



Motor Summit 2007
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Polish Motor Policy

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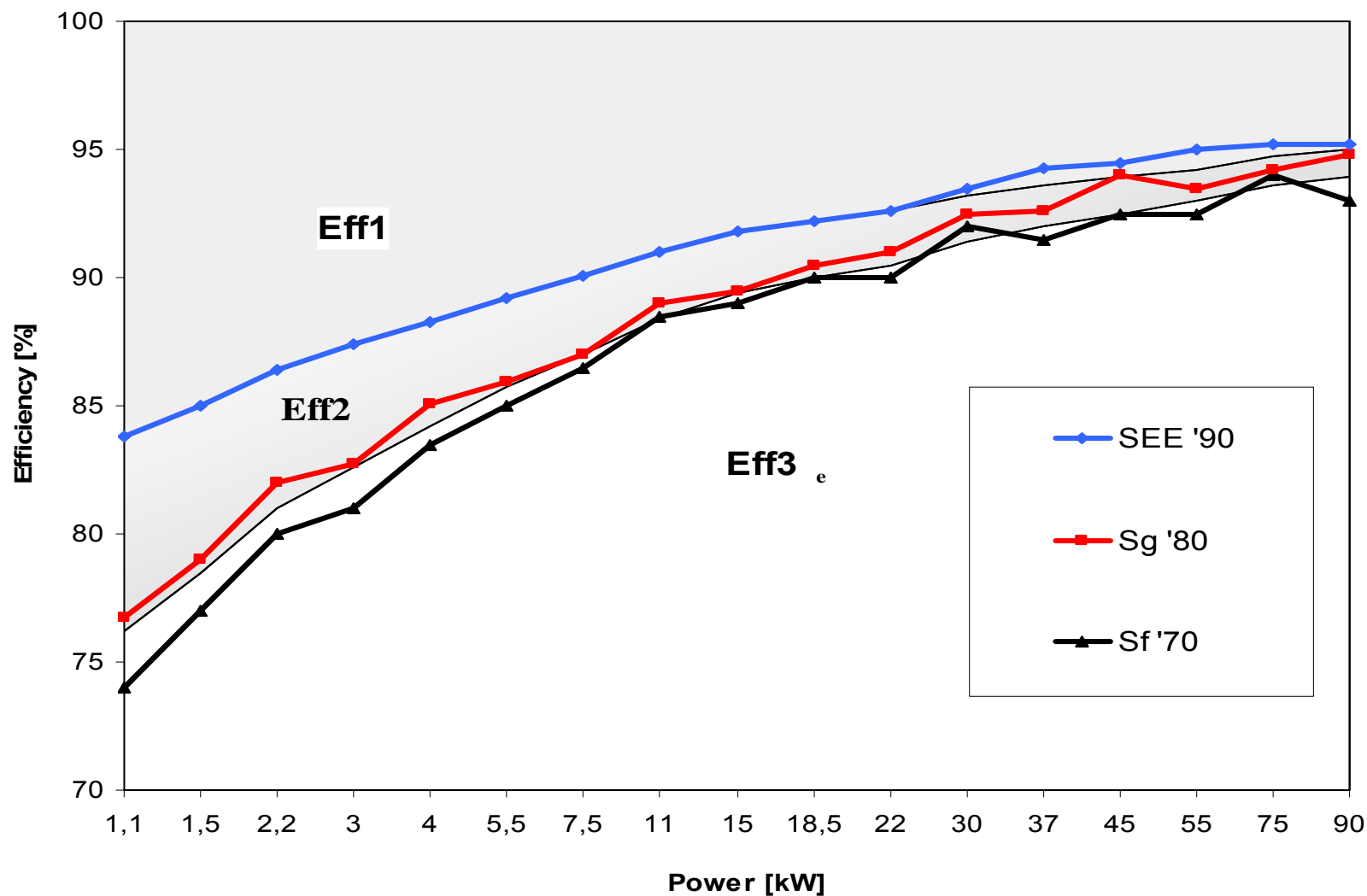


Introduction

- Motor manufacturers:
BESEL, CELMA, EMIT, INDUKTA, TAMEL
- Standards:
 - PN-72/E-04272 (introduced in 1972) “Rotating electrical machines. Three-phase induction motors. Tests methods”
 - PN-89/E-06702 (introduced in 1989) “Rotating electrical machines. Losses and efficiency”
 - PN-EN 60034-2 in year 2000 (equivalent of EN 60034-2:1996)
 - PN-E-06741:1999 “Rotating electrical machines. High efficiency induction motors. Requirements and tests”
 - SEP-E-006 „High efficiency induction motors. Requirements”

