

Chapter A: Ozone and Aerosol

A1: 25 (27)

A2: 45 (67)

A3: 35 (45)

A4: 45 (70)

A5: 45 (79)

A6: 10 ()

Total 205 pages (350)

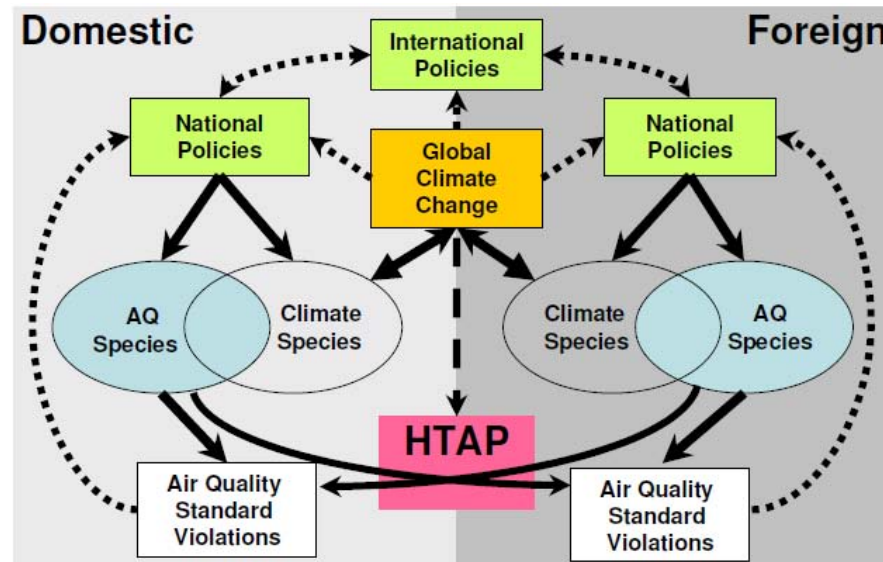
Chapter A1; Concepts; Cooper/Derwent

Minor changes:

remove box 1.1; with the 'science' questions (rephrased anyhow)

remove section 1.6 chapter story lines

Figure 1.9 needs a new home (probably Chapter A6)



Perhaps weak on aerosol

- No major items missing but
- Need to add some material on aerosol trends, NO₂, CO and CH₄ trends
- Reduce length (references; combine some material, reducing sections)
- Probably difficult to come to requested length reduction
- Limited revisions in next two weeks; August/September major update

Chapter 3: Emissions; Van Aardenne/Streets

- LA's were not present on meeting; Savitri Garivait
 - Formatting figures may give requested page limits
 - Chapter is mainly on describing datasets- still need somewhere description of mitigation potential and cost-curves/contrability in conjunction with future scenarios
 - Description of Chapter 4 emissions
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- Time schedule tbd

General:

- Re-organizing;
- cutting down of text
- improve aerosol part

2. Source Attribution:

Idealised attribution of annual mean surface O₃ at northern mid-latitude (Arctic?) showing source contributions from natural sources and methane (literature studies) and anthropogenic sources (estimated from S-R studies, and including inside/outside region distinction for a “typical” region). Can do for past and present conditions (Which future?)

Graphical for surface O₃; global tropospheric burden impacts in text.

Equivalent plot for aerosol estimated from extended S-R runs directly

3. S-R Relationships

Import sensitivity to be reintroduced; base on sum of other sources rather than out-of-region sources, as for Interim report (gives conservative estimate of effects).

Variability within regions/by month is currently shown graphically (not in 2007). Relative strength of S-R pairs; currently these are tabulated, but will bring out the key relationships.

5. Future scenarios

Quantify effect of changed emissions based on RCP8.5 2030 and RCP2.6 2050 scenarios – both on regional surface O₃ and on S-R relationships (by linearization). Aim to do the same for aerosol.
Highlight key changes due to expected climate change.

6. Uncertainties

Characterise key uncertainties by reference to TP1x and ES studies, comparison of global and regional model results, etc. Emphasise awareness of uncertainty but avoid detracting from messages of chapter; comparison with measurements to illustrate current strengths and weaknesses.

Will work with several place holder for first review draft

- We will try to include new results for PM mortality based on the SR6 simulations. This will give a better basis for comparing with ozone.
- We will try to enlist help of more health effects experts to review and complete the text on the health effects of ozone and PM generally, including new figures.
- We will complete the short sections on future health effects and recommendations for reducing uncertainty.

Chapter 5: Ecosystems

- Restructure ; reduce; harmonize with other parts
- coordinate with Chapter 4 (Ndep)
- Some more quantitative analysis
- more visual material
- some more analysis

- We will reorganize much of the chapter around ozone RF and PM RF
- This will leave sections at the end on climate impacts (dynamics) and the Arctic.
- We will complete the short sections on future climate effects and recommendations for reducing uncertainty.

