Table 3. Carbon Content of Fuels.
(Source: Energy Information Administration 1994)

Fuel type	Metric Tons of Carbon per billion BTU (1994 value)
Coal	25.61
Coal (electricity generation)	25.71
Natural gas	14.47
Residual fuel oil	21.49
Oil (electricity generation)	19.95
Liquid petroleum gas	17.02
Distillate fuel oil	19.95

Table 4. Percentage change in 2020 under alternative scenarios.

	Steel Production	**Total Energy Use**	**Energy per Ton**	**Carbon Emissions**	**Carbon per Ton**
Base Case Scenario in 2020	105,907 (10^3 Tons)	1,238,333 (10^6 BTUs)	8.88 (MT/Ton)	25,646,172 (MT)	.2422 (MT/Ton)
1.0% GDP Growth	+7.46%	+5.42%	-2.60%	+5.58%	-1.78%
2.8% GDP Growth	-6.88%	-5.16%	+2.48%	-5.29%	+1.70%
Low Population Estimate	-13.95%	-10.34	+4.96%	-10.97%	+3.49%
High Population Estimate	+14.92%	+7.89	-4.84%	+11.08%	-3.34%
Trade-weighted Dollar=70	+5.32%	+3.23%	-2.48%	+3.38%	-1.86%
Trade-weighted Dollar=86	-4.91%	-3.07%	+2.36%	-3.21%	+1.78%
70% EAF Maximum Market Share	N/C	+0.10%	+0.68%	+0.49%	+0.45%
90% EAF Maximum Market Share	N/C	-0.02%	-0.90%	-0.60%	-0.62%

Table 5. Summary of Model Results for Cost of Carbon Scenarios.

	Base Scenario	$50 per ton Carbon	$100 per ton Carbon	$150 per ton Carbon
Total Energy Use (% change from 1994 levels to 2020)	-26.79	-29.18	-31.54	-33.81
BOF Production (% change from 1994 levels to 2020)	-16.52	-23.56	-29.95	-35.62
BF Energy use per ton of product (% change from 1994 levels to 2020)	-31.42	-29.77	-28.17	-26.64
Years lost in improvement in energy use per ton of product (BF)		1	2	3
EAF Production (% change from 1994 levels to 2020)	+38.96	+49.83	+59.68	+68.43
EAF Energy use per ton of product (% change from 1994 levels to 2020)	-25.63	-26.56	-27.39	-28.11
EAF share of production in 2020 (%)	51.90	55.95	59.63	62.90
Years gained in improvement in energy use per ton of product (EAF)		1	2	3
Total Carbon Emissions (% change from 1994 levels to 2020)	-21.10	-23.55	-25.97	-27.86
<u>Financial Parameters</u>				
Cumulative present value of energy expenditures, 2000-2020 (billion 1994 $, 5% discount rate)	37.44	50.76	63.42	75.52
Cumulative present value of payments, 2000-2020 (billion 1994 $, 5% discount rate)		14.36	27.88	40.72
Energy expenditure in 2020 (billion 1994 $)	.89	1.25	1.59	1.90
Tax payments in 2020 (billion 1994 $)		.36	.69	1.01

Table 6. Summary of Model Results of Energy Tax Scenarios.

	Base Scenario	39% Energy Tax	77% Energy Tax	113% Energy Tax
Total Energy Use (% change from 1994 levels to 2020)	-26.79	-29.69	-32.46	-34.92
BOF Production (% change from 1994 levels to 2020)	-16.52	-24.95	-32.23	-38.20
BF Energy use per ton of product (% change from 1994 levels to 2020)	-31.42	-29.48	-27.68	-26.09
Years lost in improvement in energy use per ton of product (BF)		1	3	4
EAF Production (% change from 1994 levels to 2020)	+38.96	+49.83	+59.68	+68.43
EAF Energy use per ton of product (% change from 1994 levels to 2020)	-25.64	-26.69	-27.58	-28.36
EAF share of production in 2020 (%)	51.90	56.75	60.95	64.39
Years gained in improvement in energy use per ton of product (EAF)		1	2	3
Total Carbon Emissions (% change from 1994 levels to 2020)	-21.10	-23.67	-26.10	-28.24
Financial Parameters				
Cumulative present value of energy expenditures, 2000-2020 (billion 1994 $, 5% discount rate)	37.44	50.59	63.89	75.69
Cumulative present value of tax payments, 2000-2020 (billion 1994 $, 5% discount rate)		14.20	27.81	40.69
Energy expenditure in 2020 (billion 1994 $)	.89	1.24	1.56	1.86
Tax payments in 2020 (billion 1994 $)		.35	.68	.98

