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REBUS
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ACTION PLAN

City of Malmö

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Final Action Plan for February 2019

City of Malmö

Part I – General information

Project	Rebus
Partner organisation	City of Malmo
Other partner organisations involved (if relevant)	
Country	Sweden
NUTS2 region	Scania Region
Contact person	Olle Strandberg
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Part II – Policy context

Name of the policy instrument addressed: The environmental programme for the city of Malmo 2009 – 2020.

The policy instrument that the Action Plan aims to impact is:

Investment for Growth and Jobs programme	**NO**
European Territorial Cooperation programme	**NO**
Other regional development policy instrument	**YES, The environmental Programme for the city of Malmo 2009-2020**

Part III – Details of the actions envisaged

ACTION 1

Increased Energy efficiency through cooperation between the departments and behavioral change in the city of Malmo.

1. Overall Topic and Description of the proposed Policy Improvement *(please provide a brief summary of the proposed Policy Improvement that this Action refers to).*	
Overall Topic (c.200 characters)	The environmental program for the city of Malmo has high ambitions and includes sharp targets when it comes to energy consumption in public buildings. The program is decided by the highest political authority and is compulsory for all departments in the city of Malmo. As responsible for the public buildings the department of internal services rent the properties to other departments in Malmo through a lease. The lease includes costs for energy, electricity and water. Due to this role the department of internal services has a big impact on the total energy consumption and have accordingly taken a big role in matters of energy efficiency. However, to reach the targets of the environmental programme, the commitment from both property owner and

	tenant are essential. As buildings become more energy efficient the behavioural impact on total energy use increases. Prior to the start of the REBUS project, it was found that energy awareness in the other departments was low. We aim to change that. This action plan therefor includes methods and tools that could better help to apply the environmental programme and achieve the energy targets foreseen.
Specific Description (c.1000 characters)	Reducing energy is a prioritized issue in Malmo. To reach the targets, set up in the environmental program, the department of internal services has worked with renovations and energy investments for quite some years. The result is a steady decreased energy consumption. This work will continue, but as buildings become more energy efficient the behavioural impact on total energy use increases. It is therefore time to address this issue. This behavioural impact includes both technical staff and tenants. Technical staff are important to ensure the operation of building technology including maintenance and services. Many projects end as new technology is taken into use and there is no follow up. That is why new buildings sometimes has an energy consumption much higher than expected. By a good understanding of the building technology, regular follow ups and adjustments, the performance of the building is monitored and ensured. In this action plan the following activities address this issue: Energy analysis and adjustment to the organisation. The tenants are important as they influence the energy consumption by the way they act and how they use the buildings. This includes simple things as closing doors in winter time, switching of the lights when leaving a room and turning of your computer at the end of the day. But also, more complex issues such as opening hours, energy efficient machines etc. As costs for energy, electricity and water are included in the lease, our tenants have no economic incentive to change their behaviour. This makes it a bigger challenge but the

	opportunities are increasing as the concern for environmental issues rises. In this action plan the following activities address this issue: Make statistics available, develop communication, connect building and education, 50/50 methodology The overall goal of our Action plan is to change the way the programme is applied in the city, in terms of tools to be used, by introducing new methods and tools that could better help to apply the programme and achieve the energy targets foreseen. **Result foreseen: The overall result to achieve is to reach the target of the City of Malmo's environmental program of 140 Kwh/m^2 and year by 2020.**

2. Need addressed

(please provide a brief summary of the NEED that you wish to address with this policy improvement –c.1000-1500 characters)

The Need we want to address is to work with broad range of actions for energy efficiency in public buildings.
To be able to reach the energy targets of the city of Malmo, it is not enough to just lean on energy investments and renovations. These efforts need to continue, but will be completed with behavioural change for both real-estate owner and tenants.
The ambition of this action plan is to support and develop necessary changes in behavioural changes. Those changes are hampered by the fact that there is no financial incentive for the tenants as the costs for energy consumption is included in the rent. Therefor other kinds of incentive need to be used for reaching the environmental targets.

