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Insights from ex-ante modelling on socio-economic impacts of air pollution

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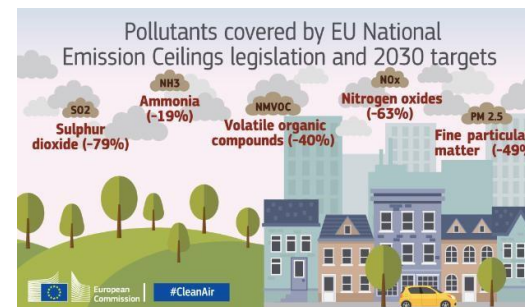
The Clean Air policy framework

Emissions

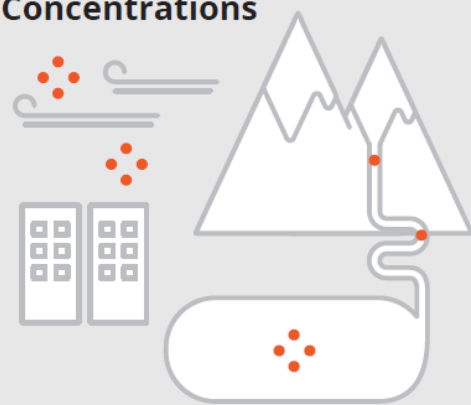


Source-specific emission standards

- Industrial Emissions Directive
- Medium Combustion Plants Directive
- Eco-design Directive
- Energy efficiency
- Euro and fuel standards



