Preliminary Economic Impact of the 2020 MWG Policy Scenario

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How Do We Define Meeting the Economic Targets?

- Positive impacts on:
  - Average annual employment through 2030
  - Cumulative personal income through 2030 with a 3% discount rate
  - Cumulative Gross State Product (GSP) through 2030 with a 3% discount rate

- Important to consider post-2030 trends in employment, personal income, and GSP, but these timeframes are not used to define the economic targets.

# How Do We Measure the Economic Impact of Policy Scenarios?

- Economic modeling conducted using REMI PI+
  - Dynamic economic impact analysis software

- Inputs sourced from several sources:
  - Expenditure changes from Pathways/LEAP modeling
  - Detailed health impacts modeled using EPA's COBRA tool
  - Spending priorities from state agencies

- Not Captured in REMI PI+:
  - Social cost of carbon
  - Total value of avoided mortality
  - Avoided costs of flooding/more severe weather

How Do We Measure the Economic Impact of Policy Scenarios?

- REMI PI+ output aligns with the metrics for the economic target:
    - Impacts on employment by industry and occupation
    - Impacts on personal income
    - Impacts on GSP
    - Impacts in five Maryland regions

- Results are further refined using models developed by RESI to comment on distributional impacts by:
    - Income
    - Education
    - Race/Ethnicity

Macroeconomic Impact Results

On Average Through 2030, the MWG Scenario Supports 3,329 Additional Jobs Relative to the Reference Case*

Employment with Transportation Measures
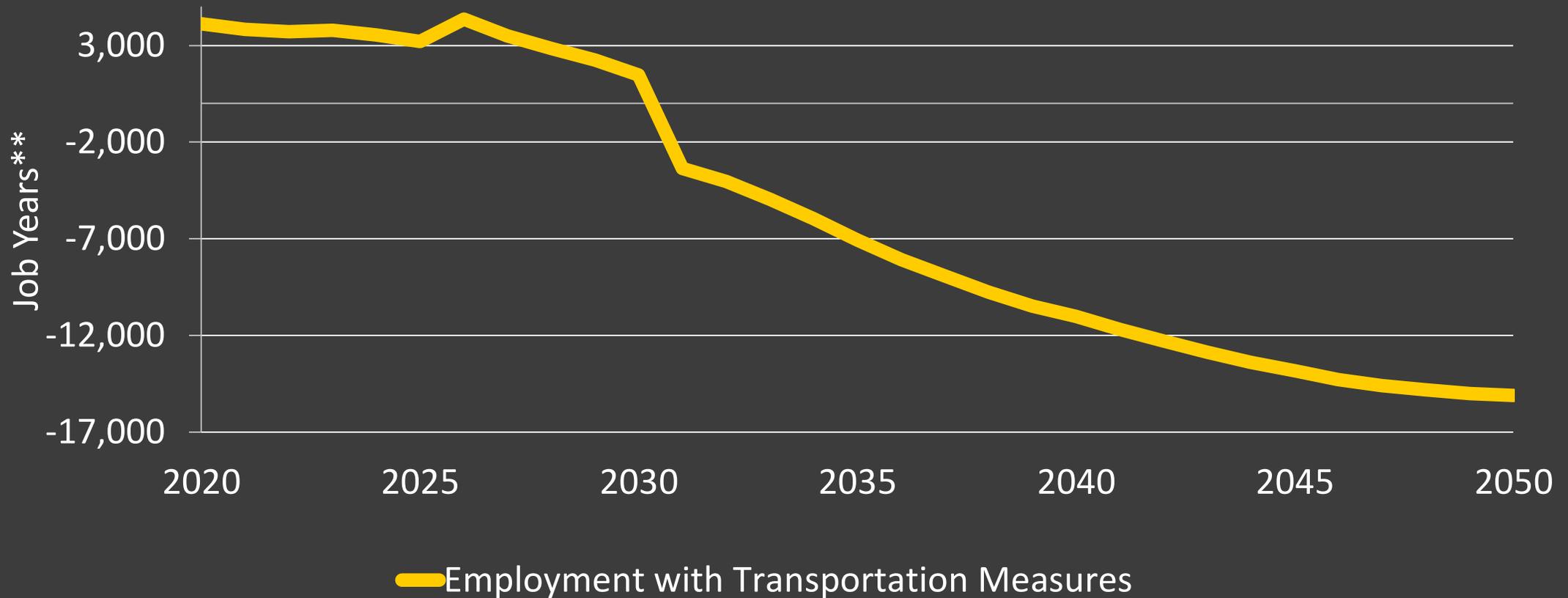
*Transportation measures were tentatively modeled using last year's approach. This will be updated with MDOT's final capital analysis.
**Difference between the MWG Scenario and reference case

