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# Project full title: Urban Reduction of GHG Emissions in China and Europe

Deliverable: D1.1

**Title: Report on Baseline-2007 & BAU-2020 Workshop**

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**URGENCHE / WP1 (Coordination) D 1.1**

**Baseline-2007 & BAU-2020 Policy Workshop, Thessaloniki, Greece, 8-10th April 2013**

Contents

1. Project wiki: OPASNET

All project management, and many scientific activities appear on the project wiki, OPASNET wiki: http://heande.opasnet.org/wiki/Urgenche
[Password protected].  Upon request to the project manager, Nicky Cocksedge, we can provide usernames and passwords.

Presentations from the Thessaloniki workshop appear on the wiki, as follows:

**Methodological Presentations from the workshop**

- WP2 Energy Balances - *Sandra Torras Ortiz*
- WP3 GIS City – *Clive* Sabel & Zena Wood
- WP3 GIS City - *Niko Karvosenoja/Ville-Veikko Paunu*
- WP4 Building Stock - *Marjo Niittynen*
- WP5 Urban Traffic, main presentation - *Menno Keuken*
- WP5 Urban Traffic, the approach for Chinese cities - *Menno Keuken*
- WP5 Urban Traffic, case studies - *Sander Jonkers*
- WP6 Exposure, Health & Well-Being - *Pierpaolo Mudu/Rosemary Hiscock*

**City Presentations from the workshop**

- WP7 Suzhou City - *Miaomiao Liu*
- WP8 Xi'an City - *Xiaochuan Pan*
- WP9 Basel City - *Laura Perez*
- WP10 Kuopio City - *Erkki Parjala*
- WP10 Kuopio City - *Arja Asikainen*
- WP11 Rotterdam City - *Willem-Jan Okkerse*
- WP12 Stuttgart City - *Sandra Torras Ortiz*
- WP13 Thessaloniki City - *Denis Sarigiannis*

**Other Presentations from the workshop**

- Changes to the Grant Agreement(from Project Management Meeting) - *Nicky Cocksedge/Clive Sabel*

2. Meeting Agenda

# Urban Reduction of Greenhouse gas EmissioNs in CHina and Europe (URGENCHE)

Baseline-2007 & BAU-2020 Workshop, 8-10th April 2013

CERTH, 6th Klm. Charilaou, Thermi Road, Thermi, Thessaloniki, Greece

## Programme

| Time | Item | Presenter/chair |
|---|---|---|
| **Monday 8th April**<br>**Zephyros Room** | | |
| 11.30 | Bus pick up from Aristotelous Square.  It will be marked "URGENCHE Workshop – CERTH". | |
| 12.00 | REGISTRATION – Buffet lunch available | |
| 12.15 | Welcome, programme of meeting | CS/NC |
| 12.30 | Welcome from hosts | Hosts |
| 12.45 | City update – WP12 Stuttgart<br>- Describe the Baseline-2007 scenario for their city & develop the BAU-2020 scenario using current urban plans/future projections | ST |
| 13.15 | City update – WP7 Suzhou<br>- Describe the Baseline-2007 scenario for their city & develop the BAU-2020 scenario using current urban plans/future projections | JB/ML |
| 13.45 | City update – WP9 Basel<br>- Describe the Baseline-2007 scenario for their city & develop the BAU-2020 scenario using current urban plans/future projections | LP |
| 14.15 | City update – WP11 Rotterdam<br>- Describe the Baseline-2007 scenario for their city & develop the BAU-2020 scenario using current urban plans/future projections | WO |
| 14.45 | BREAK | |
| 15.15 | City update – WP10 Kuopio<br>- Describe the Baseline-2007 scenario for their city & develop the BAU-2020 scenario using current urban plans/future projections | EP/AA |
| 15.45 | City update – WP8 Xi'an<br>- Describe the Baseline-2007 scenario for their city & develop the BAU-2020 scenario using current urban plans/future projections | XP |
| 16.15 | City update – WP13 Thessaloniki<br>- Describe the Baseline-2007 scenario for their city & develop the BAU-2020 scenario using current urban plans/future projections | DS |
| 16.45 | Round up discussion | |
| 17.45 | CLOSE – Bus return to Aristotelous Square | |
| 19:45 | Meet for evening meal at the Kitchen Bar, B Port Depot at Thessaloniki's Port | |

