Materials Processing Institute

RETHINKING INDUSTRIAL POLICY IN AN UNCERTAIN WORLD

A speech given at 'COP26 & Beyond', Institute of Materials Minerals and Mining, London

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Materials Processing Institute

Economic and Geopolitical Overview

The invitation for me to speak here at the Institute of Materials, Minerals and Mining comes at an astonishing time in our history and the message that you will hear from me today, is that if we do not grasp the importance of the events taking place around us right now, then we risk breaking the political consensus on climate change that has lasted for so long.

Everyone in this room understands the importance of the UK Steel industry, no one more so than the people of Corby, whose steelworkers manufactured the tubes used for the beds of Nightingale hospitals during the pandemic.

Now though, as we are just recovering from two years of the most devastating plague in a century, we are facing the greatest hostilities in Europe for 80 years. This is the moment more than ever, when, as a nation, we must wake up to the essential and fundamental underpinning that the steel industry gives to our security, our economy and our sovereign capability.

There is indeed little disagreement that steel and a domestic steel industry is fundamental to our nation and yet it remains the case that the business environment for steel in the UK is uniquely disadvantageous, as compared with our near neighbour competitors. To identify an industry as important and yet not to address the fundamental aspects holding it back, does seem to me to be a deep contradiction in policy and one that needs to be urgently addressed.

Unfortunately the war in Ukraine is likely only to make this situation worse. In our interconnected global economy, many can confidently predict the sharp rise in energy prices that will result from sanctions on Russia. Other essential commodities and raw materials, critical to our basic needs, our economy and decarbonisation ambitions, will also be affected, particularly metals, such as nickel which saw a huge price spike this week and is now trading at five times the price at the start of the year.

The impact of the increasing energy prices is already resulting in production stoppages with 900,000 tonnes of aluminium capacity and 700,000 tonnes of zinc smelting capacity in Europe having been brought offline, in addition to all Celsa steel melting operations in Spain and Pittini Group taking similar action in Italy.

Russia and Ukraine's roles as the "bread basket" of Europe has been well documented since the start of the crisis. Accounting for 20% of global corn exports, 25% of wheat and 80% of global sunflower oil, commentators have been right to highlight the impact on consumers.

However, it is less widely shared that between them, Ukraine and Russia also account for many of the metals we need for the supply chains of essential parts of our economy, including 43% of palladium used in catalytic converters.

Steel too, where the two countries make up the bulk of global exports of slabs, 250,000t of which are imported to the UK on an annual basis. The shortage of slabs that is likely to unfold on the global market will affect the price and availability of construction grade plate and strip steels. It is also the case that half of the UKs installed plate steel capacity used to make steel for construction, infrastructure and defence, is owned and operated by the Ukrainian steel producer Metinvest, who manufacture from their Spartan plate mill located in Gateshead.

This geopolitical backdrop means that the stakes are now higher than ever for the UK to create a decarbonised and financially sustainable steel industry.

What Decarbonisation Means for Steel

For steel, decarbonisation means ditching coal and switching to new technologies like hydrogen furnaces. To do this, and to do it quickly, most companies are recognising that the first step is moving to gas, immediately reducing emissions by 60%, before taking the final step to hydrogen.

In the last few weeks, three major steel companies in Germany, Russia and France have confirmed that they will become huge consumers of gas over the next decade. This is good for the environment as carbon emissions will be much lower than planned, but unless gas supplies increase then high prices will be here for a decade to come. It is though unacceptable to have industry and consumers bidding against one another for scarce gas supplies. Which government minister wants to mandate the forced closure of industry, the outcome predicted by INEOS boss Jim Ratcliffe, as the rest of us are crassly advised by energy companies to "do star jumps", or "cuddle our pets"? Unarguably, global warming is happening swiftly and life on our planet faces far-reaching and potentially catastrophic consequences without urgent action. Yet if families are unable to heat their homes in Winter, society will see the current widespread support for climate measures fall away.

I will not be alone knowing what it is like to grow up in a cold house in County Durham, everyone together in the only heated room, going to bed wearing layers of clothes, waking up to ice inside the windows. Today my family are more fortunate, but there remain too many children and elderly in this situation as parents struggle to choose between heating and eating.

Renewed investment in nuclear reactors, offshore wind, solar and hydrogen will help on the road to net zero and require immediate action. Energy efficiency measures like home insulation have an important role to play, but with 30% of UK electricity generated directly from gas, the only thing that will really make a difference is an increase in gas production.

For the UK this solves another vulnerability too - our reliance on imported energy. For years, Britain's energy generation has been offshored with as much as 30% of electricity now imported through giant undersea "interconnector" cables. This makes the UK uniquely dependent on other countries for the basics of our economy which is not a good position given the war in Eastern Europe. This insecurity was laid bare just last year when, in a fishing dispute, the French government threatened to cut off power supplies to Jersey.

