

Vision and Roadmap, Marketing Framework and Symbiotic Agreement for Malmö harbour

Deliverable 5.1, 5.2 and 5.3 (Malmö)

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1 PART 1 – VISION AND ROADMAP FOR MALMÖ PORT

1.1 INTRODUCTION AND PURPOSE

A joint vision can clearly strengthen a region and provide a valuable basis for different kind of actors. Actors that despite their organisational aims share a common picture of what the future should look like. In Malmö port area there are a multitude of stakeholders active. The stakeholders represent different parts of the society; Public and local authorities, industries, institutes etc. Many of these different organisations have a vision for their future and an idea of how they will develop; there are also public and private steering documents that set the scene for the future development. The purpose of a joint vision is not to replace any of the steering documents and visions within an organisation – they are key for each company’s success. Instead the activity focuses on the gaps between these documents and the gaps between the different organisations.

The focuses for the joint vision are; port development, bio energy/renewables and industrial symbiosis. There are no visions or other steering documents today that consider all these aspects jointly.

1.2 WORKING PROCESS

An important first step for a municipality or region that wants to form a vision and a connected roadmap to push the development is to anchor and get approval for the process within the own organisation. Since this is large organisations which fill a wide spectrum of purposes, this can be challenging, and it is important to find the gap between already existing documents and future ambitions. Industrial symbiosis and bioenergy are important within many different focus areas, and therefore it is important that these also are represented in the process. Step 1 is to involve co-workers at the different departments and make them a part of the vision process. In Malmö it was also important to get the port involved at an early stage and therefore they are also participants of the working group.

Malmö working group:

Departments of Environment, Real estate, Trade and Business, and Copenhagen-Malmö Port (environment, communication and key account) with input from City Planning Office and Traffic department

At the same time as this group established it is important to get an early approval from highest management to form a vision, and make sure it will be used. In Malmö this decision of approval was taken in September 2015 within a group called “The establishment group” for the port area and consists of directors and management of the technical departments, and the CEO of Copenhagen Malmö Port. The establishment group appointed persons in each organisation to be included in the working group.

The background work; formulating a purpose, a working group and get approval for the process took longer time than foreseen. Two reasons for that are that 1) this work is outside all departments’ key activities, it is therefore an extra task that needs engagement and focus, and 2) since the activity is outside the core business, it is very dependent on the persons that need to take part in the process. The experience in Malmö is though that when this is all established the working process really speeded up and that the wide knowledge in the group was helpful to bring in different perspectives to the work.

The working group meets, and is still meeting, on regular basis. It was decided that a first draft of a vision was to be formulated before it was presented to a wider group of stakeholders to get their input to the work. In end of May 2016 there is a public meeting planned, and in end of August 2016 the vision and roadmap will be presented for the Establishment Group (highest management), and hopefully get an approval.

1.3 FORMULATING A FRAMEWORK AND STRUCTURE

In Malmö we have experience from working with early dialogue with stakeholders from different housing development areas. It has been a successful approach which we also want to adapt in this process. Therefore it was decided, as mentioned above, that when a first vision was drafted, a workshop should be planned to address those stakeholders that share the interest of formulating a vision and would like to affect the content of the vision.

Before such a workshop, the working group gathered to set a framework for the vision. The framework needed to clarify:

- The focus of the vision; what should be included and what should be left outside this process?
- The structure of the vision; what type of document should the process result in?
- Key words for the vision
- Who will "own" the vision; communicate it and see if it is followed?

These are all important to establish as a first step, before trying to formulate the vision itself. For Malmö it was decided:

- There should be a clear focus on **industrial symbiosis, business development, competitiveness, and environmental benefits.**
- The vision should be short, approximately 1 page, and include; a payoff, a short explanation of the actual vision, an explanation of what symbiosis in Malmö intend, and finally what we will do to achieve the core of the vision.

The matter of who will own the vision is important to consider. In this case it seems reasonable that it is the city and the port that are the co-signers. At the same time it is not only the city and the port themselves that will need to act in order to fulfil the vision. Therefore our suggestion will be that every organisation that approves of the visions existence and commits to it will also be the co-signer.