An important issue that needs to be addressed for Malmo is the present financial regulations and conditions.

To create a financial incentive for our tenants, we need to diversify our rental model and Technical systems into operational energy and building. When you are aware of the operational energy consumed due to behaviour, you have the possibility to affect the consumption. It is a sustainable incentive! In some cases, this is possible, and in some it is not realistic when it demands to large investments or efforts. With input from exchanges in

the Rebus project and by this action plan, we intend to investigate the circumstances and possibilities we have.

This kind of changes takes time and are costly, so the need of other kinds of incentive are great. The sustainability issues are high up on the agenda and thanks to that, there is a possibility to increase interest this way. But, that demands a different way of working for the landlord, where we need to be better on information and to facilitate for tenants to do the right thing!

The second part of needs is to change the process for how the technicians work with the buildings. Today there is seldom done a complete inspection of the whole building, but more like smaller and partial action when needed. This is a reactive way of working rather than the more proactive, which is necessary for keeping the building optimized.

Another part identified is information and communication. To be able for all parts to work with buildings energy mitigation, knowledge is essential. To get this information easily and pedagogically a range of activities need to be taken. The energy consumption web needs to be done more pedagogical, information of where and why to work with energy savings needs to be produced and for the schools, pedagogical material for students to work with energy mitigation also needs to be produced.

3. Background and contribution from REBUS

Describe how you came to identify this proposed Policy Improvement

(please describe the lessons learnt from the REBUS project that constitute the basis for the development of the present Action Plan)

Details of proposed Policy improvement	**Links with interregional input (including details of activities, good practices and knowledge shared)**
Develop our own work of taking care of the facilities, analyse energy usage and operational optimization.	BORA 94: We have with great interest taken part of the good practice at Raclamas from Hungary and deepen our knowledge through a Bilateral Exchange Round (BER) at the 11/08/2017. Furthermore, we have had the opportunity to discussion further during project meeting in Miskolc 26/09/2017 – 28/09/2017. Raclamas training of local energy management agency. Education of technical personnel at the City of

	Raclamas is a capacity development that seeks to incorporate the content of the energy strategy into daily operations of municipal employees. That is pretty much the essence of what Malmo wants to do, to create opportunities to increase knowledge of the environmental programme, and the organizations own responsibility for energy efficiency. From this experience Malmo will develop an energy survey for the optimization of facilities and the statistical analysis.
Facilitate for other departments to work with the energy goals by increase the communication and to make the statistics more available.	Durham: We have with great interest taken part of the good practice School carbon reduction programme from Durham at the staff exchange in Durham at the 15/05/2018 – 16/05/2018. This was followed up with a BER on the 04/06/2018, where we had the opportunity to take up questions or thoughts from the staff exchange. Finally, we had the project meeting in Durham during 05/09/2018 – 06/09/2018, which also gave us possibility to discuss and broaden our knowledge base and to understand the way of working. The School carbon reduction programme of Durham: From the School carbon reduction programme there are two major things that we have learnt. The first thing is the importance of having pedagogical instruments that enables schools to access their energy data. For the moment all necessary data is collected about schools in Malmo, but the possibility to get understandable information out of it demands deep knowledge of how the system works. A pedagogical approach and easy-to use aspect needs to be applied on it. Also, the need of relevant responsive data is required! This means that all power consumed needs to be divided into operational energy and building energy, where the building energy is the non-responsive amount of the energy that the building itself needs (for instance for elevators etc.) The operational data is the energy that the tenants themselves can mitigate. The second thing we learnt from this programme is the

