Agreement in which the countries of the world committed to, among others, significantly reducing global GHG emissions. A key lever in strategies for achieving the Paris Agreement targets is moving from fossil fuel use to renewable energies, including nuclear power, and advancing towards less energy-intensive economies. Needless to say, the transport sector generates a large share of GHG emissions. Both shippers and carriers have much to consider as they aim to diversify their mix of energy sources for transportation. It's a balancing act that requires weighing many factors such as capital investment, cost of energy consumption, available infrastructure, and individual sustainability goals.

We divide internal combustion engines into two categories: single fuel source (the most common) and multi-fuel source. Here we use battery-electric vehicles, solar, biofuel (biodiesel, bio alcohol, ethanol, charcoal, compressed natural gas etc.). Dual fuel vehicles use two types of complete fuel systems and can operate on either of the fuels (for example gas + liquid, gas + gas, liquid + liquid). Flexible fuel, known as flex-fuel/flexifuel in Europe or flex in Brazil, is used in vehicles with an internal combustion engine designed to run on more than one type of fuel. The most common flexible fuel vehicles on the market use a blend of gasoline and up to 83% ethanol.

What is the real answer to alternative fuel?

We can talk about 3 categories of alternatives to fossil fuels for transportation: biofuels, e-fuels, solar fuels.
These low carbon fuels greatly reduce the amount of CO2 emissions to the atmosphere.

Biofuels, produced from biomass, are already available. Examples include ethanol made from sugar cane, corn, sorghum and biodiesel made from vegetable oils and liquid animal fats. These fuels are in a class of renewable energy, less toxic and much more sustainable than conventional fossil fuels, and can reduce emissions in the transport sector. Of course, there are challenges, such as the difficulty in using biodiesel in cold climates since it causes crystallization and the fuel tends to gel (freeze) which could cause severe damage to a truck's engine. As mentioned above, compressed and liquefied natural gas (CNG and LNG) are alternatives to petrol and diesel. CNG was actually in use before the Second World War in Europe, however, the problems of reduced storage space made travel distance very short - 50-70 kilometers. Today, this more sustainable lower-emissions alternative is gaining market share for heavy-duty transportation. Advancements in engine and fuel system technologies have contributed to the logistics industry's use together with its low and stable stock price.

LNG is more expensive than CNG to produce, store and transport. It emits slightly higher levels of GHG emissions. Its use is more common in Europe where there is a lack of pipelines for long distance CNG transport.