Test mobility scenarios and their consequences in Alba Iulia FUA

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# 1. Information about this test scenario

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| FUA Name | Alba Iulia Municipality FUA |
| Scenario Name | **Group MUST: Business-as-usual**  *Continue your current transport/mobility policy in next 20 years*  *EU, National and Regional Policies do not change in next 20 years* |
| Date | 22.11.2017 |
| Policy target year | 2030 |
| Contributor | LIST\_ALL\_CONTRIBUTORS  From Alba Iulia Municipality:  Cristiana FICA, Communication Manager  Ovidiu PODARU, Project manager  Tudor DRAMBAREAN, Project manager assistant  Maria-Elena SEEMANN, Public Manager  External Expertise:  Nicolaie MOLDOVAN, Euroconsulting |

# 2. Describe this scenario

* Max. in 10 lines

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| This scenario represents the scenario where the SUMP is only available for the core city of the FUA - Alba Iulia Municipality meaning that under this scenario all other communes members of the FUA will either develop their own SUMP at local level (taken into account that today no commune has a SUMP) or choose not to develop a SUMP in the near future. In both cases in the business as usual model, there will not be an improvement in terms of integrated mobility development at conurbation level, the mobility will be improved only at the core city level (Alba Iulia Municipality). However, the SUMP of Alba Iulia Municipality’s already has included measures for public transportation at conurbation level (since public transportation is organized today at conurbation level). This scenario will ensure only the improvement of the public transportation at FUA level, but not mobility as a whole. |

# 3. Assessment of consequences

How will the demographic structure of your FUA and the core city in it be in your planning horizon around 2025 to 2030? (No of population, age structure, etc.)

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| In the current scenario, the Core City Alba Iulia (being among the county capitals in Romania with increasing population in 2014 – while in most other cities in the country the number of inhabitants decreased – according to the ***Center for Urban and Territorial Development*** Report released on November 2015 Alba Iulia is among the 6 county capitals of Romania where the population increased in the last years, together with cities such as Iași, Vaslui, Bistrița, Sibiu and Cluj-Napoca). Concerning the trends of the commuters areas (the 7 communes) it seems that the prognosis for the city for 2030 in terms of number of inhabitants is positive for Alba Iulia, Ciugud, Galda de jos, Ighiu, and Sîntimbru and negative evolution for Cricău, Întregalde and Mihalț. The prognose was made by taking into consideration the development of the area, the construction of the highway, the new economic facilities and the aging process of the population. |

Which types of transport technology will have been diffused or will disappear in your FUA in your planning horizon around 2025 to 2030?

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| In the current scenario, the transport technology will be developed for the public transportation at FUA level but all other technologies and measures for improving the transportation will be undertaken in an individual manner by each of the communes but not in an integrated and innovative way, applicable at FUA level. For example, e-ticketing, GPS tracking for public bus at conurbation level will remain the same (which currently is considered to be innovative at national level, being the first model applied at conurbation level for local public transportation). Free WiFi will also be a technology which will remain active at conurbation level. However, in terms of transport technology and integration to other available technologies for the other means of transportation available at conurbation level, there will be a gap in ensuring the integrated transport system if there will not be a coherent approach and a planning strategy focused on the development of mobility at FUA level. |

How will the share of transport mode change in your core city and FUA? Will there be higher share of journey with cars or less? Will it increase or decrease the share of public transport? Will there be more cyclists and walkers, or less?

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| In the current business model, as mentioned before, only the use of public transportation will be increased at FUA level. There will be a decreased share of journey with cars as well if public transportation at FUA level will increase (see also scenario 2 for that). However, since public transportation will remain the only policy in terms of mobility improved at FUA level, the number of cyclists will remain the same (or even decreasing) considering that in the current planning there is no integrated approach to ensure an integrated cycling system at FUA level to encourage the transportation by bike between the communes and the core city. |

Which part of your future prediction is not in line with upper-level transport policy (of region, country and EU)?