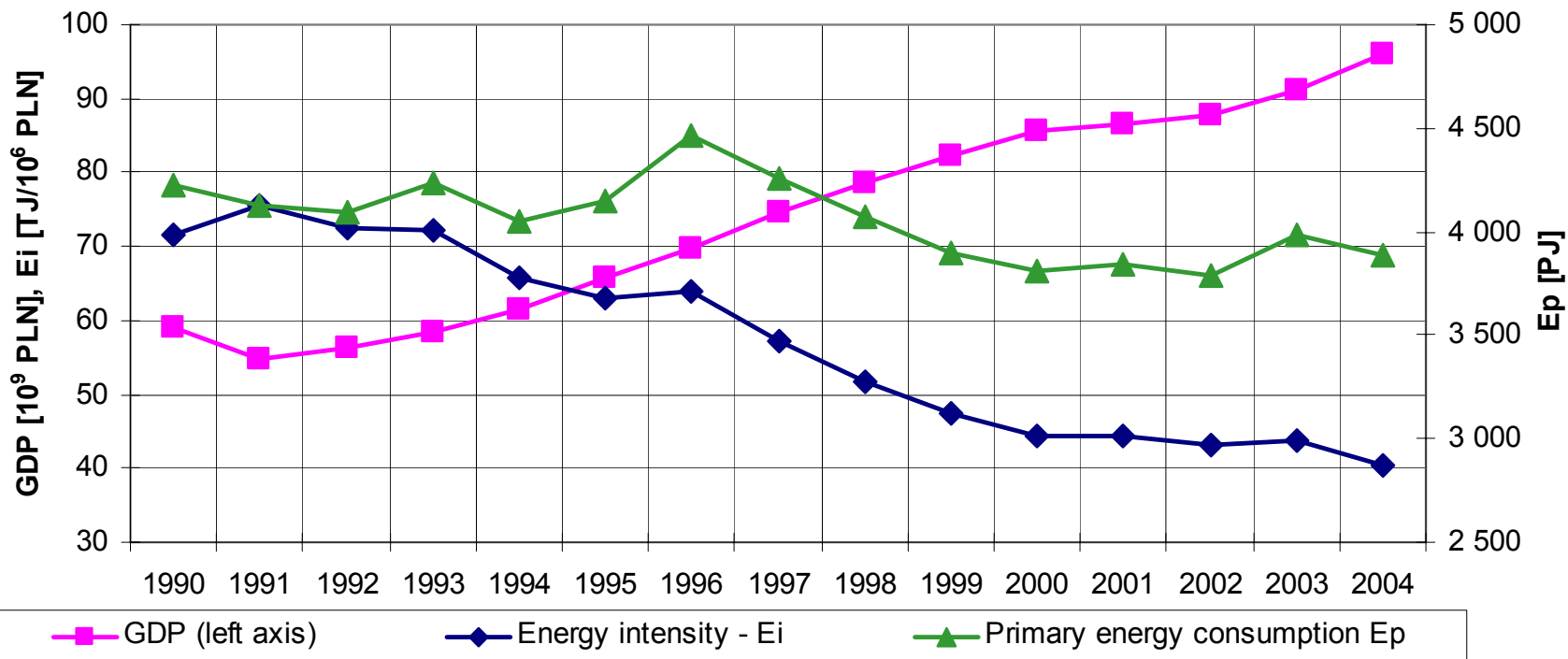


Polish series of electric motors (4 poles)



