



# How Does Decarbonization Change the Fiscal Equation? Discussion

Selma Mahfouz

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# A « global deal » to reduce emissions by 2030

The paper estimates the fiscal impact of:

- **Global deal** in which, by 2030: AEs reduce emissions by 49%, EMEs by 24 % and LICs increase by only 14% (all relative to 2019),
- **Mix of carbon prices** (= \$75, \$50 and \$25 per ton of CO<sub>2</sub> in 2030 for high, middle and low-income countries, doubled “between 2030 and 2040”)
- And **other policies** (feebates, standards, regulations, subsidies) converted into shadow prices (\$150 - \$75 - \$30, respectively) + Transfers from AEs to LICs

Main results (for 2030):

- Total **economic costs**: 0.5% of GDP at the global level, < 1% of GDP in AEs (estimated through marginal abatement curves/country), and co-benefits
- **Fiscal impacts**: AEs: +0.5% of GDP for US and Japan, 0%+ for Germany, slightly negative for France and UK – mostly because of erosion of fossil fuel tax bases  
EMEs and LICs: >+1% of GDP (incl. in 2040 – mostly due to carbon tax)

# A comprehensive approach...

## A nice and comprehensive approach:

- ***Right approach to deal with a global problem:*** all countries, all sectors, all components of fiscal equation

But comes at the cost of ***simplifying assumptions:***

- reduced form model for energy demand,
  - aggregate marginal abatement curves for economic costs,
  - do economic costs (and co-benefits) feed into fiscal equation?
- ***Does not rely exclusively on carbon prices,***  
Even though carbon tax revenues are a large component of the fiscal equation and other policies modelled through shadow prices
  - ***Takes into account the need for transfers*** – to low income households, negatively affected firms and low income countries

Although the way they are calibrated may be discussed

... that entails a risk of under-estimating costs...

**Puzzle:** “global deal”: very small costs and increases fiscal space in most countries

- ***Overall investment costs*** (0.5% of GDP)

- ***low***, compared to other estimates: cf. EU, UK (next slides)

- (because some investment already in baseline? Reduction in GHG / BAU?)

- confront with more ***granular approaches*** (costs of replacing oil or gas boilers with heat pumps, ICE cars with Evs... >> 2% of GDP for France)

- marginal abatement costs well above \$150/t for AEs for 50% reduction?

- ***“Compensation” of households:***

- offsetting the regressive effects of carbon taxes

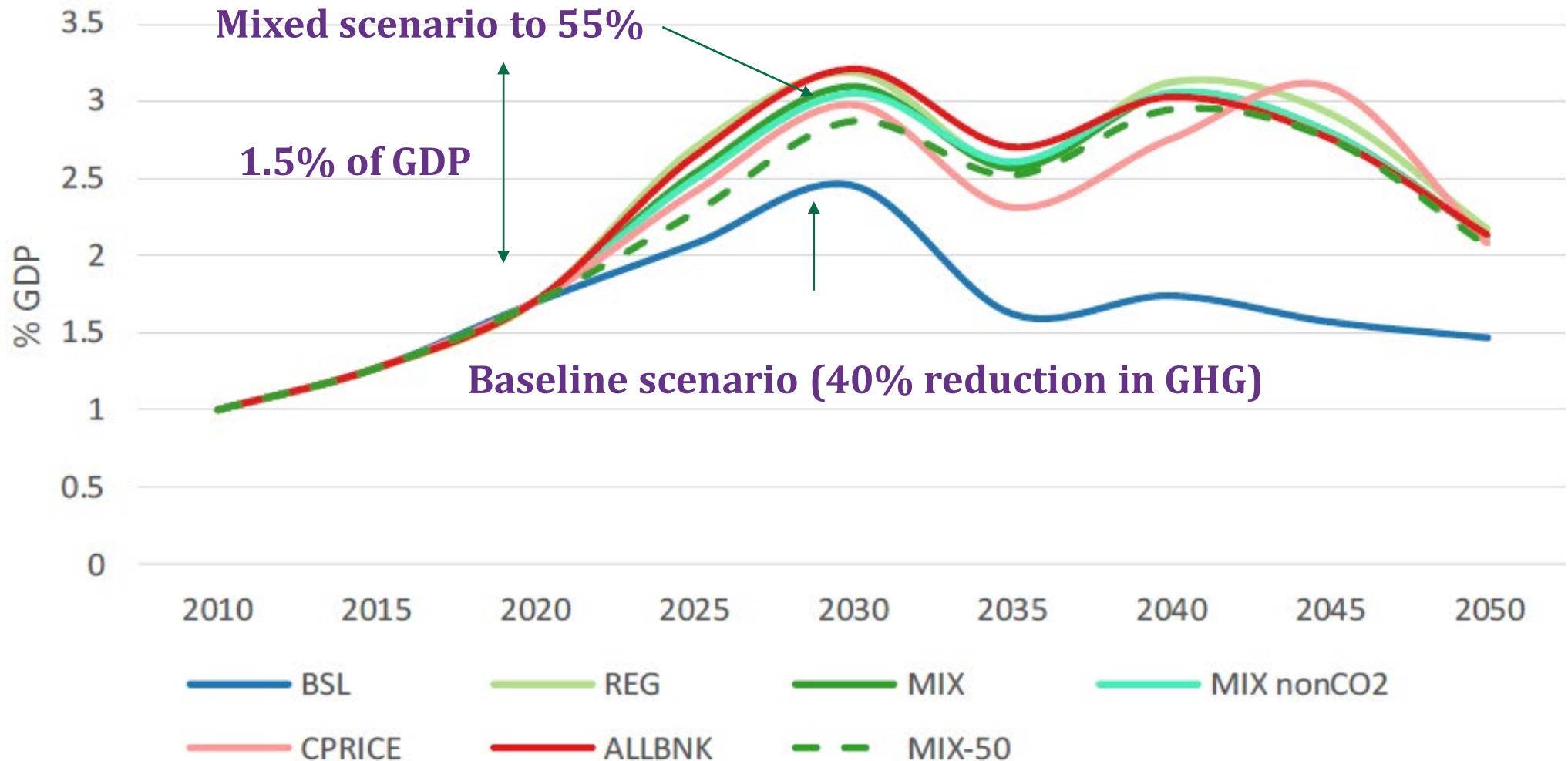
- or helping households invest in decarbonized solutions?

