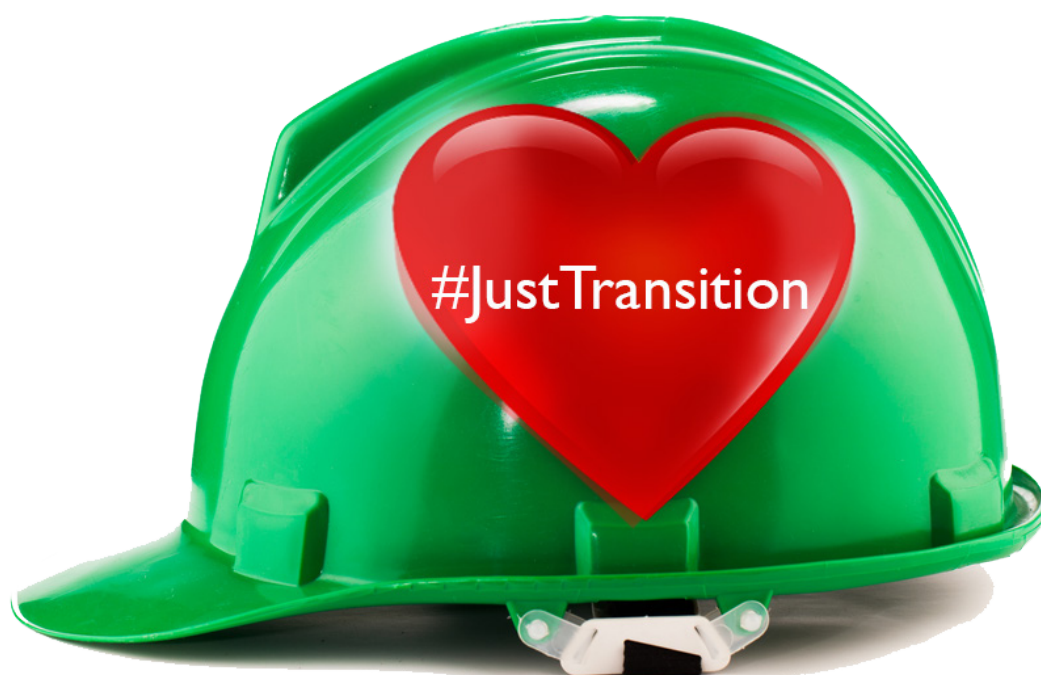




Integrating the 'Just Transition' into Europe's industrial, climate and energy framework





E3G

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Integrating industrial, energy and climate policy with a change management process

“By failing to prepare, you are preparing to fail.”
Benjamin Franklin

The perception of conflict between society and environment on the one hand and jobs on the other is the key barrier to overcome if Europe is to achieve sustainable growth and remain competitive. Considerable time and political capital is spent protecting against possible risks to competitiveness impacts, at the expense of investment in sustainable solutions that create decent jobs, boost employment and sustainable development. The lack of an integrated and proactive industrial, energy and climate policy lies at the heart of the problem. Specific attention is required for those sections of society and industry that have to transition the most. The lack of inclusive engagement and policy could provide fertile breeding ground for fear and resistance to change, especially for communities that cannot see their future role in a sustainable economy or are concerned that support may not be timely, adequate and effective. Much deeper structural changes, which are already redrawing Europe's socio-economic fabric, are likely to exacerbate this impasse.

Europe is forecast to undergo profound change over the coming decade as it comes to terms with a number of critical challenges such as energy infrastructure upgrading, adaptation to climate change, changing global economic trends and the economic recession which, according to the European Commission, is a 'moment of transformation' for the economy as it 'exposed structural weaknesses' the type of which it has not seen before in its history.¹ The European Commission highlighted six key drivers for this change:

- i) Comparatively lower GDP growth rates based on numerous factors including under investment in R&D;
- ii) Structural unemployment and labour productivity, especially the lack of science, engineering and mathematics students;
- iii) Accelerated demographic ageing in which every year two million Europeans reach the age of 60;
- iv) Increased international competition particularly as China, India and South Africa continue to invest in R&D to move up the value chain;
- v) Problems with international finance especially 'bubble-driven growth,' and
- vi) Climate change and resource challenges where 'strong dependence on fossil fuels such as oil and inefficient use of raw materials expose our consumers and businesses to harmful and costly price shocks, threatening our economic security.'²