GDP, Primary Energy Consumption, Energy Intensity in the Years 1990 - 2004

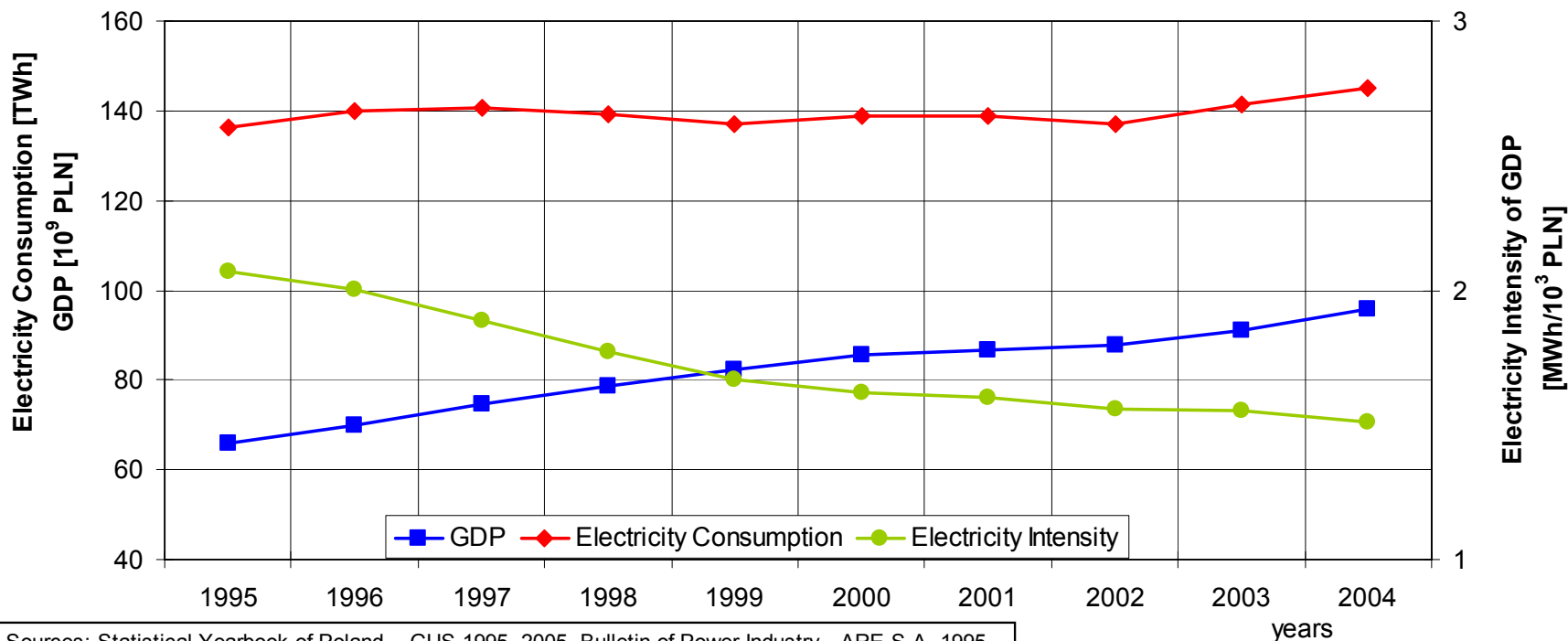
GDP (based on 1990 fixed prices), Primary energy consumption (Ep), Energy intensity (Ei)



Sources: Statistical Yearbook of Poland - GUS 1990 -2005, Energy Statistics 1990 - 2004, analyzes - FEWE

