

European Employment Observatory

EEO Review: The Employment Dimension of Economy Greening

Romania

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1. Introduction

Calan is a small and *very quiet* town in south-western Transylvania. In the clear days of summer the eye can gaze over the tops of the Southern Carpathians not far away, underneath which shelter the mysterious citadels of ancient Dacia. However, 17 years ago, the city was bustling with activity in the metallurgy sector and one could hardly see the sun, hiding underneath the black clouds of smoke coming from the plant.

This situation is more than common around the Central and Eastern Europe. In Romania, during the last twenty years since the fall of communism, large swathes of hard-polluting and grossly inefficient industries created by central planning have been simply shut down. Air has cleared and waters have found back their azure glitter, houses are again coloured brightly. However, many people lost their jobs in the process of restructuring, thus, being either forced into subsistence agriculture or migration for employment abroad.

Therefore, the current article, while more than supportively acknowledging the necessity of smartening growth and recovery through the greening of economy, also reflects the fact in the Romanian economy jobs remain the first and foremost priority.

2. Labour Market Outcomes

The massive restructuring undergone by the Romanian economy throughout the mid-late 1990s has led a dramatic drop in employment. The most affected were the metallurgy, mining (coal primarily) and chemical industry sectors. Construction materials, especially cement, which has witnessed the entry of large multinationals, has seen its workforce trimmed, some old capacities shut down, with dramatic boost of investment in the eco-friendly technologies. As a result of this shift, employment structure has also witnessed significant changes. Services sector, labour intensive but environment friendly, has become the main provider of jobs (see Table 1). Industry employment in the meantime has reduced its share in total employment, now hovering around 30 %.

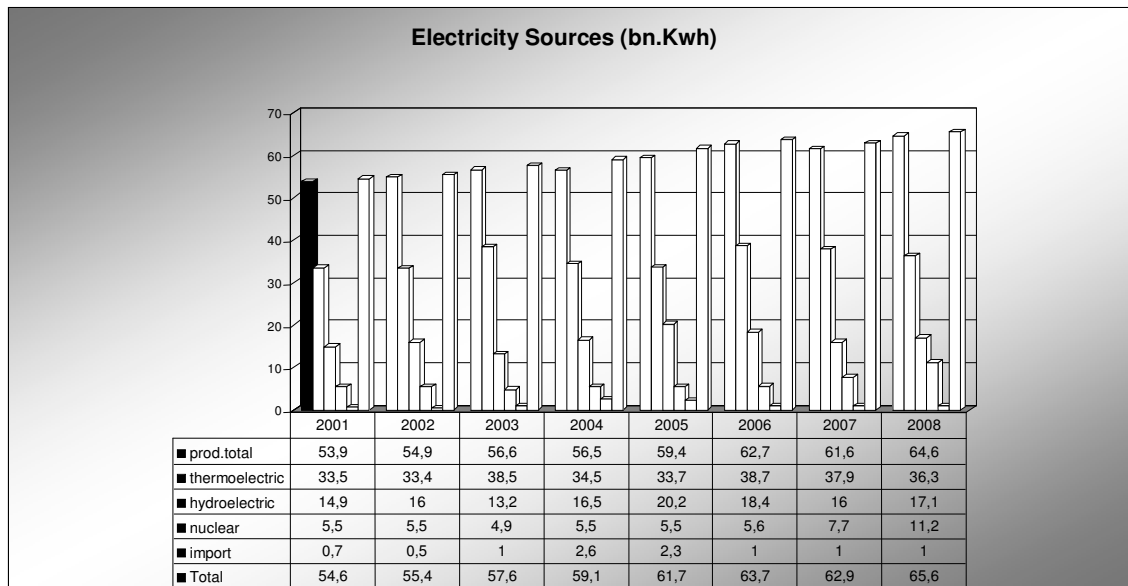
Table 1 – The Gradual Greening of a Transition Economy

Measure of gradual and inadvertent greening	2001	2008 (provisional data)	% change as of 2001 (=100)
Contribution to GDP formation of “green” (low carbon sectors) (%)	61.6	66.5	+7
Share of total employment of “green” (low carbon) sectors (%)	70.05	68.2	-2.7
Electricity generated from “green” (low carbon) sources (%)	20.4	28.3	+38

Source: National Institute of Statistics/NIS data, processed by Dr. Catalin Ghinararu.

