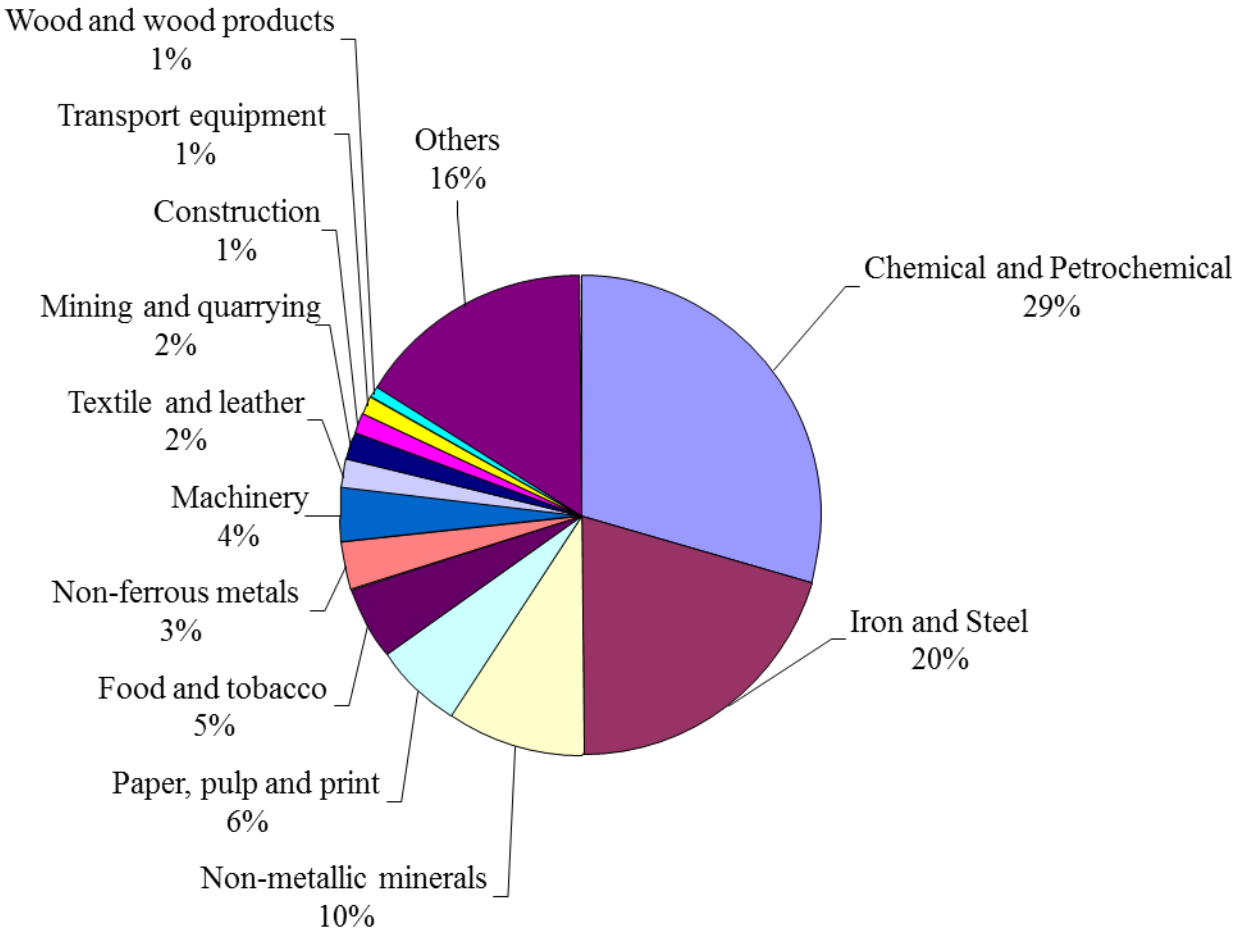
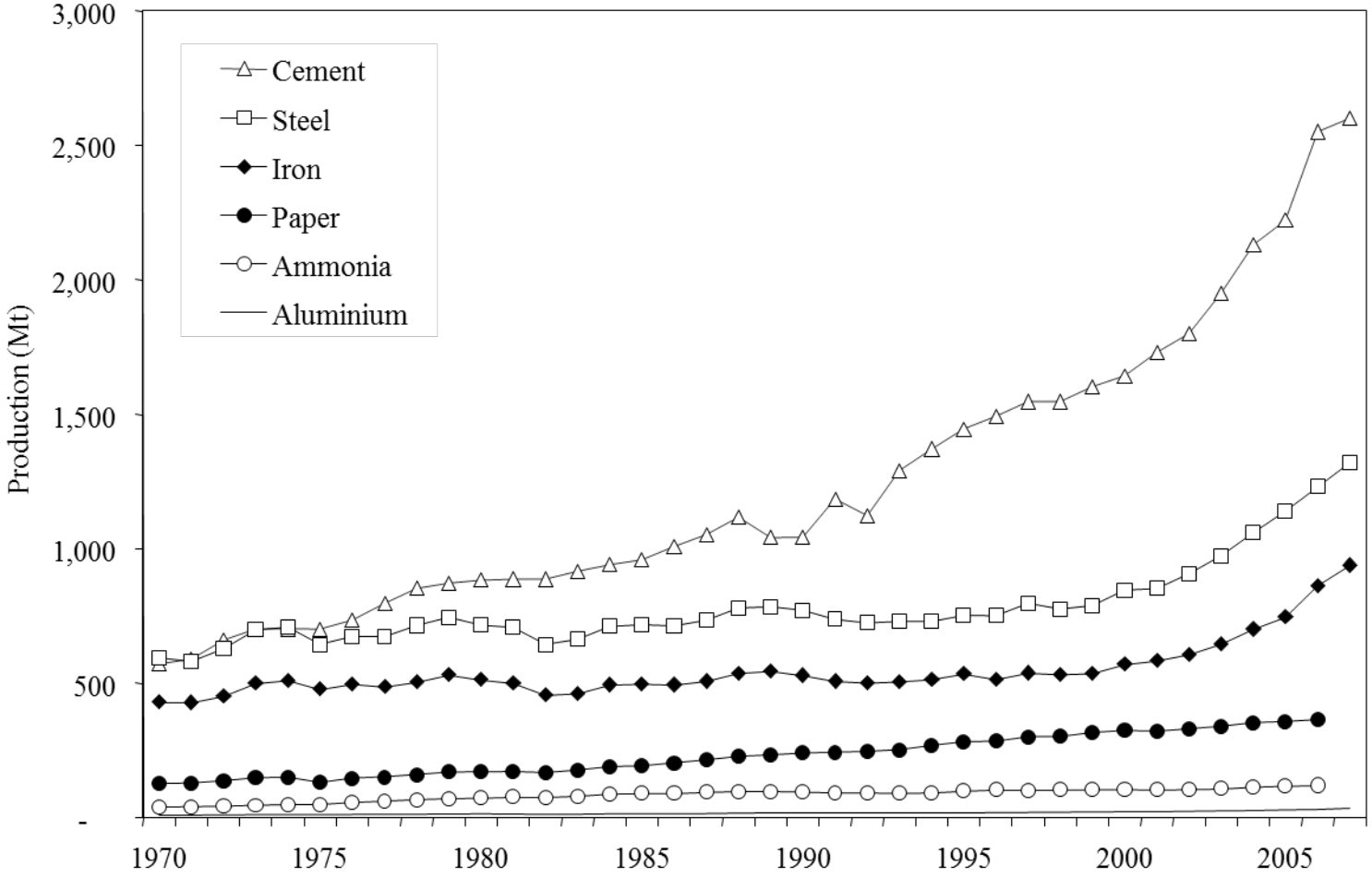
Energy End-Use: Industry

Share of Industrial Final Energy Use



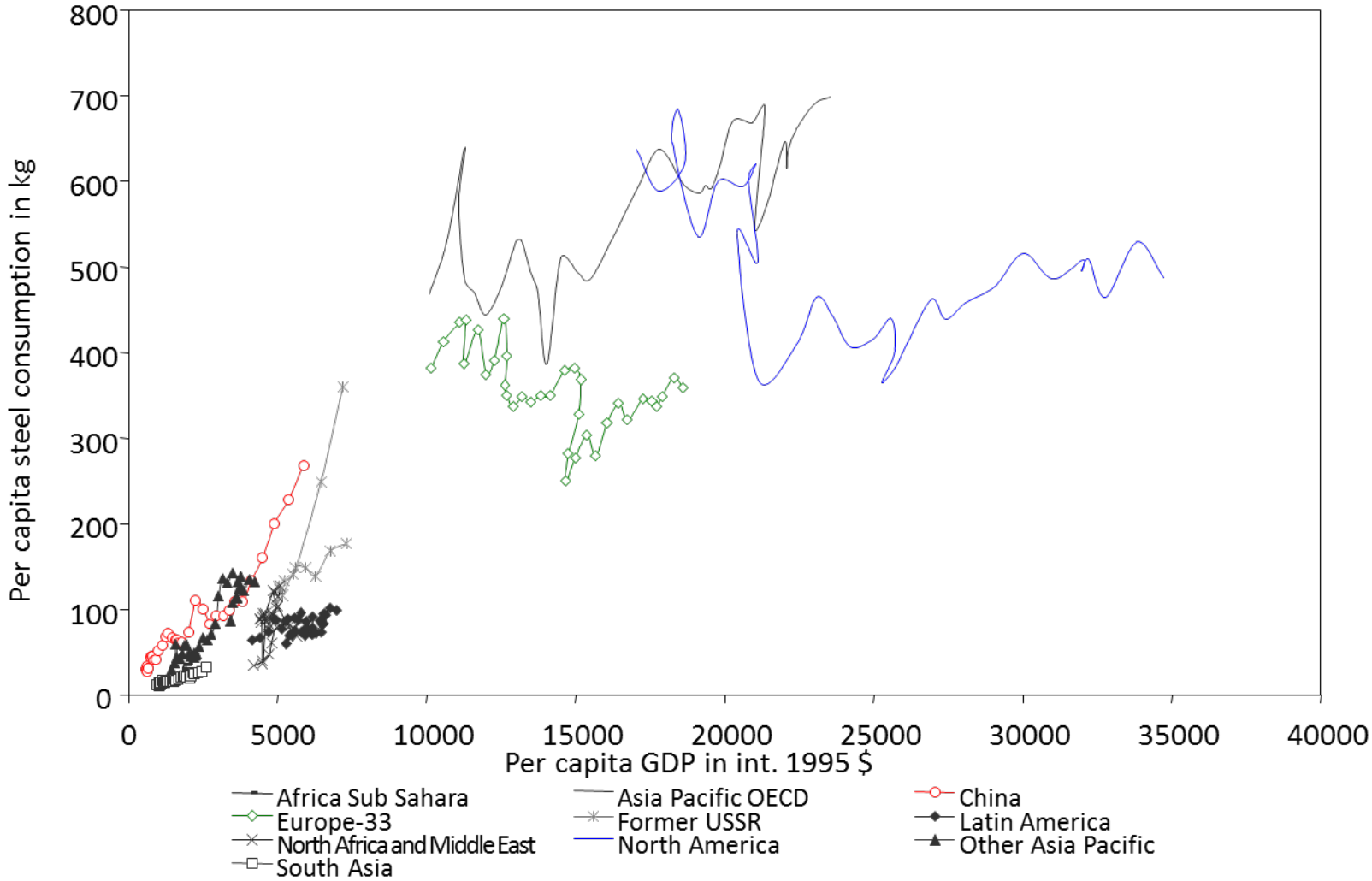
Energy End-Use: Industry

Global Production of Key Materials

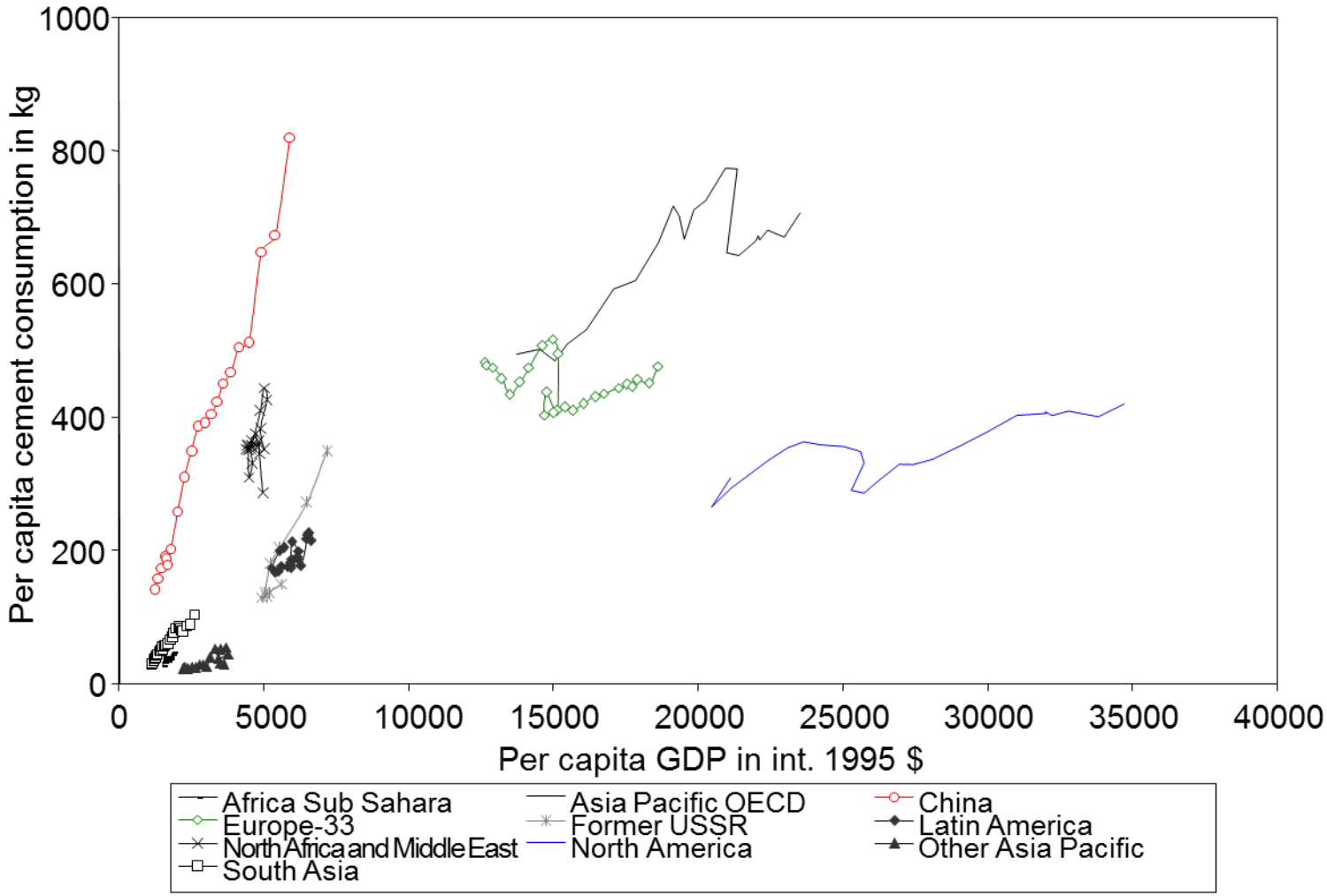


Energy End-Use: Industry

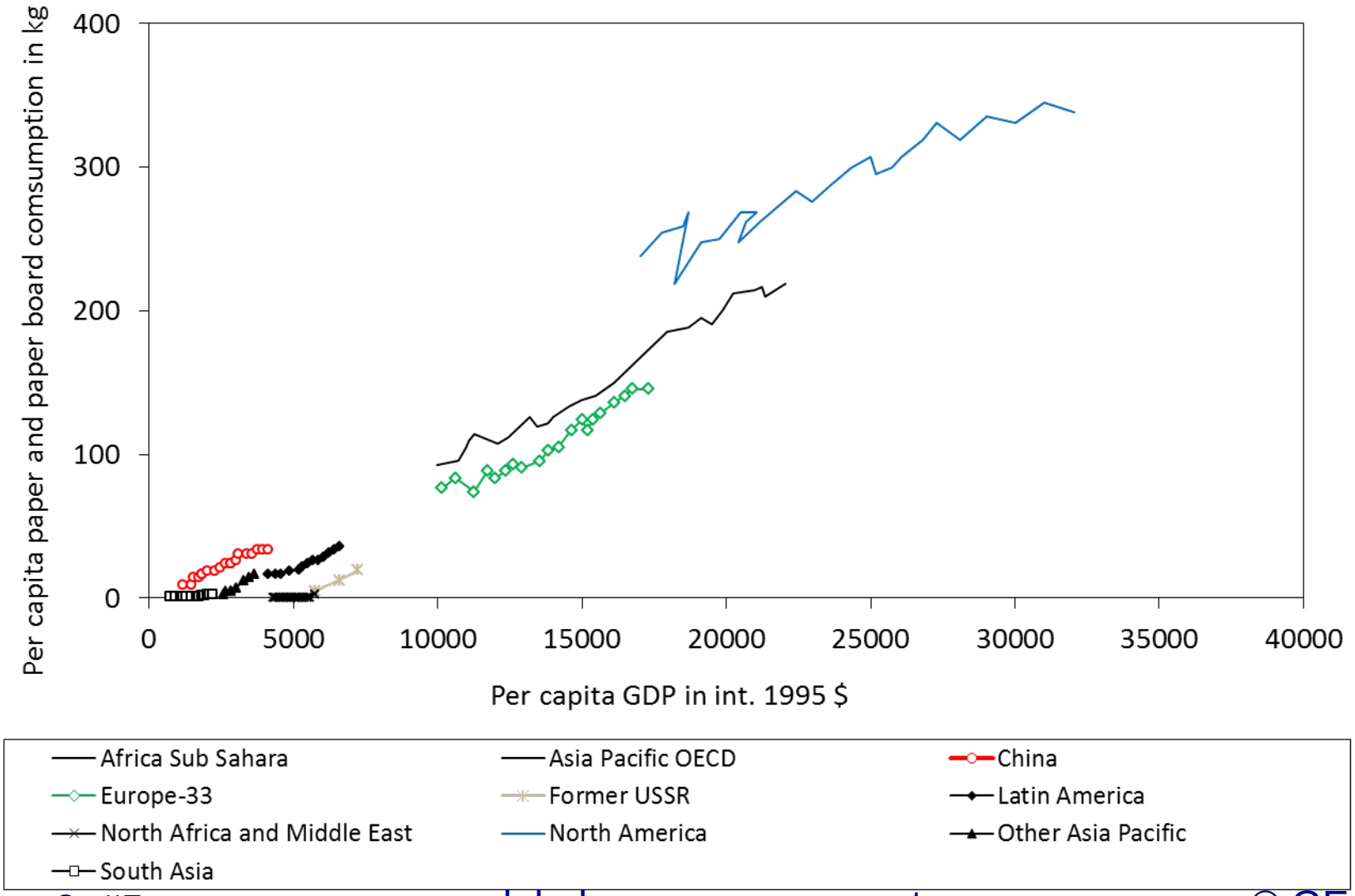
Apparent Steel Consumption as a Function of Income