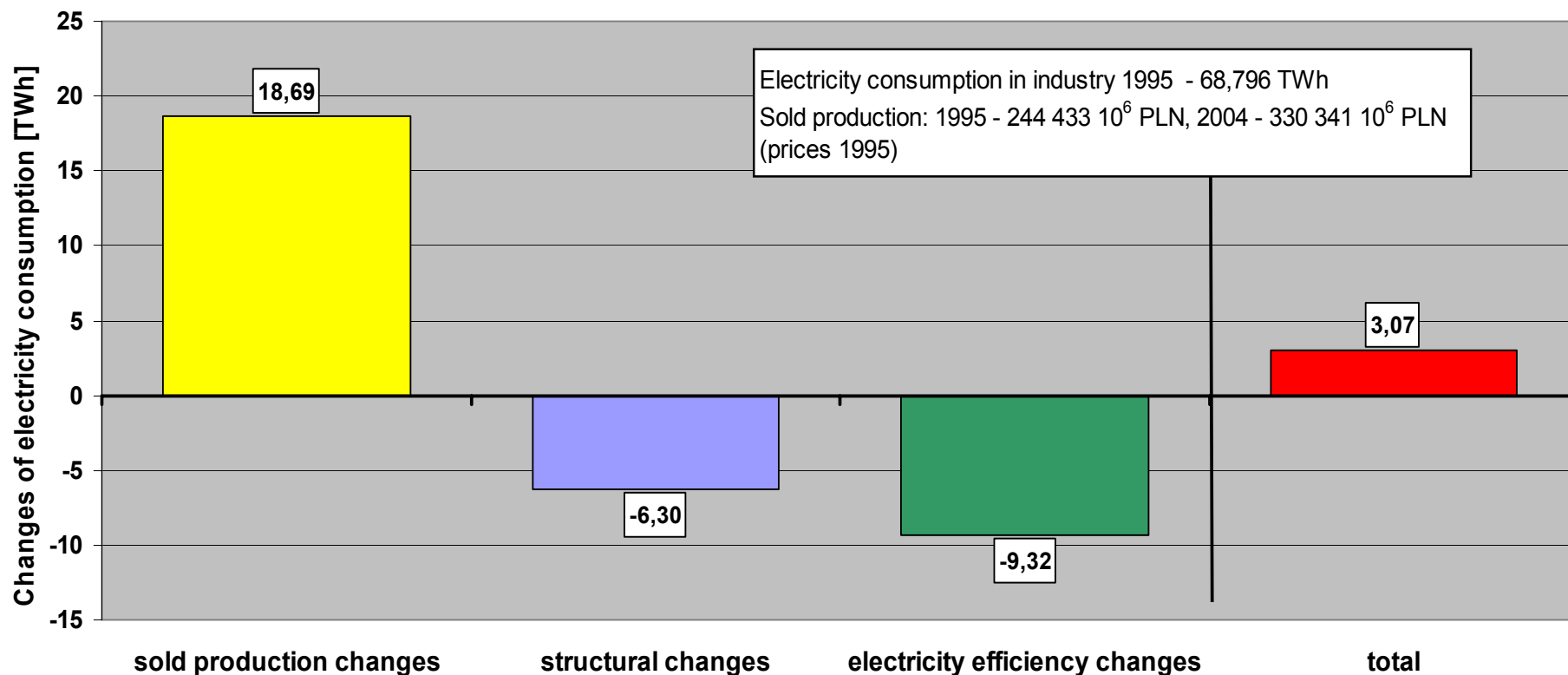
GDP, Electricity Consumption, Energy Intensity in the Years 1995 - 2004

GDP (based on 1990 fixed prices), total electricity consumption, energy intensity of GDP in years 1995 - 2004



Sources: Statistical Yearbook of Poland - GUS 1995 -2005, Bulletin of Power Industry - ARE S.A. 1995 - 2004, Energy Statistic 2003 - 2005, analyzes - FEWE

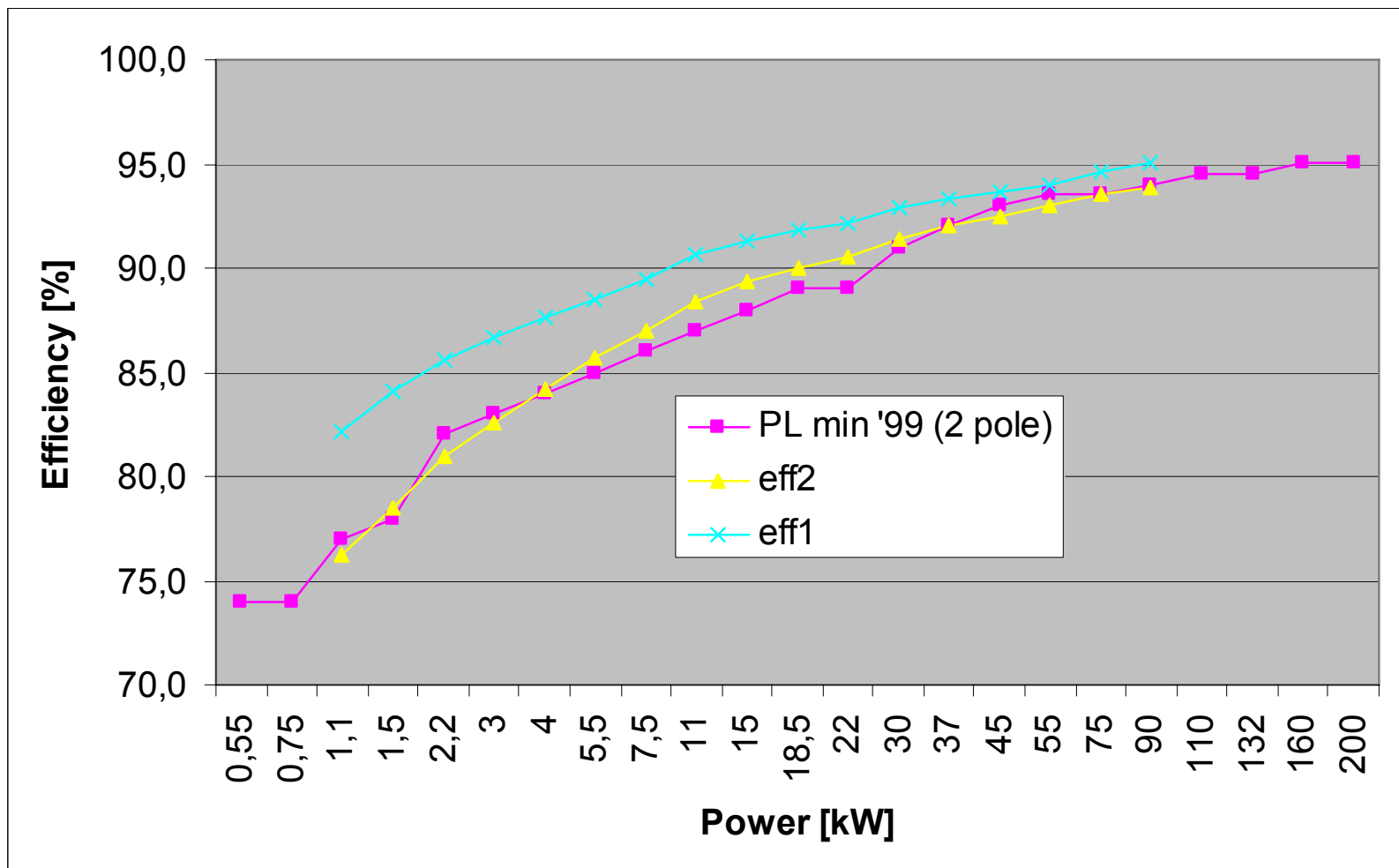
Influence of Different Factors on the Electricity Consumption in Industry, Years 1995 - 2004



