Transport is the only sector of the economy whose GHG emissions are increasing globally, scientists have warned.

Particularly in Europe, road transport CO2 emissions have been rising since 2013 and road transport, in general, contributes about one-fifth of the EU’s total emissions of carbon dioxide. While these emissions fell by 3.3% in 2012, they are still 20.5% higher than in 1990.

The annual Conference of the Parties to the United Nations Framework Convention on Climate Change (COP24) is this year taking place in Katowice, Poland, where stakeholders will explore the available options to decarbonise the transport sector.

In general, policymakers are pushing for electromobility but many analysts say it may not be the only solution to reduce transport environmental footprint.

The Intergovernmental Panel on Climate Change (IPCC) recently released a report saying that the pace of transition in the transport sector deemed necessary for a 1.5°C-consistent pathway must include more biofuels and electricity in transport’s energy mix.
When it comes to decarbonisation of transport, switching to electric cars is just one option and there are a number of others, such as biofuels, that should not be discarded, a scientist from the United Nations Intergovernmental Panel on Climate Change (IPCC) said.

“There is no doubt we will have to consider all mobility-related options,” IPCC’s Dr Diana Urge-Vorsatz told EURACTIV.com on the sidelines of COP24 in Katowice.

“These do include electromobility, biofuels, shared mobility and several different mobility services in general,” she added.

IPCC recently released a report saying that the pace of transition in the transport sector deemed necessary for a 1.5°C-consistent pathway must include more biofuels and electricity in transport’s energy mix.

The UN’s scientific body is currently working on the sixth assessment, due to be finalised in three years time.

“We will assess all the options, the IPCC will not make any recommendations but rather look at what the literature says about the potential, the cost and mitigation opportunities to these different options and the associated synergies and trade-offs,” she said.

Based on the IPCC experience, Urge-Vorsatz said there had never been one single answer in any sector, especially in mobility. “So, probably...”

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there will be a multitude of solutions, which will be considered.”

“In mobility, definitely electric mobility is not a single solution as there are many other options that are available, attractive and compatible with the 21st century digital economy.”

“Thus, switching to electric cars is just one of the many many options that we can do in transport, we have to look beyond the whole question of mobility as it’s the main driver of emissions,” she emphasised.

Scientists warn that transport is the only sector of the economy whose GHG emissions are increasing globally. Particularly in Europe, road transport CO2 emissions have been rising since 2013 and road transport, in general, contributes about one-fifth of the EU’s total emissions of carbon dioxide. While these emissions fell by 3.3% in 2012, they are still 20.5% higher than in 1990.

In the IPCC report, scientists indicated for 2020, 2030 and 2050, respectively, a biofuels share of 2%, 5.1%, and 14.7% as good policy targets in order to follow the appropriate path in curbing emissions.

The report also said that electricity’s involvement in the transport mix should increase to 1.2% in 2020, 5% in 2030 and 33% in 2050, so that by 2030, biofuel-powered vehicles would be almost as important as e-cars.

**THE BIOFUEL DISCUSSION IN EUROPE**

In Europe, the discussion about the decarbonisation of the transport sector has triggered strong reactions, especially when it comes to the future use of biofuels.

In terms of the Renewable Energy Directive revision, the EU and its member states have decided to cap first-generation biofuels at a maximum of 7%.

The European Commission is currently working on a delegated act to determine risk criteria of the so-called indirect land use change (iLUC).

The future system foresees three categories of biofuels: the high iLUC risk, the low iLUC risk, and the ones with no iLUC assessment because of limited risk.

Speaking at an event organised by EURACTIV on 5 December, several stakeholders highlighted the need for clear criteria in order not to leave room for “bad biofuels” like palm oil to enter the EU through the back door.

Jo Leinen, a social democrat MEP (S&D) from the ENVI Committee, told EURACTIV that if Europe wants to decarbonise its transport, it needs various instruments.

“Electrification is one but it won’t come so soon. Therefore, we need other tools such as sustainable biofuels, which will help us a lot at least in the transition period,” the German politician said.

He added that in the long run, Europe would need biofuels for aviation and probably for trucks.