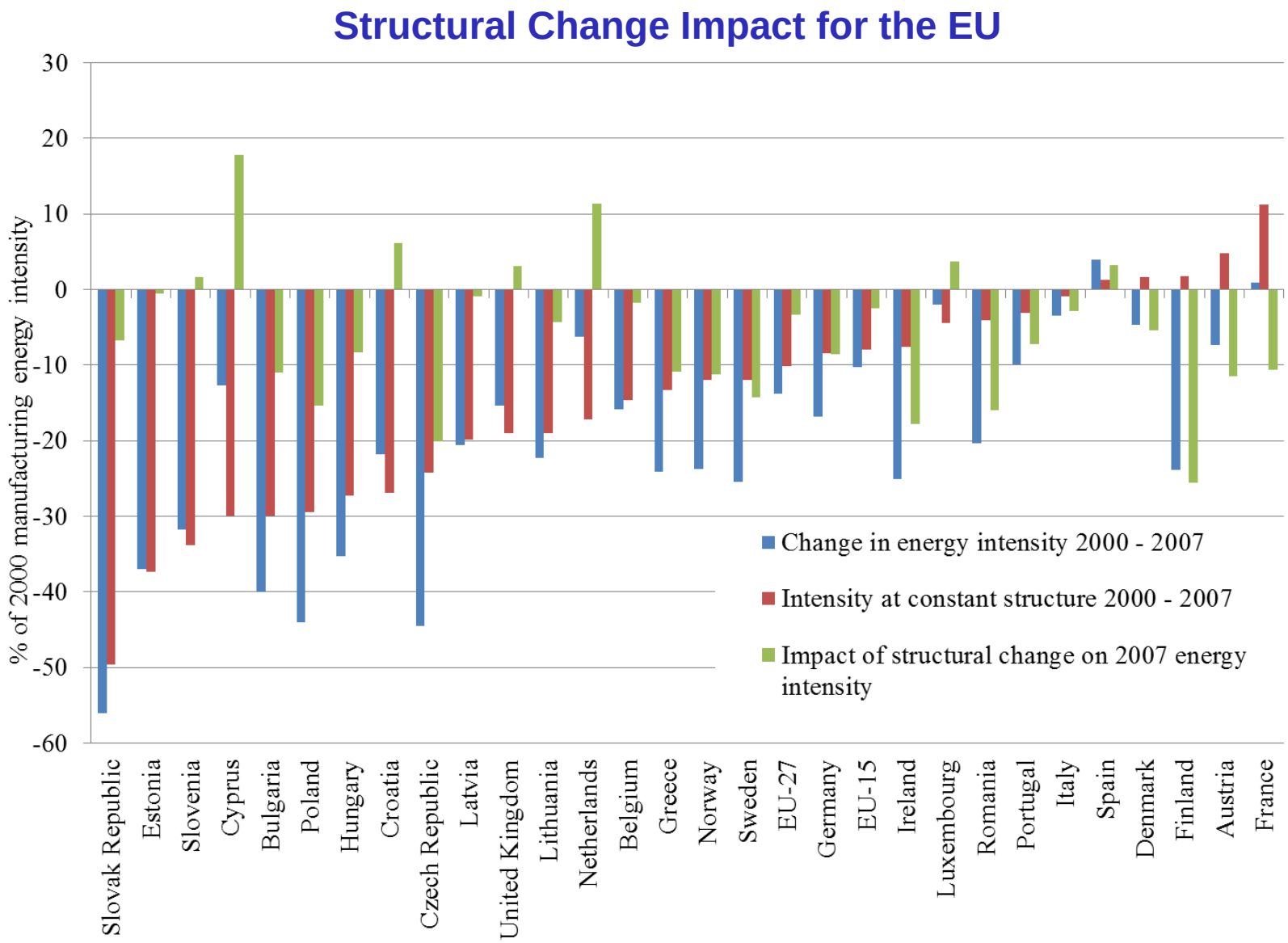
Apparent Cement Consumption as a Function of Income



Paper and Paper-Based Board – Per Capita Consumption

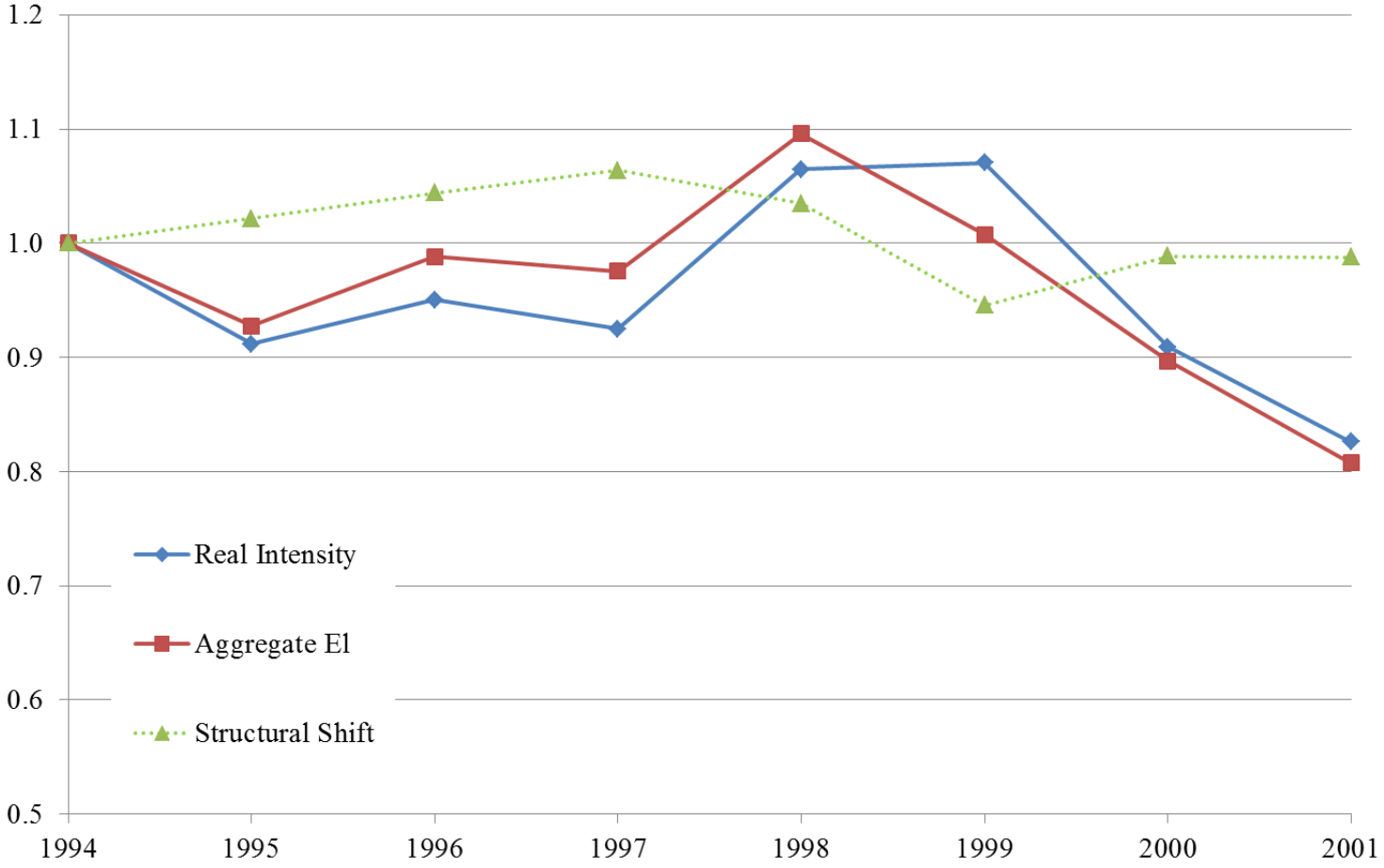


Energy End-Use: Industry

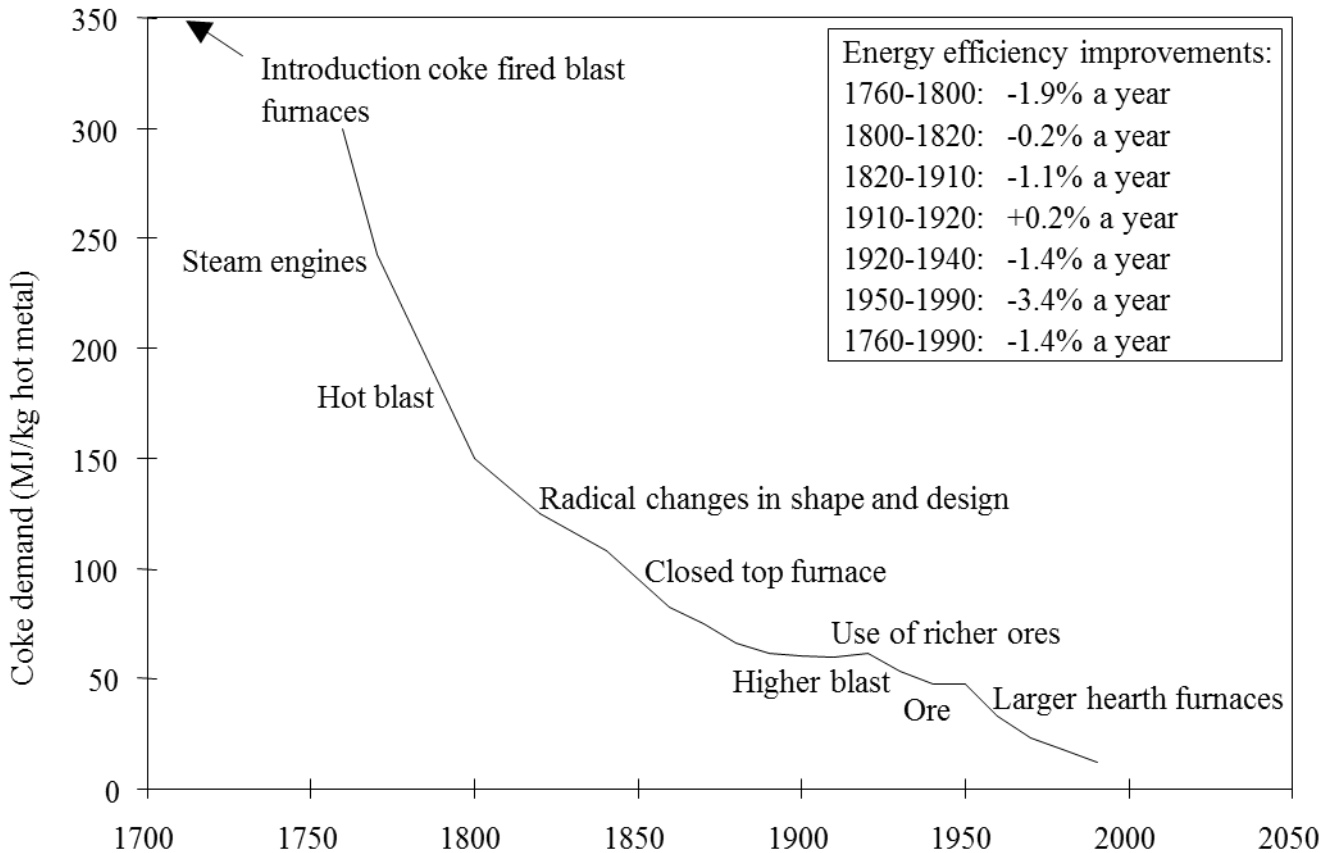


Energy End-Use: Industry

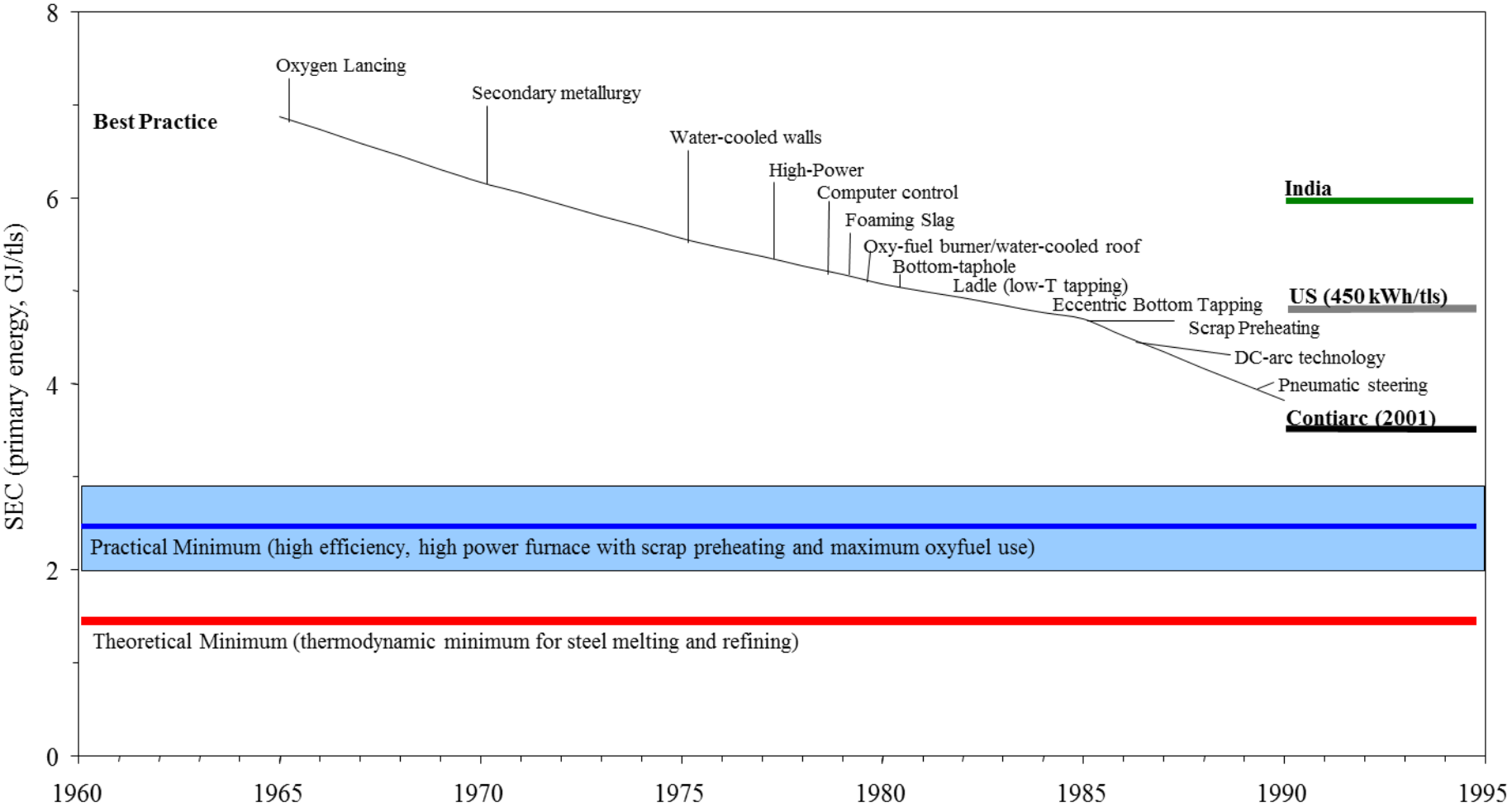
Fisher Ideal Indices for Structural Shift and Real Intensity in Russia