Sources: Statistical Yearbook of Poland - GUS, 2005; Energy Statistic 1995 - 2005, GUS; analyzes FEWE

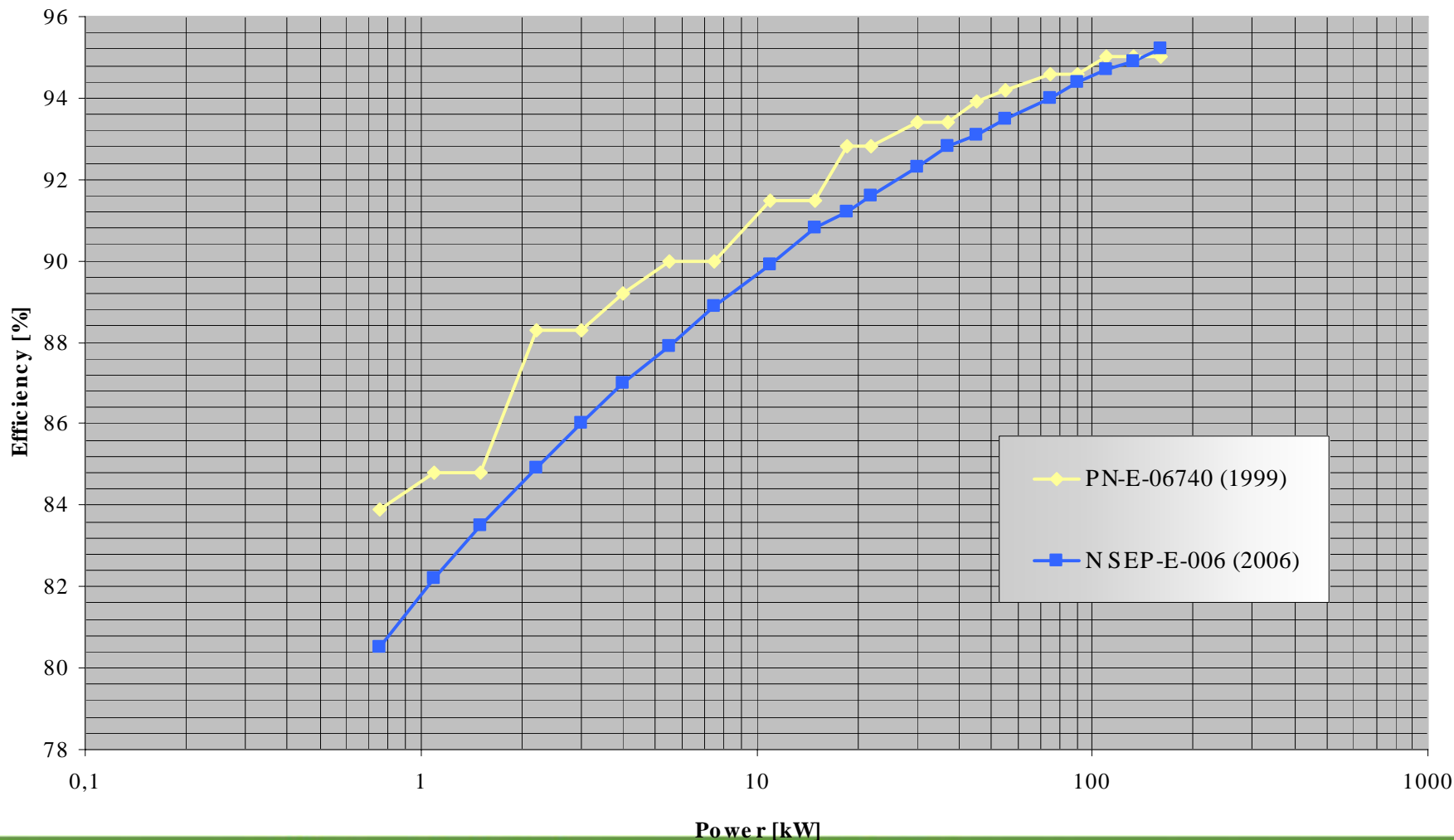