While not precisely pursuing policies directed at the creation of green jobs, Romania has nonetheless promoted the generation of low carbon energy. Successive governments after 1990 have strongly pursued the creation of a national nuclear energy generation capacity. The nuclear plant in Cernavoda (130 km east of Bucharest on the right bank of the Danube) started with Canadian technology in the mid-1970s has seen a resumption of its works in the early 1990s, with the first reactor starting production in 1997 and the second in 2007. Two more reactors of the same plant are now under construction with the government more than committed to a nuclear energy generation strategy for Romania. The end result of this quest for nuclear energy has been a rise in the country’s share of nuclear generated energy from around 5% in the mid-1990s to a high of around 17% in 2008 (see Figure 1).

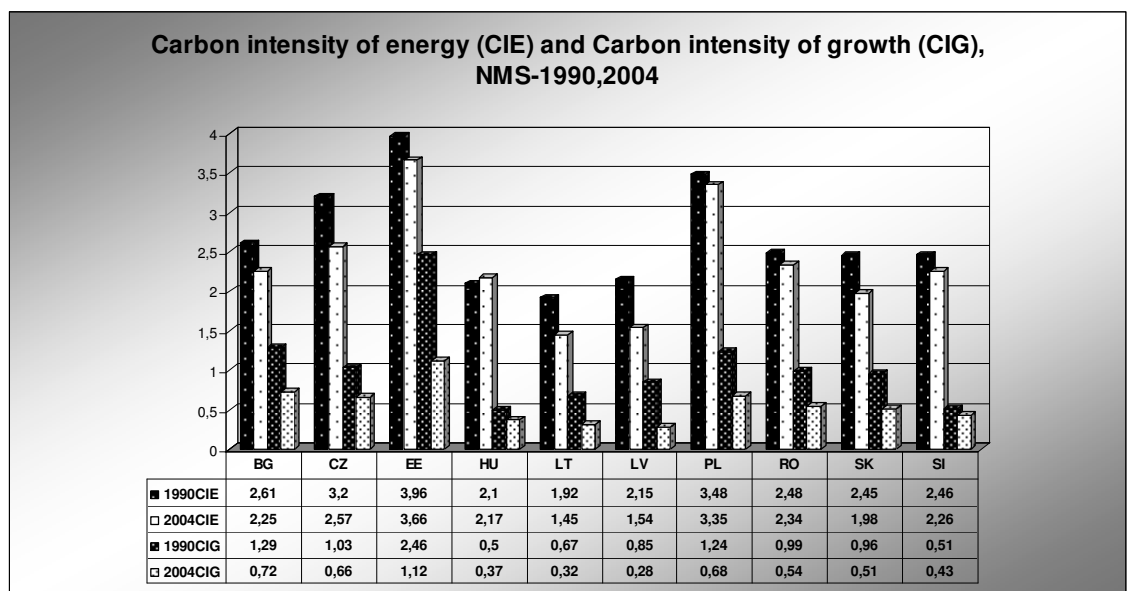
Figure 1 – Electricity sources, by type of source, 2001-2008



Source: NIS data, processed by Dr. C. Ghinararu.

Also, successive Romanian governments have used multilateral financing (World Bank, EBRD) to modernise the country's hydropower stations, with particular attention given to the large complex at Portile de Fier (the Iron Gates) on the Danube. Several other projects aim at the modernisation of the country's extensive network of hydropower stations.

Figure 2 – Carbon intensity of energy and growth, selected new Member States, 1990 and 2004



Source: U.N.D.P. – Human Development Report 2007/08, processed by Dr.C. Ghinararu.

Although the Romanian economy remains more than energy intensive, the carbon intensity of both energy generation as well as of the economic growth has markedly

declined (see Figure 2). This is the result first and foremost of aggressive industrial restructuring and the contribution of the intense national effort directed towards the creation of, if not entirely green, at least non-carbon energy generation sources.