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| At regional, national and EU level, there are regulations mandatory to be implemented, such as ensuring the e-ticketing for all levels of public transportation. However, today, at Alba county level the public transportation for the communes which are not members of the FUA is still not managing to ensure that these regulations are entirely respected, meaning that the companies managing the public transportation at county level are still not implementing the e-ticketing system. This could be tackled if the local public transportation system will be enlarged and available also to other communes at Alba County level in the future. |

Is the overall situation improving the living quality of your FUA?

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| The current scenario will not change substantially the living quality of the FUA. Concerning the Core city, one can notice in 2011 a slight increase in the number of inhabitants (on 2011 Census there were 63536 inhabitants in Alba Iulia), however due to the investments during the last 5 years at Alba Iulia level and the increase of the quality of life in the city, it is noticeable that the number of inhabitants increased even more: \*according to the INS (National Institute of Statistics) in 2017 there are 74 501 inhabitants registered.  These are indicators showing that the quality of life in Alba Iulia Municipality is increasing, meaning that keeping the same planning and development will also contribute in increasing the quality of life but not for the FUA level in an integrated manner since there is no specific regulation and strategies applying to the FUA as a whole administrative unit (excepting the AIDA TL association, as mentioned before, through which the local public transportation is ensured at FUA level in an innovative and integrated way). Coming back to the core city, Alba Iulia Municipality, according to the recent report of the World Bank, Magnet Cities - Migration and Commuting in Romania (<http://documents.worldbank.org/curated/en/327451497949480572/pdf/116400-WP-P158178-PUBLIC-MagneticCities-Jun18-v4.pdf>) ZUF Alba Iulia annually attracts more than 1200 new inhabitants (from small communes from the county but also relocation from cities (50%, 11% from Timisoara). According to the same report, Alba County is experiencing a high quality of life - the Local Human Development Index identical to the one of Bucharest and Braşov, respectively higher than Timişoara and Iaşi), respectively of the generous job offer. Also, Alba Iulia – the core city of the FUA, has an atypical status for a city of its size – a university center (attracting more than 5000 students/year, competing with larger cities such as Bacău, Ploiești, Baia Mare). |

What are the effects on particular demographic groups, such as children, elderly, low-income group, foreigners and migrants, students, mobility-impaired people, etc.?

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| This scenario will ensure that that conditions for public transportation for such groups will remain the same, children and students will still benefit of monthly subscriptions for public transportation like they do at present, while elderly or disadvantaged groups such as mono-parental children will benefit from gratuity for public transportation, like they do now. Moreover, the buses available at FUA level will still be equipped for mobility-impaired people as they are now. |

How will the transport-related cost paid by each end user change? How will the transport-related cost paid by your municipalities or regional government change?

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| The transport-related cost paid by each user will remain the same within this scenario, meaning that the end user will be able to pay the tickets for public transportation as they do now, through different means (SMS, bank transfer, ticket machine in the stations and from the driver). The transport-related cost paid by the municipalities and communes members of the FUA, associated within AIDA-Local Transportation association, will also follow the same trend. In 2018 there will be a public procurement which will be conducted for the local transportation at conurbation level, it is possible that respecting the state of the art it will ensure the same minimum criteria for the future operator of the public transportation, and the costs could also increase together with the minimum quality and standards imposed by the public procurement documentation. |

Will the overall change will lead to increase or decrease of transport-related energy consumption in your FUA?