Figure 1. Base Scenario US Steel Production Forecasts by Process and Total.

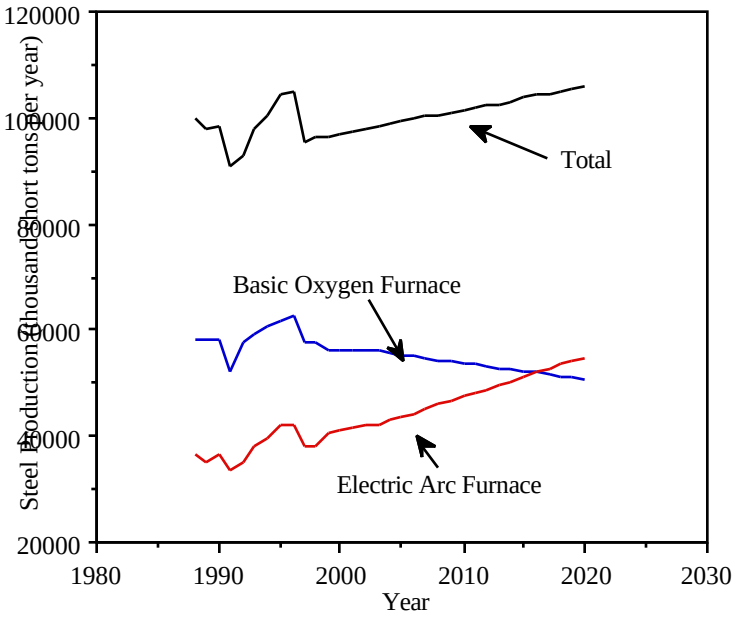

Figure 2. Base Scenario Purchased Energy Use by Energy Source and Total.

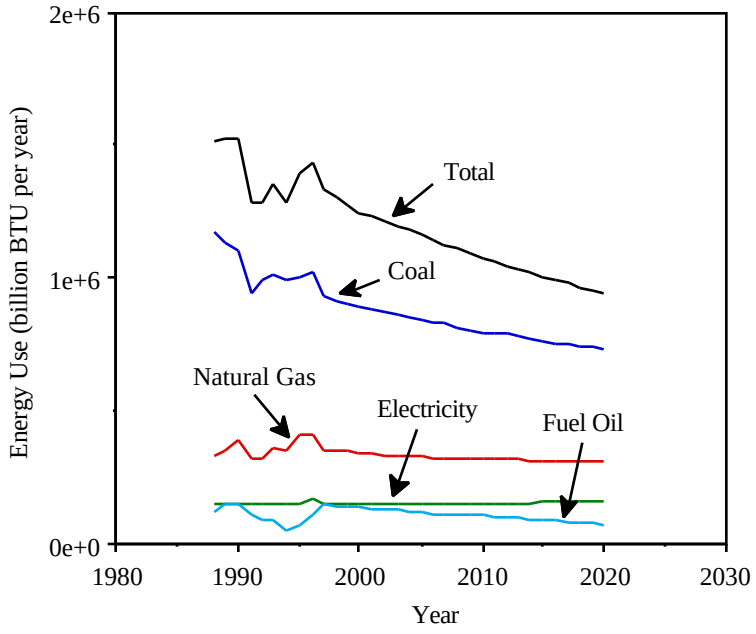

Figure 3. Base Scenario Carbon Emissions by Energy Source and Total.