>> Heat pump + renovation + EV = ***more than 2 years of income for middle class***

- ***“Compensation” of firms:*** excluding technology and deployment subsidies ?

# EU – Overall investments close to 1.5% of GDP (Impact assessment « Fitfor55 »)

## EU Investments in energy systems (incl. buildings but excluding transportation)

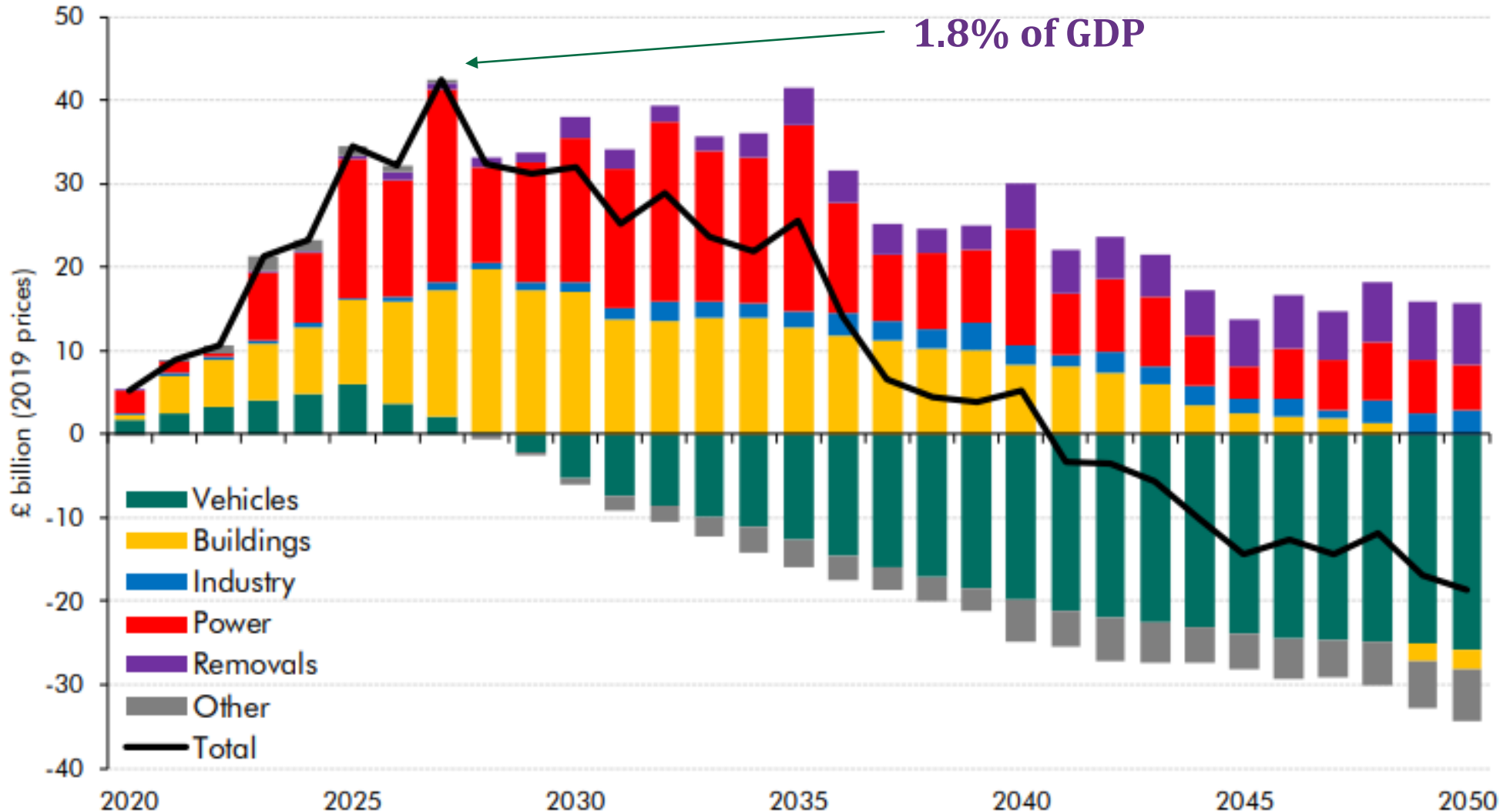


Source: European commission (2020), Impact Assessment Fit for 55, figure 11, p. 70