| | **Tuesday 9th April**<br>**Zephyros room (with Aiolos Room for breakout sessions)** | |
|---|---|---|
| 08:30 | Bus pick up from Aristotelous Square | |
| 09.00 | WP6 Exposure, Health & Well-Being<br>- Update on how WP6 work is being integrated with city activities, including what's gone well/not so well | PM/RH |
| 10.00 | Split into methodological work packages for breakout group discussions – cities to join group of their choice | |
| 11.15 | BREAK | |
| 11.30 | Split into methodological work packages for breakout group discussions – cities to join a *different* group of their choice | |
| 13.00 | LUNCH | |
| 14.00 | WP5 Urban Traffic<br>- Update on how WP5 work is being integrated with city activities, including what's gone well/not so well | MK |
| 14.45 | WP4 Building Stock<br>- Update on how WP4 work is being integrated with city activities, including what's gone well/not so well | MN |
| 15.30 | BREAK | |
| 16.00 | WP3 GIS City<br>- Update on how WP3 work is being integrated with city activities, including what's gone well/not so well | CS/ZW/NK /VP |
| 16.45 | WP2 Energy Balances<br>- Update on how WP2 work is being integrated with city activities, including what's gone well/not so well | ST |
| 17.30 | CLOSE – Bus return to Aristotelous Square | |
| 19:45 | Meet for evening meal at Agioli Restaurant (15 Nikis Avenue) for official welcome dinner, kindly provided by CERTH | |

| | **Wednesday 10th April**<br>**CERTH Auditorium** | |
|---|---|---|
| 08:00 | Bus pick up from Aristotelous Square | |
| 08:30 | Project Management Team meeting (1 person per partner)<br>CERTH Auditorium | CS/NC |
| 11.00 | CLOSE | |
| | Bus can drop delegates at airport | |

3.  Meeting Minutes

# Baseline-2007 & BAU-2020 Policy Workshop, Thessaloniki
## 8-10th April 2013

Please note: all presentations referenced below can be found on the Thessaloniki workshop page of the wiki, accessible from the main page, or via the following link:
http://heande.opasnet.org/wiki/Urgenche:_Current_%26_BAU-2020_Policy_Workshop

As a lot of information is contained within these presentations, the notes below detail only the discussions and questions relating to them.

## Day 1 – Monday 8th April

**Presentation: WP12 Stuttgart City – Sandra Torras Ortiz**

Clive Sabel: What size are your neighbourhoods?

Answer: 400 to 11000 people per neighbourhood, so the data has very high spatial resolution.

Rosemary Hiscock: Does your rent index include any measures of affordability?

Answer: No, just the amount in Euros.

Sandra Torras: We cannot connect personal information with any buildings.  The City of Stuttgart has detailed building information but it is only available to buy, and is very expensive.  We do have the data required for WP4 however.  On the energy side, we have an issue with calculating emissions for our energy model, and we have to wait for information from our partner.

Clive Sabel: What is your relationship with the city like?

Answer: Really good.  There are some financial issues, but we work really well together. However, this is only one department in the whole city so things are not straight forward – we have to contact each department separately as there is little communication between them.

Pierpaolo Mudu: BAU is based on 2010 data, so do you intend to use a 2007 baseline?  I have concerns about the comparative approach if cities are using different baselines.

Answer: No, we will use 2010 as the baseline.  For the future we want to the official city scenario, which is why we won't use 2020.

Marco Martuzzi: How much does the baseline include/exclude, as we might find in some places that BAU means different things?  BAU does not go back to the time before these

policies were thought about, but relates to things that will go into development in the near future. BAU already incorporates planned changes, but this may not be the case in all cities.

Denis Sarigiannis: There needs to be a more explicit approach to data links between energy, buildings & traffic. A separate technical meeting on this as soon as possible would be useful so we can look at the next steps, and the technical people from the cities should be included.