Without the transportation measures, employment remains positive at 575 jobs

Job Years*

3,000

-2,000

-7,000

-12,000

-17,000

2020   2025   2030   2035   2040   2045   2050

—— Employment with Transportation Measures
—— Employment without Transportation Measures

*Difference between the MWG Scenario and reference case

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On Average Through 2030, the MWG Scenario Increases Personal Income by $239 Million with the Transportation Measures

Personal Income with Transportation Measures

Personal Income without Transportation Measures

*Difference between the MWG Scenario and reference case

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On Average Through 2030, the MWG Scenario Increases Gross State Product (GSP) by $229 Million

GSP with Transportation Meausres
GSP without Transportation Measures

*Difference between the MWG Scenario and reference case

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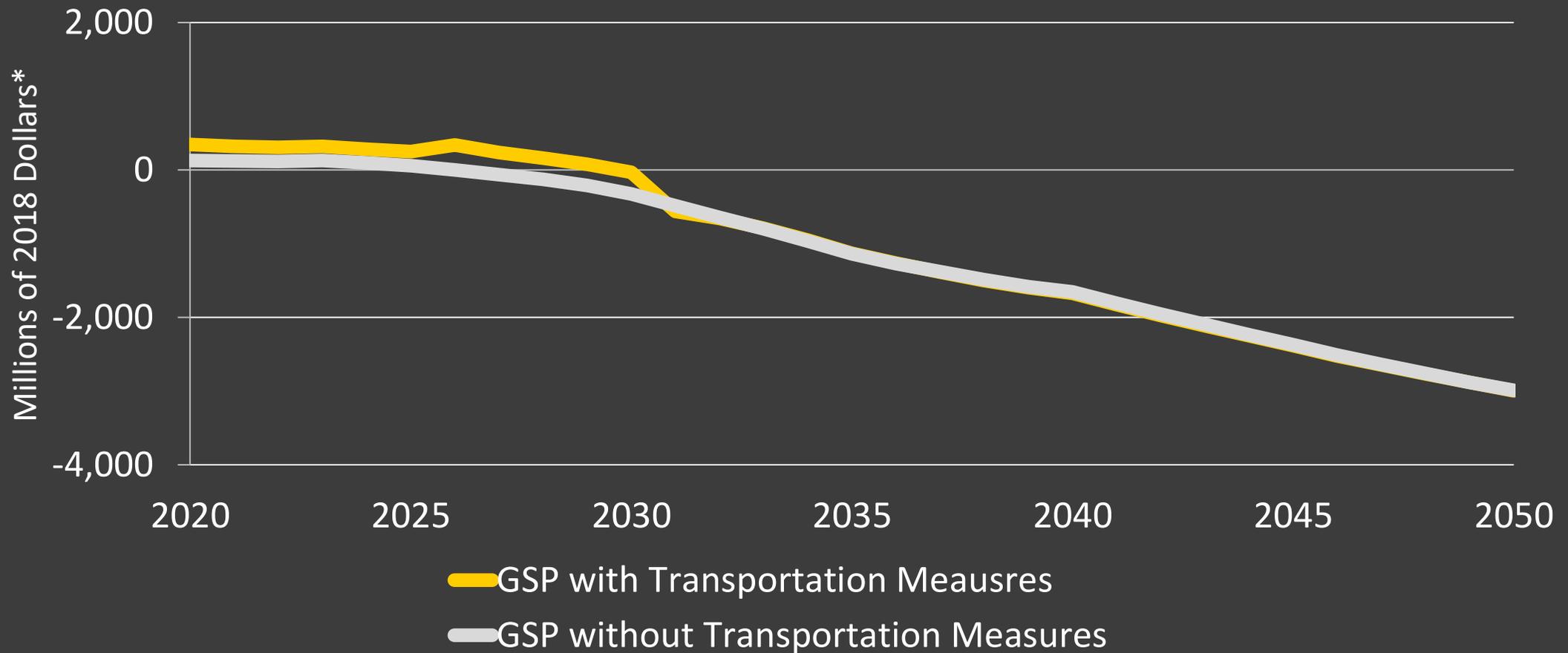
GSP Growth Remains Positive Every Year Through 2050