With many owners of the vision and also the roadmap, the next issue to solve is who will maintain it and control that it is followed and gives result? Initially, and for some years to come, it needs to be the city with assistance from the port. But when there is a more established industrial symbiosis, and companies themselves lead the process of developing it further, this could be managed by the group of companies included in the cooperation in form of i.e. a steering group. In Malmö it has also been discussed that, by including all willing organisation in the vision, it might not be necessary to also formulate symbiosis agreements as was suggested on an early stage. This will be discussed further within part three of this report.

1.4 VISION

Industrial Symbiosis – cooperation for green and competitive business in Malmö

The vision

“Through industrial symbiosis new forms of cooperation between companies and organisations will be created, which will lead to a more resource efficient and innovative development of products and services. By continuous investments in industrial symbiosis, involved actors will create a greener growth, work opportunities and more competitive businesses in Malmö by 2040. “

Symbiosis from our perspective

Industrial symbiosis implies that companies and organisations cooperate in a new and innovative way that benefit the environment but also the economy for the involved actors. Such cooperation creates added value – more efficient utilization of resources and decreased environmental impact, new innovations and product development, increased profit and competitiveness, more work opportunities and new business establishments, and experience exchange and new knowledge. Symbiosis may result in exchange of energy or materials, development of joint services and service functions, coordinated logistic solutions etc.

We will...

...initially focus on the harbour area, where a good mixture of companies with varying structure is established who are well equipped to jointly develop the industrial symbiosis.

...encourage companies and organisations to get actively involved in a symbiosis to utilize each other's resources in the development of new products, services and service functions.

...stimulate the interest for industrial symbiosis by creating meeting points, experience exchange and contribute to the dissemination of knowledge, ideas and concepts.

...show a long term commitment for companies and organisations to feel safe investing their knowledge and capital into a cooperation that creates benefits.

...initially focus the development of industrial symbiosis in specific themes such as energy, logistics and waste.

...encourage companies to use best available technology and test new innovative solutions.

...on a longer term involve more companies and organisations in Malmö, and also go beyond the traditional industry sector.

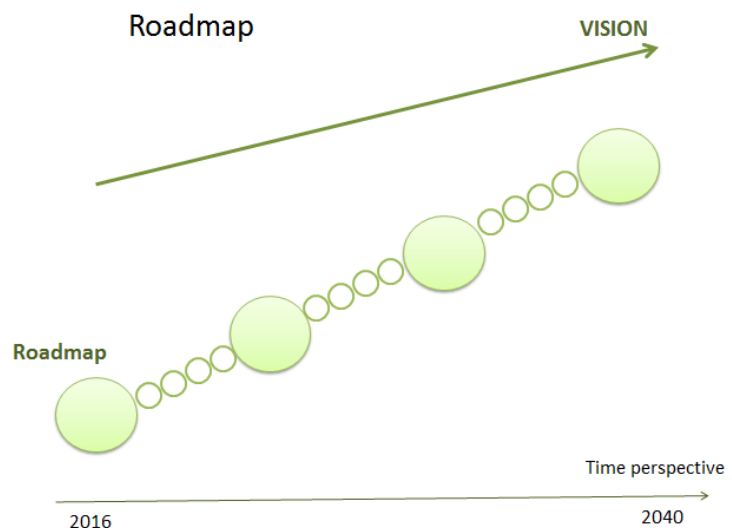
Our roadmap clarifies the statements above, and shows the different targets and activities planned to realise the vision on the road towards 2040.

We support the vision – would you like to join?