3. Review of Labour Market Policy Developments

3.1 Relevant labour market policies

Although no particular labour market policies have been directed towards greening or greener jobs, a large share of the active measures promoted by the PES have somewhat supported the move from industry to services. The mobility incentives as well as the incentives given to employers to train their employees (50% of the training costs for a maximum of 20% of an enterprises' employees, once per year), as well as the apprenticeship law, all have been directed towards workers dislocated from restructured, polluting industry, while aiming at retraining them for cleaner jobs in services. Unfortunately, up until recently, not much has been done so as to train those that moved out from the cities into the rural areas so as convert subsistence farming into eco-farming.

It is important though to mention that Romania has taken steps so as to create at least the basis of a skills/occupational demand anticipation system. As early as 2003, the National Labour Research Institute has undertaken several enterprise investigations with the aim of early identifying the rapidly changing demand for skills. Such investigations have been repeated though with sometimes diverging objectives in 2004-05, 2006 and 2008. Moreover, in 2006 a more audacious step has been made with the enterprise investigation being doubled by an attempt to create at least in a nutshell, a system of occupational monographs. The study has been made available to the Sector Committees, functioning in an advisory position to the National Adult Training Board, now fully recognised as public tripartite bodies, entrusted with the elaboration of occupational standards.

Finally, Romania, through the National Labour Research Institute, is actively involved in the anticipation exercise currently financed by the CEDEFOP aiming to produce a mid-term (2025) forecast of the demand and supply of skills in Europe.

3.2 The role of the ESF

Several projects funded by the ESF are aiming, if not explicitly at greening and green jobs, at least at bettering the capacity of the Romanian relevant authorities and enterprises to chart the developments of the demand and supply of skills in what will be an ever more integrated Single Market, revolving around flexicurity and green, smart growth. As such, the SAPERE project which brings together the Romanian National Agency for Employment (NAE) and a host of Italian partners aims at bettering the capacity of the Romanian PES to anticipate changes on the labour market and thus constantly update its toolkit of active policies. The MEDIT project which brings together the NAE and the Italia LAVORO arm of the Italian Ministry of Labour attempts to find a mechanism for an improved regulation of the flow of workers between Romania and Italy. Finally the recently started FLEXICOVERY project initiated by the National Labour Research Institute attempts to bring the core concept of flexicurity into the daily practice of Romanian enterprises.

3.3 Interesting practices at work

Starting in 2006/2007, the government of Romania has initiated a scheme whereby interested associations of owners, especially from amongst those living in the huge blocks of flats, can benefit from a state subsidy to thermally improve the buildings. Although no a very large number of blocks have benefited until now, the scheme is gaining momentum and in a period of crisis, is seen as one of the few stimulus measures the Government can afford, given the constraints of the huge IMF-backed loan in 2009. According to recent statistics released by the government in 2008, around 89 blocks have seen complete rehabilitation, with 39 more being in advanced stage of the process. For 2009, when funds have seen an increase, around 31 blocks (979 flats) have been completed, with yet another 543 blocks (around 23 000 flats) being now in various stages of the process.

An old car replacement scheme has also been initiated with more than 40 000 vehicles being targeted in 2008 and around 60 000 in 2009. The scrapping scheme has been extended in 2009 to small utility vehicles so as to assist SMEs and will see further extension to tractors starting from 1 January 2010. However, the scheme is modest in its extent. A registration tax which had been imposed by the former liberal Government in 2007-2008 so as to prevent the dumping of old cars on the Romanian market has been scrapped at the end of 2008 and replaced with a version, whereby all new cars have to pay a tax based on their level of CO2 emissions.

3.4 Brief assessment on the direction of existing reforms

Greening the economy and thus giving an impetus to the creation of jobs in green or greener sectors of the economy must be seen not as a luxury but as a necessity. Romania has missed more than half a century of normal development and thus has scarce resources to mobilise for such a goal. The current model of development which has seen their swift change into very open excessively service oriented economies seems to have failed the basic test of a random exogenous shock. Therefore, something has to be done so as to better prepare them, while in the meantime ensure that they can close the development gap with their more developed counterparts in the Union. For this, the main priorities have to be growth, jobs and incomes. Greening might be of course an option which faintly seems to make some headway in the Romanian strategy. But given the current production apparatus, more greening than currently already is, would actually mean complete economic wipe-out. Public resources to come into support are meagre, even taking into account the stream of EU funds. Accordingly, the basic contribution will come in this direction from energy related policies, where Romania strongly promotes the low-carbon solution of nuclear energy, clustered around what is the safest and most modern installation in this area of Europe (the Cernavoda plant), as well as the strategic project of the NABUCCO gas pipeline. Both directions will have a strong impact on the economy and the labour market, spurring both jobs and growth.

