IRA Tax Credit Reductions: Economic Impacts using REMI-AI

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Agenda

- **BBB Background & Renewables**
- Methodology
- Model Inputs & Findings
- Live AI model demo
- Conclusion
- Q&A

Big Beautiful Bill (BBB) Background

Taxes & Economy

- Reduces capital gains, estate taxes
- Aims to stimulate business investment with deregulation

Regulatory Rollbacks

- Scales back federal authority on certain environmental and labor rules
- Shifts more decision making to states in areas like permitting, energy siting, and environmental review

Social & Healthcare

- Reduces some healthcare subsidies and Medicaid expansion funding
- Tightens eligibility for certain welfare programs

Infrastructure & Industry

- Reduced federal matching for urban transit expansions and high-speed rail projects
- Increases funding for oil, gas, and certain manufacturing subsidies

Renewables Background

Inflation Reduction Act:

- Production Tax Credit (PTC) & Investment Tax Credit (ITC) for renewables
- Bonus credits for domestic content, low-income communities, and energy communities
- Credits available into the 2030s

OBBBA:

- Accelerates phase-out of wind & solar tax credits (PTC & ITC)
- New restrictions on credits for projects tied to "foreign entities of concern" (FEOCs)
- Maintains some credits for nuclear, geothermal and storage

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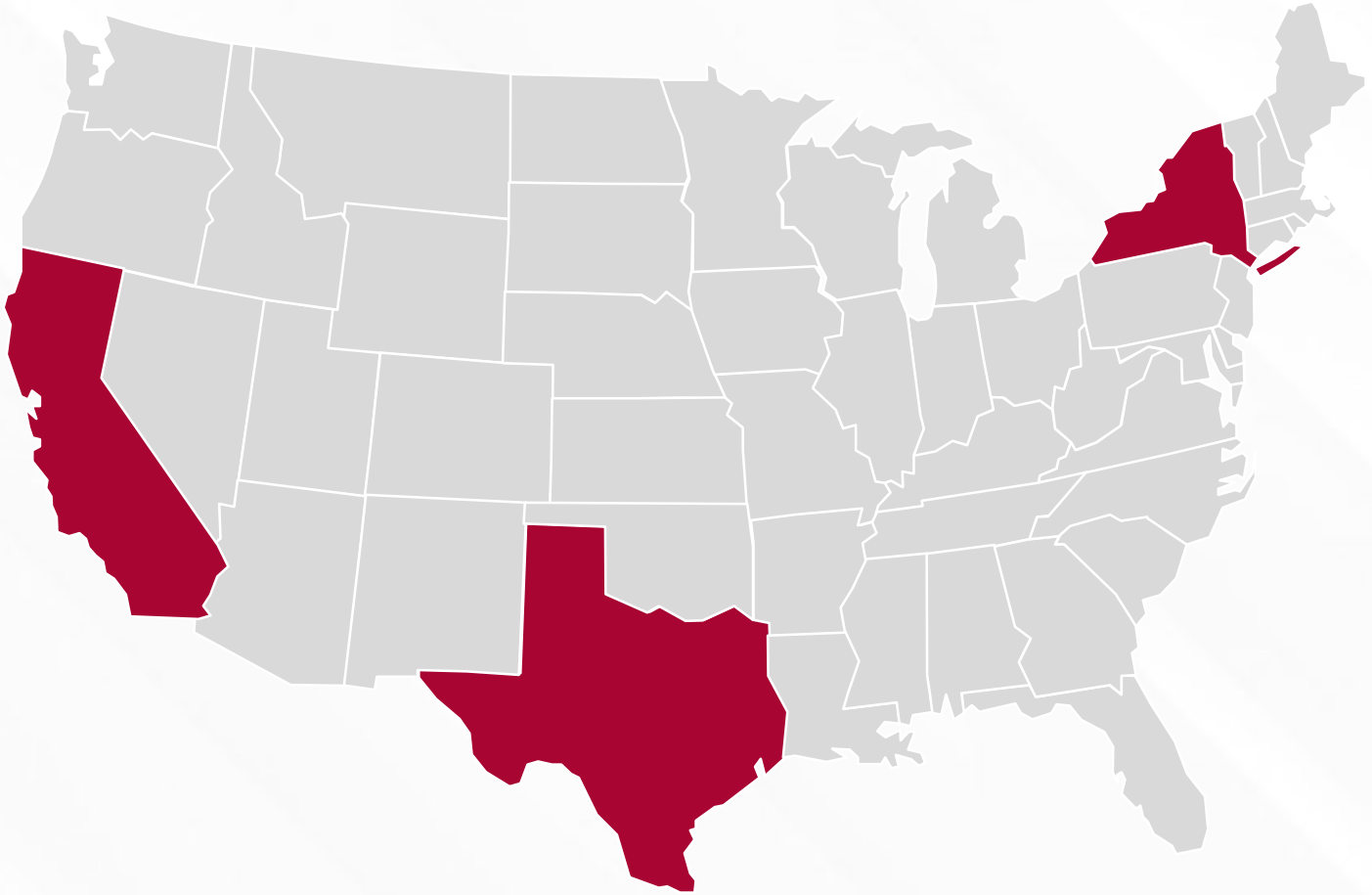
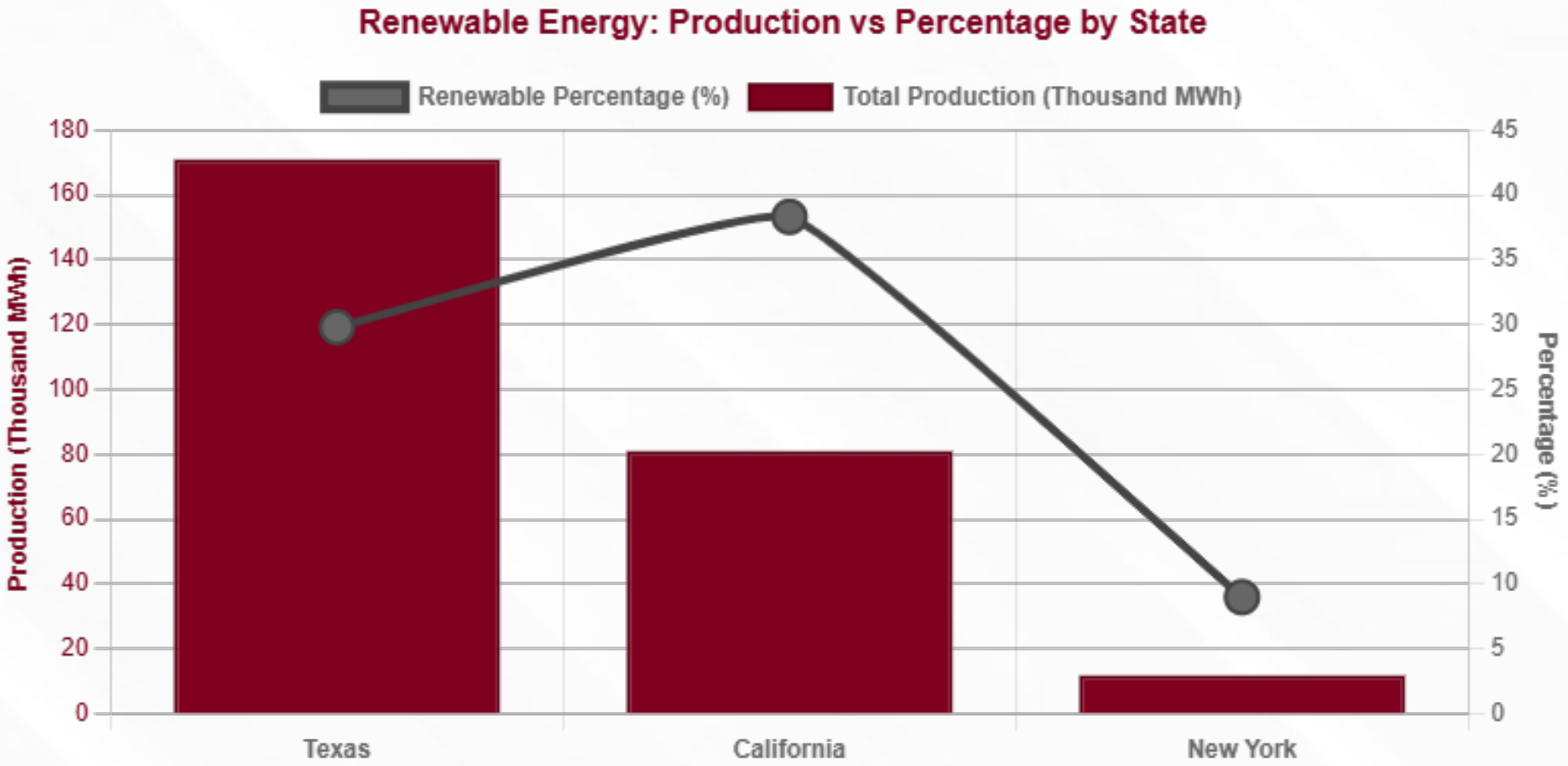
A Comparative Analysis: CA, TX, & NY



