

Railways and governments around the world need to focus on modal shift if they are to achieve the urgently needed decarbonisation of the transport sector, believes François Davenne, Director-General at the International Union of Railways.

Pointing out that with the policies currently in place, transport's greenhouse gas emissions are predicted to continue rising, he warns that technical innovation alone will not be able to deliver 'net zero' within the timescale needed to prevent irreversible climate change. The priority for the next few years must therefore be to make best use of the most sustainable modes that already exist.

The association is devoting much of its centenary year in 2022 to a major 'hearts and minds' campaign, aimed at convincing policymakers and the wider public around the world that rail has much to offer. This began with a two-day symposium in Paris on November 30 and December 1, on the theme of 'making modal shift desirable'.

Coming just a few weeks after the COP26 climate change summit in Glasgow (RG 12.21 p5), the hybrid event brought together no fewer than 1 250 participants including 60 speakers from 59 countries. The presentations offered a wide range of perspectives on the global rail sector and the transition to clean mobility, including initiatives to make railways more attractive to customers and move the sector closer to the heart of transport policymaking.

Vision 2030

The symposium was accompanied by the publication of a 'Vision for Rail 2030', in which UIC seeks to paint a picture of a more sustainable transport mix, centred around rail and public transport. It envisages a 50% increase in rail's market share by 2030, equating to 15% of global freight traffic and 12% of passenger traffic by 2030.

Picking up on the UN's Sustainable Development Goals, the document proposes a 'systems-based approach' to decarbonisation, focused on 'avoid, shift, improve'. As well as reducing dependence on transport, traffic should be shifted where possible to the most sustainable modes, which themselves should continue to work for improvements in energy efficiency, land use and a 'frugal' consumption of natural resources.

Vision 2030 is divided into four main pillars:

- transforming cities and connecting communities;
- energy, technology and innovation;
- intermodality and seamless



'We have the tools – it is in our hands to deliver'

The next decade will be crucial for the global fight against irreversible climate change, and rail is the only mode that is well placed to deliver significant decarbonisation in the transport sector, UIC Director-General **François Davenne** explains to **Chris Jackson**.

- connectivity;
- customer experience.

'In the 2020s, rail is the only viable option to significantly reverse increasing emissions from transport while improving equity and quality of life', the document suggests. 'Rail will play its part, but needs the support of policymakers and national governments, as well as investors, financial institutions, regional development banks and other supranational bodies.'

UIC wants governments to set 'binding and ambitious targets for modal shift and decarbonisation' in their nationally determined contributions, 'backed up by city, regional and sectoral strategies with "bottom-up" reporting on the Sustainable Development Goals.'

These policies should employ 'push and pull approaches in tandem to incentivise the use of rail logistics and public transport, pricing in the external environmental costs of transport while creating social tariffs and reducing administrative restrictions', particularly around cross-border flows. There should also be clear requirements around passenger and workforce accessibility and inclusivity.

A positive pandemic

Two years ago, Davenne suggested to *Railway Gazette International* that rail had a 'bright future as the backbone of sustainable mobility' (RG 1.20 p22). He remains confident that is still the case, despite the disruption of the coronavirus pandemic and the massive loss of patronage and revenue sustained by many of the world's railways over the intervening period.

'The pandemic showed that we are vulnerable, financially', he accepts. 'It has undoubtedly set things back in the battle against global warming, but if anything it makes the need for action even more urgent. And there have also been some positive outcomes, in terms of public acceptance about the relevance of rail.'

'When it came to the movement of essential goods, including foodstuffs and medical supplies, rail freight was able to step up and deliver. Many freight operators have reported some pretty good results. And while ridership was down, the pandemic helped to underline how many people have to rely on rail and public transport. Where would our society be if key workers like supermarket staff,

cleaners or medical people could not get to work each day?

'The pandemic has also highlighted opportunities for future lifestyles. It has shown that cities without cars are possible, with a transition to a more sustainable transport mix. Here in Paris, as an example, the Rue de Rivoli was always congested, but now it is a dedicated cycle lane — cleaner, greener and a lot safer to use.'

Climate concerns

As well as the pandemic, Davenne says 'climate events around the world' during 2021 also provided a wake-up call for the global community.

'In the Canadian presentation during our symposium, we heard that the biggest hits to rail freight traffic were caused by climate, not Covid.

There were

Intergovernmental Panel on Climate Change have all been saying this all along — we need to start taking action immediately to change the way our society functions, and we have very little time left.

'That presents a massive hurdle for other transport modes like aviation and automotive, who don't have a solution they can roll out in time. Technology is coming, of course, but achieving a brutal change in the market through technical innovation in 10 years is simply not possible. Aviation and automotive experts tell me that they are looking at 2040 or 2045, but that is too late.

'Electric vehicles will undoubtedly have a role to play, but they can never be a global panacea. They may provide a solution to pollution in big cities, but that's not sustainable globally — particularly when you look at the heavy pollution and use of raw materials

involved in battery production. And of course electric vehicles do not solve congestion issues.

'The rail sector can be seen as a little bit dull and technical — UIC has been described as a reliable old lady — but at the end of the day we do what we say we will do. We said autonomous trains would be possible by 2025, and we are well on the way.