Concentrations

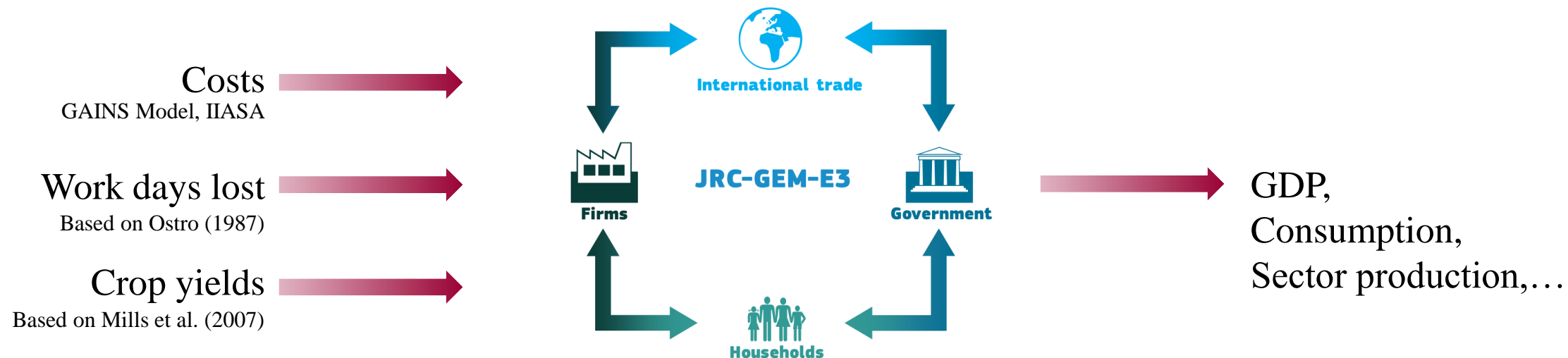


Air Quality Directives

Maximum concentrations of ambient air pollutants

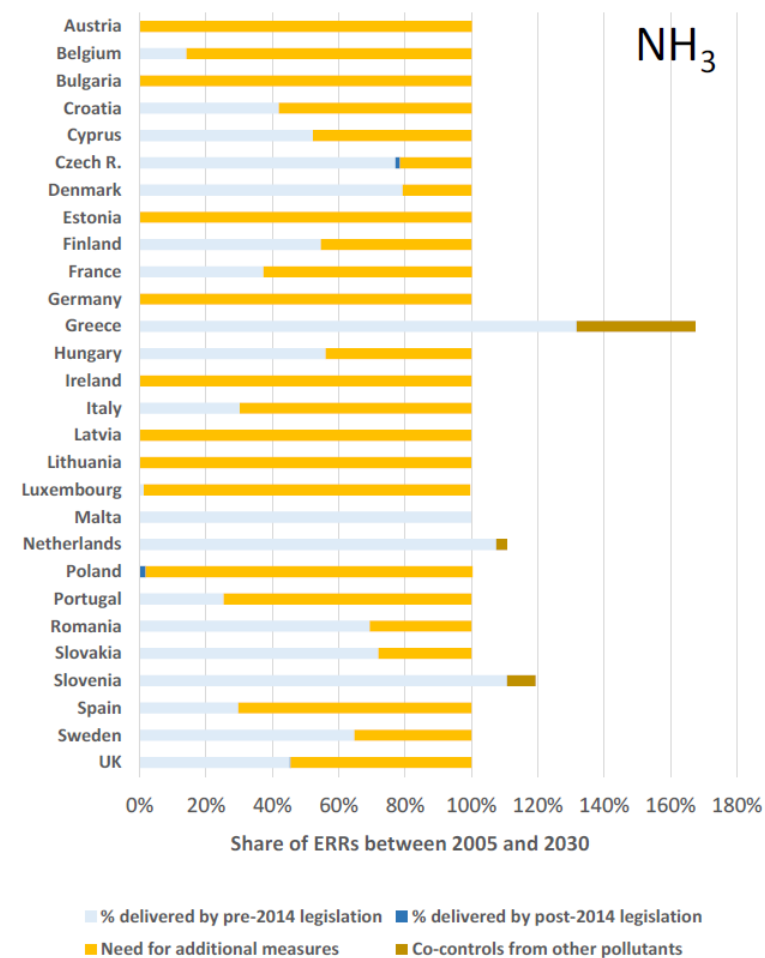
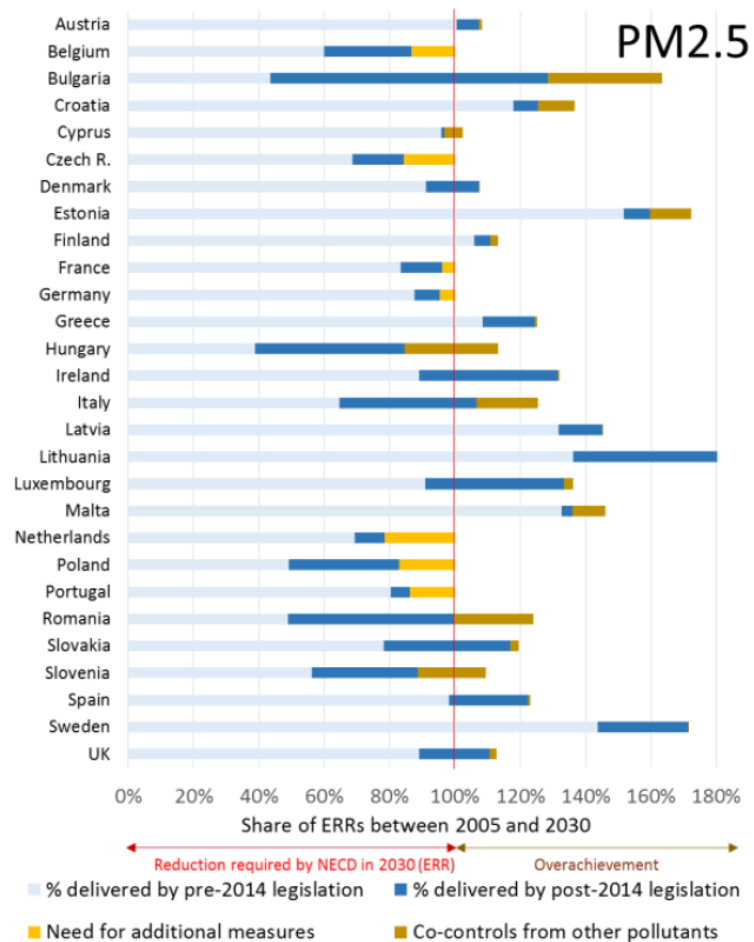
Source: EEA (2018). Air quality in Europe – 2018 Report

The general equilibrium modelling framework



- Air pollution control expenditures imply **additional demand for intermediate goods**.
- Higher labour productivity **raises income**, part of which is consumed, boosting economic output.
- Higher costs may affect **competitiveness** through international trade.