**Presentation: WP7 Suzhou City – Miaomiao Liu**

Miaomiao Liu: Suzhou will make more effort to reduce GHG emissions and hence reach their targets. We have air pollutant emission data from 2005-2010, and air quality monitoring data for 2007-2012, but the $PM_{2.5}$ monitoring only started in July 2012.

Fintan Hurley: Are these emissions measured at ground level or high up?

Answer: At ground level.

Miaomiao Liu: We are considering 5 scenarios (see slides 13-17). These are BAU, ESD where natural gas usage increases, ISD where the service industry & public transportation increases, TD where energy efficiency is improved using advanced technology, and ICR, which is a combination of the other three scenarios.

Clive Sabel: It is a great concept to directly survey the population on well-being, very commendable. It is difficult in China to stop people in the streets, so the schools were used as an intermediary. This is a nice way to get good data quickly, in a way we wouldn't be able to do in Europe.

Jun Bi: Based on the pilot survey, we will choose different schools distributed across different regions of the city. We also would like to try on street interviews so we will use a combination.

Laura Perez: how many samples do you have?

Answer: We have done 200 so far, but are aiming for 2000.

Rainer Friedrich: Will you give them a GPS, and if so, how long for?

Answer: We will buy low cost GPS sensors and personal pollution sensors, possibly to be worn for a week.

Pierpaolo Mudu: Is health impact data such as mortality or morbidity available?

Answer: We have had discussions with health centres and have some data, but just for one district of Suzhou.

Jun Bi: We can use the $PM_{10}$ data to estimate $PM_{2.5}$ and its potential impact.

Clive Sabel: A contact of Haikun Wang has disaggregated health data (e.g mortality) for the whole country, which will be useful for both Suzhou & Xi'an, and he is willing to work with us.

**Presentation: WP9 Basel City - Laura Perez**

Laura Perez: The city partners are concerned that we might publish data from TNO models that doesn't match the figures produced from their models. However, the data is mostly in agreement, and where it isn't, the City estimates are often higher than TNO's, so this should not be a problem.

Denis Sarigiannis: Are your scenarios GHG reduction scenarios, or air pollution reduction scenarios?

Answer: Air pollution reduction scenarios.

Clive Sabel: I notice there was nothing on health impacts? Do you have enough access to health data?

Answer: The next step is to look at health impacts, particularly long term mortality so we can look at life expectancy. We have hospitalization and mortality data down to neighbourhood level, but we won't be able to go too small-scale due to confidentiality issues, plus concerns over error margins. Basel has also had a well-being survey.

Jouni Tuomisto: Do you have models that you can share with us?

Answer: there's a conceptual model, but nothing that we can share.

**Presentation: WP11 Rotterdam City – Willem-Jan Okkerse**

Willem-Jan Okkerse: Rotterdam has built 2 new coal-fired power stations, and planned to use carbon capture storage, however the financial incentives for carbon capture were cut and so the business plan fell through. They have built in the capacity for carbon capture, but there is no storage as it was not financially viable. Additionally, some of Rotterdam's biomass has to be subsidised and coal is cheaper. There are also concerns whether importing biomass (wood) from Estonia and Brazil is environmentally friendly.

Fintan Hurley: For air pollution we are not just looking at peaks. A lot of work has been done on time-series studies trying to separate out temperature in relation to pollution.

Denis Sarigiannis: There is a high spatial resolution in terms of ambient air pollution. Do you see large differences in summer?

Answer: no. We have also modelled not only temperature but comfort values.

**Presentation: WP10 Kuopio City – Arja Asikainen**

Arja Asikainen: Detached houses are less likely to use district heating, as there are less of them as Kuopio mostly has apartments.

Erkki Parjala:  We have not produced as much as we wanted to at this stage due to the gap between Mikko savastola leaving and Arja Asikainen starting.

Clive Sabel: As with Basel, we need to see cities presenting health impact assessments. Kuopio have an ambitious timetable, but high confidence in their data availability.

Erkki Parjala: We still need to discuss our target year of 2020 as this is very soon.  Some measures don't have an effect in such a short time span, so 2030 would be better.

