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# Limit values or measures?
## -how can the EU do it better?


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Institute for Air Quality Management AGM, 17 November2011

# Limit Values

- Limit Values are not ideal
  - -inefficient lead to ‘hot spot’ chasing
  - -no pressure to reduce if C < LV
- But they have one great advantage in a ‘single market’ system like the EU, they offer the same level of protection to everyone
- Commission wouldn’t consider dropping them when we pitched ‘exposure reduction’ prior to the 2008 Directive

# ‘Measures’ (1)

- One way out of the ‘hot spot’ problem
- Run a BAT – based policy, no LVs?
- Attractive – mentioned it to an industry colleague a couple of years ago and he looked very worried, so it must have merit
- Each single source would be clean but how to control the number of sources?
- How does one know when to stop (or start)?
- Stop when costs & benefits balance? (anything ‘greener’ would be unacceptable to most governments, also would need to wait for the health effect studies to establish CRFs)

# ‘Measures’ (2)

- Why not a combined LV and ‘measures’ policy?
- We have that already – Euro standards, IED/IPPC, LVs

- We currently have a 4-way process:
  - -LV
  - -Exposure Reduction
  - -BAT via Euro stds and IED/IPPC
  - -NECD
- Do we need them all? We probably do

# EU Process (1)

- How did we get into the current situation?
- Negotiating several pollutants in one instrument leads to horse-trading as in the 1999 Directive
- This did not allow adequate consideration of the uncertainties especially on $NO_2$
- Compare the US process – deals with one pollutant at a time, very lengthy, prone to litigation, but produces robust targets
- There must be a better , middle way – negotiate one pollutant at a time (need to square the 'Better Regulation' enthusiasts)
- The European Parliament's powers are arguably too weak

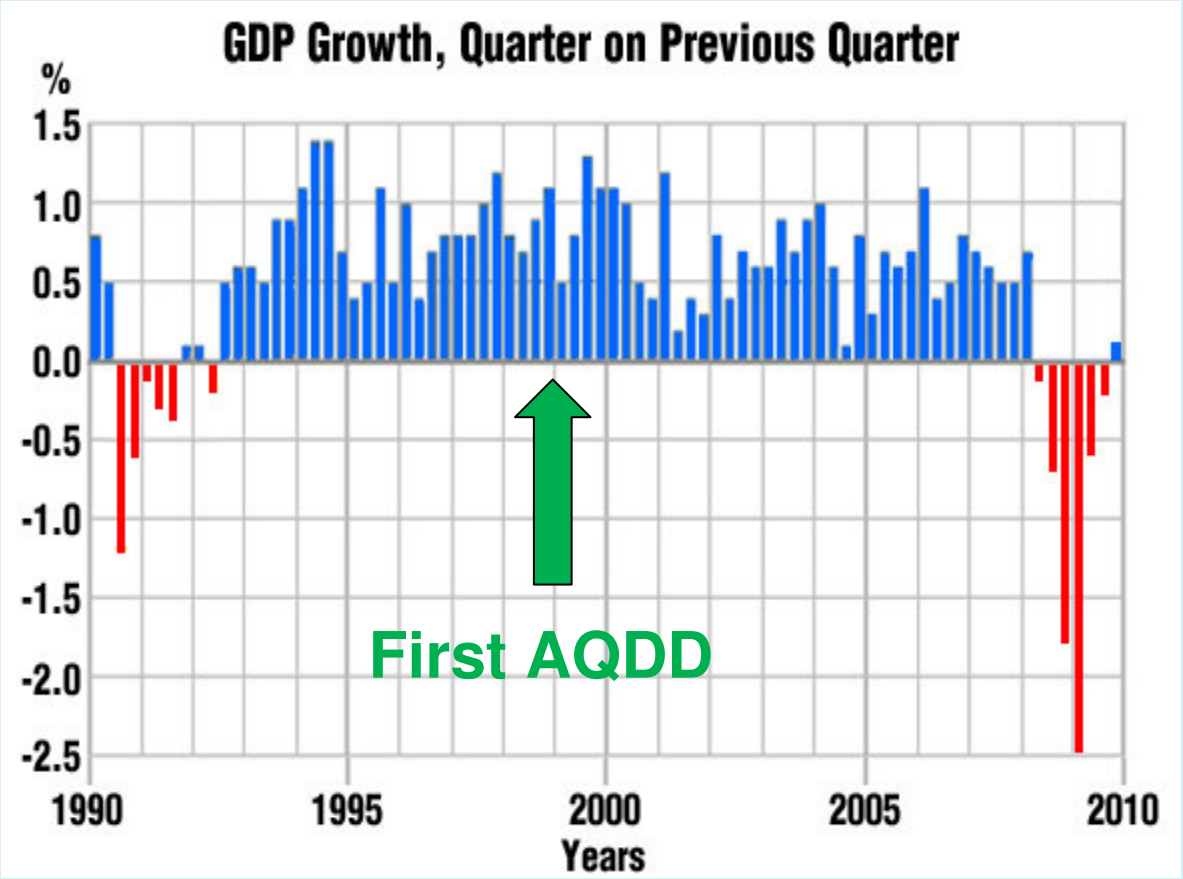
# EU Process (2)