1.5 ROADMAP

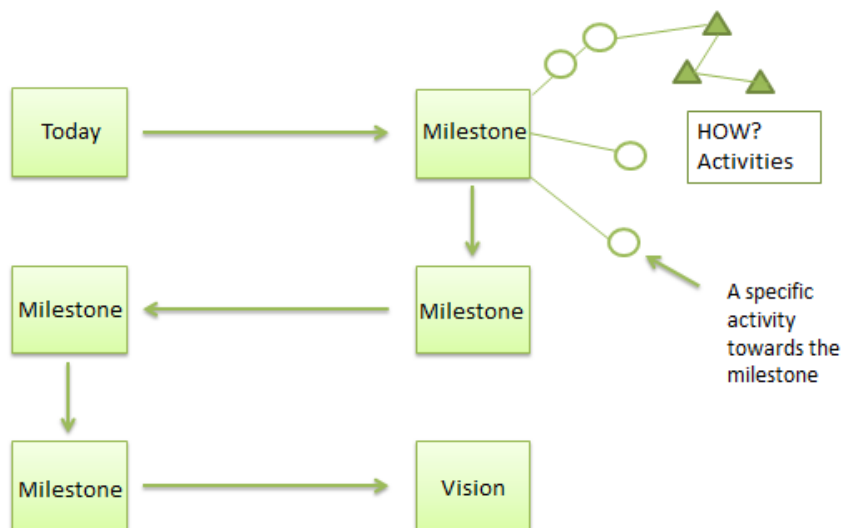
In order to fulfil the vision there is a need for a continuous focus on activities that contribute to its purpose during the years towards 2040. As the figure on this page shows we need to formulate a roadmap that strives in the same direction as the vision. To do so milestones (large rings) for different key years were decided and to reach the set milestones activities (small rings) need to be formulated. Some activities that will be included is already active, i.e. several of the cleantech opportunities found within the EPIC 2020 project are now being implemented or further investigated, and these all contribute to the vision. There are also other initiatives and projects such as large logistic projects, energy system projects and waste management projects that will be an obvious part of the roadmap since the clear focus of these projects are resource efficiency. There will also be an important process of identifying other key activities that are necessary to carry out in



order to reach the ambition of the vision. This process will continue throughout 2016 in order to get input from all relevant stakeholders, at the same time this process can never be completely finalised. Activities on a longer term, 2020 and forward, will need to be added along the years to come since it is impossible to know now what will be needed on an activity level.

In Malmö it is decided that the roadmap should be a living web based document that is open to access for anyone that is interested. There will be two different ways to view the roadmap, where one is shown in the illustration below. The idea is to show where we are today (2016) and the different milestones towards the final point, which is the vision itself. It will be possible to click on each milestone to get an explanation on how the targets will be fulfilled, and the specific activities. The activities themselves are shortly explained and, if available, there will be a link to the specific activities or projects websites where more information is provided (i.e. www.epic2020.eu).

Roadmap structure and planned functionality



Final product that supplements this picture: A map of the port where all activities are shown, and where one further can study; plans, ongoing activities and carried out projects and its results.

The second way to visualise the roadmap is by an actual map of the port area. The idea is to show public plans for the area, the participating companies, the established symbiotic links and cooperation's, the ongoing projects, and the planned activities. From the map it will be possible to dig deeper in to the developments and to learn more about the area. This visualization will hopefully be valuable as an information source for established companies, but also for new stakeholders that wish to establish in the area and therefore want to learn more about the development and available resources.

Roadmap for Malmö harbour area

2016

*Milestones: There is a finalised version of a vision and roadmap for the harbour area.
Method for and ongoing activities to map flows in the area.*

Activities:

- Development of Malmö's production of renewable energy
- Development of Malmö's energy distribution system for higher flexibility and better utilization of wasted heat flows
- Platform for cooperation established and is continuously developed
- Regional and national network active with purpose of sharing good examples and solve barriers that hinders the development
- Development of the city's, port's and infrastructural owner's roles to meet the demands of the future

2017

*Milestones: Market and communication plan for wider dissemination of the concept industrial symbiosis and related work in Malmö.
GIS-layer in the city's "City Atlas" that shows all flows for participating companies.
Better knowledge and formed alternatives for different applications of today wasted resources.*

Activities:

- Test of market dialogue and PPP innovation procurement for better utilization of waste resources to new products
- Implementation of smart grid solutions on industry
- Investigations of potential for utilization of low grade heat and district heating for new applications
- Involvement of GIS-experts to get an understanding of the development and its needs, and to prepare a solution
- Network meetings with different themes in order to share development ideas, share company visions and match companies that may benefit from cooperation

2020

*Milestones: The concept industrial symbiosis is included in Malmö's process when new establishments are planned.
Industrial symbiosis is an important part of City of Malmö and CMP's marketing of the harbour.
There is a structure for joint logistic solutions between established actors.
Local symbiosis with a global perspective.*

Activities:

- Develop synergies and integration between port close housing areas and the industry port
- Cooperation between different departments within the city on how the concept can be a part of establishment planning – what is needed?

- Engage logistic stakeholders and plan how to develop logistic systems further in the port, focus on joint transport solutions
- Study the progress on a national and global level – what can we learn?

For 2025 to 2040 activities have not yet been formulated, it is simply too long into the future to foresee which activities that will be most beneficial to focus on. Several of the activities stated for the milestones above will most probably be active during many years to come, especially when it comes to networking activities, mapping of flows and identifying business opportunities.