Europe's current and future prosperity depends on how well it manages these challenges as the consequences of failure could be dire. Jean-Claude Juncker, President of the European Commission, stressed that "Europe is finding it is often ill-prepared for the global challenges ahead, be it with regard to the digital age, the race for innovation and skills, the scarcity of natural resources, the safety of our food, the cost of energy, the impact of climate change, the ageing of our population or the pain and poverty at Europe's external borders".³

The key to timely success rests in specific support measures to aid sectors and regions that will find the transition harder. To address this problem, we propose establishing 'Just Transition' committees which operate at regional, national, EU and sectoral levels to identify the full scope of skills, technology and sustainable investment assistance and importantly, manage the transition of carbon-intensive regions to sustainability. The success of this change management process rests on the creation of a Just Transition Fund, which directly supports workers skills and retraining during the transition as well as creating new local economic models by directly financing investment in clean regional energy infrastructure. Sustainable Energy Action Plans (SEAPs) managed by the Covenant of Mayors are the perfect vehicle for these regional investments. The Just Transition Fund can source of finance which can either come from the Emissions Trading System (EU ETS) or various parts of the Multi-annual Financial Framework (MFF) and other public and/or private funds. Without this holistic approach to building a positive future, there is a danger that Europe will loss ground to competitors and be subjected to considerable global structural risks.

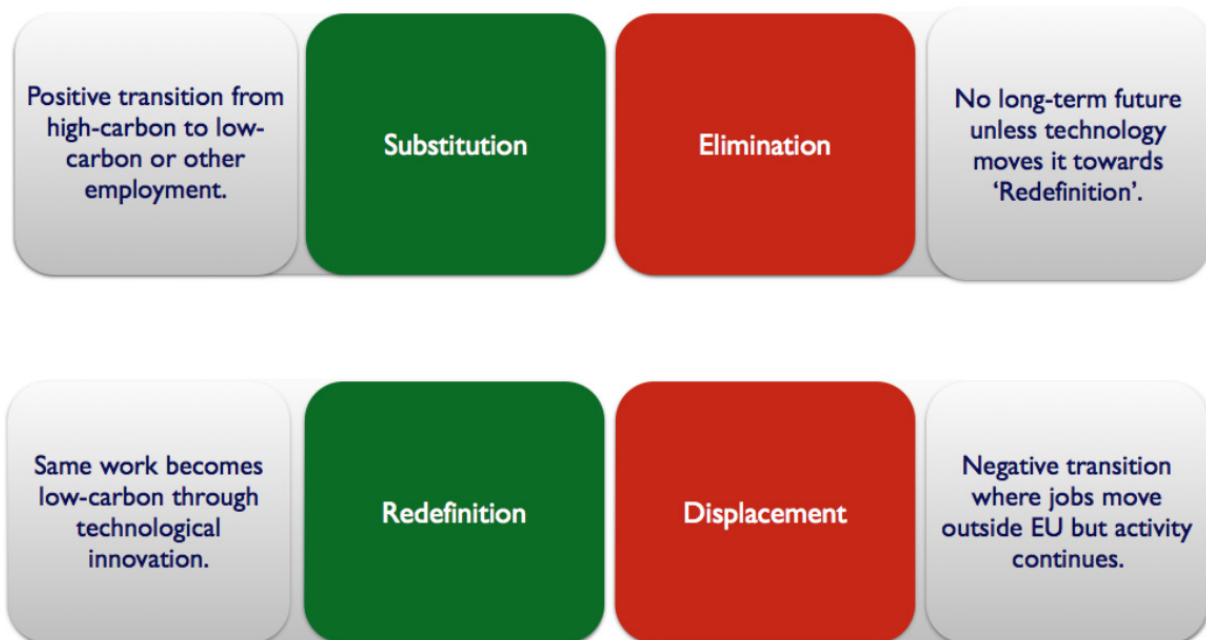


Applying the ‘Just Transition’ framework to EU policy

“The real choice is not jobs or environment.
It is both or neither”.
Brian Kohler, 1998