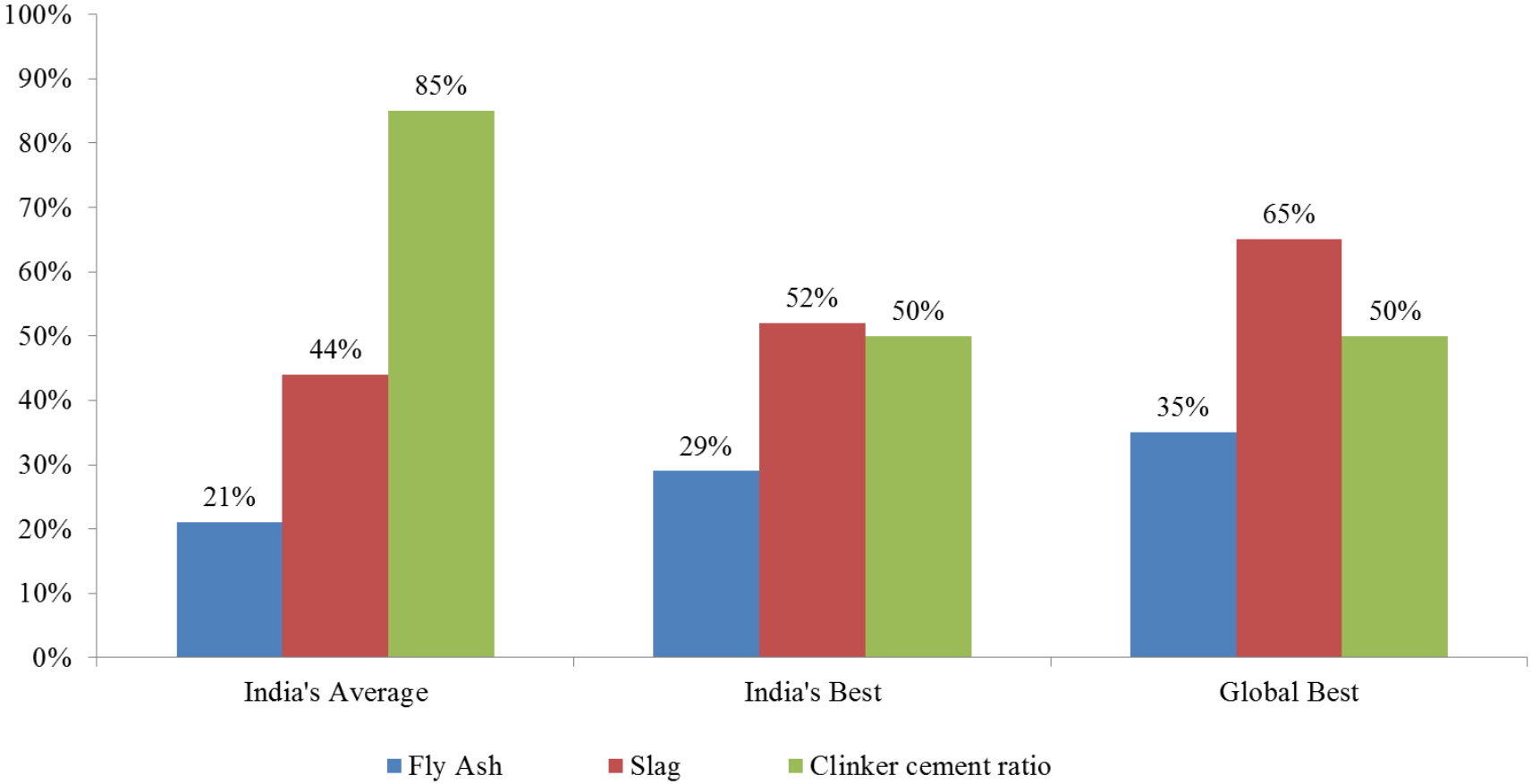
Change in Coke Demand due to Efficiency Improvements in the Blast Furnace Process



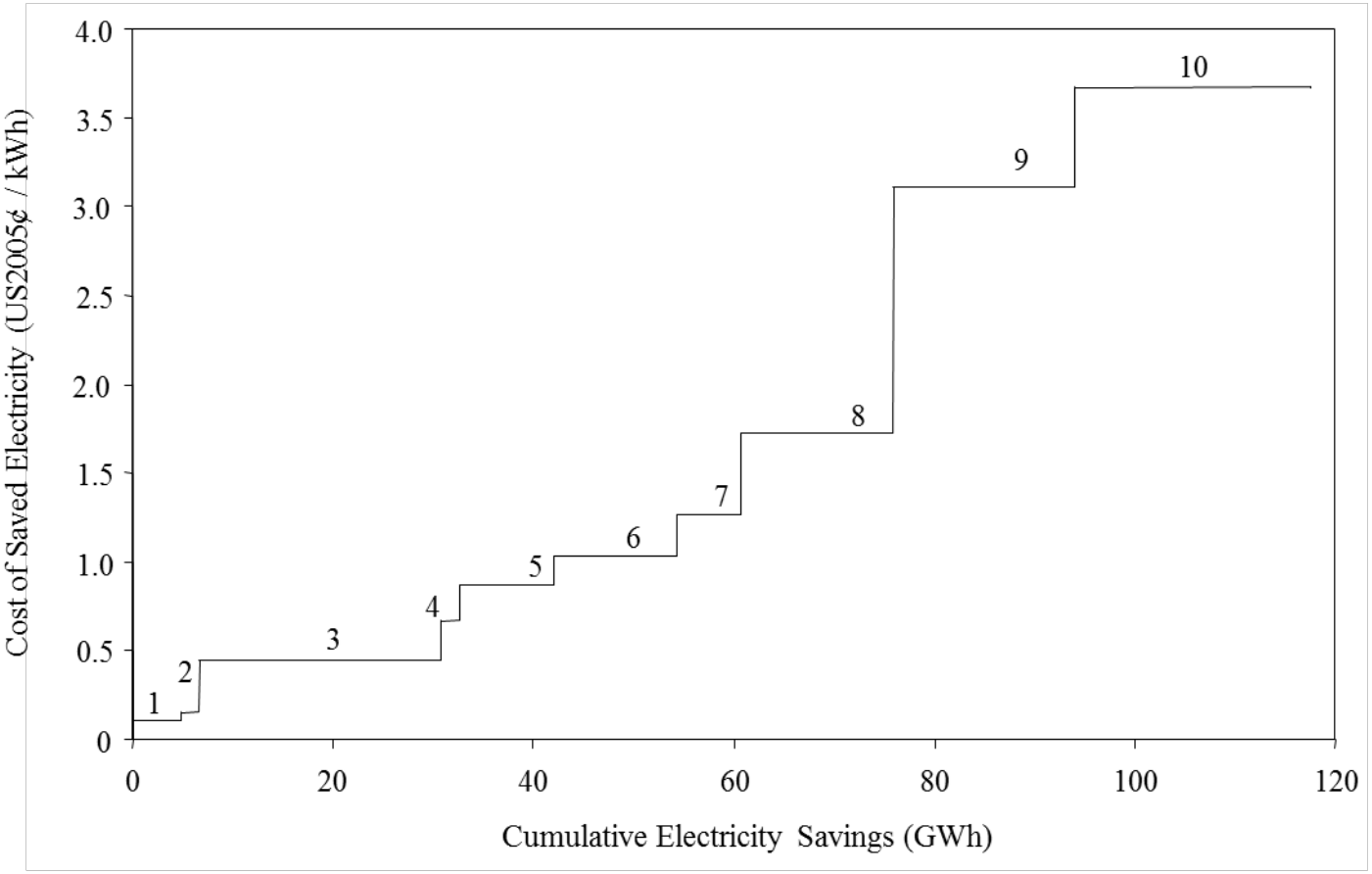
Time-series trend of specific electricity consumption values for the EAF process



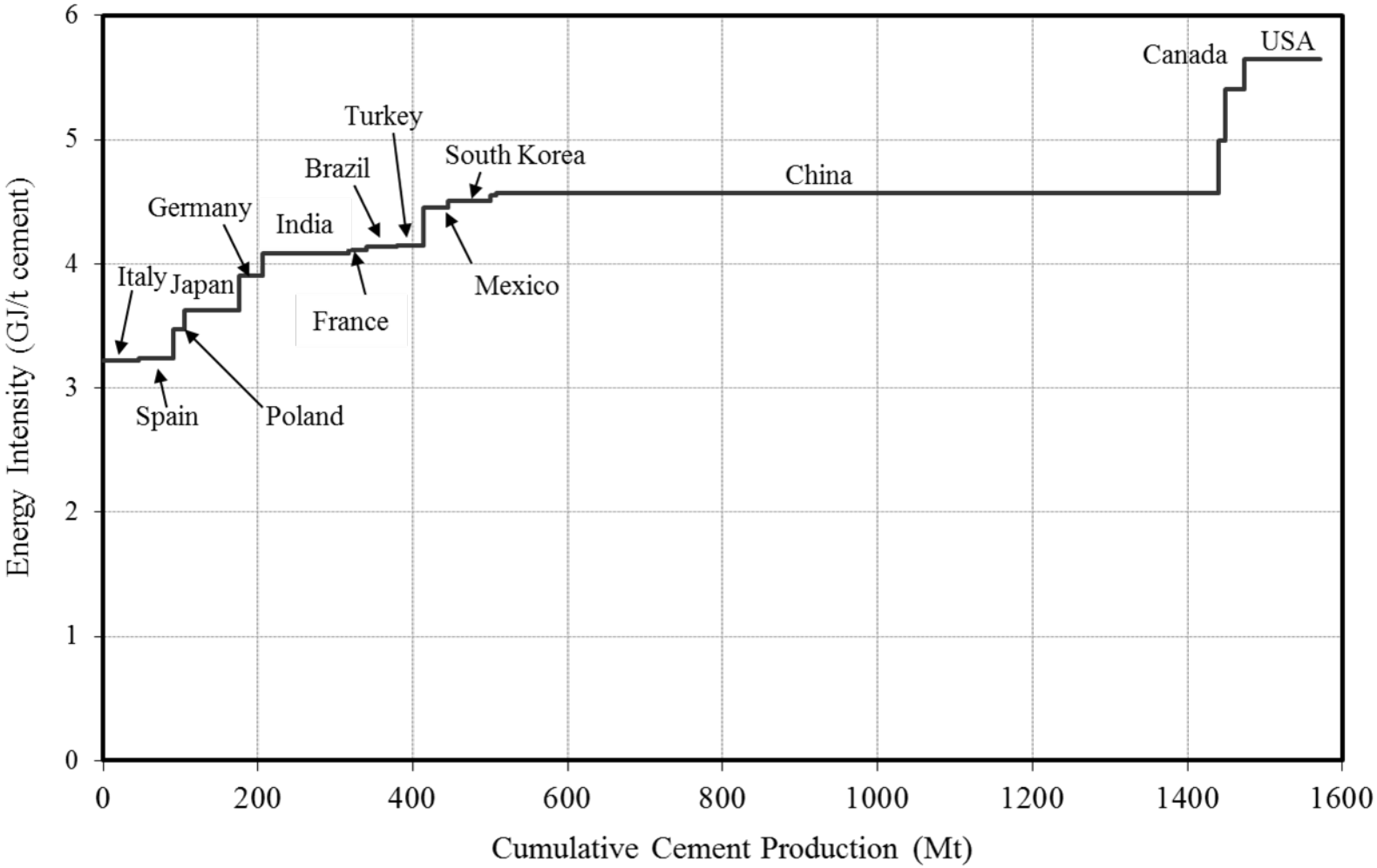
India Cement Blend Ratio – Cement Clinker Ratio Comparison with Global Best



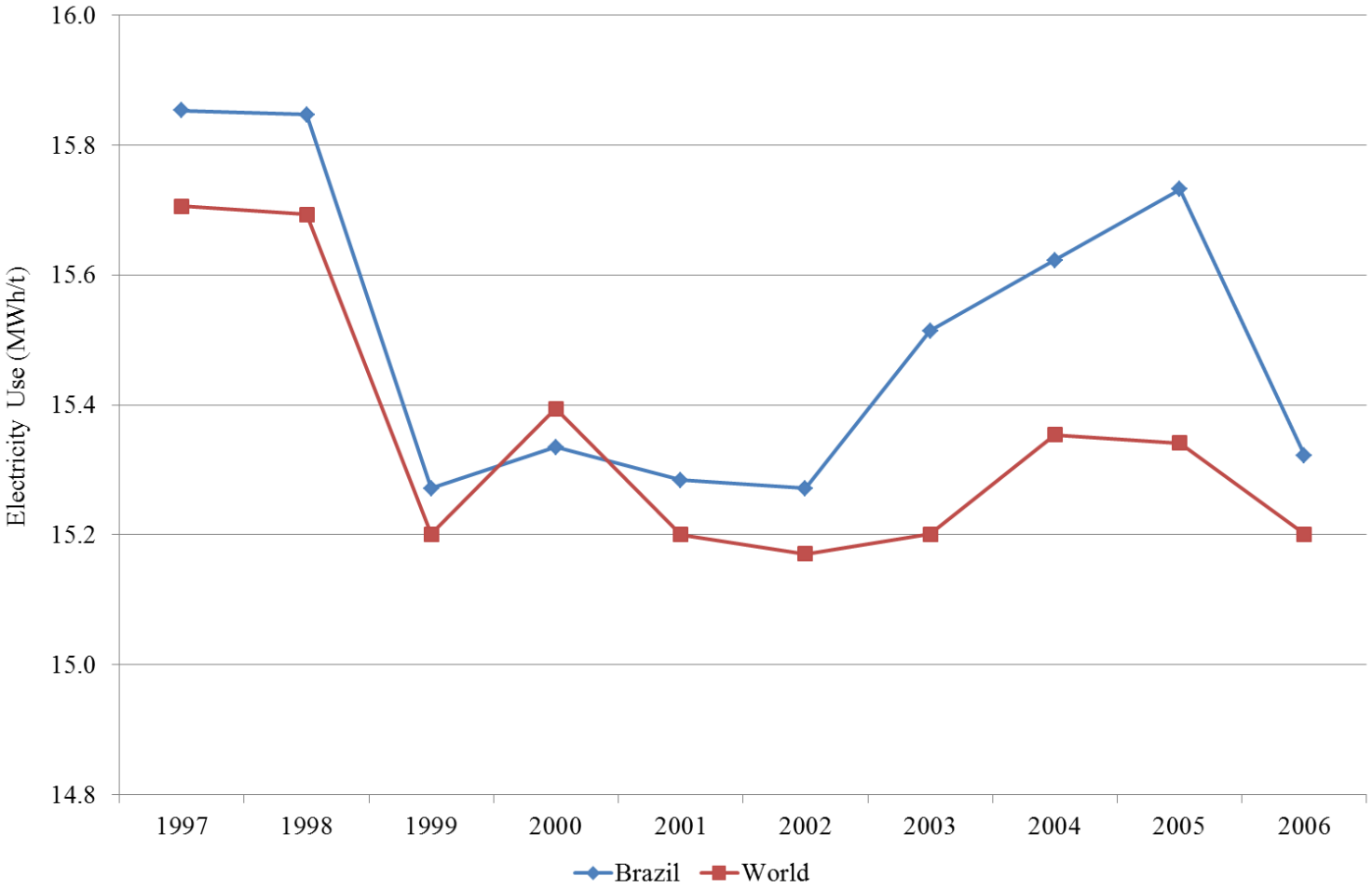
Conservation Supply Curve for Electricity Savings in the Indian Cement Industry