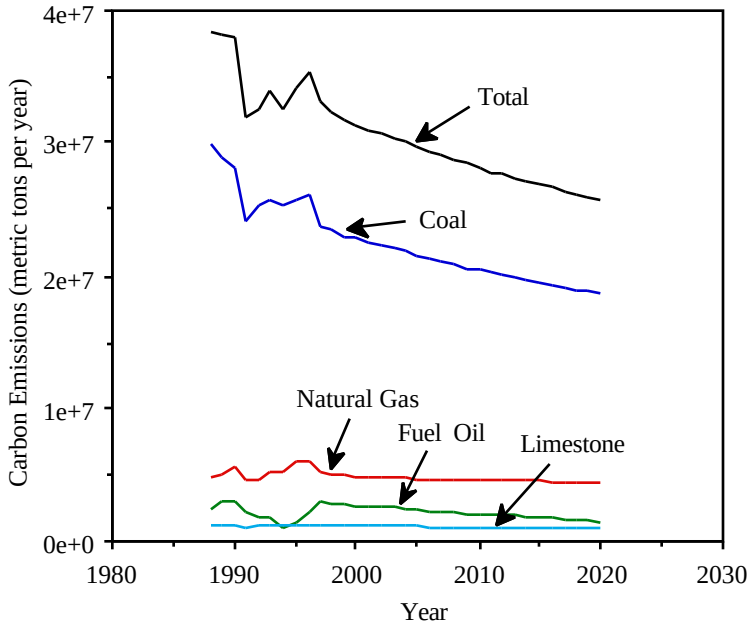

Figure 4. Base Scenario Energy Use and Carbon Emissions per Ton of Steel.

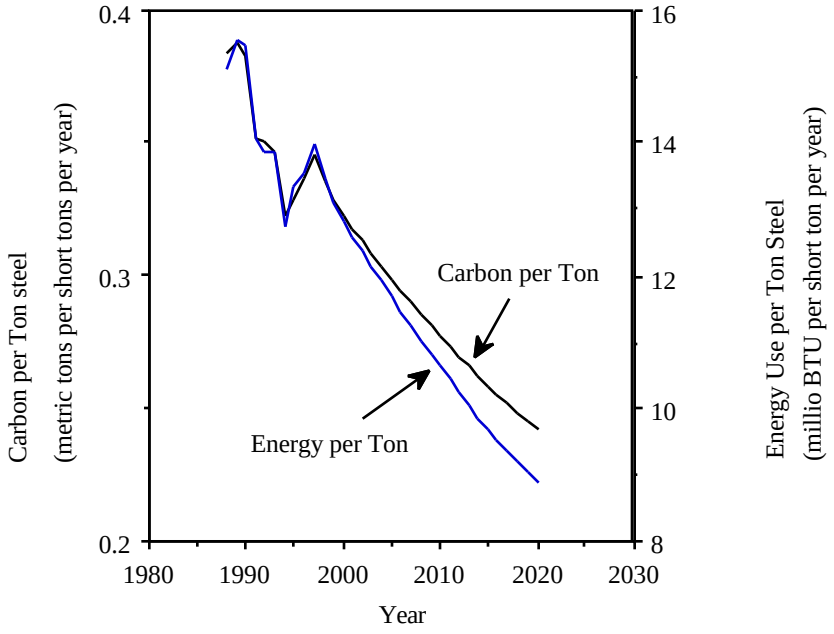

Figure 5. Energy Use per Ton of Steel for Alternative Energy Tax Rates.

