

Think Global – Act in Cologne

by Stephan Anemüller



From 6 to 17 November, 2017 the UN Climate Change Conference (COP23) takes place in Bonn. It is the 23rd time that the nations of the world community meet to discuss the reasons and consequences of the climate change and to negotiate solutions. 195 nations participate in the COP23. What's that got to do with the KVB, the public transport company of Cologne, which is a small enterprise on a global scale? Public transport is good for the environment. Attention should rather be paid to the private transport by car, the generation of energy and agriculture. Nevertheless, it pays to “see beyond the end of one's nose” to find out how climate change can be successfully realised.

On 12.12.2015, i.e. two years ago, the Paris Agreement on Climate Change was concluded, in which both the developed and the developing countries admit their responsibility for the climate and commit themselves to making changes. Thus, global warming is to be reduced to less than two degree Celsius. To Germany this means as a first step: Reduction of the carbon monoxide emission by 40 per cents by 2020.

As late as at the UN Climate Change Conference in Copenhagen in 2009 there was a deep gulf between the developed and the developing countries. Meanwhile, the participating nations of the world community have closed ranks, but simultaneously the number of participating nations has increased considerably since the first COP in Rio de Janeiro in 1992, which makes the negotiations harder and means that only tiny steps are taken at a time. It is the intention to support one another in Bonn and to determine fair standards for the calculation of the progress.

Since the beginning of the industrialisation the global warming has increased by one degree Celsius. Moreover, 2014, 2015 and 2016 were the three warmest years in all the years in which climate data have been recorded. And this fact will also apply to 2017. Man began to influence the climate considerably as he began to industrialise the world. Since the 1940s the average temperature has increased even more, and since the end of the 1970s it has increased each year without exception. Now the concentration of the “greenhouse gas” carbon dioxide (CO₂) in the air is the highest ever in the last 800 000 years. Transport is one of the main reasons for the emission of CO₂. And then we are by the KVB, just as by all the other road users and transport operators. The entirety is always the result of the actions of single persons and organisations.

KVB and the Climate Change

Public transport has the decisive advantage that it can transport many people by bus and rail. Contrary to the private car, which transports 1.1 - 1.2 persons at a time on average, all seats in the vehicles of the KVB are often occupied; in the traffic peaks in the morning and in the afternoon many passengers even have to stand. Of course, the utilisation of the vehicles is poorer at other times of the day, but the general average is decisive: He who goes by the KVB can count himself lucky because his share of the CO₂ emissions only amounts to 18.01 grams per passenger kilometre. Journeys with KVB’s light rail vehicles are even CO₂-free as green electricity is used on all twelve lines. By comparison: On average, a private car emits 142 grams of CO₂ per passenger kilometre.

Thus, it is obvious that public transport plays an important role in the climate change. Buses and rail vehicles are problem solvers. Thanks to them people can contribute actively to the climate change. Indeed, many people’s wishes can be realised by buses and rail vehicles. According to a recent expert opinion about 50 per cents of KVB’s passengers would go by private cars if the KVB would not exist; the other 50 per cents would go by bicycle or motorcycle, walk or stay at home.



Consequently, development of the public transport is the most important climate change approach in the transport sector. Changes are essential in this sector because transport has not contributed at all to saving CO₂ since 1990 although the environmentally friendly public transport has increased. The reasons are the facts that there are now quite a few more high-consumption cars like the modern SUVs on the roads and that people travel more often and longer than earlier.

In 2015 the City of Cologne announced some development projects for the public transport scheme of the state of North Rhine-Westphalia. KVB's network of lines is to grow together with the City of Cologne. An example is the extension of the North-South LRV line to Rondorf and Meschenich, districts in the South of Cologne, via the Bonner Strasse. Due to this extension it will be possible for the residents of these two satellite towns, who often do not possess private cars, to go by rail. At present, 440 private cars are registered per 1 000 adult residents in Meschenich (position 40 among the Cologne districts), which has not got an LRV connection yet, whereas only 275 private cars are registered per 1 000 adult residents in Chorweiler (position 2), which is already connected with KVB's LRV system.

The KVB advocates itself and its services in two ways:

Among the politicians and the municipal administration we advocate the development of our offers. Thus, we e.g. want to extend existing LRV lines, develop new bus lines, upgrade the East-West axis for higher performance, purchase new vehicles and modernise existing installations.



Among the residents we advocate more frequent use of our offers. In 2016 the residents and their guests boarded KVB's buses and rail vehicles about 277 million times. Each resident goes by rail about 150 times per year and by bus about 50 times. For years the KVB has advertised its services in the form of a climate campaign, in which the consequences of the climate change are illustrated by hard images and in which it is indicated that the transport by the KVB is *the* solution.

KVB's Actions

The KVB endeavours not to rest on its present environmental advantage. The enterprise takes solid steps. Thus, we always consider the climate and environmental aspects when we want to change something. In such cases it is important to unite the customers' demands, the technical and operational feasibility and the economic efficiency. Only in this way can sustainable entrepreneurial action develop, which also considers the long-term climate change.