Billions of 2018 Dollars

MWG GSP — Reference Case GSP
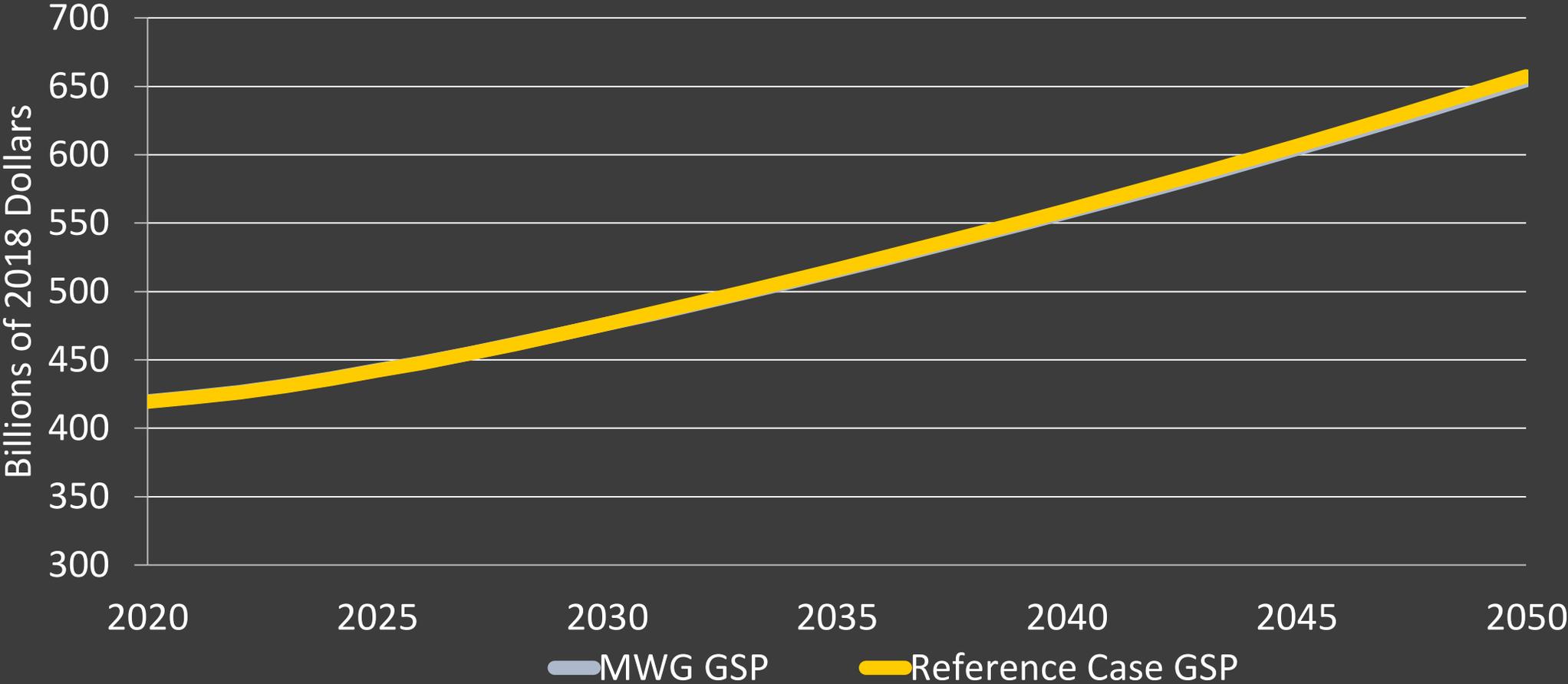
Most jobs created are in the Construction and Extraction Occupations

