

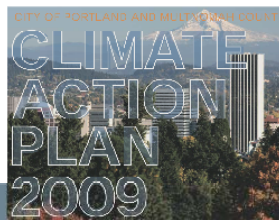
# Synergies, Conflicts and Tradeoffs in Copenhagen's Climate Strategy

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# Based on previous research

CLIMATE CHANGE MITIGATION,  
ADAPTATION AND SUSTAINABLE  
URBAN DEVELOPMENT

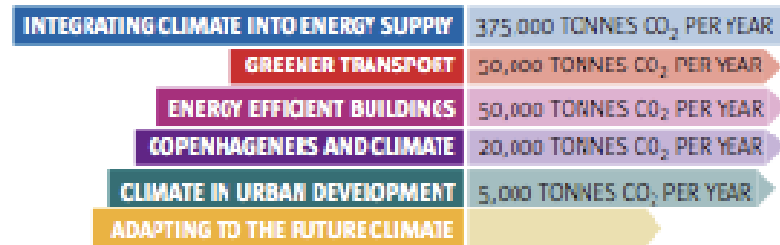
**A Case Study of  
Copenhagen and Portland**



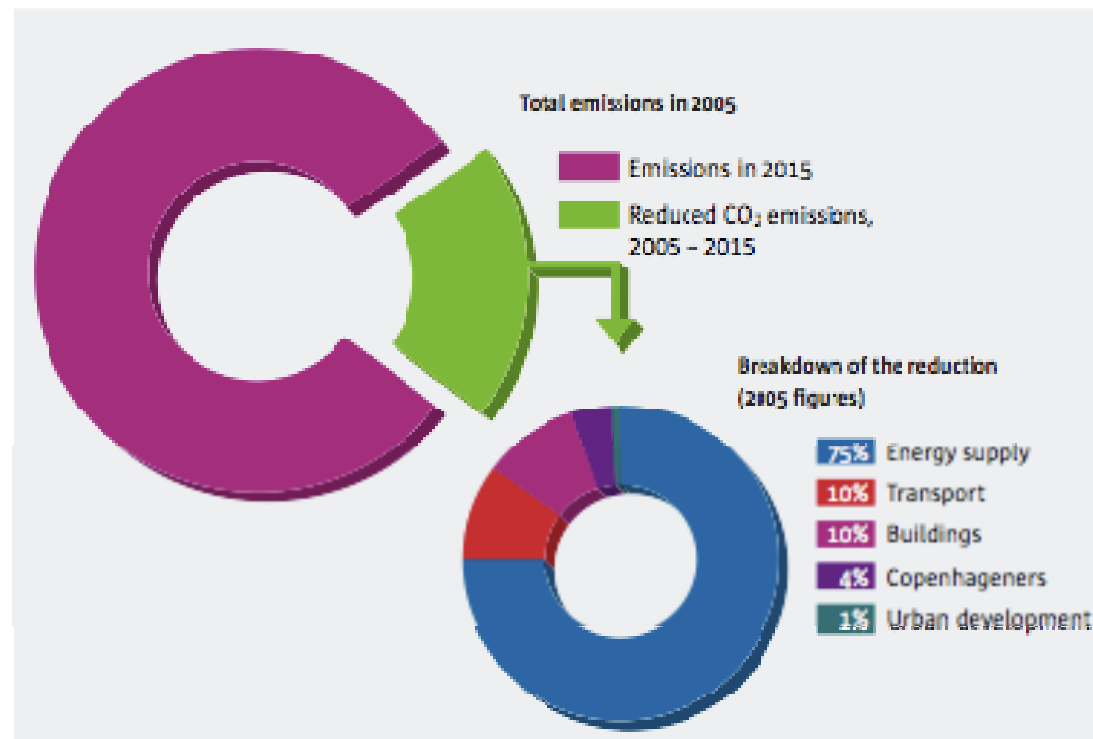
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# Climate Goals

Source: CPH Climate Plan (2009)