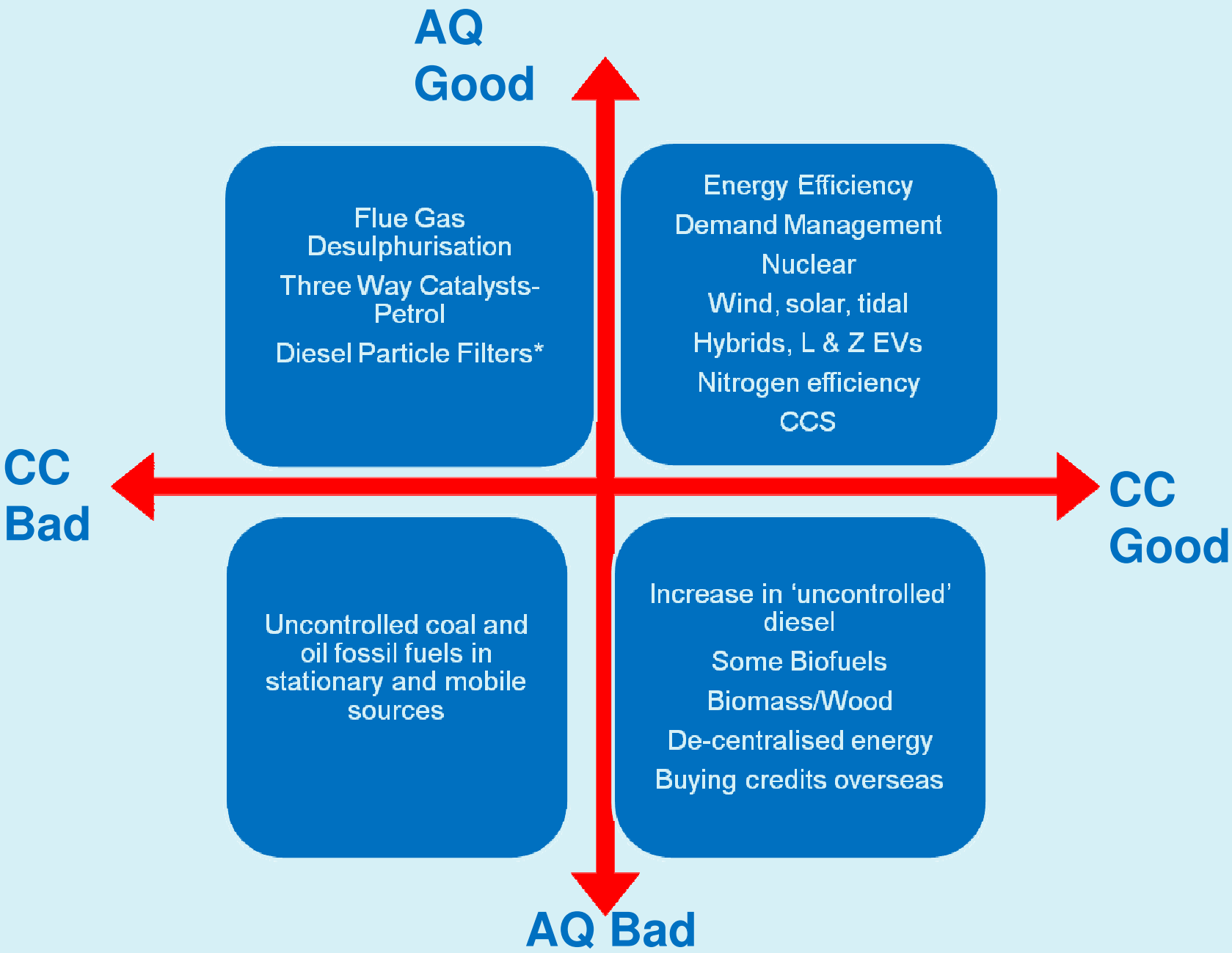
- **Simplify the Directive(s) ?**
- **Too many PM obligations ? (why a Target Value for PM2.5?**
- **If we found the '*silver bullet(s)*' wouldn't that just add to the complexity?**
- **How would we manage that in a regulatory context?**
- **Maybe we need to look for the '*base metal bullets*' - things we can ignore**
- **Don't expect ambitious obligations to emerge from the EU review !**
- **But need to plan now for the longer term**