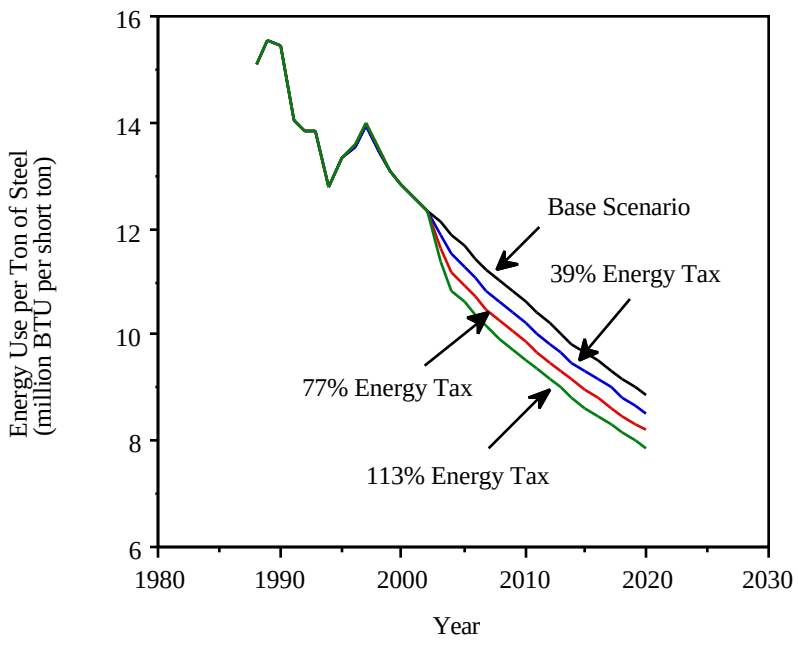

Figure 6. Carbon Emissions per Ton of Steel for Alternative Energy Tax Rates.

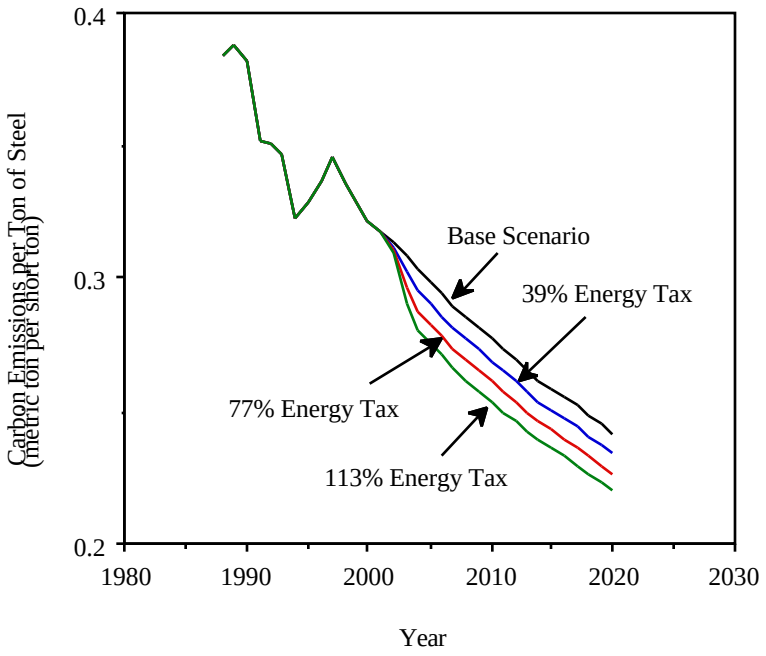

Figure 7. Energy Use per Ton of Steel for Alternative Costs of Carbon.