“So electrification and good biofuels is the combination of EU policies for sustainable road transport,” he said.

Referring to the EU executive’s delegated act, he said, “We really have to differentiate biofuels [...] palm oil tops the high-risk list.”

On the other hand, he said, the low-risk biofuels like ethanol are mainly produced in Europe.

“Our farmers fully comply with our EU laws and therefore I think the legislation is leading to a fair trade but also to sound environmental protection,” he emphasised.

Regarding the biofuel debate in Europe, Dr Urge-Vorsatz said she was aware of the several controversies related to biofuels.

She admitted that there were indeed differences among them, especially about their environment and technology perspective, and she made it clear that in the next IPCC assessment there would be a distinction among them.
Portugal will use both electromobility and biofuels to decarbonise its transport sector by 2050, José Mendes, Portuguese first secretary of state for mobility – environment and energy transition, told EURACTIV.com in an interview.

Last week, the Portuguese government presented a plan which aims to make the Mediterranean country carbon-neutral by 2050.

The plan provides several pathways for the different sectors of the economy. For transport, Portugal aims for a 50% emissions reduction by 2030, 84% by 2040 and 98.5% by 2050, which means it will be almost fully decarbonised.

“In 2050, we will still have some few emissions that will be compensated by the forest sector,” the Portuguese mobility vice-minister said on the sidelines of the COP24 in Katowice.

**ALL OPTIONS NEEDED**

Mendes said his government had considered the circumstances and tried to adopt an integrated approach instead of making a sudden energy shift to electric vehicles.

He explained that all available renewable options should be used. These options range from reducing unnecessary trips to using more public transport and even shared transportation and mobility models.

Part of the plan was also to explore ways to integrate energy that is renewable.

The Portuguese politician said electromobility technology advancement in the run-up to 2050 does not seem enough to fully decarbonise the transport sector and

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therefore biofuel will also have a role to play.

He said certain types of vehicles and transport means, such as aviation, shipping and long-distance transportation, were not easy to electrify.

“If we need fuel, this should be biofuels that are renewable,” he said.

“What we believe is that by 2030, we will have one-quarter of the consumption being biofuel; this is important mainly for aviation considering that it’s not easy to fully electrify an airplane,” he said.

He added that on average in Europe, a car is not in motion 92% of the time and when it runs, it transports only 1.5 people per trip. “We believe that by 2040, the country can have 1/3 of its trips using shared mobility,” he said.

“By 2043, all vehicles running in Portugal will be fully electric,” he emphasised.

PARIS AGREEMENT AND THE US

Referring to the ongoing climate negotiations in Katowice, Mendes said a global commitment is still feasible even without the US.

“There is a clear sign from the US community of states, companies and cities, which are willing to stay on board when it comes to the Paris Agreement,” he said, adding that it was crucial in this COP to involve subnational entities.

“The answer is there,” he added and cited as an example the State of California, which in September became the first North-American member of the International Transport Decarbonisation Alliance (TDA).

California has set a goal of 1.5 million zero-emission vehicles by 2025, and 5 million by 2030.

“Of course, we would like a clear political statement by the President of the US but we have to respect his different opinion. In any event, this is an effort that will take decades and I am sure the US will be fully committed in the future,” Mendes added.

BUILDING BRIDGES WITH CHINA

Mendes also referred to Chinese President Xi Jinping’s visit to Lisbon on 5 December, which raised eyebrows in Brussels, regarding Beijing’s “One Belt, One Road” strategy.

The two countries signed a memorandum of understanding which focused on transport connections and energy. For Mendes, it is positive that China is investing heavily in electromobility mainly to tackle massive air pollution.

“The largest fleet of e-buses is in China. Beijing is really willing to contribute to the effort to decarbonise economy and transport and in many fields, the Chinese are even advanced when it comes to technology development,” the Portuguese politician said.

He added that it’s important for the EU and Portugal to partner with China.

“What has to be clear is that we all follow the same international rules and regulations and agree on the principle to decarbonise our economies around 2050,” he said.

