Pilot Stockholm

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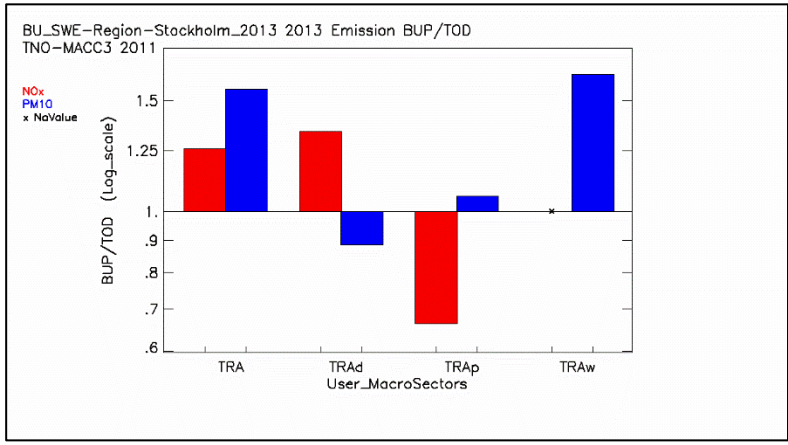
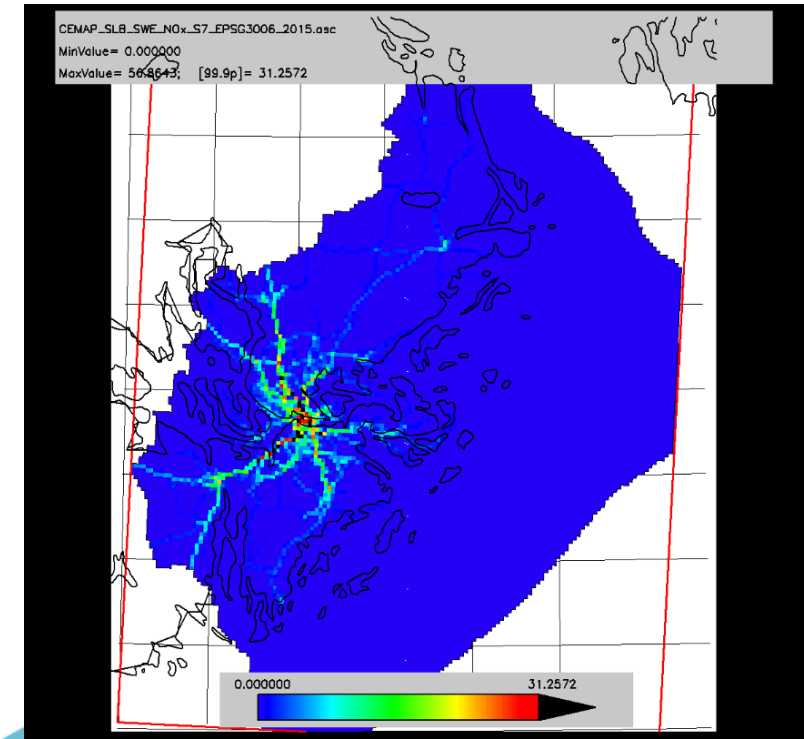
WG2 Emissions

- We have benchmarked our bottom-up emission inventory for Stockholm with the top-down inventories using Fairmode WG2 emission tool.
- We have presented and discussed the results of the emission inventory comparisons at the last two Fairmode Technical meetings, that is, in Aveiro 2015 and in Zagreb 2016.
- We will contribute to the Composite Mapping tool for emissions





Stockholms stad

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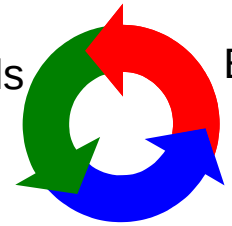
SLB-analys - our organisation

- Unit at Stockholm Health and Environment Administration, Stockholm

- Operator of Eastern Sweden's Air Quality Management Association
  - 4 counties, 50 municipalities
  - ~ 3 million inhabitants

