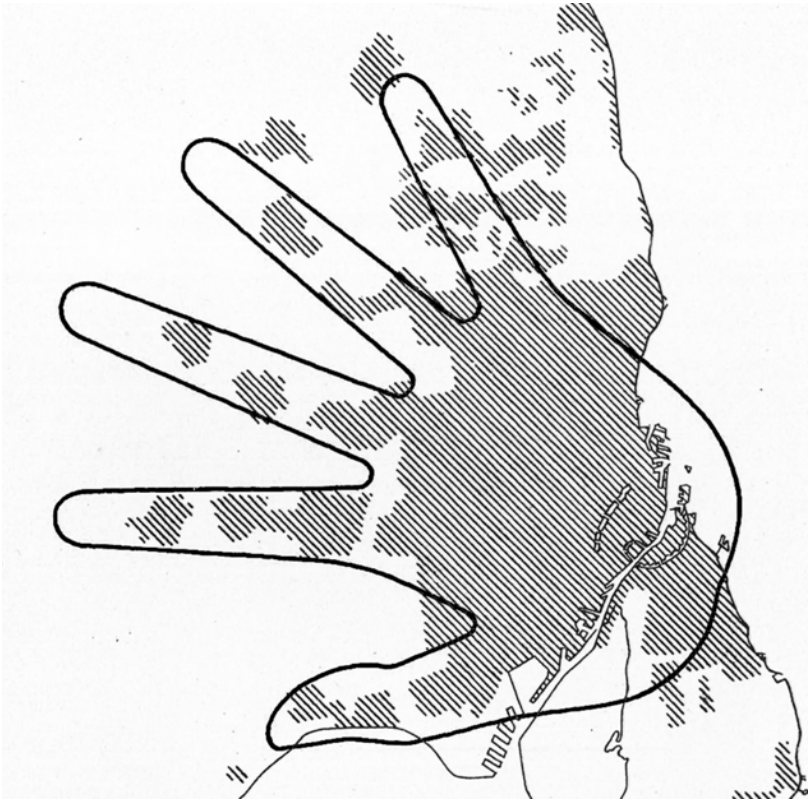
Learning Objectives

Urban Management & Development in Copenhagen
Carbon Neutrality: Cambridge Energy Master Plan
Green Mobility
Living with Water
Community Engagement in Development

1. Gain an understanding of planning in Denmark and Germany from a historical & technical perspective.
2. Explore the energy mix in Denmark & how Energy Master Planning is being implemented locally.
3. Take away ideas & inspiration for development, design & planning adapted to climate & sea level rise.

FINGER PLAN



CITY OF COPENHAGEN – THREE CASES

Water

Energy

Mobility

CASE 1: CLOUDBURST MANAGEMENT

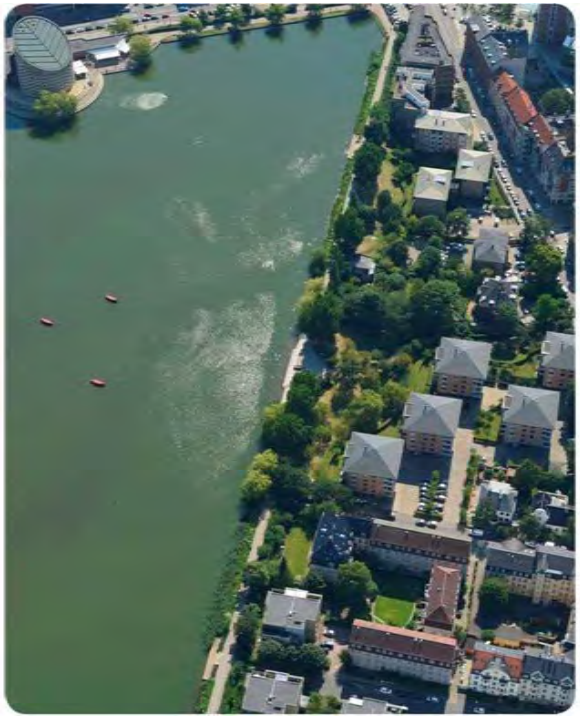
Main priority:

