



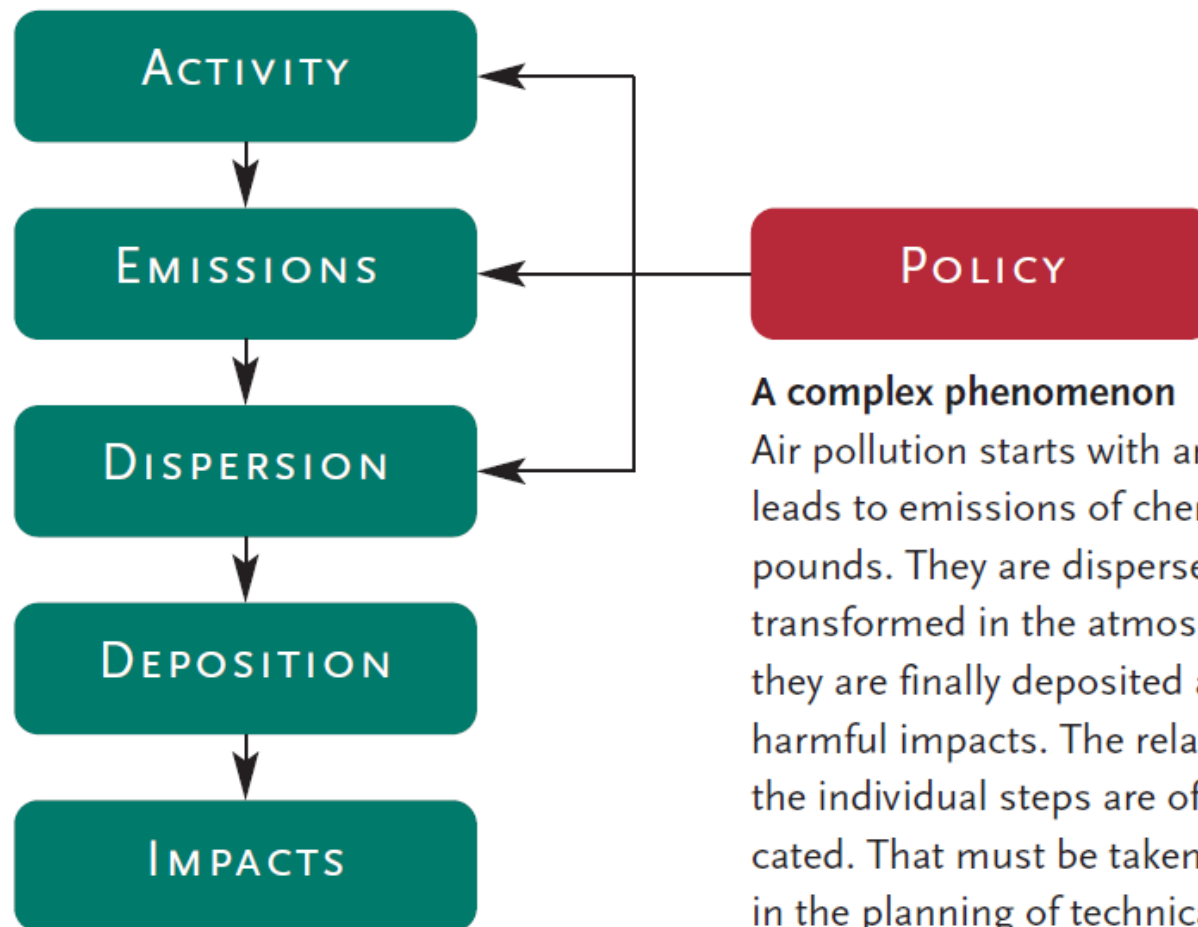
Clean air for Denmark

Government Official
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Miljøministeriet
Miljøstyrelsen

How are measurements and model result used in political decision making?