**How do you separate environmental ambition from wider economic performance?**

**Before you cut the cake you have to make it !**

**But one way is to combine environmental ambitions – AQ+CC**




AQ Good
Flue Gas Desulphurisation
Three Way Catalysts-Petrol
Diesel Particle Filters*
Energy Efficiency
Demand Management
Nuclear
Wind, solar, tidal
Hybrids, L & Z EVs
Nitrogen efficiency
CCS
CC Bad
CC Good
Uncontrolled coal and oil fossil fuels in stationary and mobile sources
Increase in 'uncontrolled' diesel
Some Biofuels
Biomass/Wood
De-centralised energy
Buying credits overseas
AQ Bad

# $NO_2$, health and the Limit Values

- Annual LV based on WHO Guideline (2000)
- WHO Guideline used IPCS Environmental Health Criteria report (1997)
- Based on meta-analysis of 9 indoor studies
- 4 studies measured $NO_2$ by Palmes tubes
- 5 studies used 'gas or electric stoves?' as the only exposure measure
- IPCS Report:- "On the basis of a background level of **15** µg/m$^3$ and the fact that significant adverse health effects occur with an additional level of **28.2** µg/m$^3$ or more, an annual guideline of **40** µg/m$^3$ is proposed."

# The EU CAFE process asked WHO 'What is the basis for maintaining the WHO annual specific guideline for $NO_2$?

- **WHO response :**
  - "Uncertainty remains over the significance of $NO_2$ as a pollutant with a direct impact on human health at current ambient air concentrations in the European Union, and there is ***still no firm basis for selecting a particular concentration as a long-term guideline for $NO_2$.***"
  - "In recent studies....$NO_2$ has been associated with adverse effects even when the annual mean is within a range that includes 40µg/$m^3$. However we are unable to establish an alternative AQG from these studies. We therefore recommend that the WHO AQG should be retained or lowered."

- WHO further response:
  - "We have been asked to comment on our confidence in this guideline. Our reply is that it remains ***difficult to provide solid scientific support for the numerical value of the guideline. There still is no robust basis for setting an annual average guideline value for $NO_2$*** through any direct toxic effect."

# WHO Global Update 2005

- "In population studies, $NO_2$ has been associated with adverse health effects even when the annual average concentration complied with the WHO annual average guideline of 40 µg/m$^3$.
- "These results (with indoor studies) suggest a lowering of the annual average guideline."
- "However since $NO_2$ is...highly correlated with other primary and secondary combustion products, ***it is unclear to what extent the health effects observed in epi studies are attributable to $NO_2$ itself or to other correlated pollutants."***