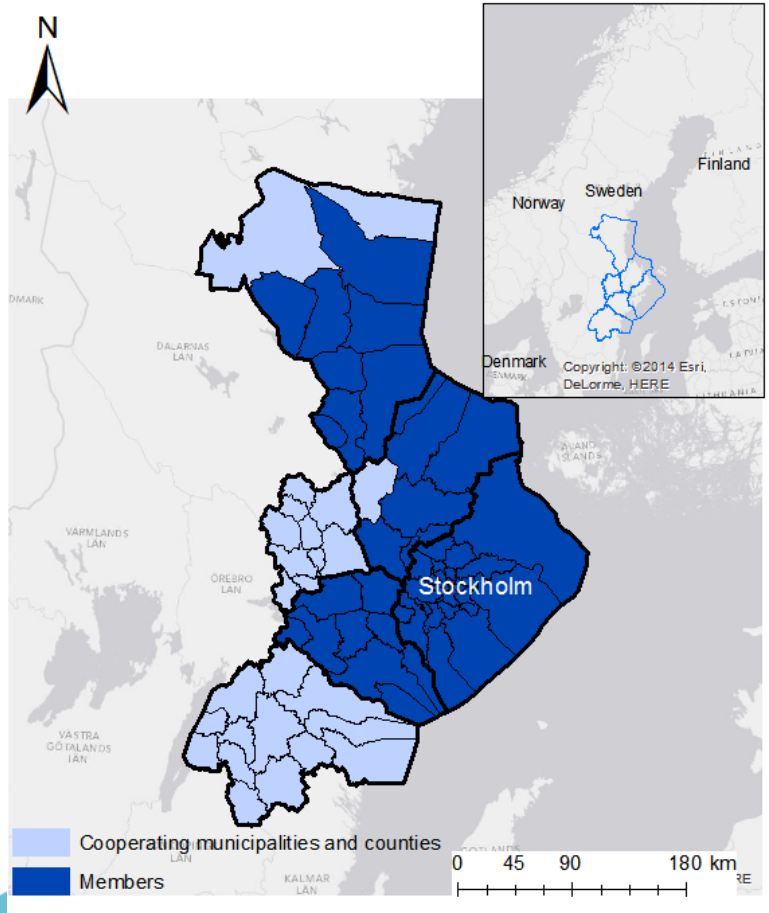
Air quality management system

Dispersion and deposition models



Emission databases

Monitoring stations (air pollutants and meteorological parameters)



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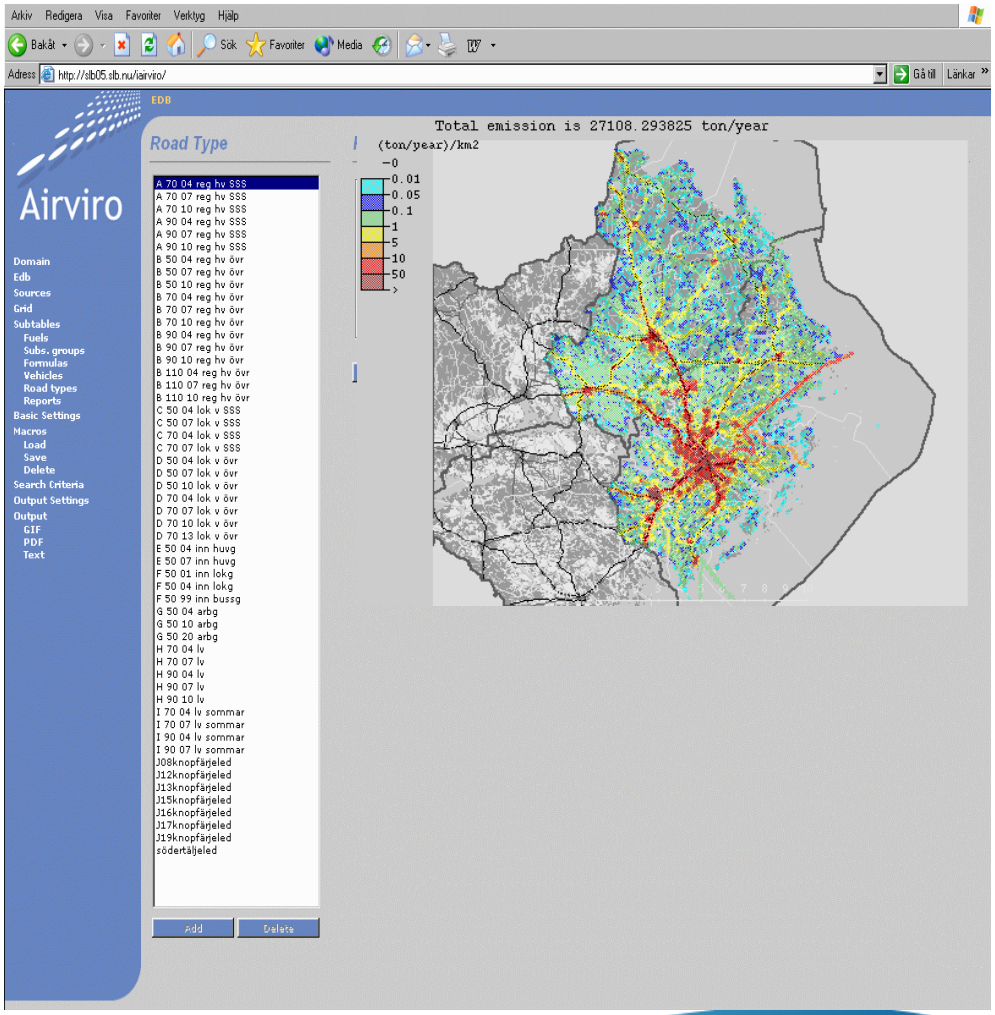
Emission inventores