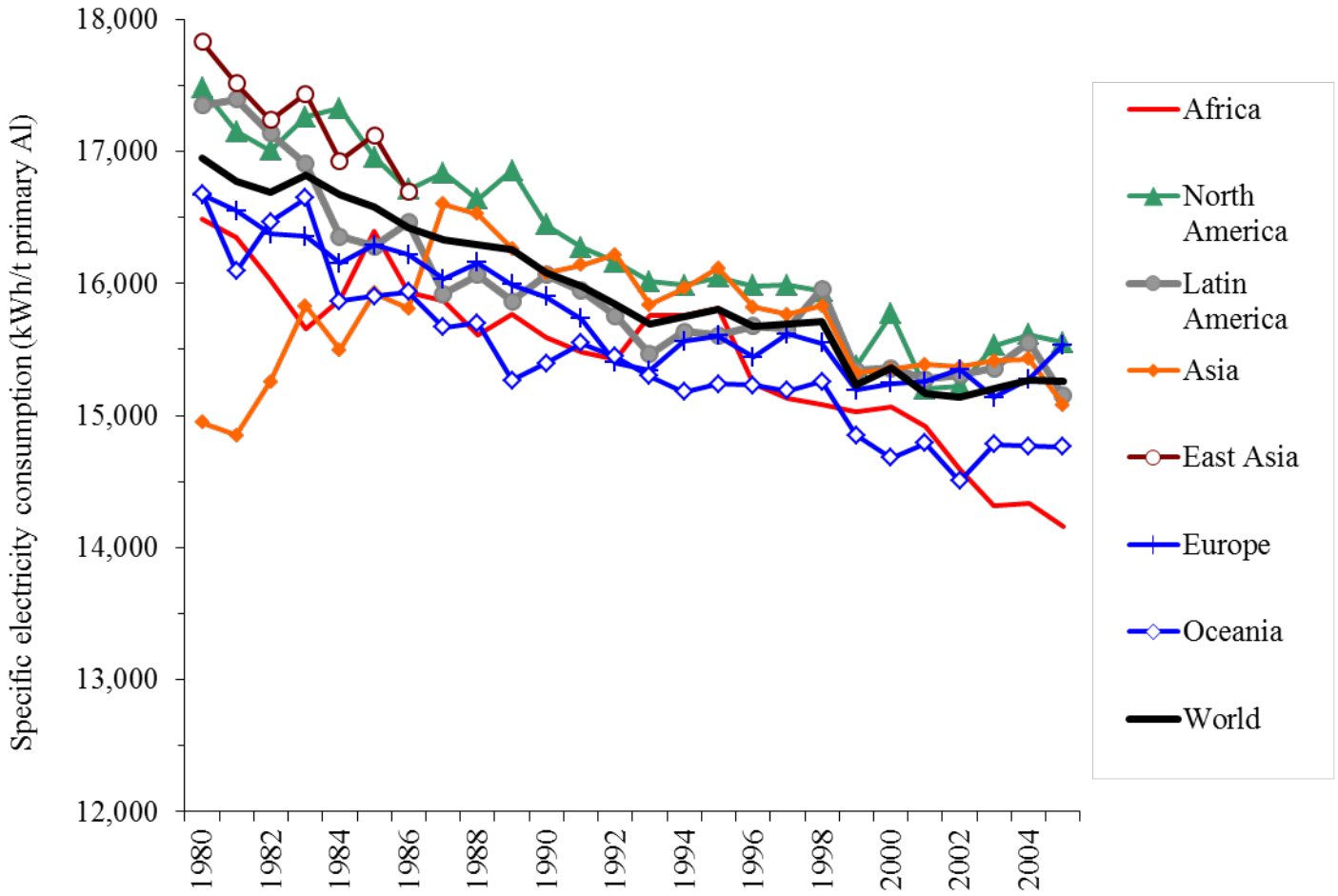
Energy Intensity of Cement Production



Specific Electricity Consumption of the Aluminum Industry

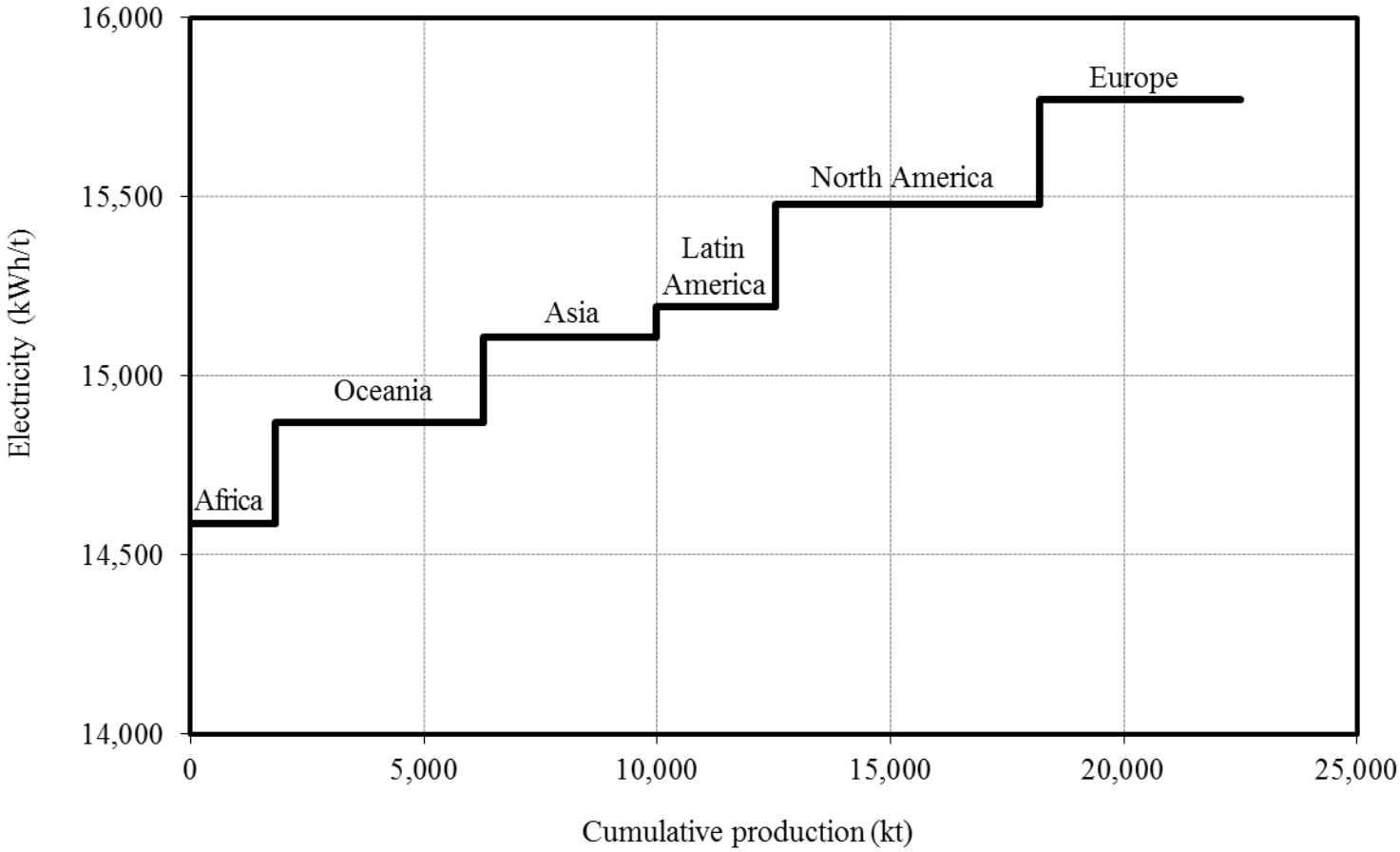


Specific Electricity Consumption of the Aluminum Industry by Region and for the World

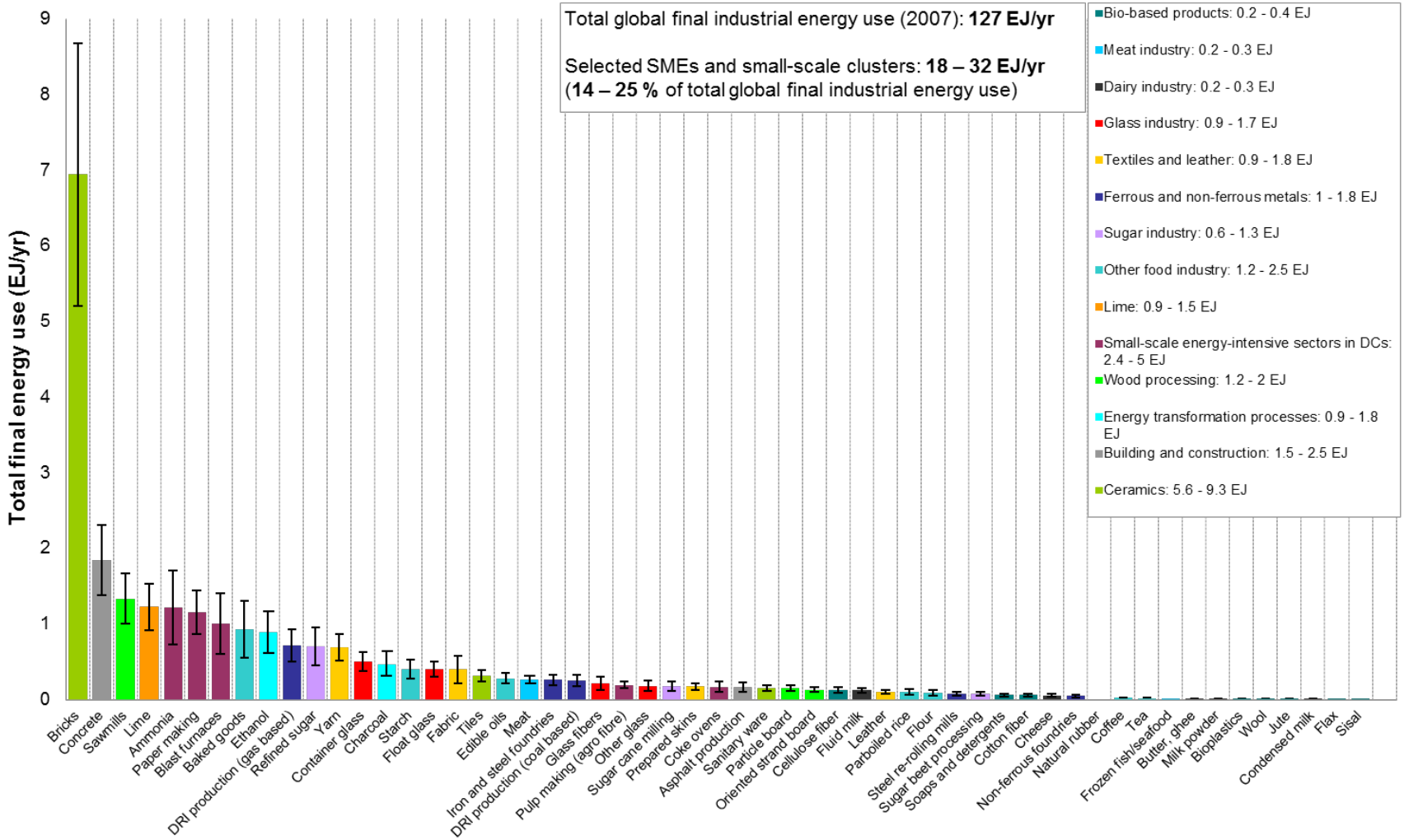


Energy End-Use: Industry

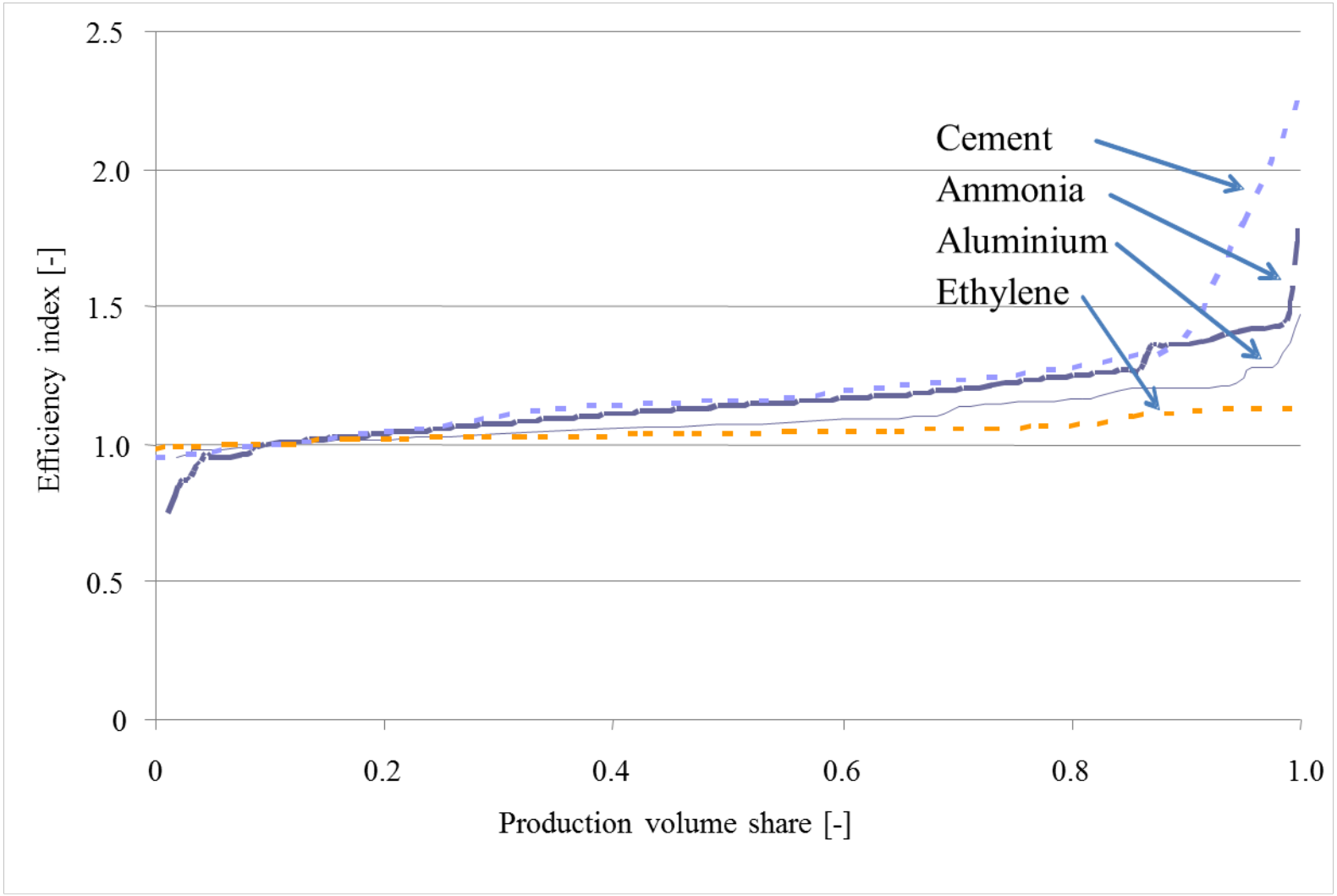
Specific Electricity Consumption vs. Production for World Regions



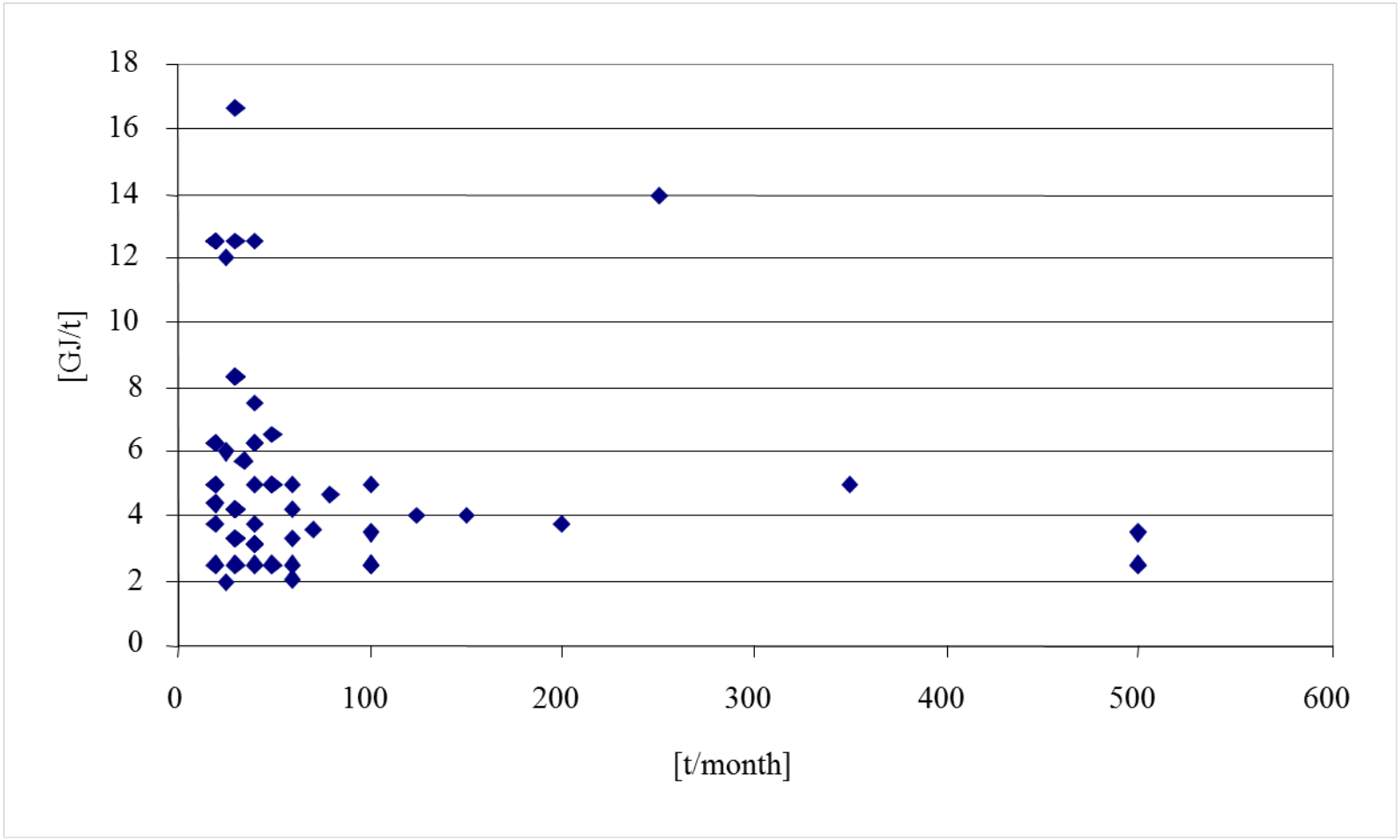
Estimated Total Final Energy Use of Selected SMEs and Small-scale Clusters Worldwide