DISTRIBUTION OF THE TOTAL CO<sub>2</sub> REDUCTION, 2005 - 2015





## Selected priorities of the climate strategy

- **Switch from burning coal to burning trees in combined heat/power plants**
- **Increase modal share of bicycles to 50% of trips to work and school**
- **Reduce energy use in building stock by 7.5%**
- **Reduce provision for private automobiles, including reallocation of street space and removal of parking spaces**
- **Source: Copenhagen Climate Plan (2009)**

# Synergies and Conflicts

<b>Mitigation Objective</b>	<b>Primary Policy Sector</b>	<b>Secondary Policy Sector</b>	<b>Adaptation Objective</b>	<b>Adaptation Action</b>	<b>Synergy or Conflict</b>
Renewable energy supply for combined heat/power plants	Energy	Urban Morphology, Built Environment	N/A	N/A	N/A
Increase cycling to 50% mode share	Transport	Urban Morphology, Energy	N/A	N/A	N/A
Reduce energy usage of building stock by 7.5%	Built Environment, Energy	Urban Morphology	Expand green roofs and facades	Demonstration projects in Copenhagen	Synergy
Traffic re-routing, lane reduction measures and parking restrictions	Transport	Urban Morphology Built Environment	Pocket parks and permeable surfaces to locally divert rainwater	Construct new parks and integrate green infrastructure into new developments	Synergy

# Level of Policy Integration

Note: + = supporting, - = weakening, +/- = ambiguous, depends on implementation and 0 = not present

<b>Governance Scale</b>	<b>Plan Type</b>	<b>Renewable Energy Supply for CHP</b>	<b>Increase cycling to 50% modal share</b>	<b>Reduce energy use of building stock by 7.5%</b>	<b>Controls on private car usage (road pricing, parking restrictions, travel lane reallocation)</b>
Copenhagen	Kommuneplan 2009	+	+	+	+
	Traffic and Environment Plan 2004	0	+	0	+
	Environment Plan	+	+	+	+
Regional	Fingerplan 2007	0	+	0	+/-
	Capital Region Development Plan 2008	0	+	0	+/-
National	Danish Transport Infrastructure, 2030	0	-	0	-

# Examples of policy trade-offs

<b>Climate Change Challenge</b>	<b>Municipal Planning Challenge</b>	<b>Connected planning area</b>	<b>Potential policy trade-offs</b>
<b>Reducing auto usage</b>	<b>Car traffic expected to rise 30-40% by 2025</b>	<b>High housing prices, low modal share of public transport regionally, social equality</b>	<b>Density in new developments, competition for economic growth, constrictions on the growth of mobility</b>
<b>Increasing energy efficiency of buildings</b>	<b>Finding space for 40,000 new inhabitants by 2025</b>	<b>Building regulations (solar/wind access), zoning regulations</b>	<b>Opposition from existing district heating provider, increase housing costs</b>



## Key findings from the research

- **The essentially voluntary nature of the climate strategies makes them vulnerable to competing interests and pressures. Unless and until climate change planning goals are firmly rooted within the zoning and land use codes, efforts to either restrain GHG emission growth or successfully adapt to a changing climate will be weak.**





## Organizational/Institutional challenges

- **Climate change strategy is still mainly tied to energy/environment policy. Causes and effects of the underlying development pathway largely ignored or unaccounted for.**
- **Regional competition for housing and employment growth also leads to tensions between competing planning priorities.**