The need for additional measures



Source: EC (2018). First EU Clean Air Outlook

Macro-economic CBA in the Clean Air Outlook

Table 2: Impact of achieving the 2030 emission reduction commitments on GDP and sector output. Source: JRC-GEM-E3.

Benchmark* includes						
Source legislation adopted since 2014?	No	No	Yes	Yes	Yes	Yes
Climate and energy package ³² ?	No	No	No	No	Yes	Yes
Health and crop yield benefits included?	No	Yes	No	Yes	No	Yes
GDP	-0.010	0.006	-0.005	0.006	-0.002	0.006
Agriculture	-0.09	-0.04	-0.05	-0.07	-0.07	-0.05
Energy	0.01	0.03	0.01	0.02	0.01	0.02
Energy intensive industries	0.00	0.02	0.00	0.02	0.00	0.02
Other industry	0.01	0.03	0.01	0.02	0.00	0.02
Services	0.00	0.01	0.00	0.01	0.00	0.01

* Results indicate percentage difference with the respective benchmark in 2030.

Source: EC (2018). First EU Clean Air Outlook

Macro-economic CBA in the Clean Air Outlook

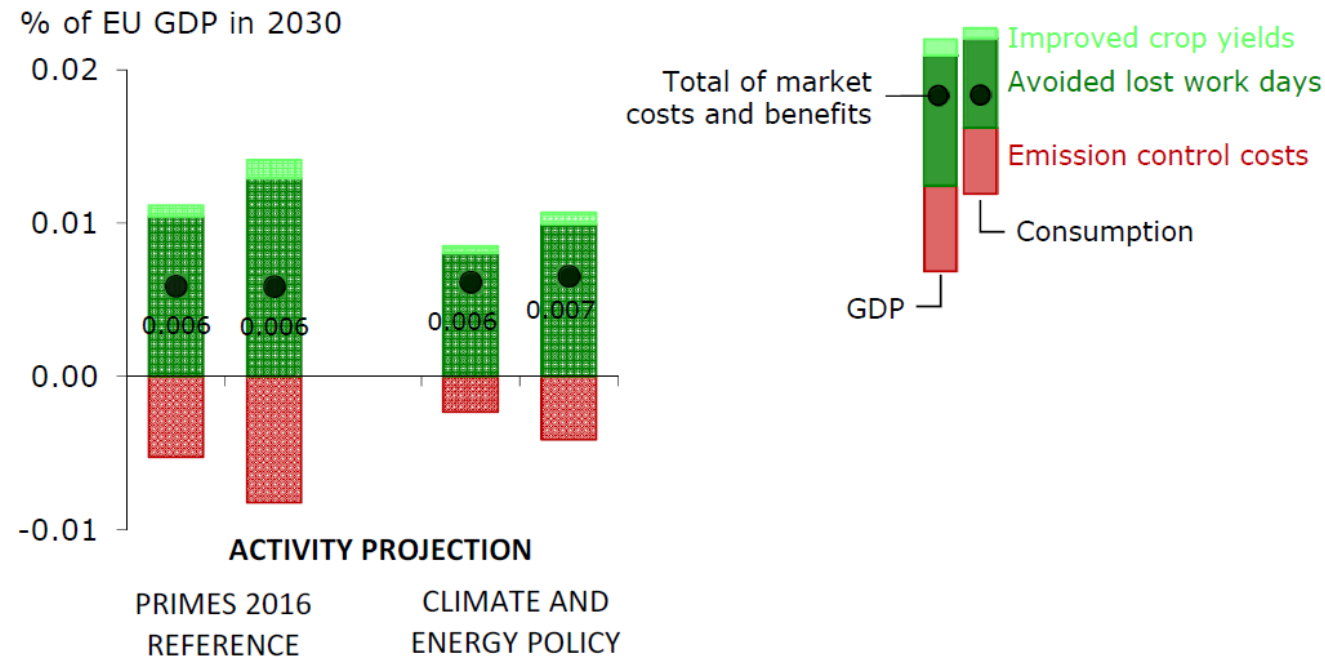
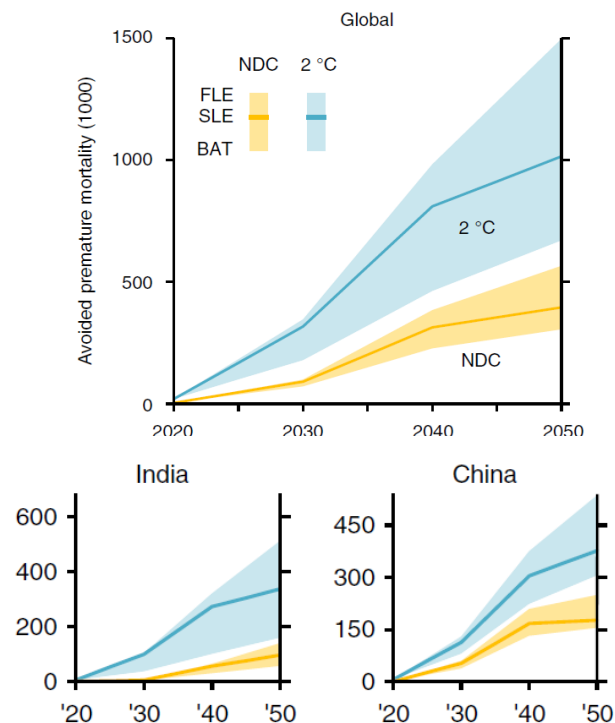