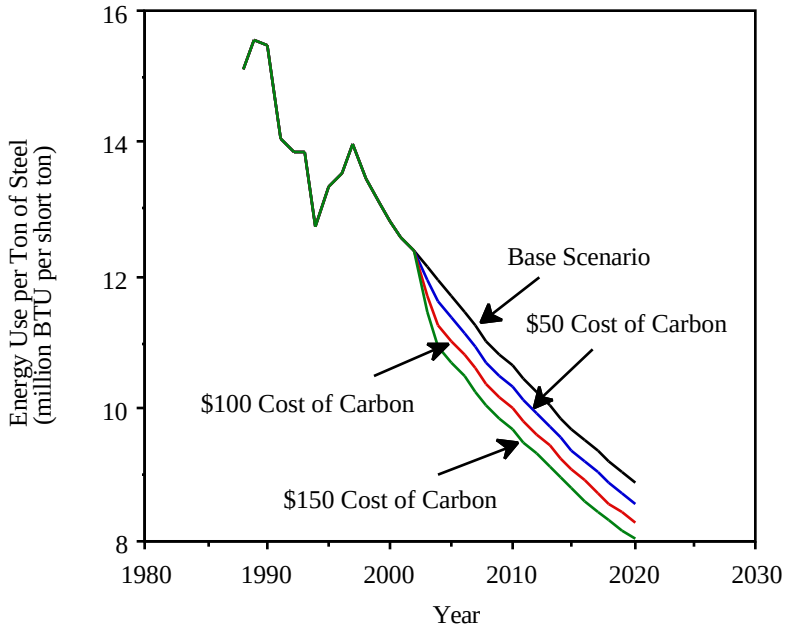

Figure 8. Carbon Emissions per Ton of Steel for Alternative Costs of Carbon.

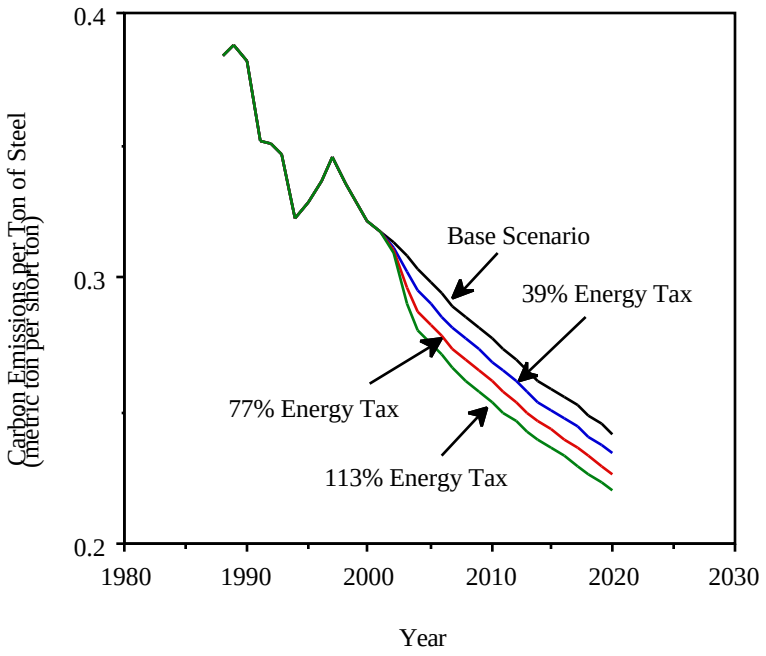

Figure 9. Share of Electric Arc Furnace Production Under Alternative Scenarios.

