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# THE MACROECONOMIC BENEFITS OF AMBITIOUS ENERGY EFFICIENCY POLICY — A CASE STUDY FOR GERMANY

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Eceee Summer Study

04/06/2015

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# Outline

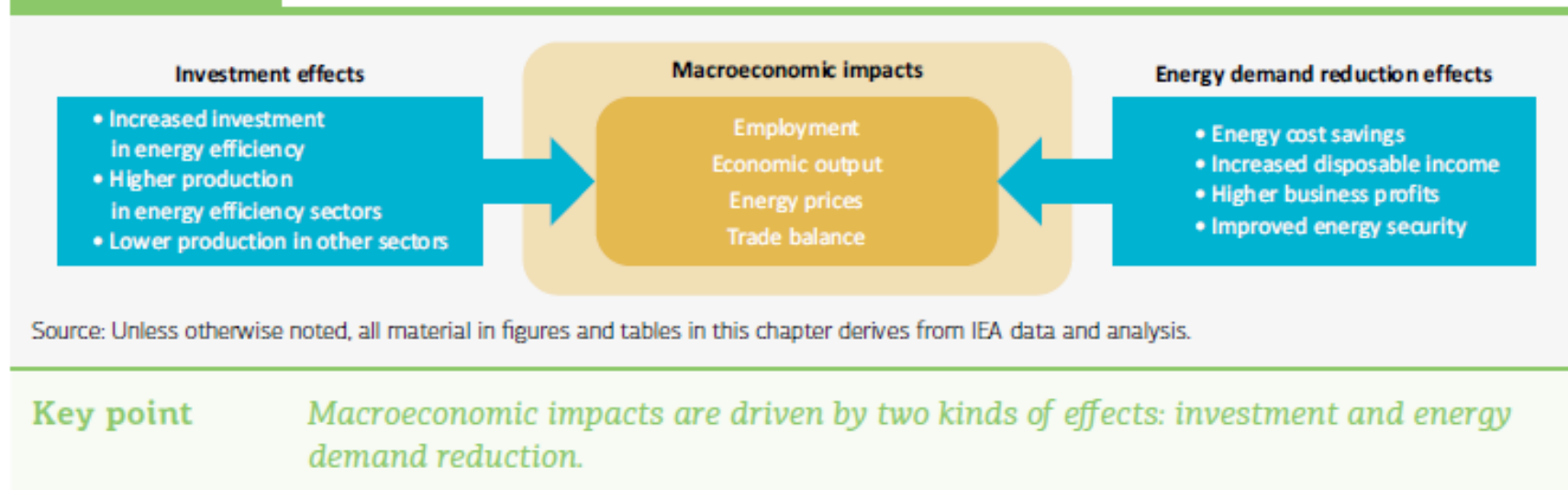
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- Macroeconomic benefits
- Approach and Results
- Rebound effect (preliminary!)

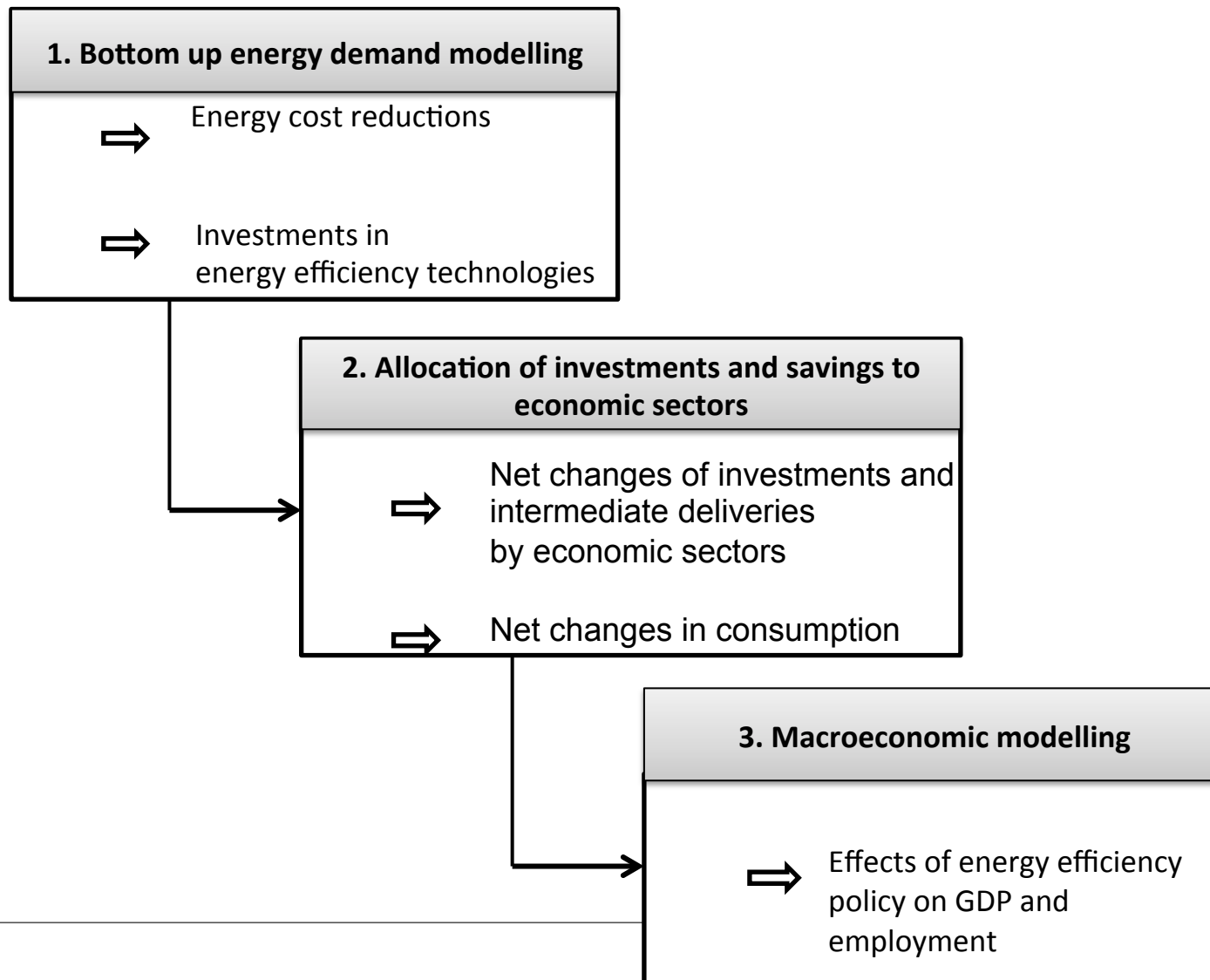
# Macroeconomic benefits of energy efficiency