Willem-Jan Okkerse: You mentioned increasing use of biofuel in vehicles, and we are doing the same in Rotterdam, so I'd like to know what types you're considering?

Answer: There are several options in Finland, including the possibility of biodiesel from wood, with at least 5 companies interested in investing in this.

**Presentation: WP8 Xi'an City – Xiaochuan Pan**

Clive Sabel: Are these goals realistic/possible by 2020?

Answer: Yes it's possible, but very difficult.

Clive Sabel: How can we best help you over the next 6 months, and are things working better now the work is being done at Peking University?

Answer: Junhan Liu is our coordinator in Xi'an.  The data collection depends on our relationship with Xi'an, and we at Peking University have been doing the analysis.  The data collection is generally okay, and we have also collected data from other sources.  For the analysis it is helpful to discuss with Menno Keuken and others.

Rainer Friedrich: We have developed the methods that Xiaochuan Pan has used further, and are shifting from expressing impacts in additional deaths to life years lost.  You have already done a lot, but now we can discuss further to see how we can help to build on what you have done.

Fintan Hurley: It's good to see you follow data on $PM_{2.5}$ through to a conclusion, but it looks like it is taken from time-series studies looking at very recent pollution events.  Risks come from longer term exposure, so we should look at the work in 'Global Burden on Disease' which is not published yet, but will give much higher values.

Laura Perez: I would also like to see a scenario on the shift to bicycle use.

**Presentation: WP13 Thessaloniki City - Denis Sarigiannis**

Denis Sarigiannis: We are looking at not just the city limits, but the metropolitan area as that is more appropriate. The BAU scenario is the baseline extrapolated with no policy measures, and doesn't take into account the financial crisis etc.

<u>**Day 2 – Tuesday 9<sup>th</sup> April**</u>

**Presentation: WP6 Exposure, Health & Wellbeing – Pierpaolo Mudu/Rosemary Hiscock**

Marco Martuzzi: We have put an outline of the rationale for Health Impact Assessment on the wiki, and this is an evolving document. The table of coefficients for health endpoints is also finished, and work is underway on the well-being part. One issue is how much do we want to compare between cities? It's a shame to have a lack of comparability but we need a balance – if cities do the same thing, it is likely to become irrelevant to policies and not as valuable at city level.

We had a small hands-on meeting in Basel with a couple of our cities, and would now like to arrange more of these meetings.
**Action:** *WP6 health to arrange small focussed meetings with cities.*

There is a website called 'Walkscore' (http://www.walkscore.com/) which is in beta version but might be good to explore, as it scores cities (including Chinese ones) and therefore may be useful for comparisons.

Most cities are planning baseline scenarios based on 2010, not 2007 as originally planned, and BAU scenarios are using different years too. Also, some cities are already very green at their baseline, whereas some would have big changes as started quite polluted, which again makes comparisons difficult.

Rainer Friedrich: I wonder if well-being can be reduced to indicators of depression and mental health, as isn't it also about happiness, and is this included in the indicators? How far can you transform this at the end of the project to a quantitative relationship?

Answer: The depression risk curves are based on air pollution peaks and hospitalization using a big dataset form Canada. We can have quantification in well-being in some case, particularly using noise, but it depends on what the cities look at. There is not much literature on well-being, and lots more on depression. If a city has a happiness scale we can look at it with the literature, but we need to know the scale. There are new things coming out on well-being all the time. Who are looking at whether we can change odds ratios to relative risk.

Laura Perez: The prevalence of depression is high in Switzerland, and the literature on this is small compared to air pollution, so it is difficult to know where to put the thresholds.

Answer: We are obviously less confident about how much we are able to quantify here, so the way forward is to do as much as we can using a qualitative component to assessments, and quantify using an order or magnitude for example. This requires a lot of consideration but is more policy relevant. How much the cities are willing to go in that direction is up for discussion.

We can be more confident than previously about physical activity, but self-rated health and social capital are more difficult areas.

Menno Keuken: How do we separate external factors such as green space and noise from economic factors? Do we have any reference cities to check our methodology?

Answer: there are many studies in Sweden, Netherlands & Germany on green space, so we have a better idea on how to proceed. If there is no socio-economic data, availability of green space makes no sense – socio-economic factors cannot be separated.