Average Job Years Through 2030*

- Construction and Extraction Occupations: 2072
- Installation, Maintenance, and Repair Occupations: 299
- Office and Administrative Support Occupations: 240
- Management Occupations: 221
- Transportation and Material Moving Occupations: 177
- Business and Financial Operations Occupations: 127
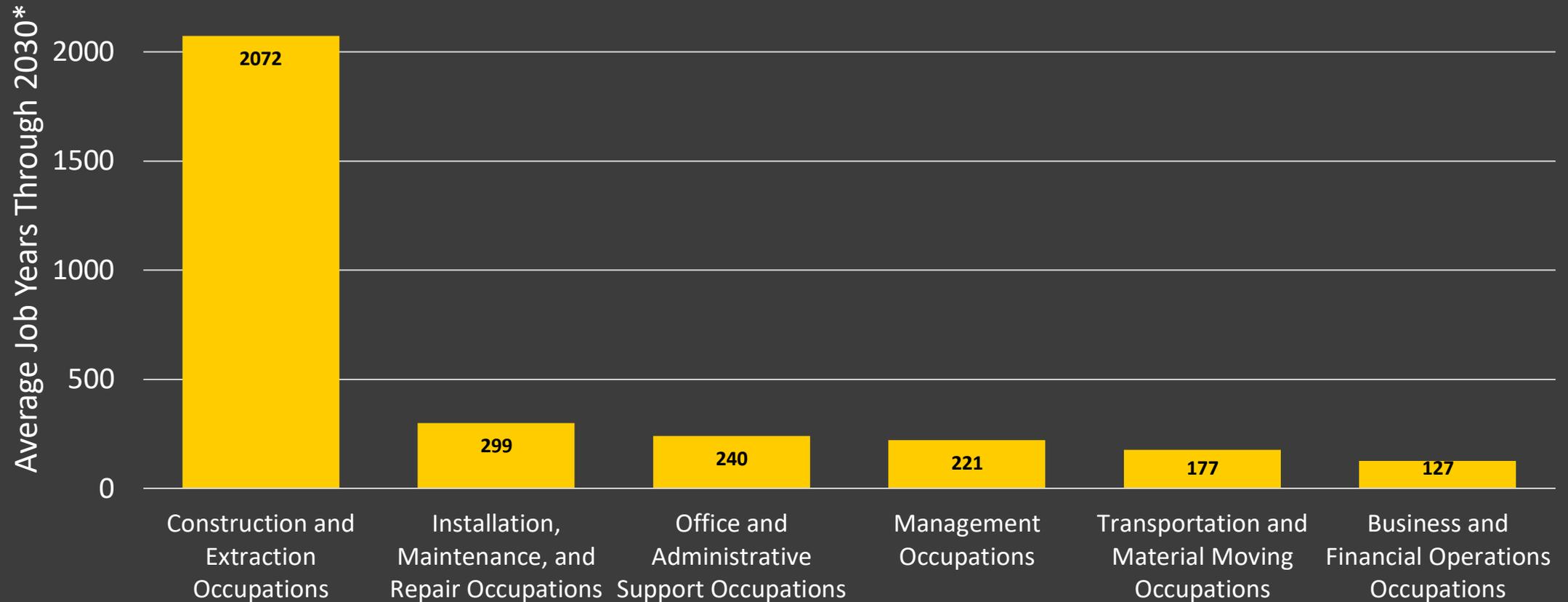
*Difference between the MWG Scenario and reference case

Job Gains Through 2030 are in Occupations Which Generally Require Lower Levels of Training and Education