**Figure 2.1** Energy demand reduction effects



Source: IEA, 2014: Capturing the multiple benefits of energy efficiency

# Methodological approach



# Step 1: Results from bottom up energy demand modelling

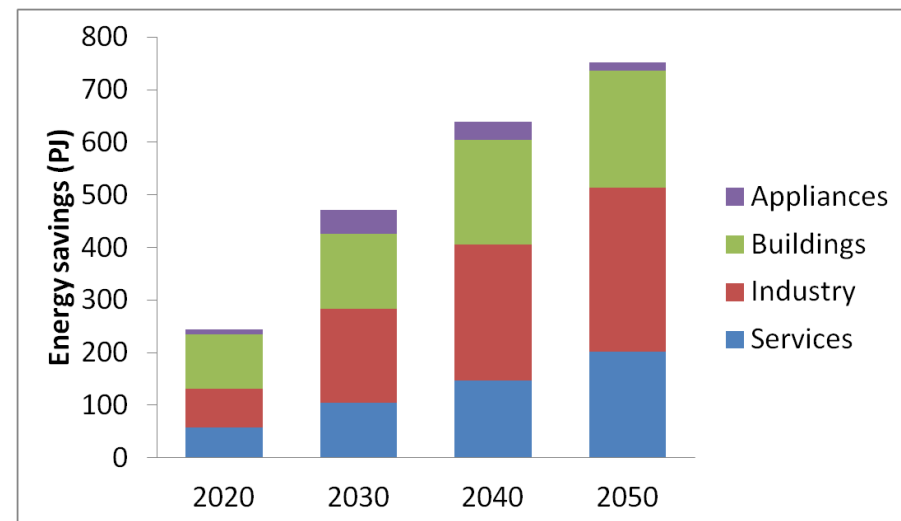
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-All bottom up modelling results based on the study „Klimaschutzszenario 2050 – Masterplan für die Energie- und Klimawende in Deutschland“ by Öko-Institut and Fraunhofer ISI

- Included in this paper: Energy efficiency in buildings and residential appliances, industry, service sector

-Bottom up models used: FORECAST and Invert/EE-Lab

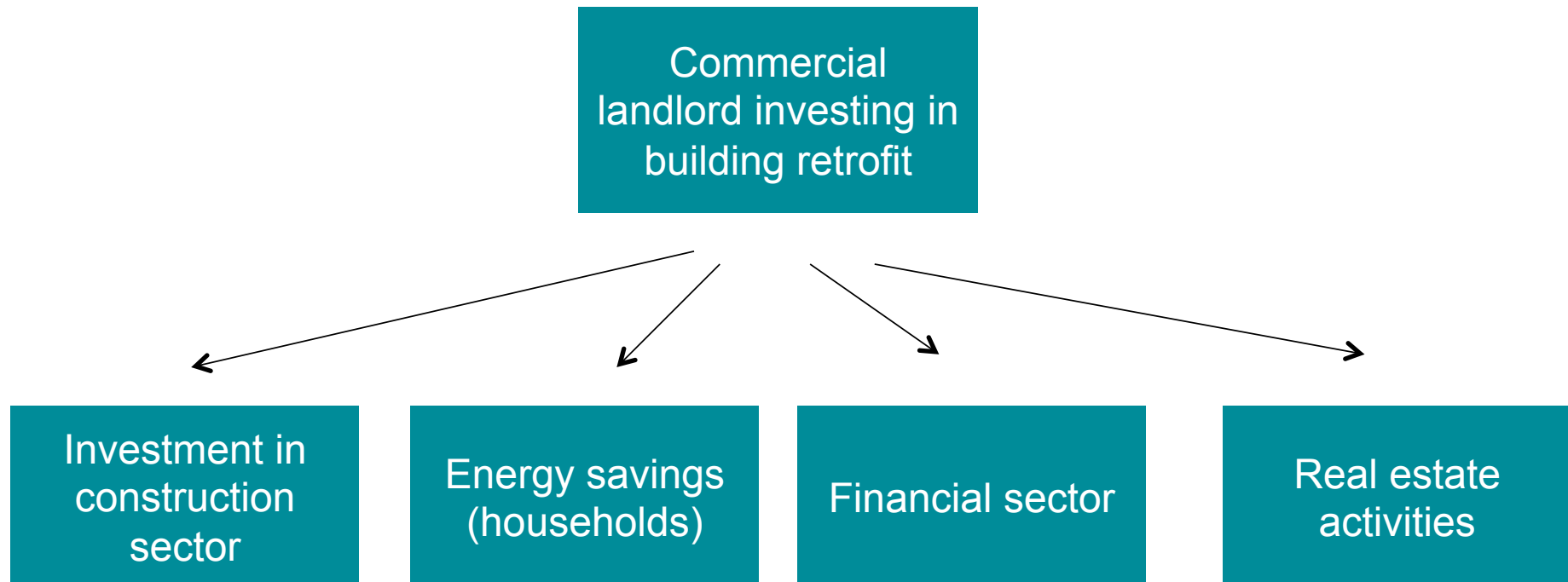
-Scenarios: Current policies scenario is compared to an ambitious energy policy scenario based on German energy concept



