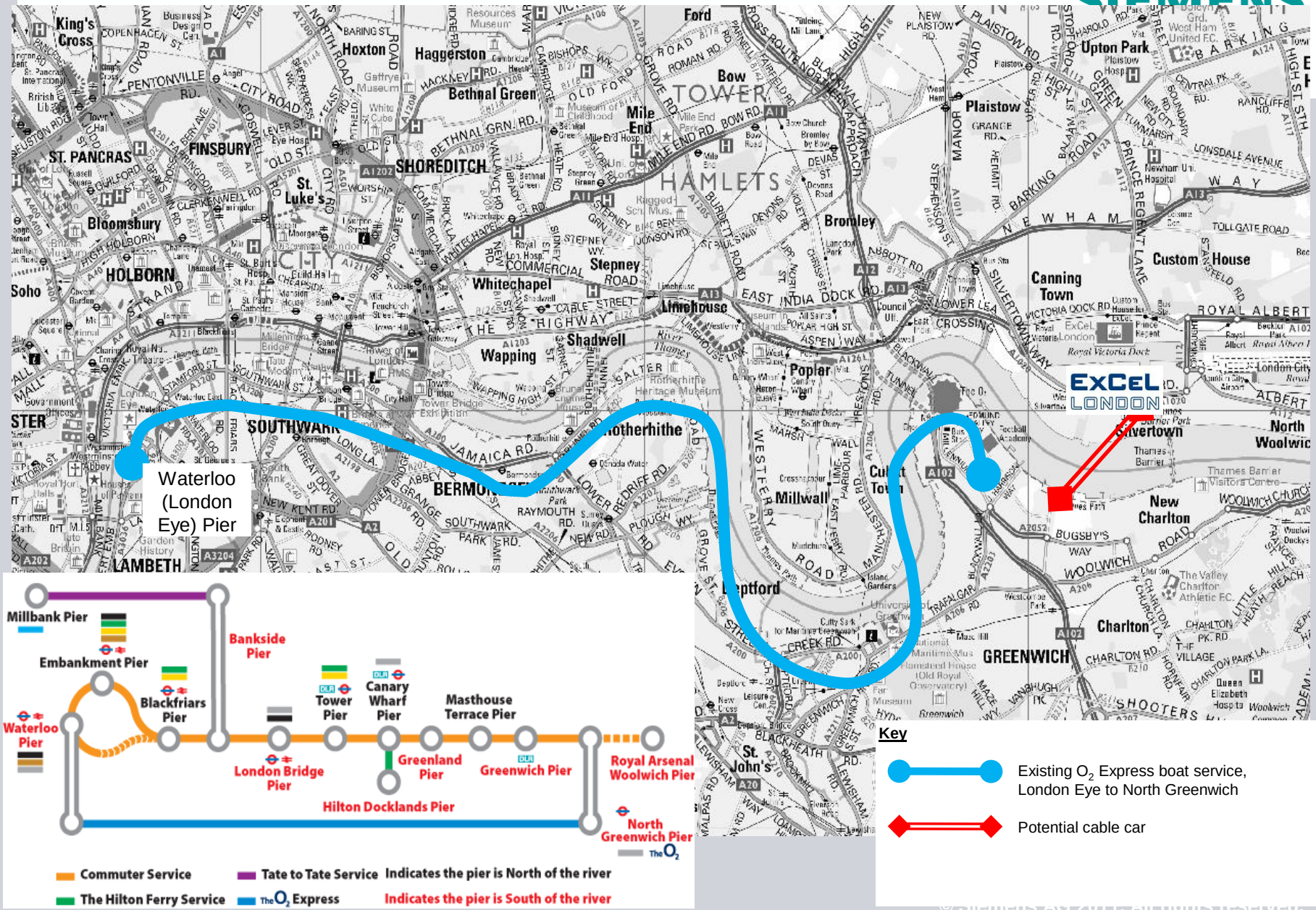



Main transmission line
District heating network (planned)
District heating network (existing)
Served development
Potential for retro fitting
Development Projects
Opportunity Areas / Areas of Intensification (indicated by darker OS base)
LEYTON
HACKNEY
HOMERTON
WEST HAM
EAST HAM
BOW
BARKING
DAGENHAM
POPLAR
GREENWICH
WOOLWICH
ERITH
LEWISHAM
CRAYFORD
1 Pimlico - Victoria Street
2 Euston Road
3 South Bank Employers Group
4 SELCHP
5 LB Tower Hamlets
6 Olympic Stadium
7 Canning Town
8 Royal Albert Basin
9 Royal Docks
10 Greenwich Peninsula
12 Woolwich
13 Barking Town Centre
14 Barking Riverside
15 Barking Power Station