- Updated yearly since 1992
- Mostly bottum-up
  - Road traffic
  - Shipping
  - Energy sector (powerplants, boilers)
  - Industries
  - Petrol stations/depots
- Some top-down
  - Residental heating
  - Household use of solvents
  - Household use of garden machinery
  - Off-road machinery



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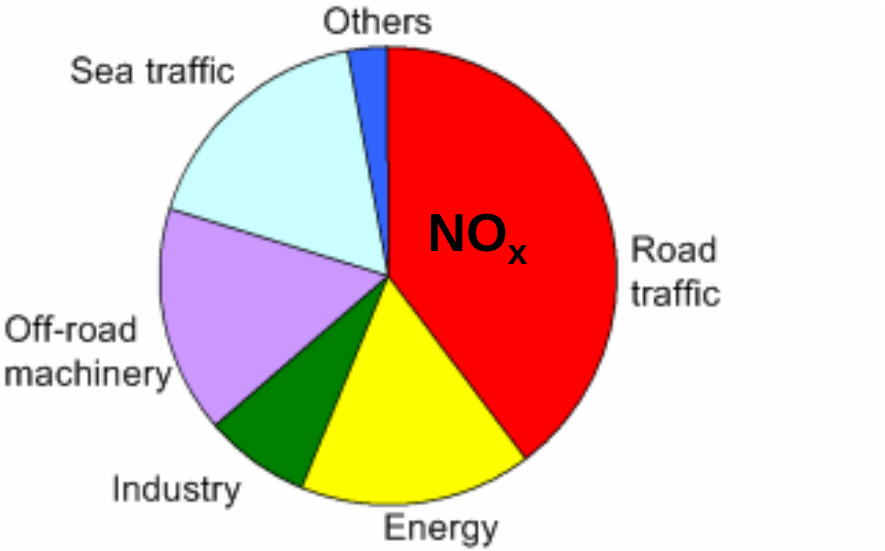
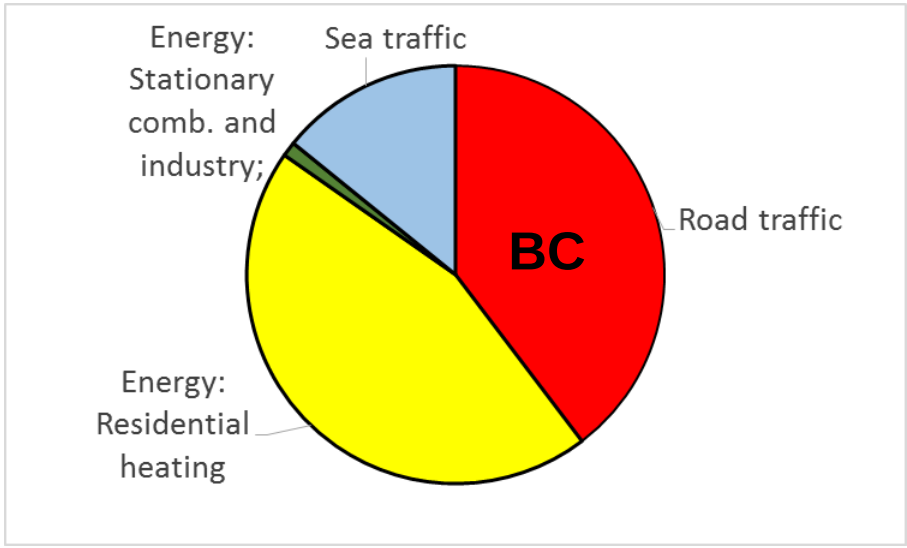
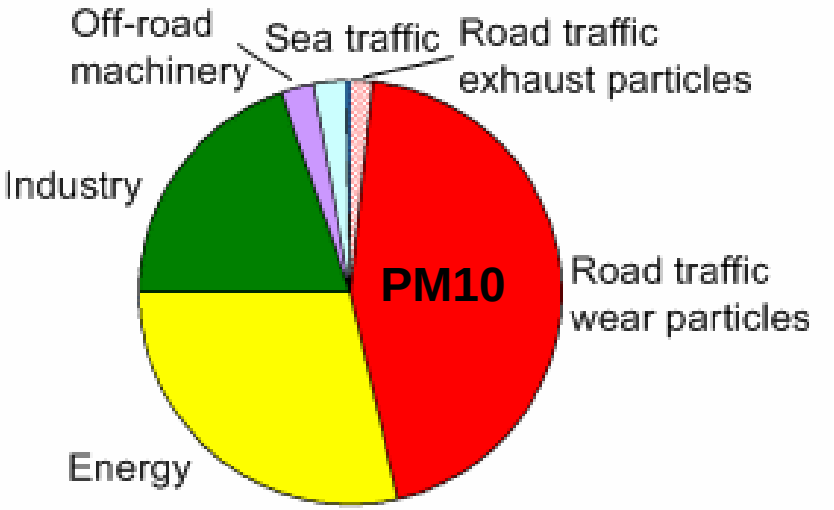
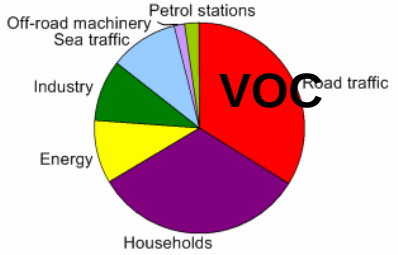
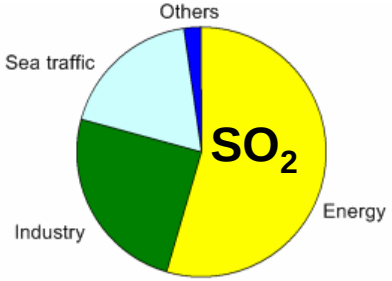
Local emissions in Stockholm County