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| Through this scenario we estimate that the transport-related energy consumption will slightly decrease at FUA level keeping in mind that public transportation is encouraged. The communes together with the core city of the FUA have started to pay attention to the transport-related energy consumption, and that nowadays the public transportation operator is recognized to be one of the most efficient in Romania, ensuring the most energy efficient but also most efficient in terms of comfort and quality of public transportation services (including high quality of human resources involved in providing the public transportation – from management to executive), being also rewarded both by international organizations such as IRU but also by national organizations such as AMR (Romanian Municipalities Association) through the Gala organized under the patronage of the Romanian Presidency. However, the current scenario will not have a significant impact on the overall transport-related energy consumption if there will not be a specific planning initiative conducted at FUA level for all means of transportation in order to reduce the use of personal cars (for private use or for business related activities) in order to stimulate more the use of alternative means of transportation at FUA level, in an integrated manner. |

Will the overall change will lead to increase or decrease of transport-related CO2 emission in your FUA?

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| It is exactly the case of the energy consumption slightly decreasing due to the current policy applicable at FUA level for public transportation. Meaning that the impact on the reduction of the transport-related CO2 emission at FUA level will be minimum if there will not be any other integrated measures at FUA level to approach other needs in terms of mobility and to encourage the use of alternative means of transportation. The reduction of CO2 emissions will only be visible related to the use of the public transportation at FUA level. |

# 1. Information about this test scenario

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| FUA Name | Alba Iulia Municipality FUA |
| Scenario Name | **Group 1:**  **Making public transport more attractive;**   * *Public transport covers 80% of the FUA’s population and workplaces/schools by 2025 within 300m of stations/stops.* * *High frequency of the service and longer service hours is provided.* * *Introduction of integrated ticket system for all types of public transport (bus, tram, railway);* * *Public transport fare is made affordable to everyone;* |
| Date | 22.11.2017 |
| Policy target year | 2030 |
| Contributor | LIST\_ALL\_CONTRIBUTORS  From Alba Iulia Municipality:  Cristiana FICA, Communication Manager  Ovidiu PODARU, Project manager  Tudor DRAMBAREAN, Project manager assistant  Maria-Elena SEEMANN, Public Manager  External Expertise:  Nicolaie MOLDOVAN, Euroconsulting |

# 2. Describe this scenario

* Max. in 10 lines

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| In this case scenario people are being encouraged by an efficient public transport, to travel more frequently by bus, leaving their cars home. After that, considering that a car (even unused) involves a lot of cost (consumables, parking fees, taxes, etc.), more than likely the number of cars per capita will drop. This will have a beneficial effect at the city level and on its inhabitants as well. First of all, we can talk about the quality of the air which will be improved considering the reduction of the quantity of CO2 emissions and greenhouse gases released in the air. The improvement of the air quality will encourage the cyclist to use their bicycles as a mean of transport, not just for fun in the weekends or as a sport activity on the hills near the forest. Also all the mobility in the city will become more efficient and less time consuming and the traffic jams from the morning and afternoon will be reduced. The inhabitants of the city and the tourists as well, will spend less time in traffic, reaching the destination faster than in a city blocked by traffic jams. |

# 3. Assessment of consequences

How will the demographic structure of your FUA and the core city in it be in your planning horizon around 2025 to 2030? (No of population, age structure, etc.)

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| From the last census in 2011, Alba Iulia has already experienced an increase of population. So considering this trend and taking into consideration the investments during the last 10 years at Alba Iulia level which increase the quality of life, and also the fact that A10 highway which will link Alba Iulia with Cluj-Napoca and Sibiu will be finished by 2019, the scenario for FUA and the core city, in terms of demographic structure by 2025 to 2030 is a positive one. The prognosis for 2030 in terms of number of inhabitants is positive also for Ciugud, Galda de jos, Ighiu, and Sîntimbru. |

Which types of transport technology will have been diffused or will disappear in your FUA in your planning horizon around 2025 to 2030?

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| For the planning horizon around 2025 to 2030 we estimated that (at least within the core city) the vehicles using fossil fuels will be reduced by half. We expect this trend in all the FUA but we can not state that one type of transport technology will really disappear. On the other hand, using the bicycle as an alternative means of transport will be very popular in FUA by 2030. |

How will the share of transport mode change in your core city and FUA? Will there be higher share of journey with cars or less? Will it increase or decrease the share of public transport? Will there be more cyclists and walkers, or less?

