



THE COMPETITIVENESS OF ENERGY-INTENSIVE INDUSTRIES IN EU'S LAST MEMBERS

**FERIDE GONEL
HASAN AGAN KARADUMAN**

YILDIZ TECHNICAL UNIVERSITY- ISTANBUL-TURKEY

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MOTIVATION OF THIS STUDY

The fossil-type energy intensity of the last 13 member of EU has been decreased

Therefore, it is important to trace how these countries protect the competitiveness of their energy-intensive industries

The question is whether the competitiveness of the dirty-industries of EU's last new members increase or not while their fossil fuel consumption changes



SOME FACTS AND FIGURES ON ENERGY...

- The dependence ratio of the EU-28 in the share of fossil fuels in gross inland consumption is still high; but it declined from 83% in 1990 to 73.8% in 2013
- Among members; the least dependent countries are Estonia (11.9%), Denmark (12.3%), Romania (18.6%), Poland (25.8%), the Netherlands (26.0%) and the Czech Republic (27.9%)
- The highest dependency rates belong to Malta (104%), Luxembourg (96%), Cyprus (96.4%) and Ireland (89.1%)



ENERGY UNION STRATEGY: **SECURE, SUSTAINABLE, COMPETITIVE AND AFFORDABLE** **ENERGY**

Under this new strategy, EU has approved the **Energy Efficiency Directive** on October 25, 2012.

The **new directive** covers all end-use sectors except transport and it puts new targets on energy consumption.

In **2014**, the EU has agreed to review its policy framework on energy and climate policy by **2030** and the EU targets have radically changed; 40% cut in GHGs emissions, the share of renewable energy in final energy consumption increased to 27% and improving energy efficiency to 30%.

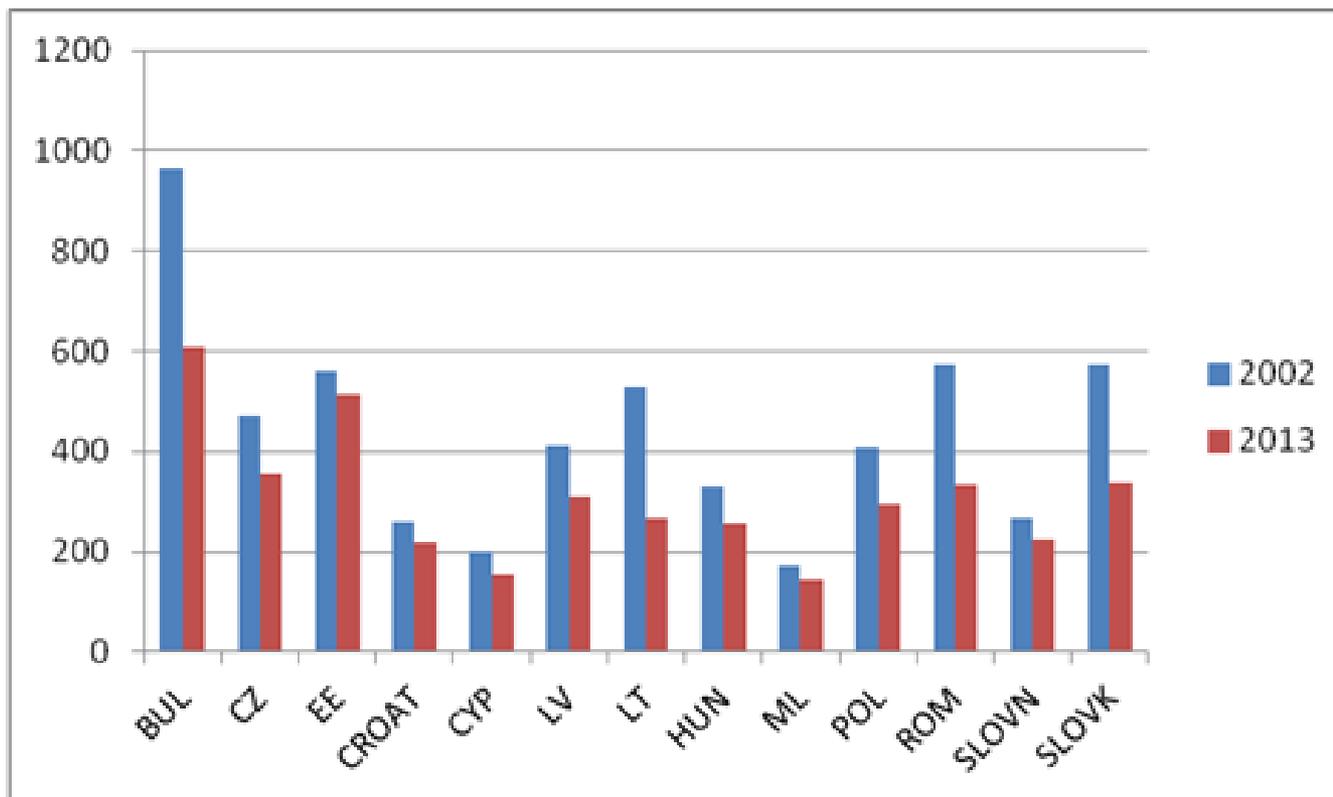


- The EU cut greenhouse gas emissions by 18% in between 1990 and 2012 and over the same period the share of renewable in gross inland consumption of EU-28 increased from 4.3% in 1990 to 8.5% in 2005 then jump to 14.1% in 2012 but it decreased to 11.8% in 2013; it is a far away from its target
- During the 2000s, overall energy efficiency gain in EU-28 has increased from 1.1% to 24%; in manufacturing industry this figure has increased from 1.8% to 16.9%
- Among EU members, Bulgaria, Poland and Estonia are at the top of the list on energy efficiency