Clive Sabel: I'm concerned in terms of the project that what works well for one city may be different in another. For example, access to green space and social level may work well in one country but not another. To be comparable across cities, the same indictor may mean different things in different cities, countries and social class.

Fintan Hurley: Some functions for $PM_{2.5}$ are probably fine in EU cities, but we need studies as local as possible – the approach is what is similar. Miaomiao Liu in Nanjing/Suzhou is leading the way with their well-being survey, but it needs to be something that works in that city, as people use space in a culturally different way. Many studies from the USA, and they are similar enough to Europe in terms of concentration etc to be useful. We can therefore plug into something that will be different in China to Europe, but we can generalise as much as we can.

Rosemary Hiscock: there are still many studies in China that will be useful to us.

Fintan Hurley: We should treat things similarly as much as we can – the whole process is an approximate process. This needs to be captured in a methodology document.

Jun Bi: In terms of relationship between exposure and health, if there is no existing data in China we can follow global data and substitute where possible. The core point is how to evaluate exposure at different scales.

Xiaochuan Pan: well-being is complicated and different in China. Mortality and economic loss are easier to calculate.

Jun Bi: in Suzhou we want sufficient samples by survey so we can view if there are existing relationships and expand to the whole city by looking at indicators. We are trying to develop a suitable questionnaire for the Chinese cities.

Fintan Hurley: In Scotland, Oxfam developed a 'Humankind Index' which needs to be tuned to different populations, but may be useful for well-being.

Rainer Friedrich: We have a parameter expressing well-being in terms of what people would pay to avoid noise for example. We can discuss if this would be a possible indicator as some quantification is available, but it depends on socio-economic status too.

Fintan Hurley: This is not just quantified, but is already used in policy analysis, so would be useful to look at.

Denis Sarigiannis: Well-being is not a dimensional thing, so we couldn't and shouldn't use utility.

Clive Sabel: In Sweden the concept of well-being and happiness was attacked as they are seen as a process to get to life satisfaction. They felt that having a worthwhile life (e.g a job that contributes something) is about more than just being happy.

Rosemary Hiscock: Mood is a temporary thing, and green space studies often look at the change in mood, not long term feelings.

Pierpaolo Mudu: In our case studies, some cities such as Rotterdam and Suzhou have extensive surveys with many factors covered, some such as Stuttgart have specific surveys on well-being and happiness, and some cities have nothing.

Jun Bi: We have concerns over the relationship between well-being and air pollution. Many news reports about the damage caused by $PM_{2.5}$ will lower well-being, so it is not a stable indicator, as there is an interaction between the two things we are trying to measure. In China people are more concerned with things such as living space and salary than air pollution.

Rosemary Hiscock: This is why it is good to look at 'walkability' as well as air pollution, as it affects their daily lives more.

Clive Sabel: Society in Europe is given messages about what our values should be, and the same in China but different values, although perhaps converging a little now. There is still an emphasis on economic growth in China.

Fintan Hurley: We need a concept paper on all of this, as different populations have different concepts on this.

Marco Martuzzi: Although we look at well-being, there is the assumption that we are after utility. If we find something good it can be measured and factored in. There is a problem with how to measure well-being, but we can try to put something in writing to clarify the concept. We would like to hear from cities and city administration to see if we can make reasonable objectives, as it would be nice to compliment the more measureable concepts with others.
**Action:** *WP6 health to provide something to clarify the concept of measuring well-being*

Rainer Friedrich: This is partly about risk perception- happiness and well-being are not dependent on the actual air pollution or noise, but on their perception of it.

**Update on THL Modelling – Jouni Tuomisto**

Jouni Tuomisto: Many people seem to think that THL are no longer developing a tool for doing assessments – we are, and progress is fairly good.  We started from the Energy Balance and GIS Buildings models, which are still simple, but the modelling environment is there in OPASNET and working fine.  I'd encourage all work packages to consider your own work and whether you have data that you can share within the project, as we can help provide space for this.
Also, let us know if you have models or equations that are important, and can be turned into sub-models in OPASNET.  We can make the models if you provide us with the equations and parameters needed to run them.