3.5 Brief assessment on the optimal intervention level of active labour market policies

Current labour market policies are not directly aimed at greening. Given the current crisis and the pressing need to resume growth and job generation, it hard to believe that, at least in the initial phase, somebody would cherry pick job creation. However, as significant sources are available via the ESF as well as other structural and cohesion instruments, it would be more than advised to channel those resources where jobs are genuinely created at the level of enterprises and local communities. The perspective of large mining projects such as the Rosia Montana gold mine (supposedly the largest in Europe if the decision to open it not overturned due to environmental reasons) must be actually not shunned on narrow “*environmentalistic*” grounds, but, on the contrary, harnessed so as to produce a pilot case, whereby the exploitation of natural resources that fosters growth also brings in a strong component of environmental rehabilitation, thus spurring not only “green jobs” but also the generation of “green-oriented” know-how. Acquiring such know-how in an area where natural resources are almost depleted in Europe and then making good use of it on a market basis would prove actually far much smarter than simply selling “hot air” (emissions certificates of which Romania now has aplenty) to developed nations.

4. Conclusions

Given its current level of development and the state of its economic structure, Romania has done more than its fair share in terms of greening, even considering that this fair share was the result of restructuring, rather than of a conscious drive towards economy and labour market greening. Perspectives are however difficult to gauge for such an economy, which has witnessed a series of random exogenous shocks of unprecedented magnitude throughout the last half a century. Greening would be more than difficult, given the current context and it would entail the loss of the remaining industrial base. However, the shock of massive unemployment has been avoided in the Romanian labour market mainly due to the buffer of subsistence agriculture and, later on, due to intense migration flows towards the older Member States. None of these might be available to such a large extent in the future. The most urgent of priorities for Romanian therefore is to re-start the engine of growth and resume job generation. If this will entail also greening so much the better, but no one can bet on it.

What is actually more likely to happen (as confirmed by the recent forecasting exercises that concentrate on the anticipation of both the demand and the supply of skills in Europe) is that the economy and the labour market will deepen themselves into a sort of disequilibrium. The sectors that look most likely to absorb the Romanian labour force in the next 15 years up to 2025 are distribution, education, automotive and... maybe not surprisingly agriculture (in 2025 still forecasted at around 19% of total employment). However, the question remains, if these are the sectors most likely to be the main employers what will happen with a workforce which at that point will boast a level of education that will by far surpass the one today? What will they do? Where will they go? Is the content of jobs going to

change so much as to make distribution sector attractive enough for the higher educated, will agriculture maybe cease to be just a dumping ground for the low skilled and the elderly and become a beacon of opportunities for people with medium education level?

All of these questions unfortunately remain unanswered. The only tentative answer is that with the decade to come, integration into the Single Market will get ever closer. As the euro will become the currency of all of countries in the region, national markets will probably matter rather *more than less*. As such, today's disequilibrium of a national labour market can be just a partial picture, whereby a collection of nationally-based disequilibrium actually turns into equilibrium at the level of the Single Market. It might be that in this way, via closer integration into the wider economy of the continent that national economies, Romanian included, for which greening seems a rather remote and even development-hindering concept today, might get not only richer before getting older but, also get **greener** while in the meantime enriching themselves so as to shoulder for their progressive, though not unavoidable **greying**.

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ANNEX 1 – Summary of recent relevant measures (labour market and fiscal) adopted in Romania**Table 1 – Labour Market Measures**

Identifying labour shortages	Anticipating future occupations	Developing training offer	PES modernisation	Internships	VET modernisation	Social dialogue
system of anticipation of skills is being created, ESF funding involved; also note strong cooperation with the CEDEFOP	system under development through a grant of the National Authority for Scientific Research	general approach	general approach; however capacity on anticipation of LM needs in construction with ESF funding;	regulation in existence, though not much applied	new integrated law on education gives special attention to the development of competences	sector committees institutionalized; powerful role in building occupational standards and thus in the accreditation of training providers