Trend in energy intensity has also been down for EU; during the same period almost all EU members show a decrease in energy intensity. However, the new members still have higher values in 2013

Fig. 1 Dramatic Decline in Energy Intensity in EU-13 Countries, kgoe/000 euro



Source: Data from the above Table 7



In most of the EU-13 countries, after the dramatic decline in energy intensity, it is expected that these countries RCA figures show better performances. Because it is widely accepted that competitiveness will be enhanced when industry consumes less energy.

In other words more energy intensity the low RCA figures.



Table 8. RCA Figures of Selected Most Dirty Industries in EU-13 Countries, 2000 and 2013

2000	BUL	CZ	EE	CROAT	CYP	LV	LT	HUN	ML	POL	ROM	SLOVN	SLOVK
5	1.08	0.76	0.60	1.34	0.00	0.68	1.02	0.65	0.17	0.70	0.62	1.17	0.85
64	0.41	1.07	1.03	1.18	0.49	0.61	0.53	0.72	0.02	1.72	0.34	2.78	2.37
66	0.86	2.28	0.68	1.99	1.00	0.47	0.77	0.62	0.09	1.11	0.90	1.23	1.27
67	3.40	1.87	0.45	0.46	0.04	2.73	0.47	0.52	0.005	1.48	3.45	1.37	4.11
68	5.50	0.60	1.39	1.11	0.92	1.45	0.15	0.92	0.10	2.16	2.04	2.10	1.40
69	0.77	3.20	1.63	1.18	0.30	0.63	0.62	1.06	0.35	2.48	0.77	2.25	1.50

2013	BUL	CZ	EE	CROAT	CYP	LV	LT	HUN	ML	POL	ROM	SLOVN	SLOVK
5	0.27	0.55	0.61	0.99	0.00	0.59	1.09	0.95	1.16	0.82	0.49	1.40	0.41
64	0.80	0.17	1.17	1.34	0.21	0.85	1.10	1.23	0.09	2.46	0.48	1.95	1.37
66	1.00	1.00	0.92	2.08	1.57	0.85	0.64	0.80	0.11	1.05	0.25	0.80	0.74
67	0.98	1.33	0.55	0.42	0.20	1.46	0.34	0.51	0.05	0.97	1.46	1.10	2.02
68	6.41	0.66	0.32	1.00	0.84	0.58	0.10	0.46	0.01	1.75	0.78	1.26	1.08
69	0.84	2.51	1.63	1.82	0.12	1.22	1.21	1.05	0.22	2.24	1.22	1.90	1.63

Not: The numbers on the left column represent the SITC classification. SITC 5: Chemicals and related products; SITC 64: Paper, paperboard and articles of paper pulp, of paper or of paperboard; SITC 66: Non-metallic mineral manufactures; SITC 67: Iron and Steel; SITC 68: Non-ferrous metals; SITC 69: Manufactures of metals



- The RCA figures of Bulgarian chemicals sector which is decreased from 1.08 in 2000 to 0.27 in 2013
- the energy intensity of Estonia has decreased by 16 %; the country's wood products (SITC 64) have increased its RCA figures from 1.03 in 2000 to 1.17 in 2013
- Despite Croatia's efforts to use more renewable energy in total energy consumption, the energy intensive industries have still high RCA in 2013.
- In Cyprus, only the non-metallic mineral manufactures has comparative advantage, the other energy-intensive industries have no advantage
- Lithuania has a strong RCA in wood and wood products, paper, refined petroleum, chemicals, rubber and plastics and the most dramatic decline in the energy intensity occurred in Lithuania.
- In Poland, the performance of the country's energy efficiency is so weak. Despite the decrease in energy-intensity, all energy-intensive sectors have competitiveness in whole economy
- The energy intensive figures of Romania has decreased dramatically; in 2013 the country is the fourth biggest country among the other EU-13 countries. Among these dirty industries, non-ferrous metals lost its competitiveness but manufacture of metals gained RCA in 2013.
- Slovenia has strong RCA in most energy-intensive industries and the energy intensity of the country has decreased by 15% during 2000-2013
- Despite the fall in energy intensity, Slovakia has lost RCA in some energy-intensive industries such as chemical and non-metallic mineral manufactures.

CONCLUSION

- In the case of six energy-intensive industries, almost **all new members' RCA figures are decreasing**, i.e. losing their competitiveness. So when these countries' dirty industries become "clean" (in other words increase their energy efficiency or decrease their energy-intensity) then they are losing their comparative advantage performances.
 - Particularly two largest energy consuming industries (**Chemicals and Iron and Steel**) RCA figures decline in almost all members.
 - In this study, our findings suggest that the comparative advantages of some energy intensive industries such as chemicals and non-metallic mineral manufactures, iron and steel, and non-ferrous metals have been getting weaker for EU's last member countries during the period of interest. However the process is just up the road.
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