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| The quality of public transport in all FUA is increasing year by year becoming one of the most modern and well organized in Romania managed by Alba Iulia Association for Intercommunity Development – Local Transport (AIDA TL). Thus AIDA TL efficiently manages transport for the core city and also for other 7 partner communes which are part of FUA. Considering this, the share of public transport will defiantly increase in all FUA and the journey with cars will decrease. In this case scenario, as we explained above, the quality of air will be improved and the number of cyclist and walkers will increase. |

Which part of your future prediction is not in line with upper-level transport policy (of region, country and EU)?

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| Through different directives, EU is trying to reduce CO2 and greenhouse gas pollution in the atmosphere. Thus, the partner countries are trying to implement these directives through various measures applied at local and regional level. Moreover Alba Iulia is implementing several transnational projects funded by EU through different programs such as Interreg Europe, H2020, URBACT, in order to increase the quality of the air and to improve the quality of the public transport. Taking into account these issues, our local policies are in line with those at European, national and regional level. |

Is the overall situation improving the living quality of your FUA?

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| The Public Transport Company (PTC) won the excellence prize of the International Union of the Road Transportation (the IRU Bus Excellence Award) for a comfortable and ecological fleet, accessible for people with disabilities, e-ticketing, for its “always on-time” schedule and for the degree of satisfaction for the clients.Moreover, PTC Alba Iulia was awarded to be the “Transportation Company of the Year” in the competition organized in 2017 within the Cargo Day in Brașov. Also, the IT prize was awarded to the PTC Alba Iulia. The company introduced the possibility to pay for rides via SMS. PTC introduced urban mobility cards for all travelers and a modern electronic ticketing. Also the company is the only one in Romania which uses validation systems based on the GPS position of the customer in the relation with tariff zones. The farthest tariff zone is situated 41 km from Alba Iulia.  The company is concerned with innovation and research in the relation with the environment protection. PTC is the first Romanian transport operator to use of biofuels in urban passenger transport.  So, taking into consideration all mentioned above, we can state that the overall situation improving the living quality in FUA, especially related to public transport, benefits from constant improvements from one year to the next. |

What are the effects on particular demographic groups, such as children, elderly, low-income group, foreigners and migrants, students, mobility-impaired people, etc.?

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| The effects are positive considering that the prices are affordable to any social category and because the ticketing system is designed in such way that a ticket is available a period of time related to the range on which the passenger wants to move and of course the prices are related to the range. But a ticket does not mean just a one way trip with the same bus. |

How will the transport-related cost paid by each end user change? How will the transport-related cost paid by your municipalities or regional government change?

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| Alba Iulia Municipality together with the other Municipalities part of the Alba Iulia Association for Intercommunity Development – Local Transport (AIDA TL) subsidizes public transport annually with a budget approved in local councils of every administrative units which are part of AIDA TL. In this way the cost paid by each end user should not change. |

Will the overall change will lead to increase or decrease of transport-related energy consumption in your FUA?

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| Considering that the number of busses related to public transport will increase in the next years it can be assumed that also the PUBLIC transport – related energy, will increase. But considering that our scenario is that until 2030 the number of private cars on the FUA will drop drastically, especially within the core city, we can estimate that the overall transport related energy will decrease. Also it is very important to mention what kind of energy consumption are we referring to, because in this regard AIDA TL together with Public Transport Company intend to introduce until 2030 a reasonable number of electric busses in the fleet. So considering this, the energy consumption for electric buses became a clean energy. However, the overall change within FUA will lead to a decrease of transport related energy by 2030. |

Will the overall change will lead to increase or decrease of transport-related CO2 emission in your FUA?