## Mitigation and adaptation are two sides of the same coin

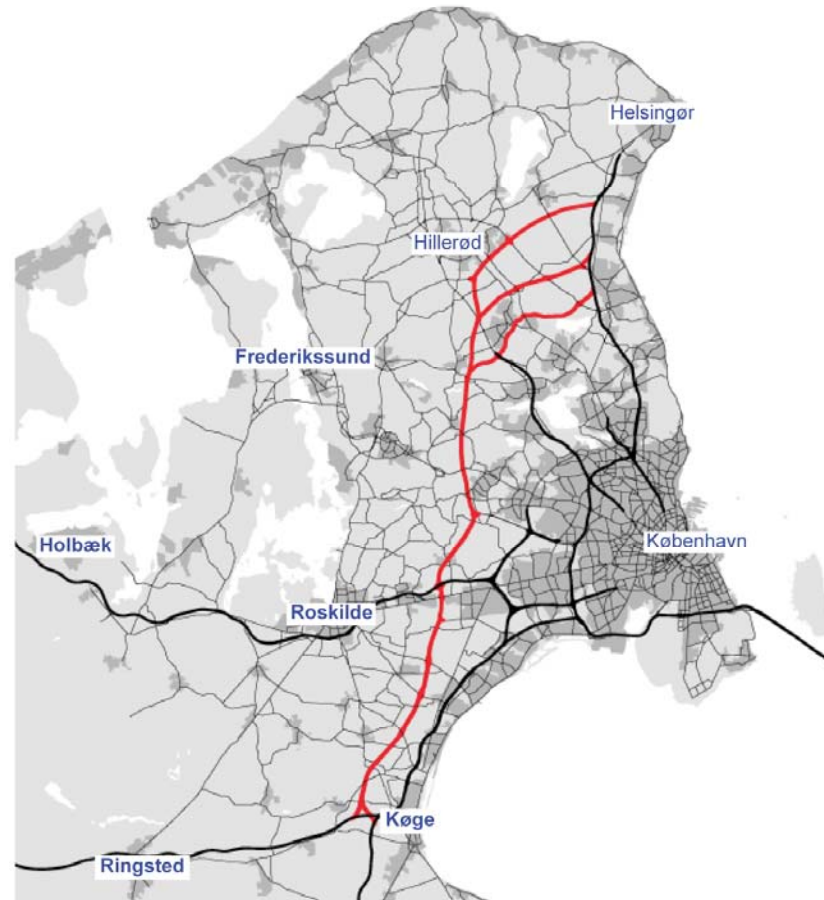
- **The treatment of mitigation and adaptation as two mostly distinct policy areas sets up potential conflicts between different plans, policies and programs**
- **This also leaves unattended questions of social justice, environmental protection and economic efficiency.**



# Fairness and democracy matter

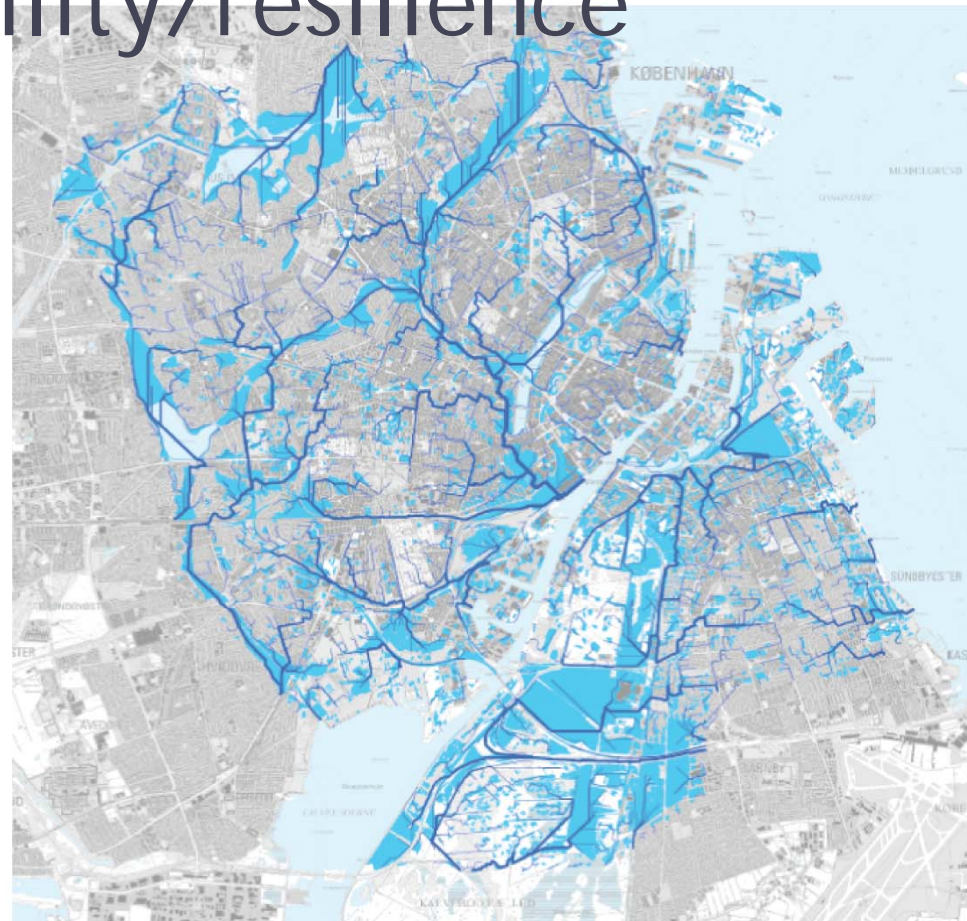
- **It is likely that governing institutions will have to more deeply engage its citizens in a politically and socially contentious debate about the trade-offs between climate change planning goals and other socio-economic, political and developmental goals**

