

Engage in the future — here and now

by Przemysław Myszka

For the transport industry, sea- and land-wise, it is the 'greenway' or the highway. It is too big of a sector to neglect the decarbonisation thereof, hoping that gains in other industries will make amends for the predicted rise in shipping and overland transportation's carbon footprint. We are talking to Carbon Neutral Consulting's President Steve Crolius about the different greenhouse gas emission (GHG-E) reduction tools – and why ammonia stands out as per the organisation's [*The Ammonia Report*](#). He also shares his views on the green revolution's potential to democratise and decentralise the global energy sector and why we need to gather pace for the technology we already have today to lift us off our feet in the future – the quicker, the better.

■ ***Could you share the story behind Carbon Neutral Consulting?***

The main goal of Carbon Neutral Consulting is to provide business strategy counselling to companies facing opportunities and challenges presented by the energy transition. I have a business strategy background myself, about 35 years. I worked for the Clinton Climate Initiative (CCI) from 2006 to 2013, leading the transportation programme and looking at how the sector can be decarbonised. We spent much time researching hydrogen as fuel when somebody suggested that hydrogen carriers might be easier to work with, including issues like managing it as a bulk commodity. We then started going the ammonia path as an energy vector, a potential fuel.

Once I left the CCI, I took up consulting again and was asked to join the board of the NH₃ Fuel Association, a group of scientists who felt strong about ammonia as an energy carrier. Around that time, Japan began scrutinising ammonia, within its Strategic Innovation Promotion Program and especially the Energy Carriers initiative, as one method of 'packaging hydrogen.' It was transformative: ammonia went from a good idea that engineers could appreciate to something that might seriously work in the real world. In 2016, I was elected to preside over the NH₃ Fuel Association; my election platform was to turn the organisation into a proper, fee-paying members industry association. The following year, we got that off the ground, initially having seven members, up to over 150 nowadays. I stepped down in the summer of 2021,

feeling that ammonia and hydrogen, likewise other aspects of the energy transition, garner such attention – that companies need to make plans based on reality, foreseeable forces, and trends. That led some colleagues and me to start Carbon Neutral Consulting. Since then, we have been working with large and small companies around the challenges-opportunities questions we anticipated they would have, helping them succeed.

■ ***Where do we stand today with making the industry greener – and why should we do better?***

There are a lot of companies, investors, and different public sector agencies in North America who are all moving with outstanding commitment and energy to do their part in promoting the energy transition. Yet, we are just lacking the national framework for reducing GHG-E in the US. The Biden Administration has laid forth certain ambitions but has been unable to put in place a national programme to achieve those.

The bottom-up activity is great – and maybe it will cohere essential parts of the national decarbonisation programme, but we shouldn't put too much hope in that. It seems it isn't the way the world works: if there's no leadership with a strong vision, things will still go in the desired direction, but in all likelihood, we won't reach the peaks of the grand goals.

According to 2018 data from the International Energy Agency, the transportation sector, passenger and freight, accounted for 21% of global GHG-E. There is no possibility that the industry can be

left outside the equation. If we don't head climate change off, the consequences will be catastrophic for humanity.

Fortunately, when it comes to the solutions to this challenge, the news is almost all good. Rising to the challenge is going well, particularly on the technological front, where there is an extreme up-welling of ingenuity. One of our potential clients, for instance, has invested in this catalytic, photo-reactant approach to creating energy-rich molecules, such as methanol or ammonia, and then extracting them back. It is the sort of innovation and genius that takes your breath away.

Business formation is going along. Capital inflow is, of course, critical. Financial institutions have a growing interest in injecting money to get innovation going. One of our other clients, a private equity firm, is contemplating an investment in another promising venture. They are dealing with huge chunks of money, so due diligence will be pivotal in knowing this will be a smart way of allocating their funds.

The policy-development story isn't quite as good – but it is also not bad. Many jurisdictions have developed policies and instruments to help parties go in the right direction. Conversely, we lack political will. In the US, as a country, we are not manifesting the political will – at least not enough in contrast to Europe or Japan. China and India are sending mixed signals.

■ ***Carbon Neutral Consulting has published [*The Ammonia Report*](#). Do you think ammonia is one of the answers to decarbonising shipping – or the answer?***

Before launching *The Ammonia Report*, we spent around a year putting our thoughts together and writing the thing. At the end of the process, we asked ourselves: what will we call this report? Though we knew it might be an overstatement, a slight misrepresentation of our message, we nonetheless wanted to clarify that this is a report focusing on ammonia.