Lead rainwater away from streets and basements across the city

PREPARING THE PLAN

Seven water catchments developed with consultants, experts and local committees

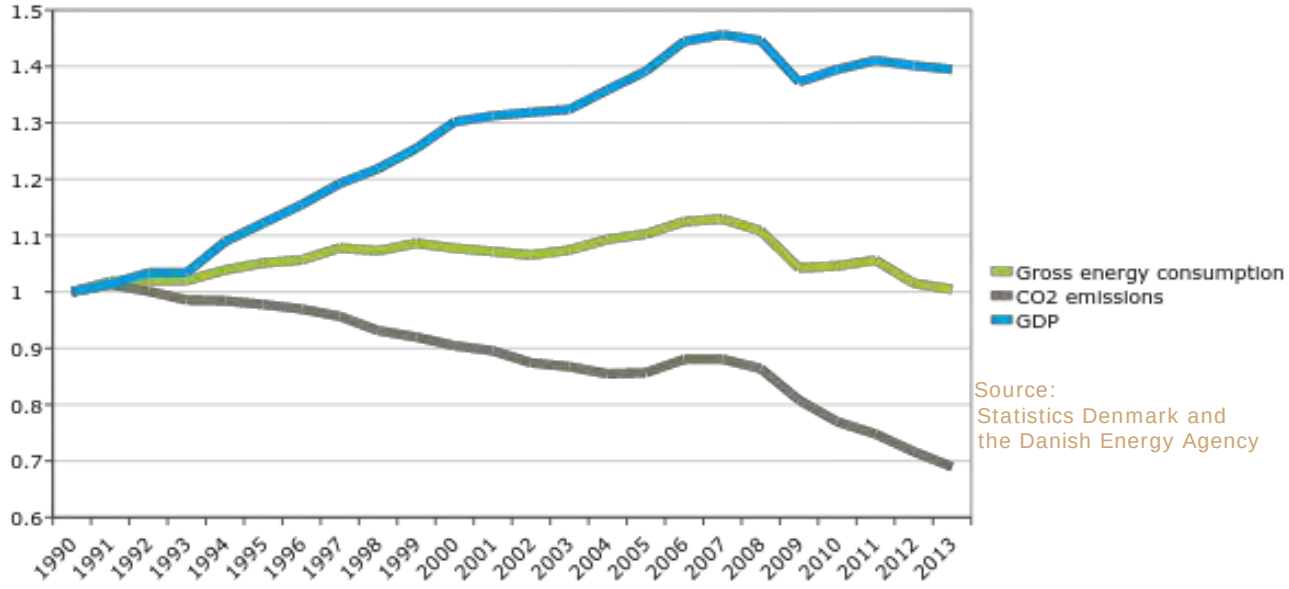
AN EXAMPLE:
SANKT JØRGENS LAKE



CASE 2: ENERGY- COPENHAGEN CO2 NEUTRAL BY 2015

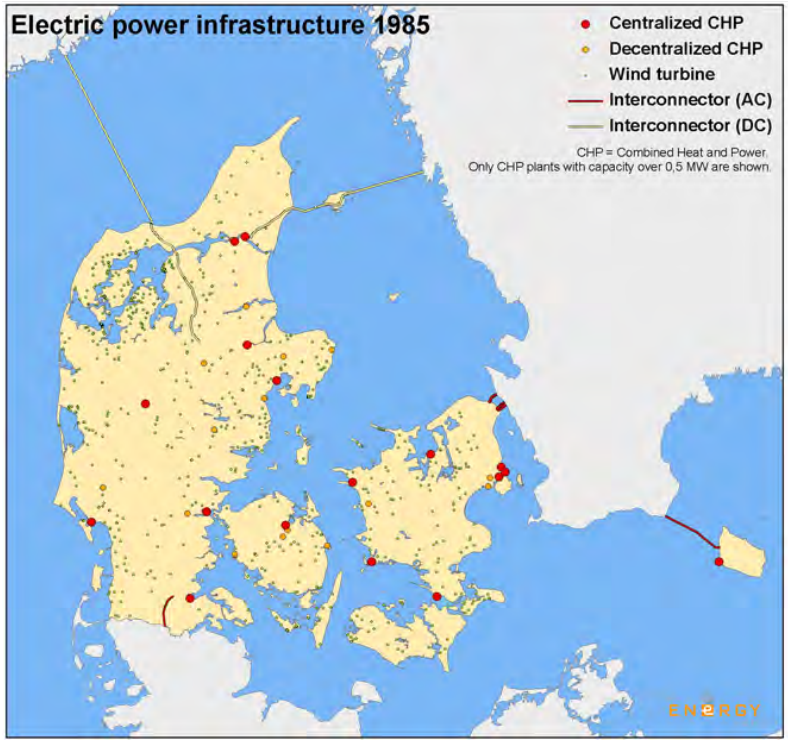
SOME PROGRESS HAS BEEN MADE ALREADY BUT WE EXPECT MUCH MORE