Coal and steel were the genesis of the European Union in 1951. Both face bleak short and long term futures. Economic restructuring, changing supply and demand patterns and incompatibility with a resource and climate constrained world will intensify the profound changes already occurring for companies ‘coal-based’, workers and the regions. The ‘Pathways for high-carbon workers’ tool, displayed in Figure 1, based on analysis by Anabella Rosenberg from the International Trade Union Confederation (ITUC), outlines scenarios faced by workers in these sectors. This tool can be applied to other industrial workers.⁴

Figure 1: Path-ways for high-carbon workers



Managing this transition requires an inclusive, proactive and trustworthy platform. The trade union movement incorporated very legitimate concerns of high-carbon workers into this change process through the ‘Just Transition’ framework. The Framework is based on five principles displayed in Figure 2:

Figure 2: Five pillars of the Just Transition



- 1 .Consultation: Consultation between representatives from trade unions, business, government, regional bodies and civil society, on the shift to a green, low carbon economy, from the workplace to national government.
- 2 .Green and Decent Jobs: Investing in technologies and infrastructure to meet the sustainability challenges for a low carbon, resource-efficient future while creating quality jobs.
- 3 .
Green Skills: Government-led investments in education/training and skills programmes, from the workplace to national levels, to equip students and the workforce with the skills for a low carbon,
- 4 .
Respect for labour and human rights: Democratic decision-making and respect for human and labour rights are essential in order to ensure the fair representation of workers' and communities' interests. Strengthening worker information, consultation and participation rights to matters concerning sustainable development.
- 5 .
Social protection: Strong and efficient social protection systems in the transition to a low carbon economy.⁵

Because the Just Transition framework is best placed to manage the required change in an inclusive, accountable and equitable manner it should be placed at the heart of industrial, energy and climate policy. Equal attention needs to be placed upon creating sustainable regions.

Historic industrial transition has caused considerable long-term structural problems, especially in regions dominated by a single industry. For example, in France, coal mining was located in three areas - The Nord-Pas-de-Calais mining basin (50% of production), Lorraine (25% of production) and Centre-Midi basin (25% production). Closing coal pits in these regions led to dramatic population decline as citizens relocated (7% for Centre-Midi region but less so in other regions as they were more densely populated). Some localities still have high unemployment (Lens, Valenciennes with more than 20%). The same is true of parts of Spain - Asturias, Galicia, Castilla- León, Terner, Puertollano y Cataluna regions - which have been unable to adjust to new industry given the lack of attention focused on developing new regional economic models.⁶

The Covenant of Mayors launched a regional initiative to motor regional sustainable development. Over 6,109 regions, encapsulating 192,121,700 inhabitants, have signed up to the Covenant of Mayors' pledge to reduce CO2 emissions through regional energy investments, which in total over achieve the EU's 20:20:20 targets.⁷ To achieve these ends, Sustainable Energy Action Plans (SEAPs) have been developed identifying specific investments on energy system infrastructure and employment-rich household energy savings. These are a vital source of low-carbon regional demand for steel demand as well as other manufacturing products making SEAPs a real source of low-carbon industrial, energy and climate policy. Linking SEAPs with a direct source of financing will help build a sustainable future and manage the transition between high and low carbon Europe.