Current Renewable Portfolio



Comparative Analysis

California

- **Solar**: Strong political support, high private investment, excellent resource
- **Onshore Wind**: Supportive policy but limited new prime sites, moderate resource
- **Offshore Wind**: Strong policy push, high industry interest, high-cost deepwater sites

New York

- **Solar**: Strong policy goals, slower private uptake, moderate resource
- **Onshore Wind**: Political backing, permitting delays, moderate resource
- **Offshore Wind**: Aggressive targets, high private commitment, strong coastal resource

Texas

- **Solar:** Mixed state politics, strong private investment, excellent resource
- **Onshore Wind:** Market leader, highly favorable economics, world-class resource
- **Offshore Wind:** Minimal state support, low private interest, viable Gulf potential

Methodology

- Strong State & Local Government Support
- Continued Private Investment
- Risky Projects lose funding

- Some big projects are cancelled
- Offshore not viable in CA

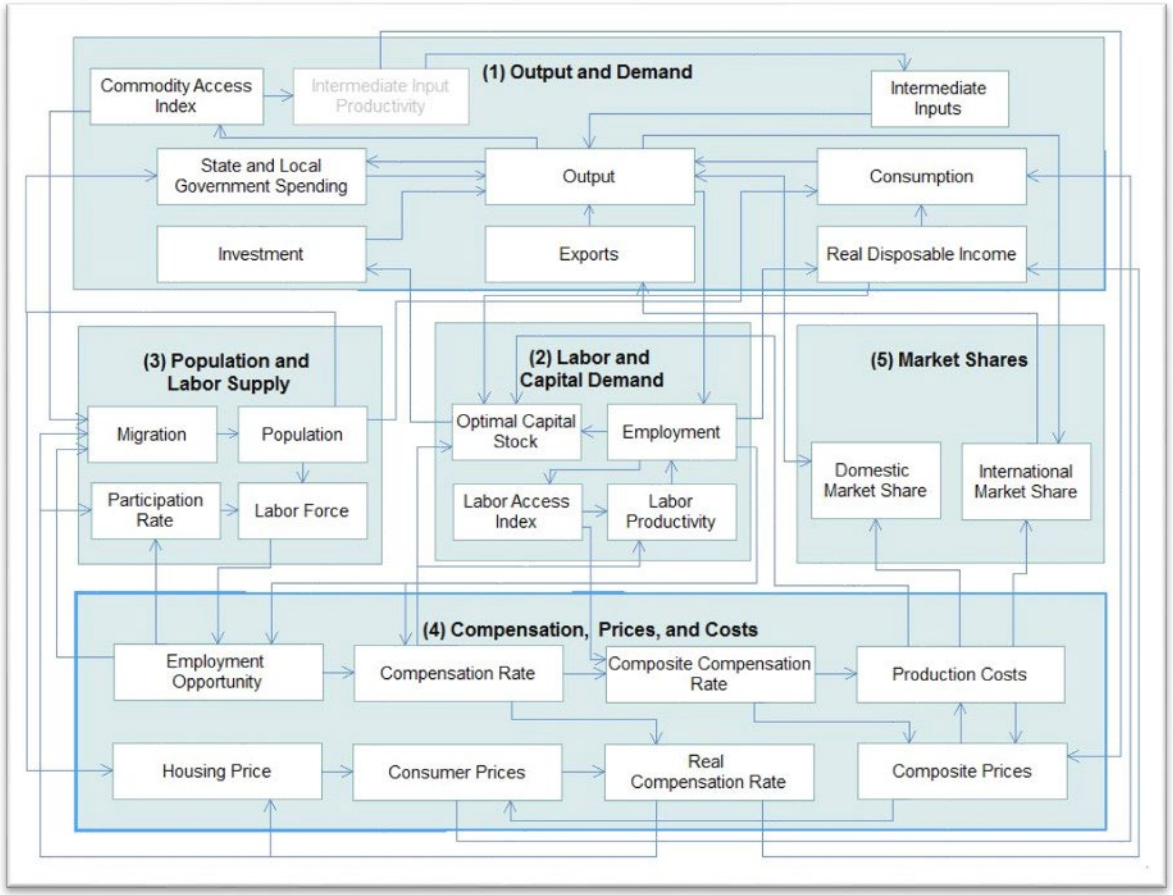
- All states lose out on majority of projects
- NY hit hardest
- Texas most stable because of strong private support

Model Simulation: REMI E3+

E3+

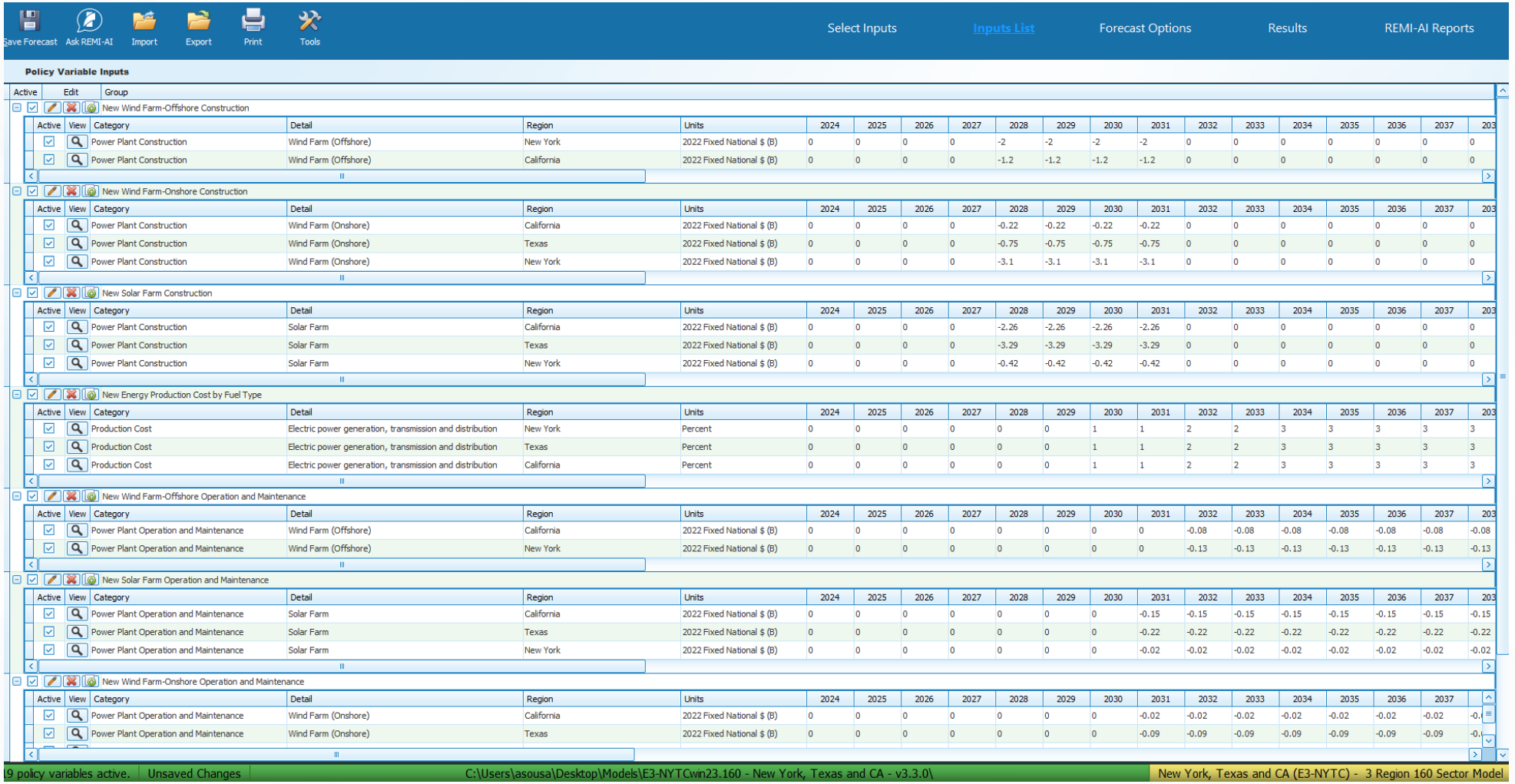
E3+ is the premier software solution for analyzing the macroeconomic and demographic impacts of any initiatives related to the energy and environmental sectors.