Automatic train operation is already a reality in China and Australia, and there are lots of trials underway elsewhere.

'Policymakers have a very basic choice. On the one hand, they can promote rail and public transport with everything already there to deliver — along of course with some electric vehicles, bicycles, walking, and buses — enough to change the way in which we use cars and trucks. They can choose to optimise around a backbone of rail and public transport. Or they can wait to see if a silver bullet will emerge on December 31 2029 to save them. But I don't think that's going to happen.

'So there is a big debate that is quite political. Something has to be done to change our habits as a society, but we have to make an informed choice.'

Common consensus

Explaining how the Vision 2030 initiative was developed by a taskforce bringing together UIC's six regions, Davenne says he was 'amazed by the consistency of the message. It came as a very good surprise to get such a clear consensus on what needs to happen, from all our members.'



heatwaves in the summer, and flooding around Vancouver at the end of November. We also saw the disruption caused by flooding across Western Europe and China, as well as parts of Australia.

'Now the problem is visible, people are starting to understand. Global warming is like toothpaste — once it is out there, you cannot squeeze it back into the tube.

'Perhaps the most important difference after the crisis is the recognition that 2050 is not the issue; it is 2030 or 2035. The reports from the

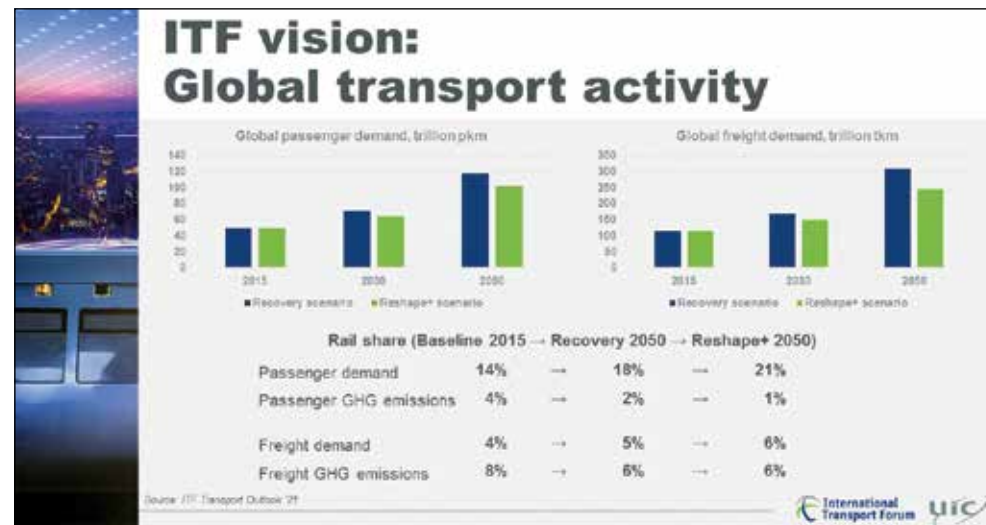
‘We are all facing in the same direction, with a common strategy. The contexts may be very different, in terms of freight or passenger, or the scale of railway development, but we are all on the same page when it comes to taking action against climate change. We are all looking to make rail a powerful player for decarbonisation.

‘We have a very big responsibility. We have 10 years to make a difference. And there are huge expectations on the rail sector, particularly from young people, who want more rail and public transport.’

Davenne believes that customer focus is an essential element in driving modal shift, mobilising public opinion both to increase rail use directly and to put pressure on decision-makers to bring forward the right policies and investment priorities.

‘For a number of years, I lived in Switzerland, where the culture of referenda means that “the people are sovereign”. All the reforms in the transport sector went to a referendum, especially financial measures. At one time the government was preparing proposals for big cuts in rail, including bus replacement on rural lines, and greater reliance on road transport. But the people voted for more rail not less, and they voted to pay for it. Today around 40% of the annual charges for road use are spent on railway investment. If you have this sort of public pressure, and the right regulatory framework, it is possible to deliver.

‘We need to get the support of the customers and policymakers. We have to do our homework, to make rail desirable. We must present our



customers with an efficient and sustainable service that they will *choose* to use. I believe we are all committed to that.

‘Modal shift will only happen if we are able to get rid of whatever makes our services “not good enough”. So we have to be very keen to solve the details. As ever, the devil is in the detail, but as a technical organisation we are used to dealing with details.

‘Those challenges include under-capacity, and fostering a culture of customer orientation, as well as connecting rail directly with public transport to create a seamless multimodal network; railways can’t live in natural isolation any more. That will need a change of mindset. But I am quite optimistic when I see the trends. All the passenger and freight CEOs that I talk to recognise the issues.’

Fig 1. Scenarios presented by the International Transport Forum show how reducing transport demand and modal shift to rail could combine to reduce greenhouse gas emissions.

Culture of reliability

Asked whether embedding a change of culture depends on attracting a new generation of railway staff with a different skillset, Davenne says he is ‘not that convinced. The main effort is to look at what our citizens actually want — those people who take the train and bus. Any successful company must have a clear picture of what their customers want.