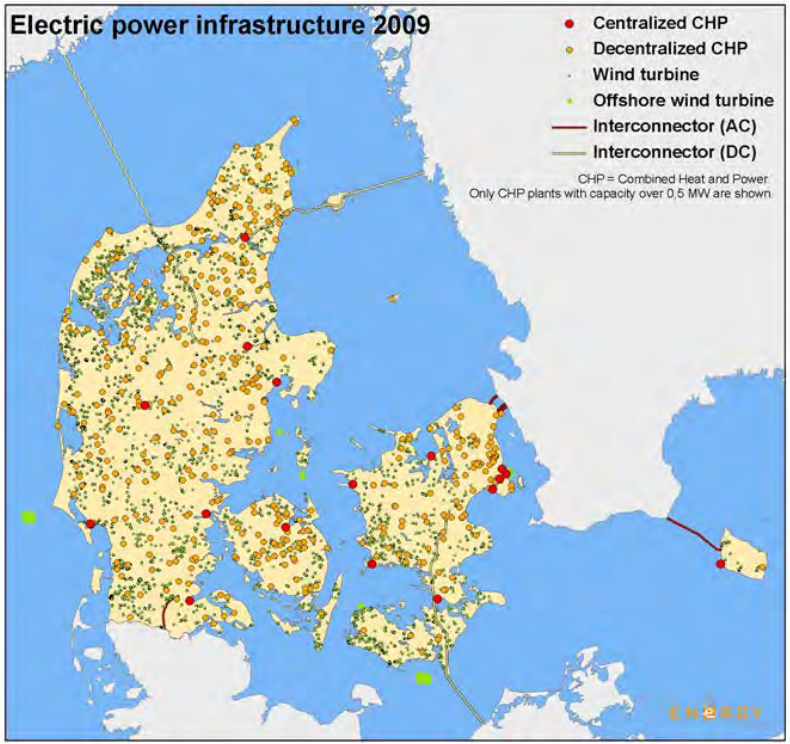
GDP, energy consumption and CO_2 emissions in Denmark 1990-2013



