# APPG ON HYDROGEN PANEL SESSION- GREEN STEEL

All Party Parliamentary Group on Hydrogen

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| Date | Tuesday 16th April |
| Time | 10:30-11.30 |
| Venue | Room R, Portcullis House |
| Chair | **Harry Methley,** Senior Counsel, Connect / **Alexander Stafford**, MP for Rother Valley and Chair of the APPG on Hydrogen |
| Speakers | • **Brett Ryan,** Head of Policy and Analysis, Hydrogen UK<br>• **Jo Milligan**, Head of Government Relations & External Affairs at GFG Alliance<br>• **Laith Whitwham**, Senior Policy Advisor at E3G |
| Theme/ Background information | In January 2024, Indian-owned Tata Steel announced plans to close both blast furnaces at Port Talbot steelworks, and install an electric furnace.<br><br>Approximately 2,500 workers from Port Talbot are expected to lose their jobs within the next 18 months. Its boss, TV Narendran, said the job losses were regrettable but necessary in the move to low-carbon steelmaking.<br><br>Under new plans, the company will invest £750m towards the restructuring and building of a less carbon-intensive, electric arc furnace on the same site, backed by a £500m government grant. The closures will leave the UK as the only major economy without the ability to make primary steel from iron ore and coal.<br><br>Tata has said it is committed to greener steelmaking in the UK, noting that it will 'look into' gas and hydrogen-based direct reduction of iron at Port Talbot. |
| Background Information for the Chair | The APPG on Hydrogen is chaired by Alexander Stafford, MP for Rother Valley. The APPG has a total of 21 parliamentary members. It provides a forum for MPs and Peers to engage with leading businesses and organisations to work to enable the UK to meet its decarbonisation targets through the implementation of hydrogen projects and discuss policy options to support these.<br><br>The APPG's sponsors are Cadent, the Energy and Utilities Alliance, Equinor, Johnson Matthey, Northern Gas Networks and SGN. |

**Harry Methley** officially opened the session, welcome attendees and introduced the session's speaker panel, before asking speakers for their thoughts on how the UK can use hydrogen to decarbonise the production of green steel.

**Brett Ryan, Head of Policy and Analysis, Hydrogen UK,** introduced Hydrogen UK and their work. He stated that there were geographical advantages of the storage of hydrogen which would allow Carbon Capture and Storage to help with scale to develop supply chains. He explained how the government will soon award contracts to fund hydrogen streams, and discussed how Hydrogen UK are examining hydrogen infrastructure including pipelines and storage to deliver at pace and decarbonise the whole industry.

**Jo Milligan, Head of Government Relations & External Affairs at GFG Alliance**, introduced herself and her work at the GFG Alliance which owns Liberty Steel and British Alvance Aluminium. She highlighted two ways hydrogen can deliver green steel in the UK; the first is using it as a low-carbon energy source that would replace methane in steel-making and the other is through powering electric arc furnace steelmaking in Port Talbot for example.

There is a capability gap due to a transition from using coal to make steel to using an electric arc furnace. It also raises the question of whether you can use hydrogen as a reducing agent to separate iron from iron ores. She also highlighted that a common question often asked is how financially and commercially valuable hydrogen is to the steel industry in the UK. Liberty Steel's electric arc furnace in Rotherham uses methane for 50% of its energy source and they aim to reduce emissions and their carbon cost exposure using hydrogen.

**Laith Whitwham, Senior Policy Advisor at E3G**, discussed E3G's work and how he leads on the UK's industrial decarbonisation at the think tank. The situation in Port Talbot indicates that the UK struggles to make high carbon steel on a competitive basis, and as a result what is needed is converting these plants to competitive low carbon steel production as well as prioritising local communities where employment is particularly concentrated in these steel plants.

He added that the demand for green steel is set to expand by up to 26% by 2030. E3G's ambitions also include expanding the grid, expanding renewable energy production, producing electric vehicles and batteries.

**Laith Whitwham** moved on to discuss the deal with Tata Steel to electrify and produce steel from steel scraps with British Steel announcing a similar proposal. He stated that it is crucial that the UK exhausts the secondary steel capacity and potential. In comparison to other countries, the UK needs a greater degree of funding support for a Direct Reduced Iron (DRI) facility and that one DRI could feed electric arc furnaces and help make the switch. There is pressure to deliver clean electricity at an affordable price for the steel sector but also at competitive volumes.

One area, where the government can foster change is providing a strong demand signal for green steel through using its purchasing power and incentivising the production of green steel in domestic markets.

**The Chair** then asked the speakers to comment on how green steel can contribute to both the net zero transition and the UK's national energy strategy.