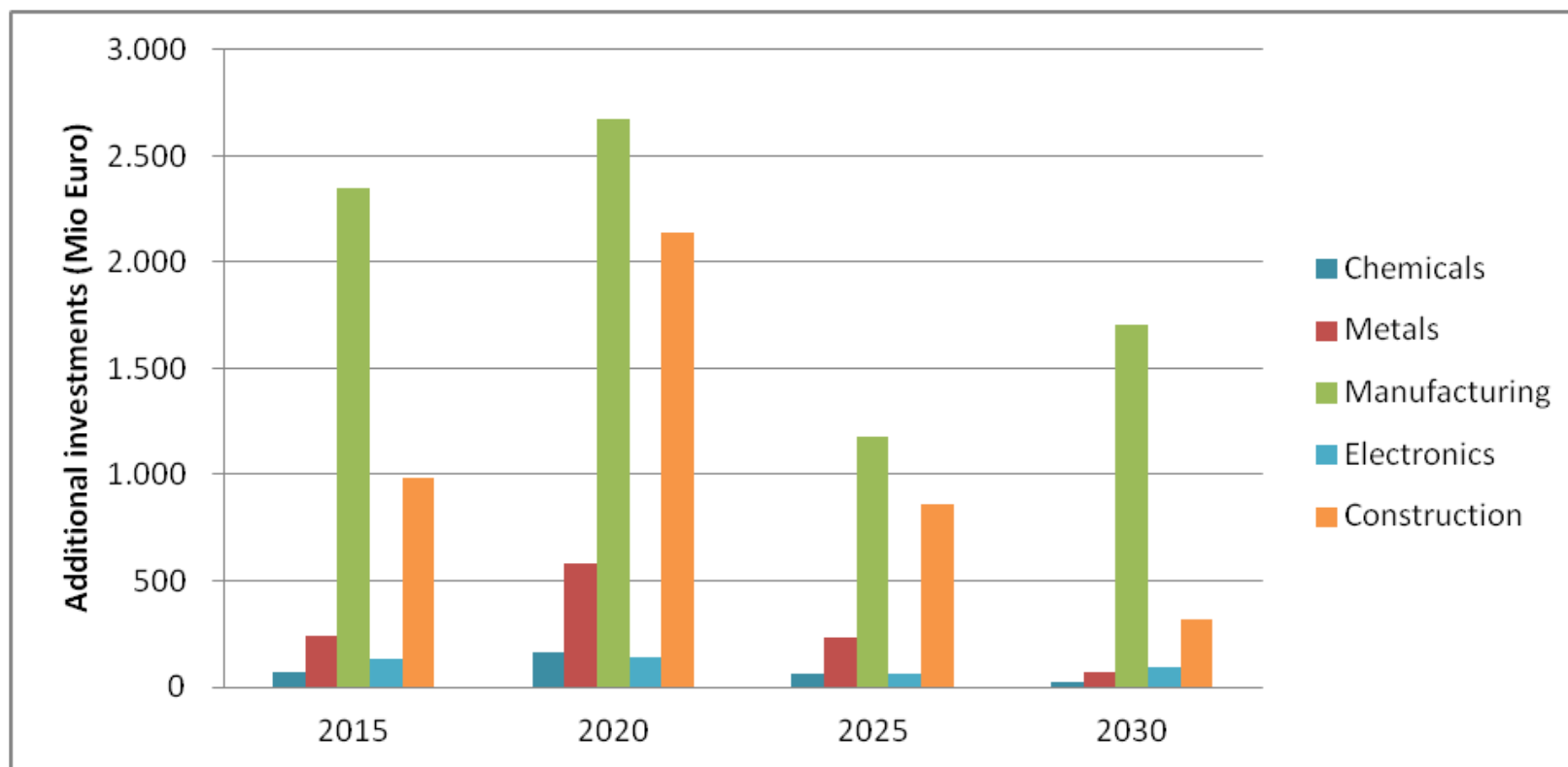
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## Step 2: Allocation for the example of buildings