Table 2 – Financial Measures

Non-employment subsidies	Infrastructure investments	Other investments	Non-employment tax reforms	SMEs support
state-aid scheme for energy co-generation	rehabilitation of blocks of flats; energy certification for building to become mandatory from 2011	continuation of the investment at the Cernavoda nuclear plant (reactors no.3&4); non-energy mining (the Rosia Montana gold mining project)	CO2 based taxation of automobiles-legislation passed initially ,applied and then subsequently repealed; currently car-replacement scheme in place, to be extended from Jan 1st 2009 also to tractors	Old cars replacement project to be extended to organisations/corporate entities and a new component for agricultural machinery to be included starting with Jan.1 st 2009;

Annex 2

Costs and benefits of the inadvertent de-carbonisation of a post-transition economy

Romania's economy might be still one of the most energy intensive in the EU but it is not one of the most carbon-intensive. A process of carbon emissions reduction has occurred during the Plan to Market Transition, only to be continued in the years of strong growth preceding the violent shock of the current worldwide economic depression (crisis). Carbon emissions were already down by 35% in the year 2000 against their 1990 level, following the radical restructuring of the Romanian economy that occurred during the late 1990s. By 2004, when the EU accession negotiations were completed, their level was down by 41%. At the height of its pre-crisis growth with full 8% annual GDP growth, Romanian carbon emissions were down as against the same 1990 levels by almost 50%. Therefore, a massive de-carbonisation process had occurred and it is likely to continue apace, as the current crisis has been hardly affecting the country's industry. Of course, this process has been an inadvertent. Inadvertent as it might have been, this de-carbonisation of the economy has had and is still having its costs. This is not to say of course that benefits, some enfeebled, some others significant, are not there to be seen.

Our calculations have shown that the reduction of CO₂ emissions has proceeded at an average of 3.1 % per annum, around 70% of it has occurred actually during the 1990s. The sharp reduction in CO₂ emissions had a cumulative cost in terms of real GDP of around 22 %. This sharp drop has meant that in nominal terms, as expressed in US\$ at market exchange rates, the country's GDP has remained stagnant for a whole decade, hovering around the wholly non-European value of US\$33 billion. Practically for each metric ton of CO₂ reduced, the cost in terms of lost overall output growth has been, for the last twenty years, of 0.22 percentage point on average. Of course, this inadvertent de-carbonisation has also yielded significant benefits, as each metric ton of CO₂ that has been reduced afterwards has brought a gain of 0.37 percentage points in terms of output growth for the period 2001-2008 but this is in itself statistically insignificant.

When looking on the other side at the nominal GDP, which points to a country's wealth, then, the results of this radical and inadvertent greening look rather dismal. For the whole of the 20 year period we have examined, the fall in CO₂ emissions has literally wiped out on the average, for each metric ton shed, no less than USD 1.75 billion. Theoretically speaking at least, without de-carbonisation on such a massive scale, the country's GDP would have been today almost USD100 billion higher.

The most striking aspect relates to jobs. Our own calculations show that the total employment has dropped throughout the whole of the period by around 3 million, from a high of around 12 million in 1990 to around 9.3 million in 2008. The loss does not seem to be so large, but around 3 million of the employed population are small farmers and their aides working in subsistence agriculture. Thus, in terms of salaried employment, de-carbonisation has been actually more drastic, as each percentage variation of CO₂ emissions has triggered a 1.6 % reduction in salaried employment. In other words, while CO₂ emissions were dropping by 1%, around 130 000 salaried jobs were lost. Unemployment rate was increasing - one percentage point of CO₂ emissions reduction added 0.06 percentage point to the (national definition) unemployment rate. Therefore, if it would not have been or the restitution of

properties in agriculture in 1991, later to be widened by subsequent measures in 1998-2000, the social climate might have gone really volatile.

It is of course that the USD 100 billion of GDP “lost” is only theory. With the industrial mix the country had at the beginning of the 1990s, any competitiveness on the world markets and even a modicum of prosperity for the country’s citizens would have been illusory. It is actually precisely because this inadvertent de-carbonisation occurred that the economy became more efficient and household poverty managed a phased, though undeniable, decrease. Nonetheless, while prosperity has been on the rise, employment failed to respond commensurately. The job loss, at least for what we know until now, looks irrevocable. But as the loss of US\$ 100 billion of GDP is mere theory so are jobs that might have been preserved, would it not have been for the inadvertent de-carbonization of the economy. However, no one can deny that while those jobs were clearly unsustainable, it was their actual loss that triggered the massive wave of migration depleting the country of valuable human resources while, in the meantime, inducing a massive disequilibrium on its small and *disproportionately open* labour market. As such, gain and loss almost look like a match one for another.

