The most important question to me is is there is a man-made climate change. The evidence that is brought forward to proof it is often not sound and thus not convincing for me enough to demand that we should radically decarbonize our economy and change our life styles.

The IPCC always brings forward scenarios on the future evolution of showing significant temperature increases by the end of the century if we do not radically decarbonize our economy and change our life styles. These scenarios are based on computer models, which pose a lot of uncertainties. In the last 20 years there was no increase in global average temperature, but the computational models were not able to predict this.

Pieces of evidence for man-made climate that is often brought forward by "climate" scientists are diagrams showing temperature and carbon dioxide concentration in air versus time for the time period ca. 1960 until 2000. This period saw a steady increase of world average temperature and carbon dioxide concentration in the atmosphere. The later rose from 310 ppm to 406 ppm today. It looks like a lot, but if one goes back in time there have been periods where carbon dioxide concentrations were much higher than today. E.g. in the early Cretaceous period (140 million years ago) carbon dioxide concentrations were at 4000 ppm. Also average temperatures were higher than today (by 8°C) and life (dinosaurs) thrived on earth.

Climate is changing permanently and naturally as above example of Cretaceous period or the four ice ages in the last 400000 years. I believe there are other factors that primarily influence our climate than just carbon dioxide emissions. This means that if we decide to decarbonize the economy and change our life styles because of a man-made climate change there has to be **sound & robust scientific evidence to proof it**.

Providing man-made climate change is on-going and thus decarbonisation of our economy is needed it must be done by **using all available means**. At the moment there is a focus on renewable energies, making our homes more energy efficient and changing our daily behavior (reduce our 'carbon footprint') to decarbonize the economy. The real challenges lie within industrial processes and transport. The only viable option to substantially decarbonize these sectors is nuclear energy. Among all energy sources nuclear is the one of highest energy density, meaning with relatively small amount of material (fuel) significant amount of energy can be produced, round the hour independent of the weather conditions and daylight and is a mature technology, which is available for 60 years now. Unfortunately there is a policy among the majority of European political decision makers to avoid nuclear, remain silent about it and even phase it out. This is also reflected in the survey. The word nuclear only appears once. Even carbon capture storage, which is a technology at its infancy, is given more attention in the survey.

With regards to transportation (road vehicles) there is a focus on electric cars as the solution for decarbonizing road transportation. Despite recent progress in the development of electric cars and battery technology there are obvious downsides of this technology. Batteries are heavy and require significant amounts of raw materials to produce them. The range of electric vehicles is limited and charging them takes some time. Charging times can be reduced by using fast charging stations, but having thousands or millions of electric vehicles at fast charging stations at the same time, will have significant impact on the electricity grid.

These downsides of electric vehicles have prompted Toyota in Japan to favor fuel cell vehicles. Like conventional vehicles with combustion engines they can be fuelled quickly, without impacting the electricity grid and vehicles remain light compared to electric vehicles. The main challenge is the production of hydrogen, which has to come from carbon-free energy sources (nuclear, renewables). Alternatively hydrogen produced by carbon-free energy sources could be combined with carbon dioxide evolving from chemical industry as byproduct or taken from the air to produce a pure methanol, which can be used as fuel for conventional vehicles. Going

along this route does not require any changes in vehicle technology and the current fuelling infrastructure with petrol stations could be further used.

So there are alternatives to electric vehicles with clear advantages, but why are they not considered by European political decision makers? Providing man-made climate change is on-going and thus decarbonisation of our economy is needed it must be done as easy as possible seriously considering all possible technologies and focus on a few ones straight away (renewables, electric vehicles), which have obvious downsides.

Another aspect that heavily matters is what the others are doing. The other major economic areas / countries of the world (i.e. US, China, India, Russia, Japan, …) make little efforts in decarbonizing their economies. Thus we Europeans can make as many efforts in decarbonizing our economy as we want, it is all for nothing, if the other major economic areas / countries of the world not do the same. Providing Europe goes along the decarbonisation route and the others do not and in let's say two decades from now the other major economic areas / countries are technology-wise more superior than Europe and their people enjoy higher standards of living compared to people in Europe then European political decision makers will have a very hard time explaining why Europe went along the decarbonisation route. If on top it turns out that man-made climate changes does not exist European political decision makers will have an extremely hard time explaining why Europe went along the decarbonisation route. Such a situation has the potential that people seriously question our political system. **So sound & robust scientific evidence to proof the existence of a man-made climate has to provided first before imposing measures to decarbonize our economy and to change our life styles.**