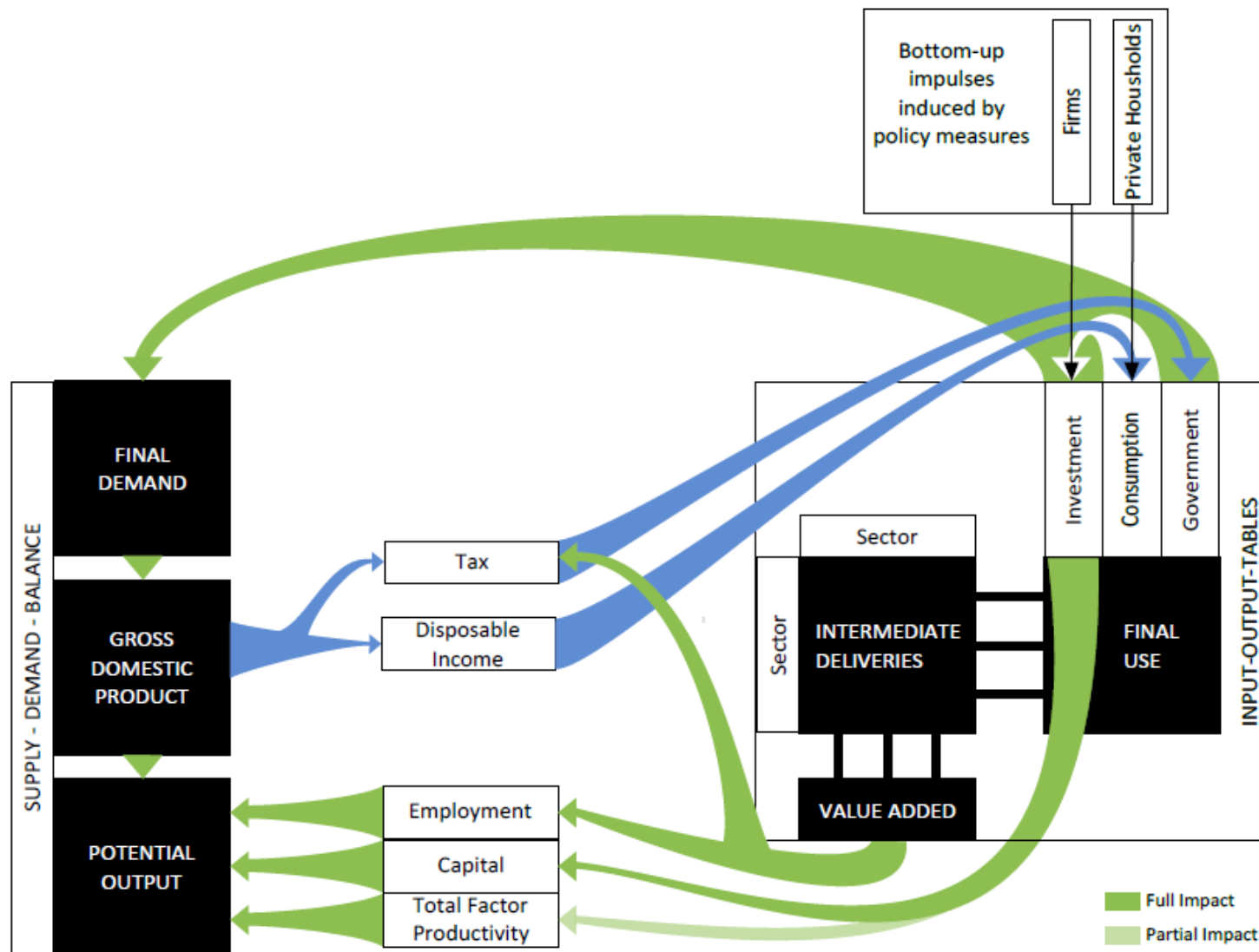
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## Step 2: Allocation of investments and energy cost savings to economic sectors