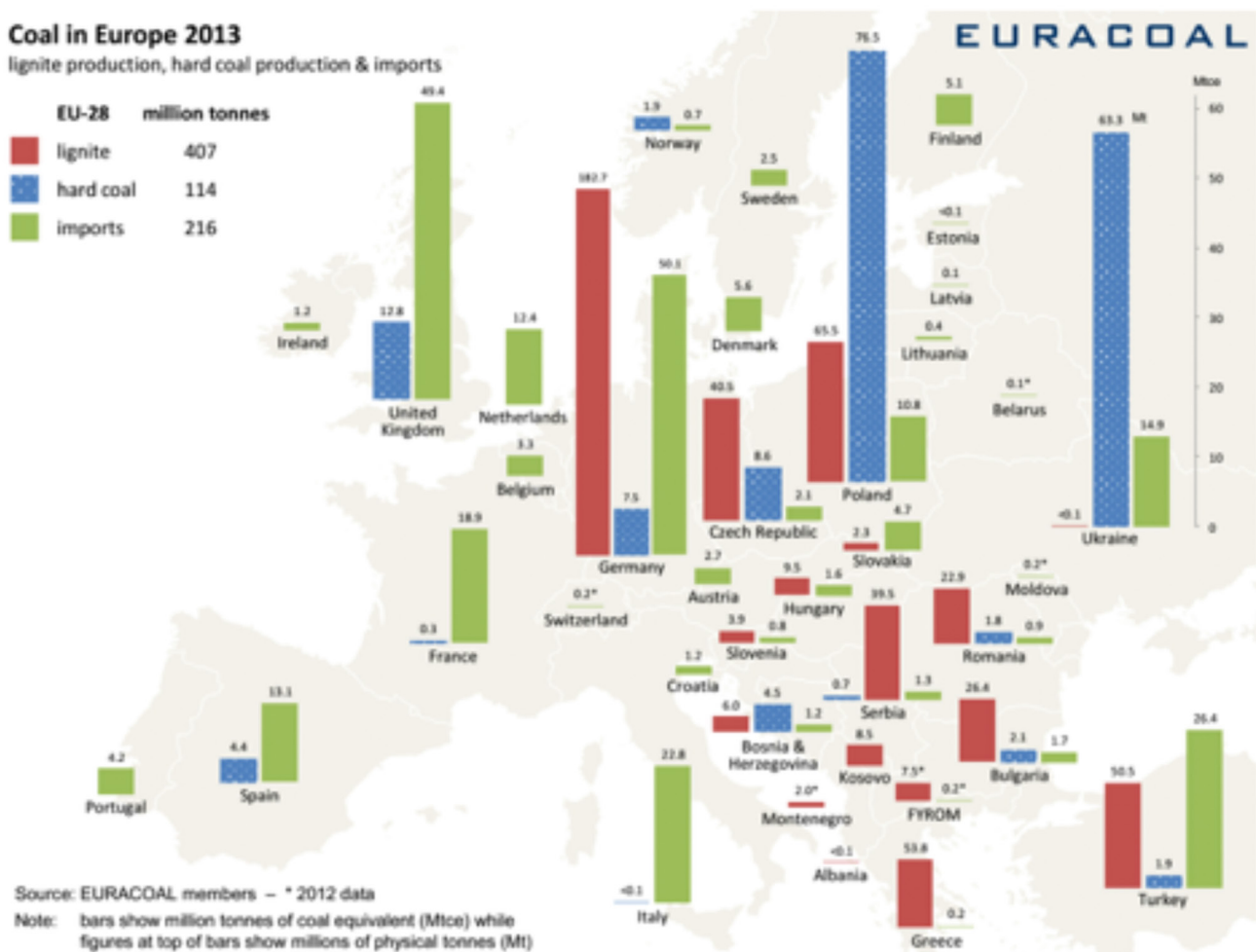


The future of coal production in Europe

Hard coal mining faces 'Elimination' as outlined in the Pathways for high-carbon workers tool unless it can operate on a competitive basis without subsidy and be made compatible within a carbon-constrained world. A lot depends on the speed at which carbon capture and storage (CCS) can be deployed and the future of the utility sector. Should leading electricity utilities shed their fossil fuel assets, coal mining in Europe is likely to decline even faster than the current trend.

Coal production in Europe has been declining for many decades. In the 1990s the main EU coal producing countries (Poland, Germany, Czech Republic, Romania, Hungary, Spain, United Kingdom, Slovenia and Slovakia) employed over 850,000 workers. Today, the European coal sector employs less than 170,000⁸, and produces less than 590 million tonnes. Coal imports, however, have constantly increased as domestic production declined. Since 2009 they have increased by 5-8% per annum⁹ and in some instances are the main source of supply as outlined in Figure 3.

Figure 3: Coal productions and imports, 2013.



Source: Euracoal, 2013

The main factors affecting domestic coal production are:

- **Restructuring and cheaper imports:** The European Union's Regulation 1407/2002, which governs State Aid to coal mining, allows a limited amount of national subsidy to maintain a confined level of indigenous primary energy source production.¹⁰ In return, governments have to restructure mines to improve their competitiveness, which means that uncompetitive mines should be closed by 2018. Subsidies decline on an annual basis to 2018 to ensure this does not cause competitive distortion.

