THE WRONG DEAL FOR STEEL

The UK government's present investment plan for the steel industry will:

- Destroy thousands of jobs
- Undermine 'levelling up'
- Result in higher imports
- Erode UK sovereign capabilities

However, there is an alternative that would maintain production and employment….and still reduce carbon emissions.

What's being proposed?

The government is offering funding to the UK's main steel producers to invest in electric arc furnaces to replace their present blast furnaces and steelmaking plant.

In September, the UK government and Tata Steel agreed proposals to invest £1.25bn, including a government grant of £500m, in a changeover at the Port Talbot works in South Wales. It is expected that a similar deal will be agreed with Chinese-owned British Steel at the Scunthorpe works in North Lincolnshire, Britain's other big steel plant.

Investment on this scale in the UK steel industry is rare. It has also been widely trumpeted by the government and Tata Steel as a move away from carbon-intensive production and a big step towards net zero.

So what is there to complain about? Well actually, quite a lot…..

The downsides

1. HUGE JOB LOSSES

The Port Talbot plant currently employs around 4,000 workers. Add in contractors, suppliers etc. and you can probably nearly double that number. It's by some margin the biggest industrial employer in South Wales. Around two-thirds of the workforce at the plant would lose their jobs, and it would be a similar picture at Scunthorpe.

The job losses would arise because of the closure of the blast furnaces, their associated coke ovens and sinter plant, and the BOS plant where iron is converted to steel. Only the rolling mills would be unaffected.

2. A CRIPPLING BLOW TO LOCAL ECONOMIES

UK Steel – the employers association – has been keen to emphasise that the steel industry provides good jobs at wage levels well above local and regional averages. Local economies can't afford to lose this source of employment.

Port Talbot lies in a part of Wales that already has one of the UK's weakest labour markets. Unemployment is down but Port Talbot and the surrounding travel to work area continue to be plagued by high levels of economic inactivity and very large numbers out of work on benefits.

Scunthorpe's present-day economy isn't quite so weak but the town is relatively isolated – it's quite a commute to Hull, Grimsby or Doncaster.

Destroying so many jobs in these places works against 'levelling up'. Port Talbot and Scunthorpe already need new jobs *and* they need the jobs in the steelworks.

At Port Talbot, £100m has been set aside to assist redundant workers and a Transition Board has been established, chaired by the Secretary of State for Wales. One of the hopes is that the planned Freeport adjacent to the works will provide replacement jobs but the timescales look incompatible – even if the Freeport is a success (and that's a big 'if') it could be many years before there are large numbers of jobs on-site.

3. LOSS OF SOVEREIGN CAPABILITY

Electric arc furnaces recycle scrap steel. Unlike the current blast furnaces, they do not produce new metal from iron ore though they can use metal from a blast furnace (or DRI – see later) as feedstock. At Port Talbot the intention is to close the blast furnaces, so the plan is to use scrap.

The technology of electric arc furnaces is tried and tested. Recycling scrap is also a good idea and there's plenty of it – the UK presently exports around 8mt a year – though there's not enough to supply all the UK's present consumption of steel.

There would, however, be a huge loss of sovereign capability. If the blast furnaces at Port Talbot and Scunthorpe are closed as proposed, the UK will lose its ability to produce primary steel. This would be an unprecedented step for a significant industrial economy.

Steel is not like coal. The UK no longer produces coal, but it also barely uses coal any more. The UK does however continue to consume very large quantities of steel – indeed around half of the UK's present consumption (directly or in finished products) comes from abroad. Steel will continue to be needed in any modern economy for the foreseeable future. Should the UK, still among the ten largest economies in the world, really be opting out of primary steel production?

4. LOSS OF MARKETS

Recycled steel from electric arc furnaces is of a lesser quality than primary steel and cannot be used for all purposes. If the steel to be recycled is sorted better the quality problems ease but they do not disappear.

For example, if the Port Talbot plant moves over to electric arc furnaces it won't be able to supply the Trostre works in Llanelli in South Wales, which makes tinplate for food cans, where there are a further 700 jobs. There are also questions about whether it would be able to supply some of the steel needed by the automotive industry and currently processed at Llanwern, again in South Wales.

Markets that are lost because of an inability to meet technical standards would have to be supplied by imports.