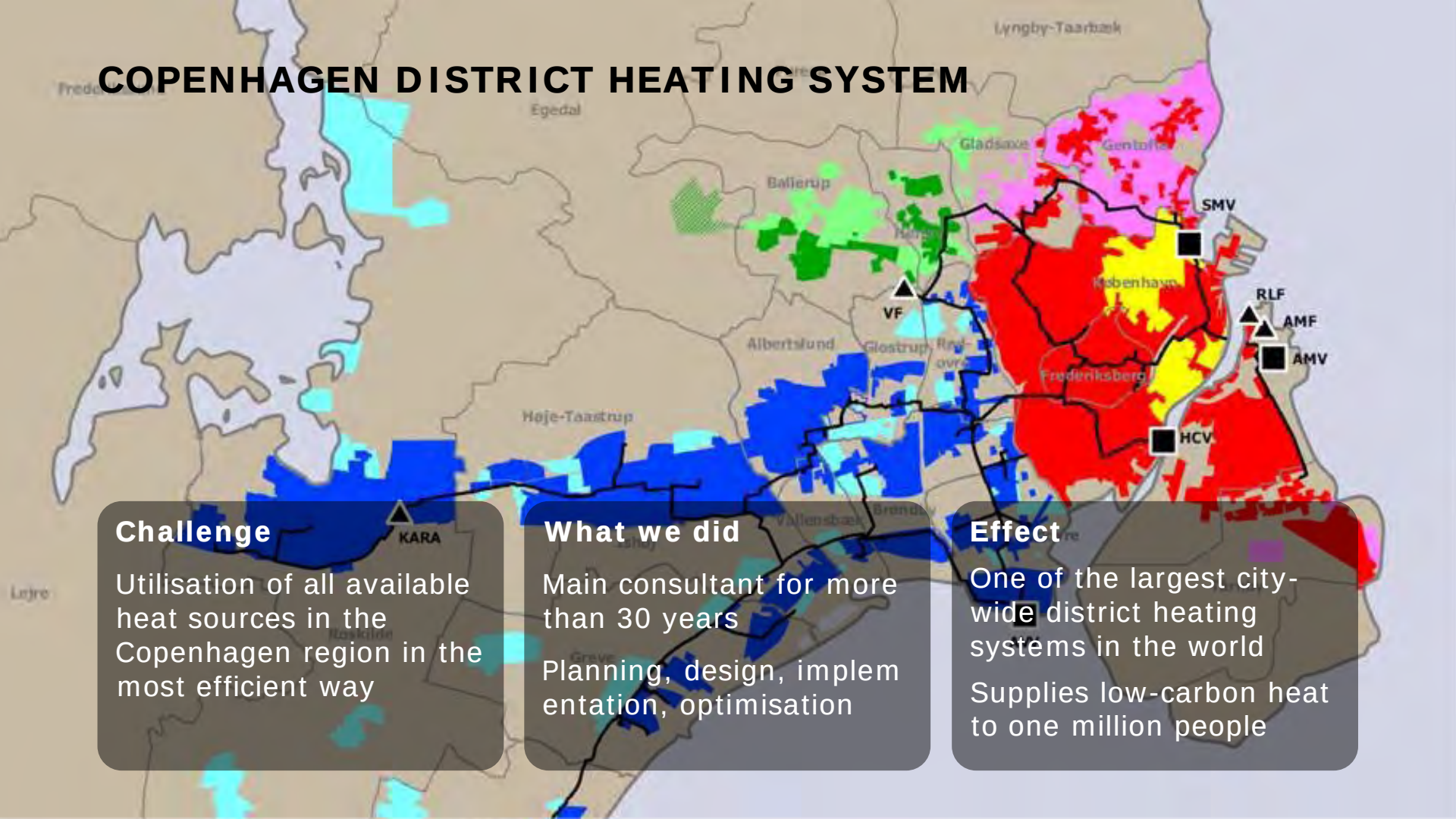
Source:
Statistics Denmark and
the Danish Energy Agency

TRANSFORMATION OF THE ENERGY SYSTEM





COPENHAGEN DISTRICT HEATING SYSTEM



Challenge

Utilisation of all available heat sources in the Copenhagen region in the most efficient way

