

## Cumulative Impacts of Technology Leveraged by EERE Programs FY11 Primary Metrics

	Metric	Model	Year				
			2015	2020	2030	2050	
<b>Energy Security</b>	Oil Imports Reduction, cumulative (Bil bbl)	NEMS	0.10	0.63	4.6	N/A	
		MARKAL	0.22	0.70	4.1	31	
	Natural Gas Imports Reduction, cumulative (Tcf)	NEMS	0.19	1.5	6.1	N/A	
		MARKAL	ns	1.9	10.2	41	
<b>Environmental Impacts</b>	CO <sub>2</sub> Emissions Reduction, cumulative (Mil mtCO <sub>2</sub> )	NEMS	251	1226	5717	N/A	
		MARKAL	316	1290	6242	27367	
	SO <sub>2</sub> Allowance Price Reduction (\$/ton)	NEMS	ns	ns	ns	N/A	
		MARKAL	N/A	N/A	N/A	N/A	
	NO <sub>x</sub> Allowance Price Reduction (\$/ton)	NEMS	269	504	767	N/A	
		MARKAL	N/A	N/A	N/A	N/A	
<b>Economic Impacts</b>	Primary Energy Savings, cumulative (quads)	NEMS	4.4	19	80	N/A	
		MARKAL	6.1	21	89	358	
	Oil Savings, cumulative (Bil bbl)	NEMS	0.11	0.72	5.9	N/A	
		MARKAL	0.23	0.88	5.5	34.4	
	Consumer Savings, cumulative (Bil \$)	NEMS	41	206	1055	N/A	
		MARKAL	53	276	1473	5543	
	Electric Power Industry Savings, cumulative (Bil \$)	NEMS	42	119	378	N/A	
		MARKAL	29	89	291	784	
	Household Energy Expenditures Reduction (\$/household/yr)	NEMS	50	190	640	N/A	
		MARKAL	114	297	817	2316	
	Jobs, cumulative (net added jobs)	NEMS/ IMSET	NA	NA	NA	NA	
	<p>- “Reductions” and “savings” are calculated as the difference between results from the baseline case (i.e. no future DOE funding for this technology) and the program case (i.e. requested DOE funding for this technology is received and is successful).</p> <p>- Oil impacts are shown as two metrics. "Oil Imports Reduction" refers only to reductions in oil imports; "Oil Savings" refers to savings (reduction) in total oil consumption.</p> <p>- All cumulative metrics are based on results beginning in 2011.</p> <p>- All monetary metrics are in 2007\$.</p> <p>- Cumulative monetary metrics are in 2007\$ that are discounted to 2011 using a 3% discount rate.</p> <p>ns - Not significant    NA - Not yet available    N/A - Not applicable</p>						

## Annual Impacts of Technology Leveraged by EERE Programs FY11 Secondary Metrics

	Metric	Model	Year			
			2015	2020	2030	2050
<b>Energy Security</b>	Oil Imports Reduction, annual (Mbpd)	NEMS	0.1	0.5	1.6	N/A
		MARKAL	0.2	0.3	1.7	5.0
	Natural Gas Imports Reduction, annual (Tcf)	NEMS	0.1	0.4	0.5	N/A
		MARKAL	ns	0.8	0.9	1.8
	MPG Improvement (%)	NEMS	0.0	0.0	0.2	N/A
MARKAL		0.0	0.0	0.1	2.5	
<b>Environmental Impacts</b>	CO2 Emissions Reduction, annual (Mill mtCO <sub>2</sub> /yr)	NEMS	95.1	256.5	613.6	N/A
		MARKAL	112.9	276.6	677.9	1247.3
	CO2 Intensity Reduction of US Economy (g CO <sub>2</sub> /\$GDP)	NEMS	7.0	16.7	30.5	N/A
		MARKAL	9.1	19.5	37.8	44.7
	CO2 Intensity Reduction of US Power Sector <sup>3</sup> (g CO <sub>2</sub> /kWh)	NEMS	ns	ns	ns	N/A
		MARKAL	ns	ns	ns	ns
CO2 Intensity Reduction of US Transportation Sector (g CO <sub>2</sub> /mile)	NEMS	ns	16.5	59.8	N/A	
	MARKAL	ns	12.3	61.5	164.9	
<b>Economic Impacts</b>	Primary Energy Savings, annual (quads/yr)	NEMS	1.5	3.7	8.0	N/A
		MARKAL	2.0	3.8	9.6	17.1
	Oil Savings, annual (Mbpd)	NEMS	0.1	0.5	2.1	N/A
		MARKAL	0.2	0.5	2.3	5.4
	Consumer Savings, annual (Bil \$)	NEMS	18.3	61.0	188.4	N/A
		MARKAL	19.2	79.5	289.7	687.4
	Electric Power Industry Savings, annual (Bil \$)	NEMS	13.9	24.7	55.0	N/A
		MARKAL	11.0	17.3	39.0	59.3
	Reduction in Energy Intensity of US Economy (BTUs of energy/\$GDP)	NEMS	148.3	272.0	425.4	N/A
		MARKAL	163.8	265.7	532.6	612.3
Net Energy System Cost Reduction, cumulative (Bil \$)	NEMS	N/A	N/A	N/A	N/A	
	MARKAL	90.1	324.8	1270.3	5480.7	