A complex phenomenon

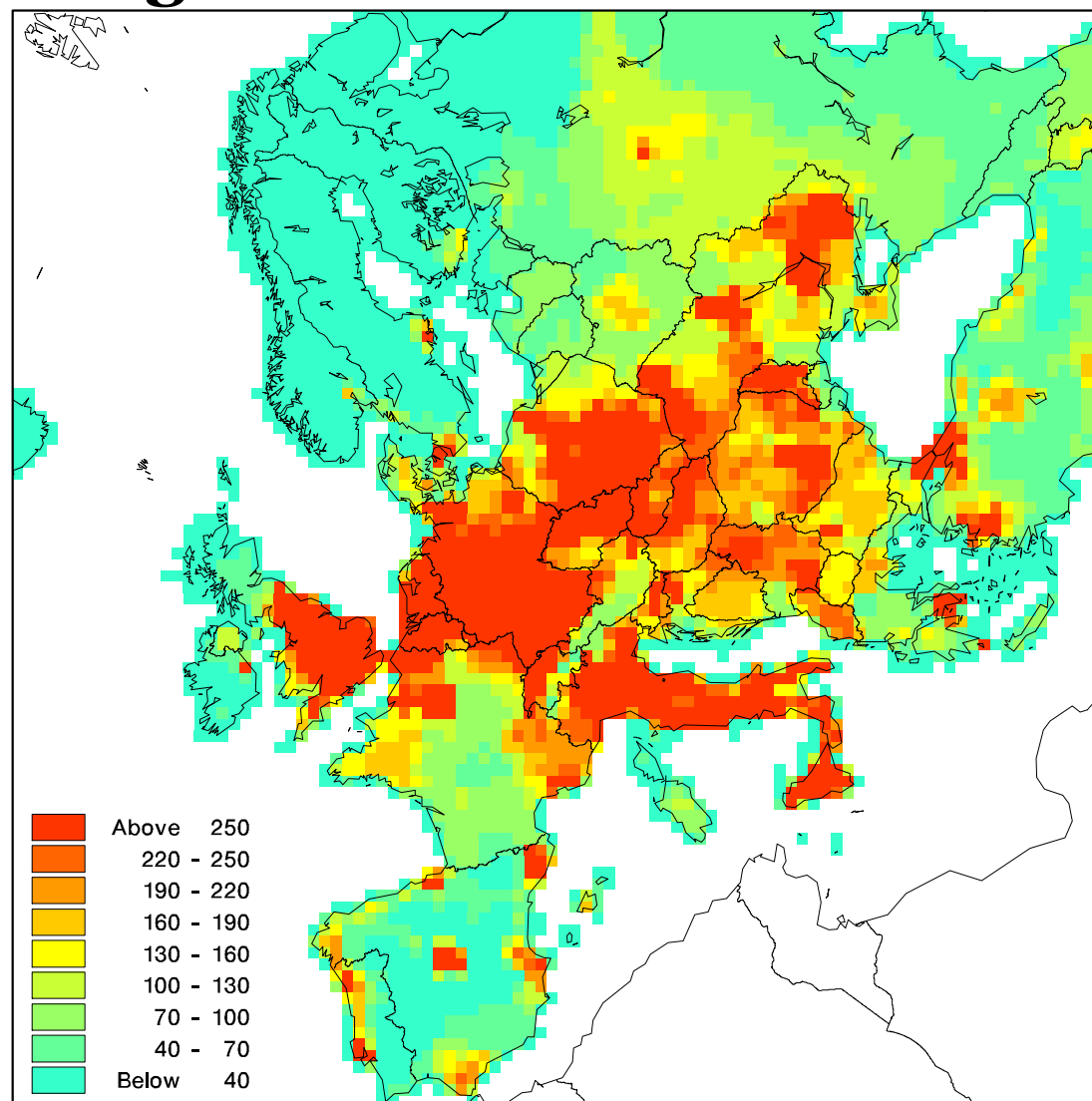
Air pollution starts with an activity that leads to emissions of chemical compounds. They are dispersed and possibly transformed in the atmosphere, before they are finally deposited and cause harmful impacts. The relations between the individual steps are often complicated. That must be taken into account in the planning of technically and economically efficient abatement measures.

