

BC Emissions Inventory & Reporting

Successes, gaps and challenges under CLRTAP

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The CLRTAP

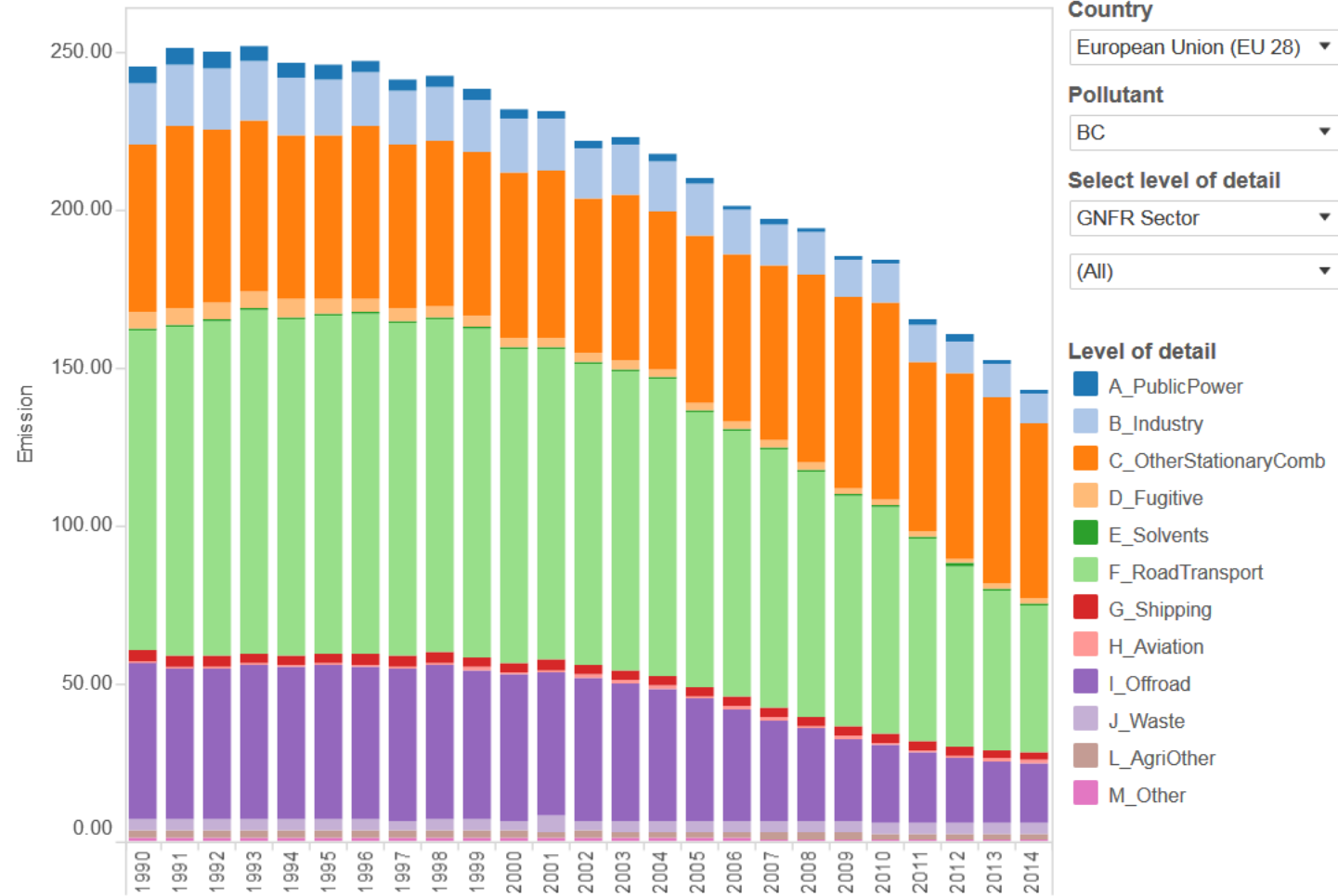
- **National emission inventories** – annual reporting from 51 countries, 26 pollutants.
- **EMEP/EEA Guidebook** – Methodologies fully consistent with IPCC Guidelines for GHGs.
- **Methodologies** – BC Emission Factors & methodologies for “all” sources.
- **BC Emissions Reporting** – Voluntary reporting from 2013.