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| As already mentioned above, there is no doubt that the CO2 emission in FUA will decrease. One reason is improving the quality of the public transport system and introducing more stations within 300 m to every school/workplace in order for the inhabitants to choose public transport at the expense of personal car. Another way for decreasing the CO2 emission will be established by introducing until 2030 a reasonable number of electric busses in the fleet. Also Public Transport Company (PTC) already began a collaboration (from 2011) with the inventor Cornelius Birtok Baneasa, author of a special air filter that reduces fuel consumption and increases engine power. PTC installed experimentally such a filter on one of the buses, observing, after about two weeks, a reduction of almost 11% in fuel consumption and pollution, without registering other side effects. In this regard we consider that the overall change will lead to a decrease of transport-related CO2 emission in all FUA. |

# 1. Information about this test scenario

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| FUA Name | Alba Iulia Municipality FUA |
| Scenario Name | **Group 2:**  **Population of the FUA increases by 50% between 2020 and 2030**   * ***FUA’s population is increasing rapidly, and becomes 50% more in 2030 compared to today;*** * ***FUA’s population is ageing at the same time, and the average age of the citizens is 10 year older in 2030.*** |
| Date | 22.11.2017 |
| Policy target year | 2030 |
| Contributor | From Alba Iulia Municipality:  Cristiana FICA, Communication Manager  Ovidiu PODARU, Project manager  Tudor DRAMBAREAN, Project manager assistant  Maria-Elena SEEMANN, Public Manager  External Expertise:  Nicolaie MOLDOVAN, Euroconsulting |

# 2. Describe this scenario

* Max. in 10 lines

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| This scenario takes into consideration the possibility for the population of the FUA to increase by 50% between 2020 and 2030.  In this scenario it is important to take into account some substantial changes in the structure of the population of the FUA and of mobility implications at the level of the FUA.  An increase of population by 50% at the level of the FUA will mean a substantial change in the transportation modes and in the pressures placed on mobility to change in order to maintain CO2 emissions at a low level. Moreover the quality of life is expected to change since a high increase of population usually brings more investors and better quality of services at the FUA level.  Also the introduction of smart technologies at the level of the core city and of the FUA, will mean that new technologies will bring an added value for improving transportation and the quality of life for the inhabitants of the FUA. |

# 3. Assessment of consequences

How will the demographic structure of your FUA and the core city in it be in your planning horizon around 2025 to 2030? (No of population, age structure, etc.)

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| In 2010 the National Statistics Institute provided that in Alba Iulia there were 72.951 persons in Alba Iulia and 96.019 inhabitants living in the whole FUA area. For 2030 under a prognosis of 50% growth the number of inhabitants for the core city of Alba Iulia would be 109.427 and 144.029 inhabitants for the whole FUA area.  The gender structure of the population for the FUA area in 2010 was 46.540 male inhabitants and 49.470 female inhabitants. For the year 2030, the prognosis under a 50% increase of the gender structure for the core city area would be 52.714 male inhabitants and 56.713 female inhabitants while for the FUA area it would be 70.014 male inhabitants and 74.015 female inhabitants. |

Which types of transport technology will have been diffused or will disappear in your FUA in your planning horizon around 2025 to 2030?

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| Within the planning horizon around 2025 to 2030 at the level of the FUA area we expect an increase in the use of cycling transportation with the considerable increase in the number of cycling routes in the FUA area, financed through the Regional Operational Program.  Moreover we expect the launch of car sharing systems integrated at the level of the FUA but also the functioning of at least 25% of public busses based on electric power.  We estimate the increase of car sharing apps such as “Bla Bla Car” or Uber at the level of the FUA, with the considerable increase of the population. Moreover, we expect a ban on diesel cars imposed at national level, especially in the core cities, such as Alba Iulia. |

How will the share of transport mode change in your core city and FUA? Will there be higher share of journey with cars or less? Will it increase or decrease the share of public transport? Will there be more cyclists and walkers, or less?