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- All cumulative metrics are based on results beginning in 2011.

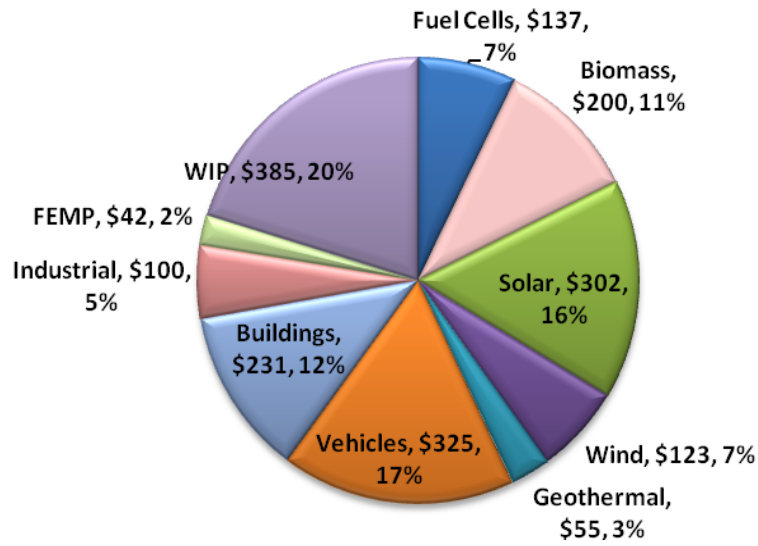
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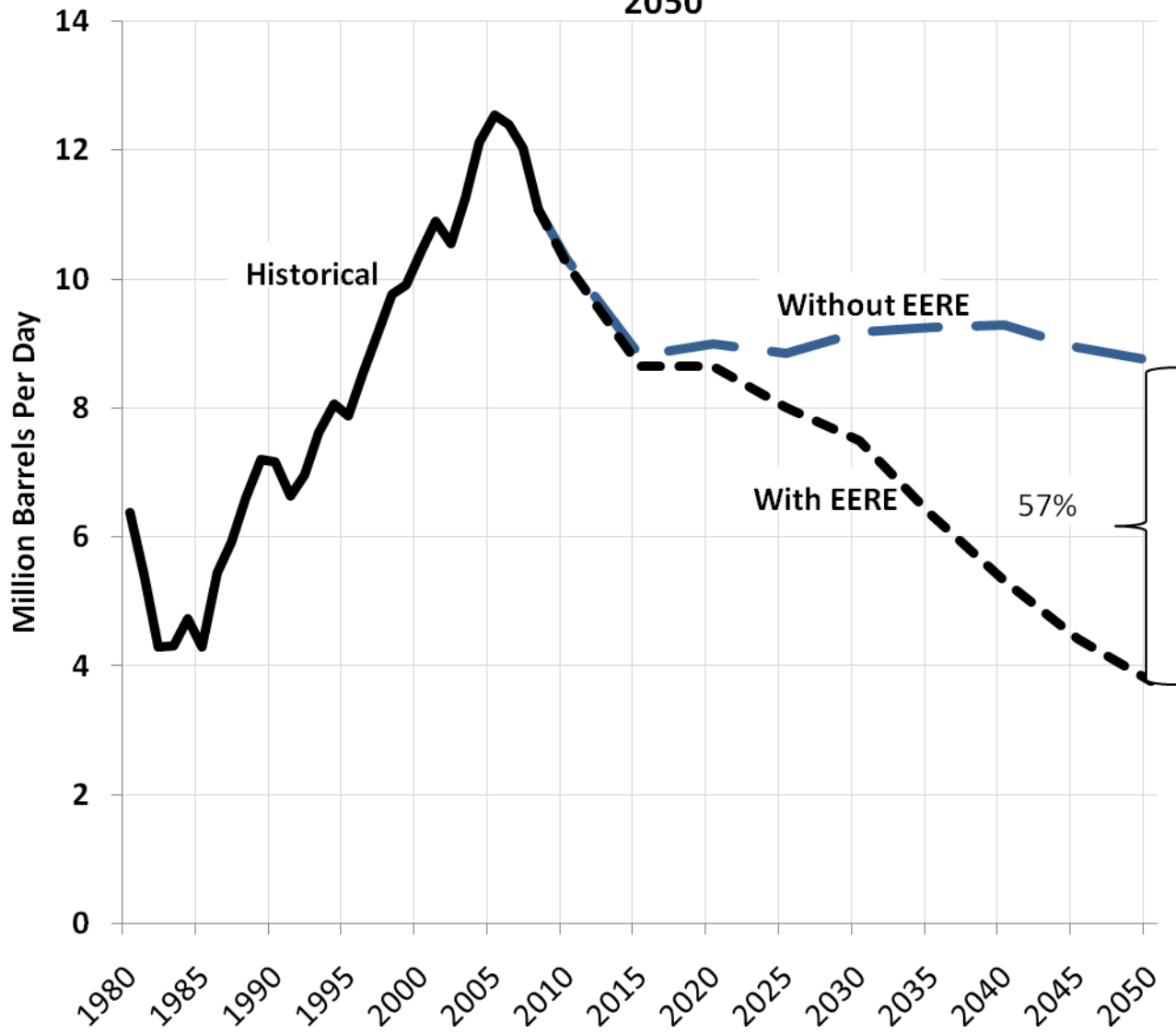
# Summary of Budget Cases