BC Emissions Reporting (2017)

- **34 Countries** reported BC emissions estimates for 2015 in latest submission (February 2017).
- **Data availability** – sector level data available on CEIP website
- Interactive data viewers:
 - http://www.ceip.at/ms/ceip_home1/ceip_home/data_viewers/official_tableau/

The data presented in this data viewer uses the GNFR14 nomenclature and is the officially reported data submitted up to 12 August 2016

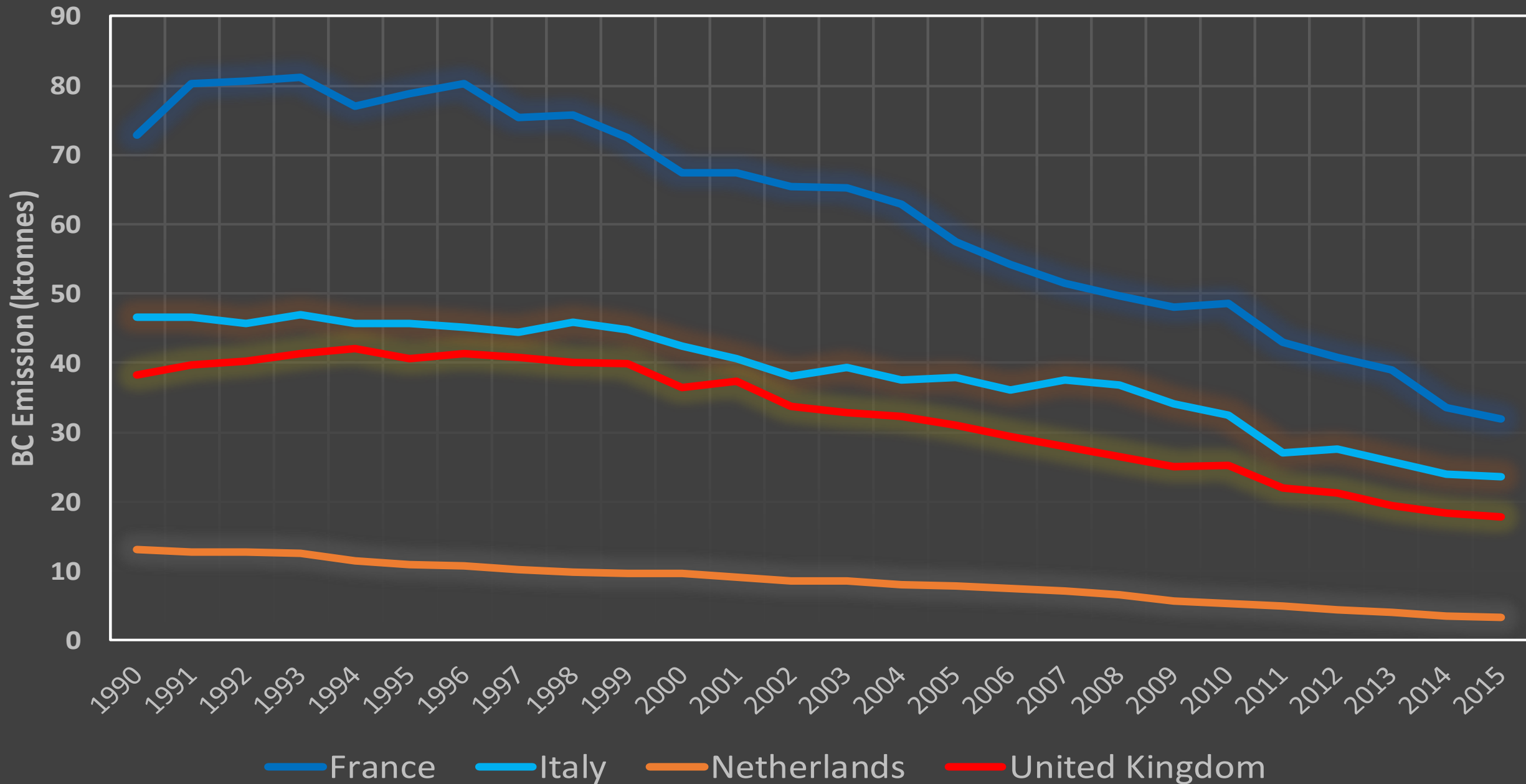
Emissions of BC (kilotonnes), European Union (EU 28)