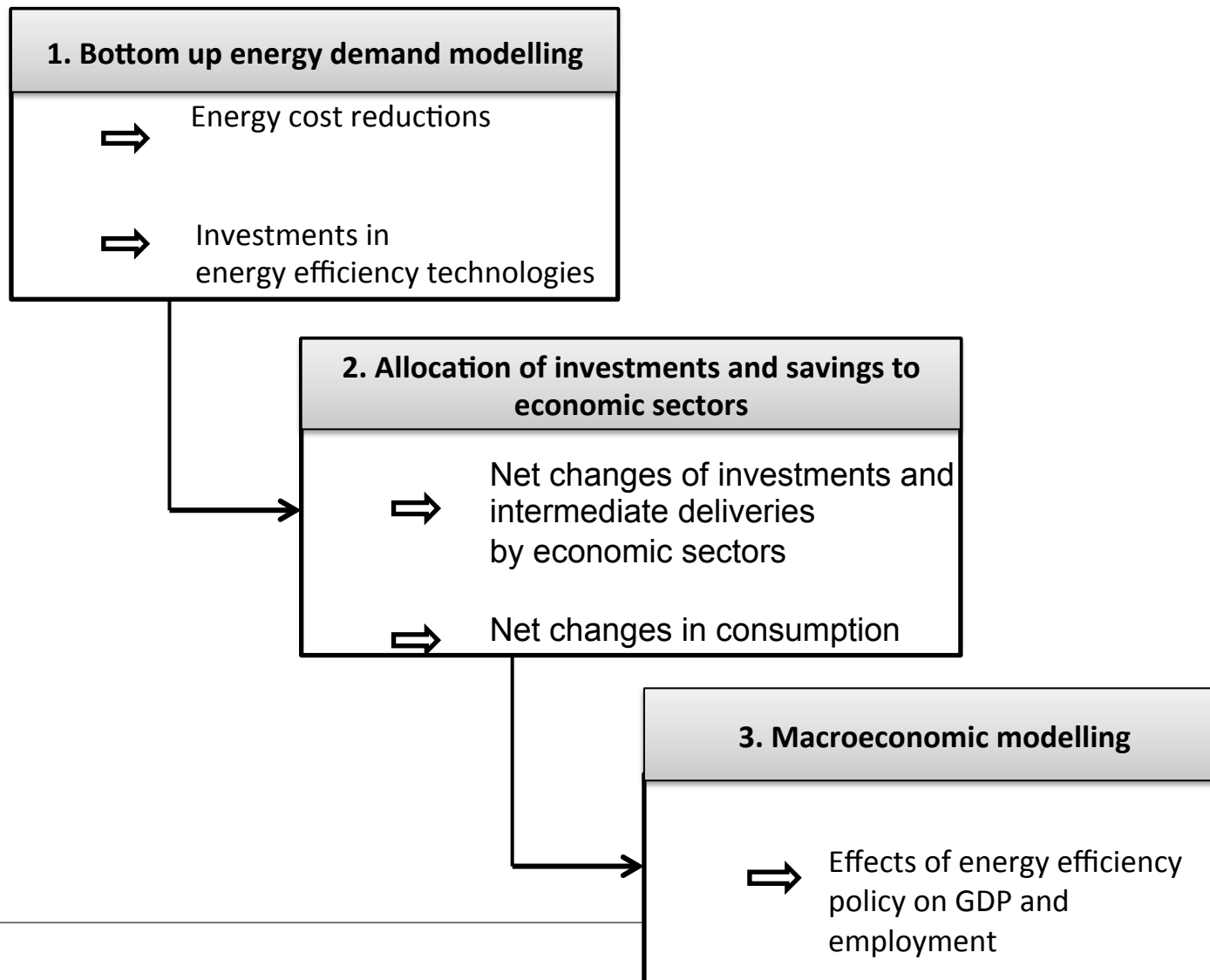


# Step 3: Macroeconomic modelling: ASTRA-D



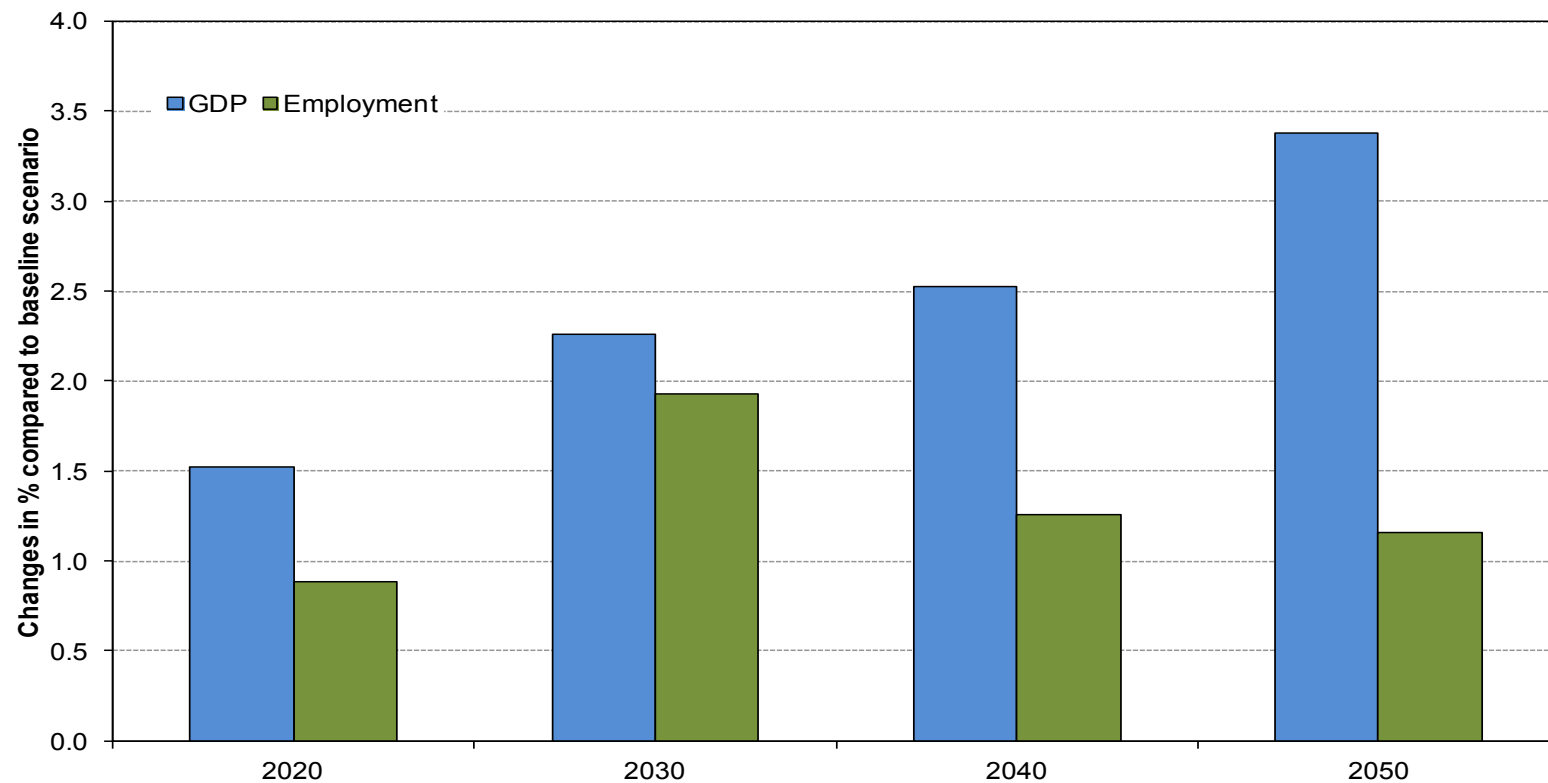


# Methodological approach

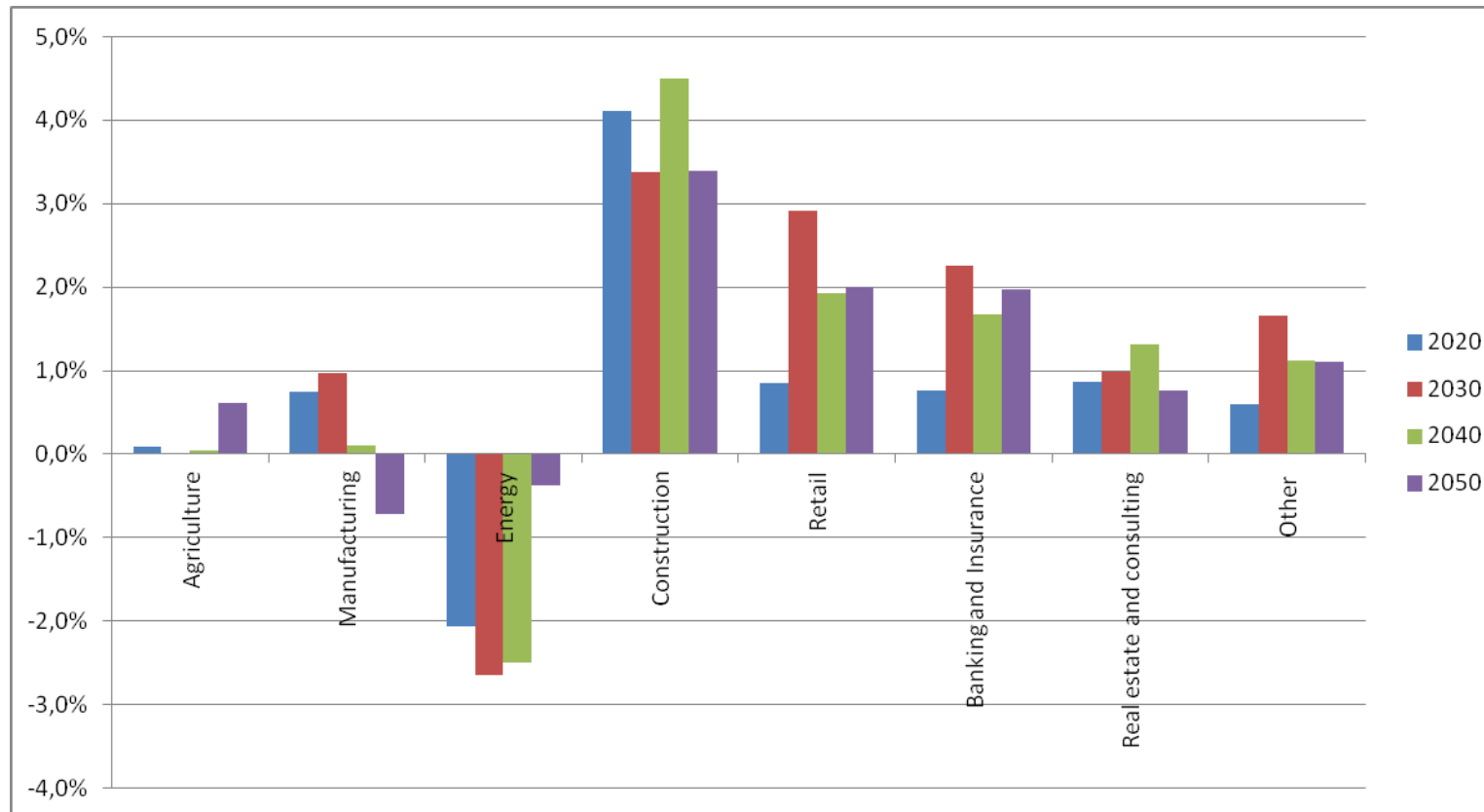