(dollars in millions)



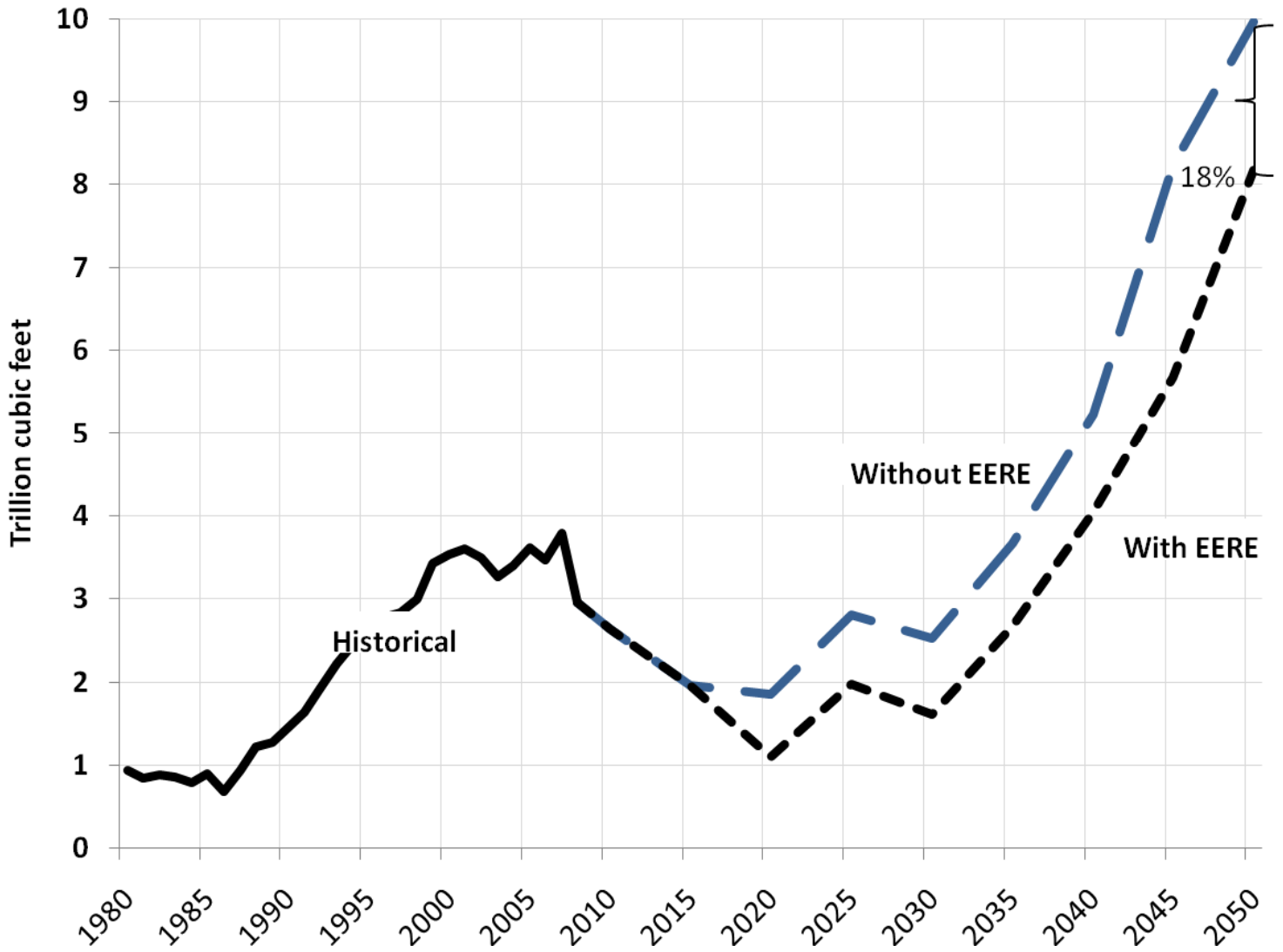
# Oil Imports

## EERE Portfolio Decreases U.S. Net Oil Imports by 57% in 2050



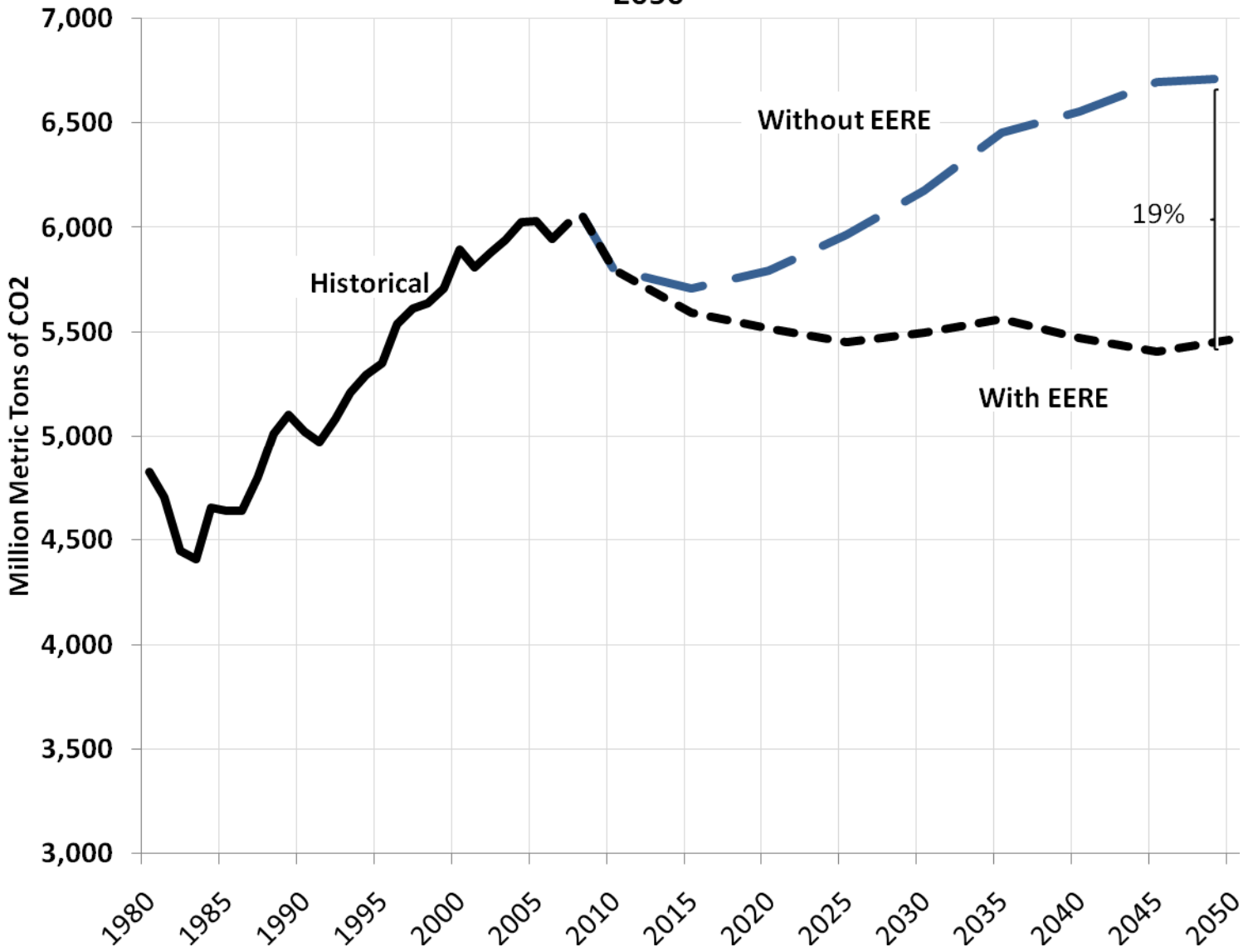
