

**Green transformation: challenge to energy
intensive regions:
The case of the Ruhr region and further
examples from Europe**

ACW meeting

November 2016

Vancouver, BC, Canada

**Bela Galgoczi, European Trade Union Institute, Brussels
bgalgoczi@etui.org**

etui.

Background: Revision of growth model

Long term challenge: a fundamental revision of previous growth model: transition to low (zero) carbon economy

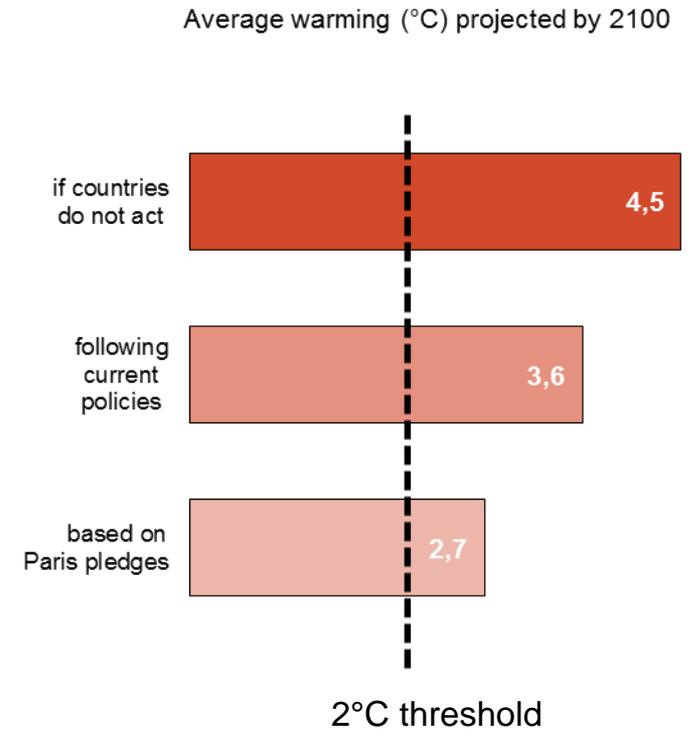
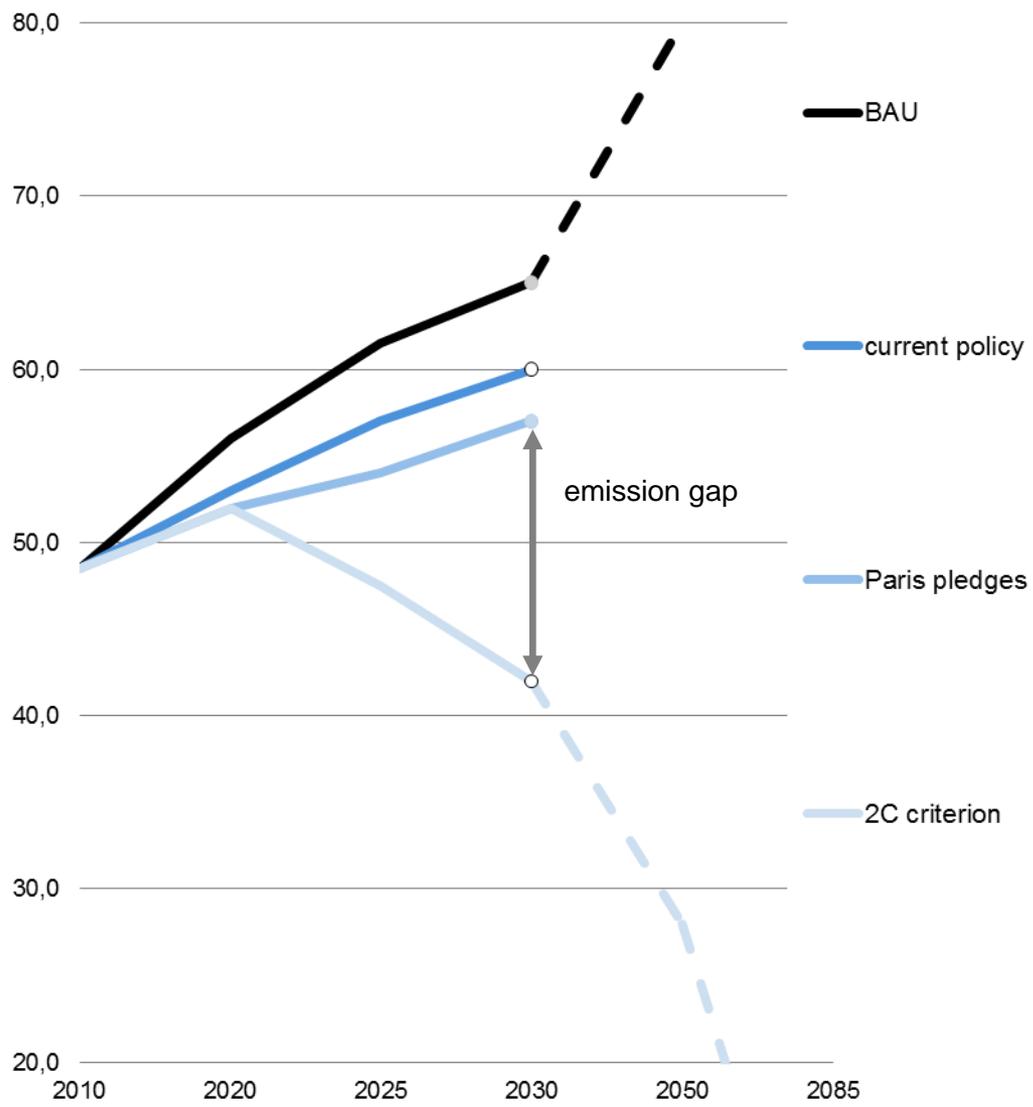
This means: a restructuring of the entire economy