Recently, the KVB has taken the following actions to reduce the climate change:

We have used green electricity on our twelve LRV lines since the beginning of 2016. In this way the CO₂ emitted by the light rail vehicles was reduced from 46 grams per passenger kilometre to 0 gram per passenger kilometre.

We have put more electric buses into operation. On 3 December 2016 bus line 133, which runs between the Cologne Main Station and Cologne-Zollstock, was converted into an electric line. Compared with the operation with diesel-powered buses, about 560 tons of CO₂ are saved per year, also because green electricity is used on this line, too.



We have just begun to erect a P&R car park in the Cologne district of Porz-Wahn, which is intended for commuters and located near two suburban lines and several bus lines. He who parks his car on one of the 300 parking spaces, which will be available by the end of 2018, and continues his journey into the inner city of Cologne with the suburban train will emit far less CO₂ than he does today. If it is assumed that the average amount of CO₂ emitted by a private car amounts to 142 grams per passenger kilometre, this about 18 km long line section from Porz-Wahn to the inner city of Cologne on the other side of the Rhine leads to an environmental advantage of 2 556 grams of non-emitted CO₂ per journey. If a commuter parks in the P&R car park and uses this connection 180 days per year (i.e. if he makes 360 journeys per year), his emission of CO₂ is reduced by more than 920 kg per year.

Moreover, the KVB is involved in eco-mobility. Since May 2015 the KVB offer has included bicycles in the form of a bicycle hire system, which is integrated into the public transport offer. At first, the KVB offered 910 bicycles, but in September 2016 the fleet was increased to 1 410 bicycles. The original area of the bicycle hire system was extended already in December 2015. Now it comprises 84 km² and is nearly twice its original size. By September 2017 our customers had hired the bicycles altogether 1.6 million times. On average each bicycle trip was 1.6 km long. Thus, more than 2.5 million CO₂-free kilometres have been ridden in Cologne.

Climate and Climate Change – Not an Easy Subject

Our climate always depends on that of other nations and other cultures - on all continents. The fine formation of the weather on a specific day, the weather over several days and the climate in the long term can be compared with a clock, which consists of many small and big gear wheels. Thus, it also includes the fine interaction of the seasons as well as the long-term variations of the average temperature and the amount of precipitation etc. To make it even more complicated, our central-European climate clearly differs from that of the other earth regions. However, there are no fixed borders between the climate zones; we live in a “clock”.

Here one turn affects the situation in the other parts of the formation. However, not only man, but also nature itself “turns” the small wheels in the form of volcanic eruption, random events and other incidents. He who thinks his way into the coherence soon understands: It is a very complex science, with which the media confront us nearly every day. How can we get and keep the overview? What’s that got to do with us?

To simplify the discussion, one central value has mainly been discussed in the last few years: The average temperature of the earth’s atmosphere. This value shall not have increased by more than two degree Celsius by the end of this century. The scientists try to measure the current situation of this complex global formation. Will the warming increase by maximum two degree Celsius if man’s present behaviour in all cultures does not change or will it increase by more than two degree Celsius in that case? Can we - all of us together - reach the climate target or do we have to increase our efforts? Many experts forecast that the warming will have increased by up to five degree Celsius by the end of this century. At present, an increase of three to four degree Celsius seems likely.

Our earth is mainly warmed up by CO₂ and methane. CO₂ emerges by the combustion of carbonaceous substances, i.e. diesel, petrol, kerosene, heavy oil etc., which are won from crude oil, and by the combustion of coal, wood and similar materials. Meanwhile, the term “CO₂” has become common knowledge. Just as in case of the other greenhouse gases, the presence of this gas in the atmosphere means that the solar energy, which shines into our earth and is reflected as heat radiation at the earth’s surface, cannot easily leave the atmosphere anymore. Consequently, the atmosphere is warmed up like the air in a greenhouse. Moreover, the ice masses at the poles melt, the difference between fresh water and salt water is changed and the temperature differences between air and oceans are changed, which in turn means that the ocean currents and the wind systems are changed, which leads to stronger heat waves, more frequent extreme rainfalls, stronger winters and longer dry periods etc. - also in our country. By the way, everybody also knows the term “greenhouse effect”.



This complexity can be countered by a simple message: The heavy emission of CO₂ contributes significantly to the global warming in our greenhouse and thus to the grave consequences that affect our lives seriously. Thus, to be able cope with the consequences of the climate change, the average global warming shall be limited to two degree Celsius. This simple message can be the maxim of action, combined with confidence in the scientists and their institutions.

It doesn't do any good to deny the warming, to resign or to whitewash it

From a naive point of view permanent warming of the earth’s atmosphere could make life more comfortable in our country. Such thoughts come just in the uncomfortable autumn with its cold, wet weather.

Or do the “side effects” of global warming, i.e. heavier storms, longer heat waves and more frequent extreme rainfalls etc., also affect us? We have seen such photos from many parts of the earth. Fortunately, floods in Bangladesh, hurricanes in the Caribbean, the expansion of the African Sahara and the drift of huge ice floes in the Antarctic are very far away from us. Most of us only know about these wetter phenomena from the television.