Polish Minimal Energy Performance Standard for Electric Motors



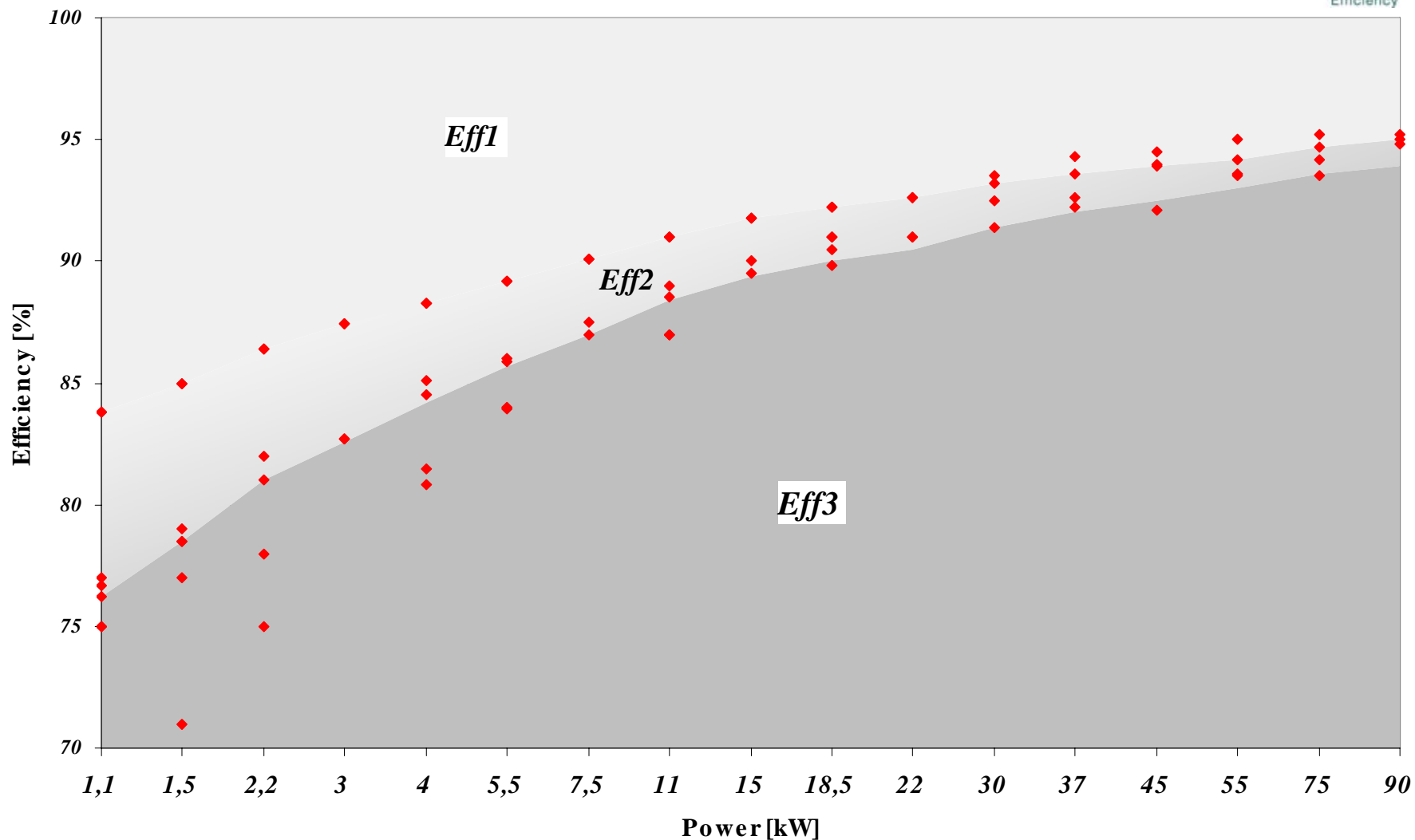


Electric Motors – different standards for energy efficient motors (4 poles)