	impact of the students in schools, and how they can be a vital part in the energy efficiency work. With the right pedagogical tools there is a great possibility to make the theoretical education of energy more visual for the students, which they also can carry home and to influence the teachers in a more sustainable approach in their work environment. From this experience Malmo will develop tools for educational purpose and develop the statistical information and presentation. Malmo will also connect those (building with education) in purpose to increase the pedagogical part.
Facilitate for other departments to work with the energy goals by increase the communication and to make the statistics more available.	Polish Network Energy Cities (PNEC): We have with great interest taken part of the good practice 50/50-energy savings from Poland and enhanced our knowledge through a BER at the 24/08/2017 and staff exchange 29/01/2018 – 30/01/2018 were Poland shared information and material used. That followed directly with a project meeting held 31/01/2018 – 01/02/2018 which gave us the opportunity for further questions and thoughts! Beside that we also had the opportunity to discuss at other project meetings. The importance of working with students are very much confirmed in the 50/50 energy-saving methodology (PNEC)! The 50/50 methodology is a 9-step methodology aiming at the achievement of energy and financial savings in public buildings, which PNEC successfully used at a lot of schools in south of Poland. The project confirms the importance of the involvement of children, and both here and in Durham, different kind of "energy clubs" has been introduced. Also, here comes the need of pedagogical tools on hand. The second part of the 50/50 methodology is the financial part, which implies that 50% of the savings goes to each of the 2 parts. In the Mazetti building there has been a need for some time to change the lighting, which is too expensive for the small companies that are

	tenants in the building, but maybe there is a way for solving the problem out of the 50/50 methodology! So, from this experience Malmo will develop the communication with tenants and will try to implement the 50/50 methodology in the Mazetti building.

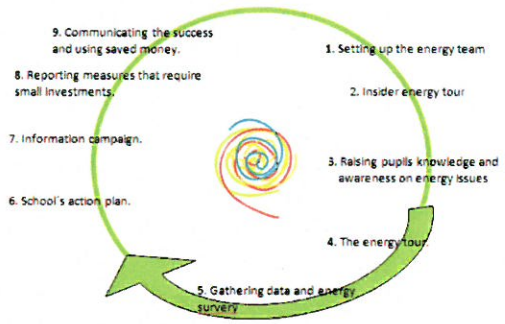
4. Specific Activities and TIMEFRAME (*please list and describe the activities to be implemented in order to achieve the policy change– add as many lines as necessary*) – THIS REFERS TO THE ACTIVITIES EXPECTED TO BE CARRIED OUT IN THE IMPLEMENTATION PHASE (PROJECT PHASE 2)		
Activity Number	**Activity Description**	**Timing (with details)**
1. Make the statistics available	Statistic of energy use is collected monthly from all properties. This statistic is available to our tenants but not in a very accessible manner. We aim to make the statistics easier to read and understand. Additionally, we will spread the information of the possibility of monitoring your building and follow up how it is received. Actions initiated during phase 1 are: Produce templates that is easy to understand for the tenants Refine template by help of a reference group	
1.1 Activities in detail	Implement the first draft of template and link with data	**Apr 2019- Jul 2019**

	Introduce template to tenants by information campaign Follow up how the templates are used and the purpose of them. Make adjustments/develop template Improved template in force	**Aug 2019** **Dec 2019 – Feb 2020** **Mar -June 2020** **Jul 2020 - on**
2. Develop communication	To change behaviour, you need a trigger and a way to do it. By developing ways for communication and to talk with our tenants about energy, we hope to influence them in matters of behaviour. This activity includes setting up plans and templates for communication as well as follow ups on results. During phase 1 discussions has been held about target groups to communicate with, and what approach to have for communication. This will be further refined during Phase 2.	
2.1 Activities in detail	Create a communication plan for communication with tenants during 1-year base. Launch communication to tenants Follow up how tenants can experience their possibility to work with EE out of received information. Adjust/develop communication based on feedback from tenants	**Apr-June 2019** **Aug 2019** **Dec 2019-feb 2020** **Mar - June 2020** **Dec 2020- Feb 2021**