Benchmarking Curves



Typical Efficiency Distribution for an Iron SME Cluster in India



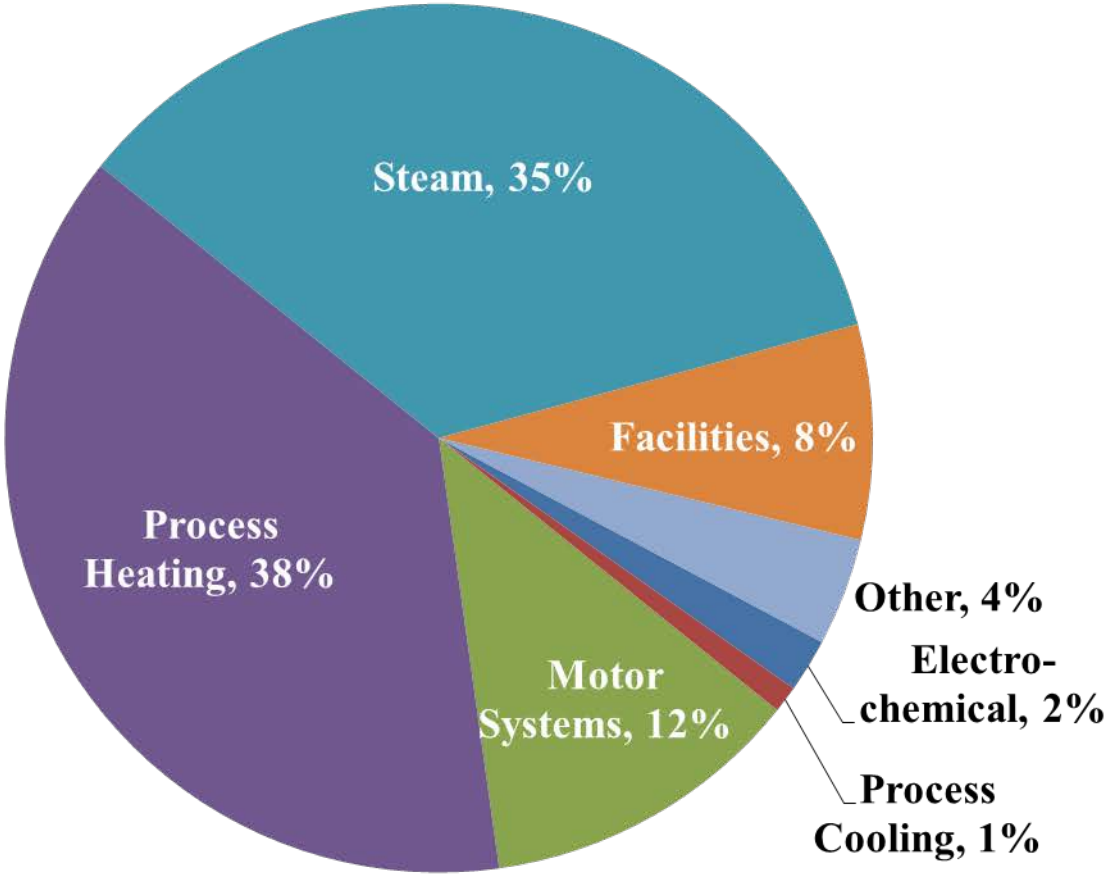
Energy End-Use: Industry

Share of Manufacturing Energy Use by System Type

Energy Efficiency Improvement Opportunities

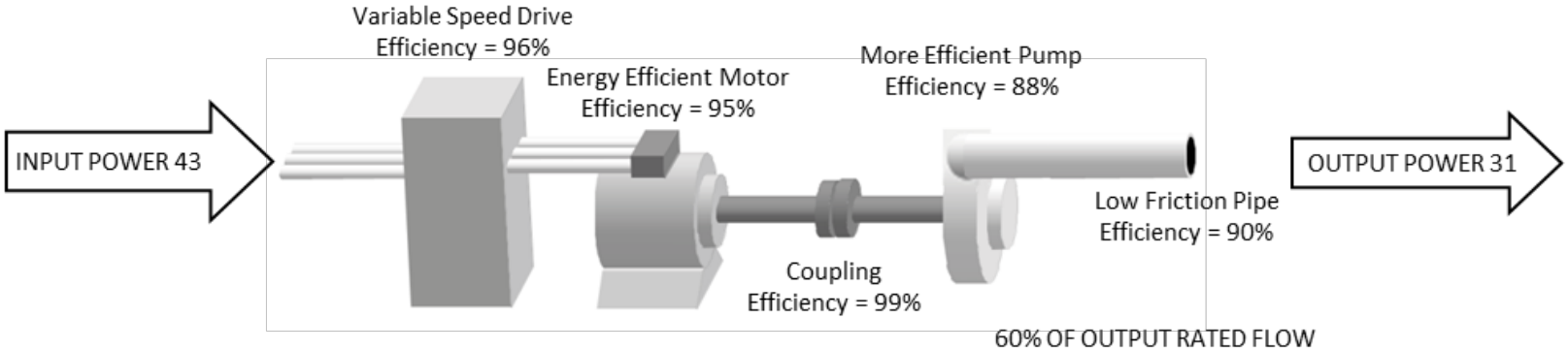
- 20% or more typical for motor systems
- 10% or more for steam & process heating systems
- Most plants do not manage these systems for energy efficiency[2]

% Manufacturing Energy Use by Type of System[1]

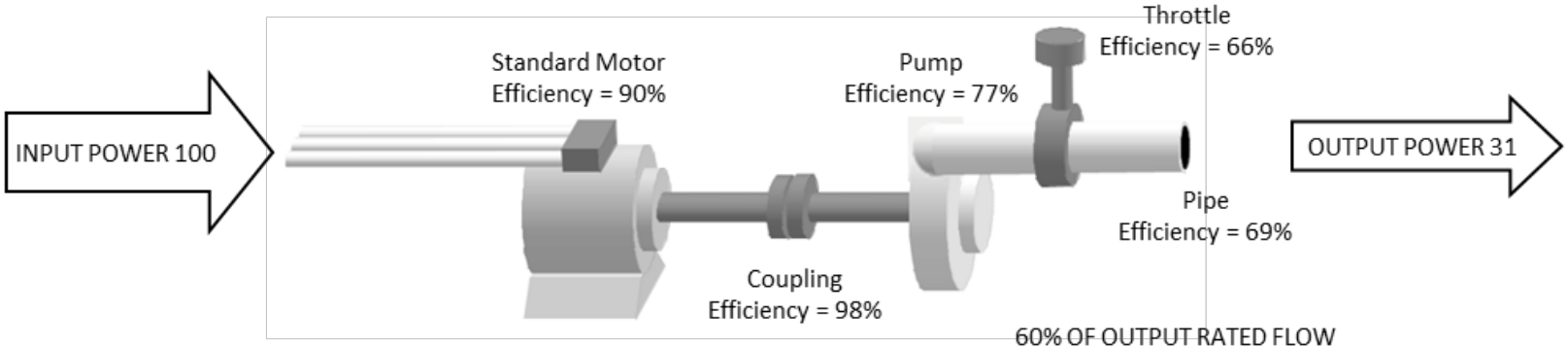


Reconfiguration of Pumping System to Improve Efficiency

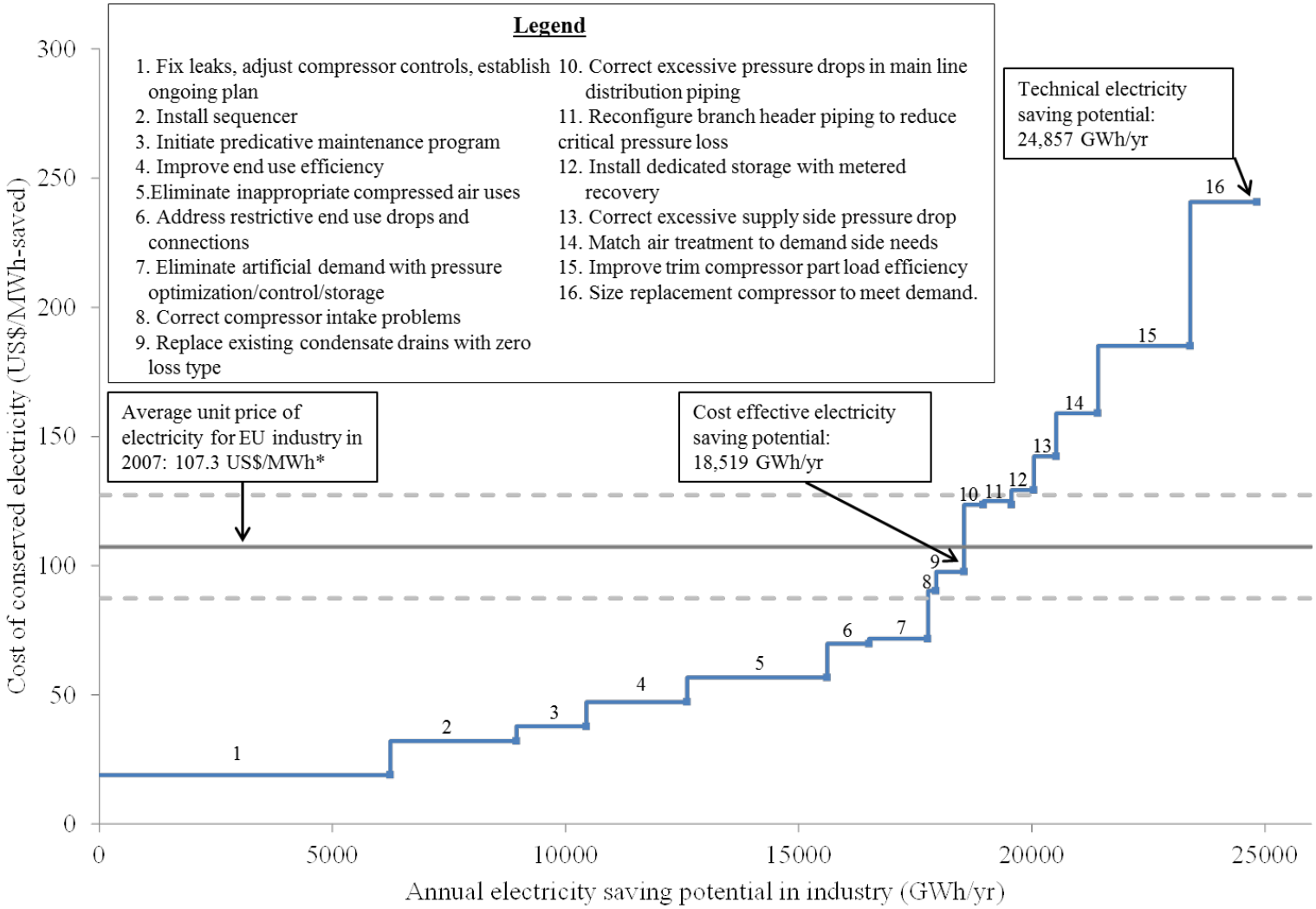
ENERGY-EFFICIENT PUMPING SYSTEM
SYSTEM EFFICIENCY = 72%



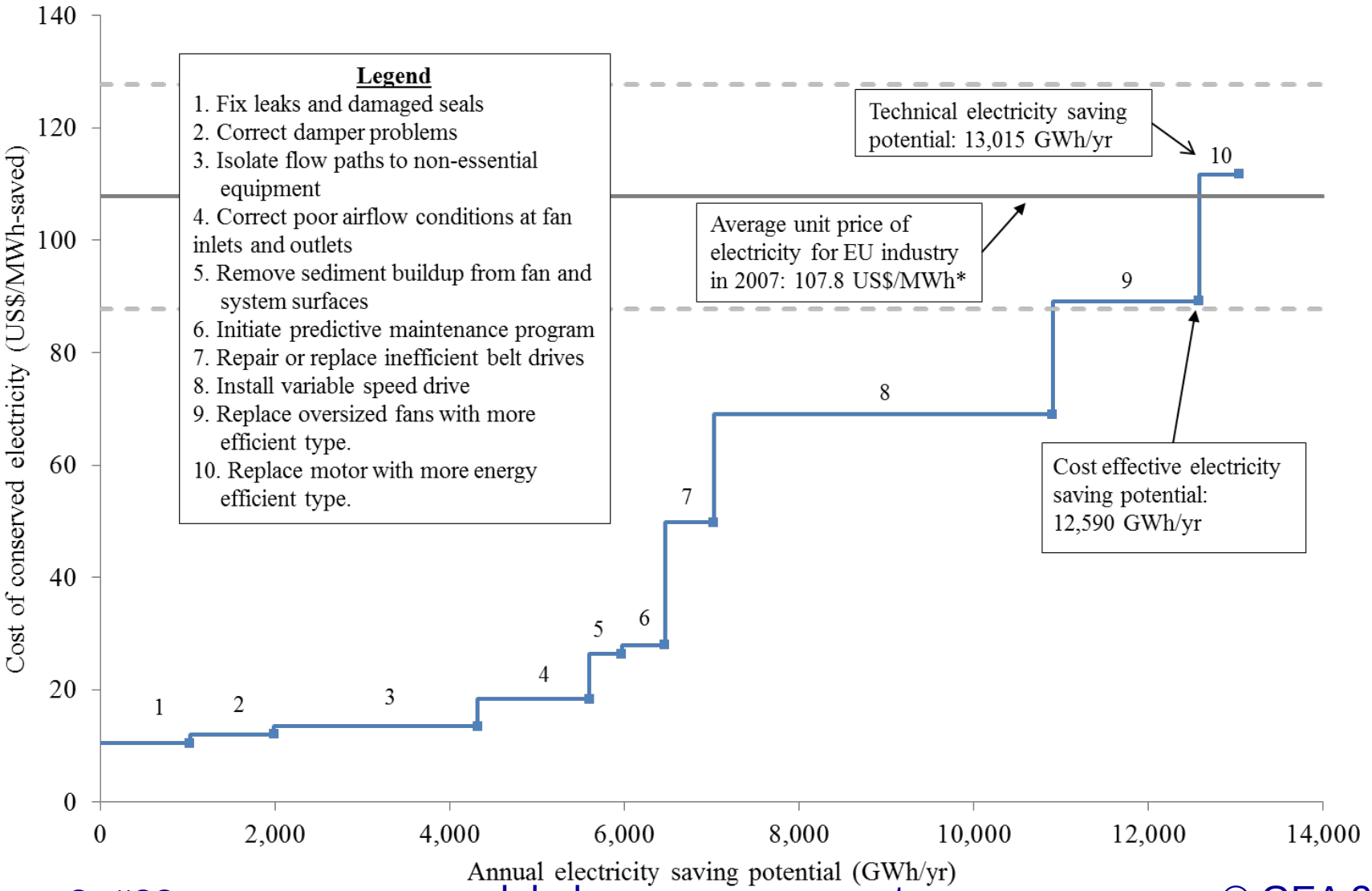
CONVENTIONAL PUMPING SYSTEM
SYSTEM EFFICIENCY = 31%



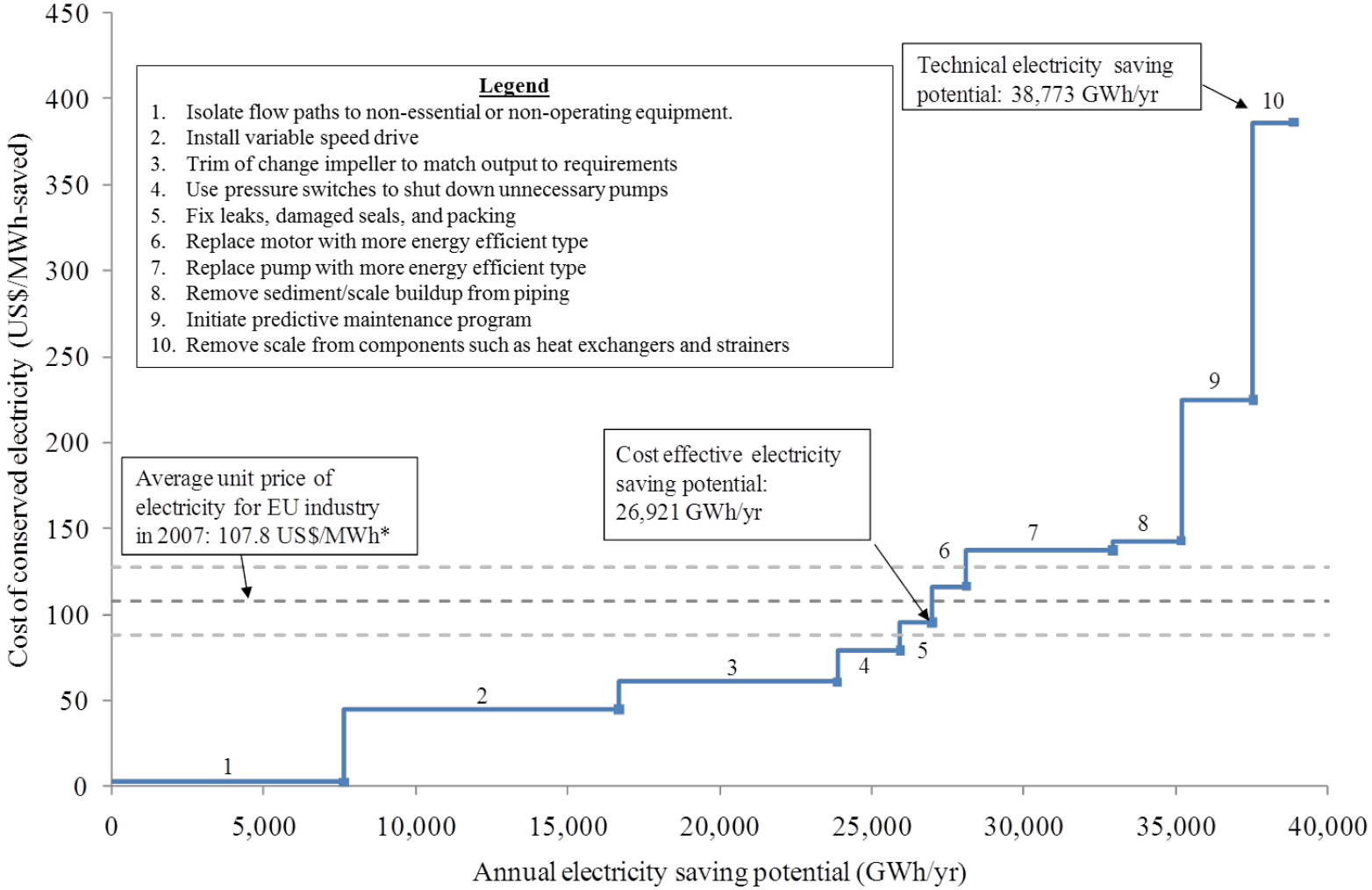
EU Compressed Air System Efficiency Supply Curve