Decision-makers depend on E3+ to provide comprehensive evaluations of the total economic impact of altering electric rates, introducing new power sources, investing in the production of energy, and other policy changes.



what does REMI say?sm

Policy Variable Inputs



Policy Variables

Construction Costs

- Used state varying construction cost data from EIA for
  - Solar
  - Onshore wind
  - Offshore wind

Operation & Maintenace Costs

- Used state varying operation & maintenance cost data from EIA for
  - Solar
  - Onshore wind
  - Offshore wind

Energy Production Costs

- Captures labor, capital, fuel, transport, and market factors. Determines:
  - Total cost of producing energy
  - Supply
  - Competitiveness

- Based on Active Interconnection Requests from Berkeley Lab.
- Applied a historical completion rate of ~20%
- Estimated 30–50% cancellation rates by resource and state
- Allocated average construction costs per resource across 2028–2031

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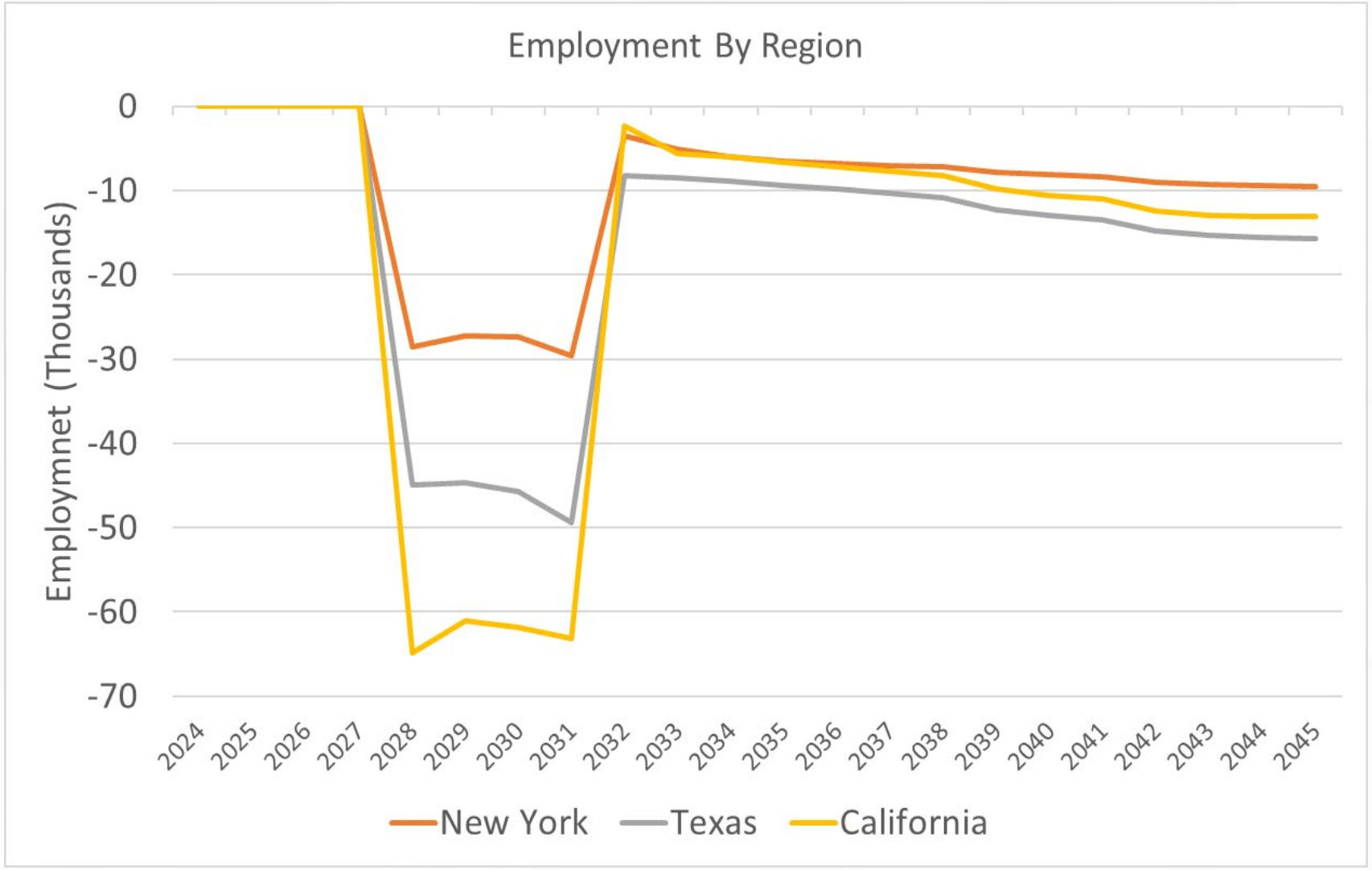
Model Inputs & Findings

