DG Opening Speech - Hydrogen Technologies in Transport Conference
17 May 2022

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Your Excellency, Richard Sulik, Deputy Prime Minister and Minister of Economy of Slovakia,

Matúš Medvec, President of the Slovak Industrial Property Office,

António Campinos, President of the European Patent Office,

Josef Kratochvíl, President of the IP Office of the Czech Republic,

Gyula Pomázi, President of the Hungarian IP Office,

Distinguished Speakers and Delegates,

Colleagues and Friends,

It is an honor to be here in the historic city of Bratislava and to open this conference on Hydrogen Technologies in Transport.

I would first like to thank the Ministry of Economy and the Slovak Industrial Property Office for partnering with WIPO to co-organize this event.

I would also like to thank the many experts from national and international institutions, including representatives from industry and academia, who have come together to make this conference possible.

Historically, Slovakia has been a crossroads for peoples and cultures, and now it is crossroads for technology, innovation and entrepreneurship. Thank you for hosting us and for your hospitality.

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Ladies and Gentlemen,

We are in the midst of a climate crisis. The latest IPCC report reinforces the scale of the climate emergency and that 40 percent of the world's population is highly vulnerable to climate change.

If we are to have any chance of limiting temperature rises to 1.5 degrees, then we must do more and that we must do it faster.

Ambitious climate targets, greater investment in clean technologies and new international pledges – including that agreed at COP 26 to accelerate the transition to zero emissions transport – are positive and tangible steps forward.

At WIPO we are fully committed to playing our part in this shared project. We will continue to develop our online platform for technology exchange, WIPO GREEN, which connects providers of green technologies with those seeking environmentally friendly solutions. And we have recently launched IPO GREEN a new initiative that supports IP offices to develop green policies and programs.

But the truth of the matter is that the path towards a more sustainable future continues to narrow. A new analysis released last week found that it is now 50:50 as to whether the Paris Agreement to cap warming at 1.5 degrees will be temporarily breached in the next five years. In 2015, the probability of this happening was close to zero.

To get back on track, we must make transport cleaner and greener. Energy, transport and industry account for nearly 80 percent of the world's greenhouse gas emissions, with transport responsible for almost a quarter of all direct carbon emissions.

While the problem seems daunting, change is possible. Just consider the rapid evolution of electric vehicles. According to the International Energy Agency around 130,000 EVs were sold during the entire year of 2012. Last year, that’s how many were purchased every week.

Innovation can and should be our catalyst for change, and it is time to nurture another wave of innovative technologies that can help make net-zero transport a reality.

This includes the fast-moving field of hydrogen fuel cell transportation.

Hydrogen has long been talked of as a potential fuel of the future but now there is a growing evidence base that fuel cell technologies are ready to make the leap from theory to practice.

As leading auto powers, with a proud heritage in auto manufacture and design, it is no surprise that this part of the world is taking a keen interest in hydrogen-powered transport.

Already this year, the first mobile hydrogen-filing station launched in Slovakia and the first hydrogen-powered bus entered service in Budapest. At the same time, the Czech Republic, Poland and Slovakia have agreed ambitious national hydrogen strategies that are galvanizing action across the public and private sectors.

As political and industry momentum continues to build, it is important that we consider the underlying climate for fuel cells in transportation and their future prospects.

To help power these trends, today WIPO launches our latest Patent Landscape Report on Hydrogen Fuel Cell Technologies in Transportation.

We are very pleased to have collaborated with our Slovakian partners on the report, which we hope will help policymakers, businesses, researchers and others make informed decisions about the future of clean and green global transport.

WIPO colleagues will present the report in fuller detail later today, but allow me to take this opportunity to share four key insights.

First, the report finds that fuel cell technologies have gone beyond a tipping point to reach a new stage of development.

Patent filings have grown strongly since 2016, both in terms of fuel cells in general and in terms of their application in transport. We are also seeing growth in patents related to automated production and fuel cell recycling, which are further indicators of a technically advanced and maturing market.

Second, fuel cell technologies hold promise across transport as a whole. Road is clearly the dominant category within the patent data, with several large manufacturers making significant plays to develop and deploy fuel cells in passenger vehicles, buses and trucks.

But momentum is also evident in shipping, rail, aviation and special vehicles. While commercial maturity might take longer to arrive in these areas than in cars and vans, companies from Alstom to Airbus have spoken openly about the potential for hydrogen powered trains and planes.

Third, the dynamics of filing have evolved considerably in recent decades. While Germany has shown strong growth, with a 50 percent increase in filings since 2015, there has been a big shift in countries like China.

Ten years ago, China was the fifth largest filer of fuel cell patents. Today, it is the top ranked nation and the main driver of growth over the last five years. Of the nearly 800 businesses active in this field, we find that over 400 are based in China.

At the same time, company portfolios remain strong in Japan, the Republic of Korea, Germany and the US. All these trends suggest an increasingly global landscape in hydrogen technology, with new players emerging even as the traditional centers of innovation remain strong.

Fourth, despite sustained growth in patent applications, we find that the overall landscape is still highly concentrated geographically and within the private sector. Fully 96 percent of patent families include as least one application in China, Germany, Japan, South Korea or the US. These five countries are also the biggest origins for inventors, accounting for around 9 in 10 patents in the field.

Likewise, while the share of filings from universities and research institutions has increased from 2 percent in 2000 to 15 percent in 2019, there is only one university in the 30 largest filers – with the top 30 companies accounting for 40 percent of patent filings.

Ladies and Gentlemen, Colleagues and Friends,

Since patenting activity offers a glimpse into the near future, we can see that fuel cell technologies are becoming well embedded in market and business strategies across all transport applications. Indeed, this report is further evidence that we appear to be rapidly nearing the point where hydrogen becomes mainstream.

But we also highlight that this is not the first boom in patenting activity. If hydrogen is to avoid a similar drop-off in filings to that which occurred after 2005, then questions of infrastructure, cost and efficiency must be addressed, alongside continuing support from policymakers, industry and consumers. In other words, there must be an ecosystem approach to hydrogen development.

In a sense, we could soon be going back to the future as hydrogen was used in the very first internal combustion engine two centuries ago. While hydrogen has suffered a few false starts since then, as our patent landscape report makes clear, the innovative environment for fuel cell technologies in transport has rarely been as promising as it is today.

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In closing, I would like to once again thank our Slovakian partners for joining WIPO to develop both the report and this conference.

It is a great pleasure it is to be with you in person and I wish all of you a fruitful and engaging couple of days ahead.

Thank you very much.