FIGURE 4: MACRO-ECONOMIC ASSESSMENT OF MARKET COSTS AND BENEFITS: GDP AND HOUSEHOLD CONSUMPTION. RESULTS SHOW THE IMPACT OF REACHING THE AGREED EMISSION CEILINGS FROM TWO DIFFERENT STARTING POINTS: THE PRIMES 2016 REFERENCE AND THE 2030 CLIMATE AND ENERGY POLICY PACKAGE. SOURCE: JRC-GEM-E3 MODEL

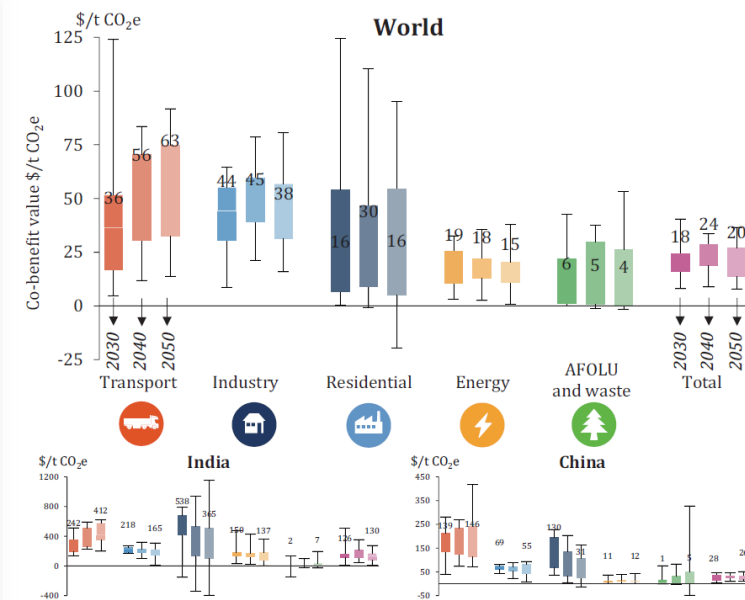
Source: Amann et al. (2017). Costs, benefits and economic impacts of the EU Clean Air Strategy and their implications on innovation and competitiveness

Global air quality co-benefits of climate policy

- The value of air quality co-benefits outweighs the mitigation costs to reach Paris Agreement pledges in many regions when avoided premature mortality is included.



- Heterogeneous co-benefits across sectors suggest directions to ratchet up climate ambition and improve human health simultaneously.



Thank you

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 @Toon_V



<https://ec.europa.eu/jrc/en>
<https://ec.europa.eu/jrc/en/geco>
<https://ec.europa.eu/jrc/en/gem-e3>

Concluding remarks

- Combining tools may give a more complete impact assessment
- Green Deal and Clean Air can be mutually reinforcing
- 2nd Clean Air Outlook is coming later this year
- Synthesis of recent econometric evidence can feed into impact assessment modelling