What we did

Main consultant for more than 30 years

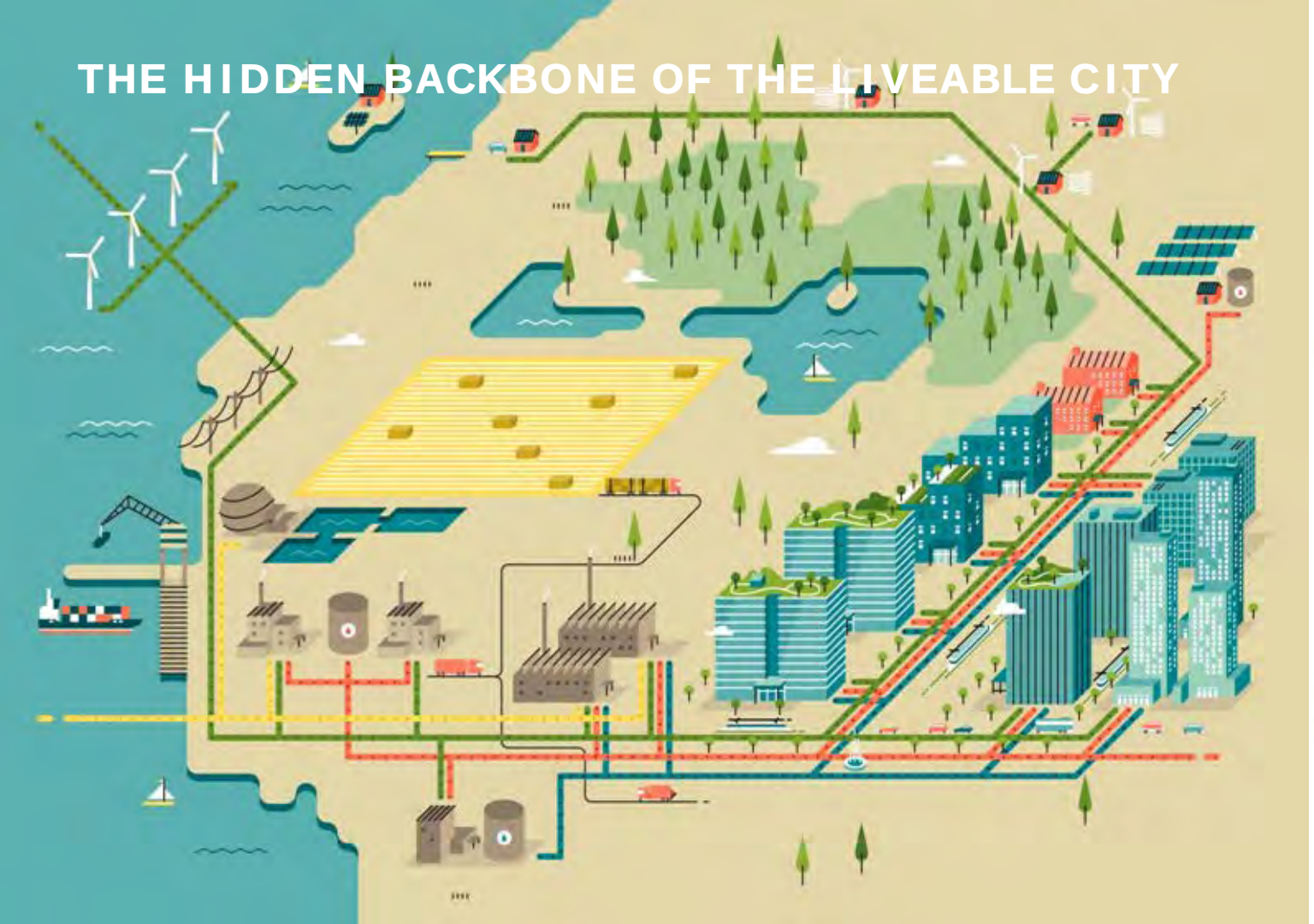
Planning, design, implem entation, optimisation

Effect

One of the largest city-wide district heating systems in the world

Supplies low-carbon heat to one million people

THE HIDDEN BACKBONE OF THE LIVEABLE CITY



- Surplus biomass for CHP plant
- Surplus straw for CHP plant
- Offshore wind farm
- Large building
- Residential building
- Harbour, unloading of biomass
- Wastewater treatment and biogas plant
- Solar heating plant and heat storage
- Distant building w/solar PV
- Outskirt building w/ heat pump, solar PV and wind turbine
- CHP plant fuelled by gas, straw, wood, city waste + heat storage
- District heating/ cooling plant + cold water storage
- Electricity
- District heating
- District cooling plus

CASE 3: MOBILITY


36.000


540 km
55 %
35 %
85 %


LOTUS HOUSE
HOTEL NORA
60 %
75%


28%

SUPER CYCLE HIGHWAYS

URBAN MANAGEMENT DEMANDS POLITICAL COURAGE, LONG-TERM PLANNING AND CLEAR PRIORITIES

- **Clear goals, general strategies and financing**
- **Public-private collaboration**
- **Co-creation with citizens**
- **Integrated approach to enhance results**