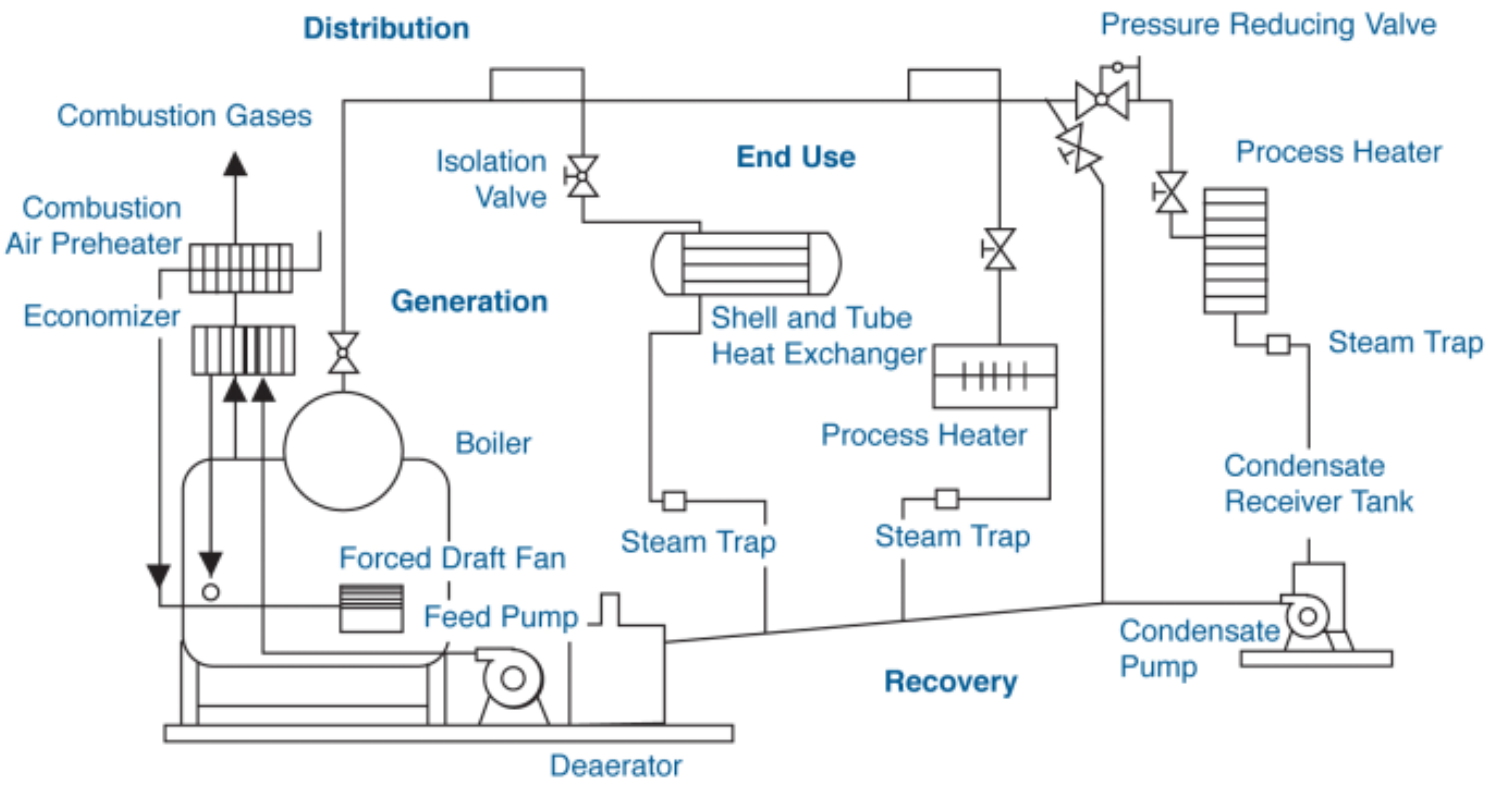
EU Fan System Efficiency Supply Curve



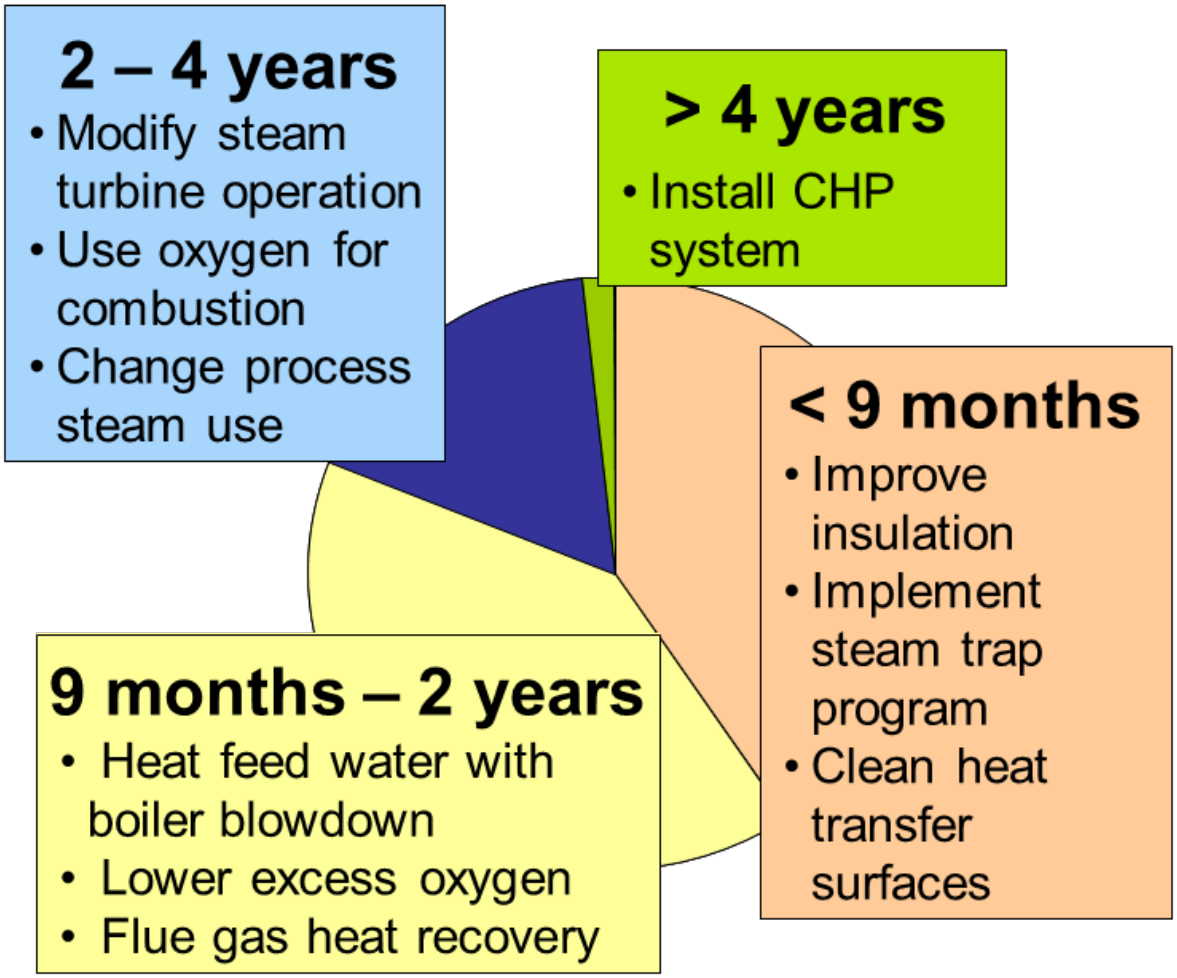
EU Pumping System Efficiency Supply Curve



Steam System Schematic

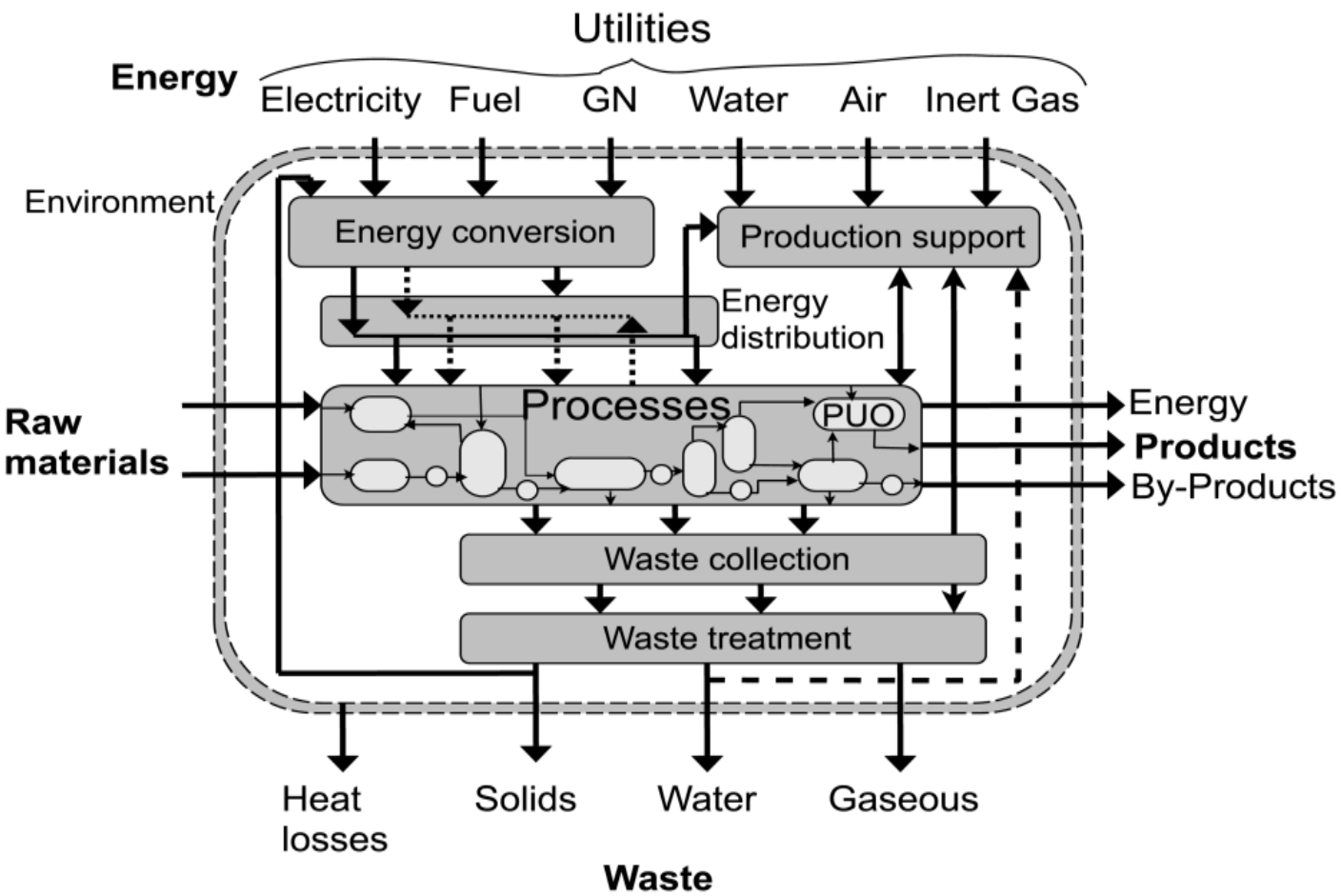


Estimated Payback Periods for Steam-Based Systems

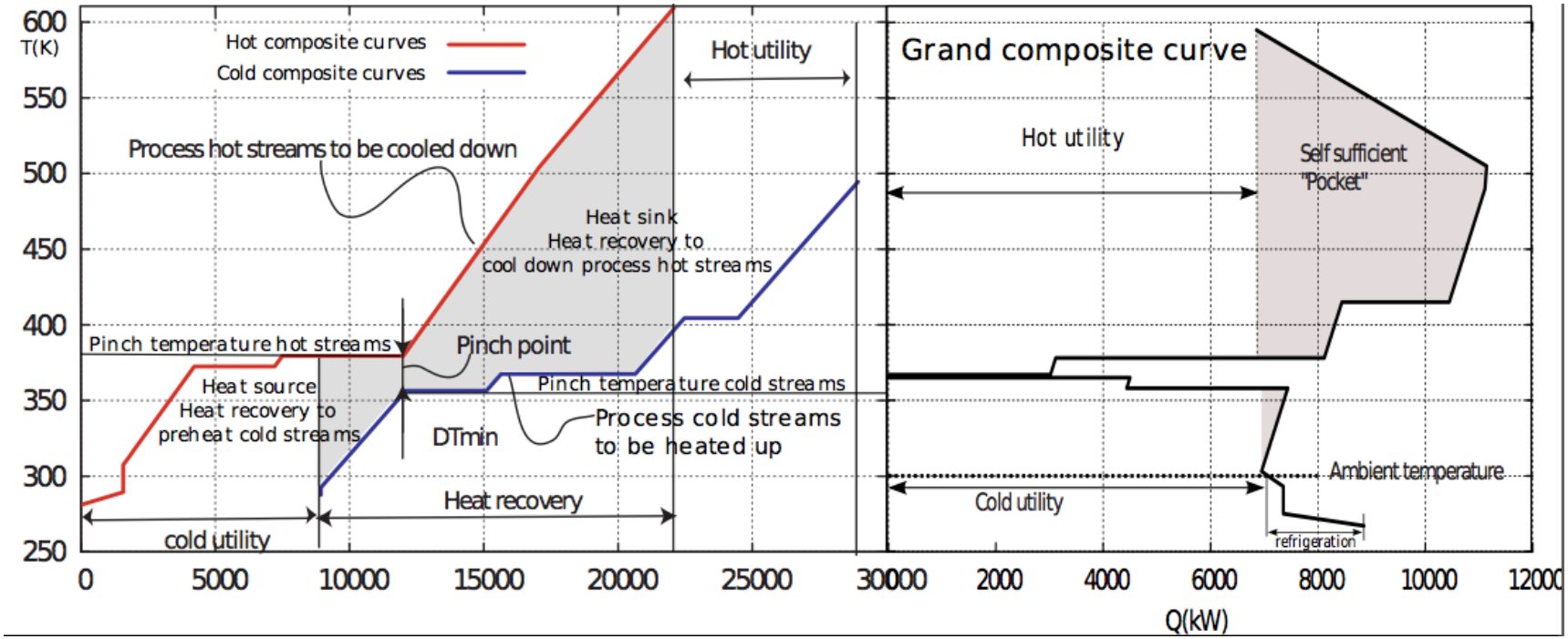


Energy End-Use: Industry

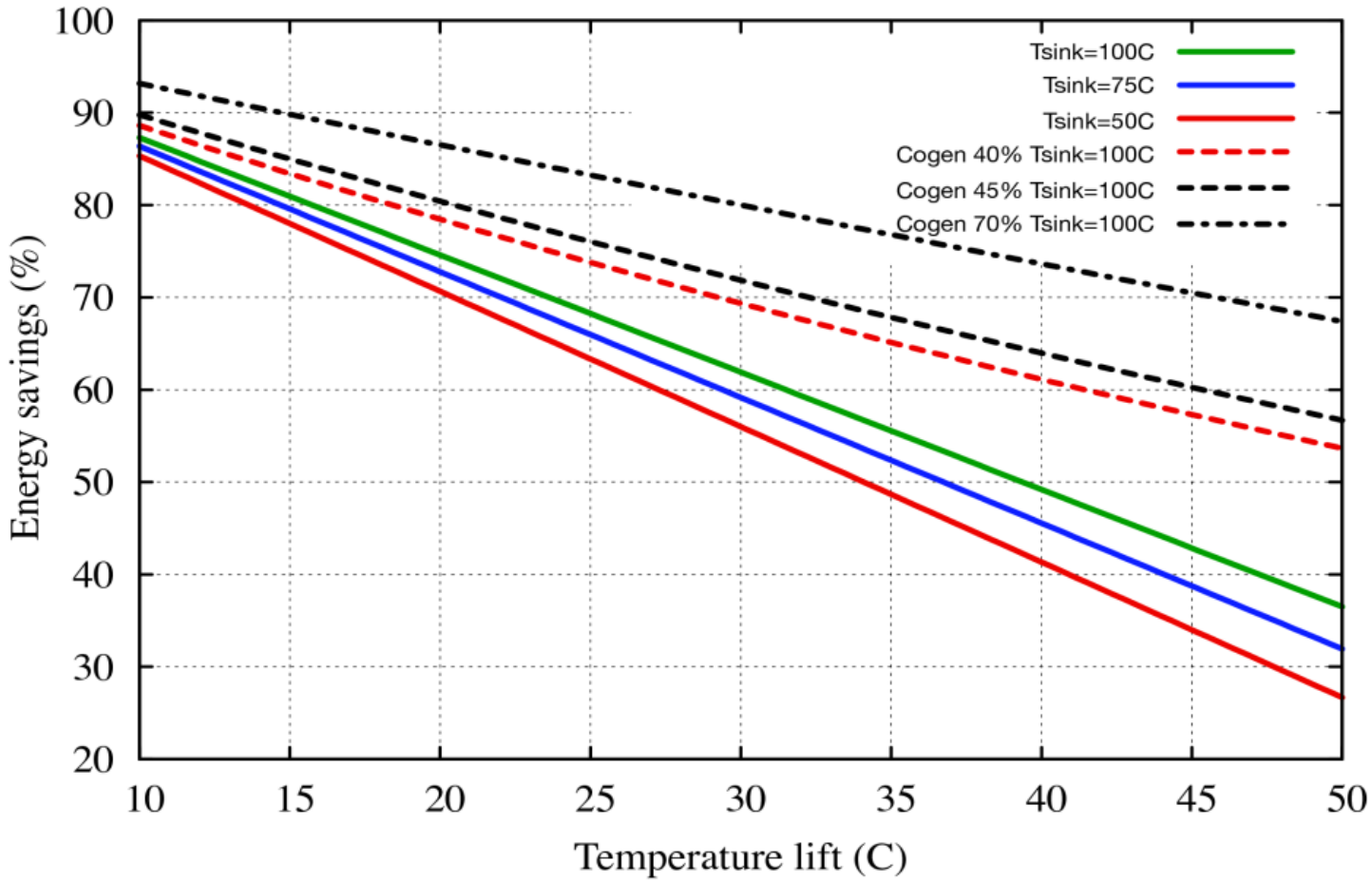
The systemic vision of an industrial process