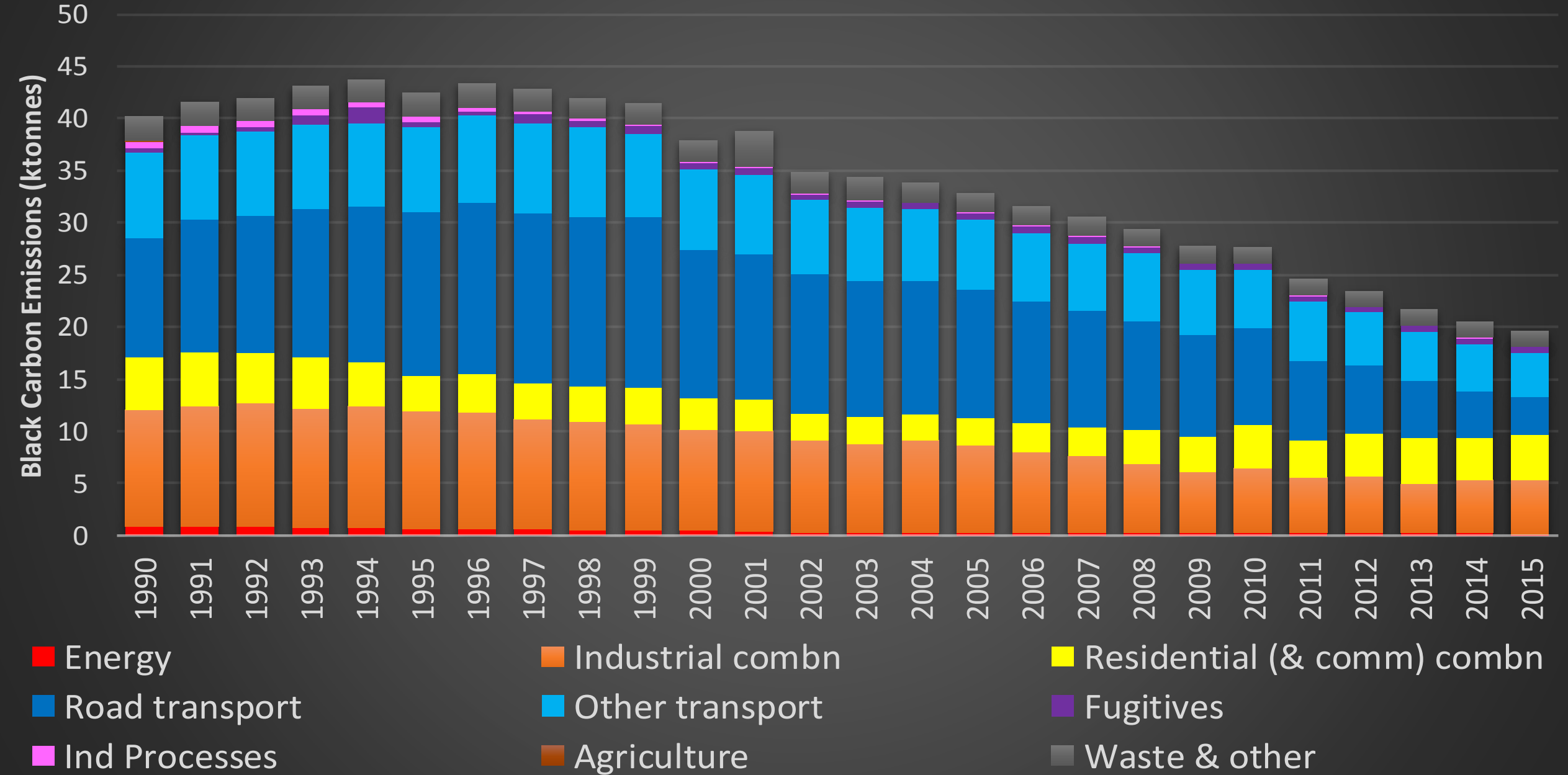
The data presented in this data viewer uses the GNFR14 and NFR14 nomenclature and is the officially reported data submitted up to 12 August 2016

BC Emissions Reporting (2017)