2025

Milestones: Platform that drives the concept for symbiosis, manage the network and follow-up results.

X percent of the actors in the port area cooperates with one or more other actors within the same area.*

Number of work opportunities created (employees at cooperating companies).

2030

Milestones: X percent of the actors in the port area cooperates with one or more other actors within the same area.*

Number of work opportunities created (employees at cooperating companies).

2035

Milestones: X percent of the actors in the port area cooperates with one or more other actors within the same area.*

Number of work opportunities created (employees at cooperating companies).

2040

Milestones: X percent of the actors in the port area cooperates with one or more other actors within the same area.*

Number of work opportunities created (employees at cooperating companies).

X* will be set after a public workshop, and will also increase in number for each year.

1.6 CONCLUSION AND NEXT STEP

As in many other processes it can be concluded that development often takes longer time than planned. In this case it probably depends on the fact that this concept or focus area is not anyone's key business. Joint solutions, and a joint approach to develop businesses and overcome barriers demands a new type of commitment, and in the beginning increased efforts to move forward. It is also important from a leader perspective to allow it to take time and firmly establish the process in

different organisations - that will pay off in the next step. Once that is done it is far easier to continue the process.

It is recommended to have a main working group that develops all content and documentation. Look into how the process can be made as creative as possible and welcome all ideas. When a first draft is finalised make sure to involve your local port network to provide input or feedback to the work. Workshops are an excellent meeting form for this type of process.

Remember that this is a continuous process and there is no idea in starting the process of developing a vision and roadmap, if it is not first clarified who it is for and by whom it will be managed.

In Malmö the next step will be to get approval for the vision, and to adjust both the vision and roadmap to final versions during 2016. The roadmap will, as earlier described, be developed continuously, and the visualisation of it will most probably continue into 2017.

2 PART 2 - PROFILING FRAMEWORK

2.1 INTRODUCTION AND PURPOSE

This part of the report focus on building a marketing framework in Malmö harbour and also includes a step-by-step guide how to build such a framework. The purpose of a profiling framework is to get to know your stakeholders, present and future, how to involve them and with what communication tools.

2.2 VISION FOR YOUR PORT AREA

The building of a marketing framework has its base in a vision for the area, service or product you need the framework for. The vision developed within the EPIC 2020-project should include development of a bio resource based symbiotic port.

Vision for Malmö Harbour area

“Through industrial symbiosis new forms of cooperation between companies and organisations will be created, which will lead to a more resource efficient and innovative development of products and services. By continuous investments in industrial symbiosis, involved actors will create a greener growth, work opportunities and more competitive businesses in Malmö by 2040.”

Symbiosis from our perspective

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2.3 GUIDE

2.2.3 STAKEHOLDER MAPPING PART ONE

This is a short outline of writing a marketing framework for ports for business investments based on bioenergy and biomass resources.

The first step is to get to know what kind of businesses you are dealing with. In Malmö, a stakeholder mapping have been conducted to learn about the businesses already settled in the port area and what interests they have in the area. The second step is to list business themes that would complement the existing in order to become a sustainable port with bioenergy resource flows.

Stakeholder and target group mapping of Malmö port area

Businesses in the area today

List the names of the businesses, what their main business are, what type of company and how they contribute to the symbiosis (what kind of (residual) resources they have).

Name of business	Main business	Type	of	(Residual) resource
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		company	
E.ON	Energy company	Commercial company	(bio)energy producer/distributor
Lantmännen	Agricultural harvest handling (grains)	Commercial company	bio-resource producer/energy consumer
Lantmännen/Gyllebo Gödning	Produce fertilizers	Commercial company	bio-resource producer/energy consumer
SYSAV	Waste incineration, recycling etc	Limited company	Waste management/Bio-resource producer
Stena Recycling	Business waste recycling	Commercial company	Energy consumer/Waste management
Norcarb Engineered Carbons AB	Carbon Black producer	Commercial company	Waste heat supplier
Ragn-Sells	Waste collection, recycling etc	Commercial company	Resource consumer
IL Recycling	Waste collection, recycling etc	Commercial company	Resource consumer
OKQ8	Fuel	Commercial company	Resource consumer
Finnlines	Ferry shipping	Commercial company	Resource consumer/bio-resource provider
Scandinavian Tank Storage	Tank storage	Commercial company	Resource consumer

The stakeholder mapping is an ongoing activity and further investigations are needed to complete the picture.