# UK - Net investments: up to 1.8% of GDP (OBR Fiscal report, 2021)

## UK net cost by sector to reach net zero

Chart 3.12: Net cost by sector of reaching net zero in the CCC's balanced pathway



Source: CCC balanced net zero pathway

## ... By overlooking financing and supply-side effects

### From a broader economic perspective:

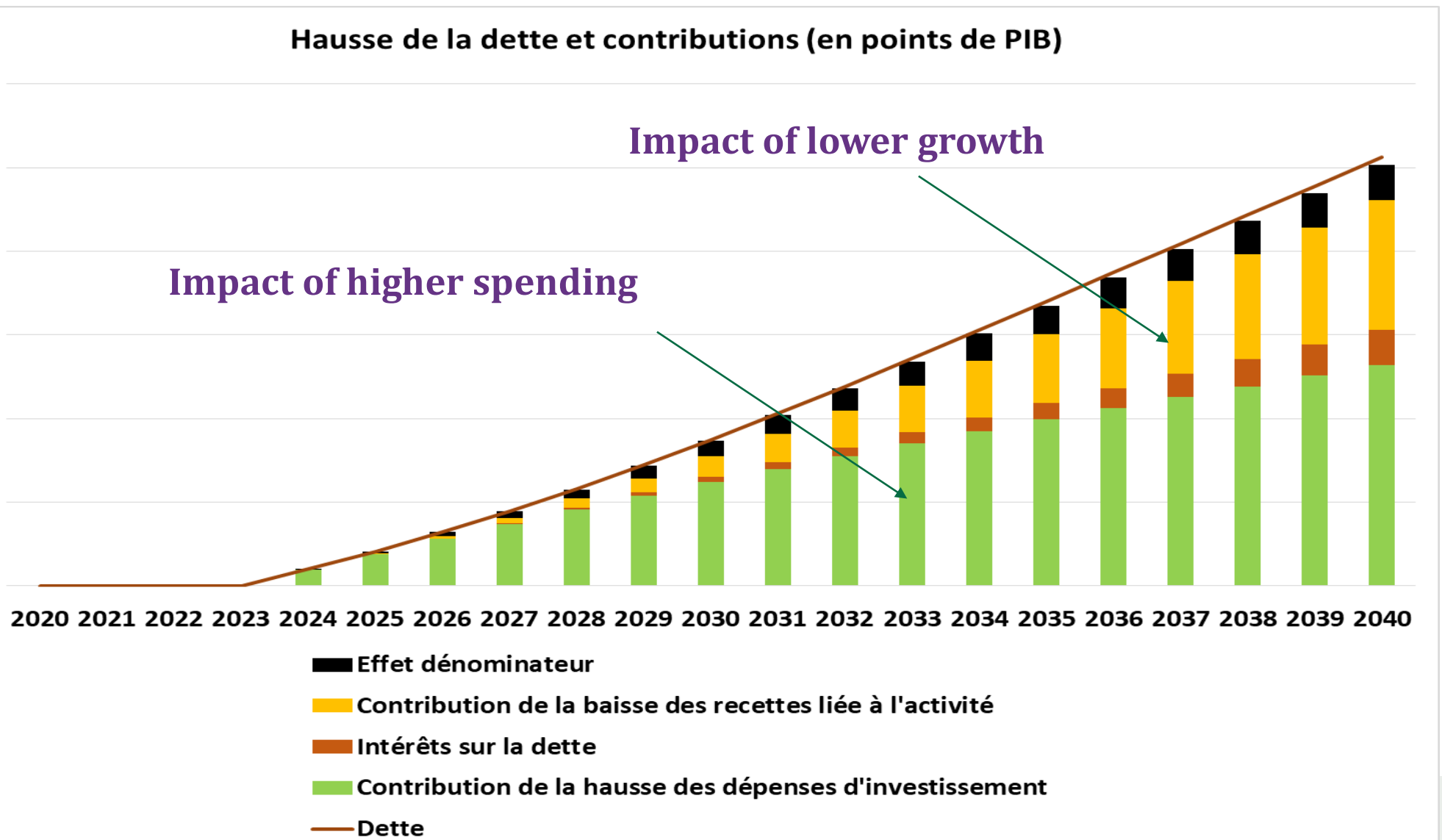
- Transition= *investing to substitute capital for fossil fuels*