He said Europe should be aware of China’s “enormous problems” mainly related to the dimension of its cities as well as of some leapfrogging technologies in some parts of China, which aim to advance through the adoption of modern systems without going through intermediary steps.

“We should also deploy this concept in other parts of the world, including Africa. It’s a matter of the planet and it’s important to build bridges with China,” Mendes concluded.
Ethanol will have a very important role in decarbonising the transport sector globally, the executive director of the International Energy Agency (IEA) has told EURACTIV.com. Another energy expert has said electrification will play a major role in transport but is not applicable to all sectors, which is where biofuels come in.

Speaking on the sidelines of the COP24 in Katowice in Poland, the IEA’s Fatih Birol, an influential figure in global climate change talks, highlighted ethanol’s contribution to cleaner transport. Ethanol “is very important because it is part of the solution in terms of reducing the oil import dependence of many countries,” Birol said.

“At the same time, ethanol will help reduce CO2 emissions from the transport sector as well as other sectors,” he added.

The IEA, a Paris-based intergovernmental organisation, was established in the framework of the Organisation for Economic Co-operation and Development (OECD) in 1974 in the wake of the 1973 oil crisis. Its initial goal was to help countries address major disruptions in the supply of oil. Since then, its role has expanded and it also examines energy issues ranging from oil, gas and coal supply and demand to renewable energy technologies and electricity markets.

“OVERLOOKED GIANT”

In October, the agency published a report saying the share of bioenergy in total renewables consumption globally is about 50% today – as much
as hydro, wind, solar and all other renewables combined.

Bioenergy is the “overlooked giant” in the renewable energy puzzle, the report concluded, adding it will represent the largest source of growth in renewable consumption over the period 2018-2023.

Caroline Lee, an energy policy analyst at the IEA, said electrification will help decarbonise many sectors of the economy but not all. “There are certain areas of the transport sector that are difficult to electrify and will still require liquid fuels in order to run and function properly,” she told EURACTIV, referring to aviation and heavy-duty road transport.

The electrification of car fleets is not the only solution, she said, adding that biofuels will play a significant role there as well. “Certainly, biofuels are an important part. One scenario we see is that by 2040, about 50% of the passenger cars stock is comprised of electric vehicles. This is a lot considering that currently, the percentage is 0.3% today,” she said.

Referring to electric cars, she said government’s policies are the primary driver of transport decarbonisation efforts. But there has been a pull-back in the financial subsidies of electric vehicles in a number of countries and in these cases “we see a very discreet slowdown in the deployment of these vehicles”.

Lee also noted that support for recharging infrastructure will be needed, as well as an energy grid flexible enough to accommodate high shares of electric vehicles. “These types of investments are driven by governments, not by the private sector,” she pointed out.
With every passing year, the pathway to a stable climate gets narrower and more difficult to navigate. Meanwhile, the reports from our planet’s top scientists paint an increasingly grim picture of what to expect if the swing in global temperatures cannot be limited to 1.5 degrees Celsius, writes Craig Willis.

Craig Willis is the senior vice-president of Global Markets for Growth Energy, America’s largest trade association representing supporters and producers of ethanol. Growth Energy is a member of the Climate Ethanol Alliance.

Flooding, famine, and mass displacement of vulnerable populations threaten to impose an incredible cost.

That’s why more than 30,000 leaders from across the globe have gathered in Katowice, Poland for COP24, the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change.

Among those are representatives from the bioenergy sector, including Climate Ethanol Alliance, working to tackle one of the most stubborn sources of global emissions, namely liquid fuels.

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That's because internal combustion engines will dominate global transportation networks for decades to come, especially in developing nations where wired infrastructure is less reliable or cannot keep pace with new opportunities for trade and commerce.

While electric vehicles offer great promise, the International Energy Agency reports that “modern bioenergy is the overlooked giant within renewable energy.”

In the United States, as in much of the Organisation for Economic Co-operation and Development (OECD), emissions from electricity generation are no longer the top contributor to climate change. The distinction now belongs to cars and trucks.

According to the US Energy Information Administration, transportation represents the country’s only major sector that experienced an increase in greenhouse gas emissions in 2017. In all other categories, advancements in efficiency and reductions in the country’s reliance on coal helped push emissions down.