Average Job Years Through 2030*

150	1145	890	705	520
Job Zone 1	Job Zone 2	Job Zone 3	Job Zone 4	Job Zone 5

<------------------------------Lower Education and Training Required   Higher Education and Training Required------------------------->
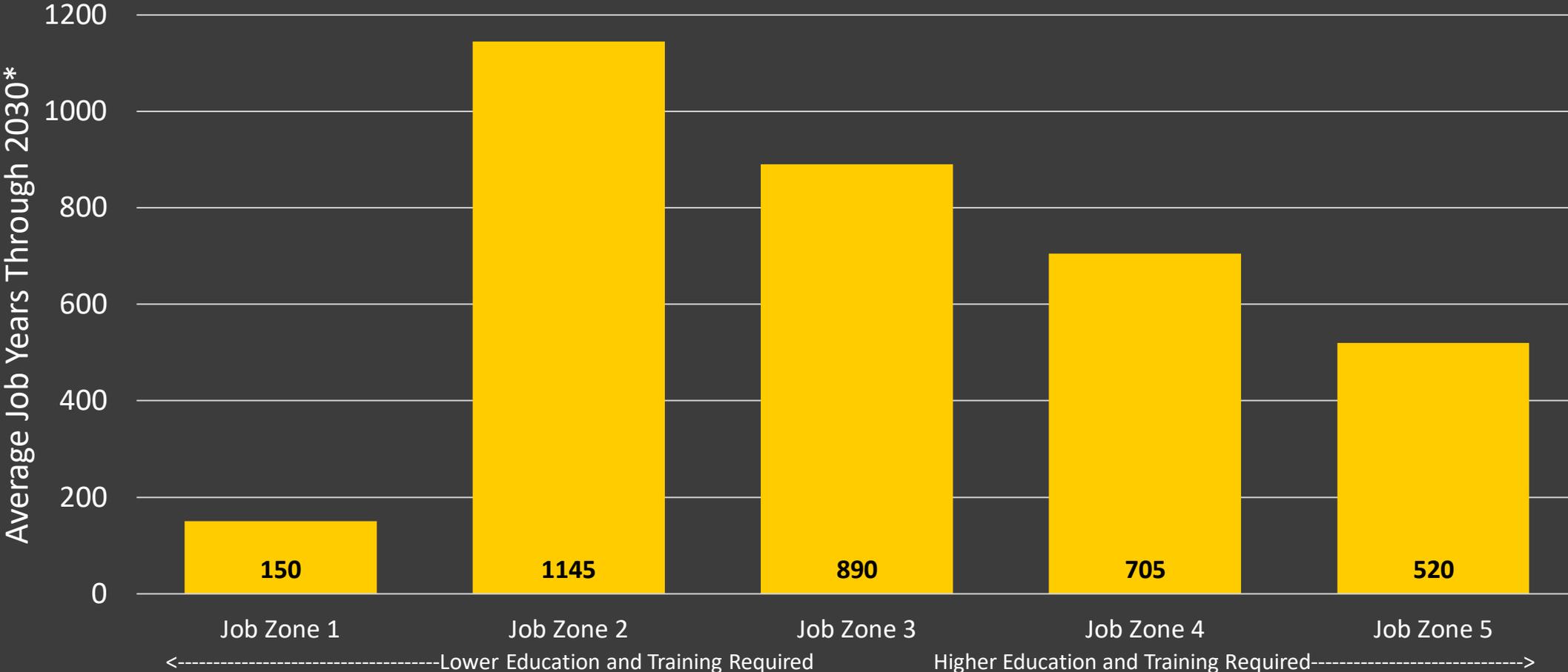
*Difference between the MWG Scenario and reference case on average through 2030

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What is Happening in this Scenario?

- Total Spending (capital costs plus fuel expenditures) is higher than the GGRA draft plan, but similar to Policy Scenario Two.
  - Capital expenditures are not generally being offset by fuel savings, economy-wide.
  - Comparison: without transportation measures, Policy Scenario 2 averages 7,515 jobs less than the reference case through 2050. The MWG Scenario averages 5,646 less jobs.
- Commercial and residential electric costs don't drop as significantly as in other policy scenarios

Similar to Policy Scenario 2, High Capital Expenditures and High Fuel Savings

*Difference between the MWG Scenario and reference case

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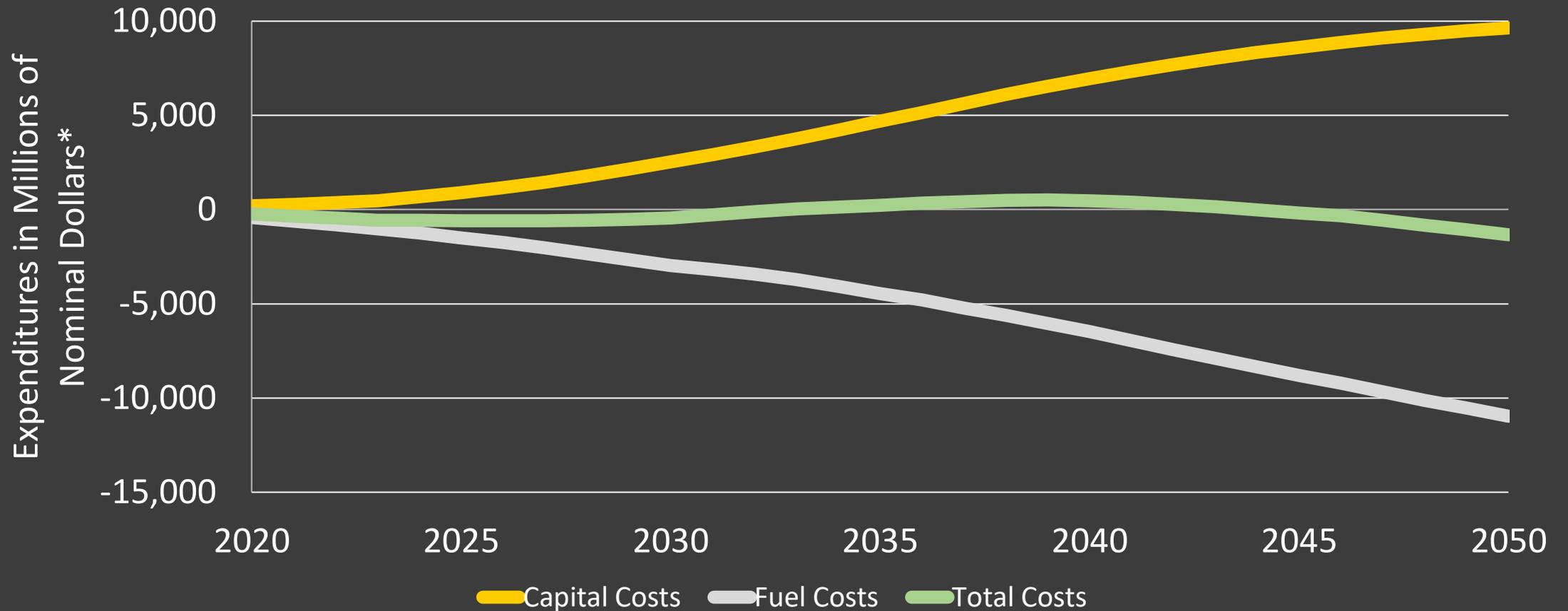
Compared to Other Policy Scenarios, Electricity Costs for Commercial and Residential are Higher in the Later Years