Clive Sabel: Most project members consider OPASNET an impossible tool to use due to its user-interface.  We also have models that are more complicated than OPASNET can cope with, for example Menno's traffic models.

Jouni Tuomisto: It is true that some models are too complex to implement, but it is not a problem, as we can focus on the many things we can do, such as the building stock model, and cities with such information can then use this model.  There are no specific plans to implement traffic models.

Fintan Hurley: There is a distinction between doing the calculations that are needed, and providing a more generic tool for people.  A simpler tool as a demonstration would be a good ambition.  There are three functions – detailed modelling in the project, a scoping exercise in new cities, and a demonstration tool.  OPASNET may not be used for all three.

Jouni Tuomisto: We have energy balance, building stock and HIA models.  At the moment we can do some things very well in OPASNET, but other things we don't have the tools for, or the resources in the project to build these tools.  However, we could implement our model in all cities.

Sandra Torras Ortiz: At this point OPASNET is not doable for traffic, but the energy balance tool is a simple model which has a lot of advantages, and needs to be modified for each city only once.  In this specific case, there are a lot of advantages compared to Excel tables.

Clive Sabel: We need to think of dissemination, and revealing our methods and tools to the remainder of the world.  The problem is the interface is unhelpful so is not used.

Rosemary Hiscock: A lot of cities don't use 'R', they use Excel.  Could this work done in 'R' be linked through to Excel?

Clive Sabel: yes, but we don't have the capacity to develop such things.

Laura Perez: The 7 case studies are what is important, and to make it useable for non-technical people will take quite a lot of effort.

Jouni Tuomisto: We don't expect people to do work in OPASNET, we are asking people to give us their data so we can do the work for them. We need to know what properties you think the interface should have.

Menno Keuken: The wiki was proposed to cut down on emails, but does not seem to be a practical solution.

Laura Perez: We are mixing up OPASNET as a communication tool, and something for models and results – results can be put into Word etc.

Jouni Tuomisto: OPASNET is not a project management tool.

Fintan Hurley: Jouni has requested data they can include in OPASNET, not for cities to use OPASNET – whether the wiki is useful is a separate discussion.

Menno Keuken: I cannot convince the city to give data to Jouni if it doesn't produce something that is useful for them.

Clive Sabel: The traffic work package models will probably never be in a situation to be made available to cities.

Fintan Hurley: In the health work package we expect the calculations to happen in the cities, so it varies by work package.

Clive Sabel: My experience with tools produced from previous projects is that they have not been used.

Rosemary Hiscock: Can it go into Excel?

Jouni Tuomisto: No, but you can copy and paste your data from Excel into the model, press a button and it does your modelling. Having the output in Excel is much more complex.

Fintan Hurley: Previous projects such as HEIMTSA produced resources that are not being used, but be of use in part of this project. A lot of the work was done late in those projects, so if we are producing tools, we need to think of this early on to give time for marketing them.

Clive Sabel: This is a risky thing to do without resources.

**Presentation: WP2 Energy Balances – Sandra Torras Ortiz**

Rainer Friedrich: What is not yet implemented in the energy balance model but should be, is the possibility to put restrictions into the system.

Jouni Tuomisto: We are looking into this.

Fintan Hurley: Regarding the spatial boundaries of the analysis, does your balance look at both GHG emissions in the city, and GHG emissions caused by energy consumption in the city?

Answer: Not all energy is being generated within the city, only a small amount. We are considering both though, and need to look at both up and downstream processes.

Rainer Friedrich: For energy conversion we distinguish between inside and outside the city, but do not specify where outside the city this conversion takes place. Imported products that use energy are not used in the analysis.

Jouni Tuomisto: The buildings model can be integrated with the energy model easily as they are running on the same platform, but not sure about traffic.

Menno Keuken: We have emission factors we can use, but we don't use fuel consumption, which is what the energy model would need, so we need to think how it could be done.

Rainer Friedrich: Do you calculate $CO_2$ emissions separately for diesel and gasoline cars, as we can link this back to fuel consumption?