The only immediate solutions to reduce the climate impact of the transportation sector at scale come from bioenergy, like ethanol. That conclusion is reflected in findings from the UN Intergovernmental Panel on Climate Change (IPCC).

The IPCC reports that the most probable scenario limiting global climate change to 1.5 degrees Celsius will require a dramatic increase in global biofuel consumption – up from 1.97% of the transportation mix in 2020 to 14.71% in 2050.

These energy sources have already been developed on a large scale in the US, which is now the world’s top producer and exporter of biofuels. Today, 98% of all motor fuel sold in America contains at least 10% ethanol (both conventional and advanced).

Yet, despite the global climate imperative, some US ethanol plants are idling production or cutting back on investments in new capacity. That is because ethanol prices have declined even faster than the historically low prices for corn feedstocks.

At the same time, these trends indicate that ethanol's cost advantage over petroleum continues to rise, creating a valuable opportunity for other nations to immediately bring down emissions by blending higher levels of ethanol into their transportation fuel mix.

Ethanol also offers a range of human health benefits because it serves as a key octane booster, displacing toxic, cancer-causing chemicals. Research from the University of California Riverside demonstrates that ethanol blends reduce toxic emissions by up to 50%, including smog and ultra-fine particulates.

That’s why nations like China, Peru, the Philippines, India, Canada, and Brazil imported a record 1.4 billion gallons of US ethanol in 2017, and American exports in 2018 are on track to eclipse that performance.

More importantly, the emissions profile of US biofuels gets cleaner with every passing year, providing a template for other nations seeking to follow the roadmap laid out by the IPCC. Whether in Argentina, Brazil, Canada, Europe or the United States, ethanol-producing countries are seeing the greenhouse gas intensity of ethanol fall every year.

A large share of the credit goes to farmers, who have adopted increasingly sustainable technologies, allowing them to produce more than ever before on less land. For example, the United States today has less cropland than was under cultivation in the 1930s, yet harvests continue to rise.

That progress has allowed biofuels to cut US transportation-related carbon emissions by 589.33 million metric tons over the last decade, equivalent to removing more than 124 million cars from the road, according to the Biotechnology Innovation Organization.

In short, biofuels offer a cost-effective opportunity to derail the fossil fuel industry’s monopoly on transportation. It’s that very promise that has made ethanol a target of misleading campaigns, designed to drive a wedge between bioenergy and other sources of renewable energy, like solar, wind, and geothermal power.

But for those seeking a comprehensive solution that can deliver results before it’s too late, there is no question that a renewed commitment to bioenergy must play a central role in the global energy transition over the decades ahead.
Increasing ethanol use will help countries around the world meet their Paris Agreement climate goals in a cheaper way, US producers told EURACTIV.com, staking their claim to a higher role for the fuel, alongside electricity, in decarbonising transport.

Speaking to EURACTIV on the sidelines of COP24 in Katowice, US ethanol producers said the oil industry was their biggest competitor, which is only interested in preserving its market share.

“We are competing with the most powerful political force, which is oil. And for us to gain market share, they are losing market share,” said Doug Berven, the vice president of corporate affairs at POET ethanol plant.

“We have lower cost and we are cleaner. Our big fight has been over the market share,” he said.

Craig Willis, senior vice-president of Global Markets for Growth Energy, America’s largest trade association representing supporters and producers of ethanol, noted that just as early as October, ethanol was $0.80 per gallon cheaper than gasoline.

“Even with the sharp drop of crude oil over the last 6 weeks, ethanol is still some 25 cents less. Because this price advantage the US exporting record amounts of ethanol to various countries around the world,” he said.

“Now that spread has narrowed somewhat with oil prices coming down to $50 per barrel, but even with Continued on Page 13
the sharp drop in crude oil prices over the last 6 weeks, ethanol is still cheaper than gasoline,” he added.

“If you look at charts over the last five years of ethanol versus other octanes, ethanol is materially cheaper than our biggest competitor MTBE,” Willis said.