# Natural Gas

## EERE Portfolio Decreases U.S. Natural Gas Imports by 18% in 2050



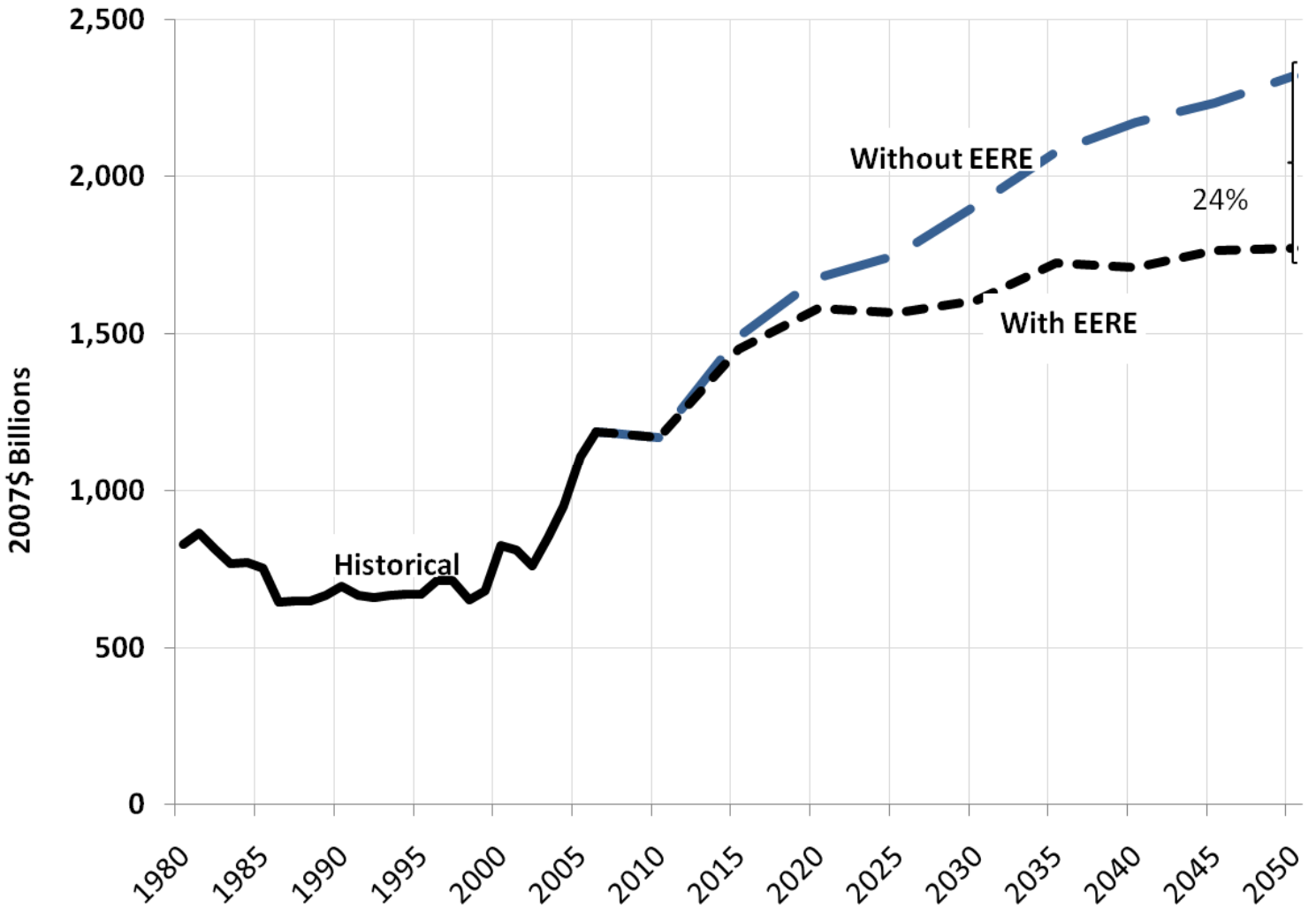
# Carbon Dioxide Emissions

## EERE Portfolio Decreases