Menno Keuken: This is possible

Rainer Friedrich: We also have the industry sector included here, but if people want to use this, they will need a small pre-processing model to feed into it.

Clive Sabel: Are you proposing to do the calculations for each city?

Sandra Torras Ortiz: No, but we will teach them. It would be useful to have face-to-face discussions with them, although the model will be simple to understand. We haven't had any data from Rotterdam yet, and would be useful to know if they have a sankey diagram.

Willem-Jan Okkerse: I'm unsure about the sankey diagram, and have misgivings about the models. I would like some literature explaining more about it, as I feel it would be a tremendous effort to put all the data together, and we'd need a lot of help to fill it in. We already have a basic energy balance model in Rotterdam, so would like to know what questions your model wants to answer.

Sandra Torras: We have data from Xi'an but need more, mostly related to consumption, to enable us to build the model.

**Presentation: WP3 GIS City – Clive Sabel/Zena Wood/Niko Karvosenoja/Ville-Veikko Paunu**

Zena Wood: What are people's views on the D3/Python options based on the pro's and con's shown? I also need to know what type of datasets the cities require?

Clive Sabel: I don't think the project needs a set of GIS tools for the cities to use, as in many cases they are already doing more advanced work and have good GIS functionality – Xi'an are the only city that don't have GIS, but myself and Menno are looking into helping them. We now need to know how to help the cities.

We will need to speak to the EU about changing the deliverable. We now need to change the role of WP3, re-using the skillsets of Ville-Veikko and Zena to make a tool for dissemination. This would be something to take to policymakers and go out to the cities, maybe as a series of roadshows, as a dissemination activity.
The alternatives are to carry on as we are, which is not working, or to cut the work package and redistribute the money, which is difficult to do, especially with employment contracts.
**Action:** *WP3 GIS City to agree appropriate deliverable, and let coordinator know so the change can be communicated to the EU.*

Menno Keuken: well-being is an interesting direction in the project, so if we're shifting person months, this may be more important than propaganda, so I'd go for more emphasis on well-being if possible, rather than visualization.

Laura Perez: I support the visualization idea.

Marco Martuzzi: A word of caution about superficial use – these are impressive examples, and the visualization was mostly for complex datasets, but the nature of our information from city assessments will be very different. We will need to be strong on attaching disclaimers to our numbers, and we want to avoid throwing everything together and ignoring these disclaimers. It is important to make our assessments more appealing, but I'm not sure how it will be done.

Fintan Hurley: Changing policies in cities changes lots of other things, so it would be good to show the flow into concentrations and health effects. From my other projects, relatively too much time is spent working on the scientific content, and relatively too little is spent on working out how to communicate it. Is there some way of building on the tools developed in HEIMTSA?

Clive Sabel: This online tool was published, and we have a paper that describes it. However, we decided that it was not a good use of time, as cities have better functionalities on their desktops than we have online.

Sandra Torras: I was worried that we would have to wait until the GIS framework was ready until we could make the assessment, so am happy that this has changed, and cities are using their own tools. I think this will be a really nice development.

Rosemary Hiscock: The social capital part of well-being is something Zena could perhaps take up, maybe with one city to start with so see how it could be visualized, overlaying voting patterns etc.

Clive Sabel: Could we make a series of tools that would form part of a well-being survey? Social cohesion is a difficult concept, and it might be useful to show it to people as part of a survey.

**Presentation: WP4 Building Stock - Marjo Niittynen**

Marjo Niittynen: I'm not sure how much city level data we are likely to get, but we can use national data if available.

Denis Sarigiannis: Which health determinants are we going to use and is there a complete list?

Answer: Yes, there is a list on the wiki

Clive Sabel: Has this list been negotiated with WP6? There is likely to be a good overlap with WP6 and we need to use their expertise.

Answer: Not very thoroughly. It depends on what the main problems are in cities, e.g dampness in Kuopio. This list originated from Matti Jantunen's spread sheet.

Marco Martuzzi: Some are covered but not all – we downgraded smoking as an intermediate factor.

Rosemary Hiscock: Are ventilation changes included in this? Matthias (WHO) has done a lot of work on this.

Answer: Not yet, but they will be.