After COP21 this is more valid then ever: Paris was a strong reminder that the world (and Europe) is far away from the 2C pathway: the emission gap is HUGE

The EU needs to do twice as much effort as had done between 1990 and 2020 and reach carbon neutrality and the exit from fossil fuel by 2050!

- Overall employment effect might be positive, but regional impacts may be severe and need to be addressed
- restructuring of traditional sectors /also job losses/

Global CO2 emission scenarios after Paris COP21



Source: UNEP, 2015

Source: Climate Action Tracker, 2015



The challenge of the transition to a low-carbon economy on jobs in Europe

Implementing climate targets will genuinely transform jobs, in quantitative and qualitative terms:

There is a consensus that although climate policies would have no major aggregate impact on the number of jobs, a massive redistribution of jobs is to be expected:

- - New jobs are being created,
- - Existing jobs will be transformed (`greened` jobs)
- - Jobs will also disappear
- - Job quality (not just green, but decent)!
- - With huge differences by region, branch and LM segment!

Sustainable industry

- **Industry is key competence > ‚desindustrialisation‘ – no option!**
- **Energy intensive industries and regions also need to transform (with potential job losses and transformation of employment structure)**
- **This is a conflictual process with a clash of short term and long term interests – also a challenge for trade unions**
- **The crisis makes it more difficult: signs of backtracking (low investments, reversal in clean energy, fossil fuel ‚revival‘) –**
- **„any job here and now“ – is the demand of the hour?**
- **The case of the Ruhr region shows that the transformation of a traditional energy-intensive and fossil fuel dependent industrial region towards a low carbon knowledge based economy is possible and delivers important lessons**
- **BUT we do not have 50 years for this!**

Ruhr: an iconic industrial region – structure of presentation

The Ruhr region used to be one of the most important industrial regions of Europe. Based on coal mining and steel it had been the major supplier of the German military machinery in two world wars. One of the aims of setting up the predecessor of the European Union, the **European Steel and Coal Community** (ECSC) in 1951 was to "make war not only unthinkable but materially impossible" /Robert Schuman/ and bring the Ruhr under community control.