Malmö port area have a strong position in energy production, about 90 percent of the district heating is produced within the area.

Businesses in the area in the future

In the future there could be a large variety of companies in the area taking advantage of already existing and/or new flows of resources. The harbour location is key for many of the actors due to their import and export of goods and products, but there are also businesses that focus on the local connections. The area has grown in multitude of different businesses, but in land effective way since they share space and services in between each other.

Main business	Type of company	(Residual) resource
Farming		
- vegetables	Cooperative	bio-resource producer/compost/heat consumer
- fish/seafood	Commercial company	bio-resource producer/nutrients/heat consumer

- i.e. algae's	Limited company	bio-resource producer/raw material for chemicals, bio-plastics etc/heat consumer
Production		
- chemicals	Commercial company	Producer/residual heat
- bio-fuels	Commercial company	Producer/residual steam
- cotton-fibers (recycled)	Limited company	Producer/construction materials
Logistics		
- ship freighting	Commercial company	Transports/energy consumer
- rail freighting	Public/commercial company	Transports
- road freighting	Commercial company	Transports/energy consumer/electricity storage
- person transport	Public company/private	Transports/energy consumer/electricity storage
Center	Limited company – co-owned by official and private businesses	Meeting rooms, show room, testbed, guiding's, catering etc

2.2.4 STAKEHOLDER MAPPING PART TWO

In order to be successful in the marketing of a port area, it is also important to map other stakeholders than the businesses you want to have a dialogue with. The port area is not an isolated island for business; all businesses have customers, employees with families, connections with the city core – both geographical and infrastructural, the municipal administration itself, surrounding municipalities, other organizations – both recreational and others, animal habitats above and below sea level etc.

Stakeholder and target group mapping of connecting organisations

City of Malmö – Municipal Administration

The municipality is the initiator and coordinator of industrial symbiosis in the port area and the main land owner, a champion in sustainable development!

The Municipal Administration is divided into different departments with different responsibilities and towards the port area these differs between legislative and strategic. The full municipal administration employs about 20 000 co-workers.

The Real Estate Office administrates the municipal owned land, both leasing and selling.

The Environment Department has two angles to work with the port area, one is strategic development as implementing industrial symbiosis and in the [Environmental Programme's action plan \(2012-2018\)](#), one action point (page 18), aims to settle industrial symbiosis within the municipality. The other is the legislative part with environmental och health related inspections, administrating environmental permits etc.

The City Planning Office organizes the municipal planning from Comprehensive Plan to Local Plans.

The Business and Trade Office leads continuous dialogues with established and new businesses in the municipality.

Copenhagen Malmö Port (CMP) – Port Administration & operations

Copenhagen Malmö Port is divided in to two port areas, one in Copenhagen, Denmark and one in Malmö, Sweden. In the EPIC 2020-project it is the Malmö area that is included. CMP is one of Europe's core ports and in Sweden a port of national interest. It is the gate for sea based transport in and out of to the Baltic Sea.

Port business is a large energy consumer; loading and unloading ships, storage, fuel handling etc.

But CMP is driven by a vision of being a leading port operator concerning market position, environment, quality and power of development. In this, industrial symbiosis is a way forward.

Malmö Industrial Park (MIP)

A cooperation between Malmö Real Estate Office, Malmö Business and Trade Office and Copenhagen Malmö Port in order to attract new business to the port area.

Neighbouring Municipalities

Copenhagen, Denmark – co-owner of the port and connected geographically through the Öresund Bridge.

Burlöv - borders directly to the port area of Malmö, mainly through the co-owned old landfill, Spillepengen.

Lomma – borders directly to the port area of Malmö. Swedish University of Agricultural Sciences (see below) have agricultural land in direct connection to the border.

The municipalities of Vellinge, Svedala and Staffanstorps also borders to Malmö, but not the port area.

The National Energy Agency, have initiated the development of a Swedish Strategic Innovation Agenda for residual heat use; mainly heat in the range of 30-40 degrees C. In order to make that, they have through a research institute (SP) invited a number of stakeholders from all over Sweden, including the City of Malmö, to workshops to work with input for the Agenda.