Impact - health effects - a basis of assessing external cost

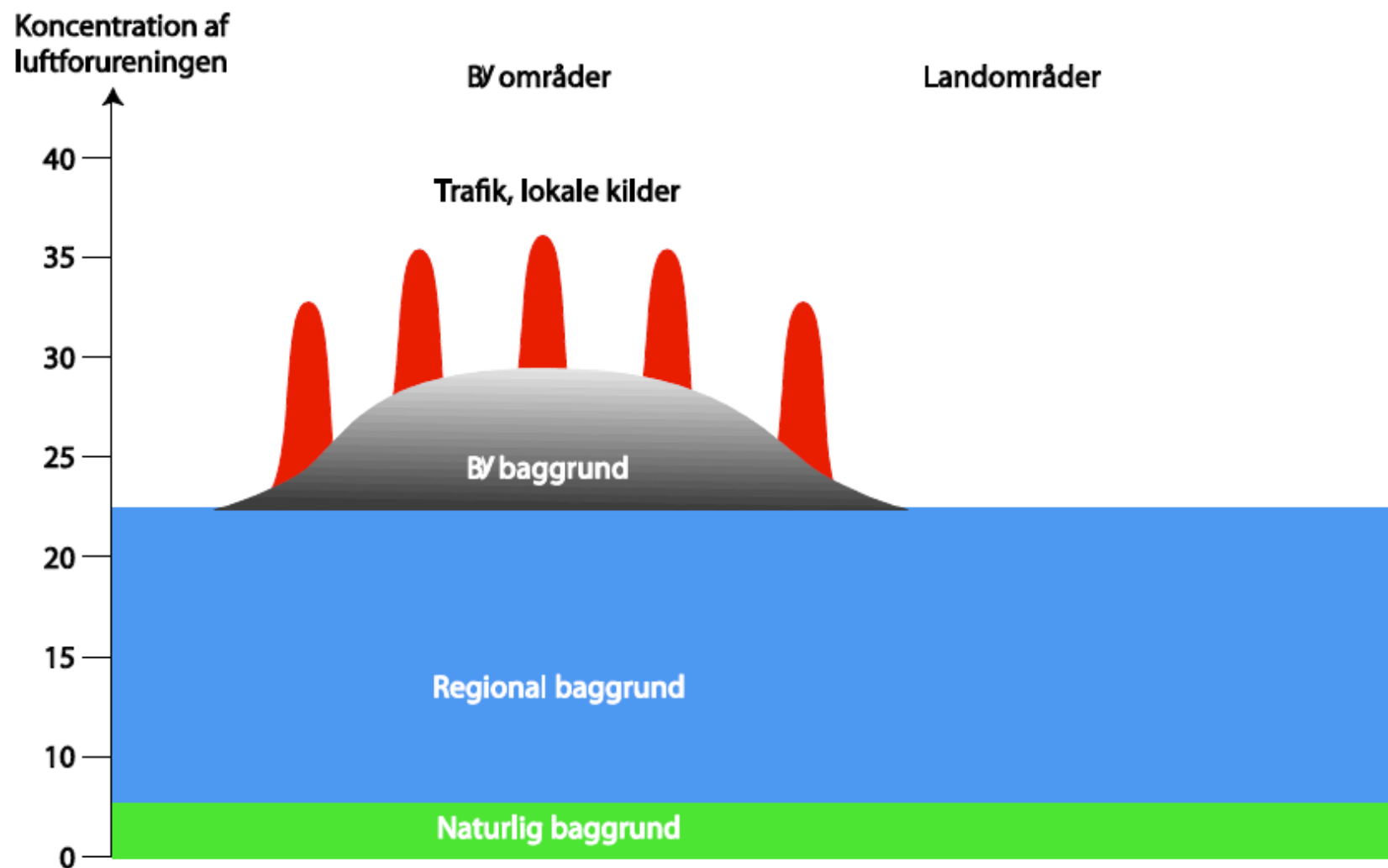
Europe:
680.000 premature death in
2000.
450.000 premature death in
2020.