Live model demo & notable results

Conclusion

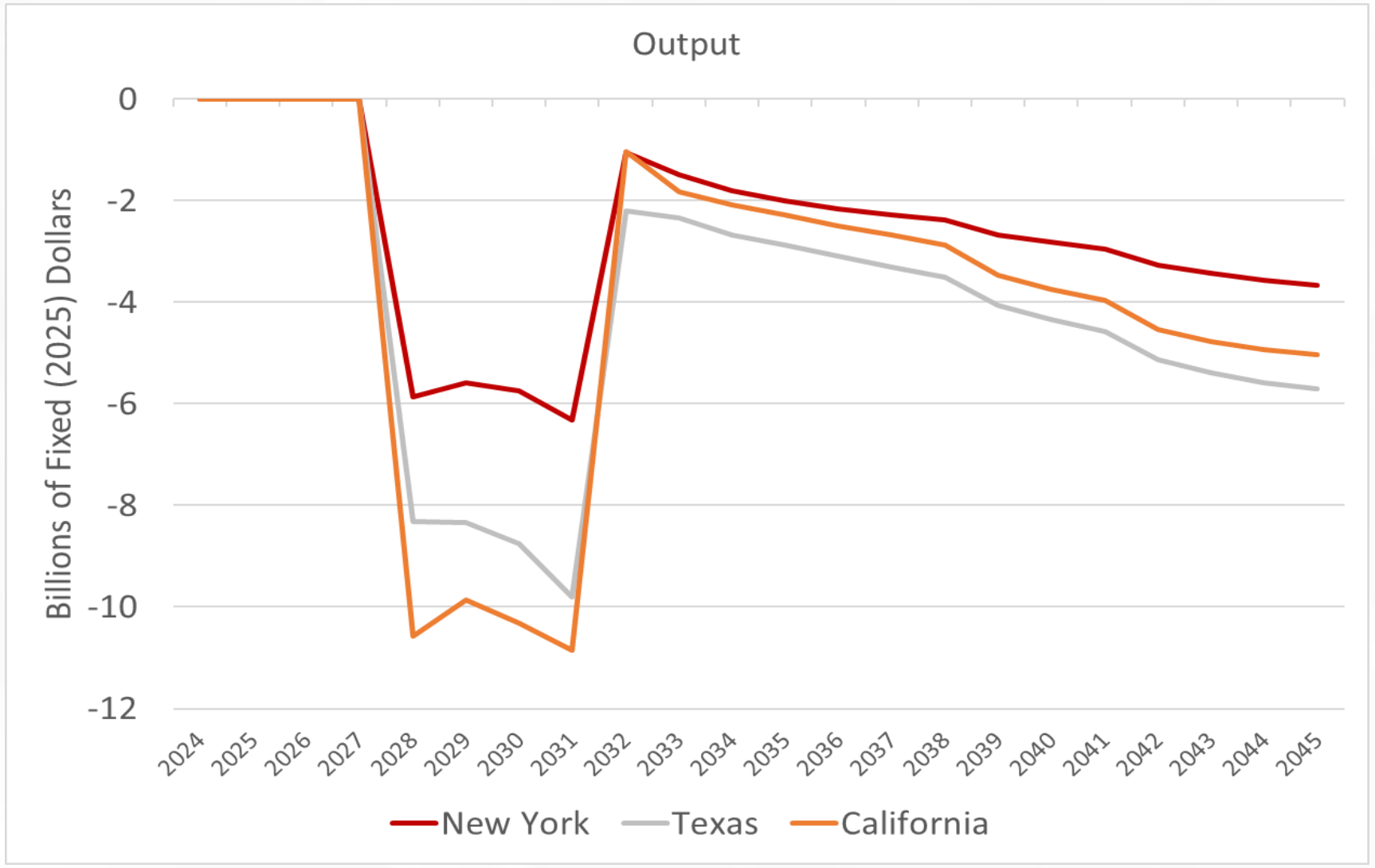
Q&A

Employment



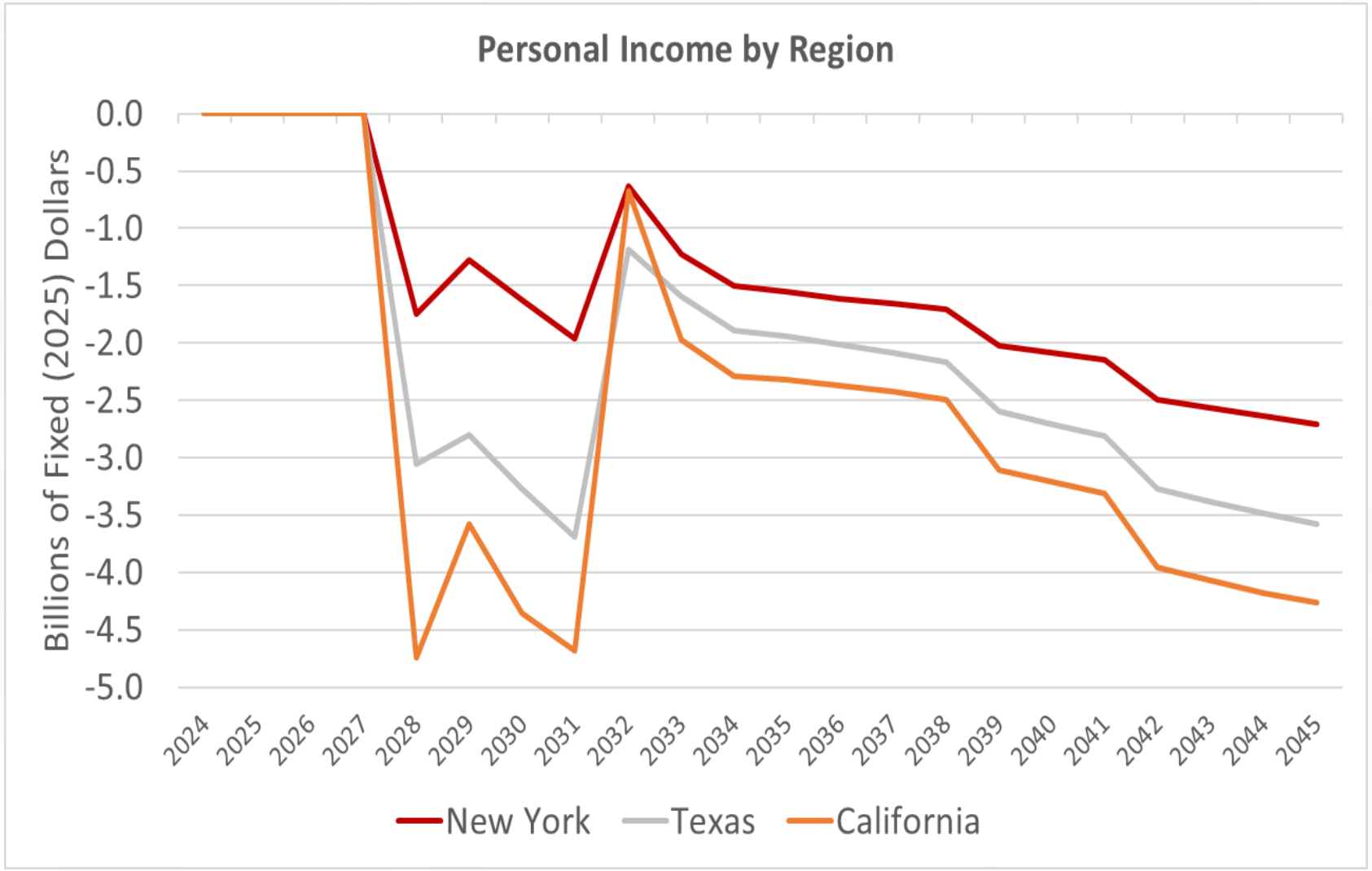
- California: Initial decrease of 65,000
- Texas: Initial decrease of 45,000
- New York: Initial decrease of 28,000
- Construction industry affected most

Output



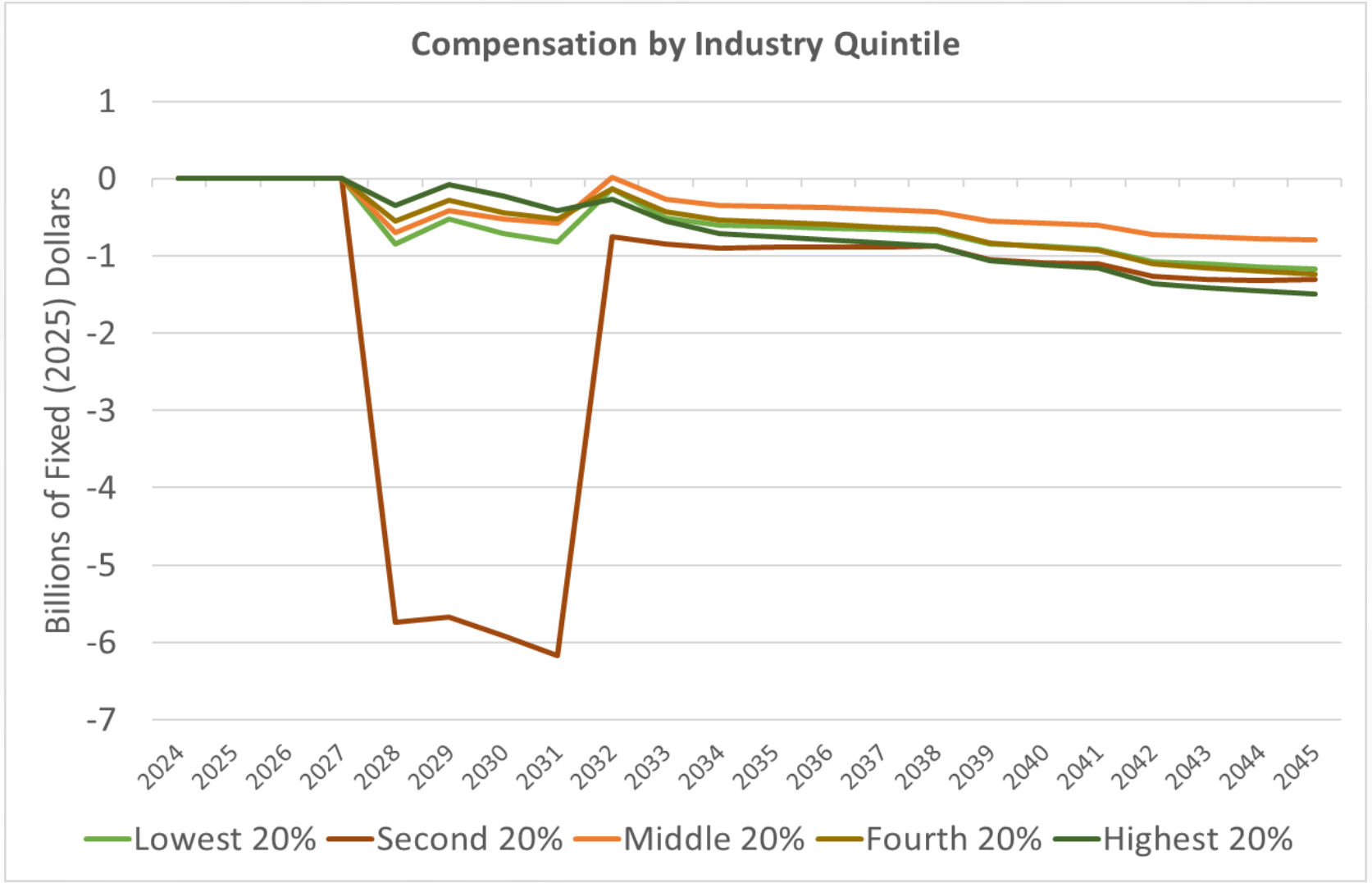
- California: decrease of $10.5 billion
- Texas: decrease of $8.25 billion
- New York: decrease of $6 billion
- Cause: Loss of renewable investment and higher operating costs from increased electricity prices