The County Administrative Board of Skåne, Sweden is divided into 21 counties, each of which has its own County Administrative Board and County Governor. The function of the County Administrative Boards is to be a representative of the state in their respective counties, and serve as a link between the inhabitants, the municipal authorities, the Central Government, the Swedish Parliament and the central state authorities. In 2014 they conducted an inventory of larger residual heat sources in the county. They also have a large influence of different permits concerning new business establishments, energy and other residual flows.

Region Skåne is a self-governing administrative region, funded by taxes, which is governed by a Regional Council. Besides public health care, public transport, culture and business development, they have an interest in bio-economy, closely related to circular economy and industrial symbiosis. They also support organisations for start-up and clean tech companies, e.g. Sustainable Business Hub.

Recreation area Spillepengen – old landfill turned into a park area for recreation within close range of the port area.

Students and Universities; Malmö have a university but it is also close to both Lund University as well as Swedish University of Agricultural Sciences. Across the Öresund Bridge is Copenhagen and Aalborg Universities present at a close range. Also the University of Linköping from more north of Sweden have close contacts to Malmö and they have specialists in industrial symbiosis. Student work with focus on Malmö Port has been conducted and more will follow.

Nature organisations; in the port area there are interesting bird populations as well as a protected area for a rare species of toads (grönfläckig padda).

Visitors; local, regional, national or international, the range is widespread and they can all have different focus of their visit. Visitors may come either as customers to one or more businesses of the area, or as future businesses themselves, or for studies of the wild life or recreation.

2.4 GUIDE – FUTURE CHANGES

When you “know” your stakeholders and what interests they have of the area, it is time to determine how they are exposed to any future changes in the area based on what is set up in the vision.

Priority one is to include businesses already present in the area and preferably made part of the development. By using the vision and the communication tools described below, it is probably more possible to make them ambassadors for the vision and care takers of the development. Making them part of the development, strengthens their resilience as a company or organization.

If the development and intentions for the area are made known and used as a marketing tool, it is more possible to attract new businesses with the same ambitions and/or even businesses are created as a direct result of the industrial symbiosis and vision for the area.

The municipal administration and the port organization can use the vision as a marketing and planning tool for the entire area. It can be a base for infrastructure and spacial planning, regulating environmental permits, attract sustainable bio based business, contribute to a resilient business climate and secure new work opportunities.

2.2.5 INCLUSION OF ACTORS IN MALMÖ

Present businesses in the port area – the City of Malmö have invited businesses in the area to participate in a network of interested actors and through that they will be able to influence the future development. The vision has been developed in close cooperation with CMP.

Future businesses in the port area – through cooperation with clean tech clusters and organizations, work is conducted to contact and locate new entrepreneurs with ideas to complete the bio based industrial symbiosis.

Municipal administration – the City of Malmö still has to educate the own administration in the benefits of industrial symbiosis through the set vision. Because of the municipality's high set environmental goals, the vision will be an excellent complement to use as a tool to include external actors in the environmental work.

2.5 GUIDE – COMMUNICATION TOOLS

Communication, and not only information, is key when it comes to establish the vision for the port area. When you have made a thorough stakeholder mapping and initial investigation of their connection to the vision it is time to start up the dialogue.

Different stakeholders need different approaches for communication and for that you need different tools.

Visitors and competence center/small scale test bed. Experience show (i.e. Kalundborg, Denmark) that it is a strength to market your area through a visitors center. The businesses in the area can use it as a showroom for different solutions, both present in the area but also as a test bed for new inventions and/or combinations. The businesses can also use it for meetings, both with customers as well as between each other. It is also possible to connect the center to more social enhancing activities; café & restaurant, study tour guides and other work opportunities.

Visitors center or not, organizing *study visits* for potential businesses and other interested groups are a very welcoming way of marketing the area. It is essential to invite already existing businesses and

offer them the opportunity to open up for outside visitors. Making the area “open” is important in finding new partners to a symbiosis.

Beside a visitors center and study visits, a *visualization of residual flows* in the area is a tool to attract new businesses. Exactly how to do this kind visualization is still open for bright ideas, but a “stock market” of resource flows or a mapping through a GIS (geographical information system) layer or a combination of both, are ideas discussed. The system must initially be easy and intuitive to use.