- The transformation of this region delivers lessons, how to manage a long term fundamental restructuring of a mono-industrial region
- Blocking factors; role of social dialogue, strategic co-operation of all actors, analysing pitfalls, failures and traps
- What were the key factors in the success at last
- ₆ Lessons for regions facing similar challenges

Main issues

- the decades-long transformation of the Ruhr region as one of the exemplary cases for managing change from traditional industry based, resource and material intensive economic activity towards a knowledge based resource efficient economy
- how to manage it in a socially balanced way where the inevitable burdens and costs are shared by all major actors in a just way. The Ruhr experience also delivers a lesson from point of view of 'just transition'. The economic diversification of the once mining dependent Ruhr region had been actively managed by the federal and regional governments and restructuring processes were embedded in an industrial relations culture marked by the strong role of workers participation – BUT this was all NOT ENOUGH for the final SUCCESS and BREAKTHROUGH

Long term employment changes

- IN FOCUS: changes in employment, the applied structural and industrial policies, the social plans and the role of the main actors.
- The case of the Ruhr delivers lessons not just because of its outcome and the difficulties faced during the process, but even more so through the ways it happened, in close co-ordination and co-operation between the major actors
- Between 1960 and 2001, the employees in the mining industry had been reduced to 10% (39.000) of the employment level of 1960 (390,000), while the output level fell to almost one sixth from 115.4 million tons in 1960 to 20 million tons by 2001. By the early 2000s the share of miners in the total employment in the Ruhr region made up just about 2.5% of the workforce - equivalent to approximately to employment in car repair.

Employment in coal mining, Ruhr region, Germany

Number of employees in coal mining in Germany (1957-2013) in thousand

1957	1965	1970	1980	1990	1995	2000	2005	2010	2012	2013
607.3	377.0	252.7	186.8	130.3	92.6	56.1	38.5	24.2	17.6	14.5

Source: German Coal Association, 2014

Employment structure by broad economic sectors

Employment structure in the Ruhr Valley and in the Federal Republic of Germany (West) between 1961 and 2000 (%)

sector	Primary (Agriculture, mining)		Secondary (Industry)		tertiary (services)		Unemployment rate (%)	
	Ruhr	FRG	Ruhr	FRG	Ruhr	FRG	Ruhr	FRG
1961	13,6	2,4	61,3	46,6	36,3	36,8	n.a.	0,5
1970	9,1	1,5	58,4	49,4	40,0	41,5	0,6	0,5
1980	5,3	1,4	51,7	45,3	47,0	49,4	5,3	3,5
1990	3,6	1,2	44,4	40,6	54,4	55,8	10,8	6,6
2000	2,5	1,2	33,3	33,5	65,4	64,0	12,2	8,1

Source: RVR Databank, 2014

Main stages of structural change at Ruhr:1840-2000

Main stages of structural change of the Ruhr

Period	Phase	Characteristics
Up to 1840	Pre-industrialisation	Small coal mines, iron and textile factories; Agricultural areas with low population density
1840-1914	industrialisation	Large-scale coal mining and development of coal chemistry; Mass production of iron and steel; Strong immigration
1894-1914	Industrial peak with highest growth rates	
1914-1945	First signs of the crisis	World Wars I and II, economic depression, dismantling product lines after WW2 End of product cycle in coal mining
1945-1957	Rapid growth	Temporary demand pull due to post-war reconstruction and the effects of the Cold War
1957-1990-s	Restructuring and transition with lock-in	Crisis of coal mining and closure of pits: international competition and location disadvantages due to changed technology; Steel crisis in 1974 with overall decline of the region; A locked-in situation into steel and coal.
From the 1990-s on	Diversification, re-industrialisation	New frontiers in knowledge based economy, renewable energy, eco-industry; Industrial heritage

Source: Bross, Walter 2000, Hospers 2004

Blockades of structural change

Factors that impeded and delayed the restructuring in the Ruhr

- **The property blocking:** in fear of new competitors on the labour market the regional companies retained their large properties or sold them at excessive prices. New investors were thus being kept away.
- **The education blocking:** Up to 1964, there was no university in an area with 5.4 million inhabitants. Since Bismarck's times universities and students have been seen as sources of unrest unwanted in Germany's economic heart. In the 1970s and 1980s, a series of universities had been founded, establishing a knowledge base.
- **The lost ability of innovation:** The mono-structure of the coal and steel industry requested highly specialised suppliers. The amounts and the qualities of the materials, machines and services to be delivered were precisely planned. Suppliers were little inclined to improve and to innovate, the ability of innovation could not sufficiently be developed in the small and medium-sized firms that otherwise could have become the engines of structural change.