Personal Income



- California: largest cumulative loss
- New York: Smallest cumulative loss
- All 3 states had a bounce back due to finishing of initial construction costs
- Cause: rising owner generation costs passed to consumers and businesses, reducing disposable income

Compensation by Quintiles: SEI



- Second 20%: Sharpest early losses (over $5B drop by 2031), partial rebound, long-term negative
- Middle-income groups: sustained by smaller proportions; declines
- Highest 20%: Most insulated, smallest proportional losses, downward slope in long run
- Overall: All quintiles see long-term decline from higher energy costs and slowed economic growth

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Model Simulation: REMI AI

REMI-AI is the next evolution in policy analysis. This tool streamlines your workflow by generating high-quality deliverables—a one-pager, a PowerPoint presentation, and a comprehensive report—directly from your model results.

Built with the newest and most secure artificial intelligence technology, REMI-AI relies exclusively on REMI model documentation and equations, ensuring accuracy and reliability without pulling information from external sources.

Executive Summary

Economic Impact: Reduced federal tax credits for renewable energy led to significant declines in GDP, output, and personal income across California, Texas, and New York, indicating a contraction in economic activity.

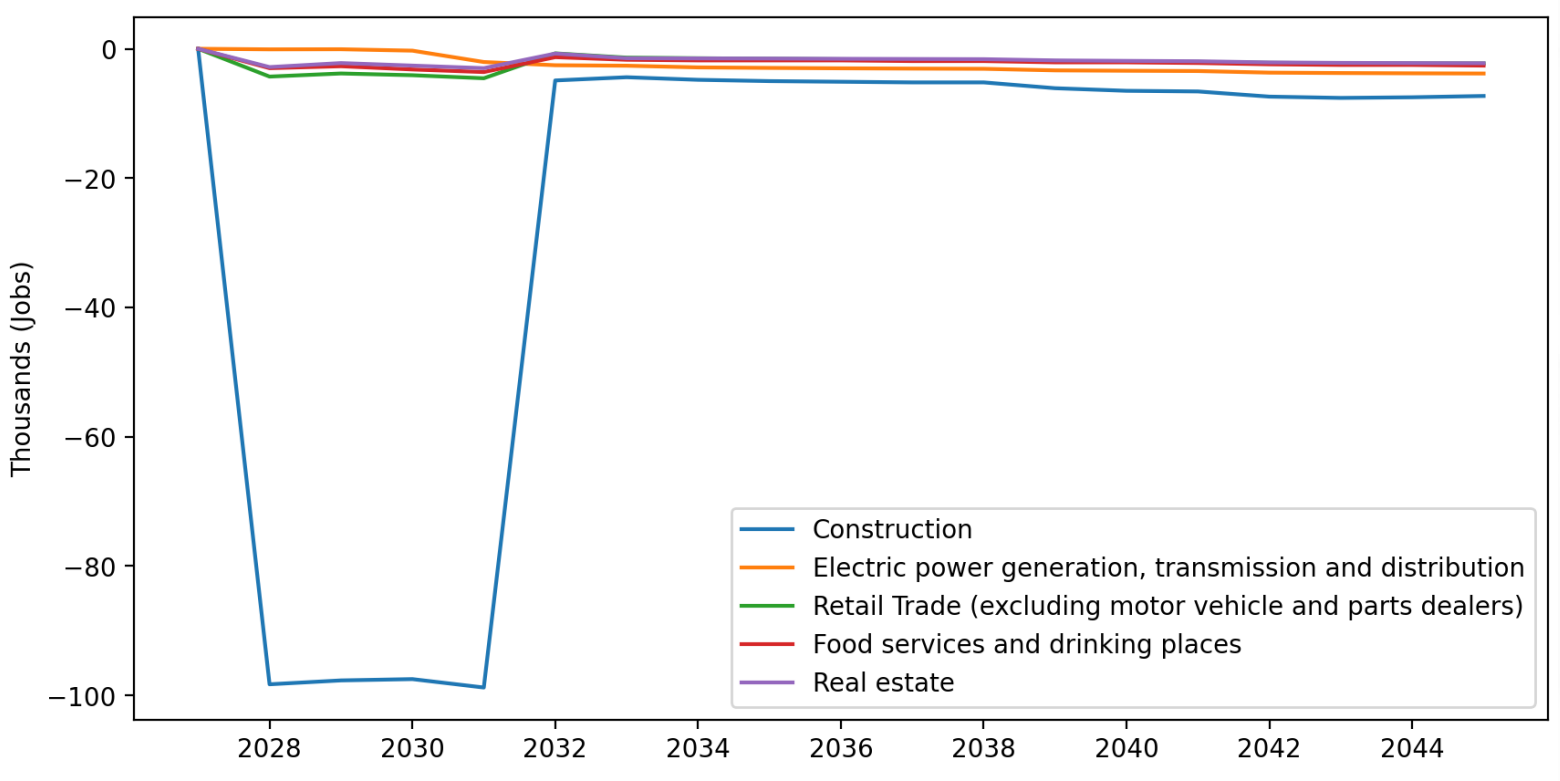
Employment Losses: The construction sector faced the largest job losses, averaging -52.53 thousand jobs annually, with a peak decline of -142.1 thousand jobs in 2031.

Rising Energy Costs: Long-term increases in energy generation prices due to reduced investments in renewables contributed to slower economic growth and higher consumer and business energy bills.