In present times’ overflow of information and information systems, making *direct contact* and open up for business to business or group discussions might be the most effective way of reaching the stakeholders you have identified. If the businesses already have a *network or cooperation* of some sort, use that as a gate opener.

Students are a useful group to use or to be used by. They often need subjects to their essays or master thesis-work, i.e. you provide them with topics you need investigated. Student courses can be in need of topics to use as studies or cases to discuss. Student internship or student employee, during such a focused area of time it is valuable to give them a certain project to work with and report back.

Open innovation challenges both for students and professionals. Use a specific need in the area as an opportunity to invite to an open innovation challenge. There are often funding to apply for organizing such competitions, and it might open up for an entire new way of thinking of a certain problem or need – a new opportunity for new business.

The must have-tool is, of course, *a website*, a communication tool with links to almost all other tools mentioned above. The website doesn’t have to be new, but update the one you already have. Depending on how mature your users are in digital use, *social media* could be the next step of involvement.

2.2.6 COMMUNICATION TOOLS IN MALMÖ

Visitors and competence centre

There is a strong wish for establishing a visitor’s center in the linkage between the port’s industrial interface and the city’s mix of housing, shops, restaurants and offices. This centre would also provide meeting rooms, test spaces for new ideas and innovative use of residual heat and other flows – i.e. cultivation. This center would be the meeting point for businesses in the area, a social node and a provider of work opportunities. There could be room for a restaurant or a market, using the produce from the cultivation.

Study visits

The City of Malmö has a long experience of showing different themes or areas to interested visitors. Through the city’s website it is possible to book pre-organized packages or tailor make a combination out of a long list of proposed visits; <http://malmo.se/English/Technical-visits.html>

Open innovation challenge

The City of Malmö has during the last couple of years, together with different partners, used open innovation challenges as a tool for new ideas to resolve different issues found.

In 2015 was one challenge, for both professionals and students, new and innovative ways of using residual heat: <http://sse-c.se/wp-content/uploads/Restvarme-tavlingsprogram-slutligt.pdf>. It resulted in thirteen approved proposals from both classes and one of the winner students is now closely involved in the development of flows in the Malmö port area.

In the beginning of 2016 planning for a more advanced and specific competition about residual heat was developed. If the plans are approved, the competition will take place in the autumn of 2016 and run in three different development steps for almost a year.

Other challenges are sustainable school yards, waste handling in old and narrow housing areas and shared living concepts.

Student work

Students from both Linköping University and Swedish University of Agricultural Sciences have written essays and thesis about industrial symbiosis, new ways of residual heat use, possible business models, chartered possible flows etc. One of the student winners from the open innovation challenge is still involved in the work of developing the symbiosis in Malmö port area.

2.6 GUIDE – IMPLEMENTING THE FRAMEWORK

The vision shows the ambitions of the area and the framework is an instrument to make sure proper work is executed to reach the set ambition and milestones. A marketing framework is the back bone of your vision and roadmap. The framework is the tool you turn to when you have to revitalize the momentum in the work of improving the port area to become a champion of industrial symbiosis.

The final and most important part is to make the framework a used tool and point out who is responsible for the execution of it.

3 PART 3 – BIOENERGY SYMBIOTIC AGREEMENT

3.1 INTRODUCTION AND PURPOSE

To ensure a long term commitment to the vision and strategies that are formed within the ports, there is a need for an agreement between the different stakeholders of the port. An agreement can be formed in various ways and can be between a various set of actors. In this chapter different forms of relevant agreements are described and evaluated based on experience from other projects, and interviews and the round-table discussions. After deciding on type of agreement it is important to look into which areas that should be covered in the agreement.

3.2 SIMILAR INITIATIVES IN MALMÖ

Hyllie Climate Contract

Hyllie is Malmö's largest urban development area, where around 9000 new apartments and 9000 new work places will be created in a near future. To reach Malmö's high ambitions in its environment program, it is necessary that the new development areas show the way. To achieve this; City of Malmö, E.ON (energy producer and distributor) and VA Syd (water and waste management) jointly lay the foundation to become the most climate-smart city district in the Öresund region and a global benchmark for sustainable urban development. The ambition was formulated as a "Climate Contract for Hyllie".

In the early stage of the planning of this area a vision was formed. The vision states;

"Hyllie will develop to become the region's climate smartest neighbourhood and a global model for sustainable urban development"

Eight targets were set to reach the vision and the contract also states different focal points for the work. Moreover the contract includes work method, organisation, time perspective, and funding ambitions. In the end the contract was signed by City of Malmö, E.ON and VA Syd.