For Denmark:
Year 2000: 4000
Year 2011: 3300
Year 2020: 2200

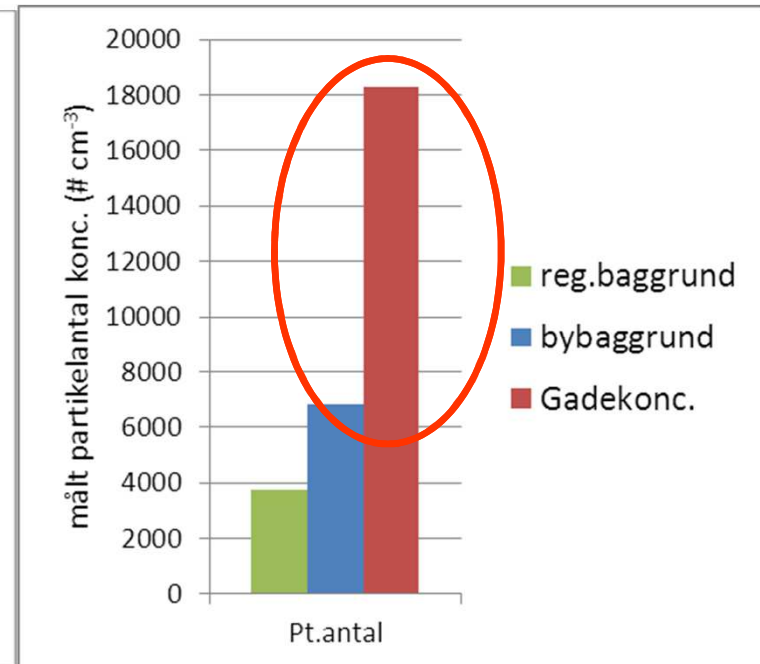
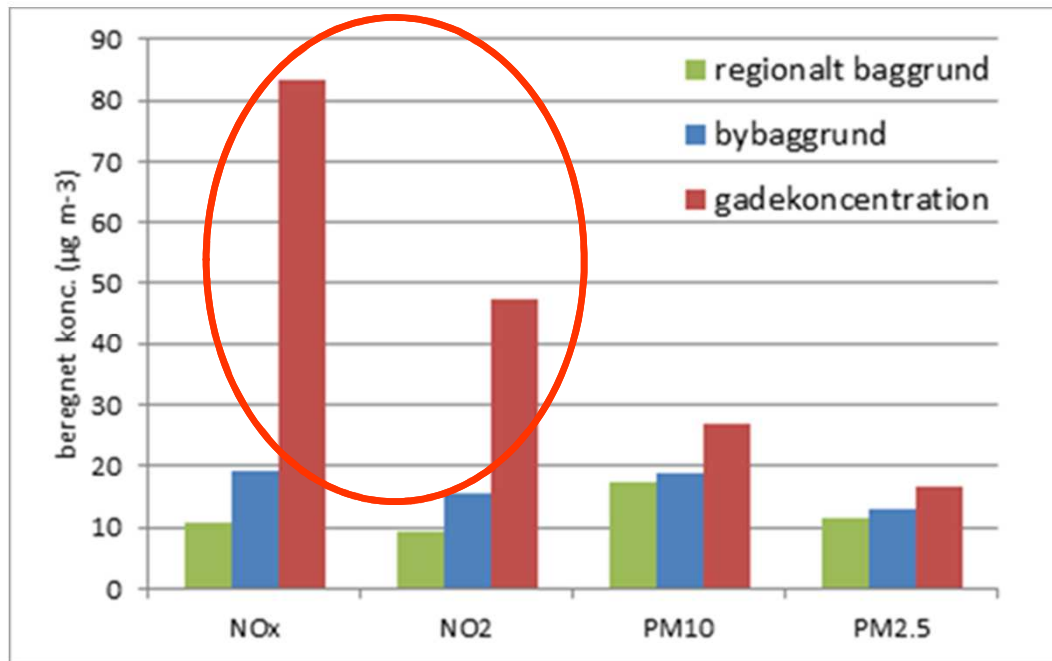
(Modeled with EVA
system year 2000)