Diversification - reindustrialisation

- Firms such as RAG, Thyssen and Krupp diversified beyond coal and steel and invested in like plant engineering, environmental technology and control services. Today these activities make up about two thirds of their turnover.
- In parallel local authorities played an important part in bringing about a “break-out” from the Ruhr’s lock-in situation. In 1984 the State of North-Rhine Westphalia changed its industrial policy with a focus on environmental technology.
- The most prominent example of genuine re-industrialisation (‘neo-industrialisation’) has been the **diversification strategy into the field of environmental technology**. Competence in this field has its roots in the local coal and steel industry that was constantly in search for innovative ways to keep pollution levels as low as possible.

Co-operation – bottom-up initiatives

- Due to the strict environmental rules and the high demand for clean technologies among local firms, the Ruhr could accumulate much expertise in how to counter environmental damage. By now, **the Ruhr has grown into the centre of environmental technology research** in Germany. The cluster has created new employment in the region as well: about 100 000 people were working in this branch by the mid-2000s. Local firms, universities, research institutes (e.g. the Soil Protection Centre and the Environmental and Packaging R&D Centre) were involved. The Ruhr has developed a **comparative advantage in energy supplies and waste disposal**. Due to the massive amounts of energy resources needed and waste produced by the coal and steel plants, **R&D in the field of renewable resources, recycling and waste combustion** was stimulated from a relatively early period on.

Co-operation – bottom-up initiatives

- a bottom-up approach was chosen instead of the previous top-down strategy. The initiative IBA (International Building Exhibition, Emscher Park), which lasted from 1989 to 1999, was a focal point for this shift towards decentralising responsibilities in matters of structural change in the Ruhr. This public-private project was aimed at the **economic, ecological and social reconstruction of a densely populated area of 800 square kilometres** near the river Emscher that had suffered much from industrial exploitation.
- 35 Cities and three municipalities presented the **“Concept Ruhr” the first initiative for the sustainable urban and regional development of the whole Ruhr Area**. The “Concept Ruhr” focuses on the “Ruhr-basics” - five guidelines for the development in the next decade- and includes 274 projects with a total investment of EUR 6 Billion.

New technology with roots in mining industry

- Many of the **components of renewable energy technologies originate from mining technology**. Two of the world's leading producers of wind turbine parts, Voith Turbo, BHS Getriebe and IBC Wälzlager GmbH were originally producers of coal-mining machinery. Siemens once produced conventional coal-fired power plants for the Ruhr area, and now the company is developing biomass generators. Instead of helping companies dig for coal, mining suppliers like Teramex are providing **drilling machinery for geothermal energy**.

The role of social partnership

- the main actors of the economy, the regional government, municipalities, employers and trade unions were closely acting together throughout the post war decades in managing the economy and its transformation. Germany and Rhineland capitalism had been famous for its co-operative industrial culture where co-determination of employees is a core value. Co-determination in the German coal and steel industries has a qualified version, 'Montan-Mitbestimmung'
- Coercive institutional co-operation may also lead to blockades and to a lock-in situation, as we have seen in case of the Ruhr for almost two decades (from the mid-sixties to the mid-eighties).

Just transition

- employment in mining in the Ruhr area had gone through a radical downsizing during the last decades, from 473 thousand in 1957 to 11448 by the end of 2013.
- **In 1993 that the bargaining parties first signed an agreement guaranteeing a socially responsible approach to the manpower restructuring programme.** The workforce agreed to forgo a wage increase and in order to avoid compulsory redundancies a work redistribution programme – referred to as ‘free shifts’ was introduced.
- A personnel restructuring process of such a magnitude requires a targeted and coordinated set of statutory, collective-bargaining and contractual regulations and initiatives. Early retirement has been the central element based on the transition payments system (APG) for coal industry employees that the state legislators introduced in 1972. A monthly-paid financial bridging support is made available for a maximum period of five years to workers after early termination of employment and until they first qualify for the pension insurance scheme. All employees who lose their jobs before 31 December 2022 are entitled to the scheme.