(limited impact of sufficiency and redirecting technical progress in the short term)

- This investment does not increase capacity or reduce production costs in the short run >> *does not increase potential output*
- Carbon tax “incentivizes” investment – but does not change liquidity constraints
- NB: assumption here: costs of renewables are lower than those of fossil fuels.
- If there are *financing constraints*, it may crowd out productive investment  
>> *reduce productivity growth (0.25% of GDP?) and potential output*  
>> This has an impact on the fiscal equation
  - Next slide

# France- 10 points increase in debt ratio by 2030 (25pts by 2040)

## France: Increase in debt ratio from higher spending and lower growth







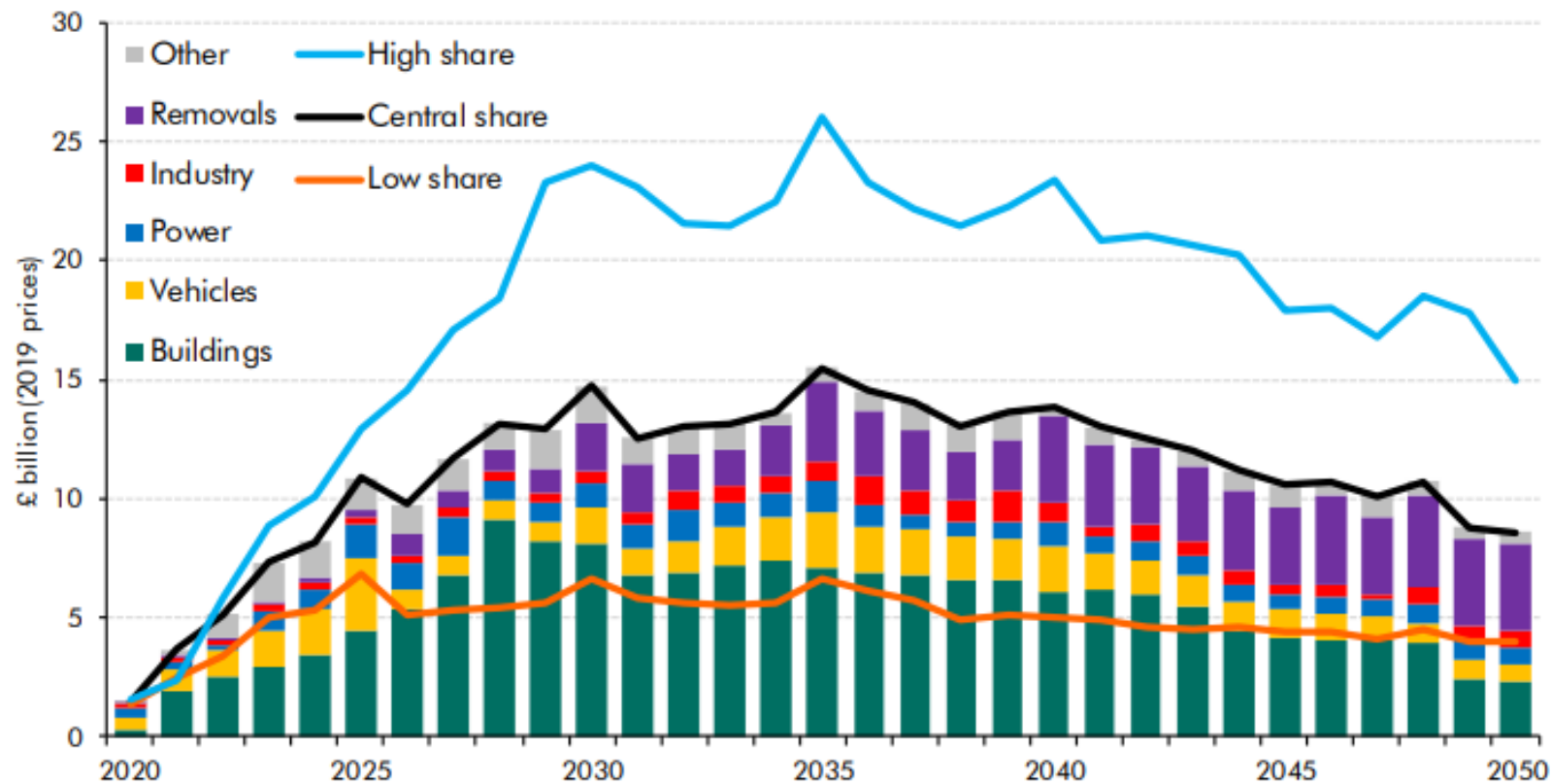
**Thank you**

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# UK (OBR) - Fiscal cost

Chart 3.19: Costs to public sector of the transition to net zero



Source: CCC balanced net zero pathway, OBR

## Investissements annuels supplémentaires (total)

<i>En milliards d'euros</i>	<b>Investissement supplémentaire en 2030</b>
<b>Bâtiments publics</b>	<b>10</b>
<b>Infrastructures</b>	<b>7</b>
<b>Rénovation des logements (chauffage et isolation)</b>	<b>21</b>
<b>Rénovation du tertiaire privé</b>	<b>17</b>
<b>Équipement des ménages en véhicules électriques</b>	<b>-8</b>
<b>Équipement des entreprises en véhicules électriques, poids lourds et utilitaires légers</b>	<b>4</b>