Category	Unit	Average Change
Employment	Thousands (Jobs)	-52.528
Population	Thousands	-60.272
Gross Domestic Product (GDP)	Billions of Fixed (2025) Dollars	-8.411
Output	Billions of Fixed (2025) Dollars	-13.133
Personal Income	Billions of Fixed Local (2025) Dollars	-7.717

Employment in Key Industries

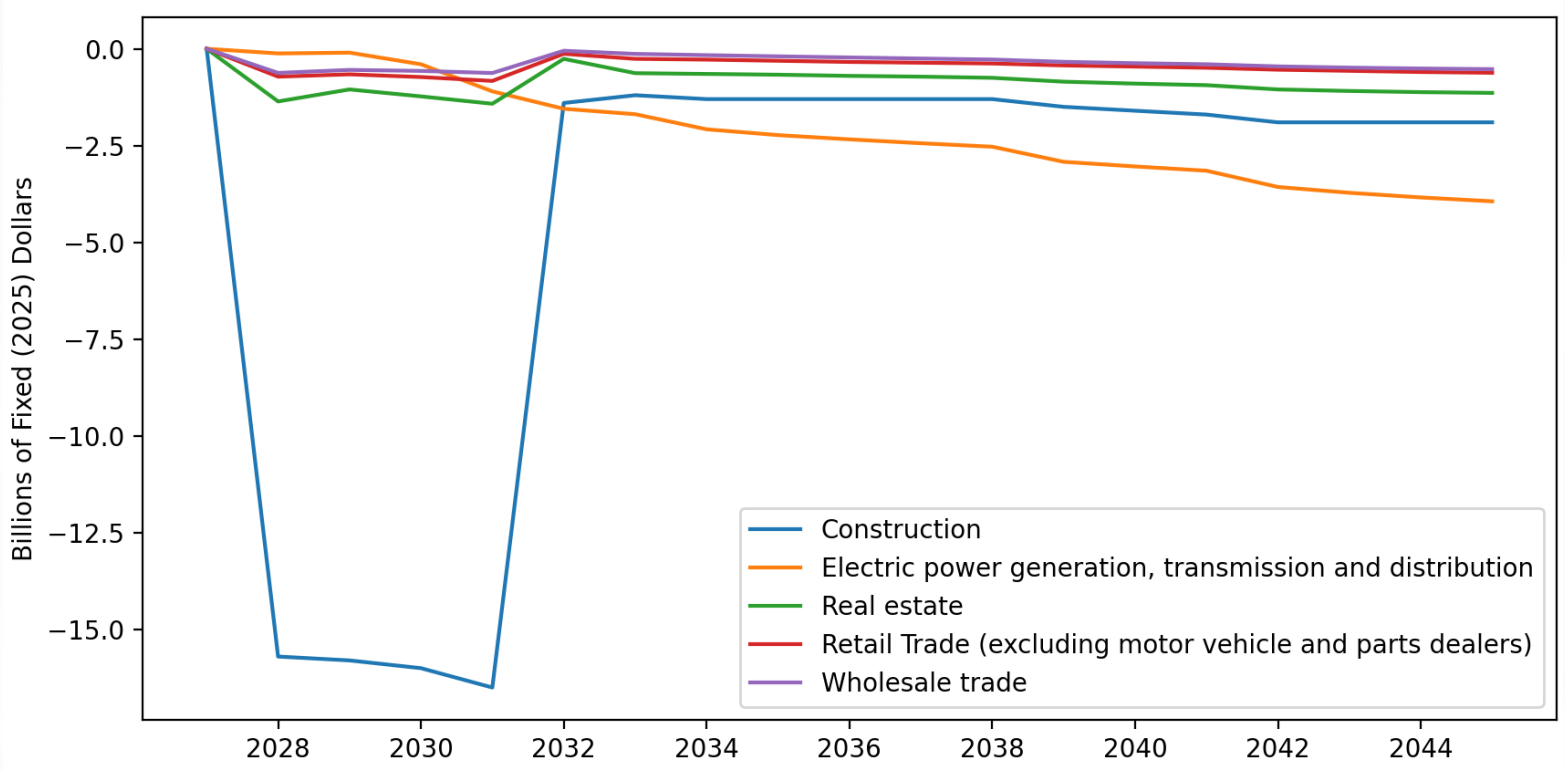
- Industries Most Impacted: Construction, Electric power generation, Retail Trade, Food services, and Real estate faced significant employment declines, with Construction losing up to 98.3 thousand jobs by 2028.
- Long-term Employment Trends: All affected industries showed negative employment changes relative to baseline forecasts, with only slight recoveries over time.
- Economic Impact: The overall economy is adversely affected by persistent job losses in these key sectors, indicating a slower recovery and potential long-term stagnation.



Industry	Units	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
All Industries	Thousands (Jobs)	-138.3	-132.9	-135.1	-142.1	-14.2	-19.2	-21.0	-22.5	-24.0	-25.2	-26.3	-29.9	-31.7	-32.9	-36.1	-37.5	-38.2	-38.4
Construction	Thousands (Jobs)	-98.3	-97.7	-97.5	-98.8	-4.9	-4.4	-4.8	-5.0	-5.1	-5.2	-5.2	-6.1	-6.5	-6.6	-7.4	-7.6	-7.5	-7.3
Electric power generation, transmission and distribution	Thousands (Jobs)	-0.088	-0.072	-0.29	-2.046	-2.545	-2.618	-2.879	-2.959	-3.021	-3.065	-3.098	-3.34	-3.399	-3.441	-3.689	-3.751	-3.795	-3.826
Retail Trade (excluding motor vehicle and parts dealers)	Thousands (Jobs)	-4.3	-3.82	-4.09	-4.56	-0.71	-1.37	-1.46	-1.54	-1.62	-1.68	-1.74	-1.9	-1.98	-2.03	-2.17	-2.23	-2.26	-2.27
Food services and drinking places	Thousands (Jobs)	-3.0	-2.7	-3.2	-3.6	-1.3	-1.7	-1.8	-1.8	-1.8	-1.9	-1.9	-2.1	-2.1	-2.2	-2.4	-2.5	-2.5	-2.6
Real estate	Thousands (Jobs)	-2.83	-2.21	-2.6	-3.0	-0.74	-1.46	-1.49	-1.51	-1.55	-1.58	-1.61	-1.8	-1.87	-1.93	-2.11	-2.18	-2.21	-2.23

Output in Key Industries

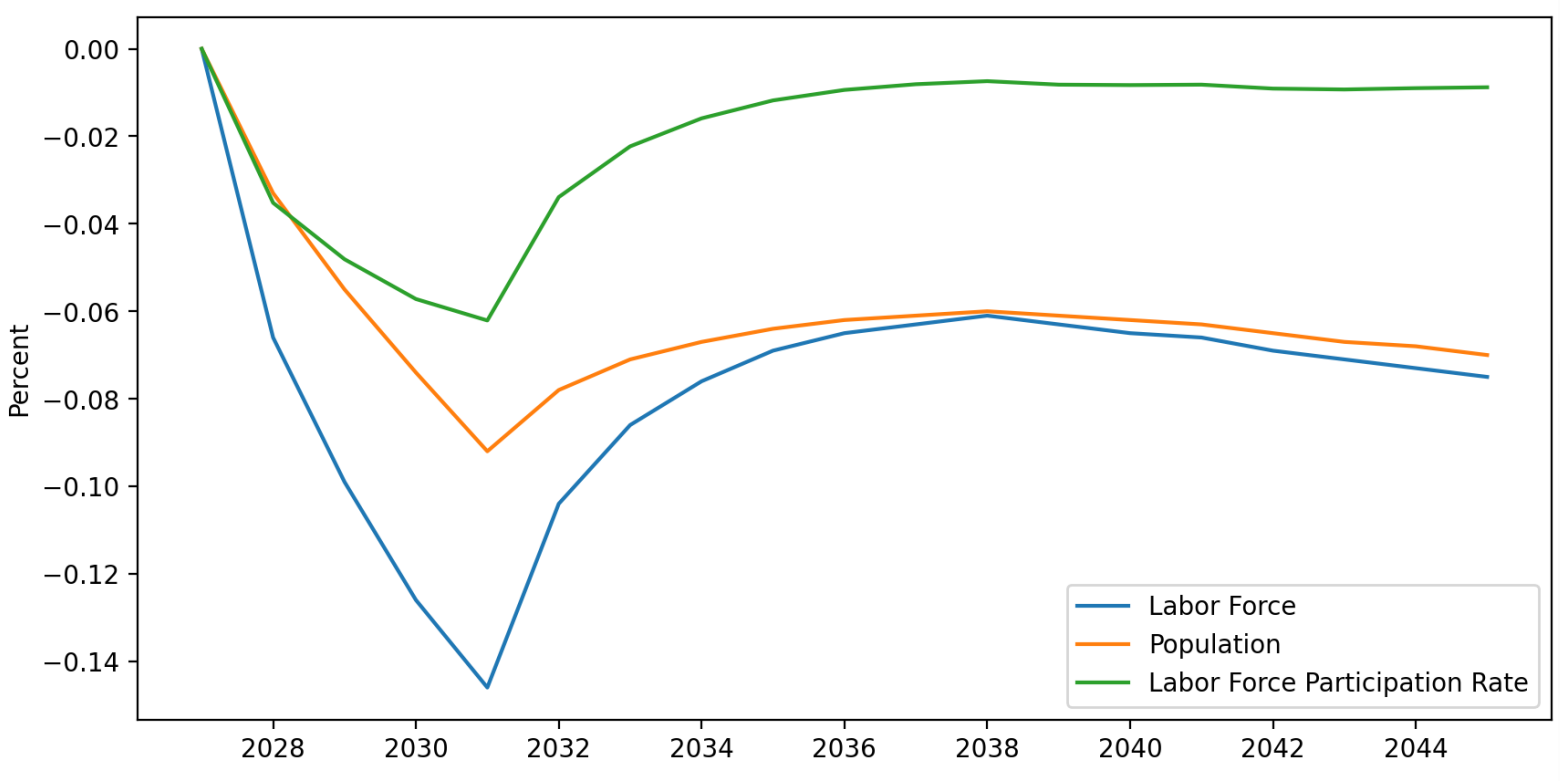
- Significant output reductions projected in key sectors: Construction, Electric Power, Real Estate, Retail, and Wholesale Trade.
- Construction alone faces a decline of -$15.7 billion by 2028, with similar trends across other industries.
- Overall economy impacted by lower outputs in these sectors, potentially leading to reduced growth and employment.