Just transition

- Measures were also taken for facilitating the labour market transitions of dismissed workers. In larger cases this was done via targeted agencies that specialised for employment promotion and training (Beschäftigung und Qualifizierungsgesellschaft).
- Coordination with the employment office about the qualification goals depending on local conditions and the potential / current labor market needs in viable areas
- individually designed training and counselling is matched to company demand
- the Ruhr restructuring experience also showed that a complex process of restructuring from a resource intensive industrial base towards a green resource-material and energy efficient economy needs a comprehensive policy framework.

Trade union role: the positive agenda: active policy role and social dialogue to meet the challenge

Trade unions are committed to more ambitious climate policy at the same time demand a framework that provides a balanced approach: **just transition**

This makes a comprehensive policy approach necessary: climate + employment + training + social + industrial policy

Such a comprehensive policy framework does not exist yet

Current employment policies are not fit to cope with the more ambitious climate policy that would be needed for the 2050 targets

Managing labour market transitions would need a European Employment Fund for the Green Transition (like Globalisation Adjustment Fund)

Just burden sharing during the transition - job quality and managing job transitions

ETUC project and case studies: Low carbon policies in seven industrial regions across Europe

The regions involved: Antwerp (Belgium), Asturias (Spain), Norrbotten (Sweden), North-Rhine Westphalia (Germany), Silesia (Poland), Stara Zagora (Bulgaria), Yorkshire & the Humber (UK);

Highlights of the results:

Two faces of the transformation (a polarised picture):

Innovative and ambitious with no major threat on employment:

Sweden, Germany, Belgium

Locked-in into coal based economic structure with no short term alternative, concerns about mass job losses: Spain, Poland, Bulgaria

An interim solution: in UK carbon capture, transport and storage seemed to offer a long term solution, but questioned now

ETUC project and case studies: Low carbon policies in seven industrial regions across Europe

Good practice cases:

Antwerp:

- The creation of Blue Gate Antwerp, an industrial eco-park designed to create a green industrial zone with negative carbon emissions, recycling and the minimisation of industrial waste products (closed cycle).
- Research on capture, use and storage of CO₂ and methane (CH₄). CO₂ purification plant, identifying possible storage options in the North Sea and looking into industrial uses for recovered gases.
- The ECLUSE project, to provide heat to 6 companies in the chemical cluster through a waste-to-energy plant. Use 80 to 90% of the energy produced, reduce CO₂ emissions and generate close to 5% of the green energy produced in Flanders.

ETUC project and case studies: Low carbon policies in seven industrial regions across Europe

Good practice cases:

Norbotten:

- The implementation of an experimental blast furnace, aimed at conducting research on top gas recycling. The work carried out has helped to identify a potential reduction of 24% in emissions associated with the process and of 76% in the case of carbon capture.
- The Stepwise project, financed by the European Horizon 2020 programme, converting off gas from blast furnaces into hydrogen and nitrogen-rich fuel.
- The use of biomass in the direct-reduced steel process, the region's participation in the BASTOR CO₂ capture project, and the use of residual heat produced by metallurgy in the district heating system.

ETUC project and case studies: Low carbon policies in seven industrial regions across Europe

Good practice cases:

Germany:

- Investments in R&D and product and process innovations in the mechanical engineering sectors, and in the chemical industry.
- Dialogue Platform (state, community organisations, universities, social partners, NGOs) bringing together multiple industrial fields (chemistry, steel, aluminium, glass, cement and paper pulp)
- The development of industries providing equipment and components for wind energy (50,000 industrial jobs at the end of 2013), advanced thermal insulation materials for buildings, energy-saving electrical and electronic equipment.
- Low-carbon chemical industry innovation park in Dormagen