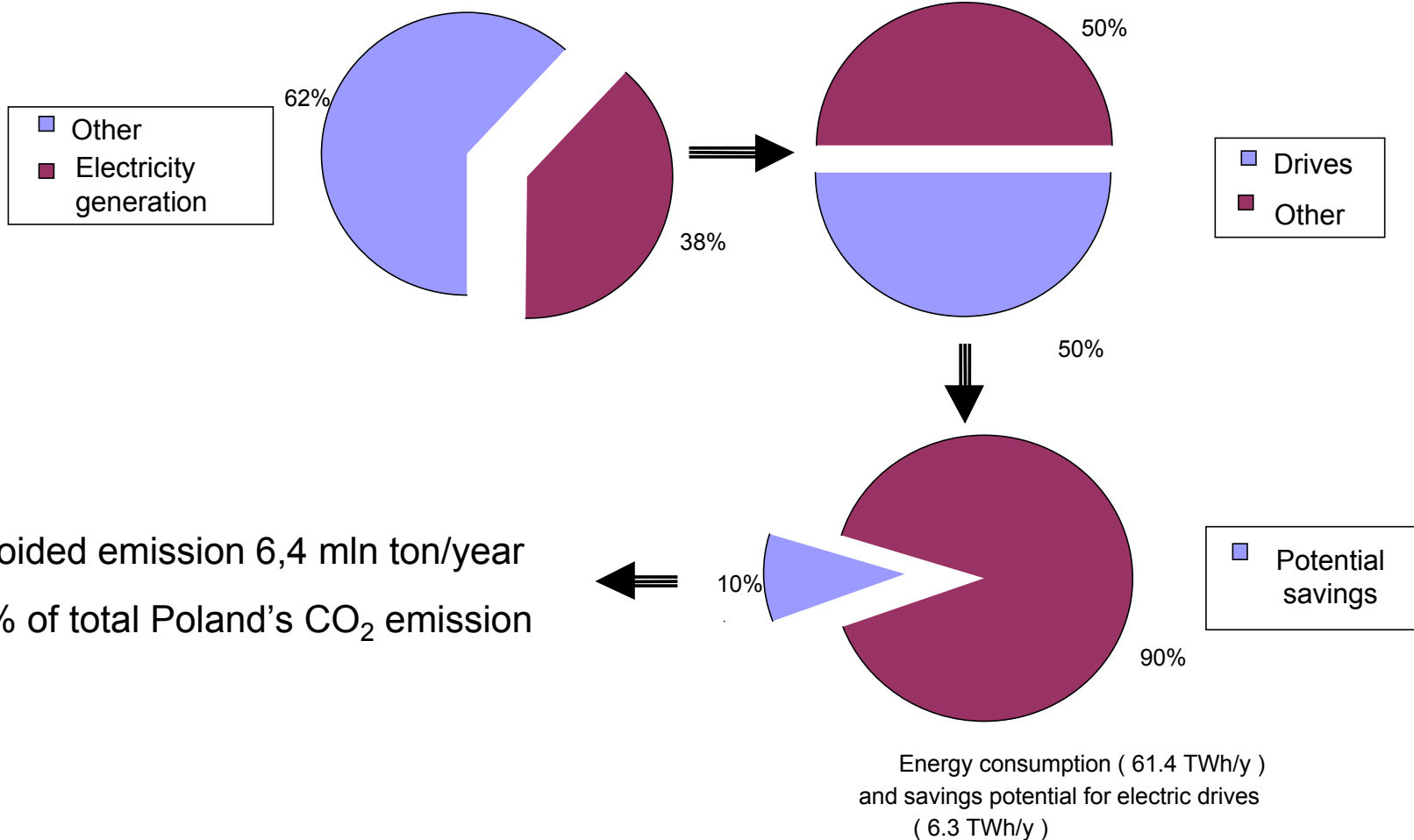
Motor Market – Efficiency of Motors



Electric Motor Systems and GHG Emission

CO₂ emission - 338 Mt/y

Electrical energy consumption – 122.8 TWh/y





Polish Energy Efficient Motor Programme - PEMP

- The PEMP is a five years lasting programme supported by Global Environment Facility,
- it addresses electric motor systems (motor, controls, transmission, driven machinery: pumps, fans, compressors, conveyors, etc.),
- it is intended to utilize the economic potential for energy efficiency improvement in Polish economy,
- reduction of electrical energy consumption – results in the reduction of greenhouse-gases emission from power plants,
- PEMP has been located in GEF Focal Area of Climate Change.



PEMP - activities

- The first major activity focuses on building capacity and raising awareness by providing information and services related to energy efficient electric motor systems.
- The second major activity involves demonstration projects to establish and showcase the technical and economic benefits of energy efficient motor systems.
- The third major activity has the objective of stimulating market transformation and competition through a financial incentive mechanism.
- The fourth aspect refers to policy components.



PEMP financial incentives mechanisms

Rated Power	Minimum efficiency 2p=2	Minimum efficiency 2p=4	Maximum PEMP subsidy	Number of motors
P_n	η_e	η_e		
0,75 kW	80,0%	81,0%	\$18	39 518
1,1 kW	82,8%	83,8%	\$20	
1,5 kW	84,1%	85,0%	\$24	
2,2 kW	85,6%	86,4%	\$27	
3 kW	86,7%	87,4%	\$35	
4 kW	87,6%	88,3%	\$47	
5,5 kW	88,5%	89,2%	\$59	
7,5 kW	89,5%	90,1%	\$68	



SILNIK ENERGOOSZCZĘDNY

DOFINANSOWANY ZE ŚRODKÓW
GLOBALNEGO FUNDUSZU
ŚRODOWISKA (GEF)
W RAMACH PROGRAMU PEMP

www.pemp.pl



PEMP financial incentives mechanisms – ctd