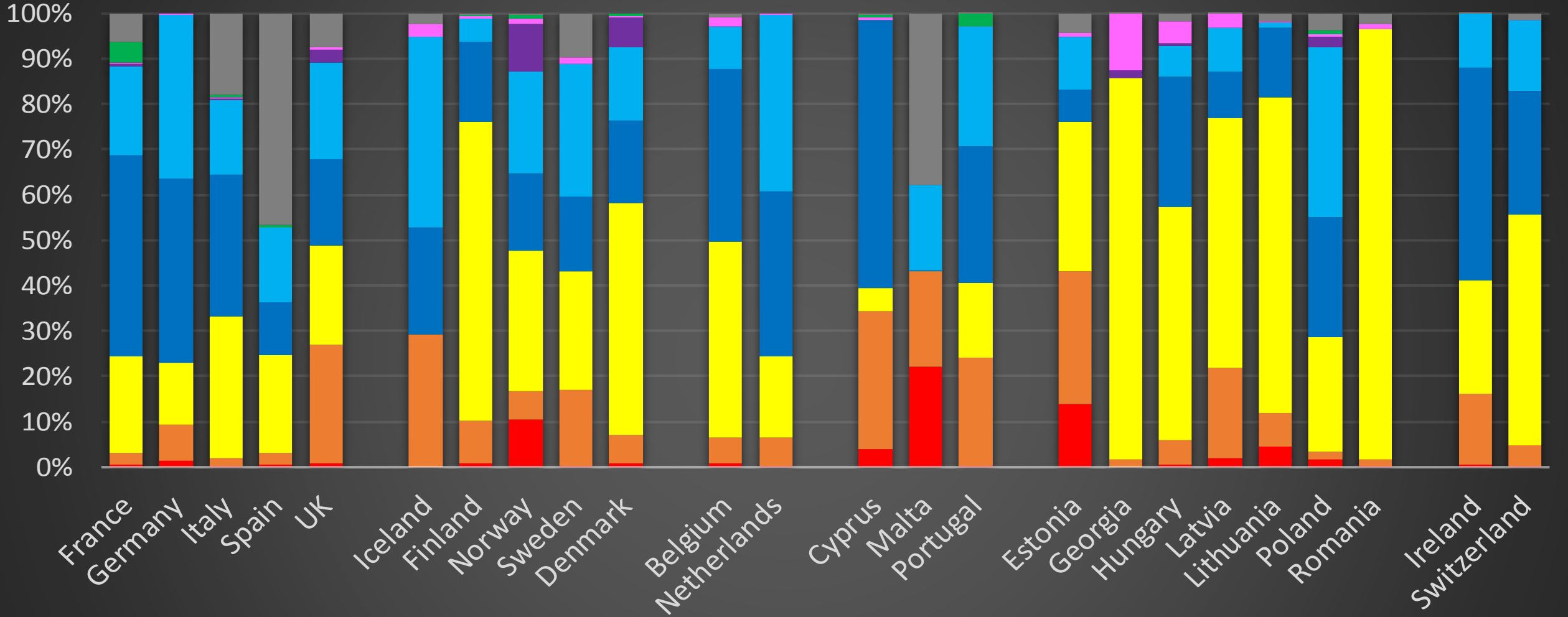
BC Time-series, Selected Countries



BC - United Kingdom



BC Source Apportionment



- Energy
- Industrial combn
- Residential (& comm) combn
- Road transport
- Other transport
- Fugitives
- Ind Processes
- Agriculture
- Waste & other

2016 EMEP EEA Guidebook:

BC Emission factors are expressed as % of $PM_{2.5}$

- Industrial Combustion
 - Emission factor for all fuel types is based upon a residential study (Zhang et al. [2012]) . References EC
- Residential Combustion
 - EFs for coal same as above (Zhang et al. [2012])
 - Tier 2 EFs for wood, natural gas, and solid fuels is an average of multiple studies. **All based on EC measurements.**
 - For some technologies, EFs are based on TSP (PM_{10} or $PM_{2.5}$)
- Road Transport
 - EFs specifically refer to an **average of EC literature values.**
- Funding “challenges”



BC Emissions Reporting – Next Steps

Transparency/Completeness/Consistency/Comparability/Accuracy

Completeness - Improve reporting coverage.

Accuracy - development of methodologies and EFs is on-going.
We struggle to express **uncertainties** satisfactorily.

Verification - Comparisons of CLRTAP vs “research” inventories are important.

Summary

- **Successes**
- Completeness of guidance
- Completeness of reporting

- **Drawbacks & Improvements**
- What is being reported?
- Geographical applicability of EFs?
- BC not a high priority within AQ
- AQ community “resource constrained”

- **Emerging Solutions**
- Strengthened review processes
- $PM_{2.5}$ priority will drive improvements