U.S. Carbon Dioxide Emissions by 19% in 2050



# Consumer Savings

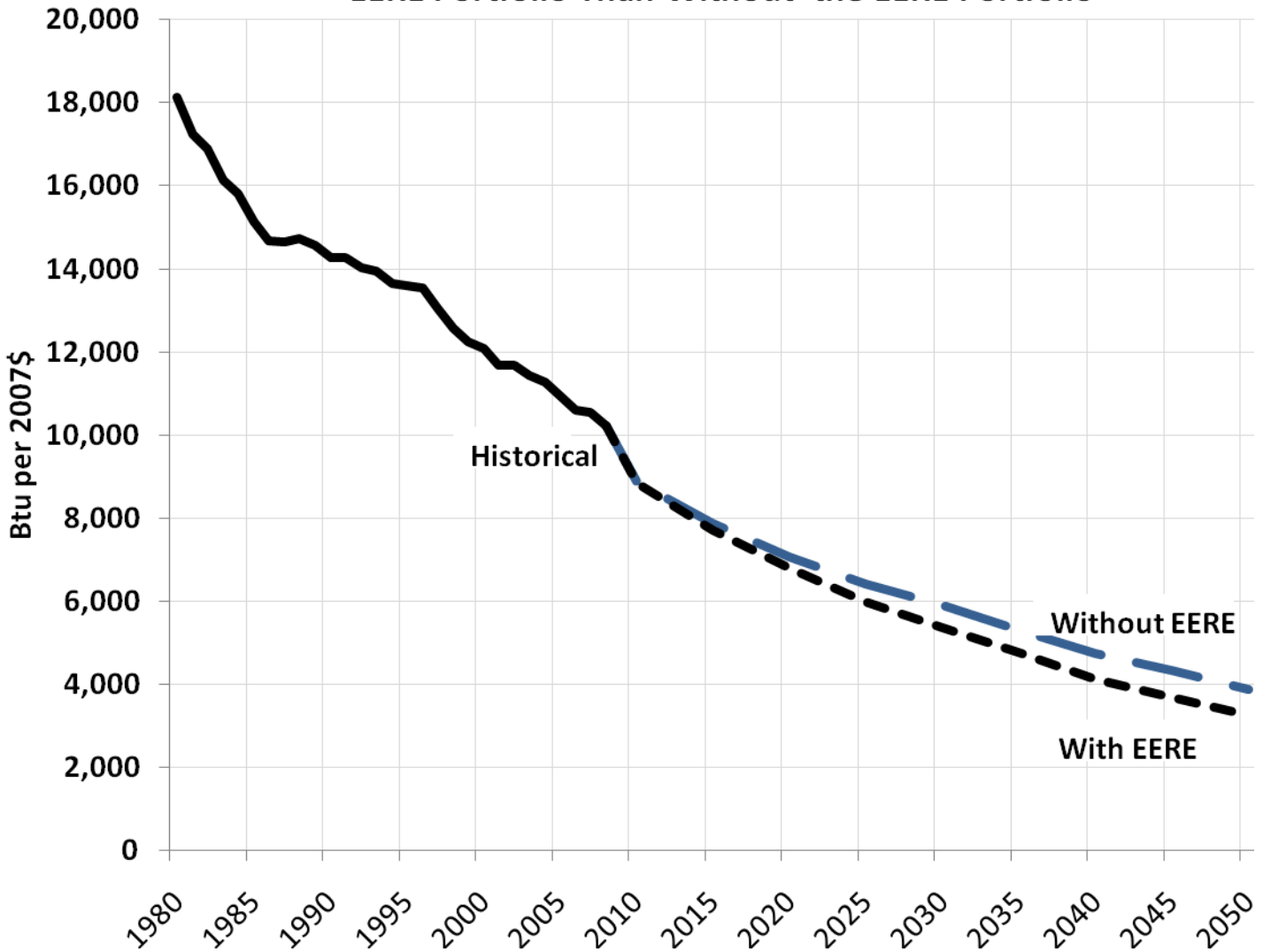
## U.S. Consumers Will Spend 24% Less on Energy\* in 2050 with the EERE Portfolio



\* This includes expenditures on fuels and electricity by all sectors. This does not include expenditures on capital investments in new energy equipment and infrastructure.