# Development pathways impact GHG emissions trends for decades



Source: Danish Ministry of Transport  
(2010)

# Density may compromise adaptability/resilience



Light blue areas show possible standing water and dark blue areas show stream paths where water will flow

**Source: CPH Climate Plan (2009)**

# Environmental risk

DANMARK 29. AUG 2010 KL. 15.28

## Falck om det store skybrud: Vi fik en lille huskekage



**ET** voldsomt regnvejr ramte Køberhavn og det nordlige Sjælland forrige weekend. Adskillige huse fik vand i kældrene og flere steder stod gaderne under vand på grund af overbelastede kloakker. (arkivfoto) - Foto: DRESLING JENS

# Political/Institutional Risk

NEWS IN ENGLISH 21. SEP 2010 KL. 10.27

## Vattenfall pulling out of DK?



**THE** Amagerværket combined heat and power plant, one of the plants that Vattenfall may divest under its new strategy. Archive. - Foto: Jens Dresling (Arkiv)

Exposure to globalized competition  
can have big impacts on local policy





# Socio-economic risk

## Carlsberg dropper solcellerne i ny grøn by

Arkitekterne dikterede solfangere, solceller og byvindmøller i Carlsberg Byen. Men ambitioner om bæredygtighed har fået Carlsberg til at droppe al lokal energiproduktion.



Bæredygtigheden kommer ikke til at synes af meget i den kommende Carlsberg by. Solceller og minivindmøller er fravalgt til fordel for fjernvarme. (Illustration: Entasis)

### LÆS OGSÅ

Byggeregler hænger fast i oliekrisen

23. oktober 2010

Husejere vil årligt spilde én milliard på lavenergikrav

22. oktober 2010

### EKSTERNE LINKS

Rambølls rapport Varmeplan Danmark

Af Ulrik Andersen, lørdag 23. okt 2010 kl. 10:00

Carlsberg Byen skal være et lysende eksempel på bæredygtighed. Det var en af de store ambitioner i tegnestuen Entasis vindende forslag for den nye bydel, der skal vokse frem på Carlsbergs bryggerigrund i Valby over de kommende 10-20 år.

Arkitekterne ville have lavenergibygninger, og forsyne dem med el fra lokalt placerede vindmøller og solceller, og med varme fra solfangere.

Men efter en nærmere undersøgelse sammen med Rambøll, har Carlsberg droppet alle tanker om at producere energi lokalt - netop for at blive mere bæredygtige, fortæller direktør i Carlsberg Ejendomme, Lars Holten.

»Vi startede med at tænke, at hvis denne bydel skulle være bæredygtig, så skulle den være scm en ø med sit eget system. Men når man begynder at regne på det, så opdager man jo, at det ikke er det mest bæredygtige.«



## What is the role of IA then?

- **Assess adaptation and mitigation measures within one coherent policy framework, highlighting synergistic policies and plans as well as policy conflicts**
- **Link up larger scales of action and longer time periods of impact**
- **Broaden focus beyond traditional environmental impacts to include socio-technical and economic impacts assessed in qualitative terms**
- **Draw policy attention to significant areas of risk and uncertainty**



Thank you for your attention