Industry	Units	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
All Industries	Billions of Fixed (2025) Dollars	-24.8	-23.8	-24.8	-27.0	-4.3	-5.6	-6.6	-7.2	-7.7	-8.3	-8.7	-10.2	-10.9	-11.5	-12.9	-13.6	-14.1	-14.4
Construction	Billions of Fixed (2025) Dollars	-15.7	-15.8	-16.0	-16.5	-1.4	-1.2	-1.3	-1.3	-1.3	-1.3	-1.3	-1.5	-1.6	-1.7	-1.9	-1.9	-1.9	-1.9
Electric power generation, transmission and distribution	Billions of Fixed (2025) Dollars	-0.12	-0.1	-0.4	-1.1	-1.55	-1.69	-2.08	-2.23	-2.34	-2.44	-2.53	-2.92	-3.04	-3.15	-3.57	-3.72	-3.84	-3.94
Real estate	Billions of Fixed (2025) Dollars	-1.36	-1.05	-1.23	-1.42	-0.26	-0.63	-0.65	-0.67	-0.7	-0.72	-0.75	-0.85	-0.9	-0.94	-1.05	-1.09	-1.12	-1.14
Retail Trade (excluding motor vehicle and parts dealers)	Billions of Fixed (2025) Dollars	-0.72	-0.66	-0.73	-0.83	-0.13	-0.26	-0.28	-0.31	-0.34	-0.36	-0.38	-0.43	-0.46	-0.49	-0.54	-0.57	-0.6	-0.62
Wholesale trade	Billions of Fixed (2025) Dollars	-0.623	-0.546	-0.572	-0.626	-0.052	-0.132	-0.165	-0.195	-0.224	-0.252	-0.278	-0.337	-0.372	-0.4	-0.455	-0.487	-0.51	-0.526

Labor Force

- Population dynamics and labor force participation rates are crucial in determining workforce availability for economic planning.
- Declines in both population and participation rates have significantly reduced the labor force, impacting overall economic growth.
- The primary driver of labor force reduction is population decline, closely mirroring changes in workforce size.

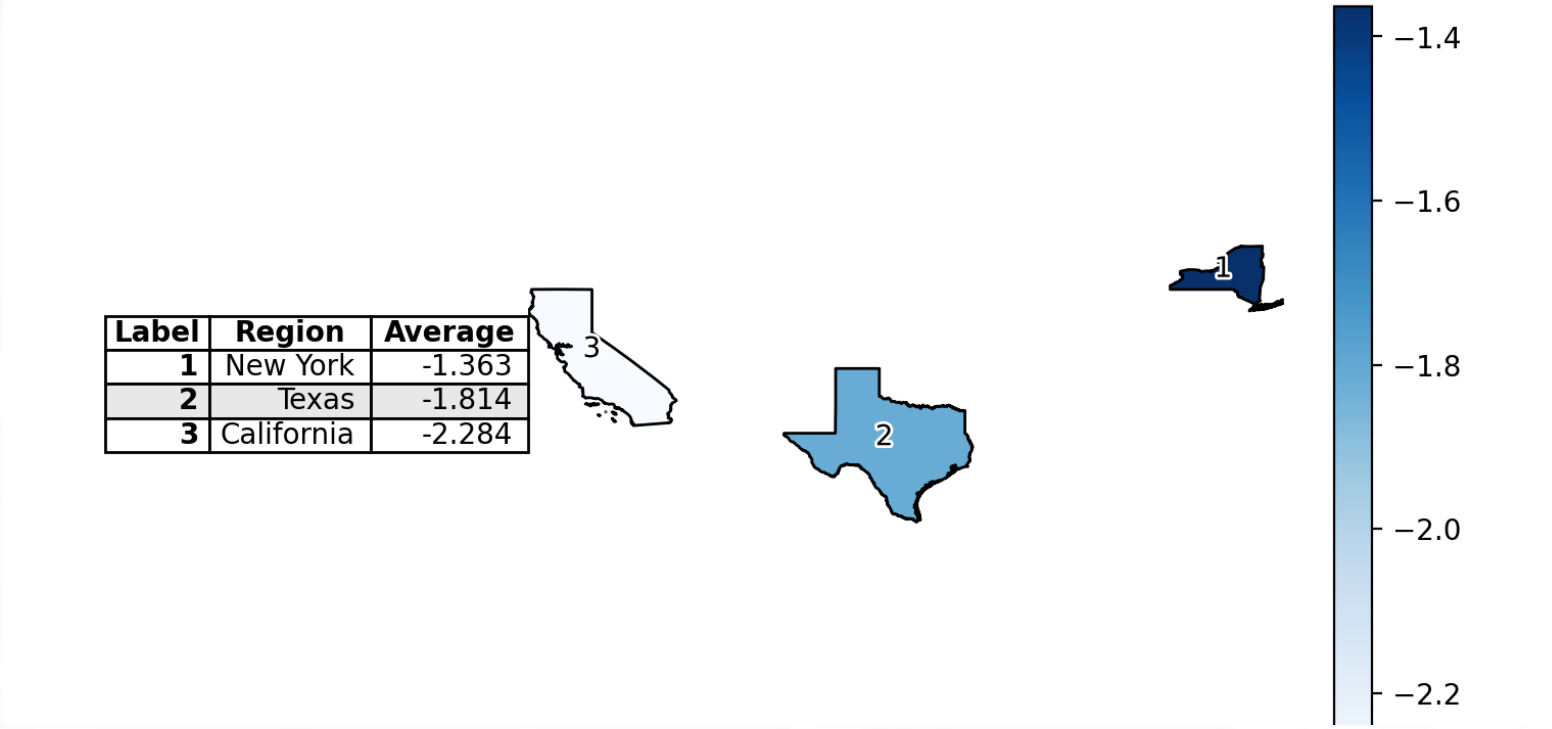


Category	Units	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Labor Force	Percent	-0.066	-0.099	-0.126	-0.146	-0.104	-0.086	-0.076	-0.069	-0.065	-0.063	-0.061	-0.063	-0.065	-0.066	-0.069	-0.071	-0.073	-0.075
Population	Percent	-0.033	-0.055	-0.074	-0.092	-0.078	-0.071	-0.067	-0.064	-0.062	-0.061	-0.06	-0.061	-0.062	-0.063	-0.065	-0.067	-0.068	-0.07
Labor Force Participation Rate	Percent	-0.0352	-0.0481	-0.0572	-0.0621	-0.0339	-0.0223	-0.0159	-0.0118	-0.0094	-0.0081	-0.0074	-0.0082	-0.0083	-0.0082	-0.0091	-0.0093	-0.009	-0.0088

Compensation by Region

- California, Texas, and New York experienced significant declines in compensation from 2028 to 2045, with California facing the largest negative impact.
- Compensation deltas: California (-0.45 to -4.24), Texas (-0.89 to -3.17), New York (-0.5 to -1.99).
- Overall economy affected by these declines, potentially leading to reduced consumer spending and economic growth in these key states.