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| Bearing in mind the expected legislation changes in terms of transportation, we expect that car ownership will decrease by 2030 due to the high number of taxes and restrictions imposed at local, regional and national level.  Thus we expect a considerable increase in the public transport along with an increase in cycling transportation and non-polluting means of transportation (such as cargo-bikes, electric cars, etc.) at the level of the FUA area. Due to the substantial increase of population we expect the increase of use of cars by the 2025, however due to the increasing of taxes for car ownership and pollution, we expect a considerable decrease in car journeys by 2030. Also we expect the increase of pedestrian walks in the core city, Alba Iulia. |

Which part of your future prediction is not in line with upper-level transport policy (of region, country and EU)?

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| All of the future predictions will be in line with upper-level transport policies. However, given the high increase of population prognosis for 2030, there is the possibility that the car ownership will still increase although measures will be imposed for reducing this trend at the FUA level. Since high car ownership will still represent a problem, CO2 emissions are still going to represent a challenge for policy makers. |

Is the overall situation improving the living quality of your FUA?

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| Generally speaking the increase of population by 50% in the whole FUA area will improve the living quality of the FUA.  We expect a considerable increase in the number of start-ups in the city, thus increasing the number of jobs available and the number of new services at the level of the FUA. An increase in population will also translate into a higher number of companies opening their branches in the FUA level since they are looking for more specialized labor force and it is well known that this can be found in cities with a larger population. Moreover, since the city is developing as a touristic destination, by 2030 we expect a large number of tourists coming to the cities, which will also generate more jobs in this area.  In terms of transportation, by 2030 the infrastructure of the core city and the FUA will be put in place to support an increase in the number of journeys at the level of the FUA. |

What are the effects on particular demographic groups, such as children, elderly, low-income group, foreigners and migrants, students, mobility-impaired people, etc.?

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| The effects for the mentioned demographic groups are expected to be positive ones since, as mentioned previously, the increase of population by 50% will generate an increase of services at the FUA level and of services provided by the public and private sectors. More services will be developed for each category as the World Bank estimates that magnet cities (such as Alba Iulia) will generally increase the quality of life within their premises. Moreover, the municipality already started implementing various smart city solutions which by the year 2030 will bring a large number of positive effects at the level of the population of the FUA area.  In terms of public transportation for different groups, the services will need to improve their current facilities, in order to tackle the large increase in the number of elderlies. In principle, services dedicated to children and students will still benefit of monthly subscriptions for public transportation like they do at present, while elderly or disadvantaged groups such as mono-parental children will still benefit of gratuity for public transportation, like they do now. Moreover, the buses available at FUA level will still be equipped for mobility-impaired people as they are now. |

How will the transport-related cost paid by each end user change? How will the transport-related cost paid by your municipalities or regional government change?

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| The transport related costs at the FUA area will probably remain constant even with an increase of population by 2030. However we expect an high increase of costs for car owners which will lead to an increase public transportation at the city level which is generally cheaper than private car ownership. Thus we expect that the costs for public transportation might decrease by 2030.  The core city and the other FUA localities will increase the costs for private owners while subsidizing even more public transportation in order to reduce the CO2 emissions and to change the trend of car ownership at the FUA level. |

Will the overall change will lead to increase or decrease of transport-related energy consumption in your FUA?

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| Given the considerable increase of population at the FUA area, transportation will be one of the most “affected” areas since mobility will increase substantially in the core city and in the FUA localities and also between the core city and the FUA localities. Even if cycle logistics will increase in the FUA area by 2030, energy consumption in the transport area will still continue to increase substantially as well. |

Will the overall change will lead to increase or decrease of transport-related CO2 emission in your FUA?

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| Given the high increase of population, in the interval 2020-2030 the CO2 emissions level will slightly increase although not at a fast pace since measures are expected to be put in place for alternative transportation (cycling, electric busses, car sharing, walking, etc.) and for increased public transportation in the FUA area. |