

# HYDROGEN IN HEAVY INDUSTRY



All Party Parliamentary Group on  
**Hydrogen**

Minutes

<b>Date</b>	Monday 18 July 2022
<b>Time</b>	16:00-17:00
<b>Venue</b>	Hybrid
<b>Chair</b>	Jacob Young MP, Chair of the APPG on Hydrogen
<b>Speakers</b>	<ul style="list-style-type: none"><li>• Lord Jonny Oates, Vice-Chair of the APPG on Renewable and Sustainable Energy and the APPG on Net Zero</li><li>• Chris McDonald, Chief Executive Officer, Materials Processing Institute</li><li>• Matthew Day, Leader of EDF Renewables' Strategy and Hydrogen Team</li></ul>
<b>Theme and Background information</b>	The session focused on the use of hydrogen in heavy industry, exploring how hydrogen can be used in cleaning steel production, and the role its high calorific value, good thermal conductivity and high reaction rate can have in decarbonising this industry.

Jacob Young MP welcomed attendees and opened the discussion, stating that he was delighted to be joined by speakers from across industry such as the MPI and EDF. He introduced **Lord Jonny Oates, Vice-Chair of the APPG on Renewable and Sustainable Energy and the APPG on Net Zero.**

Lord Oates said this was an important time in politics with all parties working together to tackle issues, no matter which one is in power. He welcomed the Government's net zero plans, adding that the Liberal Democrats wanted to go further but complementing the fact they had agreement at least. He welcomed the Government's avoidance of taking a one party approach or a one solution fits all approach, adding that hydrogen will still be a key part of the journey to net zero. He said there is a huge amount of grey hydrogen being used at the moment that we have to get away from, whether that be with green hydrogen directly or via blue hydrogen. There is clearly a huge demand for hydrogen, part of a trioka of supply, demand and distribution. This is where the Government has a responsibility to set the agenda, and should look to work with other parties to move the hydrogen agenda forward.

Jacob said one of his first experience of hydrogen was seeing excess hydrogen used in industry, noting that in many cases hydrogen these days is going back to the future. He handed over to **Chris McDonald, Chief Executive Officer of the Materials Processing Institute.**

Chris stressed the need to move quickly on the use of hydrogen in industry, noting that the reality is we need more of basic materials, and that the world economy will create as much infrastructure in next 50 years as it has already, and we will need to decarbonise industry to ensure this can be done sustainably. MPI use DRI technology, combining hydrogen with natural gas to replace a standard blast furnace and eliminate the metallurgic core. He said the UK is in danger of being left behind by its peers, noting examples of hydrogen industry projects across Europe including Skaltskitter in Germany. The UK needs to move fast or it will be left behind, and the Government needs to invest in more facilities to make the process more efficient. It needs to be a multi-sector

approach, not just steel. There is a huge opportunity but also a huge threat – we need to act or else we lose vital industries essential to our economy.

Jacob thanked Chris and welcomed **Matthew Day, Leader of EDF Renewables' Strategy and Hydrogen Team**. He said EDF's flagship project is in Teesside, where 50% of their hydrogen is produced. They have an offshore wind farm off the coast of Redcar, and are developing a large scale solar facility that also takes power from the grid. He echoed Chris' point that it is critical to act now, and that for us to be successful it is important to decarbonise all sectors. EDF are collaborating cross-sector and it is this collaboration that is making efforts to decarbonise industry work. Places like Teesside work because they are port locations, which mean that maritime decarbonisation and work with ammonia are viable options. He said that we really need to act now, bringing forward the production of green hydrogen, working to decarbonise heavy industry, and bringing forward significant investment.

Jacob thanked Matt and opened the session up to questions. He asked about countries advancing in creating hydrogen furnaces – what's holding the UK back in comparison? Chris said in other countries, companies aren't investing in themselves, they're investing alongside government - there is far more cooperation than in the UK, which is why they're working more quickly.

Jacob asked if Chris saw a future for electric arc furnaces. Chris said he sees two routes for production of steel, either electric arc, hydrogen and steel ore, or recycling scrap steel with electric arc and hydrogen.

Jacob asked Lord Oates what the Government needs to create and intervene in.

Lord Oates said the Government needs to provide the investment levels seen in other parts of the world. The Government needs to kickstart the process for industry to have the planning and foresight required. Their signalling to industry has gotten better but still needs to improve to catch competitor nations. The Government still haven't got the strategic direction seen in somewhere like Germany, which is driving the direction that Europe is following. He added that Government can only do so much and needs to work with industry, which will provide significant funding.

Matt added that delivery is crucial, the whole value chain wants to come here but it needs kickstarting.

An audience member said the problem with green hydrogen is that there is no current demand, and asked about options for a carbon tax, otherwise green hydrogen will never take off. Matt added that the cost of new renewables is exceedingly cheap. Chris added that from the steel sector's view, they are agnostic about where hydrogen comes from, but expect to see green hydrogen as core of support going forward.

Alex Cameron asked whether the UK should/can be a market maker going forward. Lord Oates said the costs are likely to come down because of efficiency increases as well as mass production of components. The blue hydrogen process is more complicated, so could become obsolete versus green hydrogen. Matt said the UK is the best place to start production, with the existing industrial clusters and a deep network of gas engineers. These are the right kinds of projects to start with.

Jacob asked Chris what kind of developments industry think may take place in the near future regarding hydrogen in heavy industry. Chris said that across industry there are common challenges, but hydrogen presents a common opportunity for economic growth. Government is an actor in this space whether they like it or not, and can look at the examples of France and Germany for how to move forward. Chris added that we are in danger of slipping behind other nations, for example we don't yet have a green light for a pilot manufacturing facility fuelled by hydrogen. He noted that there are two core things that we need to address – process upscaling and steel efficiency.

An audience member asked how cheap hydrogen needs to be in steel production to be truly cost-efficient. Chris said a level playing field versus other countries is all UK needs, and that we also need to manage the transition properly to avoid dumping. He added that if changing to hydrogen technology creates a structural increase in the cost of steel, then everything will be more expensive – how do we deal with that, especially given current cost of living crisis? Lord Oates added that that is why CBAM is a possible key technology going forward.

Joe Williams asked if speakers saw the UK as a net importer or exporter of green hydrogen. Matt said there was so much renewable energy in the pipeline that there is absolutely the potential to be an exporter of renewable energy as a whole, especially offshore wind. Green hydrogen is less certain, but we can produce it ourselves so we have that independent control.

Jacob asked for closing remarks. Chris said energy rich nations make the times in which they live, and that the next century will be the century of hydrogen – we can be a great exporter of energy to the world again and make ourselves energy independent, but we need to move quickly.

Matt said he agreed, costs are coming down which is amazing, but we need to do more on the production of hydrogen, we have the platform to deliver on this but the next two years are critical.

Jacob thanked attendees and speakers and ended the session.