The contract is a central and active part of the development in Hyllie, and in the everyday work within, and between, the signing organisations.

Quality program Western Harbour Malmö

The quality program was developed for the developers of the residential area in Western harbour in Malmö, and can be an interesting inspiration for the development of contracts in an industrial context that aims for higher resource efficiency and an increased use of bioenergy. The purpose of the program was:

- To give the developers a base standard that secures the attractiveness of the district in short and long term;
- To be an operational tool to reach City of Malmö's and the developers ambition level for the new district;
- To secure a very high quality in the districts environmental profile in order to make the district an internationally leading example of environmental adaption of a dense urban area, and also function as an accelerator in Malmö's transition towards an environmental sustainable city;
- Secure societal interests such as availability, safety, resource efficiency, eco-cycling, bio diversity, as well as developing a good place to live for citizens of Malmö;
- To secure a high quality of the architecture in the district
- To create a valuable district that engage companies, researchers, planners and public authorities interest on a long term;
- To create a positive image of Malmö, nationally and internationally, that favours companies establishing and peoples will to live in Malmö.

3.3 WHAT DOES STAKEHOLDERS SAY – INTERVIEWS TO SET A DIRECTION

The contract, as earlier described, is a way to get a long term commitment to a formed vision and roadmap for an area. The contract should on one hand be ambitious and challenge stakeholders to develop and to implement sustainable solutions in a faster pace. On the other hand it is important to lay the foundation for cooperation, and not regulate how the development should happen by introducing mandatory contracts with a content that does not reflect the stakeholder's vision and development plans. Therefore interviews with stakeholders were carried out, and the result was then used to formalize the type of contract suitable in the Malmö context. Here we summarise the stakeholders view and different opinions on an agreement.

All stakeholders pointed out difficulties with a mandatory agreement, and agreed that a condition to join is that it is on voluntary basis. There are already a lot of regulations to follow for industries, and other stakeholders, and especially for smaller companies it is difficult to manage all demands and the administration connected to it. There is a difference from i.e. Climate Contract for Hyllie, since that contract is between a public partner and infrastructure owners. These are all large organisations that will be a part of Malmö's holistic development and most probably keep their businesses in Malmö also in the future. The industries located in the port area are varying a lot in size and type of business, which makes it more difficult to commit to a mandatory agreement formed on a general level. So the conclusion is that the agreement shall be in a voluntary form.

Another important point that was discussed was what kind of content that shall be included. The overall ambition with the vision and development is to improve the environmental performance, i.e. more efficient use of resources such as energy. At the same time; within this focus there are already regulations steering towards an improvement of performance and that are followed up by the municipality. For industries this would mean yet another administrative burden to follow up, which definitely is not what we would like to create. Instead we should rather investigate how we can create an added value for the businesses. Therefore focus should be to concentrate on i.e. business development and opportunities, cooperation possibilities and openness towards neighbours and visitors.

	Studied examples <i>(Climate contract for Hyllie, Quality programme for Western harbour)</i>	EPIC 2020 Symbiotic agreement
Type of contract area	New housing and office area	Industrial port, established and new companies
Type of partners	Public authorities, public companies and infrastructural owners	Mainly private companies
Public partner role	Owner of land, developer of city/land (high mandate)	Partner in projects, authority (low mandate)

3.4 THE AGREEMENT

As earlier touched in the text it is important that the agreement creates an added value for the stakeholders and public actors that gets involved. At this stage of the development actors in Malmö

are not convinced that an agreement is a wise development step, and to formulate and sign symbiotic agreements we need to be convinced of its value.

As an alternative in Malmö it is discussed if a clear commitment to the vision and roadmap can serve in the same purpose as an additional agreement. The vision and roadmap clearly states ambitions that also would have been included as the targets in an agreement. As presented earlier in this document the idea is to make the vision a joint document with all participating organisations as co-signer's and including all these actors logos in the end as supporting organisations.

Since the necessity of and plan to develop an agreement has changed during the project period, a specific agreement has not been developed at this stage. Before that is done it is important that stakeholders agree of its being or not being, and it also needs to be clear what gap it shall fill with the vision in mind. The idea of having an agreement will still be further investigated during 2016 in cooperation with CMP.