**Jo Milligan** proposed that supply chain security is key as it enables energy security to be delivered. An attractive investment environment will also create competition and bring in supply chain security and energy security. Recently, the CEO of Tata Steel, TV Narendran, appeared before the Welsh Affairs Select Committee stating that they had invested £5 million to cover losses in the UK.

**Brett Ryan** explained that Hydrogen UK has undertaken research exploring the public supply chain strategy on behalf of Department for Energy, Security and Net-Zero (DESNZ), particularly the capacity, strategy and ability to anchor other parts of the supply chain. He agreed that the UK needs to provide value for money for public investment, but must also broaden the focus of where the value comes from, such as the other sectors hydrogen-produced steel is used.

He stressed the importance a carbon border adjustment mechanism (CBAM) is needed to avoid people "cheating the system" and bringing in higher carbon products from overseas.

Laith Whitwham explained that maximising electrification as a priority can help with the reliance and need for imported fossil fuels. The UK is exploring ways in which it can become a long-term hydrogen exporter.

Additionally, the UK could have a strong carbon capture sector and produce domestic benefits but this requires more action at the moment. This involves capturing market shares and getting the supply chain and skills in place.

Harry Methley opened to the floor for questions. One attendee asked if green steel can ever be economically effective on its own or if it will always require subsidies.

Jo Milligan replied that it is centred around the green premium. There will only be a green premium in the market if there is a value on the carbon that is embedded in the products. She proposes that carbon pricing and CBAMs are integral to creating the market for green steel. This is challenging for some of the products that Liberty Steel offers – as some are not made in a high enough volume, therefore the per tonne cost can be reduced and the UK is not doing this on a large scale.

She felt that CBAM does create a better business and investment environment in the UK, replacing high carbon imports and reducing carbon costs.

Brett Ryan argued that there is much that can be done to reduce the price of hydrogen such as bringing in large scale infrastructure and using economies of scale to help decrease costs. He added that importing electricity makes a significant contribution to the cost of the final product.

One attendee asked if wasted renewable energy can be used to produce hydrogen outside of standard production hours to reduce electricity input costs.

Brett Ryan suggested that it could be delivered through using excess generation capacity to produce hydrogen and storing it for long durations, particularly given that hydrogen is a strong energy storage medium. There is a lot of modelling on the systems approach involving the balancing of electricity with natural gas.

Jo Milligan also added that Liberty Steel produces pipes with it being one of the first in the UK to be accredited for a hydrogen pipeline. This can then take hydrogen to plants and reduce carbon emissions.

One attendee also asked about the steelworks at Port Talbot and what the potential role of hydrogen could be in adopting a new approach such as an electric arc furnace (EAF). They added that a direct-reduced iron furnace which uses hydrogen for power could be a possible approach. However, Tata Steel have responded, stating that the only way is to start with natural gas as a bridging fuel. They then asked if hydrogen can be a fuel for the electric arc furnace and why this has not been discussed further.

Jo Milligan responded that there are two roles for hydrogen in steel-making; one is in replacing methane in processing and the other is to reduce iron to create direct reduced iron and replace coal in the blast furnace.

Laith Whitwham discussed how the UK should look into a hydrogen-powered direct-reduced iron facility, running on natural gas initially and quickly transitioning to hydrogen. Notably, one DRI facility could supply the whole of the UK. He stressed that whatever approach is taken will require robust conditions for the company receiving any kind of grant funding. This is to avoid companies such as ArcelorMittal receiving funding for a transition to DRI production and abandoning their plans.

Laith also proposed that there are significant demand signals for green steel in the private sector with Swedish green steel makers having long-term contracts to provide clean steel for the automative sector. He concluded that a transition to green steel production is the only way to keep the steel sector in the UK producing.

One attendee proposed that the UK has made the steel sector uncompetitive due to policy choices with high energy prices and restrictions.

**Alexander Stafford MP, Chair of the APPG on Hydrogen** asked how far ahead Europe is in comparison to the UK on green steel.

**Jo Milligan** responded that there are headline projects around Europe but the UK is able to move further and faster depending on the right choices being made. This needs to be consistent and continuous. This is due to the UK already having the structures in place to facilitate a CBAM and being able to introduce it faster than Europe.

**Brett Ryan** agreed with this and reiterated that infrastructure is key to bring scale and reduce costs.

**Laith Whitwham** added that government commitment to the sector is needed. He stated that what the UK does not have is the policy direction and signals of other countries.

**Alexander Stafford MP** closed the meeting and thanked the speakers for their contributions.