Jouni Tuomisto: We have mostly focussed on energy consumption and building structure so far. We might have problems finding the necessary exposure information for indoor air quality, although we have been keeping an eye on the WP6 work in this area.

Denis Sarigiannis: Are you taking into account in situ energy generation in the form of heat from stoves etc.?

Answer: Not at the moment, although it is important in Finland, I'm not sure how much it will be relevant for other cities.

Denis Sarigiannis: We have lots of data we could provide to make this a more complete and useful tool e.g. radon, smoking patterns, insulation.

Clive Sabel: Where do you see the city case study analysis being done, at THL or in the cities?

Answer: We are happy to do it if we have the data. We do not expect cities to use this model by themselves, although it will hopefully be like that eventually.

Denis Sarigiannis:  I suggest THL and CERTH work together to link their two respective modelling tools, to make an overall package for cities.  We can then help the cities to work through some examples to make them more comfortable with the idea.
**Action:** *THL & CERTH to collaborate on a modelling package for WP4 Building Stock*

Laura Perez:  I agree with this idea.  We feel a bit frustrated as we know more or less what data is required, but want to learn more.

**Presentation: WP5 Urban Traffic - Menno Keuken**

Denis Sarigiannis: If we say 7% of the population use the metro, what do we do if this changes?  Do you calculate the trajectory of the people going to work, which has now changed due to the metro?  Not only does this reduce the load on the roads, but it will also change the trajectory as there will be more free roads.  Are we doing this?

Answer: We need a model to see how traffic flows through your city, so not without this data.

Denis Sarigiannis: Why split the population into 3 groups?  A street canyon model means we have high spatial resolution for both air pollution and population density, so why differentiate between the population?

Answer: The body of evidence says that close to roads with changes in traffic, there are changes in $EC/NO_2$ but not $PM_{2.5}$, and you can therefore look at sub-populations.  This stops double-counting as $PM_{2.5}$ mostly unaffected in sub-population close to roads.  It is an open question whether we should use it or not, but it allows us to differentiate between the pollutants.

Laura Perez: I read that the projections on population growth in China may not be correct.  Do you intend to do a range to cover this?

Answer: Especially traffic prognosis should be checked with Xi'an, as 20% traffic growth per year is a national figure, so it may be different for individual cities.  We have taken into account the fleet being cleaner in 2020, but traffic volume is the driving factor.

Marco Martuzzi: I would like to stress that most health assessments will take place in the cities, so the flow is not between work packages 5 and 6 as such.  Also, I don't see a problem with splitting the population into 3 zones, it's more a question of data presentation, and it's a good way of expressing the information that comes out.

Menno Keuken: If a city promotes electrifications of cars, the charge point placing will change the emissions for street canyons, but not motorways, so we need to be able to see the impact on a small sub-population.
I think calculations should be done in the cities, but they will need lots of help.  Everything is going well – the Chinese cities are the main focus now, and to validate what WP5 has done so far.

Erkki Parjala: yesterday we discussed target years, and we couldn't agree if it should be 2020 or 2030....

Menno Keuken: BAU is very simple, and we have the 'Tremove' model which describes exactly how it will look in 2020 for all cities. Anything else is additional measures, and we do not have the details in Tremove to do 2030 easily.

Fintan Hurley: But I believe Stuttgart said 2025 and I got the impression people thought this was sensible?

Menno Keuken: 2025 is similar in terms of traffic so that should be okay. Cars will be so clean in 2020 that extra measures will give little advantage. The main reason to get rid of cars at that point is mainly for other reasons such as noise, not air pollution.

### Day 3 – Wednesday 10th April

**Project Management Team Meeting**

The notes and actions from this meeting will be circulated separately to the relevant people.

**Summary of actions:**

| Action | Responsible |
|---|---|
| WP6 Health to arrange small focussed meetings with cities | WP6 Health |
| WP6 Health to provide something to clarify the concept of measuring well-being | WP6 Health |
| WP3 GIS City to agree change to deliverable, & let coordinator know, so can communicate to EU | WP3 GIS City/Nicky Cocksedge |
| To collaborate on a modelling package for WP4 Building Stock | THL/CERTH |