Some may be concerned that increasing gas production could slow the pace of tackling the climate crisis, but I fear the greatest risk to tackling climate change comes from associating green policies with children unable to do their homework in freezing houses or the elderly spending days in bed just to keep warm.

Instead, by investing in gas as part of our green industrial strategy we can accelerate Britain's transition to a green economy, switch the steel industry more rapidly from coal and commercialise the technologies needed to make the hydrogen economy real.

By investing in domestic gas production, reversing recent short-sighted, cuts to storage capacity and boosting generation, the UK can take back control of our fundamental energy needs. This would strengthen British sovereign capability over our energy supplies and could reverse the flow in the undersea connectors by exporting electricity to Europe instead.

We know what a positive boost such a policy could deliver for jobs. As one of Europe's major centres for offshore engineering, the UK would benefit from a renaissance in gas production with high wage, high skilled private sector jobs through the supply chain: surely the best answer to 'levelling up'?

Rethinking Policy

In the last decade we have seen a financial crisis, Brexit, COVID, war in Europe, an emerging energy crisis and possible food crisis. This requires a major rethink in our approach to policy, with resilience having a much greater emphasis in our national thinking.

Just as the steel industry needs to ditch coal, so Treasury needs to ditch its slavish adherence to simplistic comparative advantage that says it does not matter whether assets vital to the national supply chain are produced at home or abroad as long as they are one penny cheaper than their competitor – and start prioritising instead our sovereign capability.

Indeed, many of the implications of Brexit, COVID and global insecurity should lead us to question the outdated political motivations of mandarins who have willingly signed off hundreds of billions of pounds to maintain sovereign capability in the UK banking system and deliver guaranteed liquidity for UK financial sector, but who seem to think citing "DeLorean" and the 1970s is an adequate rebuttal to an equally important goal to maintain sovereign capability in the real economy and the role of industry to protect Britain's independence from reliance on others.

UK industrial strategy should be set by the needs of our long-term political, economic and national security priorities, not by an idealised view of maximising day by day economic return. As John Maynard Keynes said: "Practical men who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist".

Our national resilience, our economy and our steel industry has suffered from our slavish approach to defunct economists and now is the time to make decisions that are genuinely in the national interest and prioritise steel as an essential component of our sovereign capability.

Materials Processing Institute

Chris McDonald is the Chief Executive Officer of the Materials Processing Institute. The Institute carries out industrial research and innovation in advanced materials, industrial decarbonisation, digital technologies and the circular economy supporting the materials, processing and energy sectors for over 75 years. Chris led the divestment and return to independent, not-for-profit ownership of the Institute in 2014.

Chris's background is in industrial research and manufacturing, where he has worked internationally. A graduate of Cambridge University, Chris is a Fellow the Institute of Chemical Engineers and of the Institute of Materials, Minerals and Mining. He sits on industrial advisory boards at a number of universities, including Oxford and Sheffield.

Chris has an interest in innovation management and industry dynamics and in addition to leading the Institute, he provides expert opinion and consultancy support to companies, institutes, Governments and public bodies in innovation and technology strategy and management. He also advises on the technical due diligence aspects of mergers and acquisitions.

Chris is prominent in the development of public policy, around innovation, steel, SMEs, where he works to support growth and inward investment. Chris is the policy chair for Innovation and Enterprise for the Federation of Small Businesses, a member of the CBI Regional Council and Shadow Monetary Policy Committee for the North East, the Chair of the UK Metals Council and a member of the Steel Advisory Board for UK Steel (EEF).

Chris is often called to commentate in the media on innovation leadership and the steel industry.

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Chief Executive Officer
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The Materials Processing Institute is an independent, open access and not-for-profit technology and innovation centre working with industry, government and academia worldwide. Support ranges from small scale, site based investigations, through to long term collaborative research programmes.

The Materials Processing Institute is expert in advanced materials, industrial decarbonisation, digital technologies and the circular economy, specialising in challenging processes, particularly those involving high specification materials, high temperatures and difficult operating conditions.

The Institute has over 75 years' experience as a leading UK technology provider. Extensive materials processing knowledge is supported by state-of-the-art facilities with a broad range of equipment, from laboratories through to demonstration, scale-up and production plant.

Scientists and engineers work with industry and apply their expertise to develop and implement robust solutions to research and development and improvements for products and processes.

Expertise is spread across a wide range of disciplines, including:

- Materials Characterisation, Research and Development
- Simulation and Design
- Monitoring, Measurement and Control in Hostile Environments
- Process Development and Upscaling
- Specialist Melting and Steel / Alloy Production
- Engineering / Asset Management
- Materials Handling
- Minerals and Ores

Research and project management teams deliver support across a wide range of industrial and manufacturing sectors including:

- Metals and Metals Manufacture
- Chemicals and Process
- Nuclear
- Oil & Gas
- Energy
- Aerospace and Defence
- Mining and Quarrying

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