Hot and Cold Composite Curves and Possible Heat Recovery in the System

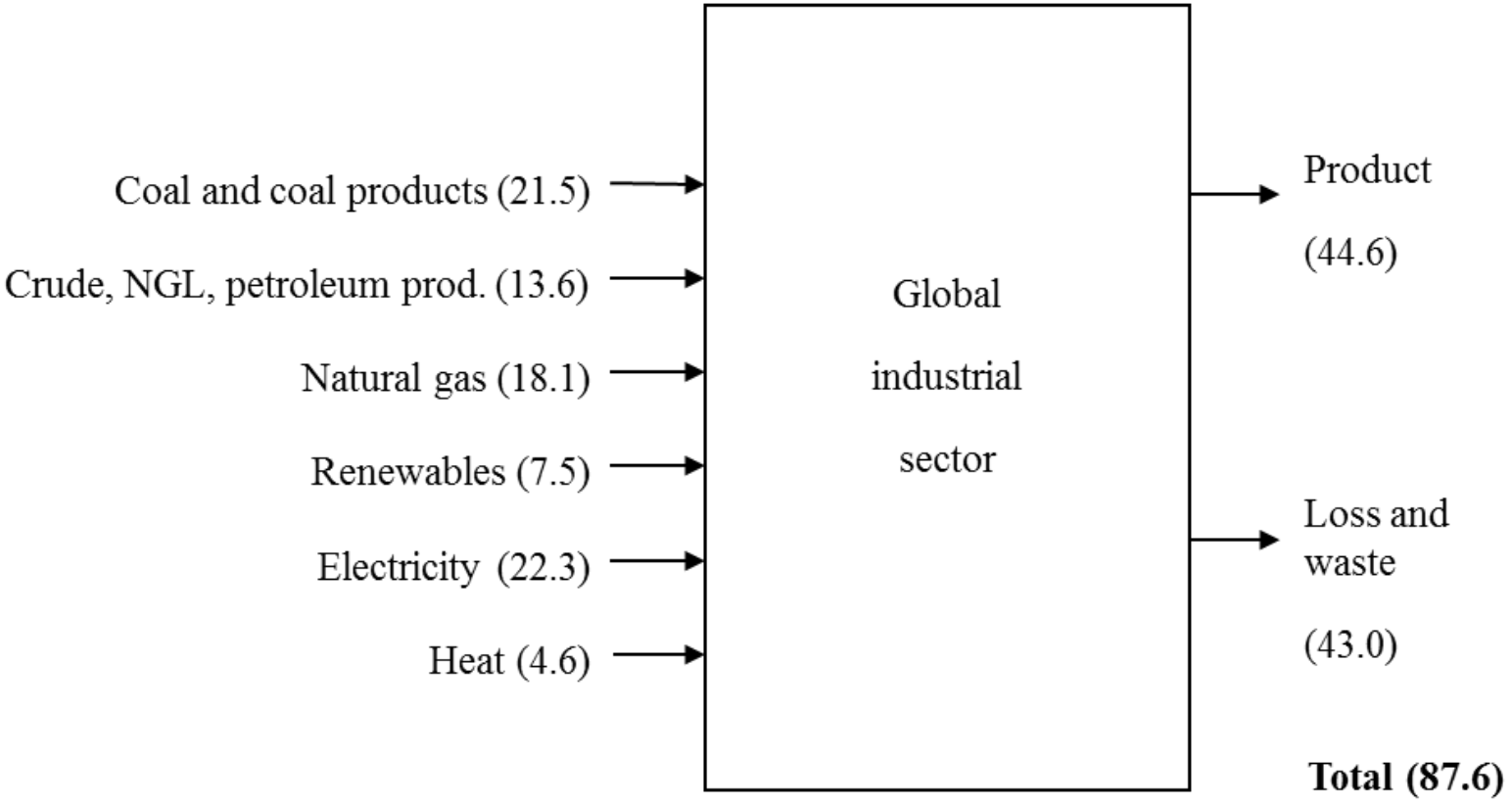


Primary Energy Savings by the Integration of Heat Pumps and of a Cogeneration Unit and Heat Pumps

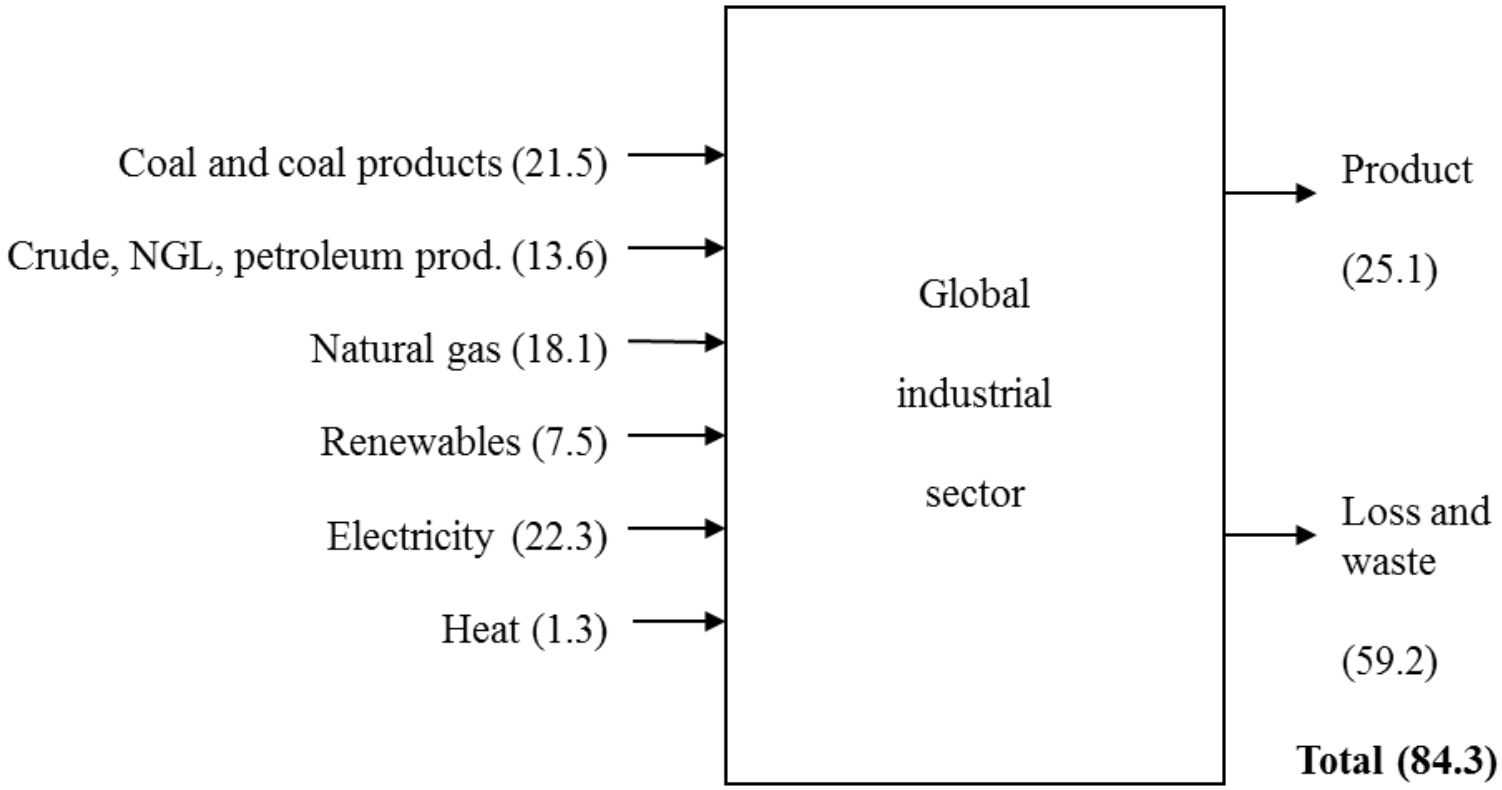


Energy End-Use: Industry

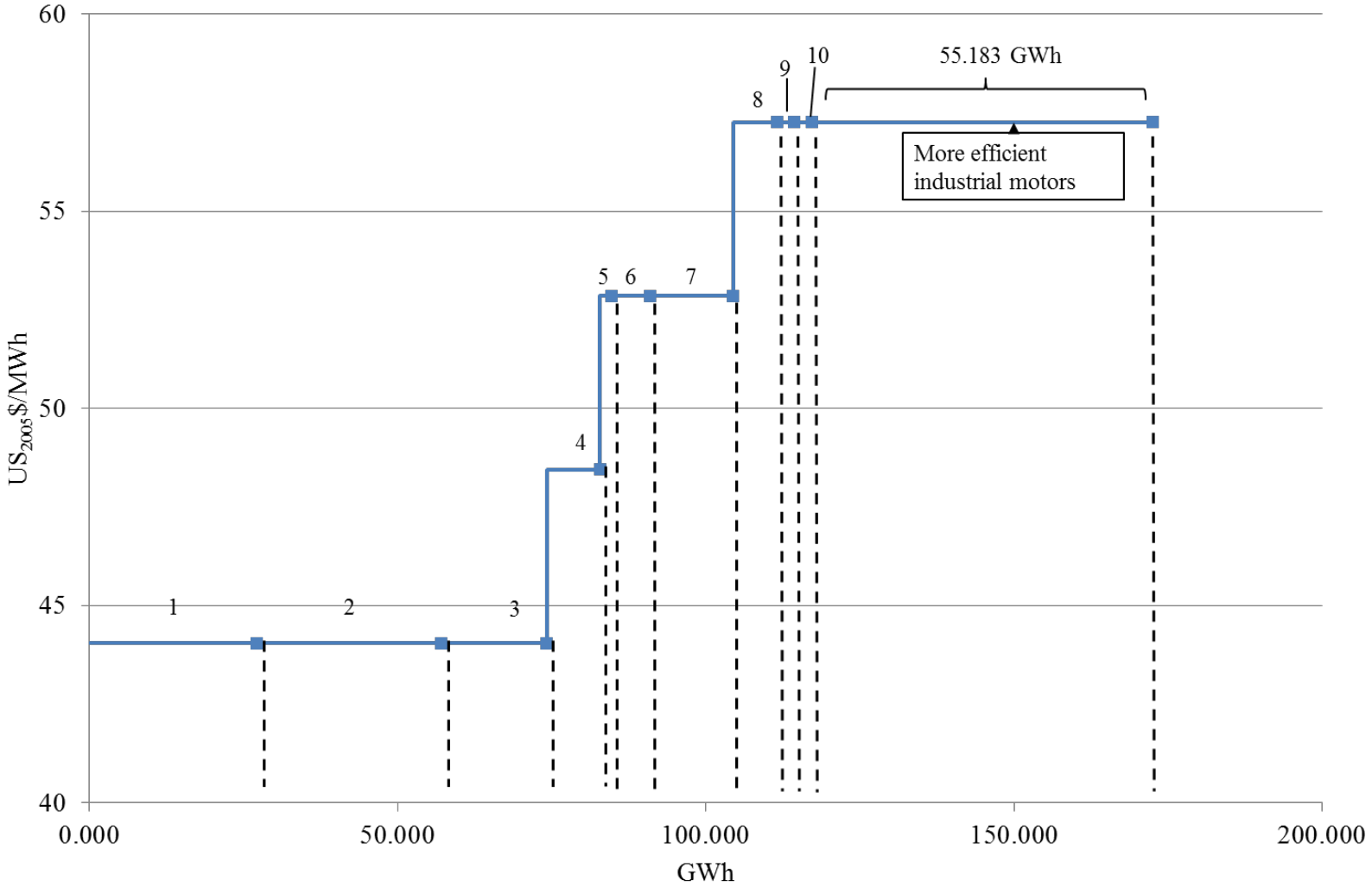
Energy Flows for the Global Industrial Sector