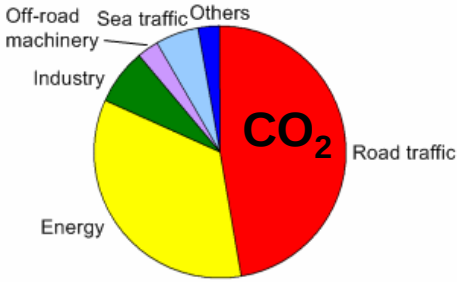












Most important emission topics

Emissions of PM10 and NO_x (HIA: Black carbon, PM2.5):

- Road traffic — Largest local source, exceedeces of AQS of PM10 and NO_2
  Good knowledge of the emissions

- Residential heating
  Large local source
  - City with district heating: large emissions of PM2.5, BC and benzo(a)pyrene due to leisure firing
  - Impact on health
  - No declining trend

  Large uncertainties in the emission data

Support from WG2: Road traffic

Best-practices from other cities regarding:

- use of emission models
  - Hbefa (exhaust)
  - Nortrip (non-exhaust PM)
  - Transphorm (black carbon)
- collecting information on activity data
  - speed data
  - traffic rythm (free flow, saturated, congested, stop & go)
  - vehicles fleet composition
  - amount of traffic

Support from WG2: residential heating

- Knowledge of different methodologies for building emission inventories of emissions from residential heating

- Composite mapping and emissions tool
    - compare our emissions inventory with others

Other source sectors where we could benefit greatly from WG2's tools : agriculture, off-road machinery

Other pollutants that we have special interest in: benzo(a)pyrene