The deepest reduction of European coal jobs took place in **Germany**, which had 260,000 workers in 1990 but 56,000 by 2007.¹¹ This is because German hard coal production is propped by substantial state subsidies, which are the largest state subsidy paid by the German Federal Government. Domestic coal mining is not likely to be competitive due to the greater geological depths coal seams are located in the country. Between 1994-2005 Germany spent €51.7 billion subsidies to maintain 38,500 jobs in its coal industry of which €34.9 billion covered operational losses. An additional €12 billion was scheduled to be spent from 2006 to 2010 to close down four out of ten mines (8.5 million tonnes of coal capacity).¹² In 1995 there were 19 hard coal mining pits. 11 had closed by 2007. The remaining eight should be closed by 2018 according to the Hard Coal Financing Act 2007 which stipulates abolishment of subsidies by this year. These closures also carry regional consequences as six are located in the Federal State of North-Rhine Westphalia, one in the Ruhr area and one in the Saar region.¹³ Pressure on the power generation sector, the largest demand for coal, intensified when the government outlined plans to reduce a further 78 million tonnes CO₂ on 3 December 2014.¹⁴ Should this lead to a reduction in domestic fossil fuel plant, it will further dampen demand the market for coal usage in Germany.

Like Germany, **Romania's** coal production is largely state driven. All six coal mining companies are owned by the state. Together they operate 36 mines located in three regions - Jiu Valley which houses hard coal reserves, Oltervia Basin and Plaiesti Basin. Lignite productions, after substantial reform, do not require state subsidy. However, hard coal production, which employed about 10,478 workers in 2010, requires major state involvement. Loss of coal mining jobs has devastated regions which solely centred upon this as their main source of economic activity. The Government, upon receiving State Aid approval from the European Commission in 2007 for €411 million, confirmed intention to close down uneconomic production by implementing Mining Law 85/2003. The Ministry of Economics and Finance expected 9,900 employees and 2,270,000 tonnes of coal capacity to remain uncompetitive and thus face closure.¹⁵

Poland, also, has witnessed considerable job losses in coal mining going from 338,784 workers in 1993 to 134,094 in 2007. A 60% decrease in the workforce. This is set to further decline as the government announced on 7 January 2015 that Europe's biggest coal mining company, the state-owned Kompania Węglowa (KW), announced closure of four mines with a loss of 4,800 workers in a bid to make it profitable again.¹⁶



The price of coal imports is considerably less than domestic production. In the US the price of coal between 2008 and 2013 was \$40 on average.¹⁷ In comparison, the price of domestic coal set by New World Resources Plc, the largest central and eastern European mine, was €52 per tonne on 7 January, 2015.¹⁸

- **Changing energy generation systems:** Coal was the largest source of input into the European energy system. However, since the 1980s other fuels, most notably natural gas, nuclear and recently wind and solar have started to eat up its market share for power generators. In Germany, the largest electricity market in the EU, fossil fuel power generation has been undergoing a transformation. E.ON, one of the largest power companies in the EU recently reformed itself into a low-carbon company focused on renewables, end-user services and efficiency. The fossil fuel element has been siphoned off into a new company due to its perceived risks and high costs.¹⁹ RWE, which is reliant on coal-fired capacity, is seeking significant state subsidies in the form of a 'capacity market' to keep its current fleet operational. This suggests that domestic demand for coal will continue to decline unless technologies such as CCS are applied in power generation. Euracoal suggests that CCS is the future for coal-fired power generation post 2020.²⁰ However, some of the most supportive CCS European power utilities recently pulled out of EU CCS initiatives on the basis the technology's cost being prohibitive at present.²¹

- **Air quality:** Coal emits sulphur dioxide (SO₂), an atmospheric pollutant that causes acid rain and is regulated by the Large Combustion Plant Directive (2001/80/EC). Geography determines the quality of coal for example the sulphur content of coal in the UK is high and therefore, to meet environmental regulations, lower sulphur coal is imported.²² Hard coal imports from Russia into Poland originate for the same reason. The Joint Research Centre estimated that current air quality legislation would reduce the current 400 GW of fossil-fired power generation capacity to 65 GW by 2030.²³

The general trend is a movement away from domestic hard coal production towards lignite. Hard coal demand will continue to be met through imports unless energy utilities diversify away from coal-based electricity generation. The future of lignite production rests upon the speed at which CCS is deployed and future carbon prices as lignite has greater CO₂-intensity than hard coal.