‘That’s already the case for successful freight operators. Despite the complexity of the railway “machine”, big freight railways in places like the USA or Russia have a very clear picture of their customers and what they require — and they just get on and do it. That doesn’t necessarily mean advanced control systems, but having a focus to deliver on time. I think the average speed on the Trans-Siberian Railway is not much more than 30 km/h — but it is highly reliable.

‘In the passenger sector, look at Switzerland. Swiss railways don’t have spectacular rolling stock, but their services are attractive because they are reliable and on time. The stations are well designed and convenient, and they offer excellent connectivity with public transport. That’s because it is mandated, but the people put pressure on the politicians to make it happen.’

Five key themes

Summing up the symposium, Davenne homes in on five key themes. Starting with a comment from European MEP Anna Deparnay-Gruenberg that rail needs to be a ‘**network, not a patchwork**’, he says that means more international rather than national thinking.

He emphasises too that rail must be **cost effective**, warning that the sector cannot expect a ‘perfect level playing

field’, however desirable that would be. ‘The pricing of carbon is a complex process, and raises lot of social questions.’ With few politicians seemingly willing to tackle the thorny challenge of discouraging the use of more polluting modes, the rail sector will have to ‘work together to improve the cost structure of rolling stock and infrastructure, through research and innovation.

Software will help, he says. ‘Digitalisation is key to improving service quality, how we organise our activities, manage and maintain our tracks, data, telecommunications and signalling. Digital technologies will enable us to do more, and drive our costs down. And they will also provide new ways to communicate with our customers.’ Cybersecurity is a growing challenge, although ‘we are looking at global solutions’.

Reflecting remarks by acting TCDD Chairman Metin Abbaş, Davenne says rail needs to be a **good neighbour**. ‘We need to preserve natural resources and be aware of biodiversity. Using more rail and public transport in cities can reduce congestion and free up public space for trees, contributing to a greener and more liveable environment. We need to work on this.’

Below: European Transport Commissioner Adina Vălean was represented by Head of Cabinet Walter Goetz.

Bottom: Francois Davenne brings the symposium to a conclusion.



And again he returns to the importance of being **customer-oriented**. ‘We need to change the perception, and talk to people as customers and as citizens. We need to have the people with us.’

Manifesto

Davenne says the next step will be the publication later this month of a ‘manifesto’ setting out the workstreams that UIC is looking to take forward from the symposium.

‘We have a very big responsibility. We have 10 years to make a difference. And there are huge expectations on the rail sector’

‘We are trying to build a consistent vision for what railways should include. How do we go from the vision to the implementation, and deliver on the promise? We will deliver if we build confidence, every concrete step to achievement with basic building blocks.’

The last part of the manifesto will include selected examples of what is already being achieved in different places — railways achieving a very high market share for passengers or freight, or offering convenient connectivity. How do they do it, what are the essential requirements, and how can we make those examples into a common reality?

‘It’s all about sharing best practice. We want everyone to do better, but they do not necessarily have to match the best. If we can increase the average level significantly, that would demonstrate real progress.’

Asked whether rail can ever be free of its reliance on public funding, Davenne retorts that is a ‘narrow minded debate — a question for the economists’. He points out that ‘any industry that is massively capital intensive must rely to some extent on public investment, either directly or indirectly. Even roads and airports are paid for by taxpayers. We don’t have to be the story to be a public service — some things that need subsidy are vital for any country’s economy and prosperity. Without public support for metros and buses a

city would collapse. Debates about subsidy were over 20 years ago, although it is clear that different markets move at different speeds.’

Reiterating that UIC is ‘agnostic’ when it comes to the structure of railway organisations, Davenne notes that the association’s members include ‘all kinds of models: public, private, state-owned, and ministries. I don’t think we can say what the best model is. At the end of the day, it all depends on the people. Whether you are a monopoly or a public company, you have to be dedicated to what you have to deliver.’

Looking at opportunities for innovation, Davenne says UIC will be part of the System Pillar for the new Europe’s Rail joint undertaking, looking to bring together all the initiatives from both Shift2Rail and ERJU itself. But there is also much to learn from railways outside Europe, he suggests.

‘What Russia is doing on digitalisation is remarkable. Under the InterTran project, the partners were able to move a trainload of freight from Japan to Moscow with complete digitalisation of all the documentation. That is clearly something to take forward.

‘Or look at the development of the high speed network in China. It’s not just the lines themselves. The stations are integrated transport hubs and centres for urban development. It is all about whole-system flows and agglomeration benefits. There is a digital continuum from modelling through conception to operations, where the data feeds drive the traffic organisation and support predictive maintenance. And an extreme example of technical development is the Chuo maglev under construction in Japan, which could be a real breakthrough.

‘UIC is a forum, a technical organisation to gather people together and share our expertise. We can deliver the vision where we are allowed. We have all the tools, it is just a question of putting them all together.

‘I believe that rail *should* have a bright future — I am convinced of that. It is in our hands to deliver.’



The closing session of the UIC symposium on December 1 brought together leaders of the association’s six regions to discuss the shape of future mobility.