	Follow up how tenants experience their possibility to work with EE out of received information.	
3. Connect building and education	As some of our properties are schools or other educational institutions, we try to use the available statistics on energy consumption in the education. Connecting the lessons to the actual building the students are in, anchor the subject in a new way. This activity includes testing a created educational material and follow up how it is received. During Phase 1 we have created educational material about water, where educational statistics of the school buildings are used. First draft is ready and will be tested on to classes during the end of phase 1 and beginning of phase 2.	
3.1 Activities in detail	Test educational material on to classes Establish a way to follow up how it is working Follow up how the material is working. Adjust and launch educational material Follow up how the material is received and if it helps the schools to work with EE.	**April 2019** **April 2019** **May 2019** **June 2019** **Dec 2019 – Mar 2021**
4. Energy analysis	With energy analysis you map the energy use of a building, get an overview of the biggest energy users and find possible improvements. By separating operational	

	energy from the tenant's usage, you get a more accurate picture. This activity includes creating an energy survey and a pilot installation in one of our buildings. The method will be evaluated and the results will form the base for an implementation of a way of working with energy analysis and separation of operational energy. During the end of phase 1 the energy survey is completed and ready for printing into booklet for a broader audience. Also, the implementation in the first building (Mazetti building) will be done.	
4.1 Activities in detail	Evaluate the result of the pilot installation. In a first stage evaluate the approach and organization to achieve an energy optimization of the Mazetti building. For example, evaluate the job categories that were needed, how much time has been spent, how planning of operations took place and feedback (i.e. Do´s and don'ts) from people involved. Cooperation with tenants are evaluated too. Based on the results from the evaluation, a method for working with energy analysis will be presented to the management of Internal services. In a second stage energy statistic is evaluated for both the building and the tenant's business. At operational optimization, energy savings are calculated and when changing technology allows an estimate to be	**April - Aug 2019** **Aug 2019** **Sep 2019 – Dec 2020**

	made of the potential savings. The imputed savings is compared to the actual energy use. A continuous analysis of statistics is divided by quarter and year. Comparison is also made with historical data. A proposal, based on the results from the evaluation of the method for separating operational energy from the total buildings energy in statistics, is presented to the management of Internal services.	**Jan 2021 – Mar 2021**
5. Adjust the organization	New production trustee is a property trustee that just work with new buildings. The task is to deploy, maintain and optimize new building during the first 2 years. After that the building is handed over to the usual property trustee. Because of the special knowledge the new production trustee has, problems and optimizations can be handed fast, to reach the proper energy consumption in the building. The new production trustee will also be a part when planning new buildings. In this way a circle of knowledge is produced where experiences from past projects can be brought into new ones.	
5.1 Activities in details	Employ New production trustee. Evaluate if/how the new role/service contributed to EE.	**Jan 2019** **Mar 2020 – end of project**
6. 50/50	The **50/50 methodology** is a 9-step methodology aiming at the achievement of energy and financial savings in a public	

	building without making larger investments (mostly through change of behaviours and small interventions). It actively involves buildings' users in the process of energy management and teaches them environmentally friendly behaviour through practical actions. Achieved financial savings are shared equally between the building users and the local authority which covers the energy bills. By investment in energy efficient equipment you enable a reduction of  energy use. However, if the tenant has a limited budget and no economically incitement to reduce energy use investments tend not to be made. In this activity we will explore the possibility of co funding an investment by considering the benefits from reduced energy costs.	
6.1 Activities in details	Calculation for renovation and budgeting. We inventory the tenants in the Mazetti buildings self-owned special luminaires regarding to energy use, savings potential, cost and if they could be	**April – Sept 2019** **Sep 2019 – Mars 2021**

	replaced by a 50/50 project. Both landlord and tenants must be jointly agreed for fulfilling the task.	