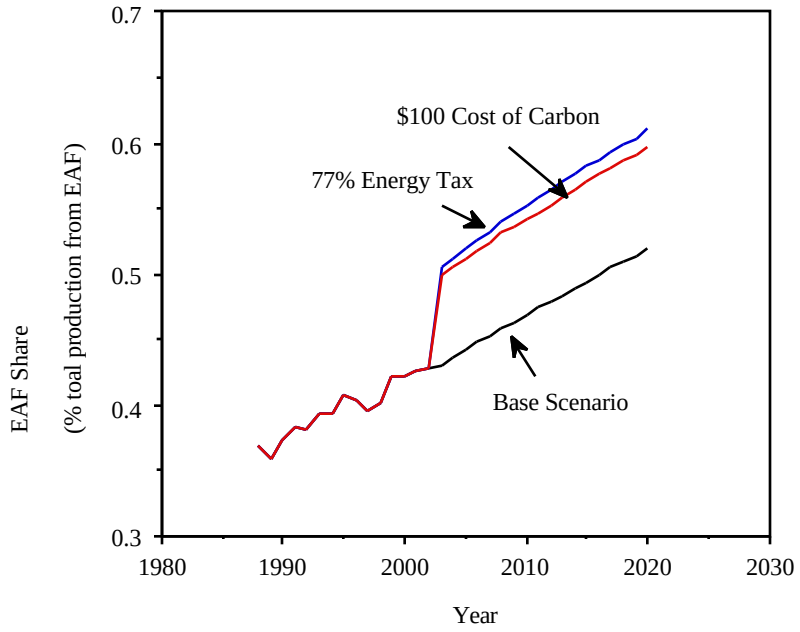

Figure 10. Energy Use Under Alternative Scenarios.

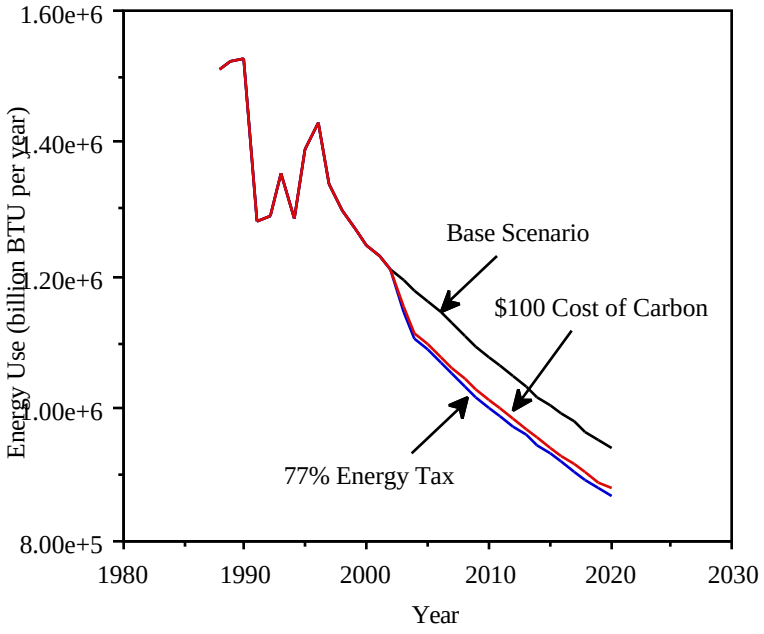
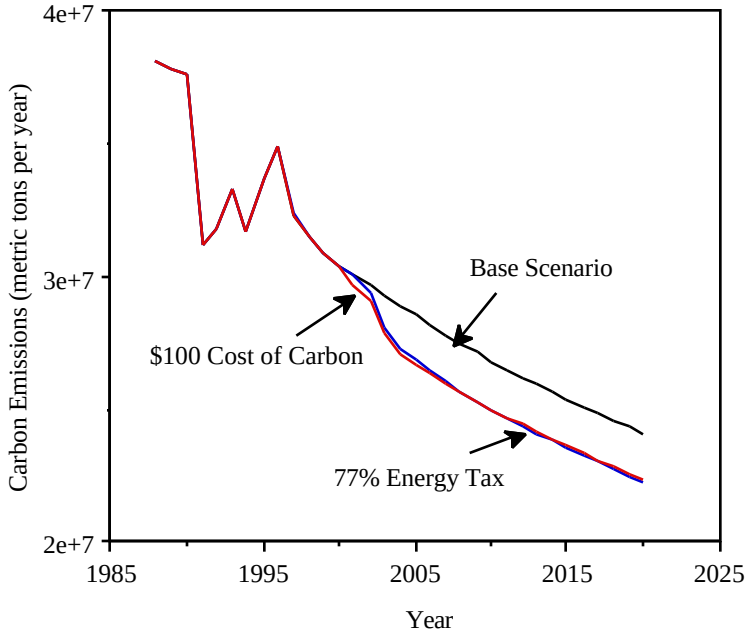
Figure 11. Carbon Emissions Under Alternative Scenarios.