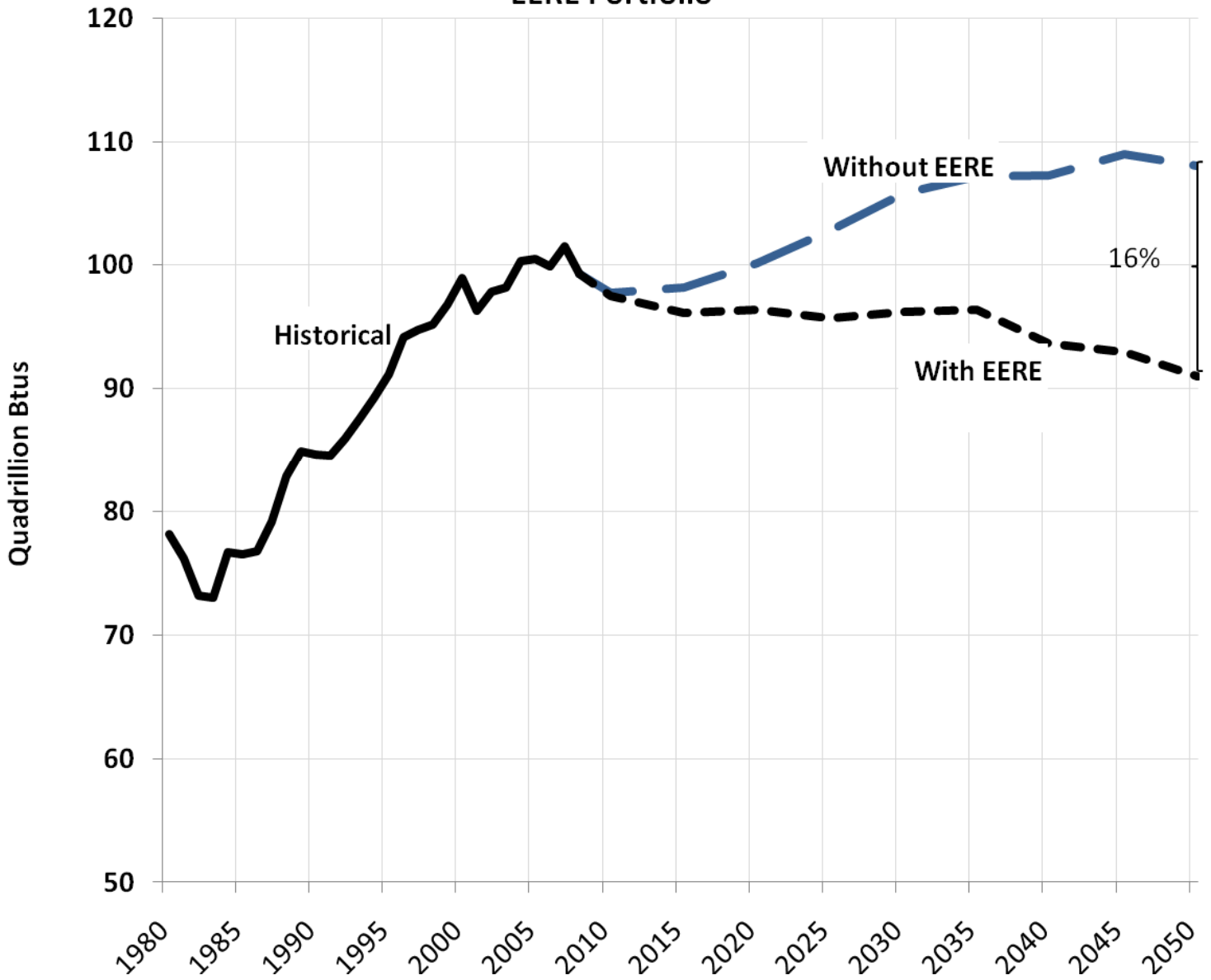
# Energy Intensity

## Energy Intensity of the U.S. Economy Will Improve More With the EERE Portfolio Than Without the EERE Portfolio



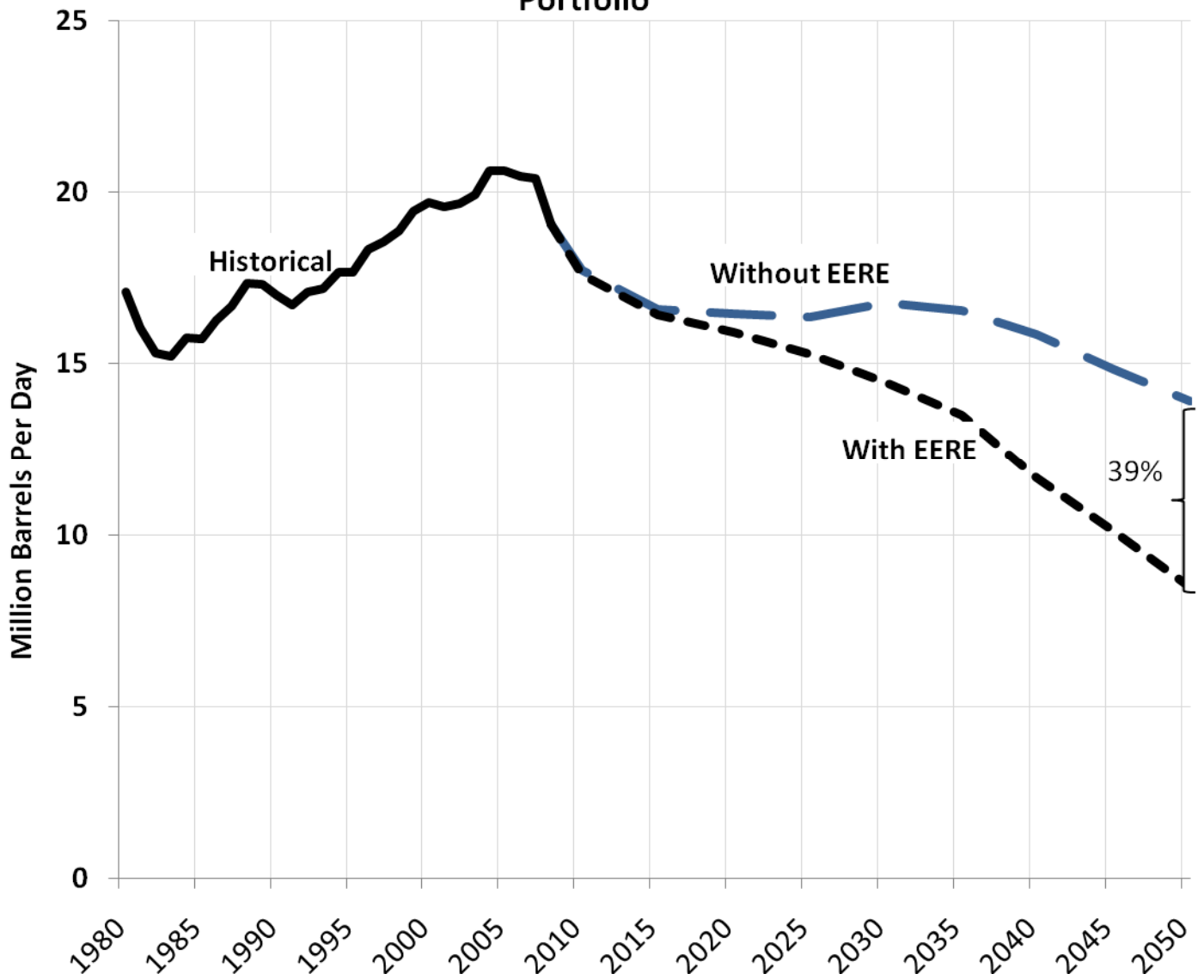
# Energy Consumption

## U.S. Primary Energy Consumption Will Be 16% Less in 2050 with the EERE Portfolio



# Oil Consumption

## U.S. Oil Consumption Will Be 39% Less in 2050 with the EERE Portfolio



# Vehicle Gas Mileage

## EERE Portfolio Significantly Improves Gas Mileage for Cars