5. Players involved (*please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role – add as many lines as necessary*) – THIS REFERS TO THE ACTIVITIES EXPECTED TO BE CARRIED OUT IN THE IMPLEMENTATION PHASE (PROJECT PHASE 2)	
Name of Organisation	**Role in Action Plan Implementation**
Department of environmental at the city of Malmo	Policy owner of the environmental programme.
Board of Internal Services at the city of Malmo	Referral of the policy of the environmental programme
Department of real estate at the city of Malmo.	Initiator and owner of the Action plan
Department of education at the city of Malmo.	Receiver of information material, co-operator of producing educational material.
Department of Culture at the city of Malmo	Receiver of information material.
Property trustee at the city of Malmo	Receiver of education and information material
Contractors with agreement to the city of Malmo.	Receiver of the education, responsible for the function and maintenance of the technical systems, responsible for the evaluation, employees.
Tenants, tutors. Users of facilities.	Receiver of information, co-operator of educational material.

6. Risk and Contingency Plans *(please describes any potential risks to Action Plan implementation and eventual contingency plans – add as many lines as necessary)*		
Description of Risk	**Level of probability (High, Medium, Low)**	**Description of Contingency Plan**
Gain support from Policy makers	Low	Inform about our efforts, cooperation with tenants
Referral responses without support	High	Increase cooperation with tenants
Political unwillingness	Medium	Keep updated, inform about our efforts
Procurement and agreements	Low	Inform about cooperation's, plan procurement, analyse present agreement
Not prioritized by the management	Medium	Information of the value of our efforts
Problems with our own capacity due to high workload, sickness etc.	High	Continually work with high work load and personnel balance to secure recourses.

7. Costs *(please describe the costs required to implement the Action Plan. This can refer to human resources and external costs required to set up the actions and to any funding required (e.g. if the Action refers to a call for proposals / a funding scheme)*

Costs for implementation of the Action plan is estimated to Approximately 228 000 € (2 375 000 SEK) in total. The amount is self-financed!

Make the statistics available; 260 hours, 130 000 SEK+ 90 000 SEK ext. costs= 21 000 €

Develop communication; 440 hours, 220 000 SEK = 21 000 €

Connect building and communication; 270 hours, 135 000 SEK = 13 000 €

Energy analysis; 140 hours, 70 000 SEK = 7 000 €

New Production trustee; 3 300 hours, 1 650 000 SEK = 158 000 €

50/50; 160 hours, 80 000 SEK = 8 000 €

8. Funding sources *(with reference to the above costs, please describe where the budget comes from to finance them)*
228 000 € will be financed from the City of Malmo.

9. Monitoring (*please describe the monitoring tools and indicators that you expect to use in Phase 2 – Implementation to ensure that your Action Plan is implemented correctly*)

Indicators should also include measurement of the territorial impact (e.g. beneficiaries concerned, results achieved in terms of increased competitiveness or cleaner environment, etc.).

Monitoring tools *(description of the tools and how they will be applied)*	**Citect BMS system and E4, EMS system. The systems are already implemented.**

Indicators *NB: The indicator included in the Application Form should be reported here, as well as any other indicator deemed necessary*		**target amounts**	**Means of Verification**
1	Energy use of the public buildings in Malmo, per square meters gross floor	140 kWh/m^2	Self-defined indicator
2	Number of persons that has taken part of the information on the statistical homepage	200	
3	The educational material connecting education and building is available for teachers	Yes/No	
4	Proposal to management/Board on energy survey	Yes/No	
5	Evidence of energy efficiency compared to evaluation of if the new buildings reach maximum 100% of energy calculation. Evaluation in 5 buildings	Yes/No	
6	Create a model for handling the 50/50 methodology	Yes/No	

Part IV – Official Signature(s)

Date:	2019-05-27
Name	Director Helen Nilsson (Director of Internal Services)
Signature	Stamp of the organisation (if available)

Endorsement by the Management authority:

Date:	2019-06-13
Name	Director Rebecka Persson (Director of environment)
Signature	Stamp of the organisation (if available) City of Malmö The Environment Department