It is difficult to outline the consequences of such inadvertent and systemic de-carbonisation. What it is likely to happen and recent results from the CEDEFOP-led forecasting exercise only show it too clear, is further de-carbonisation. In practice, the country will lose all of its polluting industries. It will turn into a type of a service-based economy, but not based on higher-end of service sector. As a national economy, it would look entirely dysfunctional and vulnerable, but, it will be completely integrated into the Single Market by that time (2020-25). Glancing into the future has become increasingly difficult, and given the current extreme economic turmoil, “further greening” is going to reach the Romanian economy via the deeper integration into the Single Market.

The table below points to the inadvertent greening (de-carbonisation) of the Romanian economy throughout the last two decades and its effects/links to a selected set of macro-economic variables.

	CO2-emissions (M.to.)	as of 1990=100	%change (YoY)	GDP%	Nominal GDP (US\$ bn.)	Total Employment (mil.)	Unemployment rate (national definition) (%)	Total No. of Salary employees (mil.)	Liberalisation Index
1990	155,1	100	0	-5,6	29,20	12,3	1,3	8,73	0,22
1991	148,59	95,80	-4,20	-12,9	26,10	10,7	3	7,38	0,58
1992	142,07	91,60	-4,38	-8,8	24,40	9,7	8,2	6,50	1,03
1993	133,85	86,30	-5,79	1,5	25,90	10,06	10,4	6,44	1,61
1994	129,90	83,75	-2,95	3,9	30,00	10,8	10,9	6,86	2,29
1995	127,41	82,15	-1,91	7,1	35,50	11,1	9,5	7,28	3,00
1996	122,43	78,94	-3,91	3,9	34,00	10,9	6,7	7,03	3,72
1997	115,75	74,63	-5,46	-6,1	32,10	11	6	6,86	4,47
1998	111,80	72,08	-3,42	-5,4	31,30	10,8	6,3	6,69	5,27
1999	103,40	66,67	-7,51	-1,2	34,20	10,7	6,8	6,29	6,15
2000	99,96	64,45	-3,33	2,1	37,40	10,7	7,1	6,27	7,05
2001	97,01	62,55	-2,95	5,7	40,10	10,6	6,6	6,26	7,97
2002	95,58	61,62	-1,47	5,1	45,80	9,2	8,4	5,96	8,47
2003	92,80	59,83	-2,91	5,2	59,50	9,2	7,58	6,06	9,17
2004	90,40	58,29	-2,58	7,36	81,10	9,15	6,77	6,25	9,62
2005	86,62	55,85	-4,18	4,65	99,00	9,14	5,83	6,21	10

2006	83,99	54,15	-3,04	7,73	125,00	9,31	5,56	6,47	
2007	81,15	52,32	-3,38	5,98	165,86	9,35	4,34	6,58	
2008	78,35	50,51	-3,46	7,38	220,21	9,36	4,01	6,69	
2009	74,56	48,07	-4,83	-6,00	171,00	9,28	6,29	6,59	

Notes to the table:

- The Liberalisation Index is a measure of the progress in the Plan to Market Transition, on a cumulative scale from 0 to 10. Therefore, the value “10” conventionally indicates the “end of Plan to Market Transition”.
- The Year 2000 is marked in red as the year when finally the economy returned to growth after the completion of radical reforms (attainment of the critical mass threshold in the Plan to Market Transition process).
- Values for 2009 are estimates. All other values have as sources the National Institute of Statistics of Romania and the National Agency for Employment.
- The data on CO2 emissions (total) comes from the UNDP Human Development Report 2007/2008 “Fighting Climate Change: Human Solidarity in a divided world”. In the original text values are only for 1990 and 2004, the rest have been estimated by Dr. Catalin Ghinararu and are appropriately marked in italics. Values after 2004 are projected estimates of Dr. Catalin Ghinararu and are as such marked in bold italics.