5. ADDITIONAL IMPORTS

There is also a fear, at Port Talbot, that Tata Steel's intention is to close both the present blast furnaces in the near future even though it's only one of them that soon needs relining. There's a telling statement on the company's website:

> *"During the transition period and project phase, Tata Steel UK would work intensively to ensure uninterrupted and reliable supply of products to fulfil customer and market commitments including through the import of additional steel substrate from stable supply chains to feed its downstream units."*

In practical terms this means that Tata Steel might import steel billets from its plants in India or strip steel from its plant in Holland. Once the UK loses these markets to imports they will be hard to recover, especially if it is not in the commercial interest of Tata Steel to restore UK production.

6. NOT SO GREEN

Blast furnaces use coking coal, which produces carbon emissions. The UK government and Tata Steel say that the proposed investment will reduce Port Talbot's carbon emissions by around 5 million tonnes a year. This is misleading.

- If additional steel is imported, as Tata Steel admits, the carbon emissions are likely to be transferred abroad where they may even be higher if there are lower environmental standards.

- Electric arc furnaces consume vast amounts of electricity. For the foreseeable future the marginal source of UK electricity will be from gas, which itself produces CO2 emissions. The carbon footprint of steel production is simply shifted off-site, not eliminated.

The UK is investing heavily in renewable electricity (wind, solar etc.) with high capital costs but low running costs. On economic and environmental grounds it makes sense to use all the available renewable energy, and much the same applies to electricity from nuclear power stations. But at most times of the day and year there isn't enough power from these sources to meet the whole of UK electricity demand and this looks likely to remain the case until well into the 2030s. The extra electricity therefore comes from gas-fired power stations. Adding electric arc furnaces to the demand on the grid will at most times of the day and year lead to extra gas consumption.

There's an additional concern about the electricity. Will it be affordable? One of the concerns voiced loudly in recent years by steel producers is that UK electricity prices are well above the level in other countries. Could a situation emerge in which it simply wasn't economic to operate electric arc furnaces in the UK and all raw steel would then be imported?

What's the alternative?

Electric arc furnaces have a role to play, particularly in making use of scrap. But they should be only part of the jigsaw.

The key is investment in 'direct reduction iron' (DRI). This is best understood as the alternative to a traditional blast furnace. In a DRI furnace iron ore is heated to remove impurities before being transferred into an electric arc furnace for conversion into steel. The technology is proven, though not yet in use in the UK.

In the first instance a DRI furnace would need to use natural gas to provide the heat. This would still generate carbon emissions, but less than from the coke used in a blast furnace. In the longer term – UK Steel's 2022 plan for *Net Zero Steel* indicated that 2035 is a reasonable target – natural gas could be replaced by hydrogen. The advantage of hydrogen is that it does not produce carbon emissions at the point of combustion. In the short term, the constraint is the industrial-scale production of hydrogen.

Investment in DRI alongside electric arc furnaces would:

- Protect jobs.
- Retain sovereign UK capability to produce primary steel.
- Protect the present customer base and retain flexibility for the future.
- Reduce dependence on imports.
- Reduce carbon emissions in the short run.
- Eliminate carbon emissions once hydrogen supplies and green electricity are fully available.

How do we get there?

Step 1: Go ahead with investment in electric arc furnaces. Bearing in mind the need to secure all the relevant permissions and then undertake construction, there might be a five-year lag before plant was up and running.

Step 2: Begin the process of design and then investment in DRI to replace blast furnaces, which might take until the end of the decade.

Step 3: Maintain the existing blast furnaces in production until there is a new domestic supply of primary metal. This may require the relining of one or more furnaces – expensive, but a great deal cheaper than new plant.

Step 4: Fire the DRI plant initially by natural gas, then convert to hydrogen as soon as a suitable supply is available.

This strategy would be in the best interests of the UK economy.

Steel producers may not see things in the same terms. They are commercial companies with multinational operations. What ultimately matters to them is profitability, not where production takes place around the globe or indeed the scale of carbon emissions. Indeed, after incurring losses at Port Talbot, Tata may be only too pleased to reduce its commitment to UK production.

This points to using financial support for investment in steel as a lever. The steel companies should be required to embrace the preferred strategy for UK steel or forfeit funding.

The sums involved in government aid are already substantial - £500m at Port Talbot alone. Labour has talked of a public investment in steel of £3bn. With potential funding on this scale there should be more than enough scope to encourage steel producers to go down the preferred route.

Industrial Communities **Alliance**

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