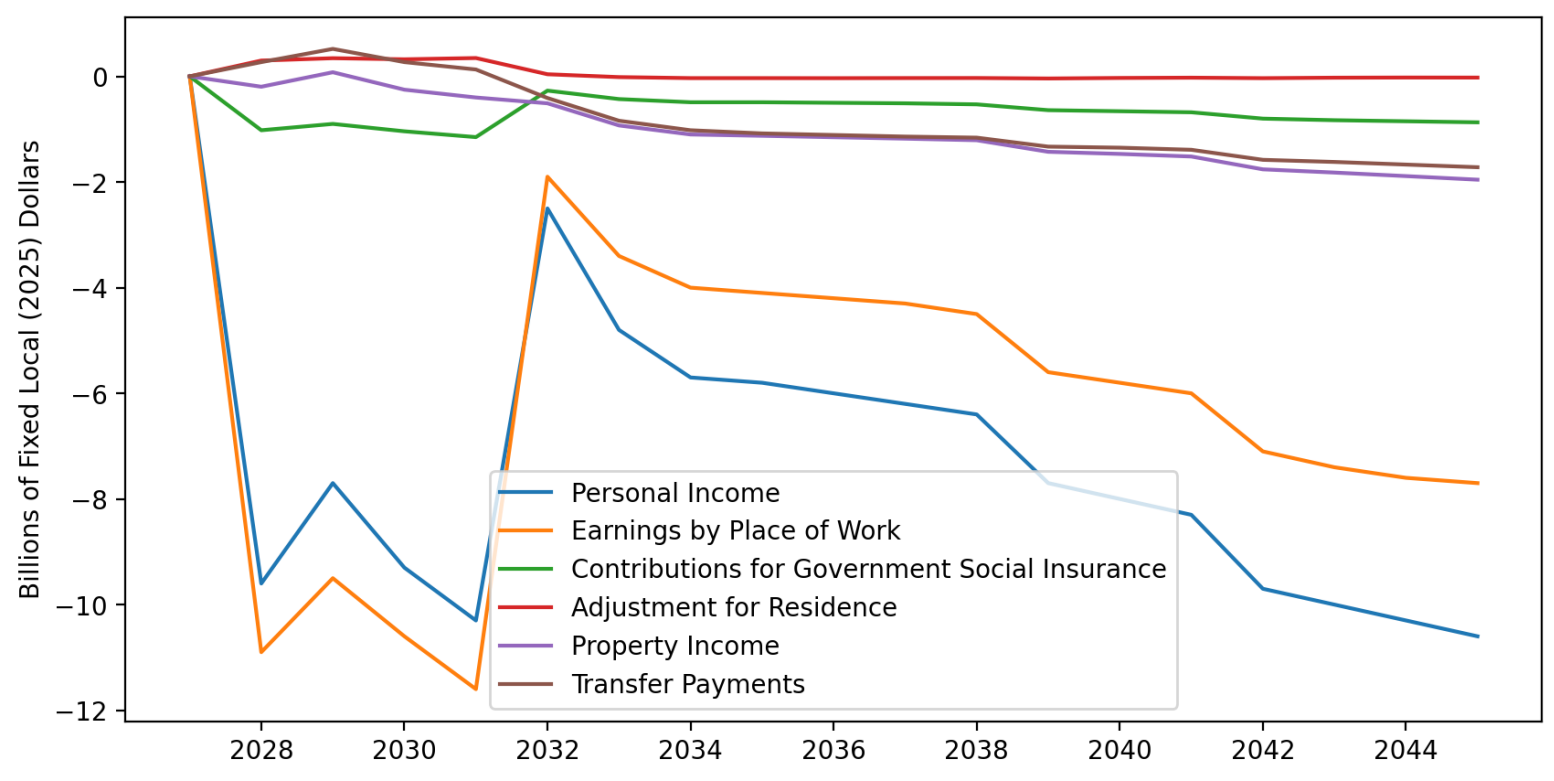
Label	Region	Average
1	New York	-1.363
2	Texas	-1.814
3	California	-2.284



Region	Units	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
California	Billions of Fixed Local (2025) Dollars	-4.24	-3.45	-3.98	-4.21	-0.45	-1.3	-1.49	-1.5	-1.53	-1.58	-1.63	-2.07	-2.16	-2.24	-2.69	-2.78	-2.85	-2.91
Texas	Billions of Fixed Local (2025) Dollars	-2.63	-2.51	-2.83	-3.17	-0.89	-1.08	-1.24	-1.25	-1.28	-1.32	-1.37	-1.65	-1.73	-1.79	-2.08	-2.16	-2.22	-2.26
New York	Billions of Fixed Local (2025) Dollars	-1.79	-1.52	-1.75	-1.99	-0.5	-0.84	-1.01	-1.04	-1.08	-1.11	-1.14	-1.35	-1.4	-1.44	-1.67	-1.73	-1.78	-1.82

Personal Income

- Key Influencers of Personal Income: Earnings by Place of Work and Property Income are the primary determinants, with significant declines projected through 2045.
- Negative Economic Impact: Reductions in these income sources could lead to broader economic contractions, affecting overall consumer spending and economic growth.
- Importance of Addressing Declines: Mitigating losses in labor earnings and investment returns is crucial for stabilizing Personal Income and supporting the economy.



Category	Units	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Personal Income	Billions of Fixed Local (2025) Dollars	-9.6	-7.7	-9.3	-10.3	-2.5	-4.8	-5.7	-5.8	-6.0	-6.2	-6.4	-7.7	-8.0	-8.3	-9.7	-10.0	-10.3	-10.6
Earnings by Place of Work	Billions of Fixed Local (2025) Dollars	-10.9	-9.5	-10.6	-11.6	-1.9	-3.4	-4.0	-4.1	-4.2	-4.3	-4.5	-5.6	-5.8	-6.0	-7.1	-7.4	-7.6	-7.7
Contributions for Government Social Insurance	Billions of Fixed Local (2025) Dollars	-1.02	-0.9	-1.04	-1.15	-0.27	-0.43	-0.49	-0.49	-0.5	-0.51	-0.53	-0.64	-0.66	-0.68	-0.8	-0.83	-0.85	-0.87
Adjustment for Residence	Billions of Fixed Local (2025) Dollars	0.299	0.344	0.323	0.347	0.04	-0.014	-0.033	-0.033	-0.034	-0.032	-0.031	-0.04	-0.03	-0.025	-0.034	-0.025	-0.022	-0.023
Property Income	Billions of Fixed Local (2025) Dollars	-0.196	0.078	-0.252	-0.4	-0.51	-0.929	-1.1	-1.125	-1.152	-1.179	-1.209	-1.428	-1.468	-1.517	-1.76	-1.821	-1.888	-1.956
Transfer Payments	Billions of Fixed Local (2025) Dollars	0.27	0.52	0.27	0.13	-0.41	-0.84	-1.02	-1.08	-1.11	-1.14	-1.16	-1.33	-1.35	-1.39	-1.58	-1.62	-1.67	-1.72

Conclusion

Reduced federal tax credits for renewable energy projects lead to delays and cancellations in construction.

Significant declines in employment, output, and personal income in construction and operation sectors.

Long-term increases in energy generation costs exacerbate economic contraction and slow growth.

Overall economy suffers from persistent GDP losses and downward pressure on labor market and household earnings.

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Conclusions and Notable Results

BBB & IRA

- The 2022 IRA implemented tax credits for renewable energy projects to drive advancements
- OBBBA wants to accelerate these projects by shortening timeline available for these tax credits which are causing many to be cancelled

Methodology

- Created risk parameters to rank the likelihood of projects being cancelled
- Specifically looked at California, New York, and Texas
- Policy variables; construction costs and maintenace and operation costs for solar, onshore wind, and off shore wind in each state, and energy production costs

Findings

- Construction industry most affected
- States are affected proportionally to their renewable energy prioritization and economic size
- Increase in energy price will negatively affect all 3 states

Q&A

Thank you for attending!

For more information, please contact
info@remi.com