It is not really a surprise that Germany is worried about its climate change progress. In the Paris Agreement on Climate Change in 2015 Germany committed itself to reducing its emission of CO₂ by 40 per cents by 2020 and to avoid further shares further by 2050. The German Environment Agency (UBA) has calculated that each inhabitant in Germany has to reduce his present average emission of CO₂ of 12 tons per year to less than one ton.

However, it is not so that we have simply committed ourselves to the wrong targets, which are now just about to be thwarted. These targets are based on concrete figures of the German share, which has been calculated on the basis of the present situation in our world, and are not simply ambitious, politically desired targets. As one of the world's richest nations with excellent research institutions, numerous strong medium-sized enterprises as innovation drivers and some big groups of companies, which are champions on the world markets, we should be able to find solutions.

The problem is man's nature, which can be expressed in terms of habit, comfort and indolence. It seems to be very difficult for us to take concrete action. We have long been satisfied with the documented decreasing CO₂ emission, but we have often overlooked that this decrease was mainly the result of the close-down of old industrial plants and energy systems of the former German Democratic Republic following the German reunification. All in all, we have not achieved anything at all since 1990.

Nevertheless, there are no borders between the world's regions. We, too, perceive that the North Atlantic flow system is weakened because the melting ice of the Arctic dilutes the salt water. Summer and winter are less delimited now than earlier and are often out of the seasonal pattern. We, too, are influenced by the increasing water line of the Rhine (and thus by the increasing water table) as e.g. the flood concept in Cologne is paid by public funds. We also have extreme rainfalls. This summer an LRV stop in Cologne ("Geldernstr.") was flooded in less than one hour, which was a nuisance to the passengers for weeks and cost more than 600 000 euros.



Therefore, we shall not deny the mechanisms of the climate change, but face the interdependencies. We are part of the solution or the problem, and in both cases we make up the biggest part. "We" are each resident, each company and each organisation in our city and region. And "we" are the KVB, too.

The World Community and Each Single Person

How do the COP23 and the concrete human behaviour go together? The motto is "think global, act local". But can a single person or a single company really make a difference? The KVB follows the strategy of solid steps. It does not matter to us whether other companies

should be more active because they contribute more to the global warming. The KVB sees itself as an active partner of the City of Cologne in the field of climate change and environmental protection. Taken steps are always part of a way and mean movement and not waiting.

May Africans not go by car because we already go a lot? Or shall the Chinese go less on holiday each year because we already travel around the world all the time? Or do indigenous peoples have to adapt themselves to a fully different environment because we want cheap palm oil from the rain forest areas? We are bound to try hard so that everybody can benefit from the development.

It is also a matter of justice. It is true that our vehicles have got more environment-friendly in the last decades. The KVB is a good example: Today, our diesel-powered buses fulfil the EURO VI emission standard, their perfected engines consume less, but very high-quality diesel and our buses no longer spew huge quantities of pollutants and CO₂. Thus, the KVB is still developing its environmental advantages although more actions have to be taken in other transport fields, especially in the field of private transport by car.

The KVB is happy to exchange experiences with groups from everywhere in the world. Recently, a group of Peruvians paid a visit to us and had the KVB bicycle and the electric bus explained. They were especially impressed by the bicycle hire system and tested the bicycles intensively. Here, too, the global aspect is important. Our solutions can also be helpful in other parts of the world, just as solutions from other countries inspire our plans. In the end, those people are supported who want to protect the climate and the environment and need useful solutions and useful commodities for this purpose.



In a worldwide context a municipal enterprise like the KVB is comparable with a single private household in a metropolis. They are both small entities that cannot themselves turn the “big wheel”. But where are the big entities that can influence the climate change directly and considerably? No matter whether one looks at small or big entities - from the KVB via Deutsche Bahn AG to the Russian State Railway or from RheinEnergie AG via RWE AG to the Chinese electricity producers - there is hardly a single entity with sustainable influence - either alone or together with a few other entities. The total formation is decisive.

Thus, Germany’s share of the worldwide climate change only amounts to two per cents, whereas that of China now amounts to one third. Although 26 per cents of Germany’s electricity is generated from renewable energy, which is twice as much as in India, each German still contributes more to the climate change than each Chinese and each Indian. These figures indicate dynamic forces and complexity. Reason urges us not to join the queue. That’s why the KVB does not rest.

KVB's Future

It is obvious that the KVB is only a small gear wheel in the global climate clock but every little thing helps to cope with the global challenge of climate change.

Above all, the solution to go by bus and rail is a solution that all residents of Cologne can realise fast and easily. The denial of the warming, the resignation or the white-washing of the climate change can only be counteracted by practicable solutions.

That's why the KVB will remain a reliable partner of the City of Cologne in the field of climate change and environmental protection. The KVB is going to further improve its environmental advantage by putting more electric buses into operation and by taking other environment-friendly initiatives.