Rated Power	Minimum efficiency 2p=2	Minimum efficiency 2p=4	Maximum PEMP subsidy	Number of motors
P_n	η_e	η_e		
11 kW	90,5%	91,0%	\$96	2 629
15 kW	91,3%	91,8%	\$118	
18,5 kW	91,8%	92,2%	\$142	
22 kW	92,2%	92,6%	\$170	
30 kW	92,9%	93,2%	\$248	
37 kW	93,3%	93,6%	\$275	



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PEMP financial incentives mechanisms – ctd

Rated Power	Minimum efficiency $2p=2$	Minimum efficiency $2p=4$	Maximum PEMP subsidy	Number of motors
P_n	η_e	η_e		
45 kW	93,7%	93,9%	\$330	455
55 kW	94,0%	94,2%	\$360	
75 kW	94,6%	94,7%	\$400	
90 kW	95,0%	95,0%	\$420	
110 kW	95,2%	95,2%	\$440	
132kW	95,4%	95,4%	\$450	
160kW	95,6%	95,8%	\$490	



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Ecofund - “debt-for-environment swap”

- Type of investment:
 - replacement of electric motor,
 - replacement of driven machinery,
 - installation of a speed control system.
- Specific project requirements and limitations:
 - rated power of each motor above 200 kW,
 - total qualified investments over 180 000 zł (45 000 EUR),
 - base case assessment (min. 12 months monitoring),
 - 24 months of post-implementation monitoring;
- **EcoFund offers grants up to 30% of qualified investments.**



Promotional activities



Remontować
czy wymieniać
silniki
elektryczne
dużej mocy

**NORMA
SEP
N SEP-E-006**

Silniki energooszczędne
(silniki o wysokiej
sprawności)

Wymagania
Wytyczne doboru



EFE
wersja 3.0
Automatyczna A

Start



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GLOBALNEGO FUNDUSZU
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EKOFUNDUSZ **ECOFUND**

KOMISJA POLSKIEGO EKOFUNDUSZU
ŚRODOWISKA

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**THE PRINCIPLES
OF ECOFUND'S OPERATION**



THANK YOU FOR YOUR ATTENTION