<b>Investissement des entreprises (y compris énergie)</b>	<b>13</b>
<b>Agriculture</b>	<b>2</b>
<b>TOTAL</b>	<b>66 (2% of GDP)</b>

## Coût brut de la transition pour des ménages-type

<b>Opération</b>	<b>Investissement brut (euros)</b>	<b>Taux d'effort total (annuel) Ménages très modestes (D1-D2)</b>	<b>Taux d'effort (annuel) Classes moyennes (D4-D5)</b>
<b>Rénovation du logement</b>	24 000	146 % (6 %)	82 % (3 %)
<b>Changement du vecteur de chauffage</b>	13 000	79 % (3 %)	44 % (2 %)
<b>Acquisition d'un véhicule électrique</b>	35 000	213 % (13 %)	120 % (8 %)

## Coût annuel de la transition pour les finances publiques (dépenses)

<i>En milliards d'euros</i>	Investissement supplémentaire en 2030	Part publique	
		Part de financement public constante	Scénario optimal
<b>Bâtiments publics</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>Infrastructures</b>	<b>7</b>	<b>4</b>	<b>4</b>
<b>Rénovation des logements</b>	<b>21</b>	<b>10</b>	<b>14</b>
<b>Rénovation du tertiaire privé</b>	<b>17</b>	<b>0</b>	<b>2</b>
<b>Équipement des ménages en véhicules électriques</b>	<b>-8</b>	<b>-2</b>	<b>-2</b>
<b>Équipement des entreprises en véhicules électriques, poids lourds et utilitaires légers</b>	<b>4</b>	<b>0</b>	<b>1</b>
<b>Investissement des entreprises (yc énergie)</b>	<b>13</b>	<b>3</b>	<b>4</b>
<b>Adaptation</b>	<b>3</b>	<b>n.a.</b>	<b>1</b>
<b>TOTAL (y c adaptation et hors agriculture)</b>	<b>67</b>	<b>25</b>	<b>34</b>