**BETTER FOR THE ENVIRONMENT**

According to Berven, ethanol should be 30-40% of the gasoline pool at least in the US and around the world, as it is in Brazil, where the market share of ethanol is about 50%.

“27.5% is the lowest amount of biofuel that you can put into your gas tank. That’s what it should be around the world,” Berven said.

Berven said ethanol replaced the most expensive and toxic chemicals in the gasoline pool.

“Ethanol is a high-octane source of fuel, which means that known carcinogens and toxins are replaced much cheaper with ethanol. It’s good for the environment, for the economy and national security.”

“There are few products outside of ethanol that could actually improve the environmental conditions at a better price than gasoline and oil does. Most of these things come at an expense. Ethanol offers a solution at a lower cost,” he said.

Transport is the only sector of the economy whose GHG emissions are increasing globally, scientists have warned.

The role of ethanol in tackling greenhouse gas emissions was recently highlighted by Fatih Birol, executive director of the International Energy Agency (IEA), who told EURACTIV that ethanol “is part of the solution in terms of reducing the oil import dependence of many countries [...] At the same time, ethanol will help reduce CO2 emissions from the transport sector as well as other sectors”.

Brian D. Healy, manager of Ethanol Export Market Development at the US Grains Council, explained that by 2022, US-produced ethanol as a whole is expected to reduce GHG emissions by 50% and that reduction continues to improve.

“There is broad recognition that the transport sector holds great opportunity and urgency to reduce emissions and more and more countries are using ethanol as a means to meet their Paris Agreement commitments set in 2015,” Healy said.

He said their global message was that countries should continue creating and expanding policies for the direct blending of ethanol at levels beyond 10%.

“Many countries have already responded. Last year alone, 11 countries have expanded or created new policies that include ethanol in the fuel mix to achieve their environmental, Paris Agreement goals,” he added.

**FOOD VERSUS FUEL**

Doug Berven also referred to the “food versus fuel” issue, often raised...
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by environmentalists. Their main argument is that the use of crop-based biofuels has led to price hikes globally, something that the ethanol industry rejects.

“One of the misconceptions about ethanol is that we consume the corn. We don’t do it. When we make ethanol from grain, we only consume the starch, which is globally abandoned and cheap,” Berven said.

“All the protein, the fibre and oil go right back into the feed market. So we are not displacing any nutrition around the world but on the contrary, we are increasing the amount of nutrition for the world by making ethanol out of grain,” he added.

On the same issue, Eric Sievers from Ethanol Europe said food versus fuel was a theory and set of predictions that history shows were “false and the opposite of reality”.

“The only story that the data of the past decade support is food plus fuel. Ethanol has been an important factor in enabling farmers to increase yields and output. As a result, sugar and maize prices globally have remained at almost record lows globally most of the time,” he said, adding that oil price spikes cause food price spikes, including a decade ago.

Sievers added that thanks to ethanol, farmers now produce more food, more fuel, more feed, more energy and use fewer per unit inputs.

“That’s why our average GHG savings, measured on a full life-cycle analysis, increase every year, and if those trends continue then in the 2030s average GHG savings from ethanol will be 100%.”

REDII NOT BASED ON REALITY

As far as the Renewable Energy Directive revision (REDII) is concerned, Sievers said it was based on erroneous data. “It is so flawed that it will be totally ineffective in decarbonising transport.”

In terms of the REDII, the EU and its member states have decided to cap first-generation biofuels at a maximum of 7% and there is also a strong push for transports’ electrification.

On the other hand, the United Nations Intergovernmental Panel on Climate Change (IPCC) has recommended that both electric cars and biofuels will be needed to decarbonise future transport.

Sievers said RED II failed to recognise the importance that both the IPCC and the IEA attach to biofuels.

“Both see substantial growth in biofuel production if a 1.5 degrees scenario is to have any hope of success. The Commission, on the other hand, is busy killing investor interest in the industry.”

“There is a lazy reliance on electromobility and a seriously misleading promotion of uncosted advanced biofuel technology. Environmental damage is also being perpetuated in the RED II through incentives for using false wastes in making fuels. Electric vehicles are essential, but so are biofuels,” Sievers concluded.