Electricity Expenditures in Millions of Nominal Dollars*

$200

$(300)

2020   2025   2030   2035   2040   2045   2050

—— Commercial   —— Industrial   —— Residential
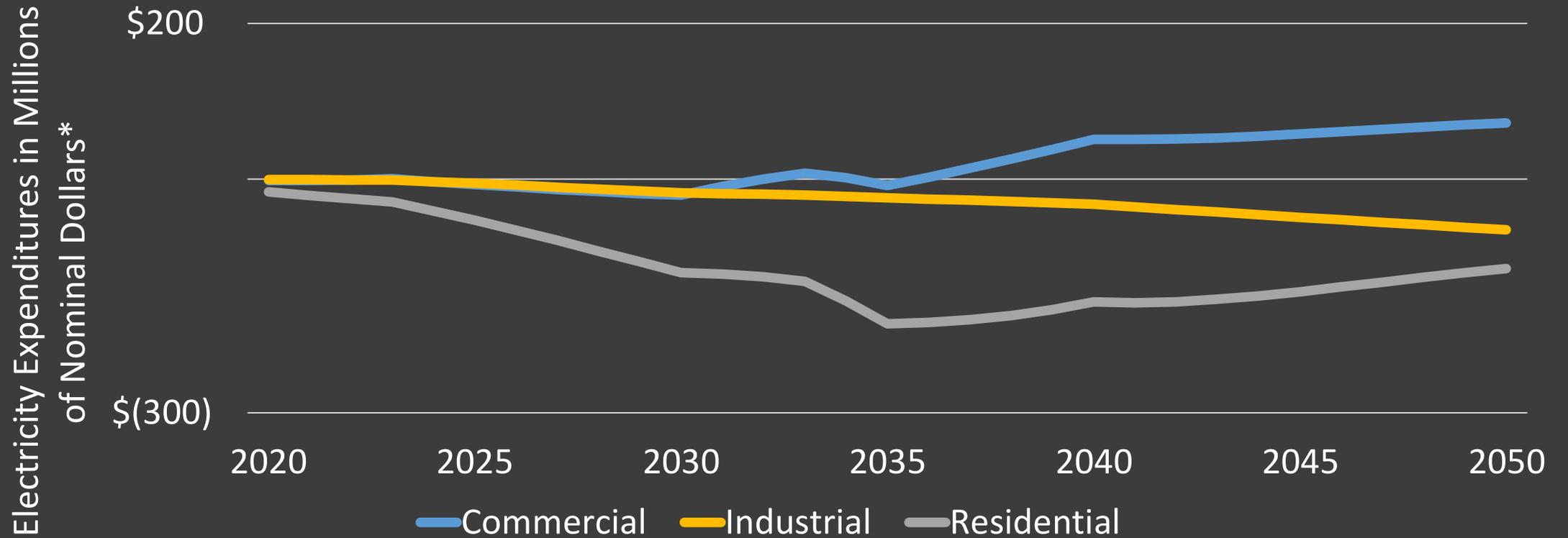
*Difference between the MWG Scenario and reference case

MWG Scenario Summary

Policy Scenario	Achieves 2020 Emissions Goal?	Achieves 2030 Emissions Goal?	Achieves 2050 Emissions Goal?	Achieves Economic Goal?
MWG Scenario	✓	✓	**X**	✓

Q&A

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