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Department for Environment
Food and Rural Affairs

Policy Background for Air Quality Projections

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Content



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- **Background**
- **Why does Defra do projections?**
- **How do we do projections?**
- **What does Defra do with projections?**
- **What are the key issues with using projections?**



Background

- **Gothenburg Protocol**
- A multi-pollutant protocol under the UNECE CLRTAP
- Aim to reduce harmful effects due to air pollution by reaching environmental objectives to protect human health and the environment
- Sets binding emission ceilings for the four pollutants – SO_2 , NO_x , VOCs and NH_3 - to be attained by 2010
- **National Emissions Ceiling Directive (NECD)**
 - Similar to Gothenburg Protocol for EU MS



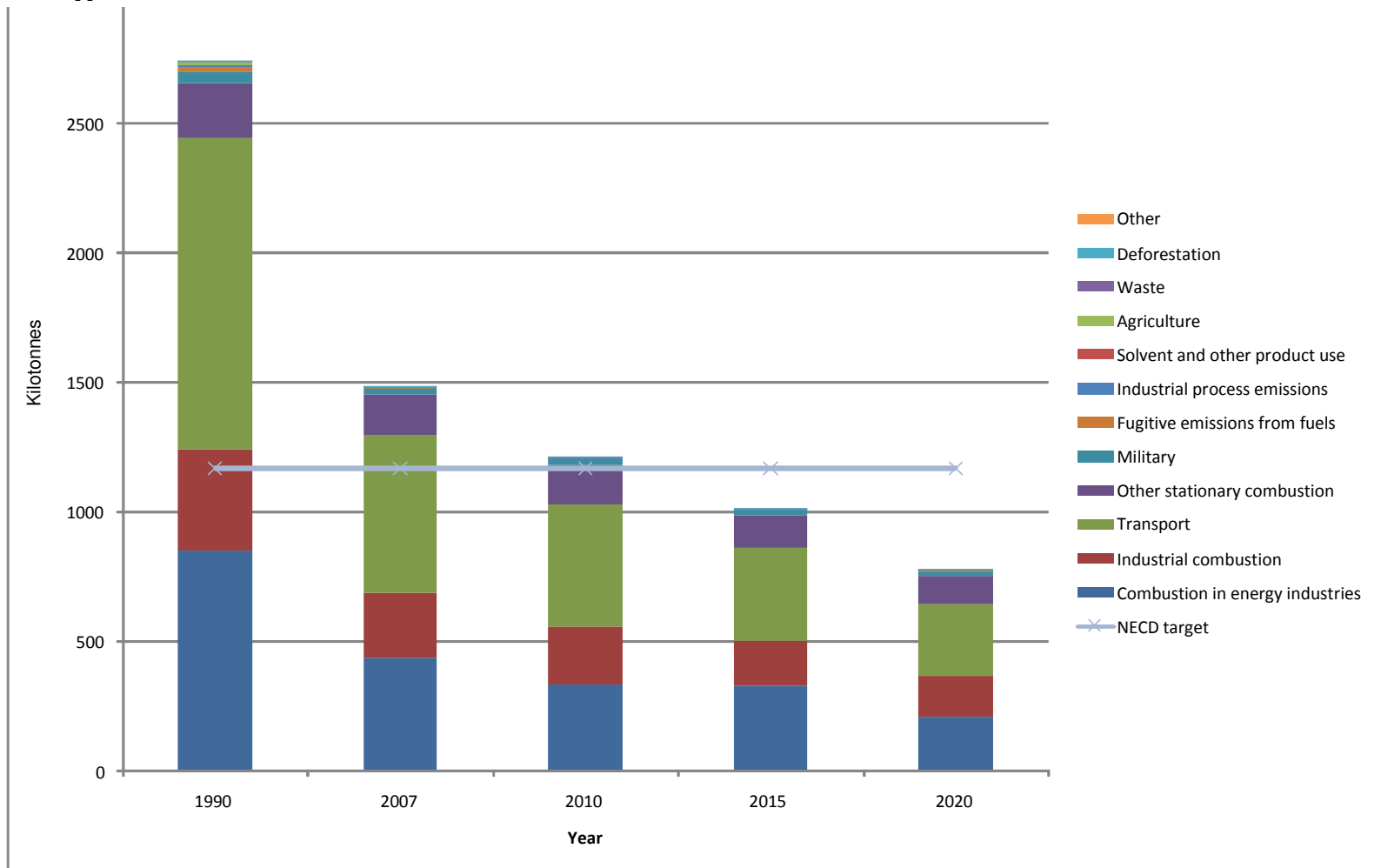
Why do we do projections?

- **Because we have to**
 - NECD - Annual projections: NO_x, SO₂, VOCs, NH₃
 - Report every 5 years under CLRTAP
- **To track progress on existing commitments**
 - NECD and Gothenburg Protocol 2010 ceilings
 - Evaluate compliance with limit values for ambient air (modelling)



Why do we do projections?

NO_x Emissions & Projections By Sector Compared to NECD Target





Why do we do projections?

- **To inform future negotiations**

- Gothenburg Protocol currently being revised
- Expected to set new, tighter ceilings for 2020 for NO_x , SO_2 , VOCs and NH_3 and add primary $\text{PM}_{2.5}$
- Revision begun 2009, negotiations likely to conclude Dec 2010/11
- Revision of the NECD – 2010?