# Overview: Effects on employment and GDP

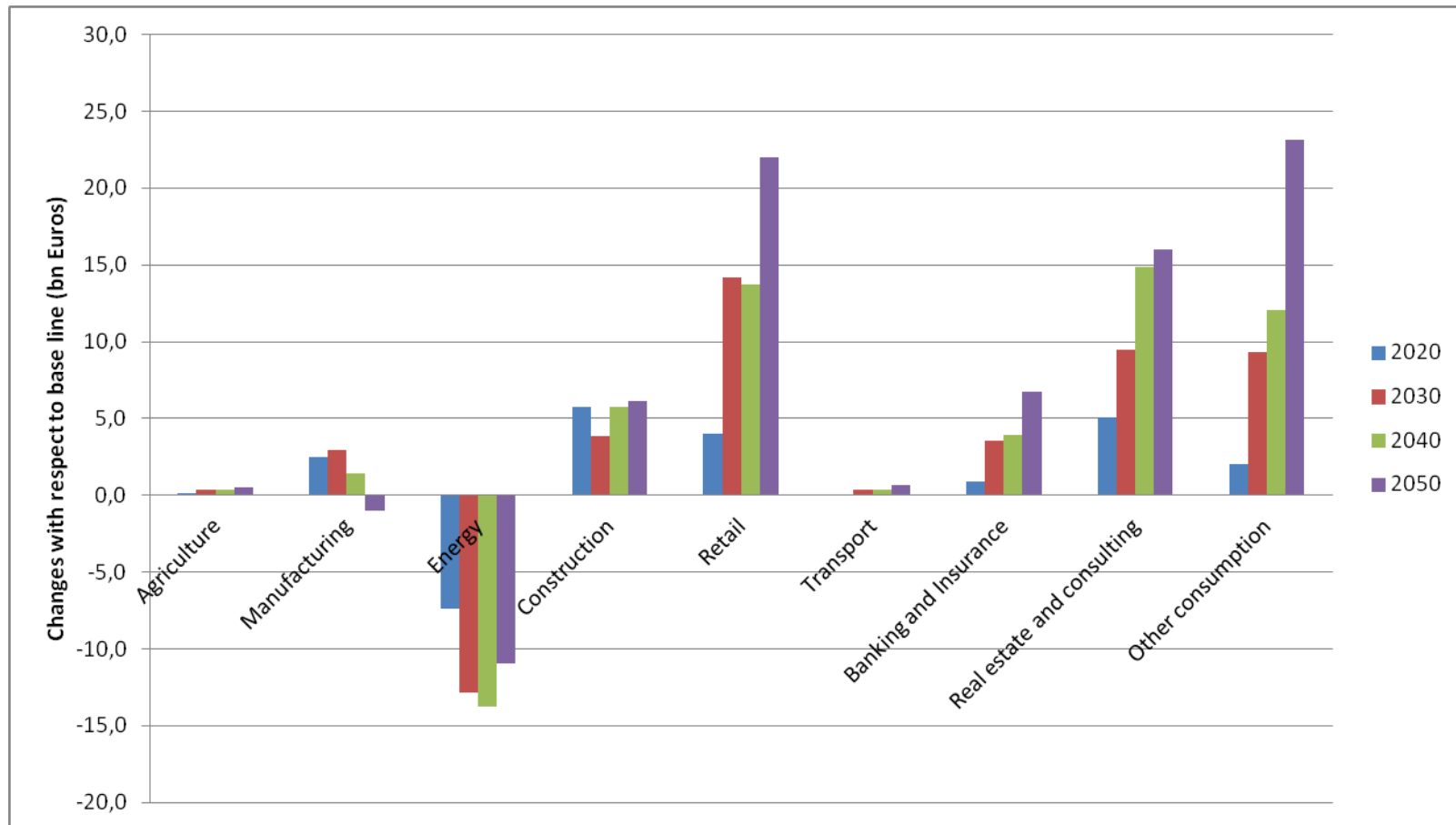
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# Sectoral employment effects



# Effects on consumption