Exergy Flows for the Global Industrial Sector

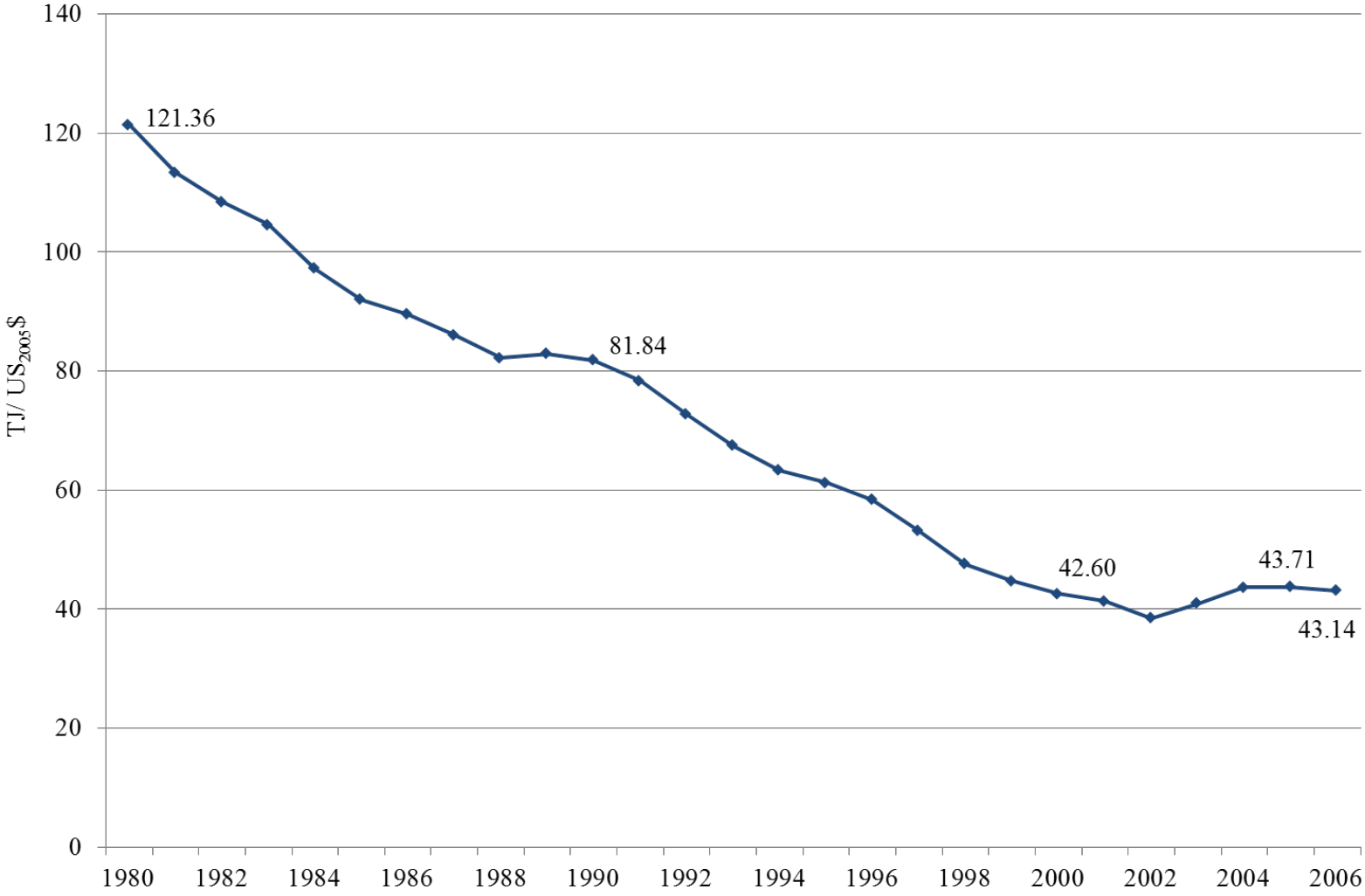


Supply Curve of Saved Electricity for 2020

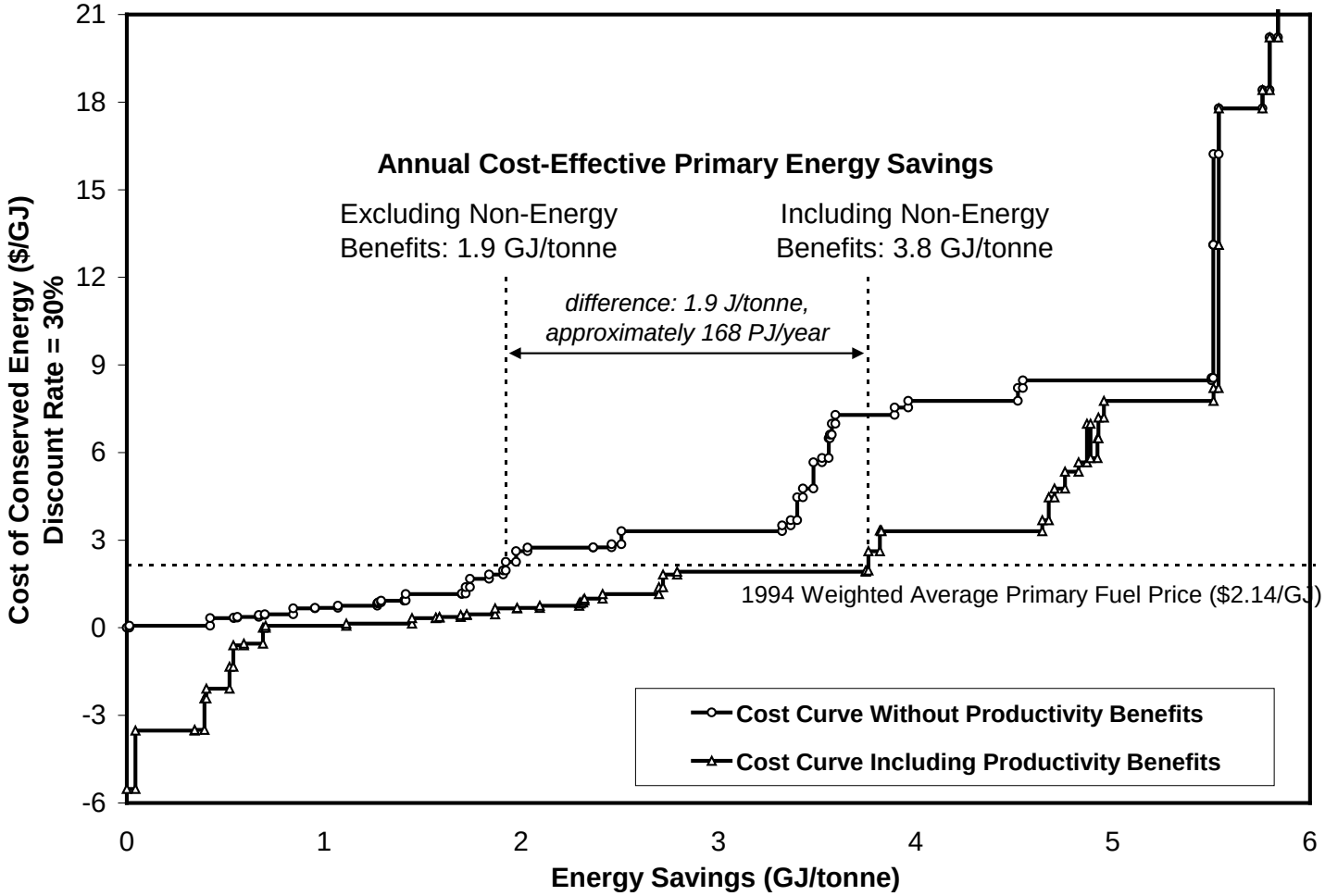


Energy End-Use: Industry

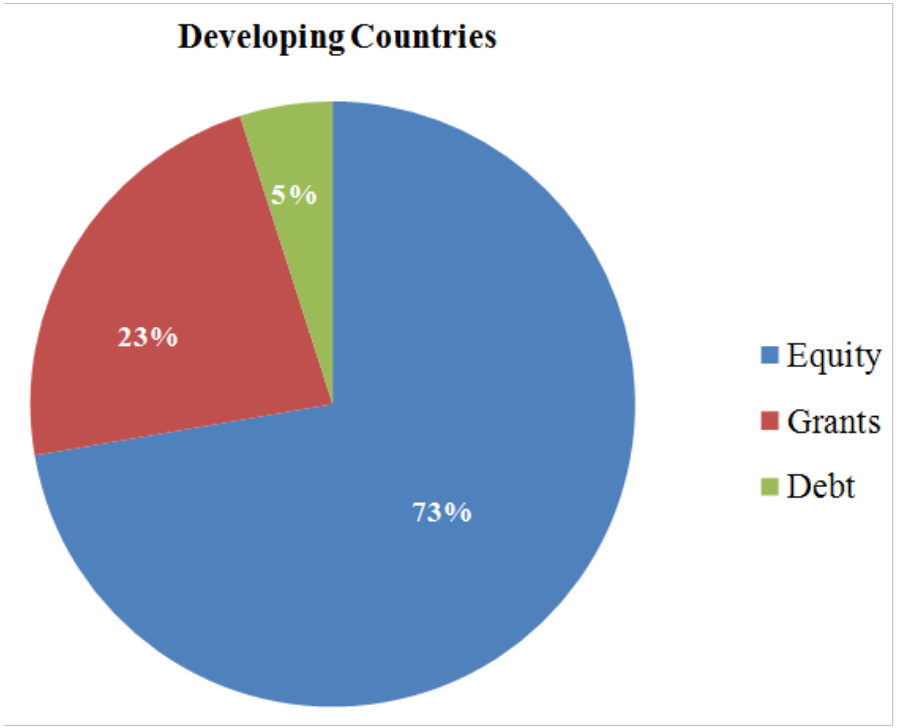
Energy Use of GDP per Unit in China

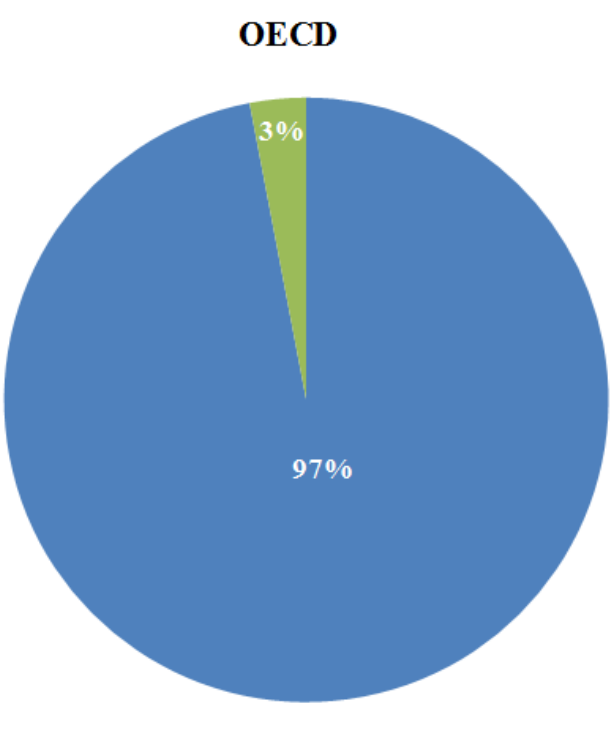


Conservation Supply Curves for the Iron and Steel Industry without Productivity Benefits and Including Productivity Benefits

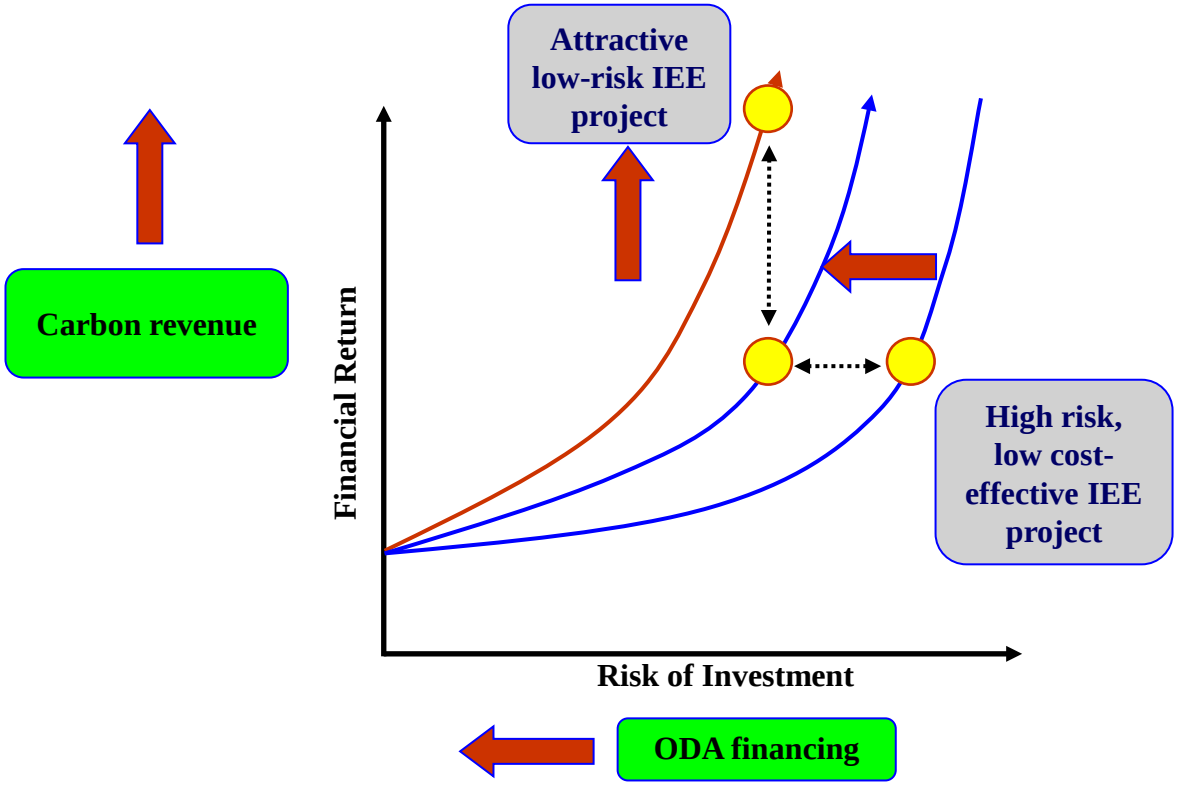


Sources of Energy Efficiency Investment in OECD and Developing Countries

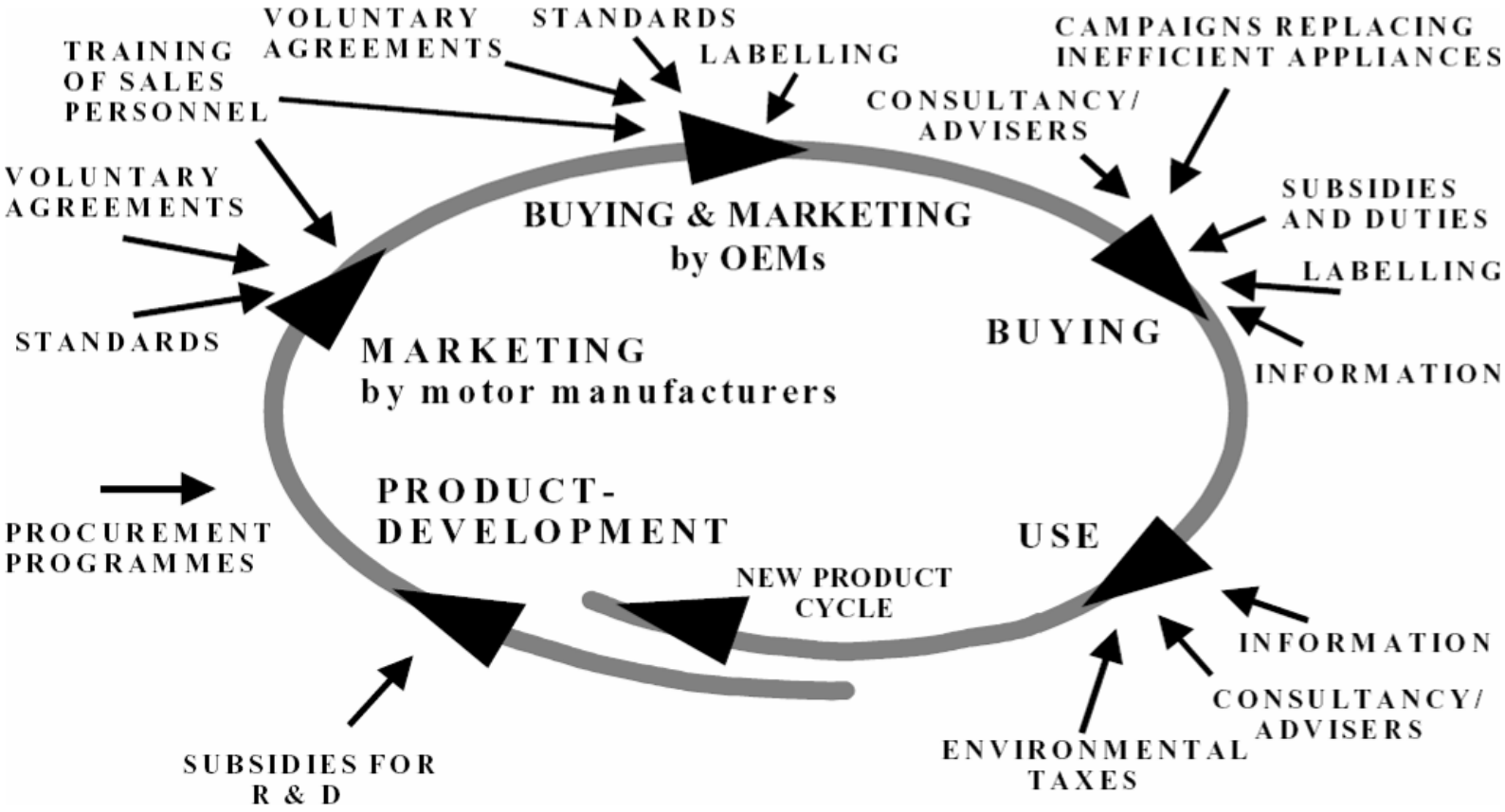




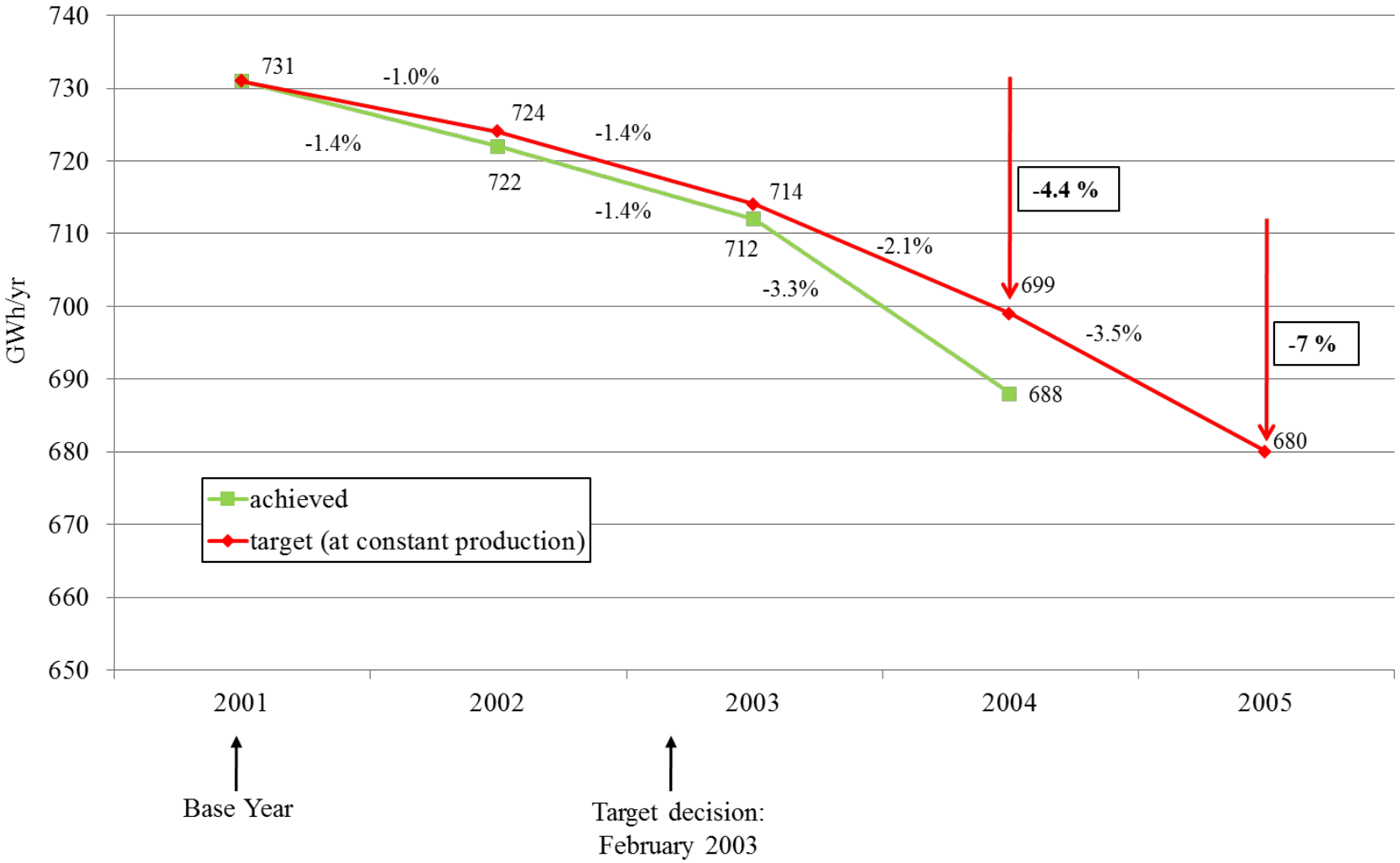
Use of ODA and Carbon Finance for IEE Projects



Obstacles Influencing the Diffusion of Highly Efficient Electrical Motors



Joint Energy Efficiency Target Path of 17 Companies of the Efficiency Table and Achieved Energy Savings



Energy End-Use: Industry

Existing, Frozen Efficiency and BAU Scenarios and the Savings in 2030