HACKNEY
NEWHAM
BARKING & DAGENHAM
HAVERING
TOWER HAMLETS
GREENWICH
BEXLEY
1 Olympic University
2 Exemplar housing
3 Green science cluster
4 Green industrial park
5 Eco Park
6 Green Expo main site
6a Expo outpost
6b Expo Legacy visitor attraction
7 Academy
8 Institute for Sustainability
9 Centre for Engineering and Manufacturing Excellence
DLR
Possible extension
Industrial sites
LDA land holdings

Strong structuring vision to deal with complexity of issues



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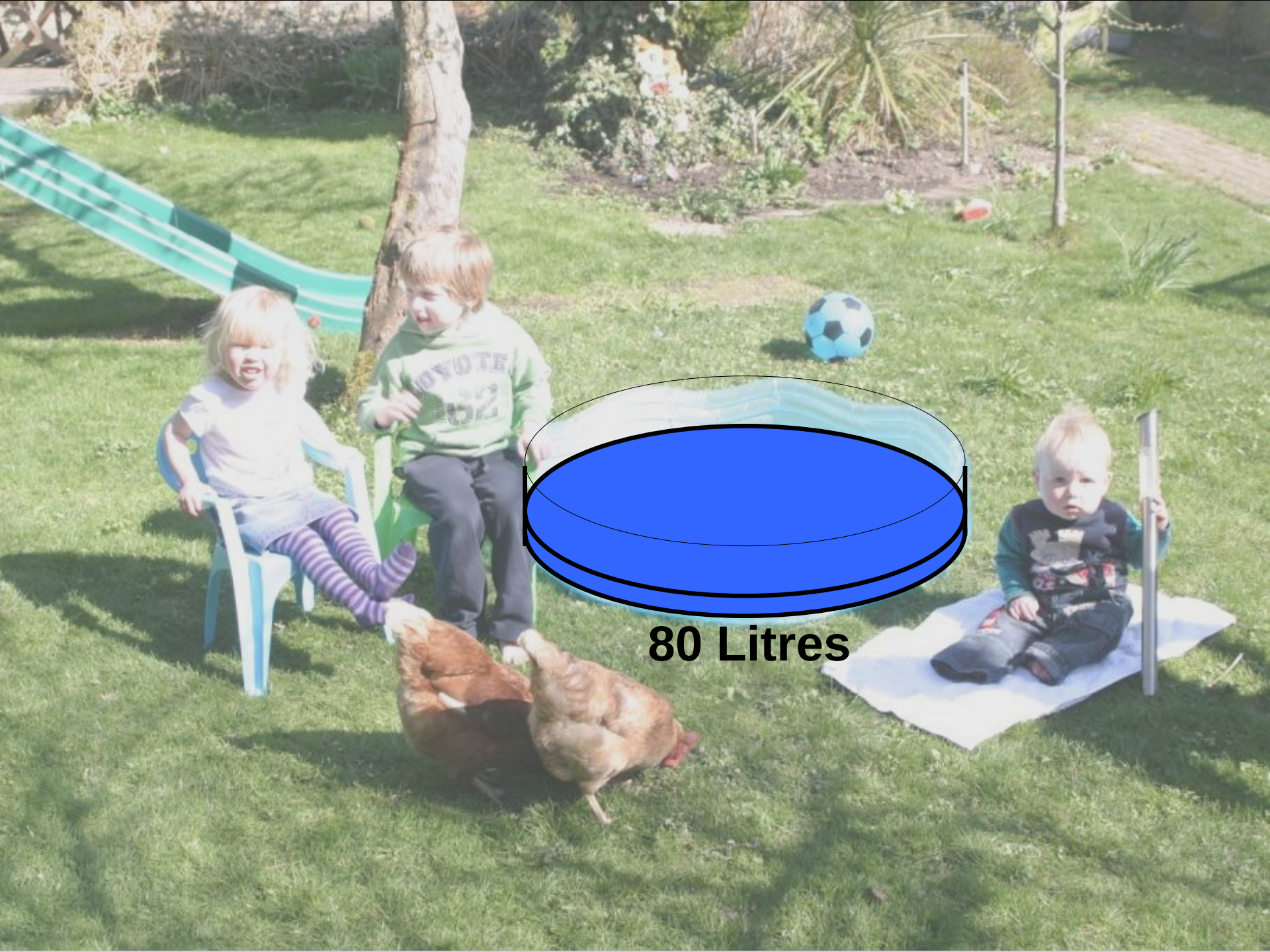
Integrated Strategies

- Energy & Climate Change
- Air Quality
- Municipal Waste
- Business Waste
- Adaptation
- Water
- Biodiversity
- Transport
- The Spatial Plan

6 The Final Challenge


80 Litres

Thank You!

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