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Considerable positive effects on GDP and employment!



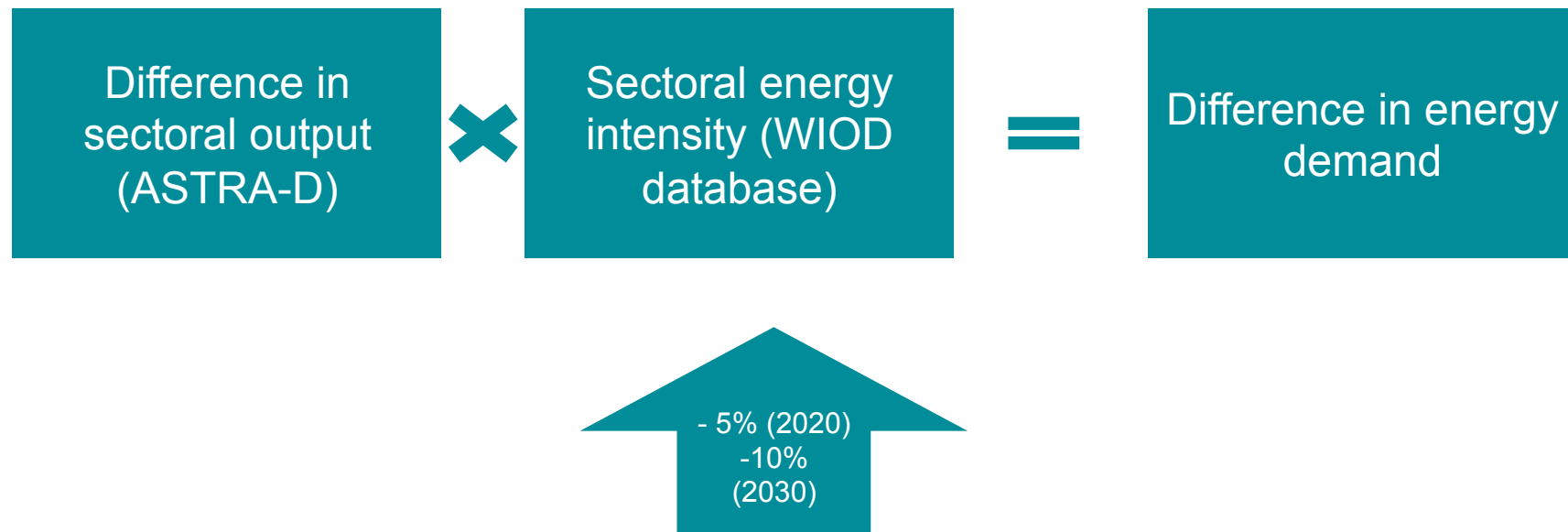
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But what about the rebound effect?