Carbon Neutral Consulting does not see ammonia as 'the best choice' marine fuel in any shape or form. In the light of the International Maritime Organization's (IMO) GHG Strategy, it is evident that the status quo of burning heavy fuel oil to run ships won't hold. If not that bunker, then what? *The Ammonia Report* shows companies the way of addressing this question. It is a counselling approach: work with the client from where they are to help them get some clarity and develop a plan that will set them for success to the best of their abilities. Or at least survival. With that orientation, we have looked at the different options and concluded that ammonia is the one that has a lot going forward.

In short, it is a good bet, not a banker in any form whatsoever, but a workable start for companies to address the situation. Ammonia is practical – in the sense that one can initiate a demonstration project and see how it works. In other words, it gets you off the 'wait for 20X0 and see' couch. Getting your wheels in motion today is essential. The present IMO goal of 2050 – and who knows, maybe it will become more ambitious – is an asset-replacement cycle away from now. Having mid-century in a shipping line's 2022-crosshairs makes much more sense than waking up in 2040 and asking yourself whether the time is right to get your tonnage green for 2050. That's ruinous! One will ruin the company should others start transitioning today. Engage in the future here and now. If ammonia isn't the answer, leastways for you, one will be richer by getting the lay of the land (and probably acquiring a better understanding of what will work for your fleet instead of ammonia).

To sidestep the chicken and egg situation, *The Ammonia Report* emphasises the role of cross-party consultation in forming small coalitions first, which then join up and become super coalitions. This is already happening, and it becomes increasingly difficult to keep track of all the entities joining the ammonia fellowship to get a practical experience: shipbuilders, engine manufacturers, ports, bunkering companies, classification societies, you name it. There is also the Clydebank Declaration on building

end-to-end green corridors, which, by definition, requires diverse stakeholders working hand in hand towards putting the low- or zero-carbon pieces together.

■ *Maybe the solution to making shipping more eco-friendly is "simply" less shipping? Perhaps we need a new economic model that will also reshape the transport landscape?*

Answering first from a personal perspective, I'm well aware of all the stresses humanity at this stage puts on nature's systems. Climate change is one of them but not the only one. Future-wise, I believe we need to change

many things about how we live.

From the Carbon Neutral Consulting's point of view, I have a conviction that we have what it takes to decarbonise the maritime industry. It is undoubtedly a tremendous amount of work, yet, from the asset replacement cycle angle, spanning some 30 years, see how many changes can occur. To bring that much needed green change in 2050, we need to roll up our sleeves properly – and do it today. I believe that by mid-century, we can make the maritime sector a trivial source of GHG-E.

Rethinking the global economy, though perhaps it may bring a lot of positives, isn't necessary for decarbonising transportation. It can be the other way around. The energy transition might set off a new wave of democratisation and decentralisation. As things stand today, the sources of fossil fuels are located in a few hotspots. By way of contrast, renewable sources of energy can be found anywhere. By going green, economies reliant on imports of dirty hydrocarbons yesterday can become exporters of clean energy tomorrow. Think of India, for example, and the country's solar and wind potential – in contrast to its dependency on foreign oil & gas (as high as 70-80% of its domestic needs). The Indian government is already working on a hydrogen strategy, and indeed the development phase will involve foreign investment and technology transfer. At the same time, there are very energetic Indian companies who want to tap into the green revolution.



In the end, countries such as India will have greater ownership of their energy sector than today.

Markets will, of course, play their part, calculating whether it is more sound to set up the energy harvesting facility where the production costs might be higher but bank on shorter transportation distances, hence lower logistics expenses.

■ *What would you change in how we are handling the maritime industry's decarbonisation process?*

I wouldn't change what is happening, but at what pace. The IMO has recently received some bad press from media outlets like *The New York Times*, which blamed the organisation for being captured by insiders not necessarily concerned with the swift decarbonisation of shipping. That is not my experience, certainly not of the IMO's Marine Environment Protection Committee (MEPC).

IMO and MEPC's meetings involve many stakeholders having prolonged discussions and consultations. It is a process-heavy thing, the speed of which won't stun you. If I were 'the king,' I would insist they shift into a higher gear. I think that would be immensely beneficial, particular to those not sure what to do and who might "play it safe" by betting on, e.g., liquefied natural gas – but that will take them only as far as, say, 2030 – rather than acting strategically for decades to come. ■