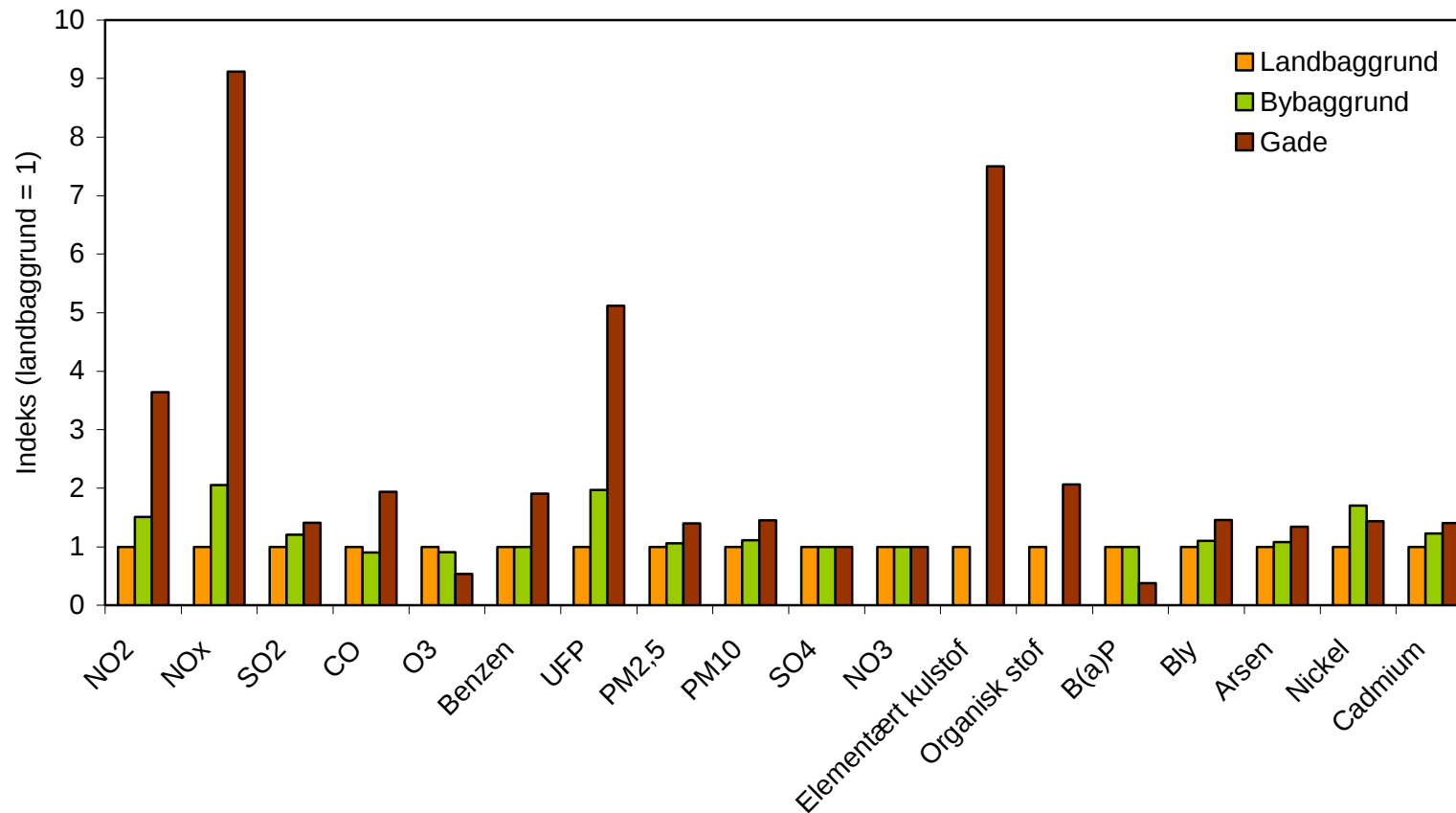
Concentration/deposition/dispersion



Concentrations in regional background, urban background and street in Copenhagen



Variation in regional, urban background and street canyons – How to priorities?



Emissions: Sources for PM_{2,5} for Copenhagen

	Regional	Urban background	Street
International shipping	18%	15%	13%
Europe	57%	48%	40%
Denmark	25%	21%	17%
Suburban areas		3,4%	2,8%
Urban background		12%	10%
Street(*)			18%
SUM	100%	100%	100%



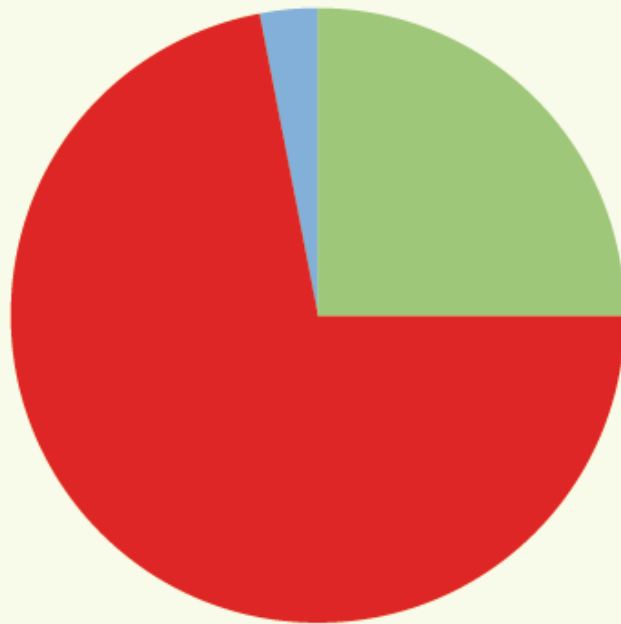
Udledning af partikler fra danske kilder (PM_{2,5})



■	Industri	8%
■	Transport	18%
■	Brændeovne & -kedler	67%
■	Landbrug	7%

Kilde: Den nationale emissions-
opgørelser af 2012.