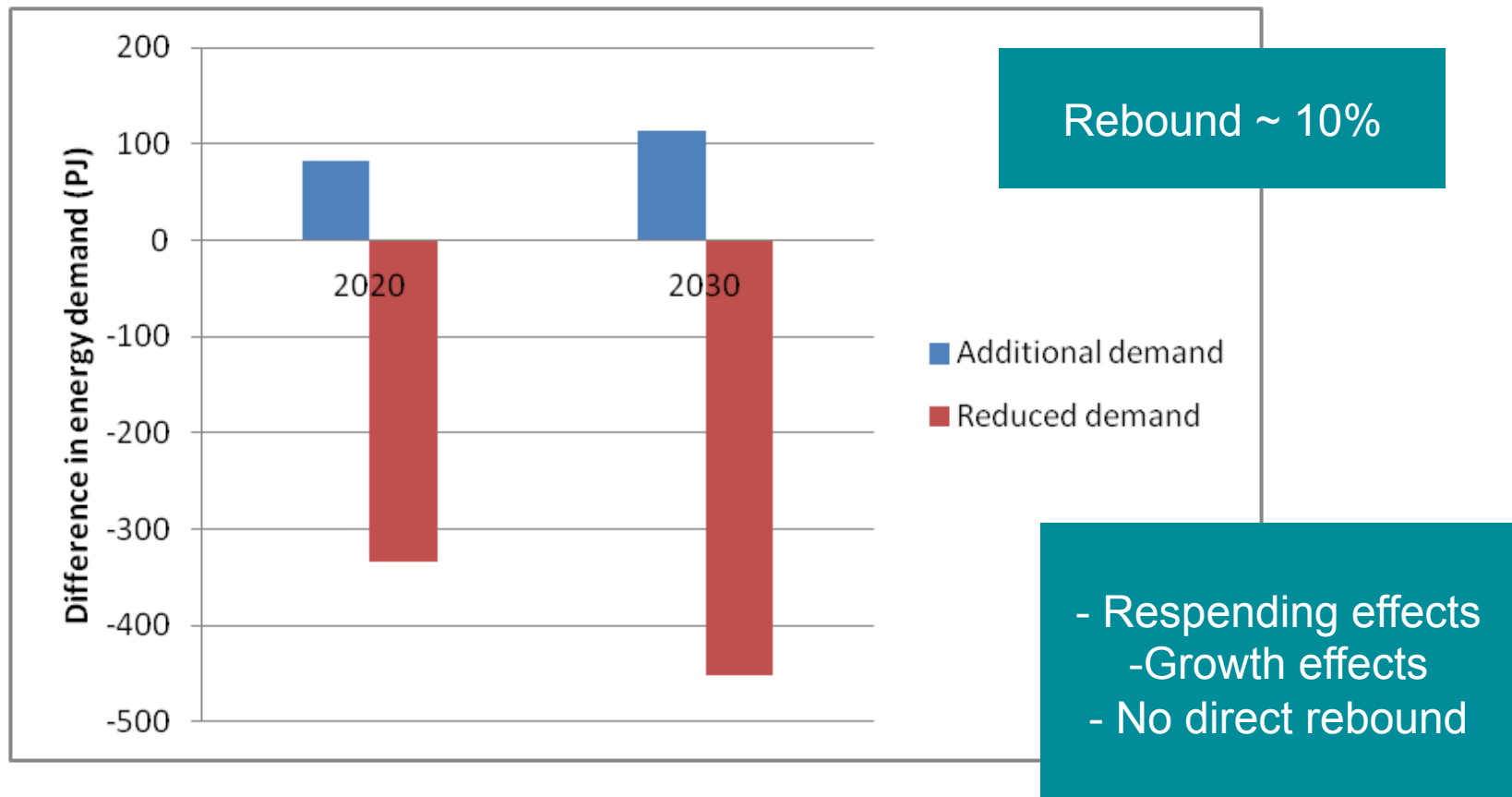


# Very first approach to estimate magnitude of rebound effect

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# Very preliminary first estimate of rebound effect





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# Summary and conclusion

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- Positive effects on GDP and employment

- Very first estimate of rebound effect: 10%

- Main conclusion regarding rebound:

Further refinement required, I am looking forward to your questions and comments!