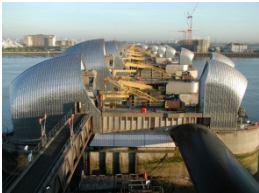
- **Work on Time Extension Notifications**

- PM_{10} TEN submitted in 24 April decision due later this year
- NO_2 TEN to be submitted in 2010



How do we do projections

- **Current NAEI**
- **Based on a number of key activity drivers:**
 - Energy statistics from DECC energy model - UEPs
 - Traffic forecasts from DfT's National Transport Model
 - North Wyke Research agricultural projections
- **Emissions factors**
- **Annual or more frequent**
 - Updated based on need & changes in key activity data
 - Timeframes - 2010, 2015, 2020, 2025, 2050

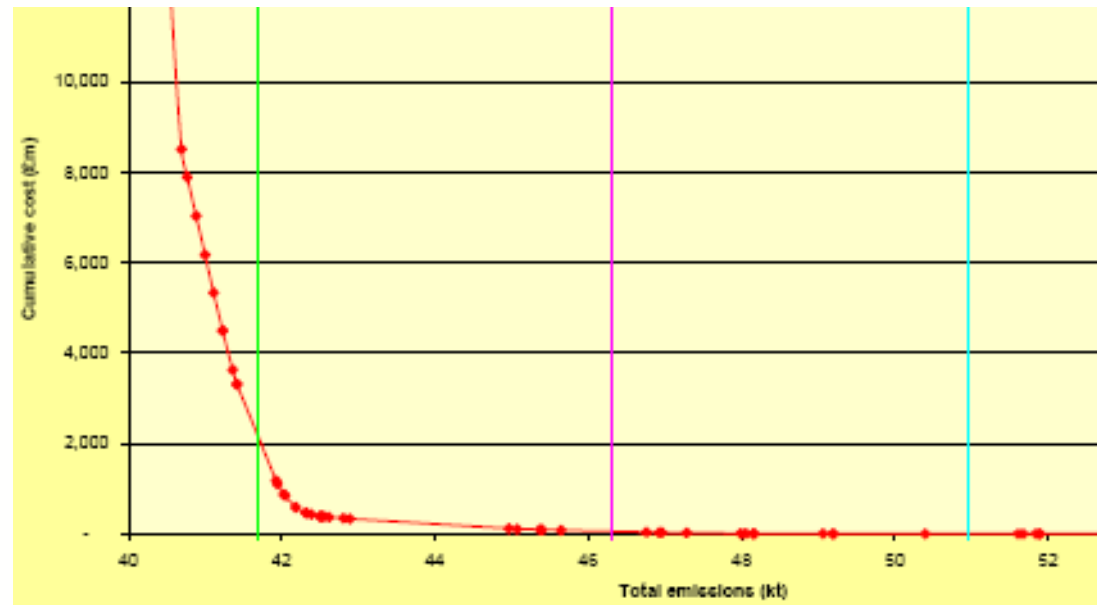


What do we do with projections?

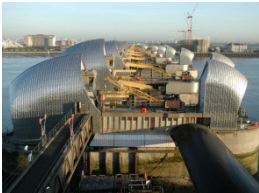


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- Inform a negotiating position
- A basis for cost curves



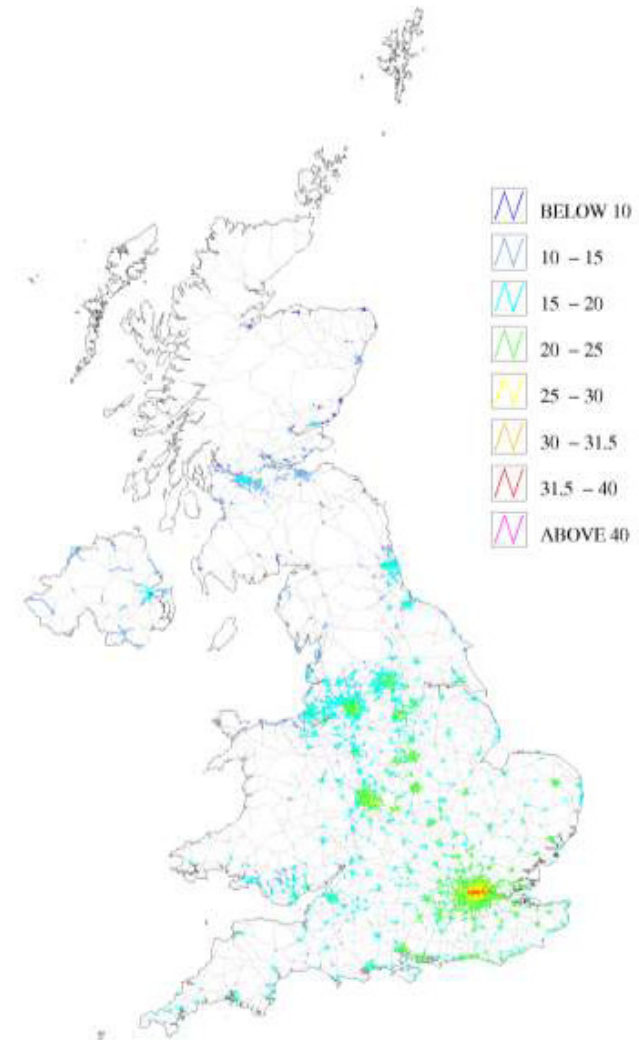
- A basis for integrated assessment modeling



What do we do with projections?

Air quality modelling

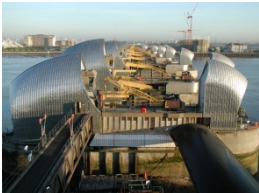
Urban major roads, annual mean roads
 PM_{10} concentration, 2011 ($\mu g m^{-3}$,
gravimetric)





What are the key issues with using projections?

- **The future isn't certain!**
Base data
Projected activity data
Projected emissions factors
- Need to understand the **assumptions** in the projections
- Need to understand key **sensitivities**
- The longer the timeframe, the more uncertain things get



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