Udledning af kvælstoffer fra danske kilder (NOx)



Industri	25%
Transport	72%
Brændeovne & -kedler	3%
Landbrug	0%

Kilde: Den nationale emissions-
opgørelser af 2012.

Government priorities

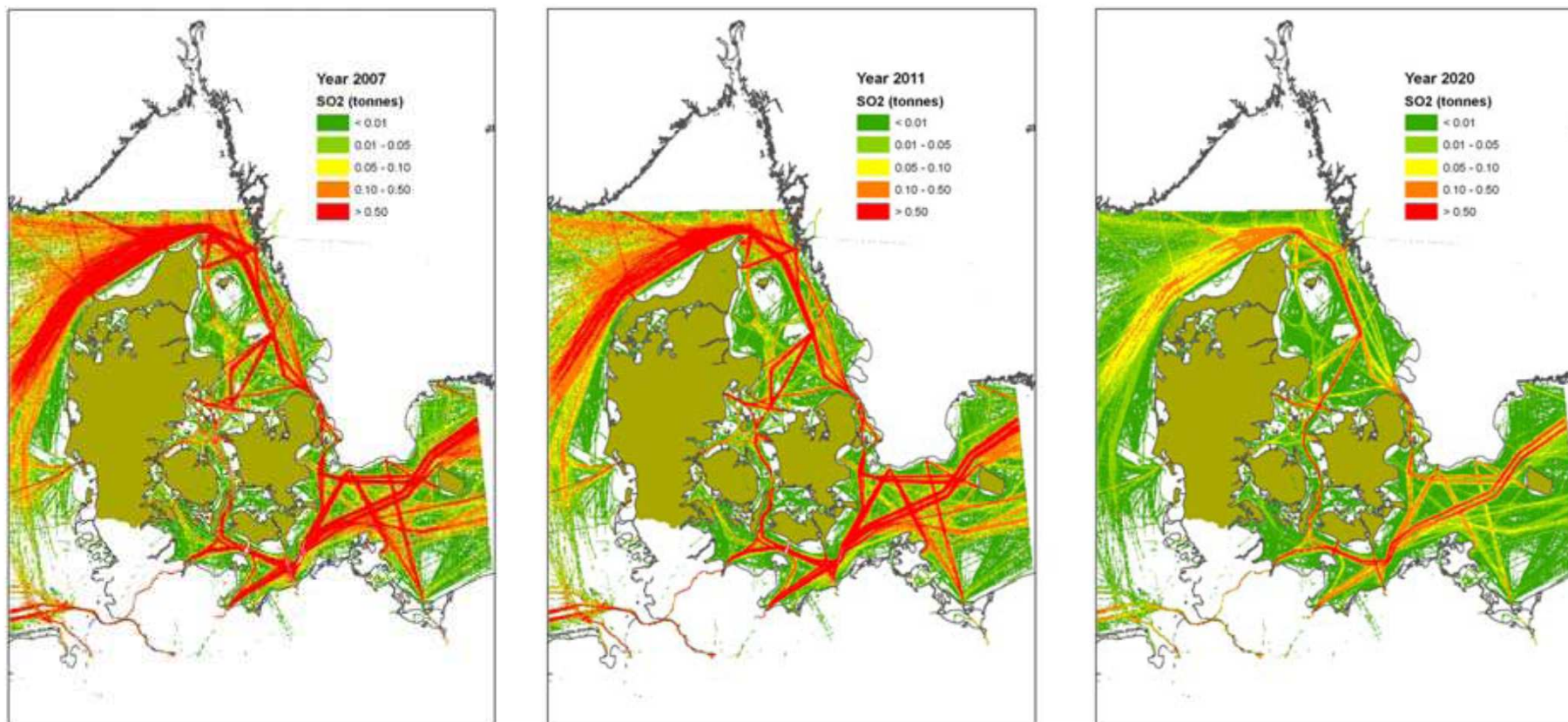
Internationalt:

- NECII
- MCP
- Euronorms
- IMO – SECA and NECA
- Ecodesign

Nationalt/lokalt:

- 149. mio. kr. 2014-2016 (cleaner busses and woodstoves)
- Prioritizing cleaner vehicles
- Low emission zones
- Tax regulation (NOx, SOx, cars)

Impact of SECA (low sulphur fuels for shipping)



Årlige emissioner SO₂ pr km² for 2007, 2011 and 2020. Effekt af SECA-områderne: maksimalt tilladte svovlindhold i bunkerolien sænkes til 2,7 pct. i 2000 til 0,1 pct. i 2015

Thank you

Questions?