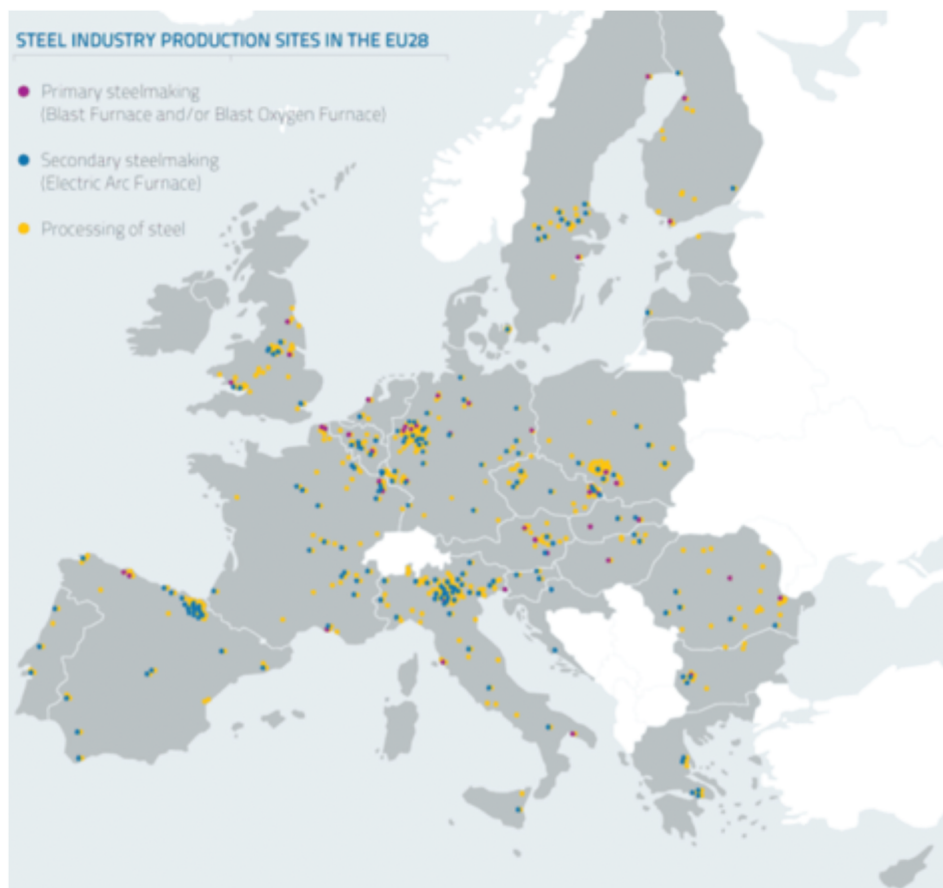
The future of steel production in Europe

The future of European steel production depends on how well it is able to develop new consumer bases as its current customers are either cyclical, in the case of construction, or moving to alternative products as is the case of the financially lucrative automotive sector. These drivers put considerable pressure on the economic viability of European capacity. The 'Pathways for high-carbon workers' tool indicates that workers face 'Substitution' to other sectors as excess capacity is closed. Primary steel operations depend on the availability of CCS technology to reduce climate change impacts whereas secondary steel has minor process emissions. Once the electricity in secondary steel is replaced by clean energy, these operations will have been 'Redefined' as outlined in the Pathways for high-carbon workers tool.

57% of steel demand emanates from three sectors - construction (27%), automotive industry (16%) and mechanical engineering (14%).²⁴ The EU steel sector has mirrored global trends for greater consolidation which has shrunk the number of companies by 1% on average since 2000 and the workforce by 1.5% per annum. This has led to market dominance by a few major companies of which ArcelorMittal is the largest producer with 55% of EU output.²⁵ Germany is the largest steel producing country followed by Italy, France, UK and Spain. These countries equated to 65% of EU steel production in 2009.