Re-orgazing all sections wil address page limit issue

Chapter A6: Summary

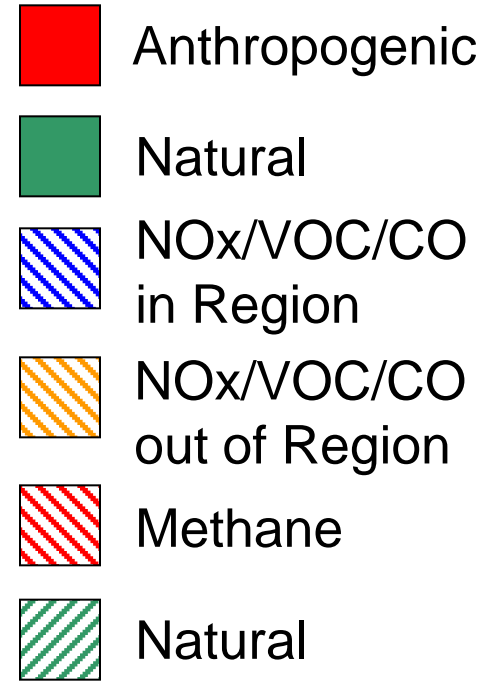
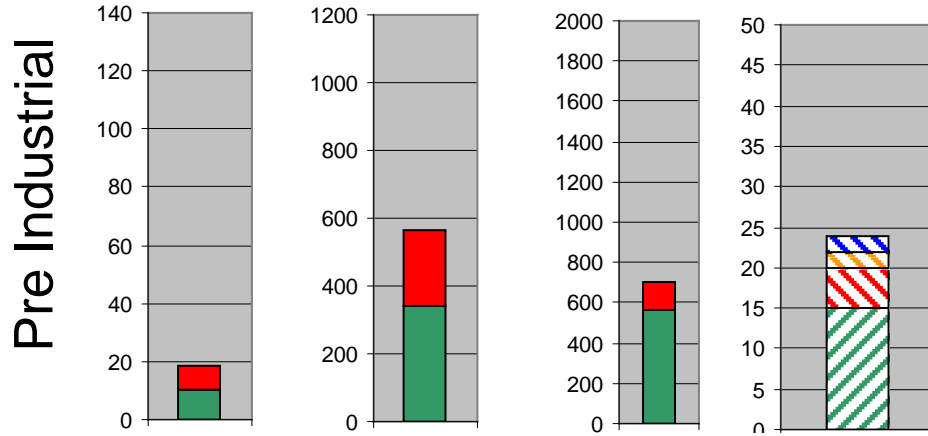
Status:

- In draft- iterating with Chapters 2-5 for the messages; and key messages
- Review draft probably only outline.

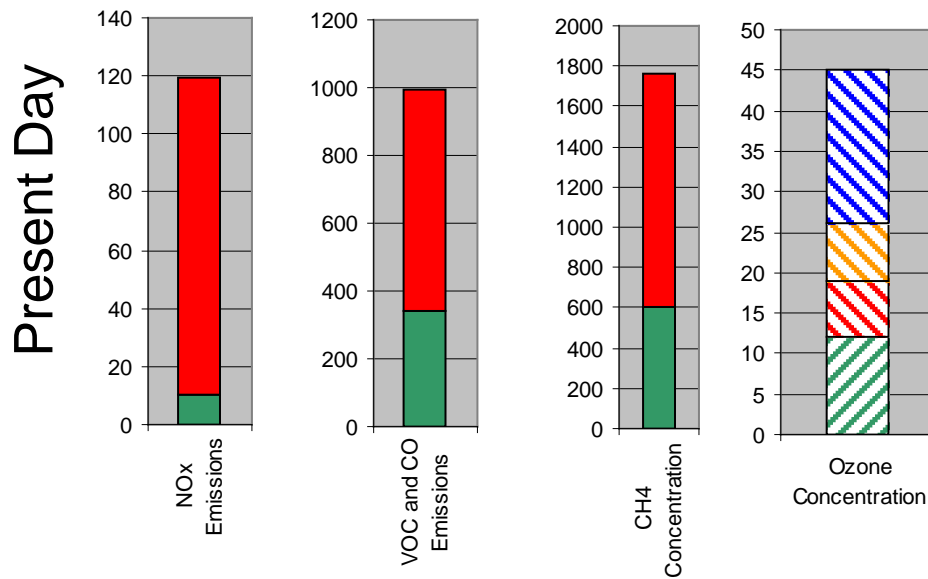
Structure:

- **Observational Evidence: Events and Trends**
- **Use of Modeling Analyses**
- **Source Attribution**
- **Source/Receptor Relationships**
- **Impacts on AQ Standards, Health, Ecosystem, Climate**
- **Effect of Expected Changes in Emissions and Climate**
- **Implications for International Policy**
- **Further Research and Analysis Needs**

A6:O₃ Source Attribution (illustrative only, not quantitative)



NO_x **VOC & CO** **CH₄**
O₃



Addressing Part D: Synthesis

- Q1: Observational evidence for transport of ozone precursors and aerosols:
a lot of material from surface, aircraft, satellite
need to strengthen information on trends
- Q2: Source attribution;
for ozone mainly based on modelling
need to draw more on literature
somewhat weak on controlability (add material also in Chapter 3)
- Q3: Source-Receptor;
most work done- but needs some harmonisation
- Q4: Impacts:
good material- need more on aerosol- some work-up of other material
- Q6: Processes (should also cover uncertainties)
Obs. Based proces studies, uncertainty discussion in Ch. 4
- Q7: Research:
Measure better the vertical dimension for LRT
Meas. Campaigns targetting specific uncertainties in LRT
Advanced use of data, data assimilation, integrated systems
Integrated ystems using measurements, models to improve emissions
- Q8: International cooperation
networks-capacity building-harmonisation and exchange of information