There are three types of steel producing facilities, Blast Oxygen Furnace (BOF) which uses coking coal to produce primary steel, and are therefore high GHG emitters, Electric Arc Furnaces (EAFs) which use electricity on secondary steel and integrated steel plants which combine both of the above. There are 38 BOFs in the EU28 as displayed in Figure 4. In 2013, Germany employed 87,323 steel workers, Italy 36,047, France 23,200 and Poland 22,200. The smallest workforce was in Portugal and Estonia which employed 180 and 16 respectively.²⁶

Figure 4: European steel production



Source: Eurofer

Factors determining the future of steel production in the EU:

- **Rise of new producers;** Developing countries, of which China is in the forefront, have dramatically increased their steel production capacity as most steel is produced for local consumption. Deutsche Bank concludes “the days in which a few industrialised nations dominated the world steel market are long past”.²⁷ This is going to lead to overcapacity, declining profit margins and implications for European production.
- **Significant global overcapacity but trade restrictions shield production;** Ernst and Young estimate 300 million tonnes global overcapacity needs to be removed from the market to allow steel production to be profitable.²⁸ However, access to markets is a crucial feature of profitability. The OECD ‘Global anti-dumping database’ highlights many restrictions to global trade for steel citing certification requirement for steel imports, tariff increases and quotas as means of protecting domestic markets. At the 76th OECD Steel Committee meeting in June 2014, the EU was highlighted as having the second highest number of trade restrictive complaints made against it.²⁹
- **Substitution;** Globally, the automotive sector, one of the most lucrative customers. It is increasingly displacing steel for lighter-weight aluminium in more fuel efficient vehicles. Recently, the Ford F150 Pick-up was redesigned using aluminium instead of steel.³⁰ Should this trend continue and gather pace, the steel sector could continue to lose significant market share.
- **New low-carbon markets;** An offshore wind farm consumes around 3,000 tonnes of steel on average.³¹ According to the European Wind Energy Association, 2,080 wind turbines are now installed and connected to the electricity grid in 69 offshore wind farms in 11 countries across Europe.³² Roland Berger, the management consultancy, estimated global energy efficiency actions to 2020 would generate nearly €450 billion potential sales revenue.³³ However, regulatory uncertainty is holding back these investments. Another example of the EU missing a key market for new high-quality steel is the lack of commercial demonstration of at least 12 CCS plants which was committed to in 2008.³⁴ To date only two CCS commercial demonstrations are being commissioned in the EU.
- **New entrants and business models;** During closure of large-scale operations at the ArcelorMittal Liege plant, workers and the regional government put forward a proposal to create a new steel company with a regional customer focus rather than relying on an international model that ArcelorMittal had introduced in 2003 which started the process of plant closure.³⁵ A similar story could exist for steel operations in Romania. Local demand from the Dacia-Renault and Ford car manufacturing sites is unmet because ArcelorMittal Galati did not upgrade facilities to meet their quality requirements. Instead, these car manufacturers import steel plates worth €100 million annually from Italy and Slovakia. An estimated €50 million would be necessary to enable the ArcelorMittal plant to produce uniform, galvanised, heavy steel plates to serve this demand according to local experts.³⁶
- **Applicability of CCS on BOFs;** Identifying which installations will not be able to accommodate CCS gives clarity and allows all relevant parties to define the timing of closure. CCS itself will require substantive amounts of steel which may help to balance will help to lessen the some of the blow.



Policy recommendations

- **Establish 'Just Transition' committees at an EU, national and regional level** to identify key high-carbon sectors and regions, map specific workforce and industrial transformation needs, outline adequate investment pathways and manage the transition.
- **A 'Just Transition' Fund:** This sets aside finance at an EU level specifically to manage 'Just Transition' committees tasked with sectoral and regional transformation investment and training. The Fund should receive initial capitalisation from at least 400 million EU ETS allowances which can be used to access private sector and public sector funding such as the European Multi-annual Financial Framework.
- **Linking the 'Just Transition' Fund to Sustainable Energy Action Plans (SEAPs):** The Just Transition Fund should be used to store ETS allowances that can be used as collateral to meet SEAP investment needs. The Fund will be used for targeted financial support from organisations such as the EIB as well as European Cohesion Funds. The Just Transition Fund could be managed by the EIB or another body that is able to provide funding of varying sizes.
- **Sustainable Energy Action Plans to 2030:** The Covenant of Mayors focuses on investment-related emission reductions up to 2020. Greater direction and investment certainty is required beyond 2050 to ensure that no region is left behind in the transition. SEAPs should include investment plans to ensure the region is greenhouse gas free by 2050 with a specific local target for 2030.
- **Commercial-scale technology demonstration:** Specific focus should be given to technology demonstration in the EU to maximise regional domestic investment.

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